

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
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Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
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Date: 13-05-2016

**निविदा सूचना सं.: सैक / पीटी / 03 / 2016-17**  
**Tender Notice No.: SAC / PT / 03/ 2016-17**

भारत के राष्ट्रपति के लिए और उनकी ओर से वरि. प्रधान, क्रय एवं भंडार, अंतरिक्ष उपयोग केंद्र, अहमदाबाद निम्नलिखित के लिए मोहरबंद निविदाएं आमंत्रित करते हैं:

For and on behalf of the President of India, Sr. Head, Purchase & Stores, Space Applications Centre, Ahmedabad invites sealed tenders for the followings:

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराह्न 3 बजे तक) Due on (Up to 3 pm)
1.	AHSE 201600028001	DETECTOR FOR SSTM (OCEANSAT-3) (Two Part Tender)	13/06/2016
2.	AHSE 201500335301	OPTICAL GRADE VIBRATION ISOLATION TABLES (Two Part Tender)	13/06/2016
3.	AHEG 201500345101	CCTV SYSTEM (Two Part Tender)	13/06/2016
4.	AHSE 201500339101	REFERENCE FLAT (Two Part Tender)	15/06/2016
5.	AHSE 201500338401	THZ SENSOR AND LASER SYSTEM (Two Part Tender)	15/06/2016
6.	AHMR 201500321501	COAXIAL DPDT SWITCHES FOR SPACE USE (Two Part Tender)	15/06/2016
7.	AHEG 201500339501	ESTABLISH OFC LINK (Two Part Tender)	20/06/2016
8.	AHPP 201500332301	MOBILE EXHIBITION PLATFORM FOR VSSE (Two Part Tender)	20/06/2016
9.	AHSE 201500342701	THEODOLITE (Two Part Tender)	22/06/2016
10.	AHAS201600001301	RATE CONTRACT FOR CHEMICAL ETCHING (Two Part Tender)	22/06/2016

निविदा दस्तावेज क्रय प्रभाग, सैक से प्राप्त किए जा सकते हैं तथा ये इसरो की वेबसाइट [www.isro.gov.in](http://www.isro.gov.in) और सैक की वेबसाइट [www.sac.gov.in](http://www.sac.gov.in) पर भी उपलब्ध हैं। इच्छुक निविदाकार इसे वेबसाइट से डाउनलोड कर सकते हैं तथा अपने प्रस्ताव ₹.545.00 प्रत्येक (रेखांकित डिमांड ड्राफ्ट के रूप में) के निविदा शुल्क के साथ प्रस्तुत करें। अपना प्रस्ताव प्रस्तुत करते समय लिफाफे के ऊपरी भाग पर निविदा सं. तथा नियत तिथि लिखें।

यदि दस्तावेज डाक द्वारा मंगाए जा रहे हैं तो निम्न बातों को नोट करें:

1. निविदा दस्तावेज मंगाने के लिए भेजे जा रहे निवेदन पत्र पर निविदा सूचना संख्या तथा निविदा संख्या दोनों लिखी जाएं तथा निविदा शुल्क ₹ 545.00 प्रत्येक (किसी भी राष्ट्रीयकृत बैंक द्वारा जारी रेखांकित डिमांड ड्राफ्ट के रूप में) के साथ मात्र क्रय एवं भंडार अधिकारी, अंतरिक्ष उपयोग केंद्र, अहमदाबाद- 380 015 को भेजा जाए।
2. जिस लिफाफे में इस प्रकार का निवेदन भेजा जा रहा हो उसके ऊपरी भाग पर "निविदा दस्तावेजों के लिए अनुरोध" लिखा जाए। प्रत्येक निविदा दस्तावेज के लिए अलग निवेदन पत्र एवं अलग डिमाण्ड ड्राफ्ट भेजा जाए।
3. निविदा शुल्क (अप्रतिदेय) का भुगतान रेखांकित डिमाण्ड ड्राफ्ट (मात्र एमआईसीआर डीडी) के रूप में किया जाए जो अहमदाबाद में देय हो तथा वह मात्र लेखा अधिकारी, सैक अहमदाबाद-380 015 के नाम पर लिया जाए।
4. डिमाण्ड ड्राफ्ट के पीछे विक्रेता का नाम एवं निविदा संख्या दर्ज होनी चाहिए।
5. नियत तिथि बढ़ाए जाने के निवेदन पर कोई विचार नहीं किया जाएगा।
6. डाक द्वारा निविदा दस्तावेज की बिक्री नियत तिथि से 10 दिन पूर्व बंद कर दी जाएगी।
7. यदि विक्रेता व्यक्तिगत रूप से आकर निविदा दस्तावेज प्राप्त करना चाहते हैं, तो वे नियत तिथि से एक दिन पूर्व तक क्रय प्रभाग (बिल्डिंग नं. 30-ए, कमरा नं. 57) में किसी भी कार्य दिवस पर 1400 से 1600 बजे के बीच संपर्क करें।
8. मोहरबंद प्रस्ताव प्राप्ति की समय सीमा प्रत्येक निविदा के सामने निर्दिष्ट नियत तिथि को 1500 बजे तक रहेगी।
9. अंतिम समय सीमा से पूर्व प्राप्त बोलियाँ उपस्थिति निविदाकारों/उनके द्वारा प्राधिकृत प्रतिनिधियों की उपस्थिति में उसी दिन 1530 बजे खोली जाएंगी।
10. ऊपर निर्दिष्ट तिथि को यदि छुट्टी घोषित की जाती है तो सैक का अगला कार्य दिवस निविदाओं की प्राप्ति एवं खोलने के लिए नियत तिथि माना जाएगा।

11. विलंब/देरी से प्राप्त प्रस्ताव स्वीकृत नहीं किए जाएंगे।
12. जिन पार्टियों ने समय से बोली जमा कराई है तथा निविदा खोलने में भाग लेना चाहते हैं, वे अपने प्राधिकृत प्रतिनिधि का नाम उस विशिष्ट निविदा में उल्लिखित निर्धारित तिथि से एक दिन पूर्व सूचित कर दें। विलंब से/अंतिम क्षणों में प्राप्त प्रवेश हेतु अनुरोध पर विचार नहीं किया जाएगा।
13. निम्नलिखित वर्ग के निविदादाता को निविदा के साथ ईएमडी में छूट के लिए उचित दस्तावेजी साक्ष्य प्रस्तुत करने पर ईएमडी के भुगतान से छूट दी जाती है (यदि लागू हो):
  - सैक में अधिकृत विक्रेता के रूप में पहले से पंजीकृत/पेनालीकृत विक्रेता।
  - भारतीय प्रतिनिधि को शामिल न करते हुए सीधे प्रस्ताव प्रस्तुत करने वाले विदेशी विक्रेता
  - केंद्रीय पीएसयू/ईपी तथा स्वायत्त निकाय
  - सूक्ष्म एवं लघु उद्यम
  - खादी एवं ग्रामोद्योग आयोग
  - राष्ट्रीय लघु उद्योग निगम
  - भारत सरकार के आदेशानुसार ईएमडी के भुगतान से विशेष रूप से छूट प्राप्त कोई अन्य स्थापना
14. निविदा मूल्यांकन प्रक्रिया के दौरान अपनी निविदा को वापस लेने वाले विक्रेताओं की ईएमडी जब्त कर ली जाएगी। विफल विक्रेताओं की ईएमडी निविदा अवार्ड करने के बाद, निविदा अवार्ड करने के 30 दिनों के अंदर ब्याज के बिना ईएमडी लौटा दी जाएगी।

Tender documents can be bought from the Purchase Division, SAC and are also available on ISRO website [www.isro.gov.in](http://www.isro.gov.in) and SAC website [www.sac.gov.in](http://www.sac.gov.in). Interested tenderers may download the same from the website and submit their offer along with tender fee of ₹ 545.00 each (In the form of Crossed Demand Draft). While submitting your offer superscribe Tender No., and due date on the envelope.

If the documents are requisitioned by post, the following points shall be noted:

1. Request letter shall be sent for requisitioning tender documents indicating tender notice number and tender number together with tender fee ₹ 545.00 each (In the form of Crossed Demand Draft issued by any Nationalized Bank) to the Purchase and Stores Officer, Space Applications Centre, Ahmedabad - 380 015 only.
2. The Envelope containing such request shall be super-scribed with "Request for Tender Documents". Separate request letter and separate Demand Draft shall be sent for each tender document.
3. The tender fees (non-refundable) shall be paid in the form of CROSSED DEMAND DRAFT (MICR DD ONLY) payable at AHMEDABAD in favour of The ACCOUNTS OFFICER, SAC, Ahmedabad - 380 015 only.
4. Vendor name and tender number shall be indicated on the reverse side of the Demand Draft.
5. No request for extension of the due date will be considered.

6. The sale of the tender documents through POST shall be closed 10 days prior to due date.
7. In case vendors desire to collect the tender document in person, they may contact Purchase Division (Bldg. No. 30-A, Room No. 57) on any working day between 1400 to 1600 hrs up to one day before the due date.
8. Deadline for the receipt of the sealed offers shall be up to 1500 hrs on the due date mentioned against individual tender.
9. Bids received before the deadline shall be opened in the presence of attending tenderers/their authorized representatives on the same day at 1530 hrs.
10. In the event any date indicated above is declared as holiday, the next working day at SAC shall be considered as the due date for receiving & opening of tenders.
11. Late/Delayed offers will not be accepted.
12. Parties, who have submitted bids in time and want to participate in tender opening, may inform their authorized representative's name one day in advance of the due date indicated against the particular tender. Delayed requests / requests for entry at eleventh hour will not be entertained.
13. The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):
  - Vendors already registered/empanelled with SAC as authorized vendors.
  - Overseas bidders submitting offers directly without involving an Indian Representative.
  - Central PSUs/PSEs and autonomous bodies
  - Micro and Small Enterprises
  - Khadi and Village Industries Commission
  - National Small Industries Corporation
  - Any other establishments specifically exempted from paying EMD by an order of the Government of India.
14. The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

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**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराहन 3 बजे तक) Due on (Up to 3 pm)
1	AHSE 201600028001	DETECTOR FOR SSTM (OCEANSAT-3) (Two Part Tender)	13/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

M/s

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**Our Ref No : AHSE 2016-000280-01**

**Tender Due: 15:00 Hrs ISTon 13/06/2016**

**Dear Sirs,**

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: As per enclosure. )

S.No.	Description of Items with Specifications	Unit	Quantity
1	Integrated Detector Dewar Cooler Assembly (IDCA) TIR IDCA (RFP & Technical Specifications- attached)	Nos.	5

**DELIVERY AT:** SAC,ISRO

**MODE OF DESPATCH** Air Freight

**DUTY EXEMPTIONS** We are exempted from payment of customs duty.

**SPECIAL INSTRUCTIONS** Mention validity, warranty, payment terms & delivery terms.

**SPECIFIC TERMS** As per enclosure.

**INSTRUCTIONS TO TENDERERS:**

Acceptance of Liquidated damages- As per enclosure

Acceptance of Performance Bank Guarantee-As per enclosure

-EMD(Earnest Money Deposit)- As per clause 3 attached Terms & Conditions

- "Quotations shall be submitted by the bidders only by post or by hand in sealed covers. Quotations received by FAX or e-mail shall not be considered as valid offers and will not be accepted for evaluation."

-Please note that this is a TWO-PART TENDER. Send your quotation as per attached instructions only. Quotation not conforming to the instructions will be rejected. Fax & email quotations will not be accepted.

-Technical & Commercial Compliance statement confirming compliance with all the point of Tech & Commercial annexures enclosed with the tender document shall be submitted along with the offer. In the absence of the same, your offer shall be summarily rejected

- Special Instruction: Pre-bid conference with probable vendors is scheduled to be held on 26/05/2016(Thursday) and 27/05/2016(Friday) with user division at Bldg. No. 38, Room No. 06 at SAC Ahmedabad. Probable vendors may confirm their participation on email address samisrehman@sac.isro.gov.in for pre-bid conference. Person attending the Pre-Bid meeting shall bring proper authorization letter and ID Proof.

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

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ANIL N VAIDYA  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

**REQUEST FOR PROPOSAL  
FOR  
TIR INTEGRATED DETECTOR  
COOLER ASSEMBLY  
(TIR IDCA)**



**SPACE APPLICATIONS CENTRE  
INDIAN SPACE RESEARCH ORGANISATION  
DEPARTMENT OF SPACE  
GOVERNMENT OF INDIA  
AHMEDABAD 380015**

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## **REQUEST FOR PROPOSAL (RFP) FOR TIR INTEGRATED DETECTOR COOLER ASSEMBLY**

### **Introduction:**

Space Applications Centre (SAC), Indian Space Research Organisation (ISRO), Department of Space, Government of India, is involved in development of space-borne cameras for meteorological applications and earth resource monitoring. SAC is planning to develop a Multi-spectral (MX) Imaging Camera in Thermal Infrared (TIR) band.

Proposals are invited from vendors having experience in manufacturing space qualified hybridized Focal Plane Area Array Detectors integrated with active Coolers (here in afterwards defined as IDCA, Integrated Detector Dewar Cooler Assembly). IDCAs shall have spectral bandpass filters and the vendor is required to procure these filters as per the requirements given herein. Offers are required for the configuration as per the requirements given in this document.

### **Vendors are requested to submit their technical and commercial offers separately in sealed covers.**

It is very important for our evaluation of the offer that your proposal includes sufficient technical data on form, fit and function. The proposal submitted in response shall be in conformity with requirements laid down in subsequent sections. It should also include the previous flight history, if any, of the IDCAs supplied by the vendor and the facilities available for fabrication and testing to meet the requirements. If this technical data is not available along with the offer, SAC reserves the right to reject the proposal.

Vendor shall provide the cost break-up including the aspects like NRE (if any), EM cost, FM cost, Filters etc. Vendor shall provide the cost break-up with and without qualification testing. Vendor shall submit all supporting documents in case the devices are proposed to be excluded from the qualification testing. SAC reserves the right to include or exclude any test depending on the flight history and cost.

Requirements given in this document may be modified by SAC before the finalization of the contract. After the award of the contract, any modification will be done as per terms of the contract. Vendor may propose alternate tests / conditions and provide detailed analysis, in case of any deviation to the requirements.

This document gives details of the requirements of the IDCA in the following five sections:

- Section-1: General Background of the Requirement
- Section-2: Electrical, Mechanical and Interface Requirements
- Section-3: Reliability and Quality Assurance Requirements.
- Section-4: Documentation Requirements.
- Section-5: Deliverables and Delivery Schedules.

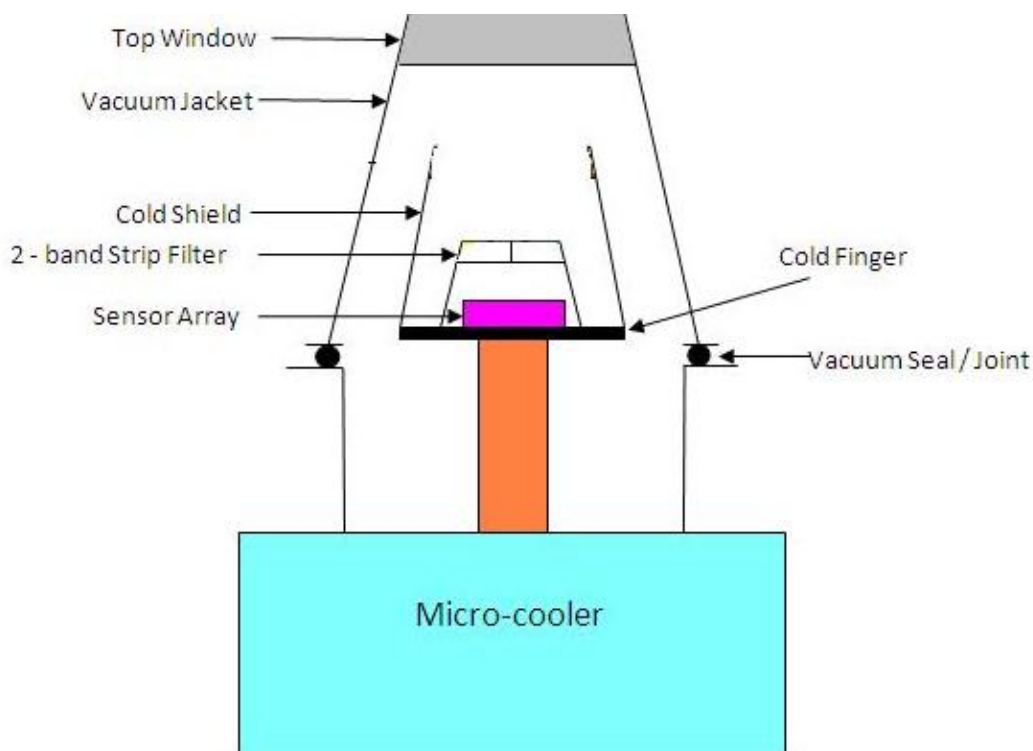
## Section-1

### General Background of the Requirement

#### General Description of IDCA:

As defined earlier, the IDCA shall have a Focal Plane Array (FPA) mounted on the cold finger of an active micro-cooler with a strip filter, cold shield and a vacuum jacket with an optical window as shown in Fig.1 below. The Focal Plane Array (FPA) shall consist of a detector of at least 320 x 256 photodiodes, sensitive in the TIR spectral band of 10.75 $\mu$ m to 12.25 $\mu$ m and hybridized with a Silicon Read out Integrated Circuit (ROIC) meeting the requirements given in Section 2.2 of this document.

**IDCA with bandpass strip filter** IDCA shall have two bandpass strip filter fixed above the sensor array, each covering half (at least 100 pixels in row direction) of the array: Detailed requirements of these optical filters are given in Section 2.5. Typical overview of IDCA for this is shown in Fig.1 below.



**Fig.1 Typical Overview of IDCA**

## Section-2

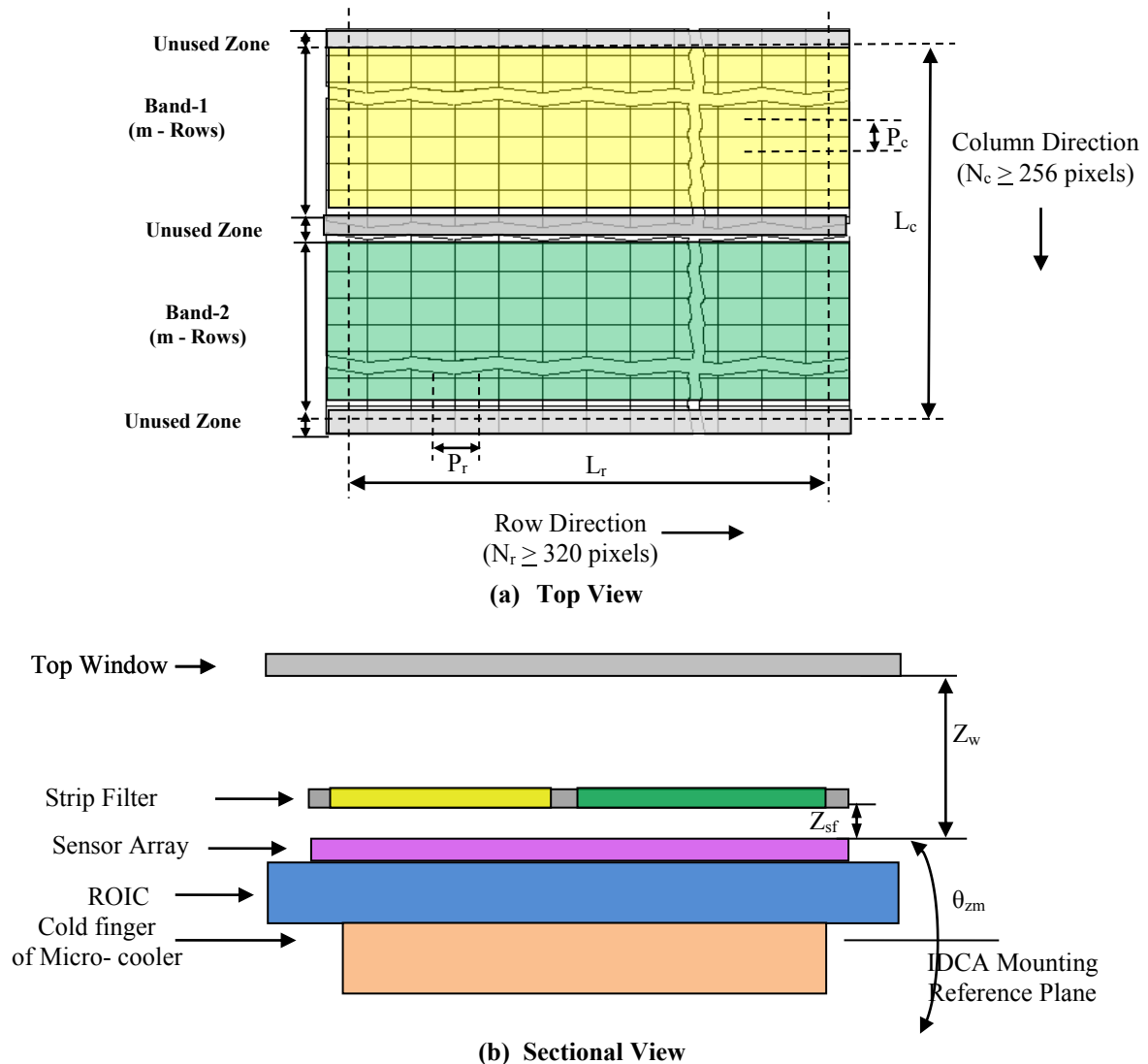
### Electrical, Mechanical and Interface Requirements

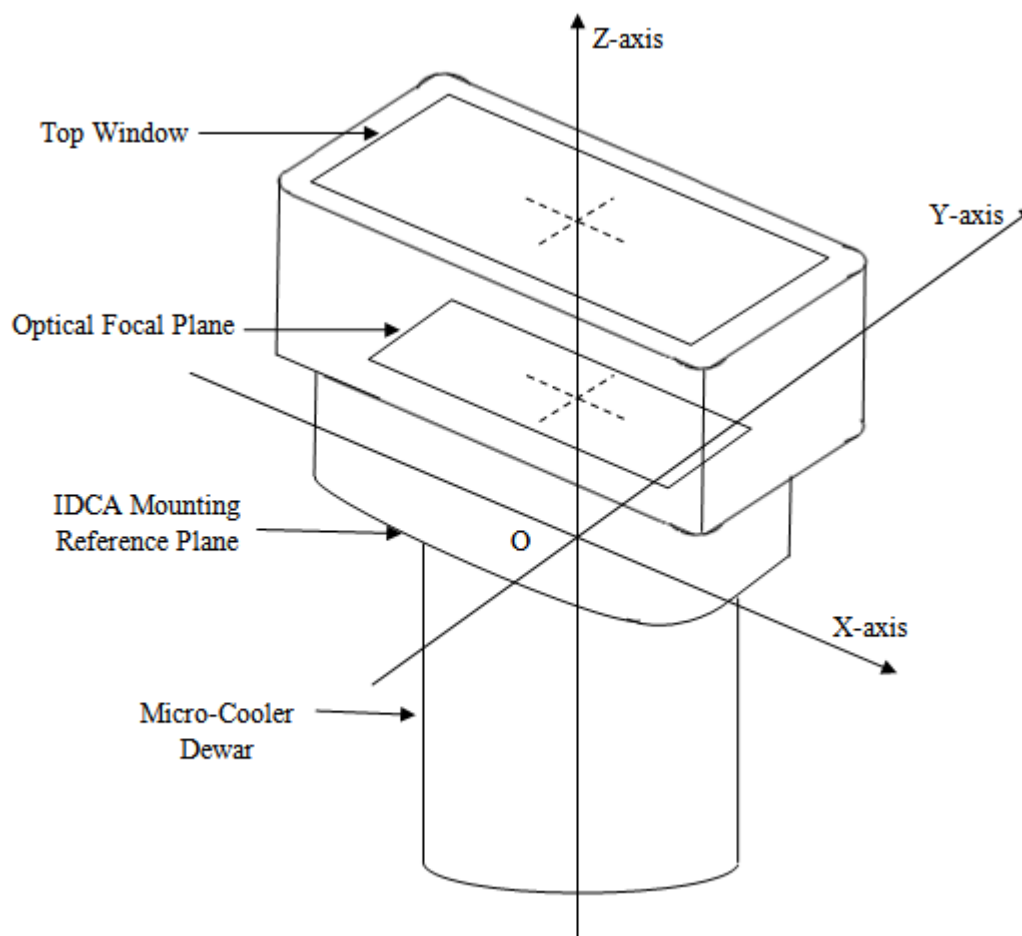
This section gives details about dimensional, electrical, electro-optical, mechanical, thermal and packaging requirements of the IDCA.

#### 2.1 Detector Array Geometric Details:

The FPA shall consist of at least 320 pixels in the row direction and 256 pixels in the column direction.

**2.1.1 IDCA with bandpass strip filter:** A bandpass strip filter having 2-bands shall be placed above the sensor array in the cold shield region of the IDCA. Top view and sectional view depicting detector array geometric details and placement of the filters in this configuration are typically shown in Fig.-3(a) and (b) respectively. 3-D view of the IDCA is shown in Fig.4 (all the figures are indicative only and not to scale).



**Fig.-3 Detector Array Geometric Details****Fig.-4 3-D View of IDCA****Definition of symbols (Fig. 3 and 4):**

$N_c$	Number of elements in column direction
$N_r$	Number of elements in row direction
$P_c$	Pixel Pitch along column direction
$P_r$	Pixel Pitch along row direction
$L_r$	Active zone length of a row
$L_c$	Active zone length of a column
$X_n$	Distance between first element and $n^{\text{th}}$ element in a row
$Y_n$	Distance between first element and $n^{\text{th}}$ element in a column
$Z_w$	Distance of average pixel plane from the inner surface of the top window
$Z_{sf}$	Distance of average pixel plane from the inner surface of the Strip Filter

Sl. No.	Parameter	Specified values / tolerances
1	$N_c$	$\geq 256$
2	$N_r$	$\geq 320$
3	$P_c$	$28 \leq P_c \leq 32 \mu m$
4	$P_r$	$28 \leq P_r \leq 32 \mu m$
5	$L_r$	$((N_r-1) \times P_r) \pm 5 \mu m$
6	$L_c$	$((N_c-1) \times P_c) \pm 5 \mu m$
7	$X_n$	$(L_r \times (n-1) / (N_r-1)) \pm 1 \mu m^s$
8	$Y_n$	$(L_c \times (n-1) / (N_c-1)) \pm 1 \mu m^s$
9	$Z_w$	To be provided by the vendor
10	$Z_{sf}$	$1.1 \pm 0.1 \text{ mm}$

<sup>s</sup> The tolerance of  $\pm 1 \mu m$  indicates only the allowable positional variation for any pixel in the device with respect to a fixed reference.

1. Pixel array angular orientation w.r.t. IDCA mounting reference plane including parallelism of mounting surface with respect to least square fit average pixel plane ( $\theta_{zm}$ ) and in-plane angle between the IDCA reference line and the pixel array line ( $\theta_{ym}$ ) shall be minimum. The deviation from the ideal value shall be clearly brought out by the vendor in the proposal.
2. Vendor shall provide top optical window and specifications.

## 2.2 Requirements for IDCA:

The requirements in the following section are given as mandatory and desirable requirements of the IDCA and are given in Table-2.1 and Table-2.2 respectively.

**Table – 2.1 TIR IDCA Mandatory Requirements**

Unless otherwise specified, all Electro-Optic parameters to be measured at the optimum operating temperature (specified by the vendor), integration Time  $T = 150\mu s$ , Frame Rate  $Fr = 2$  and  $20\text{Hz}$ , over the specified spectral band and for more than 3 hours of continuous operation. Vendor shall specify the minimum and maximum allowable electrical cable length for taking the interconnections.

S.No.	Parameter	Unit	Requirements
1	Number of Pixels in Column Direction ( $N_c$ )		$256 \leq N_c \leq 288$
2	Number of Pixels in Row Direction ( $N_r$ )		$320 \leq N_r \leq 384$
3	Spectral Bands with Filter <sup>1</sup>	$\mu m$	B1: 10.75 to 11.25 B2: 11.75 to 12.25 Minimum of 100 rows in each band at detector plane
4	Cold Shield <sup>2</sup>	-	Cold shield shall be compatible with F#1.3 optics
5	Pixel Pitch, $P_r$ and $P_c$ (in row and column directions respectively)	$\mu m$	$28 \leq \text{Pitch} \leq 32\mu m$
6	Sensor Array Surface Flatness (maximum to minimum)	$\mu m$	Better than 10
7	Readout modes <sup>3</sup>		Snapshot, sub-frame read out capability, read after integration mode, programmable exposure time.
8	Anti-blooming at pixel level		Required
9	Number of Output Ports		Selectable (1 or 4) commensurate with desired frame rate
10	Maximum Pixel Readout Rate per Port	Mpixels/s	$\geq 5$
11	Minimum Pixel Readout Rate per Port	Mpixels/s	$\leq 0.5$
12	Full Well Capacity	Million Electrons	$\geq 30$
13	Average NETD (for 300K scene temperature at 50% of Full Well with F#1.3 Optics)	mK	$\leq 80$
14	Signal Response Non-uniformity over the array (RMS)	%	$\leq 7$
15	MTF in both row and column Directions (@ Nyquist Frequency for both the bands)		$> 0.5$
16	Frame to Frame Residue (from 90% of full well to dark)	%	$< 1$
17	Dark signal per pixel	electrons	Commensurate to achieve above NETD Vendor to provide the data
18	Quantum Efficiency <sup>4</sup>	%	$> 50$
19	Absolute Responsivity	V/W	Commensurate with Quantum Efficiency and Conversion Gain Vendor to provide the data

20	Dark Noise <sup>5</sup>	electrons	Commensurate to achieve above NETD Vendor to provide the data
21	Charge Handling Capacity of silicon readout circuit		Commensurate to Full Well capacity and Anti-Blooming
22	Video Output signal Non-linearity (over 10% -90% of the dynamic range)	%	$\leq 1$
24	Cooler Type <sup>6</sup>		Active cryo cooler. Temperature to be optimized by the vendor to meet dark signal, noise and responsivity performances throughout the rated life.
25	Vibration translated to FPA due to cooler	$\mu\text{m}$	$\leq 5$ peak to peak
26	FPA Temperature Stability <sup>7</sup>	K	$\pm 1$
27	Cooler Drive Electronics (CDE)		Vendor shall quote for IDCA with and without space qualified cooler drive electronics. However, vendor may quote for at least one lab model CDE.
28	Cooler Life Time	Hours	<b>Option 1: <math>\geq 30,000</math></b> <b>Option 2: <math>\geq 60,000</math></b>  The offer shall provide details such as permitted ON/OFF cycles, MTTF and worst case cumulative life time, etc.
29	Vibration transmitted from IDCA to the mounting platform	Newton	Details to be provided by the vendor and vendor shall suggest means to minimize the vibrations transmitted to the mounting platform.

Table – 2.2 IDCA Desirable Requirements

S.No.	Parameter	Unit	Requirements
1.	Detector Material	-	Mercury Cadmium Telluride (HgCdTe)
2.	Detector Operating Temperature <sup>8</sup>	K	$\geq 55$
3.	Array Operability <sup>9</sup>	%	$\geq 99$
4.	Full Well Capacity	Million electrons	Two gains are desired, $\geq 12$ at lower gain $\geq 32$ at higher gain
5.	Dispersion of Average Responsivity (among the delivered devices)	%	$\leq 20$
6.	ROIC Conversion Gain	$\mu\text{V/e-}$	$\geq 0.05$
7.	Readout Mode		Row wise or multiple windows selection

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8.	Number of output ports		Selectable and Cascadable
9.	Video Output Drive Capability	pF	Video output shall be capable of driving > 10pF load.
10.	Output Impedance	$\Omega$	Commensurate with above
11.	Video Settling Time Clock Compatibility Recommended Operating Conditions Absolute Maximum / Minimum on all Electrical Inputs PSRR of input supply voltage lines Internal Calibration of ROIC	-	Vendor shall provide data on these IDCA parameters
12.	Cool Down Time	Minutes	$\leq 20$
13.	Cooler Power Consumption During Cooldown Phase During Regulated Phase	W	$\leq 80$ $\leq 65$
14.	Cooler Drive Electronics (for evaluation of IDCA in lab)	-	Vendor shall provide details such as electrical, mechanical and thermal interfaces.
15.	Cooler Voltage Limits	-	Vendor shall provide data for these parameters
16.	Maximum Reverse Bias	V	
17.	Maximum Voltage Across FPA Leads	V	
18.	Maximum Optical Power	W	
19.	Cooler Mounting / Heat Removal Interface	-	Details to be provided at the time of quote
20.	Problem Areas and Health Checks for Cooler. Types of Degradations in Cooler and their impact on IDCA performance.	-	Details to be provided at the time of quote
21.	IDCA Total Weight	Kg.	$\leq 3.5$

<sup>1</sup> Given spectral bands are tentative only. Details of exact bands and bandwidths will be finalised after technical presentations by the vendor and before ordering.

<sup>2</sup> Cold Shield requirements will be finalized before the placement of purchase order.

<sup>3</sup> Vendor shall define permitted sub-frame window sizes and minimum exposure time in a frame

<sup>4</sup> Vendor shall provide detector Quantum Efficiency values at 50nm intervals across the spectral band of interest. Vendor shall also provide details of detector response out side the spectral band.

<sup>5</sup> Dark noise refers to the noise on IDCA video output when the window is covered with a cold stop. Lower noise floor is desired.

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<sup>6</sup> The cooler is expected to withstand the launch loads. In case any moving element requires any locking mechanism during launch and Transport. Details of the same shall be provided including drive details.

<sup>7</sup> As the system is meant to be used in 14-bit imaging system, temperature stability of dark signal as well as spectral response shall be commensurate with 14-bit system. The temperature stability requirements of the cooler shall be brought out.

<sup>8</sup> Vendor shall provide suitable sensors for control and monitoring of the detector array temperature along with their output characteristics (output vs temperature) over 50K to 320K temperature range.

<sup>9</sup> Pixels having deviation in responsivity and / or noise more than 30% from the array average shall be considered as non-operable.

## 2.3 IDCA Physical Dimensions and Mounting Provisions:

Dimensional details of the IDCA shall be provided by the vendor in the form of engineering drawings.

The IDCA shall have proper provisions to enable adequate mechanical mounting, in the form of flanges/holes (to be detailed in the drawings). The mounting mechanism of the IDCA shall be such that proper support is provided to withstand the mechanical stresses during satellite transport, launch and deployment, ensuring reliable operation throughout its life. However, mounting configurations shall be proposed by the vendor and shall be mutually agreed upon.

## 2.4 Optical Window:

A suitable optical window shall be fixed at the top of the IDCA housing to protect the detector array and maintain the vacuum/inert gas atmosphere. **In order to minimize the background signal due to thermal emission of the window, cooling interface shall be provided at the window.** It shall have the following characteristics in its final fixed condition.

- a) **Material Type:** commensurate with the desired spectral band.
- b) **Transmission:**  $T_{\text{average}} \geq 85\%$  over the entire spectral band of interest.
- c) **Thickness:**  $t \pm 0.1$  mm where 't' is the nominal value, provided by the vendor.
- d) **Flatness:** Surface flatness better than five circular fringes at 632.8 nm wavelength before bonding. Vendor shall minimize the residual stresses resulting from the window bonding processes during fixing on to the IDCA.
- e) **Parallelism:** better than 1arc-minute between two faces.
- f) **Anti-Reflection Coatings:** The window shall be anti-reflection coated on both sides such that the average reflectance is less than 2% and  $R_{\text{max}} < 4\%$  in the spectral region of 7.0 $\mu\text{m}$  to 13.5 $\mu\text{m}$ .
- g) **Surface Quality:** Scratch and Dig maximum = 40:20 as per MIL-PRF-13830B.
- h) **Cooling interface at the window:** to cool down the window for reducing the background signal.

## 2.5 Optical Filters:

### 2.5.2 Strip Filter:

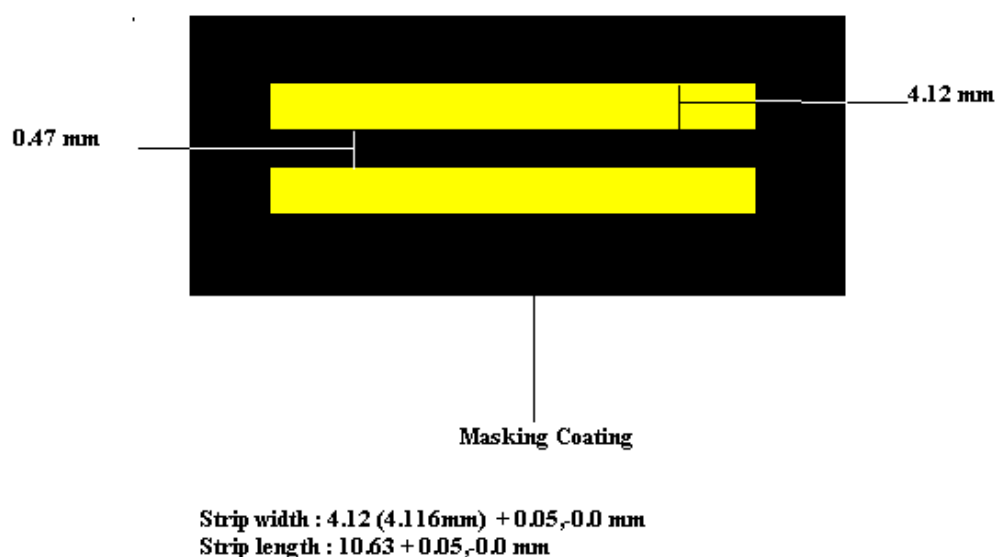
The 2-band bandpass filter-strips catering to different spectral regions shall be manufactured. This type of multiple band-pass coatings on the same substrate are referred as 'strip filters' in this document.

### Strip Filter Requirements:

#### General Description of the Strip Filter:

Option1: The strip filter consists of '2' separate bandpass filter strips sensitive in 10.75 $\mu$ m to 12.25 $\mu$ m spectral region. These interference filters with the defined characteristics shall be fabricated on a single substrate with physical separation between the adjacent filter strips typically as shown in Fig.6 (**filter dimensions are given considering 30 $\mu$ m pitch and format of 320 x 256 pixels**).

Option2: filters can be also fabricated on a single basis and integrated on a filter support separately in order to optimize both filters performances.



**Fig.6 Strip Filter Geometrical Details**

#### Substrate Physical Parameters:

- (i) Material : Germanium
- (ii) Shape : Rectangular
- (iii) Dimensions of Germanium substrate\*
  - Length (mm.) : 16.90  $\pm$  0.05
  - Breadth (mm.) : 14.90  $\pm$  0.05
  - Thickness (mm.) : 1.00 + 0.05  
- 0.00
- (iv) Surface Figure : 2 fringes at 630nm

- (v) Surface Quality : 40:20 (Both surface of the substrate)  
 (vi) Surface Roughness : < 2nm rms  
 (vii) Parallelism : better than 1 arc-minute between two faces

\* The substrate dimensions are selected to ensure that there is minimum 2mm. clearance on all sides of the usable region but these dimensions may be decided by the vendor based on his requirements, however meeting the usable region requirements.

### **Mask:**

The masking coating should be provided on the rear surface of the filter (facing FPA). Strip dimension given above are on the front surface. Masking coating should be provided as indicated in the figure 6.(figure is not to the scale)

**Masking coating:  $T < 1\%$**

**$R < 2\%$**

**Mask coating shall be free from pin holes.**

### **Filter Strips:**

Useful coated area (active area) dimensions\* for each band are (Refer Fig.6):

	F#	Strip Dimensions (mm)	Gap (mm)
strip filter	F#1.3	L = 10.63 + 0.05 - 0.00 W = 4.12 + 0.05 - 0.00	G = 0.474 + 0.05 - 0.00

**\*All the strip dimensions given above are tentative only for F#1.3 cold shield.**

This filter will be mounted inside the cold shield of the detector at a distance of 1.1mm (distance between the rear surface of the filter and the focal plane). Each filter strip will cater to 100 - rows on the detector plane and shall be aligned to within half pixel size with the detector plane. Each bandpass strip should be parallel to each other within 10 $\mu$ m.

### **Optical Requirements<sup>s</sup>:**

The optical requirements for the bandpass strip filters are given in Table – 2.3.

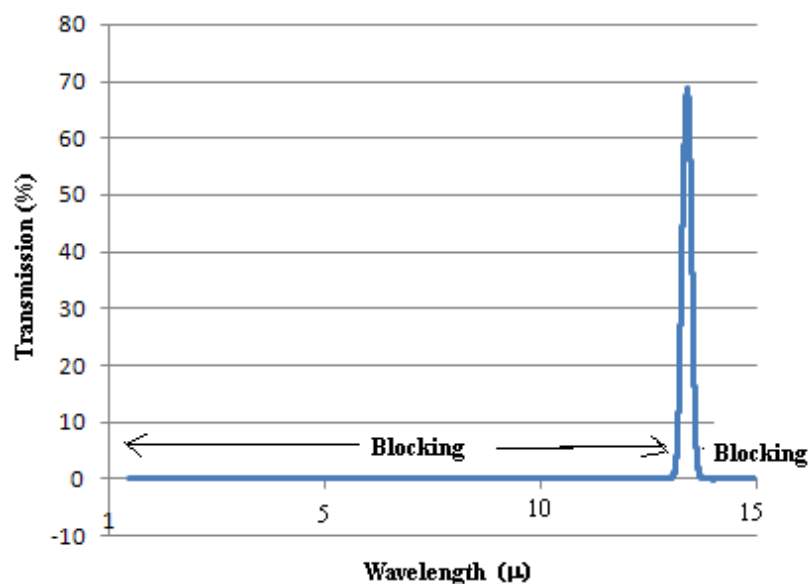
**The optical requirements should be complied with F#1.3 with angle of incidence 0° and at detector operating temperature.**

**Table – 2.3 Optical Requirements of Each Band**

Given optical requirements are tentative only. Details of exact bands and bandwidths will be finalised after technical presentations by the vendor and before ordering.

Parameter	Specification	
Band ( $\mu\text{m}$ )	10.75-11.25	11.75-12.25
Average Transmission (%)	> 70	> 70
Central Wavelength ( $\mu\text{m}$ )	11.0 $\pm$ 0.08	12.0 $\pm$ 0.08
Bandwidth ( $\mu\text{m}$ )	0.50 $\pm$ 0.08	0.50 $\pm$ 0.08
Ringings (%)	< 7	< 7
Transmission in the Blocking Range (%) (1-15 $\mu\text{m}$ )*	< 0.1	< 0.1

**\*Note:** The blocking range of the filter is dependent on the cut-off and cut-on range of the detector, hence in case needed it should be appropriately modified depending on the responsivity of the detector by the vendor.

**Fig.7 Blocking Range Definition for a Band**

### Shape Factor for Interference Strip Filters

% peak Transmittance	HPBW multiplication factor
90%	> 0.8
10%	<1.25
1%	< 1.5
0.1%	< 1.7
0.01%	< 2.4

The coating over the entire coated strip should be uniform and the non-uniformity in

Non-uniformity in CWL : < 20nm.

Non-uniformity in the bandwidth : < 10 nm.

Change in average transmission  
due to environmental test : < 2%.

Change in HPBW due to environmental test : < 5nm.

Change in CWL due to environmental test : < 20nm.

## 2.6 Absolute Maximum Ratings:

Vendor shall provide absolute maximum ratings (above which the useful life of the IDCA may be impaired) of at least the following parameters of the IDCA.

- Bias Voltage ( $V_{\text{bias}}$ )
- Digital Supply Voltage ( $V_{\text{DD}}$ )
- Clock high and low levels.

Vendor shall identify the operating conditions for maximizing the life of the IDCA. Dos and Don'ts for IDCA operation shall also be brought out.

### **Section-3**

#### **Reliability and Quality Assurance Requirements**

##### **3.1 Introduction:**

Reliability and Quality are important prerequisites of any Space program hardware. It is therefore very essential for the vendor to understand and implement the R & QA requirements judiciously. This section provides the details on Product Assurance requirements, which shall be implemented, for the chosen configuration of the Integrated Detector Cooler Assembly (IDCA) unit i.e. packaged FPA with ROIC, cooler, cooler drive electronics, interconnecting wires, cables, pipes, etc. Hence, where ever the word “unit” is used, it indicates the chosen configuration of the IDCA.

**Vendor may propose any change in product assurance plan and it shall be accompanied with impact analysis. SAC reserves the right to finalize the product assurance plan before ordering.**

##### **3.2 Reference Documents:**

Latest revisions of following documents form part of this requirement and shall be read in conjunction with it.

MIL-STD-883	Test methods for Microcircuits
MIL-STD-750	Test Methods for Semiconductor devices
MIL-STD-202	Test methods for Electronic & Electrical systems
ESCC-9020	Test requirements for CCD photo-detector devices
MIL-C-675	Coating of Glass Optical components
MIL-PRF-13830B	Optical components for fire control instruments; General specifications governing the manufacture, assembly and inspection of
ESA-PSS-01-702	A thermal vacuum test for the screening of space materials
FED-STD-209	Clean Room and work station requirements, controlled environment
NHB-5300.4(IC)	Inspection system provisions for aeronautics and space system materials, parts, components and service.
ASTM-E-595	Standard test method for TML & CVCM from outgasing in a vacuum environment.

##### **3.3 Reliability:**

### 3.3.1 Life:

- a) Operating life:** The unit shall meet all the design requirements (as per table 2.1 Sr. No. 28) for use onboard a spacecraft having 5 years of life.
- b) Shelf life:** The unit shall be capable of meeting all the functional requirements after various stages of storage and spacecraft assembly as follows:
- 5 years in controlled environmental conditions.
  - 3 years storage at various levels of spacecraft assembly and operation

Vendor shall specify the exact method of storage for the detector assembly; as well as the recommended criteria for their retest, in case of long duration storage. Vendor shall also specify the nature and extent of degradation and its impact on reliable performance of the detector when storage time exceeds 5 years.

### 3.3.2 Reliability data:

Vendor shall provide reliability data of the proposed detector/ technology. It is desirable that the failure rate of the integrated detector unit be better than 100 FITs.

The reliability calculation shall be carried out as per MIL-HDBK-217F, notice-2, specifying the methodology used in arriving at the failure rate of the elements not mentioned in MIL-HDBK-217F, notice 2. Vendor shall supply analysis, test data / test reports considered as reference to deriving the failure rate values of such parts.

Vendor shall provide de-rating analysis and list out the de-rating criteria followed for all parts used in the integrated detector assembly. For all electronic components, the maximum channel / junction temperatures shall not exceed 110° C, under all operating environmental conditions. Any effects on Silicon for low temperature operation shall be addressed in the design.

Vendor shall provide following detailed analysis reports as a part of PDR/CDR documents.

- (i) Detailed reliability analysis for the (Detector, ROIC, cooler drive electronic circuitry, as applicable). This will include
  - (a) Stress analysis
  - (b) Failure Mode Effects and Criticality Analysis (FMECA)
  - (c) Worst case drift & tolerance analysis. (taking into account radiation effects for the proposed orbital life)
- (ii) Thermal analysis with worst case operating conditions.
- (iii) Mechanical / Structural Analysis.
- (iv) Radiation analysis.

### 3.4 Environmental Conditions:

The units shall be capable of withstanding the following environmental conditions:

#### 3.4.1 Storage and Non-operating Environment:

- |                      |                                 |
|----------------------|---------------------------------|
| a) Temperature       |                                 |
| Unit (IDCA)          | -50°C / +70°C                   |
| b) Vacuum            | Ambient to 10E-6 torr or better |
| c) Relative Humidity | 50 ±5 % RH @ 25±3°C             |
| during Lab use       |                                 |

Note: Long Term Storage conditions shall be recommended by Vendor

#### 3.4.2 Operating Environment:

- |                                       |                        |
|---------------------------------------|------------------------|
| a) Temperature                        |                        |
| FPA                                   | 50K to 120K            |
| IDCA unit                             | -35°C to +60°C*        |
| b) Vacuum                             | Ambient to 10E-10 torr |
| c) Relative Humidity (during Lab use) | 50 ±5 % RH @ 25±3°C    |

\* **Note: vendor shall propose the IDCA skin temperature to meet the E-O requirements as defines in the table 2.1 and 2.2 above.**

#### 3.4.3 Space Radiation Tolerance:

Vendor shall ensure operation of the IDCA, without degradation, due to particle and high-energy radiation, by appropriate choice of materials and processes. Radiation flux expected to be received by the IDCA during the design life of the satellite mission (5years) is given below.

- a) 20Krad Ionizing dose absorbed in silicon.
- b) Protons of 50MeV with a fluence of  $5 \times 10^{10}$  p/ cm<sup>2</sup>.

#### 3.4.4 Vibration / Shock:

The unit shall be designed and fabricated to meet the vibration (sine and random), and mechanical shock requirements as per the test plan given herein.

### 3.5 Parts and Materials:

Parts / materials and processes proposed to be used in the unit shall be suitable for use in a LEO spacecraft orbiting Earth for a period of 5 years. Materials & processes shall be selected with low out gassing characteristics and for minimum material deterioration and maximum stability. These shall be selected from qualified parts / materials list (QPL/QML) and shall be procured from a qualified vendor/ sub-vendor, normally associated with long life satellite hardware. Only space-qualified epoxies, potting

materials, etc. shall be used, within their shelf life and with cure schedule as specified by the respective vendor.

A list of all the parts, materials and processes used for realization of the detectors, including vendors, shall be provided to SAC for review. **If any material, process, painting or component proposed for use, is not qualified for flight use then it will have to undergo a test and qualification program as agreed upon by SAC.**

### 3.5.1 Materials:

Ferrous and non-ferrous material used shall be of corrosion resistance type or suitably treated to resist corrosion caused by atmospheric conditions existent in storage or normal operational conditions. Only Non-magnetic materials shall be used for parts, except where magnetic materials are essential.

Materials, which are nutrients for fungus, shall not be used. Organic and inorganic materials used for the fabrication of the integrated detector assembly shall be stable under atmospheric and high vacuum conditions. These materials shall have a Total Mass Loss (TML) of less than 1% and Collectable Volatile Condensable Materials (CVCMD) of less than 0.1% when subjected to test conducted of +125°C and  $1 \times 10^{-6}$  torr for 24 hours.

In case use of materials / epoxies that are not meeting the out-gassing specifications becomes mandatory, they shall undergo additional treatment. However, their use shall be restricted and failure due to these shall be recorded and analyzed as and when detected. The selection and use of dissimilar materials shall be avoided. Where it is impractical to avoid dissimilar metals in direct contact with each other, suitable protection shall be provided by space proven coatings/plating etc.

#### 3.5.1.1 Detector element details:

Vendor to provide information regarding identification of detector elements, ROIC mounting, their interconnects. The proposal shall also include details regarding the materials of die, package and window such as:

- Detector: Material, Passivation layer, AR coating Material (s), Filter coating, Mask coating, Light Shield, Detector Contacts
- Package: Header Body, Metallization and Leads
- Substrate: Material, its attachment to cold shield and die
- Lead and wire Bonds
- Seal Materials
- Any paints / coatings / Epoxies used in the detector package

### **3.5.1.2 Device package/ substrate:**

The Focal plane array, ROIC, associated components and cold finger shall be assembled in a vacuum sealed metal package with surface treatment that is corrosion resistant and suitable for optical applications. Package Leads shall be suitably coated to protect from corrosion/environment degradation.

Substrates on which the detector array, ROIC shall be mounted shall also undergo suitable element evaluation, for attachment to the cold finger and die and bondability, prior to use.

All elements to be used inside the cold shield shall be procured as per the requirements of MIL-PRF-38534 or ESA-PSS-608, along with lot qualification tests. Lot acceptance test report for each element shall form part of the final data package.

### **3.5.1.3 Optical Window & Filters:**

Please refer to requirements for optical window and filters given in Section-2.4 and Section-2.5 respectively.

The material for both the window and filters shall meet the requirements of MIL-PRF-13830B. The substrate material used for fabrication of the windows and filters shall be free from strain, internal stresses and internal defects like bubbles, fractures etc.

**Vendor shall ensure that the performance of all the filters shall not degrade under the qualification and acceptance test conditions mentioned in section 3.10.3.**

#### **3.5.1.3.1 Coatings:**

Coatings (both optical and chemical, if any) shall be space qualified. The samples of optical elements where optical coatings, such as anti-reflection, filter, mask and other such coatings are involved shall be in conformity with the relevant MIL/ESA-standards.

The supplier/vendor should provide the transmission data for all the filter in the form of EXCEL files after the design is completed, but before the actual coating starts, for the final approval of the coating design of the filter.

#### **3.5.1.3.2 Surface Quality:**

The optical surface of the window and filters shall be free from appearance of cosmetic defects such as digs, scratches, pits, sleeks, etc as per MIL-PRF-13830B and MIL-F-48616. Surface Quality (scratch/dig) of the window shall conform to 40:20.

### 3.5.1.4 Electronic Parts:

The electronic components used for fabrication of the unit shall be of space qualified quality. The general guidelines to be followed for the selection of components are given in Table-3.1 below. Vendor shall provide a parts list, along with details including quality level, vendor, heritage, procurement details, for the information and concurrence of SAC. All new units shall undergo additional testing, prior to use, as per a test plan, to be mutually agreed upon.

**Table-3.1 Parts Quality Level**

Sr. No	Part Type	Quality Level
1	<b>Standard Semiconductors</b>	
	Packaged	<ul style="list-style-type: none"> <li>• JANS or ESA / SCC level B</li> <li>• JANTXV with quality conformance tests.</li> </ul>
	Die	<ul style="list-style-type: none"> <li>▪ MIL-PRF-19500 JANKC or ESCC Qualified</li> </ul>
2	<b>Standard Microcircuits</b>	
	Packaged	<ul style="list-style-type: none"> <li>• ESA / SCC level B or MIL-PRF-38535 QML class V.</li> <li>• ESA approved parts with LAT 2 test.</li> </ul>
	Die	(i) MIL-PRF-38535 Class-V or ESCC Qualified. Space grade die
3	Passive Parts	a) ESA / SCC level B or MIL-ER failure rate 'S' b) MIL-ER failure rate 'R' only for part types where S' is not available c) Non QPL / QML parts – with vendor's in house screening program equivalent to 'R' level with group A testing.
4	Multi pin connectors (Only miniature D-type shall be used)	a) ESA / SCC level B b) Connectors as per NASA – GSFC requirements
5	Coaxial connectors	a) ESA / SCC level B b) MIL-PRF-39012 qualified with group A & B testing.

### 3.6 Process:

The devices shall be built to the standards normally associated with long life satellite hardware. Particular attention shall be paid to the following, as a minimum:

- All the processes used should be qualified for space use,
- Neatness & thoroughness of all Plating, Coating, Sealing, Bonding etc.
- Neat, clean, smooth, and fully welded homogeneous solder joints,
- Eliminate bubble entrapment in coatings / epoxies where ever used,
- Wherever wires are attached to casing for grounding etc., a higher melting point solder than that used for lead/ cover soldering, shall be used,
- The marking and plating etc. shall be permanent and should not get damaged during normal cleaning process using Isopropyl Alcohol and other recommended cleaning solvents.
- All tolerances not specified shall be consistent with the best engineering practices. Units shall be uniform in quality and free from blemishes and defects.

Vendor shall provide a generalized flow chart of the manufacturing and assembly process, identifying the critical process steps, inspection & monitoring stages, Internal Quality control plan and Contamination control plan, for the approval of SAC.

#### 3.6.1 Lot Formation:

A lot is defined as a group of devices manufactured from the same batch of raw materials in the same wafer fabrication and assembly facilities. The materials from the same batch shall be used for fabrication of all the components including witness samples. For any lot formation step, the last device in a lot must be processed through that step not more than six weeks after the first device of that lot was processed through that step. Vendor QA department shall make a determination as to whether that material is considered to be in the same lot as the previously processed material.

Vendor shall maintain a set of run cards (lot traveler) on each unit fabricated for this project, which contain detailed data on the process sequence, specifications, measured data yields, and processing dates.

At the Detector or ROIC level, where wafer sorting is carried out for selection of suitable devices for detector assembly, Vendor's QA shall prepare a non proprietary "wafer fabrication traceability log" on these wafers for release to SAC. This shall contain the following data:

- Date (s) in and out of each key step
- General process data (without listing actual values of specifications or measurements). All out-of-spec. conditions and significant deviations from standard parameter distribution shall be noted.

Similarly, traceability of detector assembly lots shall be maintained, and additionally include details of assembly parameters and QA monitor data (destructive bond pull strength and die shear strength, equipment set up records). These details shall be available at the vendors plant for inspection by the customer.

In the case of bought-out sub-assemblies/ components, filters (cooler/ control/ power cards), the supplier's screening/ acceptance test data shall form a part of the "carry-over" data and shall be supplied to SAC, along with traceability of its use in the finished unit.

### **3.7 Marking and Identification:**

Each unit shall be marked with

- Part name/ Number, followed with "-S", to indicate Space level.
- Date code of Manufacture YYWW – representing **Year and Week** (eg 1523 for 23<sup>rd</sup> week of 2015)
- Serial Number
- Indicator for Sensitivity to ESD
- Vendor's logo

The permanency of device marking shall be sufficient to withstand the specified environmental conditions and normal cleaning operations employed during fabrication & assembly, using Isopropyl Alcohol and other cleaning solvents as per the requirements of MIL-STD 883E method 2015.

### **3.8 Packaging, Storage & Transportation:**

- (i) Each unit shall be packaged in order to protect the device against ESD, electrical, mechanical and environmental damages.
- (ii) Further, the individual packages and the intermediate packages shall be fixed within the shipping package, which shall be resistant to mechanical shocks, humidity and dust.
- (iii) Wherever required, the individual packages for the units and/ or transportation container shall have facility for nitrogen purging/vacuum sealing, so that the unit is purged with dry nitrogen/vacuum sealed before shipment, to prevent contamination and corrosion.
- (iv) It is to be noted that "Pink poly-foam" shall not be used for packing of the individual units, as it has a corrosive effect on gold plating of the device body and leads.

- (v) The shipping documentation shall be enclosed in the shipping package.

In addition to other mandatory shipping marking, the following additional marking shall appear on the shipping package in bold letters.

**“HANDLE WITH CARE”**

**“ESD SENSITIVE”**

**“HIGH-RELIABILITY COMPONENTS”**

**“TO BE OPENED UNDER CLEAN ENVIRONMENT WITH ESD PROTECTION  
ONLY IN PRESENCE OF ISRO AUTHORIZED PERSONNEL”**

**“STORE IN A COOL AND DRY PLACE”**

### **3.9 Model Philosophy:**

The test philosophy will be decided on the basis of Flight history, Qualification status, confidence etc. In general, it has been divided in three phases, namely

- Engineering Model (EM)
- Qualification Model (QM),
- Flight Model (FM)

#### **a) Phase-1 Engineering Model**

Engineering model units are electrically and mechanically identical to the final Flight model units, and are capable to perform over the complete operating temperature range. Engineering model units shall undergo Thermal Cycling & Random Vibration at Acceptance level as per Table-3.4D.

#### **b) Phase-2 Qualification Model**

In the case of new design / development, minimum one unit shall under go full qualification tests. This phase is required only if the proposed design has not undergone qualification testing for use in space. After a review of the space flight heritage and previous qualification reports, SAC shall decide suitability of the proposed unit for required application as well as applicability of this phase.

Detector assembly selected for qualification must be fully representative of the flight final configuration in terms of specification compliance, reliability and quality.

Qualification model unit shall undergo full Qualification testing as per Table 3.4 (A to D) after successful completion of screening test as per Table 3.3.

In case of failure during the Qualification tests, the cause of failure and necessary modification in the design/fabrication required to overcome the problem shall be identified, the rejection criteria being deviations from the Electro-optical requirements. Assembly of flight worthy models shall be taken up only after successful completion of qualification exercise and clearance from SAC. The Flight model FPAs shall be fabricated from the same lot of materials which were used for Qualification unit with no changes in the design and fabrication processes.

**c) Phase-3 Flight Model**

The flight model units are of final electrical, optical and mechanical design and configuration using screened Hi-Rel parts, qualified materials, processes and workmanship. All the flight model units shall be subjected to Flight Acceptance Level Testing, at the assembly level followed by integrated unit level Acceptance Testing; as per Table 3.4 (A to D).

### **3.10 Test Programme:**

IDCA forms a complex assembly, incorporating the FPA array, ROIC, optical filters along with cryo-cooler and its associated electronics. Hence it is essential that the Qualification and Flight acceptance test plan addresses all levels of assembly and integration.

#### **3.10.1 Feedthrough Evaluation**

The feed through connecting part of the Dewar shall go through lot acceptance test as mentioned in Table-3.2.

**TABLE 3.2**

TEST	CONDITION	SAMPLE SIZE
Leak Test	$10^{-8}$ atm.cc/s max	2 (0)
Insulation Resistance	> 6000 M $\Omega$ under 100VDC	2 (0)
Thermal Shock	15 cycles between -65°C and 150°C	2 (0)
High Temperature Bake Test	150°C for 2 hrs. under air	2 (0)
Plating Adhesion	After 450°C for 5 min. under air	2 (0)
Lead Fatigue	Traction of 4 pins/part without any damage	2 (0)
Lead Fatigue	3 bending to 90° of 4 pins/part without any damage	2 (0)
Final Leak Test	$10^{-8}$ atm.cc/s max	2 (0)

### 3.10.2 Evaluation of Silicon Semiconductors for detector (ROIC etc):

Prior to the use of the ROIC and other semiconductor elements inside the detector package, samples shall be assembled in a standard ceramic package and subjected to the following evaluation programme:

**TABLE 3.3 Silicon Semiconductors Evaluation Tests**

GROUP	TEST	MIL-STD-883 METHOD NO.	SAMPLE SIZE
1	Thermal cycling	1010, condition C, except temperature should be (-173 to -33°C), 100 cycles	3 (0)
	Bond Pull	2011	22 (0)
	Die shear	2019	3 (0)

### 3.10.3 Acceptance & Qualification Tests

All Flight units shall undergo Acceptance level (Screening) tests, at various stages of assembly/ integration; as per the sequence given in Table 3.4 (A to D). After successful completion of screening test one unit shall be subjected to Qualification test as per Table-3.5.

**TABLE 3.4 SCREENING TESTS**

**TABLE 3.4 A: Component Stage**

SR. NO.	TEST	METHOD/CONDITION	REMARKS
a)	SEM inspection	MIL-STD-883 Method 2018	1 Sample per lot
b)	Metallization thickness	MIL-STD-883 Method 5007	1 wafer per lot;
c)	Wafer sort tests of Detector array & ROIC (electrical )	As per vendor's specifications	100%

**TABLE 3.4B: Assembly/Integrated IDCA Level**

SR. NO.	TEST	METHOD/CONDITION	REMARKS
i)	Electro-optical tests on retinas	As per manufacturer's specification	100%
ii)	Pre-cap Inspection	As per manufacturer's specification	100%
iii)	Destructive Bond pull on specific bonding pads	MIL-STD-883 Method 2011	Process control pads on each

			device
iv)	Leak test	Leak rate < 1 x 10 <sup>-8</sup> atm.cc/s He	100%
v)	Initial EO measurements	Output DC level, responsivity & SNR (As per table-2.1)	100%
vi)	Environmental thermal cycling	-50 / +70°C, 5°C/min, 5 Cycles	100%
vii)	Random vibration	As per levels given in Table – 3.4E-2	100%
viii)	Retina thermal cycling	5 cycles, 50K to 298K, 5°C/min	100%
ix)	Pre burn-in EO measurements	Output DC level, responsivity & SNR (As per table-2.1)	100%
x)	Burn-in test	240 hrs at 40°C with cooler OFF	100%
xi)	Post burn-in EO measurements	Output DC level, responsivity & SNR (As per table-2.1) Drift criterion to be mutually agreed upon	100%
xii)	Cryocooler Burn-in	168 Hrs including 5 ON / OFF cycles	100%
xiii)	External visual inspection	As per manufacturer's specification	100%
xiv)	Cooler leak test	As per manufacturer's specification	100%
xv)	Electrical continuity test	As per manufacturer's specification	100%
xvi)	Final EO measurements	As per Table – 2.1 (section-2.2)	100%

**TABLE 3.5: Qualification Test Plan (INTEGRATED UNIT LEVEL)**

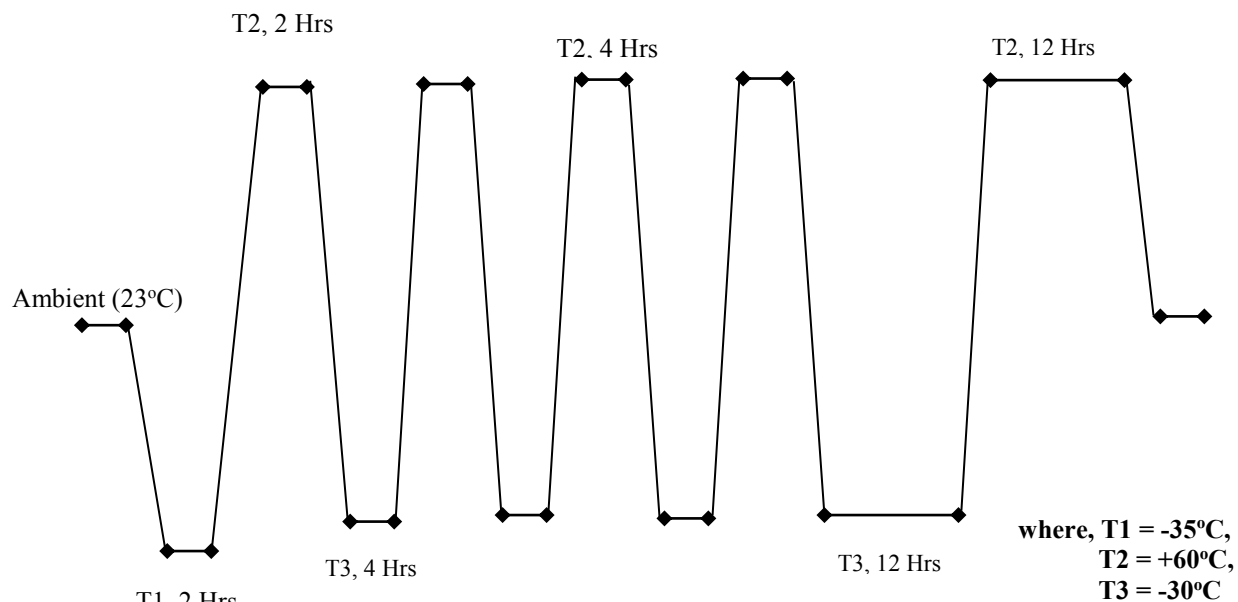
SR. NO.	TEST	METHOD/CONDITION	REMARKS
i)	Screening tests	As per Table – 3.4	1 QM unit
ii)	Environmental thermal cycling	-50/ +70°C, 5°C/min, 25 cycles	1 QM unit
iii)	EO measurements	Output DC level, responsivity & SNR (As per table-2.1)	1 QM unit
iv)	Sine vibration	As per levels given in Table – 3.4E-1	1 QM unit
v)	External visual inspection	As per manufacturer's specification	1 QM unit
vi)	Electrical continuity test	As per manufacturer's specification	1 QM unit
vii)	Cooler leak test	As per manufacturer's specification	1 QM unit
viii)	EO measurements	Output DC level, responsivity & SNR (As per table-2.1)	1 QM unit
ix)	Random vibration	As per levels given in Table – 3.4E-2	1 QM unit
x)	External visual inspection	As per manufacturer's specification	1 QM unit

xi)	Electrical continuity test	As per manufacturer's specification	1 QM unit
xii)	Cooler leak test	As per manufacturer's specification	1 QM unit
xiii)	EO measurements	Output DC level, responsivity & SNR (As per table-2.1)	1 QM unit
xiv)	Mechanical shock (pyrotechnic)	As per levels given in Table – 3.4E-3	1 QM unit
xv)	External visual inspection	As per manufacturer's specification	1 QM unit
xvi)	Cooler leak test	As per manufacturer's specification	1 QM unit
xvii)	Thermo Vacuum Test	As per Fig-4	
xviii)	Life test	Duration: 1000 hrs ON / OFF cycles: 100	1 QM unit
xix)	EO measurements	As per Table – 2.1 (section-2.2) Drift Criteria to be mutually agreed upon	1 QM unit
xx)	Radiation Test <sup>\$\$</sup>	TID: Up to 20Krad Proton: 50MeV with a fluence of $5 \times 10^{10}$ p/ cm <sup>2</sup>	1 QM unit
xxi)	EO measurements	As per Table – 2.1 (section-2.2)	1 QM unit

**\$\$ Note:** If the vendor has sufficient data to establish the radiation hardness of the FPAs, further tests are not required

Vendor shall generate a “screening traceability log” listing the details of tests conducted, quantity In / Out and date of each step.

Vendor shall perform failure analysis on catastrophic failures if any.



**Fig.8 Thermo vacuum test profile**

**Sinusoidal Vibration Test Requirements:**

**Table – 3.4E-1 Sine Vibration  
Normal to Mounting Plane**

Frequency (Hz)	Amplitude	
	Qualification Level	Acceptance Level
5 - 20	12.4 mm	8.3 mm
20 - 50	20 g	13.3 g
50 - 70	15 g	10 g
70 - 100	8 g	5.3 g
Sweep Rate	2 oct. / min.	4 oct. / min.

**Parallel to Mounting Plane**

Frequency (Hz)	Amplitude	
	Qualification Level	Acceptance Level
5 - 20	9.3 mm	6.2 mm
20 - 70	15 g	10 g
70 - 100	8 g	5.3 g
Sweep Rate	2 oct. / min.	4 oct. / min.

Number of sweeps : 1

**Tolerances:**

Acceleration : + 10%

Frequency : + 1 Hz upto 50 Hz  
+ 2 Hz above 50 Hz

Sweep rate : 10%

**Note:** Sine Vibration test shall be preceded and followed by a resonance search test to establish the integrity of the structure. Frequency shift from pre to post runs will not be more than  $\pm 3$  to 4 Hz.

**Random Vibration Test Requirements:**

**Table – 3.4E-2 Random Vibration  
All Three Axes**

Frequency	PSD ( $\text{g}^2/\text{Hz}$ )	
	Qualification Level	Acceptance Level
20 – 100	+ 3 dB/Oct	+ 3 dB/Oct
100 – 700	0.05	0.02
700 – 2000	-3 dB/Oct	-3 dB/Oct
Overall 'g' RMS	8.3	5.5
Duration	2 Minutes	1 Minute

**Tolerances:** PSD : + 3 dB

'g' rms : + 10%

Duration : + 10%

**Note:** Random Vibration test shall be preceded and followed by a resonance search test to establish the integrity of the structure. Frequency shift from pre to post runs will not be more than  $\pm 3$  to 4 Hz.

**Mechanical Shock Test:****Table – 3.4E-3 Mechanical Shock Test**

All three axes	
Freq.(Hz)	SRS (g)
100 - 600	+15 dB/Oct
600 - 5000	600
No. of Shocks	2 per axis

**3.11 Reviews / Acceptance Tests:**

The following Reviews / Acceptance tests shall be held at the site of vendor at an appropriate time.

- (i) Preliminary Design Review
- (ii) Critical Design Review
- (iii) Acceptance witness testing for qualification level testing
- (iv) Acceptance witness testing / Pre-shipment Review on First FM unit

## **Section-4**

### **Documents Required**

#### **4.1 Following information shall be provided as a minimum to SAC along with the Proposal:**

##### **Technical proposal detailing the following aspects of the IDCA:**

- Details of Space heritage and Qualification tests of similar hardware supplied for any space mission.
- Electrical, Mechanical and Thermal interface details including mounting / heat removal provisions and vibration isolation.
- Quality level of the parts proposed to be used for flight model units.
- The reliability figures proposed for similar hardware supplied for any space mission.
- Screening/lot Acceptance Test Plans.
- Quality Control Plan.
- Non-conformance Control Plan
- Facilities available for realization
- Assembly sequence
- Point to point compliance to the requirements of sections 2 and 3.
- Vendor may seek any clarification or may point out any error or omission in the proposal, so that requirement is met correctly and adequately.

#### **4.2 Following documents shall be provided to SAC for Preliminary Design Review (PDR).**

- a) IDCA design document.
- b) Typical range and optimum IDCA electrical drive requirements.
- c) Details of such as optical window, filters, cold shield, stray light and Ghost effect analysis.
- d) Details on Cooler and requirements for cooler drive electronics.
- e) Power ON/OFF sequence and power switch ON (slew) rate requirement, if any.
- f) Spice model of detector and cooler.
- g) ESD sensitivity analysis.
- h) Handling and assembly instructions:
  - Precautions to be taken
  - Recommended solder and solder practices
  - Cleaning procedures
- i) List of parts, materials, their quality levels, derating criterion followed, traceability data, including any non-standard items, suppliers-Vendors list etc.
- j) Plans for mounting, alignment & testing of filters.
- k) Reliability Analysis Report as per the latest version of MIL-HDBK-217.
- l) Worst case drift and Tolerance Analysis.
- m) Non-conformance parts and material test reports.

- n) Acceptance Test procedures including details of test procedures, calibration facilities, and environmental facilities.
- o) Thermal design and maximum junction / channel temperatures of devices.
- p) Detailed analysis of dissipation by the Detector device and Cryo- Cooler.
- q) Configuration change control Plan.
- r) Detailed structural and mechanical analysis indicating maximum static, dynamic loads along with Finite Element Model.
- s) Failure Mode, Effect & Criticality Analysis (FMECA) report.
- t) Non-conformance reports and their closeouts.
- u) Interface control drawings should be provided on a CD in AUTOCAD or compatible software format along with a hardcopy.-
- v) A Mechanical mock up model of each type of the devices to be supplied on completion of the Design Verification Model. This is needed for mechanical compatibility of the units with the layout design etc.

**4.3 Following documents shall be provided to SAC for Critical Design Review (CDR).**

- Test results of EM units.
- Any changes in design / process/ parts based on the EM test results.
- Any deviation in component quality.

**4.4 Along with the delivery of the units, the data pertaining to each device including (refer to Para 3.3.2), but not limited to the following shall be provided:**

- a) Certificate of compliance to the agreed requirement.
- b) Reference number & traceability of the selected materials
- c) WLAT, WAT test results along with SEM photographs.
- d) Production test data and test details.
- e) Processing, Characterization and acceptance test reports for filters
- f) Screening test report of each assembled device including actual measured data of each parameter and separations/spacing.
- g) Detailed QM test report.
- h) The test data and reports of Screening (Acceptance)/ Lot Acceptance test should preferably also be available on suitable electronic media like CD.
- i) Failure reports (for catastrophic failures), mechanical or handling failures, malfunctioning or operative deviations from the requirements along with corrective actions.

## Section-5

### Deliverables and Delivery Schedule

#### 5.1 Deliverables\*:

Sr. No.	Item	Quantity (Nos.)
1	Engineering Model IDCA Unit	Quote shall be provided in quantity slabs: 1-3 Nos. 4-5 Nos.
2	Screened Flight Model IDCA Units	Quote shall be provided in quantity slabs: 1-3 Nos. 4-5 Nos. 6-10 Nos.
3	Qualification Model IDCA Unit	1
4	Micro-Cooler with dummy thermal load	1
5	All Witness Samples of windows and filters	All samples

\* SAC reserves the right to finalize the types and quantities before ordering.

#### 5.2 Delivery Schedule:

Vendor shall provide a detailed schedule break-up of fabrication, testing and delivery, identifying major milestones.

Delivery of

- |                                   |   |                   |
|-----------------------------------|---|-------------------|
| i) Engineering Model IDCA Unit    | : | $T_0 + 12$ Months |
| ii) Qualification Model IDCA Unit | : | $T_0 + 15$ Months |
| iii) Flight Model IDCA Units      | : | $T_0 + 18$ Months |

$T_0$  is Contract Finalization Date.

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II      : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II       :       PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with “Tender fee cover” (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG WITH  
THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

<b>Sr. No.</b>	<b>Commercial terms</b>	<b>Compliance/Remarks/Comments by Vendor</b>
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1 14.2	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number.	

14.3	Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	
14.4		
14.5	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.6	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.7	Please indicate rate of the Sales Tax/VAT applicable.	
14.8	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required. Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be	

	replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24.	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30. 30.1 30.2 30.2.1 30.3	<p>Bank Guarantees (from Nationalized/ Scheduled Bank/ Bank approved by Purchaser.</p> <p>Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.</p> <p>Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.</p> <p>The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.</p> <p>Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.</p>	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	

37.	<p>Acceptance of Fall clause.</p> <p>“The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase &amp; Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction” .</p>	
38.	<p>You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.</p>	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER**

1. The Tenderers should submit quotations in sealed envelope, superscribing the Tender No. and due date of opening and complete in all respects with technical specifications, including pamphlets and catalogues. Separate instructions, if any in this regard should be strictly complied with.
2. A Proforma Invoice may also be given which should contain the following information:
  - a) The FOB/FCA value, for import by Sea freight / Air freight up to Ahmedabad and for air parcel post up to Ahmedabad should be separately indicated.
  - b) Agency Commission: The amount of commission included in the price and payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an Invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. This payment will be released to the Indian Agent after receipt and acceptance the goods in India.
  - c) The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor's invoice should separately reflect the amount of commission payable to his Indian Agent.
  - d) The earliest delivery period and country of origin of the Stores.
  - e) Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor.
  - f) The approximate net and gross weight and dimensions of packages / cases.
  - g) Recommended spares for satisfactory operation for a minimum period of one year beyond warranty.
  - h) Details of any technical service, if required for erection, assembly, commissioning and demonstration.
3. "Bidders shall submit an amount of **₹ 5,00,000 (Rupees Five Lakh Only)** with the bid / before the date of tender opening as stipulated in tender schedule towards Earnest Money Deposit (EMD).

The EMD shall be submitted in the form of DD/Banker's cheque/Bank Guarantee/Fixed Deposit Receipt (FDR) made in the name of Accounts Officer, Space Applications Centre, and be payable at par at Ahmedabad.

Bids received without EMD shall be treated as invalid and shall not be considered. In case of two-part (multi-part) tenders, EMD must be submitted either in separate sealed cover clearly marked as 'EMD against tender no. \_\_\_\_\_' or with technical bid, so that it should be available at the time of opening of the first part of bid document itself. Tenders not complying with this requirement shall be rejected.



The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):

- Vendors already registered / empanelled with SAC as authorized vendors.
- Overseas bidders submitting offers directly without involving an Indian Representative.
- Central PSUs/PSEs and autonomous bodies
- Micro and Small Enterprises
- Khadi and Village Industries Commission
- National Small Industries Corporation
- Any other establishments specifically exempted from paying EMD by an order of the Government of India.

The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

EMD of successful tenderer may be retained and converted to Security Deposit, if applicable."

4. The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country.
5. The offer should be valid for a minimum period of 120 days or longer if called for from the due date of opening of the tender.
6. Samples, if called for, should be sent free of all charges.
7. Late and delayed tenders will not be considered. Quotations by fax must be followed by detailed offers.
8. Offers made by Indian Agents on behalf of their Principals, should be supported by the Proforma invoice of their Principals.
  - a) In a tender either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
  - b) If an agent submits bid on behalf of the principal/OEM, the same agent shall not submit a bid on behalf of another principal/OEM in the same tender for the same item/product.
9. We are exempted from Customs/Excise Duties.
10. The details of Import Licence will be furnished in the Purchase Order.
11. The authority of person signing the tender, if called for, shall be produced.
12. Instructions / Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents / correspondence should be in English language only.
13. The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason.
14. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.
15.
  - a) Part shipment is not allowed unless specifically agreed to by us.
  - b) As far as possible stores should be despatched by Indian Flag Vessels / Air India through an Agency nominated by us.



16. Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractor.
17. Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility.
18. For items having shelf life, those with maximum shelf life should be supplied if order is placed.
19. No request for extension for due date for submission of tenders will be entertained.
20. Unsigned quotations will be rejected.
21. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.

## **TERMS AND CONDITIONS**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assignees.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's Successors, representatives, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by duly authorised officer intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores, plant, machinery or equipment or part thereof.
- (d) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.

### **2. PRICES:**

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations. However, such clauses will be subject to final acceptance by Purchaser.

### **3. TERMS OF PAYMENT:**

- 3.1 Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon.
- 3.2 The Sight Draft / Letter of Credit will be operative on presentation of the under mentioned documents:
  - a) Original Bill of Lading / Airway Bill



- b) Commercially certified invoices in triplicate, describing the stores delivered, quantity, unit rate and their total value. The invoice should indicate discounts, and Agency Commission if any separately.
- c) Packing List showing individual dimensions and weight of packages.
- d) Country of Origin Certificate in duplicate.
- e) Test Certificate.
- f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.
- g) Warrantee and guarantee Certificate/s vide Clause 20 herein below

#### **4. IMPORT LICENCE:**

Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide Para 3.2.

#### **5. DEMURRAGE:**

Supplier shall bear demurrage charges, if any, incurred by the Purchaser due to delayed presentation of shipping documents as prescribed in Para 3.2 to the bankers beyond a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

#### **6. ADDRESS OF INDIAN AGENT:**

.....

#### **7. GUARANTEED TIME OF DELIVERY:**

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

#### **8. INSPECTION AND ACCEPTANCE TESTS:**

- 8.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under the Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the Purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.
- 8.2 For tests on the premises of the Contractor or of any of his sub- Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.
- 8.3 When the stores have passed the specified test, the Purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the Purchaser as may be required.



**9. MODE OF DESPATCH:**

Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the Purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

**10. PORT OF ENTRY:**

FOR AIR SHIPMENTS: AHMEDABAD (Via Mumbai, if required)

FOR SEA SHIPMENTS: NHAVASHEVA/Mumbai Seaport

**11. CONSIGNEE:**

Sr. Purchase & Stores Officer,  
Central Stores,  
Space Applications Centre (SAC),  
Ahmedabad

**12. SHIPPING MARKS:**

The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow:

PURCHASE ORDER NO. ....

DATED .....

GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE

Destination: ..... &

Port of Entry: .....

**13. INSURANCE OF THE STORES:**

The necessity or otherwise of insurance will be as indicated in the Purchase Order.

**14. CONTRACTOR'S DEFAULT LIABILITY:**

14.1 The Purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

- a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.
- b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

15. In the event the Purchaser terminates the Contract in whole or in part as provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores.



15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

- a) Any completed stores.
- b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores delivered to and accepted by the Purchaser and for manufacturing material delivered and accepted.

15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the Purchaser for liquidated damages for delay as set out in Clause 19 until the stores are accepted.

#### **16. REPLACEMENT:**

If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the Purchaser agrees, the price towards replacement items shall be paid by the Purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.

#### **17. REJECTION:**

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the Purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may at his option either:

- a) Replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or
- b) Terminate the Contract for default as provided under Clause 14 above, or
- c) Acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice any other rights of Purchaser's under the Contract including recovery of liquidated damages for delay.

#### **18. EXTENSION OF TIME:**

If the completion of supply of stores is delayed due to reasons of *force majeure* such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the Purchaser in writing of his claim for an extension of time. The Purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.



#### **19. DELAY IN COMPLETION / LIQUIDATED DAMAGES:**

If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the Purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5%) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 %) of the Contract price of the portion of stores so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.

#### **20. GUARANTEE & REPLACEMENT:**

- a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance.
- b) For a period of twelve months (or such period as agreed upon by the parties) after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months (or such period as specified in Contract) from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty.
- c) If in the opinion of the Purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the Purchaser provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months (or such period as specified in Contract) from the date of acceptance thereof.
- d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- e) The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects has developed within the said period of 12 months (or such agreed period) or as to whether the nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor.
- f) To fulfill guarantee conditions outlined in Clause 20 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser - Bank Guarantee format enclosed) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at Purchaser's site.
- h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months.**



## **21 REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:**

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the Purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

## **22. PACKING:**

- a) The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space qualified stores. The Contractors shall be held responsible for all damages due to improper packing.
- b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.
- c) The Contractor shall notify the Purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.
- d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.
- e) Transshipment of equipment shall not be permitted except with the written permission of the Purchaser.
- f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the Purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:
  - a) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt.  
(Two non-negotiable copies)
  - b) Invoice (3 copies)
  - c) Packing List (3 copies)
  - d) Test Certificate (3 copies)
  - e) Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.

## **23. ARBITRATION:**

If at any time any question, dispute or difference whatsoever shall arise between the Purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by Purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India.



**24. LANGUAGE AND MEASURES:**

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

**25. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent, Registration of design or Trade Mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract.

**26. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:**

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the bidder, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.

**27. SECURITY INTEREST:**

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, Purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the Purchaser in accordance with the terms of the Contract. Such security interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

**28. BANK CHARGES:**

While the Purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising amendment commissions.

**29. TRAINING:**

The Contractor shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores. Number of such personnel to be mutually agreed upon.

**30. APPLICABLE LAW:**

The Contract shall be interpreted, construed and governed by the laws of India.



## **PACKING INSTRUCTIONS**

1. In tune with the requirement of international plant protection convention of the FAO, UN the following has become mandatory with immediate effect.
2. All packing materials of any kind of plant origin used for packing shall require treatment including hear-kiln treatment at 56 degree centigrade for a minimum of 30 hours of methylbromide fumigation at 48g/cum for 32 hours of chemical impregnation as per international standards.
3. If the consignments are sent without the aforesaid certificate, all demurrages and other charges for treatment etc. will be to the account of the suppliers.
4. This aspect also should be taken care of while submitting the offers.
5. If the packaging material being used for your product does not come under the category "material of plant origin" (i.e. Leaves, grass, wood etc.) Please certify the same in your quote and ignore the above instructions. However, the same should be ascertained at the time of actual shipment if the order is awarded to you.

.....



**STANDARD TENDER FORM**  
(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

**TENDER FORM**

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: [publictender@sac.isro.gov.in](mailto:publictender@sac.isro.gov.in)

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराह्न 3 बजे तक) Due on (Up to 3 pm)
2.	AHSE 201500335301	OPTICAL GRADE VIBRATION ISOLATION TABLES (Two Part Tender)	13/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

M/s

000000

**Our Ref No : AHSE 2015-003353-01**

**Tender Due: 15:00 Hrs ISTon 13/06/2016**

**Dear Sirs,**

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: As per enclosure. )

S.No.	Description of Items with Specifications	Unit	Quantity
1	OPTICAL GRADE VIBRATION ISOLATION TABLES ALONG WITH ACCESSORIES (As per attached specifications)	Nos.	4

**DELIVERY AT:** SAC AHMEDABAD

**MODE OF DESPATCH** ON SITE

**DUTY EXEMPTIONS** We are exempted from payment of customs duty.

**SPECIAL INSTRUCTIONS** Mention validity, warranty, payment terms & delivery terms.

**SPECIFIC TERMS** As per enclosure.

**INSTRUCTIONS TO TENDERERS:**

- Acceptance of Liquidated damages- As per enclosure
- Acceptance of Performance Bank Gurantee-As per enclosure
- EMD(Earnest Money Deposit)- As per clause 3 attached Terms & Conditons
- "Quotations shall be submitted by the bidders only by post or by hand in sealed covers. Quotations received by FAX or e-mail shall not be considered as valid offers and will not be accepted for evaluation."
- Please note that this is a TWO-PART TENDER. Send your quotation as per attached instructions only. Quotation not conforming to the instructions will be rejected. Fax & email quotations will not be accepted.
- Technical & Commercial Compliance statement confirming compliance with all the point of Tech & Commercial annexures enclosed with the tender document shall be submitted along with the offer. In the absence of the same, your offer shall be summarily rejected

ANIL N VAIDYA  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

# TECHNICAL SPECIFICATIONS OF OPTICAL TABLE WITH VIBRATION ISOLATION SUPPORT

## (A) : OPTICAL TABLE

PARAMETER	SPECIFICATIONS
Length (mm)	3500 ± 200
Width (mm)	1500 ± 100
Thickness (mm)	250 (Typical)
Load capacity(kg) (total)	≥ 1500
Surface Material	Stainless steel (Preferably ferro-magnetic)
Core Material	Honeycomb
Surface skin thickness(mm)	Between 4.5 to 6
Flatness (over any 1m <sup>2</sup> area)	≤ 0.2 mm
Deflection Under Load (for 100 kg load) in μm	≤ 15
Mounting holes type	M6 x 1mm (pitch)
Mounting holes pitch (mm)	25
Hole/core sealing	Easy cleanup, non-corrosive material
Maximum Dynamic Deflection Coefficient	≤ 0.001
First Resonant frequency(Hz)	≤ 230
Transmissibility at first resonance	< 10
Corner Compliance at first resonance (μm/N)	< 0.035
Core Shear Modulus (GPa)	Better than 1.5
Clean Room Class	10000
Warranty	Minimum 1 year

**(B): VIBRATION ISOLATION SUPPORT**

<b>PARAMETER</b>	<b>SPECIFICATIONS</b>
Vertical isolation type	Active air suspension
Number of supports	Minimum of 4 legs (6 legs preferable)
Leg Height(mm)	550 to 650
Leg Cross Section (mm)	250 (Typical)
Height Adjustment(mm)	≥ 25
Load capacity (per leg) (kg)	600 (Typical)
Vertical isolation at 5 Hz	≥90 %
Horizontal isolation at 5 Hz	≥85%
Vertical isolation at 10 Hz	≥95 %
Horizontal isolation at 10 Hz	≥95 %
Vertical isolation resonance/Vertical resonant frequency	≤ 1 Hz
Horizontal isolation resonance/Horizontal resonant frequency	≤ 1.5 Hz
Leveling of table	Active leveling. (Supplier should provide all accessories required to float the table including connectors, tubes etc.)
Self-leveling repeatability	0.25mm (typical)
Air supply pressure	Required (Supplier shall specify value in psi/kPa)
Clean Room compatibility	10000
Compressed air connection	Required
Air Compressor and Air Filter	Suitable Air Compressor, Air filter, tubing necessary for operation of vibration isolation system shall be offered by the vendor
Installation	Vendor shall perform the installation of indented vibration Isolation system at SAC

### **General Requirement:**

1. Vendors shall provide detailed datasheet and warranty conditions along with the quote. The Warranty shall be applicable from the date of installation and commissioning of material
2. Authorization certificate from the original manufacture is to be provided.
3. Vendor is required to submit **Certificate of Compliance** at the time of submitting quote. **Offer will not be considered without compliance matrix for each specification**
4. Vendor is required to do installation of indented item at SAC facility.
5. Vendor shall deliver necessary tubes of appropriate dimensions and length compatible to Active vibration isolation leg, Air compressor and air filter for installation and commissioning.
6. Packaging: Indented item shall be packed carefully in order to protect it from damage during shipment from the fabricator's premises to SAC.
7. Vendor shall provide necessary manuals for operation and maintenance of system at the time of delivery.

## **Compliance Matrix (To be filled by the Vendor)**

### **A. OPTICAL TABLE**

<b>Parameter</b>	<b>Specifications</b>	<b>Compliance with Values</b>	<b>Remarks if Any</b>
<b>Length (mm)</b>	3500 ± 200		
<b>Width (mm)</b>	1500 ± 100		
<b>Thickness (mm)</b>	250 (Typical)		
<b>Load capacity(kg) (total)</b>	≥ 1500		
<b>Surface Material</b>	Stainless steel (Preferably ferro-magnetic)		
<b>Core Material</b>	Honeycomb		
<b>Surface skin thickness(mm)</b>	Between 4.5 to 6		
<b>Flatness (over any 1m<sup>2</sup> area)</b>	≤ 0.2 mm		
<b>Deflection Under Load (for 100 kg load) in µm</b>	≤ 15		
<b>Mounting holes type</b>	M6 x 1mm (pitch)		
<b>Mounting holes pitch (mm)</b>	25		
<b>Hole/core sealing</b>	Easy cleanup, non-corrosive material		
<b>Maximum Dynamic Deflection Coefficient</b>	≤ 0.001		
<b>First Resonant frequency(Hz)</b>	≤ 230		

<b>Transmissibility at first resonance</b>	< 10		
<b>Corner Compliance at first resonance (<math>\mu\text{m}/\text{N}</math>)</b>	< 0.035		
<b>Core Shear Modulus (GPa)</b>	Better than 1.5		
<b>Clean Room Class</b>	10000		
<b>Warranty</b>	Minimum 1 year		

**(B): VIBRATION ISOLATION SUPPORT**

<b>Parameter</b>	<b>Specifications</b>	<b>Compliance with Values</b>	<b>Remarks if Any</b>
<b>Vertical isolation type</b>	Active air suspension		
<b>Number of supports</b>	Minimum of 4 legs (6 legs preferable)		
<b>Leg Height(mm)</b>	550 to 650		
<b>Leg Cross Section (mm)</b>	250 (Typical)		
<b>Height Adjustment(mm)</b>	$\geq 25$		
<b>Load capacity (per leg) (kg)</b>	600 (Typical)		
<b>Vertical isolation at 5 Hz</b>	$\geq 90 \%$		
<b>Horizontal isolation at 5 Hz</b>	$\geq 85\%$		
<b>Vertical isolation at 10 Hz</b>	$\geq 95 \%$		
<b>Horizontal isolation at 10 Hz</b>	$\geq 95 \%$		

<b>Vertical isolation resonance/Vertical resonant frequency</b>	$\leq 1 \text{ Hz}$		
<b>Horizontal isolation resonance/Horizontal resonant frequency</b>	$\leq 1.5 \text{ Hz}$		
<b>Leveling of table</b>	Active leveling. (Supplier should provide all accessories required to float the table including connectors, tubes etc.)		
<b>Self-leveling repeatability</b>	0.25mm (typical)		
<b>Air supply pressure</b>	Required (Supplier shall specify value in psi/kPa)		
<b>Clean Room compatibility</b>	10000		
<b>Compressed air connection</b>	Required		
<b>Air Compressor and Air Filter</b>	Suitable Air Compressor, Air filter, tubing necessary for operation of vibration isolation system shall be offered by the vendor		
<b>Installation</b>	Vendor shall perform the installation of indented vibration Isolation system at SAC		

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II                : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II        :        PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with ‘Tender fee cover’ (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG WITH  
THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

<b>Sr. No.</b>	<b>Commercial terms</b>	<b>Compliance/Remarks/Comments by Vendor</b>
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1 14.2	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number.	

14.3	Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	
14.4		
14.5	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.6	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.7	Please indicate rate of the Sales Tax/VAT applicable.	
14.8	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required. Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be	

	replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24.	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30. 30.1 30.2 30.2.1 30.3	<p>Bank Guarantees (from Nationalized/ Scheduled Bank/ Bank approved by Purchaser.</p> <p>Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.</p> <p>Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.</p> <p>The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.</p> <p>Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.</p>	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	

37.	<p>Acceptance of Fall clause.</p> <p>“The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase &amp; Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction” .</p>	
38.	<p>You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.</p>	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER**

1. The Tenderers should submit quotations in sealed envelope, superscribing the Tender No. and due date of opening and complete in all respects with technical specifications, including pamphlets and catalogues. Separate instructions, if any in this regard should be strictly complied with.
2. A Proforma Invoice may also be given which should contain the following information:
  - a) The FOB/FCA value, for import by Sea freight / Air freight up to Ahmedabad and for air parcel post up to Ahmedabad should be separately indicated.
  - b) Agency Commission: The amount of commission included in the price and payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an Invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. This payment will be released to the Indian Agent after receipt and acceptance the goods in India.
  - c) The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor's invoice should separately reflect the amount of commission payable to his Indian Agent.
  - d) The earliest delivery period and country of origin of the Stores.
  - e) Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor.
  - f) The approximate net and gross weight and dimensions of packages / cases.
  - g) Recommended spares for satisfactory operation for a minimum period of one year beyond warranty.
  - h) Details of any technical service, if required for erection, assembly, commissioning and demonstration.
3. "Bidders shall submit an amount of **₹ 1, 74,000 (Rupees One Lakh Seventy Four Thousand Only)** with the bid / before the date of tender opening as stipulated in tender schedule towards Earnest Money Deposit (EMD).

The EMD shall be submitted in the form of DD/Banker's cheque/Bank Guarantee/Fixed Deposit Receipt (FDR) made in the name of Accounts Officer, Space Applications Centre, and be payable at par at Ahmedabad.

Bids received without EMD shall be treated as invalid and shall not be considered. In case of two-part (multi-part) tenders, EMD must be submitted either in separate sealed cover clearly marked as 'EMD against tender no. \_\_\_\_\_' or with technical bid, so that it should be available at the time of opening of the first part of bid document itself. Tenders not complying with this requirement shall be rejected.

The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):



- Vendors already registered / empanelled with SAC as authorized vendors.
- Overseas bidders submitting offers directly without involving an Indian Representative.
- Central PSUs/PSEs and autonomous bodies
- Micro and Small Enterprises
- Khadi and Village Industries Commission
- National Small Industries Corporation
- Any other establishments specifically exempted from paying EMD by an order of the Government of India.

The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

EMD of successful tenderer may be retained and converted to Security Deposit, if applicable.”

4. The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country.
5. The offer should be valid for a minimum period of 120 days or longer if called for from the due date of opening of the tender.
6. Samples, if called for, should be sent free of all charges.
7. Late and delayed tenders will not be considered. Quotations by fax must be followed by detailed offers.
8. Offers made by Indian Agents on behalf of their Principals, should be supported by the Proforma invoice of their Principals.
  - a) In a tender either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
  - b) If an agent submits bid on behalf of the principal/OEM, the same agent shall not submit a bid on behalf of another principal/OEM in the same tender for the same item/product.
9. We are exempted from Customs/Excise Duties.
10. The details of Import Licence will be furnished in the Purchase Order.
11. The authority of person signing the tender, if called for, shall be produced.
12. Instructions / Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents / correspondence should be in English language only.
13. The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason.
14. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.
15.
  - a) Part shipment is not allowed unless specifically agreed to by us.
  - b) As far as possible stores should be despatched by Indian Flag Vessels / Air India through an Agency nominated by us.
16. Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractor.



17. Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility.
18. For items having shelf life, those with maximum shelf life should be supplied if order is placed.
19. No request for extension for due date for submission of tenders will be entertained.
20. Unsigned quotations will be rejected.
21. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.

## **TERMS AND CONDITIONS**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assignees.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's Successors, representatives, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by duly authorised officer intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores, plant, machinery or equipment or part thereof.
- (d) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.

### **2. PRICES:**

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations. However, such clauses will be subject to final acceptance by Purchaser.

### **3. TERMS OF PAYMENT:**

- 3.1 Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon.
- 3.2 The Sight Draft / Letter of Credit will be operative on presentation of the under mentioned documents:
  - a) Original Bill of Lading / Airway Bill
  - b) Commercially certified invoices in triplicate, describing the stores delivered, quantity, unit rate and their total value. The invoice should indicate discounts, and Agency Commission if any separately.
  - c) Packing List showing individual dimensions and weight of packages.
  - d) Country of Origin Certificate in duplicate.
  - e) Test Certificate.



- f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.
- g) Warrantee and guarantee Certificate/s vide Clause 20 herein below

#### **4. IMPORT LICENCE:**

Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide Para 3.2.

#### **5. DEMURRAGE:**

Supplier shall bear demurrage charges, if any, incurred by the Purchaser due to delayed presentation of shipping documents as prescribed in Para 3.2 to the bankers beyond a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

#### **6. ADDRESS OF INDIAN AGENT:**

.....

#### **7. GUARANTEED TIME OF DELIVERY:**

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

#### **8. INSPECTION AND ACCEPTANCE TESTS:**

8.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under the Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the Purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.

8.2 For tests on the premises of the Contractor or of any of his sub- Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.

8.3 When the stores have passed the specified test, the Purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the Purchaser as may be required.

#### **9. MODE OF DESPATCH:**

Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the Purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

#### **10. PORT OF ENTRY:**

FOR AIR SHIPMENTS: AHMEDABAD (Via Mumbai, if required)



FOR SEA SHIPMENTS: NHAVASHEVA/Mumbai Seaport

**11. CONSIGNEE:**

Sr. Purchase & Stores Officer,  
Central Stores,  
Space Applications Centre (SAC),  
Ahmedabad

**12. SHIPPING MARKS:**

The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow:

PURCHASE ORDER NO. ....

DATED .....

GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE

Destination: ..... &

Port of Entry: .....

**13. INSURANCE OF THE STORES:**

The necessity or otherwise of insurance will be as indicated in the Purchase Order.

**14. CONTRACTOR'S DEFAULT LIABILITY:**

14.1 The Purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

- a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.
- b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

15. In the event the Purchaser terminates the Contract in whole or in part as provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores.

15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

- a) Any completed stores.
- b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores



delivered to and accepted by the Purchaser and for manufacturing material delivered and accepted.

15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the Purchaser for liquidated damages for delay as set out in Clause 19 until the stores are accepted.

#### **16. REPLACEMENT:**

If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the Purchaser agrees, the price towards replacement items shall be paid by the Purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.

#### **17. REJECTION:**

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the Purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may at his option either:

- a) Replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or
- b) Terminate the Contract for default as provided under Clause 14 above, or
- c) Acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice any other rights of Purchaser's under the Contract including recovery of liquidated damages for delay.

#### **18. EXTENSION OF TIME:**

If the completion of supply of stores is delayed due to reasons of *force majeure* such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the Purchaser in writing of his claim for an extension of time. The Purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.

#### **19. DELAY IN COMPLETION / LIQUIDATED DAMAGES:**

If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the Purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5%) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 %) of the Contract price of the portion of stores so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.



## **20. GUARANTEE & REPLACEMENT:**

- a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance.
- b) For a period of twelve months (or such period as agreed upon by the parties) after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months (or such period as specified in Contract) from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty.
- c) If in the opinion of the Purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the Purchaser provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months (or such period as specified in Contract) from the date of acceptance thereof.
- d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- e) The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects has developed within the said period of 12 months (or such agreed period) or as to whether the nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor.
- f) To fulfill guarantee conditions outlined in Clause 20 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser - Bank Guarantee format enclosed) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at Purchaser's site.
- h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months.**

## **21 REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:**

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the Purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

## **22. PACKING:**

- a) The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space



qualified stores. The Contractors shall be held responsible for all damages due to improper packing.

- b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.
- c) The Contractor shall notify the Purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.
- d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.
- e) Transshipment of equipment shall not be permitted except with the written permission of the Purchaser.
- f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the Purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:
  - a) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt.  
(Two non-negotiable copies)
  - b) Invoice (3 copies)
  - c) Packing List (3 copies)
  - d) Test Certificate (3 copies)
  - e) Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.

### **23. ARBITRATION:**

If at any time any question, dispute or difference whatsoever shall arise between the Purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by Purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India.

### **24. LANGUAGE AND MEASURES:**

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

### **25. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent,



Registration of design or Trade Mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract.

**26. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:**

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the bidder, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.

**27. SECURITY INTEREST:**

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, Purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the Purchaser in accordance with the terms of the Contract. Such security interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

**28. BANK CHARGES:**

While the Purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising amendment commissions.

**29. TRAINING:**

The Contractor shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores. Number of such personnel to be mutually agreed upon.

**30. APPLICABLE LAW:**

The Contract shall be interpreted, construed and governed by the laws of India.



## **PACKING INSTRUCTIONS**

1. In tune with the requirement of international plant protection convention of the FAO, UN the following has become mandatory with immediate effect.
2. All packing materials of any kind of plant origin used for packing shall require treatment including hear-kiln treatment at 56 degree centigrade for a minimum of 30 hours of methylbromide fumigation at 48g/cum for 32 hours of chemical impregnation as per international standards.
3. If the consignments are sent without the aforesaid certificate, all demurrages and other charges for treatment etc. will be to the account of the suppliers.
4. This aspect also should be taken care of while submitting the offers.
5. If the packaging material being used for your product does not come under the category "material of plant origin" (i.e. Leaves, grass, wood etc.) Please certify the same in your quote and ignore the above instructions. However, the same should be ascertained at the time of actual shipment if the order is awarded to you.

.....



**STANDARD TENDER FORM**  
(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

**TENDER FORM**

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: publictender@sac.isro.gov.in

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराहन 3 बजे तक) Due on (Up to 3 pm)
3.	AHEG 201500345101	CCTV SYSTEM (Two Part Tender)	13/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

M/s

000000

**Our Ref No : AHEG 2015-003451-01**

**Tender Due: 15:00 Hrs ISTon 13/06/2016**

**Opening : 15:30 Hrs ISTon 13/06/2016**

**Dear Sirs,**

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: As per overleaf. )

S.No.	Description of Items with Specifications	Unit	Quantity
1	CCTV PTZ camera.Detail Specifications as per Annexure-I.Terms & Conditions as per Annexure-II	each	30
2	Industrial Grade Network Switch.Detail Specifications as per Annexure-I.Terms & Conditions as per Annexure-II	each	30

**DELIVERY AT:** SAC STORE

**MODE OF DESPATCH** ON SITE

**DUTY EXEMPTIONS** We are exempted from the payment of excise/customs duty.

**SPECIAL INSTRUCTIONS** NIL

**SPECIFIC TERMS** As per overleaf.

**INSTRUCTIONS TO TENDERERS:**

Detailed Terms & conditions as per Instructions attached.

BALRAJ SINGH  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

Indent No. AHEG 2015000345101

**[Detailed tender terms & tender conditions]**

1. Detailed Specifications, terms & Conditions as per Annexures.
2. This is a TWO PARTS tender; please submit your quotations as per the instructions. Quotations not confirming to the instructions will be rejected. Fax quotation shall not be accepted.
3. Duly filled compliance statement (enclosed) is to be attached with along with Part I. Technical & Commercial Compliance statement confirming compliance with all the point of Tech & Commercial annexures enclosed with the tender document shall be submitted along with the offer. In absence of the same, your offer shall be summarily rejected.
4. A copy of masked Price Bid (i.e. without prices) may be enclosed along with Part I to understand whether all the details/items to be quoted by you have been quoted in the Price Bid.
5. Your offer should be accompanied with Demand draft for an amount of Rs. 545/- drawn in favour of "Accounts Officer, SAC, Ahmedabad" towards tender fee. Offer received without tender fee shall be liable for rejection.
6. Please mention our ref. no. AHEG 201500345101 (DL/641) and tender due date on your quotation & envelopes.
7. 4] EARNEST MONEY DEPOSIT (EMD): An amount of Rs.2,25,000/- shall be remitted by Account Payee DD / Fixed Deposit Receipt (FDR) in favour of Accounts Officer, SAC Payable at Ahmedabad towards EMD along with quotation only for the Vendors who are not registered with us. Vendors Registered in SAC's/EGPS/COWAA database participating through open Public/Limited Tenders. Foreign Vendor's Central PSU's/PSE's/AUTONOMUS Bodies, Micro and Small Enterprises, KVIC National Small Scale Industries Corporation are exempted from Payment of EMD.  
Please note that without EMD, quotation will not be considered. EMD of successful bidder shall be adjusted as Security Deposit and the remaining amount of security deposit will be deposited by the Service Provider. EMD of unsuccessful bidders will be returned after finalization of contract without any interest.

## Annexure-I

### 1.0 Outdoor Heavy duty, Pan/Tilt, Day and Night vision camera with Internal/external IR Illuminators & IP connectivity (with accessories)

SN	Specifications		Complied Y/N	Remarks
1.	<b>Make</b>	AXIS/BOSCH/HONEYWELL/PANASONIC/PELCO/ SONY		
2.	<b>Image Sensor</b>	1/3" CCD/CMOS or better		
3.	<b>Optical zoom</b>	10x (High Definition) or better		
4.	<b>Digital Zoom</b>	10x or better		
5.	<b>IR Illuminators</b>	LED array/Laser illuminator technology with wavelength 850nm or better. Two nos. illuminators with 60° -180° coverage to give total 360° coverage and each to cover a minimum of 125 m at narrow angle and 75 m at wide angle or better with IP66 ingress rating. Operating temperature 0°C to +50°C or better		
6.	<b>Resolution</b>	Up to 1920x1080, @ 25 fps, or better		
7.	<b>Frame rate</b>	H.264: 25 fps selectable or better		
8.	<b>Focus</b>	Automatic		
9.	<b>Minimum Illumination</b>	Color 1.0 lux(1/30 sec), B/W 0.1 lux or better		
10.	<b>Pan</b>	360°		
11.	<b>Tilt</b>	180° or better		
12.	<b>Day / Night Functions</b>	Day/Night, Automatic switch over from Color to B/W		
13.	<b>Network Interface</b>	10 /100 base TX, RJ 45.or better		
14.	<b>Preset</b>	100 preset positions minimum with control queue and on screen directional indicator		
15.	<b>IR cut filter</b>	Yes		
16.	<b>Video Compression</b>	H.264 , M-JPEG		
17.	<b>Compatible standard and Protocol</b>	ONVIF Profile S Support		
18.	<b>Video streaming</b>	Multi- stream with variable/ configurable frame rate / bit rate for preview and recording H.264/MJPEG Video		
19.	<b>Audio Streaming</b>	Two-way		
20.	<b>Alarm inputs/ Outputs</b>	Minimum configurable 2 input & 2 output		
21.	<b>Intelligence</b>	Intelligent motion detection and auto tracking,		
22.	<b>Image settings</b>	Wide dynamic range (WDR), electronic image stabilization (EIS), color, brightness, sharpness, white Balance, exposure control, backlight compensation, Text and image overlay with privacy mask zone,		
23.	<b>Security</b>	Password protection, IP addresses filtering, User access logs		

24.	<b>Supported protocols</b>	IPv4/v6, HTTP, FTP, SMTP, UPnP, SNMP, RTP, TCP, UDP, RTCP, ICMP,, DHCP, HTTPS, NTP, SSL, TLS, SSH, etc		
25.	<b>Users</b>	3 or more simultaneous Users/Unlimited users in multi-cast mode.		
26.	<b>Power</b>	230V ac +/- 5% , 50 Hz OR Suitable Power adapter, POE+		
27.	<b>Mounting</b>	Pole mounted		
28.	<b>Casing</b>	IP66 or above- rated casing, Nema 4X with sunshield, IK-10 rated metal Vandal proof housing		
29.	<b>Operating temperature</b>	0°C to +50° C or better		
30.	<b>Accessories</b>	Power supply, other mountings and connector kits, Installation Guide, CD with installation tools, Recording software and User's Manual, Installation, Management tools, Service manual and QC test report.		
31.	<b>Local storage</b>	SD/SDHC/SDXC, Minimum 32GB		

## 2.0 Industrial Grade 10/100/1000G Ethernet Switch with PoE and 2 SFP Uplinks

SN	Specifications		Complied Y/N	Remarks
1.	<b>Preferred Make</b>	Alcatel/Allied Telesis/Brocade/CISCO/Extreme/HP		
2.	<b>Type</b>	Industrial grade, Managed switch		
3.	<b>Ports</b>	4 X 10/100/1000T ports (PoE Plus) and 2 X 100/1000X SFP		
4.	<b>Power supply</b>	230V AC 50Hz Internal power supply. (If required, appropriate power adaptor should be supply along with switch)		
5.	<b>Protection Class</b>	IP 30		
6.	<b>Management</b>	web GUI, CLI, SNMP		
7.	<b>Accessories</b>	a. Mounting hardware including connecting cables with Indian Standard plug tops. b. Two number SFP modules from same manufacture for SMF up to 10 km support with 0°C to 60°C temperature range		
8.	<b>Standards</b>	IEEE 802.1q IEEE 802.3 IEEE 802.3u IEEE 802.3ab IEEE 802.3at IEEE 802.3x		
9.	<b>Operating temperature</b>	Operating temperature 0°C to 60°C Operating humidity 10% to 95% (non-condensing)		

## **Annexure – II**

### **1. Terms & Conditions**

- a. Supplier shall submit the specifications-cum-compliance statement as per specifications and terms in Annexure – I with clear mention complied or not complied in the respective column.
- b. Any additional information, better specifications or reasons for deviations shall be provided separately against each specification
- c. If the specification or term is kept blank in “Complied/Not complied” column it shall be treated as “Not Complied” against respective specification/term and offer shall not be considered.
- d. Vendor shall submit data sheet of quoted items along with offer with marking of all the above specifications. Offer without data sheet & compliance statement shall not be considered further. For camera & switch OEM specifications complied is required if not indicated in datasheet.
- e. Vendor shall supply, install, integrate & commission by replacing existing CCTV cameras & switches with minimum system downtime time (24 hours) & seamlessly integrate all the cameras & network switches.
- f. Vendor shall include in quote all required accessories like two SFP module with each LAN switch, pole mounting brackets for camera & switch, sealing kits after installation of camera & switch, cables/patch cords, adapters, power cords, fasteners, hardware etc. No separate cost for accessories and installation shall be paid.
- g. After completion of installation, testing, programming and commissioning, vendor shall demonstrate working of all the supplied items as per SAC specifications and requirements.
- h. Vendor must quote for standard make of items and also specify ‘name of the manufacturer’, ‘make’ & ‘model’ of the items along with product catalogue including source of Original Equipment Manufacturer (OEM).
- i. SAC engineers shall carry out inspection of all the material at vendor’s factory. Readiness of the material shall be informed to SAC in advance.
- j. Vendor shall carry out site survey before erection and installation. The exact schedule of each work shall be decided in consultation with SAC engineer.
- k. If any item/s is/are not quoted in price bid by the vendor and it is required to implement this project, vendor shall supply all such required items without paying any extra cost.
- l. Vendor shall depute senior engineer on site to supervise the work.
- m. During erection, installation, commissioning & warranty, vendor shall use their tools, ladder and equipment. SAC shall not provide any tool or equipment.
- n. Vendor shall supply two sets of manuals for installation, programming and maintenance in electronic media for all deliverable materials.
- o. Vendor shall quote as per annexure III

### **2. Delivery & installations**

- I. Vendor shall supply all the material within 3 weeks from the date of SAC Purchase order.
- II. Installation shall be completed within a 3 weeks from the date of delivery.

### **3. Acceptance Test Plan (ATP)**

- a. Acceptance Test will be conducted only after successful installation and uninterrupted operation of the entire system at site for minimum period of seven days.
- b. Vendor shall submit details of ATP to SAC for an approval as per tender specifications. Specifications of the system shall be demonstrated to SAC as per tender document to SAC.
- c. ATP shall start after successful 24x7 operation of system for seven days.
- d. During ATP, vendor will use their own tools & equipment. SAC will not provide any test instrument/tools.

### **4. Warranty**

- a. Supplier shall provide on-site warranty of three years from the date of acceptance.
- b. Warranty shall include preventive & unlimited break-down maintenance calls including all the repair/replacement of spares, modules, software etc.

- c. During warranty, call response time shall be three hours and call completion time shall not be more than 24 hours.
  - d. Vendor shall depute qualified site engineer for three months from date of acceptance.
5. **Payment terms**
1. Payment will be divided in two parts as below:
    - a) 60 % against delivery of material
    - b) 40 % payment after satisfactory installation and commissioning in all respect and acceptance of the system
  2. Vendor shall submit of 10 % Performance bank guarantee valid for warranty period.
6. **Delay in Completion/ Liquidated Damages**
- In the event of the vendor failing to deliver the material or complete the work within the time specified in the contract agreement or in extension agreed thereto, SAC shall reserve the right to recover from the vendor as liquidated damages, a sum of one half percent (0.5%) per week or part thereof of the undelivered portion of the total contract price of system, equipment or work. The Total liquidated damages shall not exceed the ten percent (10.0%) of the total purchase order price.
7. **Vendor selection criteria (Supporting documents to be attached)**
- Vendor shall fulfill following requirements:
- a. Vendor shall submit authorization certificate from OEM for sales & service.
  - b. Vendor shall have office in Ahmedabad for service support with minimum two service engineers.
  - c. Vendor shall have service experience of minimum three years in IP based fiber connectivity CCTV system.

### Annexure – III

#### **BILL OF MATERIAL CUM PRICE**

SN	Description	Qty	Quote for	Unit price with tax	Total price with tax in Rs.
1	Outdoor Heavy duty, Pan/Tilt, Day and Night vision camera with Internal/External IR Illuminators & IP connectivity (with accessories) (Ref.1.0)	30	Per Unit		
2	Industrial Grade 10/100/1000G Ethernet Switch with PoE and 2 SFP Up links (Ref.2.0)	30	Per Unit		
<b>Total Cost (all inclusive) in INR.</b>					

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II                : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II        :        PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with “Tender fee cover” (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG  
WITH THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

Sr. No.	Commercial terms	Compliance/Remarks/Comments by Vendor
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1  14.2  14.3	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number. Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	

14.4	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.5	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.6	Please indicate rate of the Sales Tax/VAT applicable.	
14.7	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required.	
14.8	Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30.	Bank Guarantees (from Nationalized/	

30.1	Scheduled Bank/ Bank approved by Purchaser. Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.	
30.2	Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.	
30.2.1	The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.	
30.3	Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	
37.	Acceptance of Fall clause. "The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase & Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction" .	
38.	You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS**

1. Tenders should be sent in sealed envelopes super scribing the relevant tender No, and the due date of opening. Only one tender should be sent in each envelope. Unsigned bids shall be rejected.
2. Late tenders and delayed tenders will not be considered. Unsigned bids shall be rejected.
3. Tender fee & bid security (EMD) exemption for MSME.
4. Sales Tax and/or other duties/levies legally leviable and intended to be claimed should be distinctly shown separately in the tender.
5. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from the Purchase Officer concerned to avoid any payment of such levies.
6. a) Your quotation should be valid for at least 120 days from the date of opening of the tender.  
b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
7. Preference will be given to those tenders offering supplies from ready stocks and on the basis of FOR destination/delivery at site.
8. (a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.  
(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non-acceptance of tender, the tenderer will have to remove the samples at his own expense.  
(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.  
(d) **Specifications:** Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.
9. The Purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

10. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
11. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.
12. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted.
13. The authority of the person signing the tender, if called for, should be produced.
14. We are exempted from the payment of Central Excise & Custom Duties vide notifications issued by Govt. of India.
15. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.
16. No request for extension for due date for submission of tenders will be entertained.

## **TERMS & CONDITIONS OF TENDER**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assigns.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition is included in the Purchase Order.
- (d) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

### **2. PRICES:**

Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

### **3. SECURITY DEPOSIT:**

On acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding ten percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, 'Security' and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores Contracted at the risk of the



Contractor in terms of Sub-Clause (ii) and (iii) of clause 10(b) hereof and/or to recover from the Contractor, damages arising from such cancellation.

#### **4. GUARANTEE & REPLACEMENT:**

- (a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.
- (b) For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any part thereof are faulty.
- (c) If, in the opinion of the Purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the Purchaser, provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months from the date of acceptance thereof.
- (d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- (e) The decision of the Purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defect has developed within the said period of 12 months or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor.
- (f) To fulfil guarantee conditions outlined in clause 4 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- (g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of the stores at Purchaser's site.
- (h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications then such a specification shall apply in such cases the period of 14 months referred to in para 4 (b) & (c) shall be the 'asked for' guarantee period plus two months.

#### **5. PACKING FORWARDING & INSURANCE:**

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

## **6. DESPATCH:**

The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on 'said to contain' basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

## **7. TEST CERTIFICATE:**

Wherever required, test certificates should be sent along with the despatch documents.

## **8. ACCEPTANCE OF STORES:**

- (a) The stores shall be tendered by the Contractor for inspection at such places as may be specified by the Purchaser at the Contractor's own risk, expense and cost.
- (b) It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the Purchaser, whose decision shall be final.
- (c) If, in the opinion of the Purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the Purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.
- (d) If the whole or any parts of the stores supplied are rejected in accordance with Clause No. 8 (c) above, the Purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

## **9. REJECTED STORES:**

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the Purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

## **10. DELIVERY:**

- (a) The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.
- (b) Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the Purchaser shall be entitled at his option either:
  - (i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or
  - (ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the

Purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the Purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor. In the event of action being taken under sub-clause (ii) & (iii) of clause 10 (b) above, the Contractor shall be liable for any loss which the Purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to repurchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re-purchase shall be at the discretion of the Purchaser, whose decision shall be final. It shall not be necessary for the Purchaser to serve a notice of such re-purchase on the defaulting Contractor. This right shall be without prejudice to the right of the Purchaser to recover damages for breach of Contract by the Contractor.

#### **11. EXTENSION OF TIME:**

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the Purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the Purchaser's right to recover liquidated damages under clause 10 thereof.

#### **12. ERECTION OF PLANT & MACHINERY:**

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the Purchaser, the Purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the Purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the Purchaser.

#### **13. PAYMENT:**

Contractor's bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

#### **14. MODE OF PAYMENT:**

Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

#### **15. RECOVERY OF SUM DUE:**

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the Purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the

case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the Purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the Purchaser on demand the remaining balance due. Similarly, if the Purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the Purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the Purchaser are finally adjudicated upon and paid by the Contractor.

#### **16. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the Purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfilment of the contract.

#### **17. ARBITRATION:**

In the event of any question, dispute or difference arising under these conditions or any conditions contained in the Purchase Order or in connection with this Contract (except as to any matter the decision of which is specially provided for by these conditions), the same shall be referred to the sole arbitration of the Head of the Purchase office or some other person appointed by him. It will be no objection that the arbitrator is a Government servant that he had to deal with matter to which the Contract relates or that in the course of his duties as Government servant he has expressed views on all or any other matters in dispute or difference. The award of the arbitrator shall be final and binding on the parties of this Contract.

If the arbitrator be the Head of the Centre/Unit –

- (i) In the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in-office either to proceed with reference himself, or to appoint another person as arbitrator, or
- (ii) In the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Centre/Unit to appoint another person as arbitrator. If the arbitrator be a person appointed by the Head of the Purchase Office – In the event of his dying, neglecting or refusing to act or resigning or being unable to act, for any reason, it shall be lawful for the Head of the Centre/Unit either to proceed with the reference himself or appoint another person as arbitrator in place of the outgoing arbitrator. Subject as aforesaid the Arbitration & Conciliation Act 1996 and the rules thereunder and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this Clause. The Arbitrator shall have the power to extend with the consent of the Purchaser and the Contractor the time for making and publishing the award. The venue of arbitration shall be the place as Purchaser in his absolute discretion may determine. Work under the Contract shall, if reasonably possible, continue during arbitration proceedings. In the event of any dispute or difference relating to the interpretation and application for the provisions of the Contracts, such dispute or difference shall be referred by either party to Arbitration of one of the Arbitrations in the



Department of Public Enterprises. The Arbitration Act 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute provided however any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs. Ministry of Law & Justice, Government of India. The parties to the dispute will share equally, the cost of arbitration as intimated by Arbitrator.

**18. COUNTER TERMS AND CONDITION OF SUPPLIERS:**

Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof is obtained.

**19. SECURITY FOR PURCHASE OF MATERIALS:**

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the Purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.

\*\*\*



## STANDARD TENDER FORM

(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

### TENDER FORM

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

(Seal)

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: publictender@sac.isro.gov.in

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराहन 3 बजे तक) Due on (Up to 3 pm)
4.	AHSE 201500339101	REFERENCE FLAT (Two Part Tender)	15/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

M/s

000000

**Our Ref No : AHSE 2015-003391-01**

**Tender Due: 15:00 Hrs ISTon 15/06/2016**

**Dear Sirs,**

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: As per enclosure. )

S.No.	Description of Items with Specifications	Unit	Quantity
1	FABRICATION AND SUPPLY OF HIGH QUALITY REFERENCE FLAT as per document No:Report No.SAC/SEDA/EOSG/OSD/22/2/2016/01	No.	1

**DELIVERY AT:** SAC-STORES, AHBD.

**MODE OF DESPATCH** BY AIR FRE

**DUTY EXEMPTIONS** We are exempted from payment of customs duty.

**SPECIAL INSTRUCTIONS** Mention validity, warranty, payment terms & delivery terms.

**SPECIFIC TERMS** As per enclosure.

**INSTRUCTIONS TO TENDERERS:**

Acceptance of Liquidated damages- As per enclosure

Acceptance of Performance Bank Gurantee-As per enclosure

-EMD(Earnest Money Deposit)- As per clause 3 attached Terms & Conditons

- "Quotations shall be submitted by the bidders only by post or by hand in sealed covers. Quotations received by FAX or e-mail shall not be considered as valid offers and will not be accepted for evaluation."

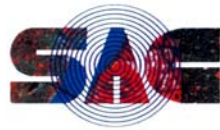
-Please note that this is a TWO-PART TENDER. Send your quotation as per attached instructions only. Quotation not conforming to the instructions will be rejected. Fax & email quotations will not be accepted.

-Technical & Commercial Compliance statement confirming compliance with all the point of Tech & Commercial annexures enclosed with the tender document shall be submitted along with the offer. In the absence of the same, your offer shall be summarily rejected

ANIL N VAIDYA  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser



**REQUEST FOR PROPOSAL FOR FABRICATION AND SUPPLY OF HIGH QUALITY  
REFERENCE FLAT**



**SPACE APPLICATION CENTRE  
INDIAN SPACE RESEARCH ORGANIZATION  
DEPARTMENT OF SPACE  
GOVERNMENT OF INDIA  
AHMEDABAD 380015**

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## SECTION I

### 1.1 Introduction

The Space Applications Center is interested in the procurement of one high quality reference flats (RF) with Tip/tilt mount for thermo-vacuum use. This reference flat is to be used as reference optical components in various interferometer test set ups for ground testing of flight components.

This document provides technical specifications of high quality reference flat along with its two-axis tip/tilt mount. Hence forward following definitions apply unless specified otherwise:

- Reference Flat (RF): Reference flat along with its holding mount.
- Mount: Tip/tilt Mount
- Reference Flat Assembly: Reference flat on the tip/tilt mount
- SAC: Space Applications Centre
- Nominal configuration of reference flat: Optical axis of reference flat is within  $\pm 0.5$  degrees of the horizontal axis

### 1.2 Scope

The scope of this contract includes:

- Design and fabrication of greater than 1000 mm clear aperture reference flat and its holding mount as per SAC's specifications.
- Design and fabrication of Tip/tilt mount for RF.
- Opto- mechanical design analysis of the optics in the mount.
- Design Analysis for gravity loads.
- Stress free mounting of reference flat on to the mount.
- Demonstration of performance of the reference flat assembly as mentioned in this contract.

### 1.3. Supplier's capability

The supplier should have expertise in designing, realization and testing of one meter class precision reference flats (surface figure  $\sim \lambda / 70$  RMS) with its mount for lab /thermo vacuum use. The supplier should have facility to carry out tests as per the specifications.

### 1.4 Supplier's Responsibility

The supplier shall be responsible for demonstrating the satisfactory performance at supplier's location as required by the applicable specifications and worldwide adopted standards. It is supplier's responsibility to submit a schedule of every stages of realization. It is also the supplier's responsibility to inform about the monthly developments and also at every milestone as identified in this contract.

### 1.5 APPLICABLE DOCUMENTS

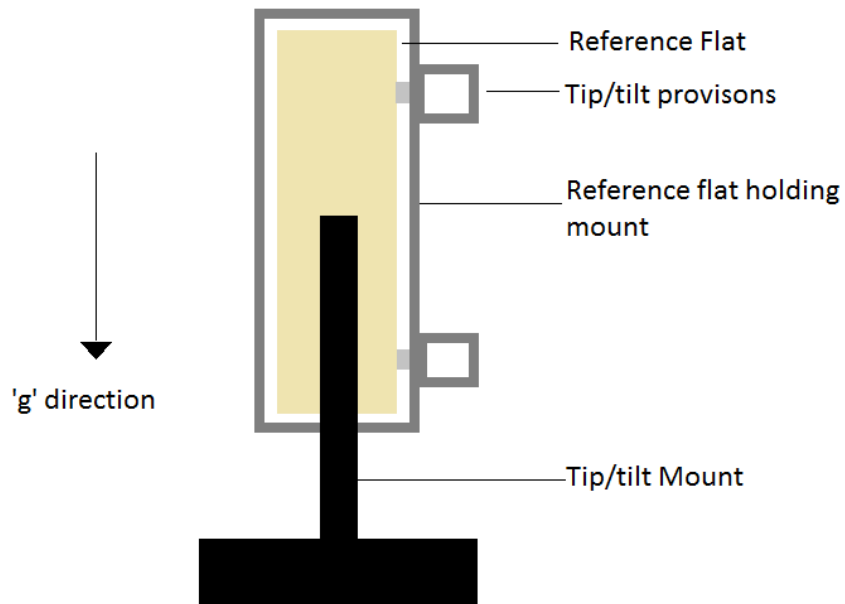
The latest version of the following documents (including but not limited to) form a part of the specifications.

S.I. No	Document No	Description
1.	MIL – 0-- 13830 A	General specifications covering the manufacture\assembly and inspection of ...

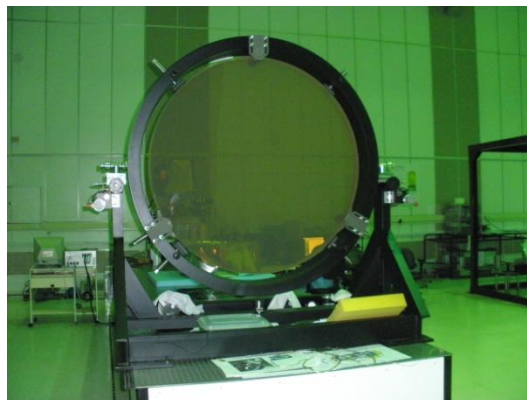
2.	MIL – 0 – 16898	Optical elements packaging
3.	MIL-PRF-13830_B	General specification governing the manufacturing, assembly, and inspection of Optical Components for.
4.	ISO 10110-8:2010 Optics and photonics	Preparation of drawings for optical elements and systems -- Part 8: Surface texture; roughness and waviness

## SECTION II

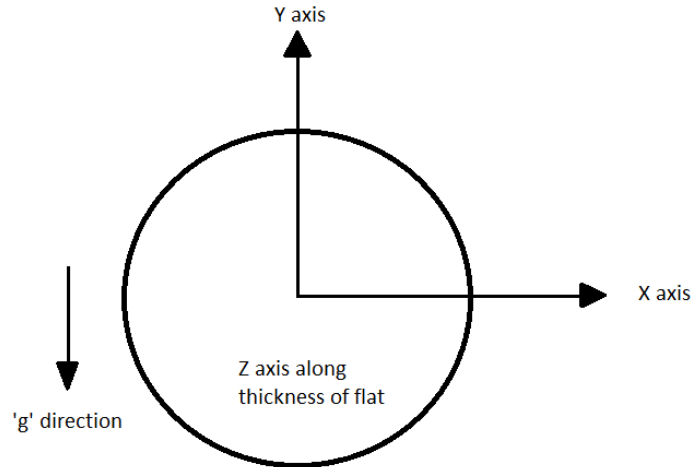
This section gives the specifications of the reference flat assembly. Figure 2.1 shows the schematic diagram showing reference flat in its holding mount placed on tip/tilt mount and Figure 2.2 shows the schematic diagram showing x, y and z axes.



**Figure 2.1 a: Schematic diagram showing reference flat in its holding mount placed on tip/tilt mount**



**Figure 2.1 b. typical photo of the reference flat (for illustration only)**



**Figure 2.2: Schematic diagram showing the x, y and z axes.**

### 2.1 Description of RF assembly

Reference flat will be used in various interferometer test set ups as a reference optical component. The RF with its holding mount shall be rested on a two-axis tip/tilt mount as shown in Figure 2.1. The optical axis of the RF shall be perpendicular to gravity direction as shown in Fig. 2.2.

### 2.2 Requirement Details on RF assembly

Optical specifications of reference flat assembly in the nominal condition (optical axis within +/- 0.5 degrees of horizontal) are given in Table 2.1. The specification compliance for performance of the reference flat assembly at nominal position and measurements at extreme tilt value of Tip/tilt shall be demonstrated at supplier's location and documented.

**Table 2.1: Optical specifications of the Reference Flat Assembly in the nominal condition**

S. No.	Parameter	Value	Comment
1.	Material of reference flat	Low thermal expansion material ( $CTE \leq 0 \pm 0.05E-6 /K$ )	Schott Zerodur™ or equivalent
2.	Shape	Circular	
3.	Physical diameter (mm)	1200.00	
4.	Clear aperture (mm)	$\geq 1000$	

5.	Thickness (mm)		Final value to be supplied by the fabricator	Optimized thickness to minimize gravity deflection and weight of the flat.
6.	Weight		To be specified by the supplier	
7.	Reference Flat assembly (at optical axis horizontal)	Surface figure Front face ( $\lambda = 633 \text{ nm}$ )	$\leq \lambda/70 \text{ RMS}$ $\leq \lambda/6 \text{ PV}$	Front and rear shall have identification mark
		Surface figure Rear face ( $\lambda = 633 \text{ nm}$ )	Optical finish (approx: finish with $2\lambda \text{ PV}$ )	
8.	Scratch & Dig	Front face	60/40	
		Rear face	80/60	
9.	Micro roughness (nm)	Front face	$\leq 1$	
		Rear face	$\leq 1$	
10.	Wedge Angle (degree ) between front and rear face of RF		0.1 (typical)	Wedge angle to be calculated and reported
11.	Chamfering (mm X degree)		Sharp edges of the mirror shall be chamfered to less than 5 mm X 45 degree	
12.	Minimum reflectance @ normal incidence angle		4% over full active area (uncoated)	
13.	Other requirements		The reference flat assembly shall meet the required performance as stated in Table 2.1 for a thermal environment of $22 \pm 5 \text{ }^\circ\text{C}$ . In addition to this, the system shall withstand a storage temperature range from $10^\circ \text{C}$ to $45^\circ\text{C}$ .	
Tip/Tilt mount				
14.	Resolution (arc seconds)		$\leq 10.0$ (Over entire range of $\pm 5.0^\circ$ )	
15.	Clear aperture		To be given by supplier	Compliant with reference flat

16.	Component diameter	To be given by supplier	Compliant with reference flat
17.	Travel Range (degrees)	$\pm 5^\circ$	About x and y axis as shown in Figure 2.2
18.	Tip/tilt mount to hold its position when power is switched off	Yes	
19.	Maximum load capacity (Kg)	Commensurate with the load of reference flat	To be specified by the supplier for an optimized design
20.	Mass without reference flat (Kg)	Commensurate with the load of reference flat	To be specified by the supplier for an optimized design
21.	Connectors and cable	Compatible connectors and cables (5 metres @ both ends) and feed through to VAC flange	
22.	Cable length in meter	5 + 1 / -0	
23.	Vacuum compatibility (Torr)	$10^{-5}$ or better	
24.	Material	Aluminium alloy	To be specified by the supplier for optimised design.
25.	Paint/surface treatment	Vacuum compatible non-specular black paint /suitable surface treatment should be used	
<b>Motion Controller</b>			
26.	Compatibility with tip/tilt mount	Yes	
27.	Home marker for reference	Yes	
28.	Power supply	230 VAC,50 Hz	
29.	Stand alone type rack mountable	Yes	
30.	Standard programmability	Yes	
31.	Remote interface for latest windows OS 7 or higher version through standard Ethernet , USB and other suitable interfaces	Yes	
32.	Front panel display	Yes	
33.	Axis jogging /control with joystick	Yes	

**Other mandatory requirements:**

1. Since this component forms the reference optical flat of an interferometer setup, its long term performance stability shall be ensured. The optical material used shall be free from internal stress as well as external stress at various stages of realization. This should be ensured by conducting polariscopic tests at each stage of fabrication.
2. Base of the tip/tilt mount shall have provision for locking with the platform or with the vibration isolation table. It should have free holes for M6 tap with a pitch in multiple of 50 mm at accessible locations (preferably at the four corner of the base).
3. The reference flat shall be held on a suitably designed stress free two-axis Tip/tilt mount. Handling provision (hooks) shall be provided at appropriate locations on Reference Flat and its assembly for handling with a crane.
4. Design of mount shall ensure the performance stability even after multiple handling of reference flat assembly. To protect the reference flat assembly from dust when not in use, the supplier shall provided transparent protective cover attached to the both sides of reference flat as well as a soft cover made of anti-static material to cover the reference flat assembly.
5. The effect of gravity on the flatness of the optical component in the nominal configuration (as mentioned in Table 2.1) and in tilted condition shall be analyzed and supplied to SAC in terms of wave front error by the supplier.

### SECTION III

This section gives the test conditions, test procedures, test matrix/test plan, inspection rights and documents to be supplied for fabrication and testing the reference flat assembly.

#### 3.1 Conditions and Methods of Tests

The design, predicted performance and test methods of RF assembly at various stages:

- Reference flat along with its holding mount.
- RF with its mount held on the tip/tilt mount

Test conditions shall be submitted to SAC and mutually agreed upon. The performance analysis due to the effect of various parameters namely, stress, gravity etc., shall be submitted individually as well as all parameters combined.

#### 3.2 Inspection Rights

SAC reserves the right to participate/monitor any of the tests envisaged in this contract. If any inspection is to be carried out at a place other than manufacturer's place, supplier shall make the appropriate arrangement for the participation of SAC nominee (s).

#### 3.3 Details of Test

The detailed test methods/procedures shall be suggested by the manufacturer to SAC and mutually agreed upon, in advance (at least 4 weeks before the start of test). The test methods/procedures shall include but not limited to the following.

- Description of test procedures, test facilities, environmental conditions, calibration, tolerance and operation details of test facilities and equipment along with their certificates.
- Test results at various identified major stages shall be communicated to SAC, for review and approval.

Test matrix is given below but not limited to:

**Table: 3.1 Test Matrix for acceptance, review and approval of SAC**

S.NO	PARAMETER	STAGE / LEVEL	REMARKS
1.	Material properties	Procurement	Data to be provided to SAC
2.	Clear aperture	After fabrication	Data to be provided
3.	Scratch / dig	After fabrication	Data to be provided
4.	Stress study	Before & After fabrication	Polariscope data
5.	Surface figure	Reference flat assembly	Interferogram to be provided
6.	Tip/tilt mount specifications and features verification	After assembly of Reference flat on tip/tilt mount	Data to be provided.

#### 3.4 Documentations to be supplied

- Material selection criteria details and properties.
- Material acceptance report in case of procurement from other source.
- Theoretical analysis results / reports for gravity effects.
- Mount design and analysis details.
- Performance evaluation of test set up and calibration details.
- Stress analysis details and results.
- Final results / reports.
- Interferogram of the reference flat surfaces before and after mounting.
- Handling details and instructions
- Packaging, transportation & insurance details and instructions.

## SECTION IV

This section gives the information required by SAC about design details, sensitivity analysis, test and evaluation plan and project plan to be followed by the supplier. The detail requirements are given in Para 4.1. This section also gives the list of deliverables, schedule, handling and transportation instructions and installation at SAC.

### 4.1 Required Information

1. Data / Design data pertaining to compliance to all the specifications and requirements.
2. Details of analysis and processes substantiating the ability to meet all the specifications and requirements.
3. Design sensitivity to fabrication and assembly tolerances.
4. Information on past experience for similar type of systems realized.
5. The required information shall also contain but not limited to the following information:
6. List of materials proposed to be used.
7. Thermal and mechanical design details.
8. Non-compliance, if any, of the specifications and alternatives.
9. Engineering drawings with dimensions and weight of the proposed design.
10. Product assurance plan detailing the aspects of
11. Fabrication and process control
12. Inspection and acceptance criteria to be followed
13. Non conformance control
14. Configuration control and traceability
15. Broad “test and evaluation plan” giving the test facilities and instruments proposed to be used during the acceptance tests.
16. Project plan envisaging all matters relating to the performance of all phases of the contract. The plan shall also include major milestone and identify all hardware and other deliverables specified in the contract.

### 4.2 List of Deliverables

S.I. No	Item	QTY
1.	Reference flat assembly (Reference flat + tip/tilt mount with required provisions)	01 (One)
2.	Motion Controllers with driver	01 (One)
3.	Transparent protective cover for the reference flat assembly quantity .One for each side.	02 (Two)
4.	Soft cover (anti-static) completely enclosing the reference flat assembly quantity	02 (Two)
5.	All documents and test reports.	01 lot

#### 4.3 Delivery Schedule and milestones

Serial No.	Milestone	Description	Time schedule
1	Preliminary design review	Design analysis as per Section IV, paragraph 4.1; Design data pertaining to compliance to all the specifications and requirements.	T0* + 2 months
2	Critical design review	Delivery of factory test results including material properties, clear aperture, scratch/dig, surface figure interferometry, stress study and Tip /tilt mount features verification per Section III, 3.1 and 3.2 and specification compliance of performance parameters. Test reports.	T0 + 14 months
3	Final shipment and installation	Delivery as per list of deliverables. Installation at SAC	T0 + 16 months

**\*T0 is date of finalization of contract**

The supplier shall draw up the schedule for design, procurement, manufacturing and performance tests to commensurate with the required delivery schedule.

#### 4.4 Packaging and Transportation

The complete assembly shall be packed in an appropriate container, in order to protect it from any degradation from the required specification due to various factors (namely shocks, humidity, vibrations, dust etc.) during storage, handling and transportation.

#### 4.5 Installation and Warranty

S.I No.	Parameter	Specification
1.	Installation	Assembly and installation of the Reference flat at SAC. Supplier to provide the minimum specification parameters that can be demonstrated at user's site.(mandatory)
2.	Warranty	One year from the date of installation at SAC .(mandatory)
3.	Software (update) for motorized stages.	One year from the date of installation.

## Annexure 1

### GUIDELINES FOR QUOTATION

1. The supplier should clearly mention the compliance/noncompliance (point by point compliance) to every section of the RFP. In case of the non-compliance to any section, the non-compliance should be explained clearly. Alterations if any shall be proposed and explained. Compliance to each section /parameter/specifications should be provided in tabular format.
2. The supplier should submit the write-up highlighting their expertise in the design and development of the similar equipment, the available facilities and the test details.
3. The technical and commercial quotations should be provided in separate sealed covers.

### Specification compliance matrix

**Table 1: Compliance table for Reference flat with motorised tip/tilt mount**

S. No.	Parameter		Value	Comment	Compliance/ non-compliance	Remark
1.	Material of reference flat		Low thermal expansion material ( $CTE \leq 0 \pm 0.05E-6 /K$ )	Schott Zerodur or equivalent		
2.	Shape		Circular			
3.	Physical diameter (mm)		1200.00			
4.	Clear aperture (mm)		$\geq 1000$			
5.	Thickness (mm)		(Final value to be supplied by fabricator)	Optimized thickness to minimize gravity deflection and weight of the flat.		
6.	Weight		To be specified by the supplier	Weight to be calculated using volume and density provided by the substrate supplier		
7.	Reference Flat assembly (at	Surface figure Front face ( $\lambda = 633 \text{ nm}$ )	$\leq \lambda/70 \text{ RMS}$ $\leq \lambda/6 \text{ PV}$	Front and rear shall have identification mark		

	optical axis horizontal)	Surface figure Rear face ( $\lambda$ = 633 nm)	Optical finish (approx: finish with $2\lambda$ PV)			
8.	Scratch & Dig	Front face	60/40			
		Rear face	80/60			
9.	Micro roughness (nm)	Front face	$\leq 1$			
		Rear face	$\leq 1$			
10.	Wedge Angle (degree ) between front and rear face of RF		0.1 (typical)	Wedge angle to be calculated and reported		
11.	Chamfering (mm X degree)		Sharp edges of the mirror shall be chamfered to less than 5 mm X 45 degree			
12.	Minimum reflectance @ normal incidence angle		4% over full active area (uncoated)			
13.	Other requirements		The reference flat assembly shall meet the required performance as stated in Table 2.1 for a thermal environment of $22 \pm 5$ °C. In addition to this, the system shall withstand a storage temperature range from 10° C to 45°C.			
Tip/Tilt mount						
14.	Resolution (arc seconds)		$\leq 10.0$ (Over entire range of $\pm 5.0$ )			
15.	Clear aperture		To be given by supplier	Compliant with reference flat		

16.	Component diameter	To be given by supplier	Compliant with reference flat		
17.	Travel Range (degrees)	$\pm 5^\circ$	About x and y axis as shown in Figure 2.2		
18.	Tip/tilt mount to hold its position when power is switched off	Yes			
19.	Maximum load capacity (Kg)	Commensurate with the load of reference flat	To be specified by the supplier for an optimized design		
20.	Mass without reference flat (Kg)	Commensurate with the load of reference flat	To be specified by the supplier for an optimized design		
21.	Connectors and cable	Compatible connectors and cables (5 metres @ both ends) for feed through to VAC flange / controller (both side of the flange )			
22.	Cable length in meter	$\geq 5$			
23.	Vacuum compatibility (Torr)	$10^{-5}$ or better			
24.	Material	Aluminium alloy	To be specified by the supplier for optimised design.		
25.	Paint/surface treatment	Vacuum compatible non-specular black paint /suitable surface treatment should be used			
<b>Motion Controller</b>					
26.	Compatibility with tip/tilt mount	Yes			
27.	Home marker for reference	Yes			
28.	Power supply	230 VAC,50 Hz			
29.	Stand alone type rack mountable	Yes			

30.	Standard programmability	Yes			
31.	Remote interface for latest windows OS 7 or higher version through standard Ethernet , USB and other suitable interfaces	Yes			
32.	Front panel display	Yes			
33.	Axis jogging /control with joystick	Yes			

**Table 2: Compliance table for other requirements**

S.I. No	Parameter	comment	Compliance- non-compliance	Remark
1.	Scope	Refer section 1.2		
2.	Supplier's Capability	Refer section 1.3		
3.	Suppliers Responsibility	Refer section 1.4		
4.	Applicable documents	Refer section 1.5		
5.	Other requirements as mentioned in section 2.2	Refer section 2.2		
6.	Conditions an methods of tests	Refer section 3.1		
7.	Inspection rights	Refer section 3.2		
8.	Details of tests	Refer section 3.3		
9.	Documents to be supplied	Refer section 3.4		
10.	Required information	Refer section 4.1		
11.	List of deliverable as mentioned in section 4.2	Refer section 4.2		
12.	Delivery schedule and milestones	Refer section 4.3		
13.	Packaging and transportation	Refer section 4.4		
14.	Installation and warranty	Refer section 4.5		

|

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II                : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II        :        PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with “Tender fee cover” (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG WITH  
THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

<b>Sr. No.</b>	<b>Commercial terms</b>	<b>Compliance/Remarks/Comments by Vendor</b>
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1 14.2	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number.	

14.3	Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	
14.4		
14.5	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.6	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.7	Please indicate rate of the Sales Tax/VAT applicable.	
14.8	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required. Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be	

	replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24.	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30. 30.1 30.2 30.2.1 30.3	<p>Bank Guarantees (from Nationalized/ Scheduled Bank/ Bank approved by Purchaser.</p> <p>Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.</p> <p>Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.</p> <p>The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.</p> <p>Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.</p>	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	

37.	<p>Acceptance of Fall clause.</p> <p>“The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase &amp; Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction” .</p>	
38.	<p>You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.</p>	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER**

1. The Tenderers should submit quotations in sealed envelope, superscribing the Tender No. and due date of opening and complete in all respects with technical specifications, including pamphlets and catalogues. Separate instructions, if any in this regard should be strictly complied with.
2. A Proforma Invoice may also be given which should contain the following information:
  - a) The FOB/FCA value, for import by Sea freight / Air freight up to Ahmedabad and for air parcel post up to Ahmedabad should be separately indicated.
  - b) Agency Commission: The amount of commission included in the price and payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an Invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. This payment will be released to the Indian Agent after receipt and acceptance the goods in India.
  - c) The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor's invoice should separately reflect the amount of commission payable to his Indian Agent.
  - d) The earliest delivery period and country of origin of the Stores.
  - e) Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor.
  - f) The approximate net and gross weight and dimensions of packages / cases.
  - g) Recommended spares for satisfactory operation for a minimum period of one year beyond warranty.
  - h) Details of any technical service, if required for erection, assembly, commissioning and demonstration.
3. "Bidders shall submit an amount of **₹ 5,00,000 (Rupees Five Lakh Only)** with the bid / before the date of tender opening as stipulated in tender schedule towards Earnest Money Deposit (EMD).

The EMD shall be submitted in the form of DD/Banker's cheque/Bank Guarantee/Fixed Deposit Receipt (FDR) made in the name of Accounts Officer, Space Applications Centre, and be payable at par at Ahmedabad.

Bids received without EMD shall be treated as invalid and shall not be considered. In case of two-part (multi-part) tenders, EMD must be submitted either in separate sealed cover clearly marked as 'EMD against tender no. \_\_\_\_\_' or with technical bid, so that it should be available at the time of opening of the first part of bid document itself. Tenders not complying with this requirement shall be rejected.



The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):

- Vendors already registered / empanelled with SAC as authorized vendors.
- Overseas bidders submitting offers directly without involving an Indian Representative.
- Central PSUs/PSEs and autonomous bodies
- Micro and Small Enterprises
- Khadi and Village Industries Commission
- National Small Industries Corporation
- Any other establishments specifically exempted from paying EMD by an order of the Government of India.

The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

EMD of successful tenderer may be retained and converted to Security Deposit, if applicable.”

4. The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country.
5. The offer should be valid for a minimum period of 120 days or longer if called for from the due date of opening of the tender.
6. Samples, if called for, should be sent free of all charges.
7. Late and delayed tenders will not be considered. Quotations by fax must be followed by detailed offers.
8. Offers made by Indian Agents on behalf of their Principals, should be supported by the Proforma invoice of their Principals.
  - a) In a tender either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
  - b) If an agent submits bid on behalf of the principal/OEM, the same agent shall not submit a bid on behalf of another principal/OEM in the same tender for the same item/product.
9. We are exempted from Customs/Excise Duties.
10. The details of Import Licence will be furnished in the Purchase Order.
11. The authority of person signing the tender, if called for, shall be produced.
12. Instructions / Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents / correspondence should be in English language only.
13. The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason.
14. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.
15.
  - a) Part shipment is not allowed unless specifically agreed to by us.
  - b) As far as possible stores should be despatched by Indian Flag Vessels / Air India through an Agency nominated by us.



16. Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractor.
17. Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility.
18. For items having shelf life, those with maximum shelf life should be supplied if order is placed.
19. No request for extension for due date for submission of tenders will be entertained.
20. Unsigned quotations will be rejected.
21. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.

## **TERMS AND CONDITIONS**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assignees.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's Successors, representatives, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by duly authorised officer intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores, plant, machinery or equipment or part thereof.
- (d) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.

### **2. PRICES:**

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations. However, such clauses will be subject to final acceptance by Purchaser.

### **3. TERMS OF PAYMENT:**

- 3.1 Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon.
- 3.2 The Sight Draft / Letter of Credit will be operative on presentation of the under mentioned documents:
  - a) Original Bill of Lading / Airway Bill



- b) Commercially certified invoices in triplicate, describing the stores delivered, quantity, unit rate and their total value. The invoice should indicate discounts, and Agency Commission if any separately.
- c) Packing List showing individual dimensions and weight of packages.
- d) Country of Origin Certificate in duplicate.
- e) Test Certificate.
- f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.
- g) Warrantee and guarantee Certificate/s vide Clause 20 herein below

#### **4. IMPORT LICENCE:**

Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide Para 3.2.

#### **5. DEMURRAGE:**

Supplier shall bear demurrage charges, if any, incurred by the Purchaser due to delayed presentation of shipping documents as prescribed in Para 3.2 to the bankers beyond a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

#### **6. ADDRESS OF INDIAN AGENT:**

.....

#### **7. GUARANTEED TIME OF DELIVERY:**

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

#### **8. INSPECTION AND ACCEPTANCE TESTS:**

- 8.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under the Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the Purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.
- 8.2 For tests on the premises of the Contractor or of any of his sub- Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.
- 8.3 When the stores have passed the specified test, the Purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the Purchaser as may be required.



**9. MODE OF DESPATCH:**

Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the Purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

**10. PORT OF ENTRY:**

FOR AIR SHIPMENTS: AHMEDABAD (Via Mumbai, if required)

FOR SEA SHIPMENTS: NHAVASHEVA/Mumbai Seaport

**11. CONSIGNEE:**

Sr. Purchase & Stores Officer,  
Central Stores,  
Space Applications Centre (SAC),  
Ahmedabad

**12. SHIPPING MARKS:**

The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow:

PURCHASE ORDER NO. ....

DATED .....

GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE

Destination: ..... &

Port of Entry: .....

**13. INSURANCE OF THE STORES:**

The necessity or otherwise of insurance will be as indicated in the Purchase Order.

**14. CONTRACTOR'S DEFAULT LIABILITY:**

14.1 The Purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

- a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.
- b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

15. In the event the Purchaser terminates the Contract in whole or in part as provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores.



15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

- a) Any completed stores.
- b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores delivered to and accepted by the Purchaser and for manufacturing material delivered and accepted.

15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the Purchaser for liquidated damages for delay as set out in Clause 19 until the stores are accepted.

#### **16. REPLACEMENT:**

If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the Purchaser agrees, the price towards replacement items shall be paid by the Purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.

#### **17. REJECTION:**

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the Purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may at his option either:

- a) Replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or
- b) Terminate the Contract for default as provided under Clause 14 above, or
- c) Acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice any other rights of Purchaser's under the Contract including recovery of liquidated damages for delay.

#### **18. EXTENSION OF TIME:**

If the completion of supply of stores is delayed due to reasons of *force majeure* such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the Purchaser in writing of his claim for an extension of time. The Purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.



#### **19. DELAY IN COMPLETION / LIQUIDATED DAMAGES:**

If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the Purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5%) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 %) of the Contract price of the portion of stores so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.

#### **20. GUARANTEE & REPLACEMENT:**

- a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance.
- b) For a period of twelve months (or such period as agreed upon by the parties) after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months (or such period as specified in Contract) from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty.
- c) If in the opinion of the Purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the Purchaser provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months (or such period as specified in Contract) from the date of acceptance thereof.
- d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- e) The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects has developed within the said period of 12 months (or such agreed period) or as to whether the nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor.
- f) To fulfill guarantee conditions outlined in Clause 20 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser - Bank Guarantee format enclosed) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at Purchaser's site.
- h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months.**



## **21 REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:**

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the Purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

## **22. PACKING:**

- a) The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space qualified stores. The Contractors shall be held responsible for all damages due to improper packing.
- b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.
- c) The Contractor shall notify the Purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.
- d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.
- e) Transshipment of equipment shall not be permitted except with the written permission of the Purchaser.
- f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the Purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:
  - a) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt.  
(Two non-negotiable copies)
  - b) Invoice (3 copies)
  - c) Packing List (3 copies)
  - d) Test Certificate (3 copies)
  - e) Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.

## **23. ARBITRATION:**

If at any time any question, dispute or difference whatsoever shall arise between the Purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by Purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India.



**24. LANGUAGE AND MEASURES:**

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

**25. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent, Registration of design or Trade Mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract.

**26. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:**

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the bidder, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.

**27. SECURITY INTEREST:**

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, Purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the Purchaser in accordance with the terms of the Contract. Such security interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

**28. BANK CHARGES:**

While the Purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising amendment commissions.

**29. TRAINING:**

The Contractor shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores. Number of such personnel to be mutually agreed upon.

**30. APPLICABLE LAW:**

The Contract shall be interpreted, construed and governed by the laws of India.



## **PACKING INSTRUCTIONS**

1. In tune with the requirement of international plant protection convention of the FAO, UN the following has become mandatory with immediate effect.
2. All packing materials of any kind of plant origin used for packing shall require treatment including hear-kiln treatment at 56 degree centigrade for a minimum of 30 hours of methylbromide fumigation at 48g/cum for 32 hours of chemical impregnation as per international standards.
3. If the consignments are sent without the aforesaid certificate, all demurrages and other charges for treatment etc. will be to the account of the suppliers.
4. This aspect also should be taken care of while submitting the offers.
5. If the packaging material being used for your product does not come under the category "material of plant origin" (i.e. Leaves, grass, wood etc.) Please certify the same in your quote and ignore the above instructions. However, the same should be ascertained at the time of actual shipment if the order is awarded to you.

.....



**STANDARD TENDER FORM**  
(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

**TENDER FORM**

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: publictender@sac.isro.gov.in

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराहन 3 बजे तक) Due on (Up to 3 pm)
5.	AHSE 201500338401	THZ SENSOR AND LASER SYSTEM (Two Part Tender)	15/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

M/s

000000

**Our Ref No : AHSE 2015-003384-01**

**Tender Due: 15:00 Hrs ISTon 15/06/2016**

**Dear Sirs,**

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: As per enclosure. )

S.No.	Description of Items with Specifications	Unit	Quantity
1	THz Sensor and Source System (FPA-Qty:02, Evalboard:01, lens:02, source with driver: 01 each, software)	No.	1

**DELIVERY AT:** SAC AHMEDABAD

**MODE OF DESPATCH** BY AIR FRE

**DUTY EXEMPTIONS** We are exempted from payment of customs duty.

**SPECIAL INSTRUCTIONS** Mention validity, warranty, payment terms & delivery terms.

**SPECIFIC TERMS** As per enclosure.

**INSTRUCTIONS TO TENDERERS:**

Acceptance of Liquidated damages- As per enclosure

Acceptance of Performance Bank Gurantee-As per enclosure

-EMD(Earnest Money Deposit)- As per clause 3 attached Terms & Conditons

- "Quotations shall be submitted by the bidders only by post or by hand in sealed covers. Quotations received by FAX or e-mail shall not be considered as valid offers and will not be accepted for evaluation."

-Please note that this is a TWO-PART TENDER. Send your quotation as per attached instructions only. Quotation not conforming to the instructions will be rejected. Fax & email quotations will not be accepted.

-Technical & Commercial Compliance statement confirming compliance with all the point of Tech & Commercial annexures enclosed with the tender document shall be submitted along with the offer. In the absence of the same, your offer shall be summarily rejected

- Special Instruction: Pre-bid conference with probable vendors is scheduled to be held on 01/06/2016(Wednesday) with user division at Bldg. No. 43 at SAC Ahmedabad. Probable vendors may confirm their participation on email address parulsingh@sac.isro.gov.in for pre-bid conference. Person attending the Pre-Bid meeting shall bring proper authorization letter and ID Proof.

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

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ANIL N VAIDYA  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

## THz sensor and source system

SAC is interested to procure a THz sensor system consisting of five different sub-systems: (1) Focal Plane array (FPA), (2) Sensor Evaluation Board, (3) Optics, (4) THz Source and drive unit and (5) Video data acquisition and processing software. Potential suppliers shall provide quotation for a THz source based active imaging system matching requirements at the sub-system and integrated system. The Software modules shall support complete operation of sensor system and image data visualization. Overall system and sub-system requirements are defined in the following table.

### System Requirements:

Sr. No.	Parameter	Requirements
1	Spectral range	100GHz to 3THz or more
2	FPA (Sub-system-1)	Microbolometer Array Pixels in Horizontal (H) Direction: 300 to 400 Pixels in vertical (V) Direction: 256 to 300 Pixel pitch range: 30 – 50 $\mu$ m
3	Sensor Evaluation board (Sub-system-2)	Generate stimuli for FPA (sub-system-1) operation and generate video data up to 40Hz Frame rate Output data digitization: 16-bits or higher
4	Optics (Sub-system-3)	Refractive Shall be compatible with FPA format (Sub-system-1) and spectral range
5	THz Source and Driver (Sub-system-4) Centre Frequency	280 $\pm$ 10GHz
	Typical Output Power	$\geq$ 3 mW
6	Software modules (Sub-system-5)	Imaging system Control Video Data acquisition Video data processing Visualization
7	FPA Noise Equivalent Power (NEP)	$\leq$ 250pW at source centre frequency
8	Response time	$\leq$ 25ms
9	Total power consumption	$\leq$ 100W
10	Operating condition	Supply: 230V, 50Hz Temperature range : 25 $\pm$ 5°C Humidity: 50 $\pm$ 10 RH Clean room class: 1000

**Sub-system requirements:**

<b>Sub-system-1</b>		
<b>Microbolometer FPA</b>		
Quantity required: 02		
One of the pieces shall be integrated with the imaging system and the other unit shall be packaged and supplied separately as a spare unit		
<b>Sr. No.</b>	<b>Parameters</b>	<b>Requirements</b>
1	Operation mode	Uncooled (ambient)
4	FPA Spectral Range	100GHz to 3THz or more The FPA sensitivity shall be optimized in the range $280 \pm 10\text{GHz}$ (commensurate with the source wavelength) As an option, vendor shall also propose to optimize FPA sensitivity at 230GHz
5	FPA operability (% good pixel)	More than 98%
6	Window	Package cavity shall be sealed with High resistivity Silicon window
7	Thermo Electric cooler (TEC)	Internal TEC is preferred for maintaining FPA temperature (the vendor shall provide details)
8	Information required along with hardware delivery	(a) Window Transmission curve as a function of frequency shall be provided (b) NEP data shall be provided for different frequencies covering the spectral range (c) Bad pixel definition and map shall be provided by the vendor (d) FPA interfaces necessary for development of electronics board at SAC

<b>Sub-system-2</b>		
<b>Sensor Evaluation board</b>		
Quantity required: 01		
<b>Sr. no.</b>	<b>Parameters</b>	<b>Requirements</b>
9	Clock, bias and control signals	As per requirements of Sub-system-1. This unit shall be fully compatible with FPA mentioned in Sub-system -1
10	Frequency of optimization	The board design shall be optimized for catering to FPA spectral range
11	Operation voltage	12V DC (supply line permitted tolerance and noise specifications shall be specified by the vendor)
12	Video Output Interface	GigE (preferred)
13	Mechanical support	Shall provide mechanical structure necessary to support FPA during characterization. The supplier shall provide dimensional details in the form of CAD drawing showing mounting interface requirements.

<b>Sub-system-3</b>		
Optics Quantity required: 02 One of the pieces shall be integrated with the imaging system and the other unit shall be packaged and supplied separately as a spare unit		
<b>Sr. no.</b>	<b>Parameter</b>	<b>Requirements</b>
14	Optics Type	Refractive
15	Focal Length range	40 – 50mm
16	F no. range	0.5 – 1.0
17	Lens material	HRFZ-Si
18	Object Distance	1m to infinity
19	Information required along with hardware delivery	(a) Transmission with respect to frequency (b) Surface figure (c) Mounting interface

<b>Sub-system-4</b>		
THz source with driver Quantity required: 01		
<b>Sr. no.</b>	<b>Parameter</b>	<b>Requirements</b>
20	Compatibility	Fully compatible for imaging with Sub-system-1
21	Type of source	Solid state
22	Output Antenna Type	Diagonal Horn (compatible with Subsystem-1 and shall be defined by the supplier)
23	Information required along with hardware delivery	(a) Beam profile (b) Beam divergence (c) FWHM

<b>Sub-system-5</b>		
Software requirements Quantity required: 01		
<b>Sr. no.</b>	<b>Parameter</b>	<b>Requirements</b>
24	Software	The supplier shall provide necessary Software modules for Programming, control, video data acquisition and visualization
25	Recording	Image and video
26	Visualization	Image display
27	Correction	Gain, offset, bad pixel (if any) replacement

1. Acceptance Criteria: Vendor shall provide a test report at the time of product delivery.
  - a. Report on characterization of NEP
  - b. THz source centre frequency and output power
2. Installation and training at SAC by the OEM
  - a. Product Installation
  - b. Training: two working days (after successful installation) on instrument operation and maintenance
  - c. Demonstration of Imaging capability
3. Point by point compliance matrix (defining committed specifications against each of the requirements). Vendor shall provide user manual and datasheets of individual subsystems reflecting compliance.
4. Vendor shall provide storage and handling guidelines for the offered products.
5. Proposed subsystems shall be fully compatible for operation in an integrated mode. Hence, partial offers would not be acceptable.
6. Authorization certificate from manufacturer / OEM
7. Warranty: one year
8. The supplier shall quote for necessary accessories for complete operation of the system

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II                : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II        :        PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with ‘Tender fee cover’ (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG WITH  
THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

<b>Sr. No.</b>	<b>Commercial terms</b>	<b>Compliance/Remarks/Comments by Vendor</b>
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1 14.2	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number.	

14.3	Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	
14.4		
14.5	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.6	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.7	Please indicate rate of the Sales Tax/VAT applicable.	
14.8	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required. Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be	

	replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24.	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30. 30.1 30.2 30.2.1 30.3	<p>Bank Guarantees (from Nationalized/ Scheduled Bank/ Bank approved by Purchaser.</p> <p>Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.</p> <p>Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.</p> <p>The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.</p> <p>Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.</p>	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	

37.	<p>Acceptance of Fall clause.</p> <p>“The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase &amp; Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction” .</p>	
38.	<p>You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.</p>	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER**

1. The Tenderers should submit quotations in sealed envelope, superscribing the Tender No. and due date of opening and complete in all respects with technical specifications, including pamphlets and catalogues. Separate instructions, if any in this regard should be strictly complied with.
2. A Proforma Invoice may also be given which should contain the following information:
  - a) The FOB/FCA value, for import by Sea freight / Air freight up to Ahmedabad and for air parcel post up to Ahmedabad should be separately indicated.
  - b) Agency Commission: The amount of commission included in the price and payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an Invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. This payment will be released to the Indian Agent after receipt and acceptance the goods in India.
  - c) The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor's invoice should separately reflect the amount of commission payable to his Indian Agent.
  - d) The earliest delivery period and country of origin of the Stores.
  - e) Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor.
  - f) The approximate net and gross weight and dimensions of packages / cases.
  - g) Recommended spares for satisfactory operation for a minimum period of one year beyond warranty.
  - h) Details of any technical service, if required for erection, assembly, commissioning and demonstration.
3. "Bidders shall submit an amount of **₹ 5,00,000 (Rupees Five Lakh Only)** with the bid / before the date of tender opening as stipulated in tender schedule towards Earnest Money Deposit (EMD).

The EMD shall be submitted in the form of DD/Banker's cheque/Bank Guarantee/Fixed Deposit Receipt (FDR) made in the name of Accounts Officer, Space Applications Centre, and be payable at par at Ahmedabad.

Bids received without EMD shall be treated as invalid and shall not be considered. In case of two-part (multi-part) tenders, EMD must be submitted either in separate sealed cover clearly marked as 'EMD against tender no. \_\_\_\_\_' or with technical bid, so that it should be available at the time of opening of the first part of bid document itself. Tenders not complying with this requirement shall be rejected.



The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):

- Vendors already registered / empanelled with SAC as authorized vendors.
- Overseas bidders submitting offers directly without involving an Indian Representative.
- Central PSUs/PSEs and autonomous bodies
- Micro and Small Enterprises
- Khadi and Village Industries Commission
- National Small Industries Corporation
- Any other establishments specifically exempted from paying EMD by an order of the Government of India.

The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

EMD of successful tenderer may be retained and converted to Security Deposit, if applicable.”

4. The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country.
5. The offer should be valid for a minimum period of 120 days or longer if called for from the due date of opening of the tender.
6. Samples, if called for, should be sent free of all charges.
7. Late and delayed tenders will not be considered. Quotations by fax must be followed by detailed offers.
8. Offers made by Indian Agents on behalf of their Principals, should be supported by the Proforma invoice of their Principals.
  - a) In a tender either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
  - b) If an agent submits bid on behalf of the principal/OEM, the same agent shall not submit a bid on behalf of another principal/OEM in the same tender for the same item/product.
9. We are exempted from Customs/Excise Duties.
10. The details of Import Licence will be furnished in the Purchase Order.
11. The authority of person signing the tender, if called for, shall be produced.
12. Instructions / Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents / correspondence should be in English language only.
13. The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason.
14. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.
15.
  - a) Part shipment is not allowed unless specifically agreed to by us.
  - b) As far as possible stores should be despatched by Indian Flag Vessels / Air India through an Agency nominated by us.



16. Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractor.
17. Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility.
18. For items having shelf life, those with maximum shelf life should be supplied if order is placed.
19. No request for extension for due date for submission of tenders will be entertained.
20. Unsigned quotations will be rejected.
21. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.

## **TERMS AND CONDITIONS**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assignees.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's Successors, representatives, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by duly authorised officer intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores, plant, machinery or equipment or part thereof.
- (d) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.

### **2. PRICES:**

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations. However, such clauses will be subject to final acceptance by Purchaser.

### **3. TERMS OF PAYMENT:**

- 3.1 Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon.
- 3.2 The Sight Draft / Letter of Credit will be operative on presentation of the under mentioned documents:
  - a) Original Bill of Lading / Airway Bill



- b) Commercially certified invoices in triplicate, describing the stores delivered, quantity, unit rate and their total value. The invoice should indicate discounts, and Agency Commission if any separately.
- c) Packing List showing individual dimensions and weight of packages.
- d) Country of Origin Certificate in duplicate.
- e) Test Certificate.
- f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.
- g) Warrantee and guarantee Certificate/s vide Clause 20 herein below

#### **4. IMPORT LICENCE:**

Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide Para 3.2.

#### **5. DEMURRAGE:**

Supplier shall bear demurrage charges, if any, incurred by the Purchaser due to delayed presentation of shipping documents as prescribed in Para 3.2 to the bankers beyond a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

#### **6. ADDRESS OF INDIAN AGENT:**

.....

#### **7. GUARANTEED TIME OF DELIVERY:**

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

#### **8. INSPECTION AND ACCEPTANCE TESTS:**

- 8.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under the Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the Purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.
- 8.2 For tests on the premises of the Contractor or of any of his sub- Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.
- 8.3 When the stores have passed the specified test, the Purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the Purchaser as may be required.



**9. MODE OF DESPATCH:**

Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the Purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

**10. PORT OF ENTRY:**

FOR AIR SHIPMENTS: AHMEDABAD (Via Mumbai, if required)

FOR SEA SHIPMENTS: NHAVASHEVA/Mumbai Seaport

**11. CONSIGNEE:**

Sr. Purchase & Stores Officer,  
Central Stores,  
Space Applications Centre (SAC),  
Ahmedabad

**12. SHIPPING MARKS:**

The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow:

PURCHASE ORDER NO. ....

DATED .....

GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE

Destination: ..... &

Port of Entry: .....

**13. INSURANCE OF THE STORES:**

The necessity or otherwise of insurance will be as indicated in the Purchase Order.

**14. CONTRACTOR'S DEFAULT LIABILITY:**

14.1 The Purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

- a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.
- b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

15. In the event the Purchaser terminates the Contract in whole or in part as provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores.



15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

a) Any completed stores.

b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores delivered to and accepted by the Purchaser and for manufacturing material delivered and accepted.

15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the Purchaser for liquidated damages for delay as set out in Clause 19 until the stores are accepted.

#### **16. REPLACEMENT:**

If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the Purchaser agrees, the price towards replacement items shall be paid by the Purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.

#### **17. REJECTION:**

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the Purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may at his option either:

a) Replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or

b) Terminate the Contract for default as provided under Clause 14 above, or

c) Acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice any other rights of Purchaser's under the Contract including recovery of liquidated damages for delay.

#### **18. EXTENSION OF TIME:**

If the completion of supply of stores is delayed due to reasons of *force majeure* such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the Purchaser in writing of his claim for an extension of time. The Purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.



#### **19. DELAY IN COMPLETION / LIQUIDATED DAMAGES:**

If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the Purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5%) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 %) of the Contract price of the portion of stores so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.

#### **20. GUARANTEE & REPLACEMENT:**

- a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance.
- b) For a period of twelve months (or such period as agreed upon by the parties) after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months (or such period as specified in Contract) from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty.
- c) If in the opinion of the Purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the Purchaser provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months (or such period as specified in Contract) from the date of acceptance thereof.
- d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- e) The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects has developed within the said period of 12 months (or such agreed period) or as to whether the nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor.
- f) To fulfill guarantee conditions outlined in Clause 20 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser - Bank Guarantee format enclosed) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at Purchaser's site.
- h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months.**



## **21 REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:**

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the Purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

## **22. PACKING:**

- a) The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space qualified stores. The Contractors shall be held responsible for all damages due to improper packing.
- b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.
- c) The Contractor shall notify the Purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.
- d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.
- e) Transshipment of equipment shall not be permitted except with the written permission of the Purchaser.
- f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the Purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:
  - a) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt.  
(Two non-negotiable copies)
  - b) Invoice (3 copies)
  - c) Packing List (3 copies)
  - d) Test Certificate (3 copies)
  - e) Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.

## **23. ARBITRATION:**

If at any time any question, dispute or difference whatsoever shall arise between the Purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by Purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India.



**24. LANGUAGE AND MEASURES:**

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

**25. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent, Registration of design or Trade Mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract.

**26. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:**

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the bidder, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.

**27. SECURITY INTEREST:**

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, Purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the Purchaser in accordance with the terms of the Contract. Such security interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

**28. BANK CHARGES:**

While the Purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising amendment commissions.

**29. TRAINING:**

The Contractor shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores. Number of such personnel to be mutually agreed upon.

**30. APPLICABLE LAW:**

The Contract shall be interpreted, construed and governed by the laws of India.



## **PACKING INSTRUCTIONS**

1. In tune with the requirement of international plant protection convention of the FAO, UN the following has become mandatory with immediate effect.
2. All packing materials of any kind of plant origin used for packing shall require treatment including hear-kiln treatment at 56 degree centigrade for a minimum of 30 hours of methylbromide fumigation at 48g/cum for 32 hours of chemical impregnation as per international standards.
3. If the consignments are sent without the aforesaid certificate, all demurrages and other charges for treatment etc. will be to the account of the suppliers.
4. This aspect also should be taken care of while submitting the offers.
5. If the packaging material being used for your product does not come under the category "material of plant origin" (i.e. Leaves, grass, wood etc.) Please certify the same in your quote and ignore the above instructions. However, the same should be ascertained at the time of actual shipment if the order is awarded to you.

.....



**STANDARD TENDER FORM**  
(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

**TENDER FORM**

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: [publictender@sac.isro.gov.in](mailto:publictender@sac.isro.gov.in)

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराहन 3 बजे तक) Due on (Up to 3 pm)
6.	AHMR 201500321501	COAXIAL DPDT SWITCHES FOR SPACE USE <b>(Two Part Tender)</b>	15/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

M/s

000000

**Our Ref No : AHMR 2015-003215-01**

**Tender Due: 15:00 Hrs ISTon 15/06/2016**

**Opening : 15:30 Hrs ISTon 15/06/2016**

**Dear Sirs,**

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: As per attached sheets)

S.No.	Description of Items with Specifications	Unit	Quantity
1	Coaxial DPDT Switches For Space Use - 1 Lot (5 FM Units + 1 LAT Unit), As Per Attached RFP	Lot	1

**DELIVERY AT:** SAC STORES A'BAD

**MODE OF DESPATCH** BY AIR FRE

**DUTY EXEMPTIONS** We are exempted from payment of Excise/ Customs duty.

**SPECIAL INSTRUCTIONS** NIL

**SPECIFIC TERMS** As per attached sheets.

**INSTRUCTIONS TO TENDERERS:**

- It is a Two Part Tender
- Please mention our Ref. no. AHMR201500321501 (DF/04) & tender due date in your quotation and on envelope.
- Please send your quotation in sealed cover only, Quotations by fax/ Email will not be entertained.
- Bidders shall submit (EMD) an amount of Rs. 210000 along with their offer if you are not registered vendors on our Panel/Central PSUs/PSEs & Autonomous bodies/MSE/Khadi & Village Industries Commission/NSIC.
- EMD shall be submitted in the form of DD/FDR made in the name of Accounts Officer, Space Applications centre & payable at par at Ahmedabad. Bids received without EMD shall be treated as invalid.
- Foreign vendors, registered vendors or vendors who have already applied for renewal of registration, Central PSUs/PSEs/Autonomous Bodies, MSE, KVIC, NSIC etc, shall be exempt from the payment of EMD.
- Your offer should be accompanied with DD, equivalent to Rs.545/- in favor of "Accounts officer, SAC, Ahmedabad" towards tender fees. Offers received without tender fee will be liable for rejection.

BALRAJ SINGH  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

### Specifications For Coaxial DPDT Switches For Space Use

S. No.	Specifications	
1	Frequency Range	DC to 18 GHz
2	Contact Arrangement	DPDT
3	Command 1	Port 1 To Port 4 and Port 2 to Port 3
4	Command 2	Port 1 To Port 2 and Port 3 to Port 4
5	Insertion Loss	$\leq 0.5$ dB
6	Return Loss	$> 20$ dB
7	Power Handling	10 W
8	Isolation	$\geq 60$ dB
9	Input/Output Impedance	50 ohms
10	Life	1,00,000 operations minimum
11	Coil Energization	24 - 43 V DC
12	Coil Current	$< 200$ mA @ 43 V (Preferred Value)
13	Pulse Duration	$\leq 200$ ms
14	Maximum Pulse Duration	To Be Defined By The Manufacturer/Vendor
15	Switching Time	$\leq 100$ ms
16	RF Contacts	Break Before Make
17	Contact Finishing	Gold Plating
18	Command Lines	Two separate command lines and separate return lines isolated from ground
19	Telemetry Indicator Circuit	TTL / CMOS compatible interface circuit for Telemetry readout
20	Environmental Specifications	As Per QA Annexure
21	All The Specifications	To Be Met Over Full Frequency Range
22	RF Connectors	SMA Female on all ports
23	DC Connector	Standard Density D – Sub connector
24	Venting	Venting Hole/s to be provided
25	Preferred Dimensions in mm	70 (Length) x 70 (Width) x 40 (Height)
26	Weight	150 gm max.
27	Format for ICD	Preferably in IGES format
28	End Item Data Package	Complete test data including LAT to be provided to SAC
29	Quantity Slabs	1 - 5 Nos. + 1 LAT Sample 6 - 10 Nos. + 1 LAT Sample 11 - 15 Nos. + 1 LAT Sample

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## RELIABILITY AND QUALITY ASSURANCE (R & QA)

### INTRODUCTION

Reliability and quality are important prerequisites of any Space programme hardware. It is therefore very essential for the vendor to understand and implement the R & QA requirements judiciously. This section provides the details on R & QA requirements, which shall be assured for this programme.

## 1 RELIABILITY

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### 1.1 LIFE

- a) The UNITS shall meet all the design requirements for use onboard spacecraft as per specified environmental conditions with a minimum life of **7 years**.
- b) Additionally, the UNITS shall be capable of meeting all the functional requirements at various stages of storage and spacecraft assembly as follows:
  - **5 years** in controlled environmental conditions. The vendor shall specify the exact method of storage and retest criteria in case of longer storage.
  - **3 years** storage and life at various levels of spacecraft assembly

### 1.2 RELIABILITY ANALYSIS

Manufacturer shall provide complete reliability analysis in terms of reliability estimation with stress (derating) analysis. The UNITS shall be designed and fabricated to achieve a failure rate of **better than  $0.06 \times 10^{-6}$  per Hour**. Vendor shall specify the methodology used in arriving at the failure rate of the units.

## 2 ENVIRONMENTAL CONDITIONS

---

### 2.1 NON-OPERATING ENVIRONMENT

The units shall be capable to withstand the following environmental conditions:

- a) TEMPERATURE : -40°C to +85 °C  
RANGE
- b) PRESSURE : Ambient to 10<sup>-10</sup> torr (except critical pressure)
- c) RELATIVE : Up to 95% without condensation of water at  
HUMIDITY +40°C

### 2.2 OPERATING ENVIRONMENT

- a) Temperature Range:
  - i) Screening : -20 °C to +80 °C
  - ii) Lot Acceptance : -25°C to +85 °C
  - iii) Cold Turn On : -40 °C
- b) Pressure : Ambient to 10<sup>-10</sup> torr (except critical pressure)
- c) Relative Humidity : Up to 95% without condensation of water at 40°C

The temperature(s) specified are base plate temperature(s). Temperature rise due to self-heating of unit during operating conditions with full power under thermo-vacuum conditions at this base plate temperature shall be specified by vendor and unit shall be designed to operate in these conditions for 7 years on-board communication satellite.

## 2.3 VIBRATION/SHOCK

The unit shall be designed and fabricated to meet the vibration (Sine and Random) and mechanical shock requirements as per the tests mentioned in this annexure.

## 2.4 EMI/EMC SHIELDING

The unit shall be designed for both magnetic and EMI shielding to meet the requirements specified herein.

# 3 PARTS AND MATERIALS

---

Parts and materials proposed to be used in Units shall be selected from qualified parts and materials list and through a qualified sub-vendor normally associated with long life communication satellite hardware. Necessary certification showing compliance with this requirement shall be supplied along with the units.

## 3.1 PARTS

For flight model switches, parts complying with following quality level requirements shall be used:

- Discrete semiconductors                      - JAN-S/ESCC level B3
- Passive Parts                                      - ER type with failure level "S" /  
ESCC level B3

In case JAN-S parts are not available, then next lower grade devices, i.e. JAN TXV, with up-screening may be used. DPA and Verification of Quality (VOQ) shall be performed along with appropriate up-screening, in the case electronic parts quality levels being lower than the requirements.

The epoxy for coating and adhesion shall not degrade / soften with use of isopropyl alcohol (electronic grade), normally used for cleaning. The electronic parts used should not be of date code older than 5 years, at the time of UNIT manufacturing.

Further, all parts used shall have sufficient space history and shall be inspected before assembly of the units. Nonstandard parts, wherever used, shall also have sufficient space flight history and the quality level equivalent to the above mentioned parts. DPA and Verification of Quality (VOQ) wherever applicable shall be carried out by the manufacturer to gain sufficient confidence in the parts used in the Flight units.

### 3.2 MATERIALS

Ferrous and non-ferrous materials used shall be corrosion resistance type or suitably treated to resist corrosion caused by atmospheric conditions existent in storage or normal operational conditions. Non-magnetic materials shall be used for all parts except where magnetic materials are essential. Materials which are nutrient for fungus shall not be used.

Organic and inorganic materials shall be stable under atmospheric and high vacuum conditions. These materials shall have Total Mass Loss (TML) less than 1% and Collected Volatile Condensable Material (CVCM) of less than 0.1% when subjected to test condition of 125 degC and 10E-6 torr pressure for 24 hours as per ASTM-E-595. Only space qualified epoxies, potting materials, etc. shall be used within their shelf life and cure schedule specified by the manufacturer. However, their use shall be restricted and failures due to these shall be recorded and analysed as and when they are detected.

The selection and use of dissimilar materials shall be avoided, where it is impractical to avoid dissimilar metals in direct contact with each other, suitable protection shall be provided by space proven coating-plating etc.

## 4 PROCESSES

---

The unit shall be built to the standards normally associated with long life communications satellite hardware. Particular attention shall be paid, as a minimum, in respect to the following:

- Neat clean, smooth and fully wetted homogeneous solder joints
- Eliminate bubble entrapment in coatings/epoxies where ever used
- All components including torroidal/bead inductors/ coils shall be suitably supported on PCB by suitable potting compound
- Wherever wires are attached to casing for grounding etc., a higher melting point solder than that used for lid (cover) soldering, shall be used
- The input/output connections on pins from the PCB etc. shall also be made with high melting point solder to avoid detachment of these connections while soldering the pins to external system using SN 63 solder
- The marking and plating etc. shall be permanent and should not get damaged during normal cleaning process using Isopropyl Alcohol/Freon and other cleaning solvents approved for the fabrication of electronic hardware for space.

Further, a list of recommended solvents may be provided to SAC.

All tolerances not specified shall be consistent with the best engineering practices. Units shall be uniform in quality and free from blemishes and defects.

## 5 MARKING AND IDENTIFICATION

---

The unit shall be identified by assigning unique serial number on the exterior surface by a suitable process applicable for space use. Marking shall not degrade the performance of the unit. In addition to functional markings like input/output, frequency etc. following marking shall appear on each unit:

- Part name
- Part Number
- Specification No. / Contract No.
- Serial Number
- Name of the Manufacturer
- Date of Manufacture (Date Code)
- Port marking (Input/output marking)
- LAT unit (Applicable to Lot Acceptance Test unit only)

Suggested part No. for these devices are:

**RFSW SMA DPDT DC-18 GHz 10W RFP**

The permanency of the marking shall be sufficient to withstand the specified environmental conditions and normal cleaning operations using Isopropyl alcohol and other cleaning solvents. The test method to demonstrate the same shall be specified by the vendor.

## **6 TRANSPORTATION**

Suitable packing shall be provided for the transportation of the units by air, ship or road without any degradation/damage. The transportation package shall protect the unit from rough handling. Wherever required, the transportation container shall have nitrogen-purging facility so that the unit before shipment is purged with dry nitrogen to prevent contamination and corrosion.

Each unit shall be packaged in individual ESD protective packaging. This package shall protect the unit from environmental conditions encountered during transportation, like heat, humidity & dust. Connectors shall be suitably protected to prevent contamination entering the connector contacts during handling and transportation. The unit shall be packaged in separate containers to protect against electrical, mechanical and environmental damage. Each individual container shall have a moisture absorbing material inside.

Devices subjected to Lot Acceptance Test shall be clearly marked as **"LAT unit"** and **"NOT FOR FM"**.

This individual container shall then be placed in a transportation container. More than one individual unit may be placed in the transportation container. The transportation container shall protect the units from heat, humidity, dust, mechanical shock & vibrations during transportation.

The individual unit package shall be fixed within the shipping package in such a way that they will be resistant to mechanical shock, humidity and dust. The shipping package shall contain all the necessary technical documents as specified and the necessary commercial documents.

In addition to other mandatory shipping markings, the following additional marking shall appear on the shipping packages in bold letters:

**"Handle with Care / HIGH-RELIABILITY COMPONENTS"**

**"To be opened under clean environment with ESD protection only"**

**"Store in a cool and dry place"**

## **7 TEST PROGRAMME**

The RF switch design shall be a qualified design, i.e. switches having similar electrical, mechanical and thermal design are qualified for HI-REL space use. The qualified design shall have similar operating frequency and power levels. Vendor should supply Qualification report clearly detailing the operating frequency, power level and environmental specifications in terms of operating & non-operating temperature range, vibration and shock test conditions, thermo-vacuum performance etc. **ALONG WITH THE TECHNICAL OFFER.** Vendor should supply specific space flight history **OF THE OFFERED DESIGN** with name of programme, operating frequency and power level.

Offers for designs not qualified for space or designs under qualification at the time of submission of technical quote and/or designs with no space heritage will not be considered.

Vendor shall give specific attention while determining compliance to requirements of "TEST PROGRAMME" and shall supply sufficient technical details **ALONG WITH QUOTE/TECHNICAL OFFER** so that qualification by similarity for the current requirement could be appropriately assessed.

After thorough assessment of the qualified design with space heritage from the vendor, the programme will be executed as FM + LAT.

## **7.1 LOT FORMATION**

The term Lot is defined to be consisting of each type of units manufactured together from the same batch of raw materials on the same production and assembly line, having all the provisions for quality assurance. The unit shall satisfy all design, performance and environmental requirements of the specifications.

All the units fabricated in a single Lot shall undergo Screening (FM) Test as per table-1. Maximum 5% failures are allowed during screening. After completion of screening, 5% of the screened units (minimum one unit of each type) shall be subjected to LAT level test as per Table-1. No failure/ deviation shall be allowed for LAT unit. LAT shall be selected from each fabricated lot, with sample selection as defined in this section.

## **7.2 FINAL PRODUCTION TEST**

The Final Production Tests are part of tests carried out by the vendor before the units are finally ready for Acceptance (Screening) tests. It shall include:

- Pre cap visual inspection and Physical dimension measurements
- 1000 Actuations

The vendor shall specify and provide the details of Final Production Tests and assembly sequence **ALONG WITH THE TECHNICAL OFFER.**

### 7.3 SCREENING AND LOT ACCEPTANCE TEST (LAT)

All the units shall undergo SUCCESSFUL Screening and Lot Acceptance Test (LAT) specified in flow chart before they are acceptable to SAC (Figure - 1).

The manufacturer shall submit the test plan for the functional and environmental tests to be conducted on the units during the Screening (ATP) and LAT (QTP) test programme for approval by SAC, before beginning of tests. The test plan shall include, but not limited to, the tests and specification **IN THE SEQUENCE** indicated in the Table-1. The test plan shall also include the procedure for conducting each test, the test equipment used and their calibration, total uncertainty for each test set-up, parameter tolerance/limits for the unit under test and accept/reject criteria for each test. Proposed sensor locations, for each applicable test, shall be detailed in the test procedure documents. Suitable buffer connections shall be provided during testing. **Sample test data log format** shall be supplied **ALONG WITH THE TECHNICAL OFFER** for each test described in Table-1.

The test data shall be logged in electronic form compatible with electronic spreadsheet processing tools. All ATE/data collection and processing databases/algorithms shall be thoroughly evaluated and a compliance report from an independent software quality assurance entity shall **ACCOMPANY THE TECHNICAL QUOTE**.

Only after submission of the test procedures including test data log format (screening and LAT) by vendor and subsequent approval by SAC, testing shall commence. **Units tested through unapproved test procedures are not acceptable. Refer PARA 9 "LIST OF DOCUMENTS"**.

**TABLE-1: TEST MATRIX FOR SCREENING AND LAT**

Sr. No.	TEST	SCREENING	LAT
1.	VISUAL INSPECTION	X	X
2.	PHYSICAL MEASUREMENTS	X	X
3.	INITIAL PERFORMANCE	X	X
4.	THERMAL SHOCK	X	X
5.	TEMPERATURE STORAGE	X	X
6.	TEMPERATURE OPERATIONAL	X	X
7.	VIBRATION		
	- Sine	-	X
	- Random	X	X
8.	MECHANICAL/PYRO SHOCK*	-	X
9.	THERMO-VACUUM	-	X
10.	ACTUATION LIFE TEST IN VACUUM	-	X
11.	EMI / EMC TEST	-	X
12.	HUMIDITY STORAGE TEST	-	X
13.	FINAL PERFORMANCE TEST	X	X
14.	RESISTANCE TO SOLVENT TEST	-	X

"X" Mark against the test denotes applicability of test. Test details and conditions are as described in this document.

\* Applicability of mechanical shock test shall be decided based on heritage test levels of the quoted design.

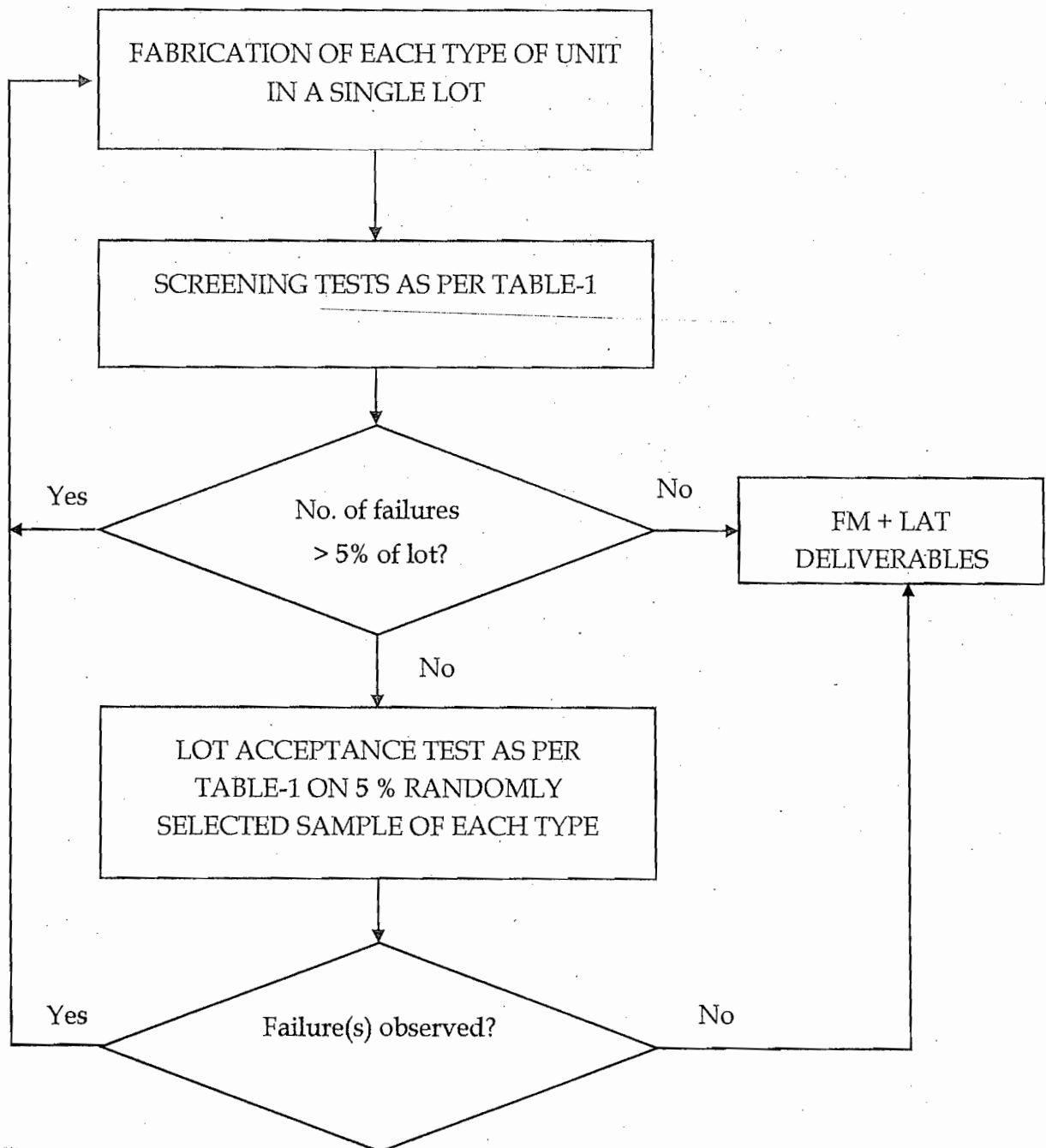
### 7.3.1 SCREENING

All the units of the Lot shall undergo Screening Test as per table-1. Units exceeding the specified limits shall be removed from the lot.

### 7.3.2 LOT ACCEPTANCE TESTING

On successful completion of Screening Test, the Lot Acceptance Test (LAT) shall be carried out on 5% (minimum one) samples, randomly selected from screened lot of each type, as per Table-1.

**FIGURE 1: FLOW CHART FOR SCREENING AND LOT ACCEPTANCE PROGRAMME**



## 7.4 TEST MATRIX FOR SCREENING TEST PERFORMANCE

PERFORMANCE MEASUREMENTS	TESTS	Visual Inspection	Insertion Loss	VSWR	Isolation	Switching time	Threshold Voltage	Contact Resistance (TLM)	Coil Resistance	Transient Suppression	Insulation Resistance	Dielectric Withstanding Voltage	Switch Position	Switching time and coil current at extreme voltages (FOR REFERENCE ONLY)
Initial Performance		X	X	X	X	X	X	X	X	X	X	X	X	X
Post Thermal Shock		X	X	X	X	X	X	X	X	-	-	-	X	X
Post Temp. Storage (Cold)		X	X	X	X	X	X	X	-	-	-	-	X	X
Post Temp. Storage (Hot)		X	X	X	X	X	X	X	-	-	-	-	X	X
Temperature Operational (Cold)		-	-	-	X	X	X	X	-	-	-	-	X	X
Temperature Operational (Hot)		-	-	-	X	X	X	X	-	-	-	-	X	X
Post Vibration/ Final Performance		X	X	X	X	X	X	X	X	X	X	X	X	X

"X" Mark against the test denotes applicability of test. Test details and conditions are as described in this document.

## 7.5 TEST MATRIX FOR LAT PERFORMANCE

TESTS	PERFORMANCE MEASUREMENTS	Visual Inspection	Insertion Loss	VSWR	Isolation	Switching time	Threshold Voltage	Contact Resistance (TLM)	Coil Resistance	Variation over Temperature	Transient Suppression	Insulation Resistance	Dielectric Withstanding Voltage	Switch Position	EMI/EMC per MIL461E	RF Path Monitoring	Switching time and coil current at extreme voltages (FOR REFERENCE ONLY)
Initial Performance		X	X	X	X	X	X	X	X	-	X	X	X	X	-	-	X
Post Thermal Shock		X	X	X	X	X	X	X	X	-	-	-	-	X	-	-	X
Post Temp. Storage (Cold)		X	X	X	X	X	X	X	-	-	-	-	-	X	-	-	X
Post Temp. Storage (Hot)		X	X	X	X	X	X	X	-	-	-	-	-	X	-	-	X
Temp. Operational		-	-	-	X	X	X	X	X	X	-	-	-	X	-	-	-
Post Vibration		X	X	X	X	X	X	X	X	-	-	-	-	X	-	-	X
Thermo-vacuum		-	-	-	X	X	X	X	X	X	-	-	-	X	-	-	-
EMI/ EMC		-	-	-	X	-	-	-	-	-	-	-	-	-	X	-	-
Post Pyro Shock		X	X	X	X	X	X	X	X	-	-	-	-	X	-	-	X
Actuation Life (Vacuum)		-	X	-	X	X	X	X	X	-	-	-	-	X	-	X	-
Humidity Stor. Test		X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Final Performance		X	X	X	X	X	X	X	X	-	X	X	X	X	-	-	X
Post Resistance to Solvent test		X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

"X" Mark against the test denotes applicability of test. Test details and conditions are as described in this document.

## 7.6 ENVIRONMENTAL CONTROL REQUIREMENTS

Maximum allowed tolerances on test conditions are as given below:

Temperature :  $\pm 3^{\circ}\text{C}$

### Atmospheric Pressure

Greater than 0.1 torr :  $\pm 5\%$

Less than 0.1 torr :  $\pm 50\%$

Relative Humidity :  $+0\%, -5\%$

Acceleration :  $\pm 10\%$

### Vibration

Frequency :  $\pm 2\%$  above 20 Hz, 0.5 Hz below 20 Hz

Sinusoidal Amplitude :  $\pm 10\%$

Random (g-rms) :  $\pm 10\%$

### Power Spectral Density

20-300 Hz :  $\pm 1.5\text{ dB}$

300-2000 Hz :  $\pm 3.0\text{ dB}$

## 7.7 FAILURE CRITERIA

The details of the unit fall-out during Screening or LAT shall be informed to SAC. Maximum of 5% failure are allowed during screening. No failure is allowed during LAT. Number of failures more than 5% of lot during screening and any failure during

LAT shall be a cause for lot rejection. However, depending on the type of failure and failure mechanism established based on the failure analysis, usability of the Lot will be reviewed. Failure at any stage shall be reported to SAC immediately. This shall be followed by detailed failure analysis. Based on failure analysis, SAC shall decide for the acceptance of lot, the requirement of corrective actions and retest plan, which shall be decided by SAC and implemented by vendor.

Any deviations/non-conformances encountered during screening/LAT shall be duly recorded and shall be reported to SAC, not later than pre-shipment data submission stage.

## **8 TEST DETAILS**

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### **8.1 VISUAL INSPECTION**

Visual inspection shall be carried out at 10X (min) magnification. Devices shall be inspected for defects related to material, finish, surface, workmanship. The visual inspection criteria should necessarily include the inspection of SMA connectors, D-sub/micro D connectors, required port markings, any bend pins or contacts, damages, if any etc. Further details shall be specified by the vendor with detailed accept/reject criteria.

### **8.2 PHYSICAL MEASUREMENT**

Mechanical dimensions of the unit with respect to the ICD shall be measured. ICD shall specify the surface finish also, and the same shall be verified on sample basis. Interface dimensions of the connectors shall be measured and shall meet the requirements of MIL-STD-348. Test details to be specified by the manufacturer.

### **8.3 INITIAL PERFORMANCE TEST**

Full RF characterization shall be carried out as per electrical specifications for all applicable paths, as per TEST PROCEDURE approved by SAC.

## 8.4 THERMAL SHOCK

The test shall be carried out as per MIL-STD-202, Method 107, Condition 'A', with temperature ranges as described in ENVIRONMENTAL SPECIFICATIONS. The number of cycles shall be as given below. Test shall be conducted with cold cycle first.

Screening : 10 cycles

Lot Acceptance : 25 cycles

## 8.5 TEMPERATURE STORAGE

High and Low temperature storage test shall be performed as per the sequence given below:

**Step-1:** Stabilize at ambient and perform Functional Test as per APPROVED TEST PROCEDURE.

**Step-2:** Store all units at LOWEST NON OPERATING TEMPERATURE for 6 hours.

**Step-3:** At the end of 6 hrs, stabilize the units at ambient and perform functional Test as per APPROVED TEST PROCEDURE

**Step-4:** Store all units at HIGHEST NON OPERATING TEMPERATURE for 6 hours.

**Step-5:** At the end of 6 hours stabilize the units at ambient and perform functional Test as per APPROVED TEST PROCEDURE.

At the end of the above, a VISUAL INSPECTION shall be carried out to verify any possible physical degradation of materials and processes deterioration after the exposure to the high and low temperature conditions.

## 8.6 TEMPERATURE OPERATIONAL TEST

The temperature operational tests shall be performed both during the Screening and Lot Acceptance testing programs by verifying the electrical performances at the specified High and Low operating temperature limits specified for FM and LAT in ENVIRONMENTAL CONDITIONS.

The units shall be placed in a suitable thermal chamber, and connected with the external test set-up through an interconnecting plate carrying suitable connectors. The test shall be conducted according to the following sequence and conditions:

- Step-1: Decrease the chamber temperature down to the above-specified MINIMUM-OPERATING LIMIT and maintain the stabilized condition
- Step-2: While in the above conditions perform a functional verification as per APPROVED TEST PROCEDURE
- Step-3: Increase the chamber temperature up to the above-specified MAXIMUM-OPERATING LIMIT and maintain the stabilized condition
- Step-4: While in the above conditions perform a functional verification as per APPROVED TEST PROCEDURE
- Step-5: At the end, decrease the chamber temperature at ambient conditions and after stabilization, perform a functional verification as per APPROVED TEST PROCEDURE

At the end of the above, a VISUAL INSPECTION shall be carried out to verify any possible physical degradation of materials and processes deterioration after the exposure to the high and low temperature conditions.

## 8.7 VIBRATION

The units shall be subjected to vibration test as specified below. The natural resonant frequency of the units shall be higher than 100 Hz. Low level sine (LLS) resonance search shall be carried out before and after each vibration test for all units tested. The resonance frequencies of the units and corresponding amplitudes shall be logged at all stages and form part of data package. The shift in resonance frequency before and after each vibration test shall not exceed 10%. Vendor to include detailed accept/reject criteria in test procedure document.

### 8.7.1 SINE VIBRATION

Sine Vibration test shall be carried out as per MIL-STD-202, Method 204, condition 'E', except the following:

10 to 2000 Hz, 30 g peak.

Sweep Rate: 2 Octaves / min.

No. of sweeps: 4 per axis

### 8.7.2 RANDOM VIBRATION

The test shall be carried out as per MIL-STD-202, Method 214, following conditions shall apply:

Frequency (Hz)	Screening	LAT
20-50	+ 6 dB/Octave	+ 6 dB/Octave
50-1200	0.20 g <sup>2</sup> /Hz	0.45 g <sup>2</sup> /Hz
1200-2000	- 6 dB/Octave	- 6 dB/Octave
Overall Level	18.2 g rms	27.2 g rms
Duration	1 minute/axis	2 minute/axis

### 8.8 MECHANICAL/PYRO SHOCK TEST

The UNIT design shall be capable to withstand the mechanical/pyro shock test conditions given below. Requirement of the compliance demonstration is by analysis and/or test data and shall be decided at the time of order placement based on available technical details. Shock test level during qualification shall be equal or higher than the following levels. The levels are specified for Q=10.

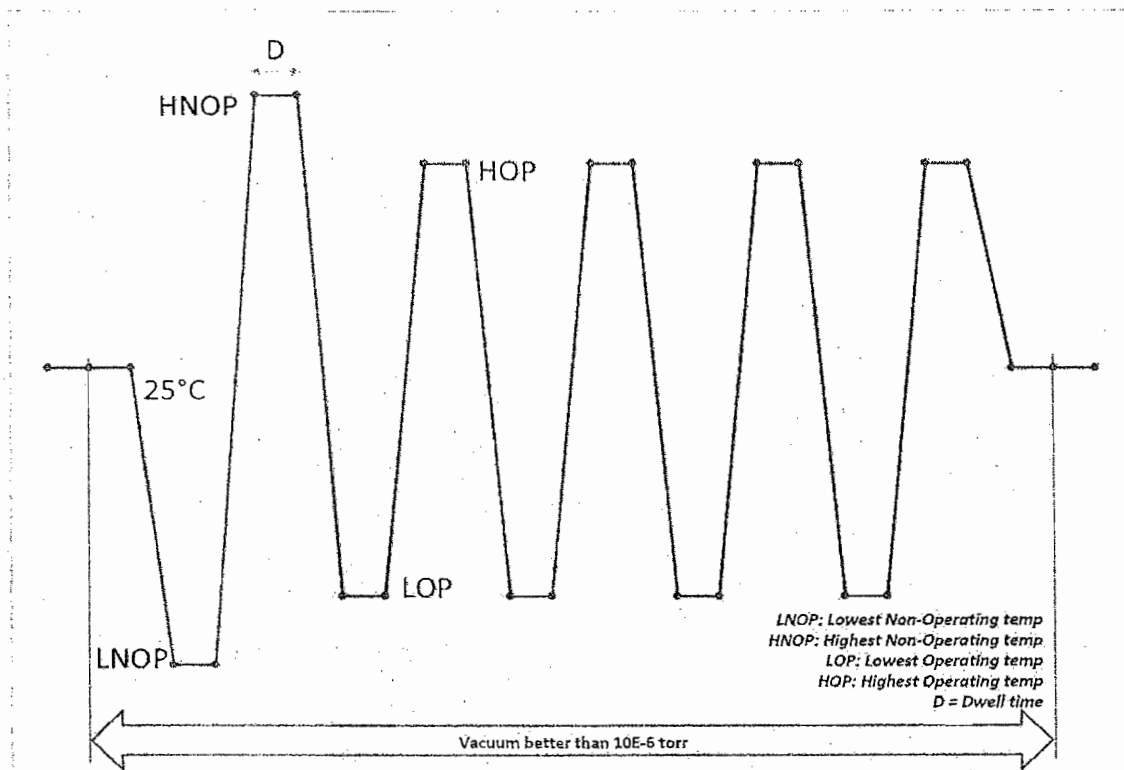
Frequency (Hz)	SRS Normal to mounting plane	SRS Parallel to mounting plane
100 – 600	15 dB/oct	15 dB/oct
600 – 5000	600 g	600 g
No. of pulses	2	2

## 8.9 THERMAL VACUUM TEST

Thermo-vacuum test shall be carried out only on LAT samples. The test shall be carried out as per the profile given in fig. 2.0.

The test shall consist of five cycles. Dwell time shall be two (2) hours for all the cycles. The requirement for COLD TURN ON shall be at the temperature defined in environmental specification. The duration of cycle may be extended for completion of performance measurement tests. Temperature limits shall be storage temperature limit for first cycle & operating temperature limit (LAT) for remaining four cycles. The insertion loss and isolation of each unit under test, during transition from each temperature extreme shall also be monitored and recorded. Device shall be operated within operating temperature limits only. The temperatures are as specified in "Para2: environmental conditions".

Vendor to specify the temperature transition rate in degC/min.



**FIGURE 2: THERMO-VACUUM TEST PROFILE**

### 8.10 ACTUATION LIFE TEST IN VACUUM

The life test shall be performed on all Lot Acceptance Test units. The units shall be subjected to ACTUATION LIFE in vacuum at Coil Energization Voltage (defined in Annexure-I: electrical specifications) under extreme temperature (defined in Annexure-II: R & QA requirements) conditions for ALL APPLICABLE PATHS:

Temperature	Coil Energization Voltage	No. of Actuations
High	High	ACTUATION LIFE/4
Low	High	ACTUATION LIFE/4
High	Low	ACTUATION LIFE/4
Low	High	ACTUATION LIFE/4

The parameters to be monitored shall be as defined in TEST MATRIX FOR LAT PERFORMANCE.

#### **8.11 EMI/EMC TEST**

The UNIT shall be designed as per the requirements of MIL-STD-461E to meet RE-102 requirements. Vendor shall supply detailed analysis/heritage test results ALONG WITH THE TECHNICAL OFFER.

The UNIT shall be capable to meet MIL 461E-RE102 test requirements. The requirement of performance compliance through test shall be decided at the time of order placement.

#### **8.12 HUMIDITY STORAGE TEST**

This test is applicable for LAT samples only. Devices shall be subjected to humidity storage test as per MIL-STD-202, method 103, condition 'A'. Devices shall be visually inspected after completion of test. No discolouration, tarnishing, corrosion shall be allowed.

#### **8.13 FINAL PERFORMANCE TEST**

This shall be carried out as per electrical specification for all applicable paths as per SAC APPROVED TEST PROCEDURE.

#### **8.14 RESISTANCE TO SOLVENTS**

Vendor to provide details on the applicability of this test for the proposed design. If applicable, resistance to solvents shall be carried out as per MIL-STD-202, method 215. The test may be carried out on electrically rejected samples.

## **9 LIST OF DOCUMENTS**

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### **9.1 TECHNICAL DOCUMENTS REQUIRED ALONG WITH THE QUOTE**

- 9.1.1 Qualification report summary giving details regarding the list of tests & test conditions. This report should necessarily contain the operating and non-operating environmental conditions, vibration and shock levels to which the design was successfully tested and typical electrical performance apart from other relevant details.
- 9.1.2 Space History/Space Programme to which similar items have been supplied with frequency of operation and RF power level.
- 9.1.3 Specific documents in support of the compliance to each section of this Request for Proposal
- 9.1.4 List of qualified Parts, Materials and Process proposed to be used for this programme
- 9.1.5 Reliability Analysis Summary /Typical failure rate.
- 9.1.6 Quality Control Plan
- 9.1.7 Screening/Qualification Plans
- 9.1.7 Non-conformance Control Plan
- 9.1.8 Configuration change control Plan

### **9.2 TECHNICAL DOCUMENTS TO BE SUPPLIED AFTER AWARD OF CONTRACT**

Apart from above, the documents/ reports as given below, but not limited to, shall be supplied later after the award of contract at the stages mentioned below. These shall be full reports (not the summary reports):

**9.2.1 DOCUMENTS to be supplied after receipt of purchase Order and before fabrication of the UNITS**

9.2.1.1 List of qualified Parts, Materials and Processes, their quality levels, derating, criterion followed, traceability data, procurement history etc. proposed to be used for this programme, for review and subsequent approval by SAC

9.2.1.2 Non-conformance Control Plan, for review and subsequent approval by SAC

9.2.1.3 Configuration change control Plan, for review and subsequent approval by SAC

9.2.1.4 Any other technical document which the vendor finds appropriate for communication

**9.2.2 DOCUMENTS to be supplied before testing (screening and LAT)**

9.2.2.1 Documents containing test procedures (ATP & QTP with test set up details), test and calibration facilities, environmental facilities and relevant operation details. This document shall clearly address all tests with accept/reject criteria as defined in this annexure, for review and subsequent approval by SAC

9.2.2.2 Nonconformance parts and material test reports (if any), for review and subsequent approval by SAC

9.2.2.3 Any other technical document which the vendor finds appropriate for communication

**9.2.3 DOCUMENTS to be supplied if failures/non-conformances observed**

9.2.3.1 Failures encountered, if any, shall be duly recorded and failure reports (for catastrophic failures), mechanical or handling failures, malfunctioning or operative deviations from the specifications along with corrective actions, for review and subsequent approval by SAC

9.2.3.2 Nonconformance parts and material reports (if any), for review and subsequent approval by SAC

9.2.3.3 Any other technical document which the vendor finds appropriate for communication

## **9.2.4 DOCUMENTS to be supplied before shipment**

9.2.4.1 Summary sheet of all the tests performed as per approved test plan, for review and subsequent approval by SAC (shipment clearance), shall be provided as annexure to Certificate of Compliance which shall have:

9.2.4.1.1 Serial numbers of the units over which tests were performed

9.2.4.1.2 Test conditions for each test

9.2.4.1.3 Outcome of each test

9.2.4.2 Any other technical document which the vendor finds appropriate for communication for shipment clearance.

## **9.2.5 DOCUMENTS to be supplied along with deliverable hardware (FM and LAT units)**

9.2.5.1 Certificate of compliance- 3 copies (ONE Hard copy + TWO soft copies on separate CDs)

9.2.5.2 Final reports of Screening/LAT along with the deliverable units (TWO soft copies on separate CDs), for review and subsequent approval by SAC.

# **10 GENERAL**

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## **10.1 SAC DECISION TO OPT FOR A TEST/GROUP OF TESTS**

The cost of each test is to be indicated separately in the proposal AT APPROPRIATE PLACE ONLY. Please note that technical information (documents) should not contain any price information. Based on the quality details, previous qualification and space flight history details from the supplier in the proposal, SAC may decide to delete any test or group of tests to be performed by vendor, at the time of order placement.

## **10.2 DATA/DRAWING SUBMISSION FORMAT**

The drawings/ ICD shall be supplied in format as specified in electrical specifications and test data in Microsoft Office/PDF compatible format.

All the drawings shall be provided on a CD along with a hardcopy. A draft ICD shall accompany the technical offer. The stages, at which the data and drawings shall be submitted to SAC for review and final approval by SAC, shall be as defined in "Para 9: List of Documents".

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II      : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II       :       PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with ‘Tender fee cover’ (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG  
WITH THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

Sr. No.	Commercial terms	Compliance/Remarks/Comments by Vendor
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1  14.2  14.3	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number. Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	

14.4	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.5	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.6	Please indicate rate of the Sales Tax/VAT applicable.	
14.7	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required.	
14.8	Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30.	Bank Guarantees (from Nationalized/	

30.1	Scheduled Bank/ Bank approved by Purchaser. Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.	
30.2	Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.	
30.2.1	The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.	
30.3	Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	
37.	Acceptance of Fall clause. "The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase & Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction" .	
38.	You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS**

1. Tenders should be sent in sealed envelopes super scribing the relevant tender No, and the due date of opening. Only one tender should be sent in each envelope. Unsigned bids shall be rejected.
2. Late tenders and delayed tenders will not be considered. Unsigned bids shall be rejected.
3. Tender fee & bid security (EMD) exemption for MSME.
4. Sales Tax and/or other duties/levies legally leviable and intended to be claimed should be distinctly shown separately in the tender.
5. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from the Purchase Officer concerned to avoid any payment of such levies.
6. a) Your quotation should be valid for at least **120 days** from the date of opening of the tender.  
b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
7. Preference will be given to those tenders offering supplies from ready stocks and on the basis of FOR destination/delivery at site.
8. (a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.  
(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non-acceptance of tender, the tenderer will have to remove the samples at his own expense.  
(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.  
(d) **Specifications:** Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.
9. The Purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

10. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
11. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.
12. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted.
13. The authority of the person signing the tender, if called for, should be produced.
14. We are exempted from the payment of Central Excise & Custom Duties vide notifications issued by Govt. of India.
15. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.
16. No request for extension for due date for submission of tenders will be entertained.

## **TERMS & CONDITIONS OF TENDER**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assigns.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition is included in the Purchase Order.
- (d) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

### **2. PRICES:**

Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

### **3. SECURITY DEPOSIT:**

On acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding ten percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, 'Security' and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores Contracted at the risk of the



Contractor in terms of Sub-Clause (ii) and (iii) of clause 10(b) hereof and/or to recover from the Contractor, damages arising from such cancellation.

#### **4. GUARANTEE & REPLACEMENT:**

- (a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.
- (b) For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any part thereof are faulty.
- (c) If, in the opinion of the Purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the Purchaser, provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months from the date of acceptance thereof.
- (d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- (e) The decision of the Purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defect has developed within the said period of 12 months or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor.
- (f) To fulfil guarantee conditions outlined in clause 4 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- (g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of the stores at Purchaser's site.
- (h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications then such a specification shall apply in such cases the period of 14 months referred to in para 4 (b) & (c) shall be the 'asked for' guarantee period plus two months.

#### **5. PACKING FORWARDING & INSURANCE:**

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

## **6. DESPATCH:**

The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on 'said to contain' basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

## **7. TEST CERTIFICATE:**

Wherever required, test certificates should be sent along with the despatch documents.

## **8. ACCEPTANCE OF STORES:**

- (a) The stores shall be tendered by the Contractor for inspection at such places as may be specified by the Purchaser at the Contractor's own risk, expense and cost.
- (b) It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the Purchaser, whose decision shall be final.
- (c) If, in the opinion of the Purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the Purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.
- (d) If the whole or any parts of the stores supplied are rejected in accordance with Clause No. 8 (c) above, the Purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

## **9. REJECTED STORES:**

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the Purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

## **10. DELIVERY:**

- (a) The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.
- (b) Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the Purchaser shall be entitled at his option either:
  - (i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or
  - (ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the

Purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the Purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor. In the event of action being taken under sub-clause (ii) & (iii) of clause 10 (b) above, the Contractor shall be liable for any loss which the Purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to repurchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re-purchase shall be at the discretion of the Purchaser, whose decision shall be final. It shall not be necessary for the Purchaser to serve a notice of such re-purchase on the defaulting Contractor. This right shall be without prejudice to the right of the Purchaser to recover damages for breach of Contract by the Contractor.

#### **11. EXTENSION OF TIME:**

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the Purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the Purchaser's right to recover liquidated damages under clause 10 thereof.

#### **12. ERECTION OF PLANT & MACHINERY:**

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the Purchaser, the Purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the Purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the Purchaser.

#### **13. PAYMENT:**

Contractor's bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

#### **14. MODE OF PAYMENT:**

Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

#### **15. RECOVERY OF SUM DUE:**

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the Purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the

case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the Purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the Purchaser on demand the remaining balance due. Similarly, if the Purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the Purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the Purchaser are finally adjudicated upon and paid by the Contractor.

#### **16. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the Purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfilment of the contract.

#### **17. ARBITRATION:**

In the event of any question, dispute or difference arising under these conditions or any conditions contained in the Purchase Order or in connection with this Contract (except as to any matter the decision of which is specially provided for by these conditions), the same shall be referred to the sole arbitration of the Head of the Purchase office or some other person appointed by him. It will be no objection that the arbitrator is a Government servant that he had to deal with matter to which the Contract relates or that in the course of his duties as Government servant he has expressed views on all or any other matters in dispute or difference. The award of the arbitrator shall be final and binding on the parties of this Contract.

If the arbitrator be the Head of the Centre/Unit –

- (i) In the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in-office either to proceed with reference himself, or to appoint another person as arbitrator, or
- (ii) In the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Centre/Unit to appoint another person as arbitrator. If the arbitrator be a person appointed by the Head of the Purchase Office – In the event of his dying, neglecting or refusing to act or resigning or being unable to act, for any reason, it shall be lawful for the Head of the Centre/Unit either to proceed with the reference himself or appoint another person as arbitrator in place of the outgoing arbitrator. Subject as aforesaid the Arbitration & Conciliation Act 1996 and the rules thereunder and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this Clause. The Arbitrator shall have the power to extend with the consent of the Purchaser and the Contractor the time for making and publishing the award. The venue of arbitration shall be the place as Purchaser in his absolute discretion may determine. Work under the Contract shall, if reasonably possible, continue during arbitration proceedings. In the event of any dispute or difference relating to the interpretation and application for the provisions of the Contracts, such dispute or difference shall be referred by either party to Arbitration of one of the Arbitrations in the



Department of Public Enterprises. The Arbitration Act 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute provided however any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs. Ministry of Law & Justice, Government of India. The parties to the dispute will share equally, the cost of arbitration as intimated by Arbitrator.

**18. COUNTER TERMS AND CONDITION OF SUPPLIERS:**

Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof is obtained.

**19. SECURITY FOR PURCHASE OF MATERIALS:**

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the Purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.

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## STANDARD TENDER FORM

(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

### TENDER FORM

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

(Seal)

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: publictender@sac.isro.gov.in

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराहन 3 बजे तक) Due on (Up to 3 pm)
7.	AHEG 201500339501	ESTABLISH OFC LINK <b>(Two Part Tender)</b>	20/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

M/s -

**Our Ref No : AHEG 2015-003395-01**

**Tender Due: 15:00 Hrs ISTon 20/06/2016**

**Opening : 15:30 Hrs ISTon 20/06/2016**

**Dear Sirs,**

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: As per overleaf. )

S.No.	Description of Items with Specifications	Unit	Quantity
1	To establish OFC link at Bopal campus & to maintain for two years as per Request For Proposal (RFP) attached herewith.	Loat	1

**DELIVERY AT:** NEW BOPAL CAMPUS

**MODE OF DESPATCH** ON SITE

**DUTY EXEMPTIONS** We are exempted from the payment of excise/customs duty.

**SPECIAL INSTRUCTIONS** NIL

**SPECIFIC TERMS** As per overleaf.

**INSTRUCTIONS TO TENDERERS:**

As per Sheets attached.

BALRAJ SINGH  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

**Indent No. AHEG 2015000339501**

**[Detailed tender terms & tender conditions]**

1. Detailed Specifications, terms & Conditions as per Annexures & RFP attached.
2. This is a TWO PARTS tender; please submit your quotations as per the instructions. Quotations not confirming to the instructions will be rejected. Fax quotation shall not be accepted.
3. Duly filled compliance statement (enclosed) is to be attached with along with Part I. Technical & Commercial Compliance statement confirming compliance with all the point of Tech & Commercial annexures enclosed with the tender document shall be submitted along with the offer. In absence of the same, your offer shall be summarily rejected.
4. A copy of masked Price Bid (i.e. without prices) may be enclosed along with Part I to understand whether all the details/items to be quoted by you have been quoted in the Price Bid.
5. Your offer should be accompanied with Demand draft for an amount of Rs.545/- drawn in favour of "Accounts Officer, SAC, Ahmedabad" towards tender fee. Offer received without tender fee shall be liable for rejection.
6. Please mention our ref. no. AHEG 201500339501 (DL/624) and tender due date on your quotation & envelopes.
7. 4] EARNEST MONEY DEPOSIT (EMD): An amount of Rs.75,000/- shall be remitted by Account Payee DD / Fixed Deposit Receipt (FDR) in favour of Accounts Officer, SAC Payable at Ahmedabad towards EMD along with quotation only for the Vendors who are not registered with us. Vendors Registered in SAC's/EGPS/COWAA database participating through open Public/Limited Tenders. Foreign Vendor's Central PSU's/PSE's/AUTONOMUS Bodies, Micro and Small Enterprises, KVIC National Small Scale Industries Corporation are exempted from Payment of EMD.  
Please note that without EMD, quotation will not be considered. EMD of successful bidder shall be adjusted as Security Deposit and the remaining amount of security deposit will be deposited by the Service Provider. EMD of unsuccessful bidders will be returned after finalization of contract without any interest.



**REQUEST FOR PROPOSAL (RFP)**

**FOR**

**OFC link at Bopal campus**

**SPACE APPLICATIONS CENTRE**  
**INDIAN SPACE RESEARCH ORGANISATION**  
**AHMEDABAD 380015**

## **REQUEST FOR PROPOSAL (RFP) ON OFC link at Bopal campus**

### **1.0 Introduction**

SAC - New Bopal campus is up-coming around 500 meter from existing Bopal technical area and opposite to Bopal hostel. SAC has planned to establish Optical Fiber Cable (OFC) link between Bopal technical area and New Bopal campus.

### **2.0 Scope**

- 2.1 Supply, Installation & testing of twenty-four core single mode OFCs on two alternate route by putting into 40 mm HDPE ducts from Bopal Telephone exchange room (Room no.6071) to Telephone exchange room at Payload integration building at New Bopal campus through public road on turnkey basis. Each cable shall be laid through physically separate route and work as a redundant.
- 2.2 Supply of all the material like OFC, HDPE pipe, chamber for man hole with cover, Line Interface Unit (LIU), patch cord and other accessories as per bill of material in Table-A.
- 2.3 Laying of cable may be carried out through manual digging, Horizontal Directional Drilling (HDD) either manual or through machine and laying in cable trench/duct.
- 2.4 Termination of OFC at both ends and testing of OFC link for 10Gbps requirement.
- 2.5 To liaison with concern agency/authority to obtain written permission required for installation of OFC through public road.
- 2.6 To maintain OFC link for two years from the date of acceptance of OFC link using deliverables and labor as per Table-B.

### **3.0 Work details and Specifications**

- 3.1 Installation of OFC by putting in HDPE pipe shall be carry out in one of the three ways as mentioned below as per site conditions and SAC requirements.
- 3.2 Manual digging  
OFC shall be laid underground at a depth of one meter. This shall include excavation of duct, laying of HDPE pipe and putting OFC inside, to supply & put half round RCC plates on top for protection of the cable, refilling of the duct and leveling with same material (hard/soft) which was earlier. Metal route markers shall be installed at every 50 meter.
- 3.3 Manual and Machine Horizontal Directional Drilling (HDD)  
HDD shall be preferred to avoid excavation of roads and soil while crossing the road and to avoid damage of other services on public road as well as non-feasibility of manual digging. Vendor shall carry out manual/machine HDD as per length of excavation required. The depth of HDD shall be 1.5 to 5 meter. HDPE pipe shall be laid through HDD and OFC shall be pushed later in the pipe.  
Pre-cast RCC loop chambers for manhole with cover shall be installed wherever required. These chambers shall be visible and easily accessible in the event of any fault. During pulling of OFC through HDD route, spare cable loop shall be kept of appropriate length in loop chambers to meet future requirements for maintenance of OFC link.
- 3.4 Laying in Trench/Duct  
HDPE pipe and OFC shall be laid in Trench / Duct.
- 3.5 Where depth of HDD & OFC laying varies due to change in type of cable laying as mentioned above, care shall be taken that transition from lower depth to higher depth or vice-versa, is gradual (maximum gradient 15 degrees).
- 3.6 Wherever joint of HDPE pipe required, suitable size couplers and adapters shall be used to close ends of HDPE pipe.

### **4.0 DETAILED ITEM WISE SPECIFICATIONS**

#### **4.1 Twenty-four core single mode OFC**

- a. 24 core single mode jelly filled armored
- b. Cladding Diameter -  $125.0 \pm 1.0 \mu\text{m}$
- c. Cladding Non-Circularity -  $\leq 1.0\%$
- d. Coated Fiber Diameter -  $245 \pm 10 \mu\text{m}$
- e. Fiber Curl -  $> 4\text{m}$
- f. Mode Field Diameter -  $9.3 \pm 0.5 \mu\text{m}$  @ 1310 nm

- g. Core/Cladding Concentricity Error -  $\leq 1.2 \mu\text{m}$
- h. Zero-Dispersion Wavelength - 1300 to 1322 nm
- i. Dispersion Slope -  $\leq 0.092 \text{ ps/nm}^2\text{-km}$
- j. Polarization Mode Dispersion Coefficient -  $\leq 0.2 @ 1310 \text{ nm} \ \& \ 1550 \text{ nm ps}/\sqrt{\text{km}}$
- k. Cut-off Wavelength (Cables) -  $\leq 1260 \text{ nm}$
- l. Armor type - Electrolytic Chromium Coated Steel (ECCS) Tape
- m. Can withstand temperature up to:  $- 40^\circ \text{C}$  to  $+ 70^\circ \text{C}$
- n. The cables shall have identification marking at regular intervals of one meter.
- o. All the fibers in the tube should be color coded. The bundling threads should also be color coded.
- p. All the fibers should be protected inside through jelly filled tube.
- q. The cable core should be made water proof by using water blocking material and filling compound.
- r. Supplier has to submit test report for electrical and mechanical parameters at the time of cable supply.
- s. The fibers should be as per international standards ITU G 652.

#### 4.2 **40 mm HDPE pipe – ISI Make**

- a. Material : High Density Polyethylene & flexible
- b. Nominal diameter 40 mm
- c. Corrosion and chemical resistant PE pipe
- d. Working temperature -  $0^\circ$  to  $70^\circ \text{C}$
- e. Pressure rating 2.5 Kgf/cm to 25 Kgf/cm.
- f. Highly resistant to most acids, bases, salts, aliphatic solutions, oxidants, and halogens.

#### 4.3 **Fiber Optic LIU - 24 Port with pigtails for Single Mode OFC**

- a. LIU made of aluminum box for splices & termination of single mode OFC
- b. Suitable adapter panel with slots for simplex 24 nos. pigtail of LC type
- c. Rubber fiber slotted bracket built-in, metal splice shelf to protect the fibers.
- d. Splice tray & cable Spool provision inside LIU.
- e. Accessory kit should consist of cable ties; mounting ear screw earthling and spiral wrap tube
- f. Panel cover with sliding for easy maintenance, removable Rear & Front cover for better access to interior of LIU
- g. Removable rubber grommet for pre terminated fiber trunk installation
- h. Pigtail made of one core fiber optic cable terminated with LC connector at one end and open at other end
- i. Simplex Pigtail length – 1 meter
- j. Should have insertion Loss  $\leq 0.2\text{dB}$ , Max.  $0.3\text{dB}$  for single mode G652 optic fiber.
- k. Should have ceramic connector Ferrule.
- l. Working temperature -  $0^\circ$  to  $70^\circ \text{C}$

#### 4.4 **Patch cord LC-LC/ LC-SC with 3-meter length**

- a. Fiber optic patch cord with one core fiber cable terminated with LC connector at one end and LC/SC connector at other end.
- b. 100% inspected for optical characteristics & fiber end face finish.
- c. Should have insertion Loss  $\leq 0.2\text{dB}$ , Max.  $0.3\text{dB}$  for single mode G652 optic fiber.
- d. Should have ceramic connector ferrule
- e. Working temperature -  $0^\circ$  to  $70^\circ \text{C}$

#### 4.5 **Manhole**

- a. Vendor shall prepare a manhole installation plan based on site survey prior to duct installation.
- b. Manhole shall be installed at crossings or branch-off points at every 250m approximately on route.
- c. Manhole shall be precast RCC of size height-900mm, dia-1000mm and wall thickness-150mm.
- d. Manholes provided along the route of ducts shall serve repository for OFC cable joint closures and extra cable loops that can later be used for repair and maintenance during operations. Length of looped cable shall be around 5 meter and shall be in the shape of

numeral '8' to avoid twisting and kinking during splicing/jointing. The extra cable loop lengths shall be recorded and incorporated in route diagram.

- e. Simplex caps shall be installed at the end of ducts through which fiber has been blown.
- f. Vendor shall plan the cable blowing operation including preparation of cable drums schedule such that to the extent possible in consent with SAC engineer. Complete drum-length of OFC is to be laid without cutting in-between or at ends. To an extent feasible, extra cable (less than 50m) shall be coiled inside the manhole to avoid cutting of the cable as any cutting of extra fiber may become unusable piece.

## **5.0 Delivery & installations**

- 5.1 Vendor shall supply all the material within four weeks from the date of Purchase Order (PO). Parallely, vendor shall proceed to obtain necessary permission from agency/authority to install OFC on public road on behalf of SAC within two weeks from PO date.
- 5.2 All the original permissions / receipts are to be handed over to SAC during acceptance of system.
- 5.3 Installation shall be commenced soon after permission availed and shall be completed within twelve weeks from the date of permission availed.

## **6.0 Acceptance Test Plan (ATP)**

- 6.1 Acceptance test will be conducted only after successful installation and uninterrupted operation for minimum period of seven days of the OFC links installed through two separate routes for voice and data applications.
- 6.2 Vendor shall submit details of ATP to SAC for an approval as per tender specifications. ATP shall include specifications of the system to be demonstrated to SAC as per tender document.
- 6.3 ATP shall include testing of OFC for data connectivity for 10Gbps requirement.

## **7.0 Warranty of deliverables**

- 7.1 Vendor shall provide on-site warranty of all deliverables for two years from the date of acceptance.
- 7.2 Warranty shall include preventive & break-down maintenance calls including all the repair and replacement of spares, modules, etc. if any required
- 7.3 For all items covered under warranty, call response time shall be six hours and call shall be resolved within 48 hours.

## **8.0 Maintenance of OFC link**

- 8.1 After OFC link established and accepted, vendor shall maintain OFC link for period of two years from the date of acceptance of OFC link.
- 8.2 Vendor shall deliver material and carry out work as per Table-B on event basis as per site requirement.
- 8.3 Vendor shall ensure the working of OFC for all applications like Voice, Data & Video.
- 8.4 In case of breakdown of OFC or any new development work on the route shall be reported immediately to SAC engineer and shall take necessary actions to re-establish the fiber link within 48 hours by making permanent splicing of OFC.
- 8.5 Permanent splicing of OFC shall include localize cable fault/cut, excavation of hard and soft soil - digging, supply & laying of piece of OFC and HDPE pipe, splicing at both the ends, supply of material like Joint enclosure, connectors, RCC half round pipe, coupler etc. One permanent splicing job shall include digging, laying of HDPE & OFC, refilling & leveling up to ten meter of length.
- 8.6 Splicing of fiber shall be done using Fusion Splicing technique for fiber cable joint and terminations. All straight planned joint shall be done using fusion splicing machine and shall kept in joint enclosure of standard make like Raychem. At both end, fiber shall be terminated in LIU.

- 8.7 Vendor shall carry out co-ordination with concern agency as and when required and shall take necessary actions to prevent the break-down of OFC as proactive measure.
- 8.8 Vendor shall carry out temporary splicing in case of delay in splicing beyond 48 hours due to non-feasibility at site for permanent splicing. Subsequently permanent splicing shall be carry out once the site is cleared.
- 8.9 After completion of splicing, vendor shall carry out testing for all the core of fibers between two campuses using OTDR & Laser source - Power meter to check the quality of splicing work. Detail Soft & hard copy of OFC test report shall be submitted within three working days after restoration of link.
- 8.10 OFC shall be re-installed as and when required to replace damage OFC through manual digging/HDD/laying in duct/trench as per site condition.

## **9.0 Payment terms**

- 9.1 Payment of installation of OFC link shall be divided in parts as below:
  - a. Item no.1 to 6 are deliverables and item no.7 to 16 are labor jobs as per Table-A).
  - b. Payment of labor jobs shall be paid on actual quantity consumed.
  - c. 60% amount of deliverables shall be paid against delivery of material.
  - d. 40% amount of deliverables and 100% amount towards labor jobs (consumed on actual) for establishment of OFC link shall be paid after acceptance of the OFC link.
- 9.2 Vendor shall submit 5% of installation cost (Table-A) as Performance Bank Guarantee(PBG) valid for warranty period of two years.
- 9.3 Payment of maintenance shall be made as per Table-(B) on event basis after satisfactory job carried out and duly certified by Head, ESSD after each quarter.

## **10.0 Penalty for maintenance**

- 10.1 If OFC link is damaged and not re-established within 48 hours during maintenance period of two years, payment towards event base shall be deducted 1% for delay of every three days.
- 10.2 Maximum penalty shall be 10% of the quarterly payment.

## **11.0 Terms & Conditions**

- 11.1 Vendor shall carry out all above work on turnkey basis to establish OFC link as per specifications & requirements mentioned above.
- 11.2 Vendor shall comply with all the specifications, requirements and terms & conditions as per SAC proposal.
- 11.3 Vendor shall quote items all the items as per Table-A & B. In addition to this, if vendor found that few additional item/s required to establish OFC link as per above scope, vendor shall quote additional item in Table-A & B with justification for requirement of additional items along with Make, Model & technical specifications of each items with cost breakup.
- 11.4 If any item/s is/are not quoted in price bid as above by the vendor and it is required to implement this project, vendor will supply all such required items without paying any extra cost as this is a turnkey job.
- 11.5 Vendor must quote for standard make of items and also specify 'name of the manufacturer', make' & 'model' of the items along with product catalogue including source of Original Equipment Manufacturer (OEM). Detail bill of material must be provided by the vendor as per Table A.
- 11.6 Any item with better specifications may be accepted.
- 11.7 All prices shall be quoted on unit basis, so that order can be placed for the required items and quantities for the present order. Final payment shall be based on actual.
- 11.8 Schedule of material delivery shall be informed to SAC in advance.
- 11.9 Vendor shall carry out site survey and liaison with concern agency/authority before installation. The exact schedule of each work shall be decided in consultation with SAC engineer to meet schedule mentioned above in 5.0.
- 11.10 Vendor shall depute senior engineer on site to supervise the work.

- 11.11 During installation, commissioning and acceptance vendor shall use their tools and equipment. SAC will not provide any tool or equipment.
- 11.12 Vendor shall submit original permissions obtained from the agency/authority.
- 11.13 SAC engineer shall supervise work on site as and when required.
- 11.14 Vendor shall carry out related civil and finishing work after completion of the work wherever required. Vendor shall maintain the aesthetics of building and other places while installing & maintaining OFC link.
- 11.15 SAC has right to add or delete the similar item at any time during this contract on pro-rata basis. The payment shall be made out on pro-rata basis.
- 11.16 SAC reserves the right to terminate the contract with one-month notice.
- 11.17 In the event of the damages to our property or personal injury to SAC/Vendor personnel due to the negligence of Vendor employee, the responsibility shall be solely rest with vendor.
- 11.18 SAC shall not be responsible for the loss of life of vendor personnel at the time of performance of contract at SAC premise due to natural calamities/accident explosion if any.
- 11.19 Vendor shall arrange their own logistic support to carry out the work under this contract and shall not be provided by SAC.
- 11.20 SAC reserves the right to enter into parallel contract simultaneously or at any time during the period of the contract with one or more Vendor.
- 11.21 Gate pass for taking out spares/components/peripherals to be cleared within the stipulated time as mentioned in that gate-pass.
- 11.22 Vendor shall co-ordinate with different divisions of SAC for not damaging existing electrical cable, water drainage, pipes, LAN network & telephone network etc.
- 11.23 Vendor shall provide line by line compliance of this tender & submit technical literature for from OEM with marking/highlight of SAC tender specifications.

#### **12.0 Delay in Completion/ Liquidated Damages**

In the event of the vendor failing to deliver the material or complete the work within the time specified in the contract agreement or in extension agreed thereto, the SAC shall reserve the right to recover from the vendor as liquidated damages, a sum of one half percent (0.5%) per week or part thereof of the undelivered portion of the total contract price of system, equipment or work. The Total liquidated damages shall not exceed the ten percent (10.0%) of the total contract price.

#### **13.0 Vendor selection criteria**

- a. Vendor should have the capability to establish OFC link and maintained underground OFC network.
- b. Vendor should have own Splicing Machine, OTDR, Laser source, Cable fault locator, Optical Power meter and UG Duct tracer of their own for carrying OFC laying and maintenance
- c. Vendor should have their own Fault rectification team working 24X7.
- d. Vendor should have office in Ahmedabad.

#### **14.0 This will be a two-part tender.**

**Table – (A)****Price statement for Installation - Deliverables & Labor**

SN	DESCRIPTION	QTY	UNIT	UNIT COST (Rs.)	Applicable Tax in %	TOTAL COST (Rs.)
<b>Deliverable material</b>						
1.	24 core Jelly filled armored Single mode Optical fiber cable	2500	Meter			
2.	40 mm HDPE pipe	2500	Meter			
3.	LIU with pigtails	4	No.			
4.	Fiber Patch cord – LC to LC	24	No.			
5.	Fiber Patch cord – LC to SC	24	No.			
6.	Any additional item if required	Specify	Lot			
<b>Total Amount (Rs.)</b>						
<b>Following items are labor jobs with required material on actual basis</b>						
7.	Making of manhole chamber with material required	----	No.			
8.	Permanent splicing of 24 core OFC with kit	----	Per job			
9.	Temporary splicing of 24 core OFC with kit	----	Per job			
10.	OFC laying by digging		Meter			
11.	OFC laying by manual HDD Method	----	Meter			
12.	OFC laying by machine HDD Method	----	Meter			
13.	OFC laying in existing trench of SAC	----	Meter			
14.	Liaison charges	----	Lot			
15.	Installation & commissioning charges	----	Lot			
16.	Any additional item if required	Specify	Lot			
<b>Total Amount with all taxes (Rs.)</b>						

**Table – (B)**

**Price statement for Maintenance – Deliverables & Labor**

**Event Base charges (As per Actual)**

<b>SN</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>UNIT COST (Rs.)</b>	<b>Applicable Tax in %</b>
1.	24 core Jelly filled armored Single mode Optical fiber cable	Meter		
2.	40 mm HDPE pipe	Meter		
3.	LIU with pigtails	No.		
4.	Fiber Patch cord – LC to LC	No.		
5.	Fiber Patch cord – LC to SC	No.		
6.	Making of manhole chamber with material required	No.		
7.	Permanent splicing of 24 core OFC with kit	Per job		
8.	Temporary splicing of 24 core OFC with kit	Per job		
9.	OFC laying by manual digging	Meter		
10.	OFC laying by manual HDD Method	Meter		
11.	OFC laying by machine HDD Method	Meter		
12.	OFC laying in existing trench of SAC	Meter		
13.	Any additional item if required	Lot		

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II                : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II        :        PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with “Tender fee cover” (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG WITH  
THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

<b>Sr. No.</b>	<b>Commercial terms</b>	<b>Compliance/Remarks/Comments by Vendor</b>
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1 14.2	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number.	

14.3	Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	
14.4		
14.5	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.6	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.7	Please indicate rate of the Sales Tax/VAT applicable.	
14.8	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required. Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be	

	replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24.	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30. 30.1 30.2 30.2.1 30.3	<p>Bank Guarantees (from Nationalized/ Scheduled Bank/ Bank approved by Purchaser.</p> <p>Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.</p> <p>Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.</p> <p>The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.</p> <p>Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.</p>	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	

37.	<p>Acceptance of Fall clause.</p> <p>“The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase &amp; Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction” .</p>	
38.	<p>You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.</p>	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS**

1. Tenders should be sent in sealed envelopes super scribing the relevant tender No, and the due date of opening. Only one tender should be sent in each envelope. Unsigned bids shall be rejected.
2. Late tenders and delayed tenders will not be considered. Unsigned bids shall be rejected.
3. Tender fee & bid security (EMD) exemption for MSME.
4. Sales Tax and/or other duties/levies legally leviable and intended to be claimed should be distinctly shown separately in the tender.
5. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from the Purchase Officer concerned to avoid any payment of such levies.
6. a) Your quotation should be valid for at least **120 days** from the date of opening of the tender.  
b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
7. Preference will be given to those tenders offering supplies from ready stocks and on the basis of FOR destination/delivery at site.
8. (a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.  
(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non-acceptance of tender, the tenderer will have to remove the samples at his own expense.  
(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.  
(d) **Specifications:** Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.
9. The Purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

10. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
11. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.
12. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted.
13. The authority of the person signing the tender, if called for, should be produced.
14. We are exempted from the payment of Central Excise & Custom Duties vide notifications issued by Govt. of India.
15. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.
16. No request for extension for due date for submission of tenders will be entertained.

## **TERMS & CONDITIONS OF TENDER**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assigns.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition is included in the Purchase Order.
- (d) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

### **2. PRICES:**

Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

### **3. SECURITY DEPOSIT:**

On acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding ten percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, 'Security' and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores Contracted at the risk of the



Contractor in terms of Sub-Clause (ii) and (iii) of clause 10(b) hereof and/or to recover from the Contractor, damages arising from such cancellation.

#### **4. GUARANTEE & REPLACEMENT:**

- (a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.
- (b) For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any part thereof are faulty.
- (c) If, in the opinion of the Purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the Purchaser, provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months from the date of acceptance thereof.
- (d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- (e) The decision of the Purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defect has developed within the said period of 12 months or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor.
- (f) To fulfil guarantee conditions outlined in clause 4 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- (g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of the stores at Purchaser's site.
- (h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications then such a specification shall apply in such cases the period of 14 months referred to in para 4 (b) & (c) shall be the 'asked for' guarantee period plus two months.

#### **5. PACKING FORWARDING & INSURANCE:**

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

## **6. DESPATCH:**

The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on 'said to contain' basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

## **7. TEST CERTIFICATE:**

Wherever required, test certificates should be sent along with the despatch documents.

## **8. ACCEPTANCE OF STORES:**

- (a) The stores shall be tendered by the Contractor for inspection at such places as may be specified by the Purchaser at the Contractor's own risk, expense and cost.
- (b) It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the Purchaser, whose decision shall be final.
- (c) If, in the opinion of the Purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the Purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.
- (d) If the whole or any parts of the stores supplied are rejected in accordance with Clause No. 8 (c) above, the Purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

## **9. REJECTED STORES:**

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the Purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

## **10. DELIVERY:**

- (a) The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.
- (b) Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the Purchaser shall be entitled at his option either:
  - (i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or
  - (ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the

Purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the Purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor. In the event of action being taken under sub-clause (ii) & (iii) of clause 10 (b) above, the Contractor shall be liable for any loss which the Purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to repurchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re-purchase shall be at the discretion of the Purchaser, whose decision shall be final. It shall not be necessary for the Purchaser to serve a notice of such re-purchase on the defaulting Contractor. This right shall be without prejudice to the right of the Purchaser to recover damages for breach of Contract by the Contractor.

#### **11. EXTENSION OF TIME:**

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the Purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the Purchaser's right to recover liquidated damages under clause 10 thereof.

#### **12. ERECTION OF PLANT & MACHINERY:**

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the Purchaser, the Purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the Purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the Purchaser.

#### **13. PAYMENT:**

Contractor's bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

#### **14. MODE OF PAYMENT:**

Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

#### **15. RECOVERY OF SUM DUE:**

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the Purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the

case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the Purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the Purchaser on demand the remaining balance due. Similarly, if the Purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the Purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the Purchaser are finally adjudicated upon and paid by the Contractor.

#### **16. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the Purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfilment of the contract.

#### **17. ARBITRATION:**

In the event of any question, dispute or difference arising under these conditions or any conditions contained in the Purchase Order or in connection with this Contract (except as to any matter the decision of which is specially provided for by these conditions), the same shall be referred to the sole arbitration of the Head of the Purchase office or some other person appointed by him. It will be no objection that the arbitrator is a Government servant that he had to deal with matter to which the Contract relates or that in the course of his duties as Government servant he has expressed views on all or any other matters in dispute or difference. The award of the arbitrator shall be final and binding on the parties of this Contract.

If the arbitrator be the Head of the Centre/Unit –

- (i) In the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in-office either to proceed with reference himself, or to appoint another person as arbitrator, or
- (ii) In the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Centre/Unit to appoint another person as arbitrator. If the arbitrator be a person appointed by the Head of the Purchase Office – In the event of his dying, neglecting or refusing to act or resigning or being unable to act, for any reason, it shall be lawful for the Head of the Centre/Unit either to proceed with the reference himself or appoint another person as arbitrator in place of the outgoing arbitrator. Subject as aforesaid the Arbitration & Conciliation Act 1996 and the rules thereunder and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this Clause. The Arbitrator shall have the power to extend with the consent of the Purchaser and the Contractor the time for making and publishing the award. The venue of arbitration shall be the place as Purchaser in his absolute discretion may determine. Work under the Contract shall, if reasonably possible, continue during arbitration proceedings. In the event of any dispute or difference relating to the interpretation and application for the provisions of the Contracts, such dispute or difference shall be referred by either party to Arbitration of one of the Arbitrations in the



Department of Public Enterprises. The Arbitration Act 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute provided however any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs. Ministry of Law & Justice, Government of India. The parties to the dispute will share equally, the cost of arbitration as intimated by Arbitrator.

**18. COUNTER TERMS AND CONDITION OF SUPPLIERS:**

Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof is obtained.

**19. SECURITY FOR PURCHASE OF MATERIALS:**

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the Purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.

\*\*\*



## STANDARD TENDER FORM

(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

### TENDER FORM

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

(Seal)

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: publictender@sac.isro.gov.in

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराहन 3 बजे तक) Due on (Up to 3 pm)
8.	AHPP 201500332301	MOBILE EXHIBITION PLATFORM FOR VSSE (Two Part Tender)	20/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

Our Ref No : AHPP 2015-003323-01

M/s

Tender Due: 15:00 Hrs ISTon 20/06/2016

Dear Sirs,

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: ----- )

S.No.	Description of Items with Specifications	Unit	Quantity
1	Mobile Exhibition Platform for VSSE ON TURN KEY basis. Terms and Conditions as per attached RFP.	No.	1

**DELIVERY AT:** SAC-STORES,AHMEDABAD

**MODE OF DESPATCH** ON SITE

**DUTY EXEMPTIONS** -----

**SPECIAL INSTRUCTIONS** NIL

**SPECIFIC TERMS** -----

**INSTRUCTIONS TO TENDERERS:**

- (1) This is a Public Tender on Two part basis. Please send your offer as per enclosed instructions only.Offer not confirming to the instructions will be rejected.Fax offer will not be accepted.Your offer should be valid for 90days.
- (2) In Case, vendors are falling under the category of MSME, registered under NSIC & would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemption under Public Procurement Policy.
- (3) " Compliance Statement required to be filled & enclosed along with the technical & commercial bid by the vendors" attached.
- (4) Tender Terms and Conditions attached.
- (5) Request For Proposal (RFP) attached.
- (6) Earnest Money Deposit (EMD), Security Deposit (SD), Performance Bank Guarantee (PBG), Liquidated Damages (LD) are as per Annexure-A attached.
- (7) Please submit your offer along with tender Fee Rs. 545.00 (in the form of Demand Draft) in favour of "Accounts Officer, SAC Ahmedabad". The draft should be submitted with the technical Bid.
- (8) Pre-Bid meeting is scheduled on 03.06.2016, 1400 hrs. Bidders willing to participate in the Pre-Bid meeting shall submit details by e-mail to Purchase & Stores Officer(e-mail: rsingh@sac.isro.gov.in, psoa@sac.isro.gov.in) at least 3 working days in advance.

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

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RAJESH SINGH  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

**"ANNEXURE – A"**

**AHPP 201500332301**

"Bidders shall submit an amount of Rs 1,20,000/- (Rupees One Lakh Twenty Thousand Only) with the bid towards Earnest Money Deposit (EMD). The EMD shall be submitted in the form of DD/Banker's cheque/Bank Guarantee/Fixed Deposit Receipt (FDR) made in the name of Accounts Officer, Space Applications Centre, and be payable at par at Ahmedabad.

Bids received without EMD shall be treated as invalid and shall not be considered. In case of two-part (multi-part) tenders, EMD must be submitted either in separate sealed cover clearly marked as 'EMD against tender no. AHPP 2015-003323-01' or with technical bid, so that it should be available at the time of opening of the first part of bid document itself. Tenders not complying with this requirement shall be rejected.

The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):

- Vendors already registered / empanelled with SAC as authorized vendors.
- Overseas bidders submitting offers directly without involving an Indian Representative.
- Central PSUs/PSEs and autonomous bodies
- Micro and Small Enterprises
- Khadi and Village Industries Commission
- National Small Industries Corporation
- Any other establishments specifically exempted from paying EMD by an order of the Government of India.

The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

EMD of successful tenderer may be retained and converted to Security Deposit, if applicable."

(2) **SECURITY DEPOSIT:** - Security Deposit shall be obtained at 10% of the value of the Purchase Order. Security Deposit can be submitted through Bank Guarantee or fixed deposit receipt from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and should be valid for a period of sixty days beyond the date for completion of the Purchase Order. In case the vendor fails to furnish the security deposit within the specified date or extended due date, the Purchase Order/Contract shall be cancelled, and the EMD made earlier shall be forfeited. In the event of non-execution of the Purchase Order or breach of any terms and conditions of the Purchase Order, the Security Deposit shall be forfeited. After completion of period as mentioned above, the Security Deposit will be returned without any interest.

(3) **PERFORMANCE BANK GUARANTEE:** - Successful vendor have to furnish a Performance Bank Guarantee worth 10% of the contract value in 100 Rupees non-judicial stamp paper of the basic value and shall be valid for a period of sixty days beyond the date for completion of expiry date of warranty period. After completion of period as mentioned above, Performance Bank Guarantee will be returned without any interest.

(4) **LIQUIDATED DAMAGES:** - The delivery date stipulated in the orders released by SAC is the essence of the order. If the contractor fails to deliver the stores within the time specified in the order or any extension thereof purchaser shall recover from the supplier as liquidated damages a sum of one half percentage (0.5%) of the ordered price of the un-delivered stores for each calendar week of delay. The total liquidated damages shall not exceed Ten percent (10%) of the order price of the unit or units so delayed.

  
(Rajesh Singh)

Purchase & Stores Officer

# **Vikram Sarabhai Space Exhibition (VSSE)**

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## **Request for Proposal (RFP) document on Mobile Exhibition Platform for VSSE**



**Space Applications Centre (SAC)  
Indian Space Research Organisation (ISRO)  
Ahmedabad - 380 015**

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## 1. SAC & VSSE Overview

The **Space Applications Centre (SAC)** is a major centre of Indian Space Research Organisation (ISRO), which focuses on design of space-borne instruments and the development as well as operationalisation of applications of space technology for the national development.

The **Vikram Sarabhai Space Exhibition (VSSE)**, located in the premises of SAC, Ahmedabad is a non-commercial exhibition and has been functioning for the past 13 years. VSSE is open for public viewing and societal use. The aim is to impart knowledge to the visitors on the significant advancements and achievements made by ISRO in general and SAC in particular, in development of state-of-the-art communication/earth observation/navigation satellites, launch vehicles, planetary missions & applications.

A person who visits the exhibition will get a glimpse of entire range of ISRO activities covering satellites, launch vehicles and applications of the satellites. The visitors will get an idea of all the people of our country are greatly benefitted by the space program.

However, the rural population of India are not able to benefit from such a permanent exhibition. Special efforts are needed to ensure that they too get the benefits of science exhibition.

To achieve this objective, the VSSE aims to have a state of the art mobile exhibition which will travel to the rural areas and cities of Gujarat and its neighbouring states. This Request for Proposal (RFP) invites proposal for design, fabrication, realization and commissioning of such a state of the art mobile exhibition platform.

## 2. Primary Objectives for Mobile Exhibition

In order to create awareness, educate and effectively communicate space science to the rural community of our country, VSSE has planned to setup a professional, modern, state-of-the-art mobile exhibition platform to:

1. Create awareness on basic space technologies & applications, thereby enhancing ISRO's outreach to the larger masses.
2. Promote utilisation of satellite-based applications which directly benefit the society.
3. Enable target audience to easily understand the complex space-science by effectively explaining them with the help of audio-visual aids, static panels, interactive displays, scaled models of satellites etc
4. Inculcate scientific temper in young minds and inspire them to make a career in the space industry.

The mobile exhibition will be usually hosted by schools/colleges/institutes of Gujarat and neighbouring states and will be open to the target audience encompassing masses from all age groups coming from various walks of life, including students, teachers, professionals as well as the general public. Since VSSE is for societal use, there is no entry fee for visitors to the exhibition.

The mobile exhibition platform will be used to carry various exhibits like static panels, dynamic displays, scaled down models of rockets, launch vehicles and satellites, etc covering information on themes like ISRO Timeline, ISRO History, Launch Vehicles, Earth Observation Satellites, Communication Satellites and their application, Inter-planetary mission, Human Space program, Kids Section, Quiz Section.

### 3. Scope of Work

The scope of work includes the **End-to-End Realisation** (Purchase of Chassis, Body Building as per design guidelines provided and approved by VSSE, RTO passing, design and fabrication of driver's/Executive's/storage cabins, Installation of various racks / storage elements inside to store the panels, displays & exhibits, Painting of Graphics of all sides) of Mobile Exhibition Platform **on Turnkey basis**, including Supply, Installation, Integration and Commissioning **of Air-Conditioning, Fire Safety systems, Emergency Lights, recliners and beds for ISRO Executives to sit / sleep comfortable inside.** The platform will be equipped with a navigator to help in reaching various remote places where the exhibition is to be held. In addition, it will also have a GPS tracker.

The proposed mobile exhibition platform will be built around a chassis with length of 12 mts and satisfying BS IV Emission norms. It is planned to accommodate **50 Static Panels, 3 LED Displays, 12 Satellites Models, 3 Launch Vehicle Models and few working models** inside the mobile exhibition platform. The bidder may do the site visit for further understanding and on site dimensions of each of these exhibits to design the racks.

The various items are fragile and so they need to be protected from shocks and vibrations during movement of the exhibition platform

The images of the models with indicative sizes are given in Annexure. The bidder can target to meet the volumes indicated in the image.

The desired turnkey solution must be comprised of following major sub-systems:

#### 1. Chassis:

- a) Make – Tata / Ashok Leyland / Volvo Only
- b) Overall chassis length: 12m
- c) BS IV Emission Norms Essential
- d) Ground Clearance = 250mm

#### 2. Bus Body:

Over all dimension: The bus body after construction will measure as follows;

- a) Built up body measuring approx. 40ft
- b) Overall breadth: As per RTO Norms
- c) Height: As per RTO Norm

#### 3. Driver's Cabin [Min 6ft, Max 8ft]

- Adjustable driver's seat with height adjustment possible
- Two observation mirrors will be provided on both sides.
- Fire Extinguishers – 2 nos. to be fixed in Driver's cabin.

- A tool box of standard size which can be accommodated in the cabin to be provided with locking arrangements.
- Vehicle Tracking System and Vehicle Navigator. One device each. These will be of Mapmyindia make and loaded with latest maps and features.
- One fan

#### **4. Executive's Cabin [Min 12ft, Max 14ft]**

Six official representing ISRO will be traveling with the exhibition platform to various places. The following minimum amenities are required in the cabin for these Executive:

1. The official's cabin will be of the standard of the executive class with all furniture and equipments commensurate with such a class.
2. It will be fully air conditioned
3. Individual recliners of high quality for each of the six executives to sit comfortable (Approx. 1m x 1m x1m). Provision of two beds for sleeping. The beds may be separated from the seating arrangement appropriately to avoid disturbance. The recliner should one of the following brands: Godrej, Recliner India or Durian only.
4. A center table for discussions.
5. One laptop to be provided as a part of this cabin. It should be one of the following brands only: Lenovo ThinkPad or Dell Precision Mobile WS or HP Probook series laptop with specifications: Intel i7 based laptop with minimum 15" screen, latest windows OS (official licensed copy) with minimum 1TB HDD, minimum 8GB RAM and minimum 2GB dedicated non-intel graphics card
6. Charger point for laptops, mobiles etc.
7. Small refrigerator unit to store water or cold drinks of make Kelvinator, Godrej or Whirlpool
8. A tea/coffee maker. Philips or Black & Decker or Morphy Richards only.
9. Small cupboard will also be fixed inside this cabin to store various articles of the Executives / pamphlets of exhibition
10. Wi-Fi enabled cabin for accessing internet using mobiles/laptop. The required hardware like network switch / router with dongle input facility to be provided by the vendor. Router should be of reputed brand – Cisco, Digisol or D-Link only with dongle support.
11. Proper lighting with individual lights for reading for each person. Use of LED lighting sources to minimize power consumption.
12. Two fans to be used in case AC is not used
13. Overhead or side-top ventilation

## 5. Storage Cabin[Min 18ft, Max22ft]

1. The storage cabin will house all the exhibits and material related to the mobile exhibition as described in table 2.1
2. It should contain various cabinets made of 18mm wood or metal to store the various exhibits safely during transport. Vendor should clearly mention the material, along with details of its sizes and finish, to be used for making cabinets and bring out the comparative advantage of such a material.
3. The exhibits are fragile – made up of glass / plastic – hence it is very important to pay attention to shock / vibration isolation to prevent any damage to these items. Vendor should mention clearly these details in response to this RFP while bidding.
4. Rugged arrangements to hold the fragile exhibits in place while transport is essential. Width/ Height adjustable cabinets may be considered to properly hold the exhibits in place.
5. Vendor may quote for additional items like ruggedized light weight boxes in which to safely and securely pack the exhibits. Vendor to quote these items separately as an optional addition.
6. Two fan at proper location.
7. Overhead or side-top ventilation
8. The back door should open to form a ramp / slope so that exhibits can be easily carried over it.

**6. Body Painting:** All visible outside body to be painted with ISRO related graphics. The design will be finalized in consultation with VSSE Team. High quality automotive PU to be used as painting material

## 7. Hydraulic Pallets:

- i. One hydraulic pallet: Weight to be lifted will be less than 200kgs and height to be lifted will be maximum 2m.
- ii. One Trolley to carry the exhibits to the location of exhibition from the vehicle. Platform size (Minimum): 2m x 1m.



**8. Waterproofing:** All joints shall be waterproof

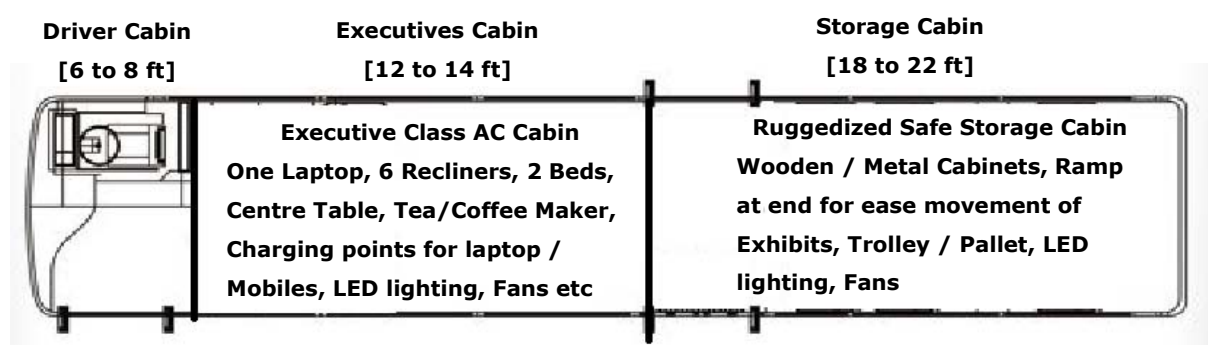
9. Two bright high watt lights at backside of the vehicle to execute night operations. This should be a waterproof installation.
10. Reverse / parking sensor with sound and lights warning system.

The details on the functional requirements & technical specifications of all the above are given in **Annexure – 2 (Functional Requirements & Technical Specifications)**.

The vendor has to submit a **detailed document**, which shall include the following:

- a. Schematic/Drawing showing the detailed Dimensions & Locations of the three cabins (Driver, Executive and Storage).
- b. Engineering / CAD drawings of each of the cabin with all dimensions. The material to be used for each element to be clearly mentioned. The dimensions / sectional area of each element to be mentioned clearly.
- c. It should clearly show locations and dimensions various cabinets for panels, exhibits, ladders, electrical equipments, audio-video systems, electrical points etc in the storage area. It should clearly show location of furniture, electrical points, lighting in the Executive's cabin.
- d. Clearly indicate emergency exits and firefighting equipments locations and dimensions.
- e. Hydraulic pallets / trolleys to carry the exhibits – Make, dimensions and features.
- f. Details on proposed design of Storage racks, Driver and official's cabin, Lighting, Furniture, etc with materials to be used. Standard company products to be used wherever applicable and the same should be mentioned in the document.
- g. Conform to carry out all the allied Electrical requirements including cabling. Standard make electric fittings and wires to be used. The brand to be used in switches, adapters, wires to be mentioned.
- h. Conform to the stated requirements during Acceptance Testing Procedure
- i. Conform to provide excellent pre & post implementation support including AMC

The vendor shall also submit other documents like Delivery Challans, Configuration settings of all the installed components, Training Toolkits, User Manuals, etc. in addition to the one mentioned above.



Vendor to submit details of these three compartments of the mobile exhibition platform clearly indicating the dimensions, facilities of each compartment and the material used for each part of the mobile platform. The materials to be used will be of minimum dimensions /quality as mentioned in table below:

**Table 3.1: Materials to be used in Body Building – External and Internal.**

External Body	GI Pipe 40x60x2 / 14 AWG / 2mm
Inner Finish	ABS / Moulded Composite panels, executive cabin looks
Roof	40x40x2 GI Pipe
Front	Volvo / Airport Bus type finish
Outer Panelling and Sides	0.90GI Sheet
Windows	Triple Hardened, Tinted, Glass
Painting	Automotive PU Paint
Executives' Cabin Floor	18mm Chequered Ply with 2mm Vinyl finish
Executives' Cabin Seats	6 Numbers, Executive Recliners, Godrej, Recliners India, Durian Only
Executives' Cabin Beds	2 Beds, Separated Compartment, Charging Points, Reading Lights
Executives' Cabin Cupboard	18mm Teak with locks, six individual compartments, magazine/newspaper holder
Executives' Cabin Centre Table	Teak Wood, modern looks
Executives' Cabin Inner	ABS finish, Charging Points for Laptops /Mobile
Executives' Cabin AC	Subros make with min 1.5 ton capacity and 5 star rating
DG Set	3HP, Honda, Silent, Petrol
Inverter	Luminous, Spare Battery to be provided
Electrical / Wiring	As per best industry standard. Standard brands like Havells, Crabtree, Anchor only to be used`
Storage Cabin Racks	40x25x1.6 GI Pipe with epoxy coating, FR Grade waterproof Ply Covering, Anti-corrosive
Storage Cabin Racks	Sliding door to adjust depth of rack to hold the exhibits firmly, straps to hold the exhibits boxes firmly.
Storage Cabin Floor	18mm ply, 2mm vinyl covered with 4mm MS plain sheet
Storage Cabin Back Door	Hydraulic Preferred, Open to form a ramp of movement of exhibits
Emergency Exit	In Executives' Cabin, May be combined with Window
Graphics	Automotive PU Paint, to be painted on three sides as per SAC, ISRO guidelines
Vehicle GPS Navigation Device	Latest Mapmyindia device make with latest map
Vehicle GPS Tracker	Latest Mapmyindia device with facility to transmit location to any mobile device

#### **4. Inspection at various stages of development**

- a. Various milestones for inspection will be decided in agreement with SAC Team at the beginning of project and inspections shall be carried out in coordination with SAC engineer in a time bound manner
- b. SAC team will audit the process followed for the development time to time. If the process followed found unsatisfactory then party may be asked to correct the process followed for the development. If development process not followed properly or not improved within time, SAC may ask the party to the extent of discontinuing of the project. No payments will be made if the projects discontinuity happens for said reason.

- c. Vendor shall make all necessary jigs, fixtures, templates, gauges and any other tooling required for above fabrication.
- d. After fabrication, supplier shall assemble various components of module and demonstrate all the specifications/ features mentioned to SAC team. The mock-up assembly will be examined for fabrication quality, specifications, functioning and other requirements as per this document.
- e. Vendor shall demonstrate the integrated system to SAC team at its place for inspection before submitting it to SAC.

## 5. Dimensions of exhibits to be carried

- I. **Rocket Models ( 3 Nos ) :** Volume of each rocket 3' x 2' x 8' (L x W x H)



- II. **Satellite models without solar panels ( 2 Nos ) :** Volume of each model 2' x 2' x 2'



- III. **Satellite models with solar panels ( 6 Nos ) :** Volume of each model 4' x 2' x 2'



**IV. Display panels ( 50 Nos. Approx. ) :** Size of each panel 6' height x 4' width.



**V. Payload components ( 2 Nos. ) :** Volume of each model 4' x 2' x 2'



**VI. Working model of satellite ( 1 No. ) :** Volume of box 3' x 3' x 3'



**VII. LED display ( 3 No. ) :** Dynamic Display to showcase ISRO activities

## Annexure 1: Eligibility Criteria

**Note:** The vendor participating in the procurement process shall possess the following minimum eligibility criteria. The vendor not fulfilling the below mentioned criteria may be rejected.

Sl. No.	Requirements	Description	Compliance (Yes/No) & Document Ref. No.
1.	<b>Turnkey Solution Capability</b>	Capable of <b>end-to-end realisation</b> of the entire Mobile Exhibition Platform as per the details mentioned in the RFP document. The vendor must essential enclose documents to prove his end-to-end realisation capabilities which may include details of previous work experience in similar project, images of facilities to realise the Mobile Exhibition Platform, photographs of previously executed similar vehicles etc.	
2.	<b>Turnkey Implementation Experience</b>	Vendor must have successfully <b>completed/executed at least one project</b> of similar nature <b>on turnkey basis</b> . Details of such projects to be attached including photographs of vehicle front, sides, back and interiors. This project should be the best project executed by the vendor as per his own standards.	
3.	<b>Fabrication Facilities available with the vendor</b>	Attach all details including <b>engineering specifications of facilities</b> where the mobile platform will be fabricated, the brand of machines used, painting facilities available with vendor etc. Enclose photographs of facilities.	

## Annexure 2: Functional Requirements & Technical Specifications

**Note:** Vendor has to provide compliance the functional requirements and technical specifications as given in the tables below. In addition, the vendor should also supply, install, integrate, test and commission any other additional equipment/component/part/assembly/accessory/consumable/software/etc, which is necessary to meet the complete requirement of the project. The additional items required have to be clearly specified and listed in the Bill of Material. The prices for additional items have to be included as a part of the financial bid of the vendor's solution for the turnkey project.

Sr. No.	Item/ Specification	Description of Requirement	Compliance (Yes/No)	Deviations/ Remarks
<b>1.</b>	<b>Chassis</b>			
	<b>Functional Requirement</b>			
	Type - Tata / Ashok Leyland / Volvo BS IV	Overall Length : 12m Vendor to mention Brand and model details in the bid Please note that BS IV emission norms is compulsory.		
	Chassis	The chassis shall conform to latest revision of Central Motor Vehicles Rules (CMVR) in all respects. Chassis shall comprise of chassis frame, Engine, Fuel Injection Pump, air Compressor, Radiator, Transmission (including Clutch, Gear Box and Propeller shafts), Front Axle Assembly, Rear Axle Assembly, Suspension, Power Steering Assembly, Seven wheels with Tyre Assembly. Brake System, Head and Tail Lamp Assemblies, Electrical Horns, Side Indicators, Rear View Mirrors, Aesthetically designed Adjustable type ready upholstered driver seat with Safety belt, Driver Cabin Flooring, without Front Cowl and Centre Grill. The chassis shall be of Full Forward Control only.		
	Fuel Tank	Mention Storage capacity		
	Electrical System	The system shall be of 24 -Volt D.C. A battery-isolating switch (main cable cut off switch) shall be provided near driver seat on the LH side. Battery: Maintenance-free Batteries of 24 Volts (12 x 2) 21 Plates 150 AH of reputed make.		
	Instrument Panel	Aesthetically designed instrument Panel should consist of Speedo Meter with km counter, Air pressure Gauge, Flashing-side indicator and switch, Warning lamp for low air pressure, Warning lamp for changing of batteries, Starter Switch, Dipper Switch, Ammeter of 50 Amp range, Temperature gauge, Engine oil Pressure Gauge, Engine RPM Meter etc.		
	Tools	The Vendor shall supply necessary tool box with tools along with the Chassis.		
<b>2.</b>	<b>Body Building</b>			
	Functional Requirement	A mobile exhibition platform will be used to carry various exhibits described below and the Executives representing ISRO to the location of exhibition. The dimensions of the exhibits are as described in previous sections and the boxes in which they will be stored are having dimensions as given in table below		
	<b>Executive's Cabin</b>	Overall Dimensions of the Cabin		
		No of Recliners – 6, Brand and dimensions		
		No of Beds – 2 Essential Requirement		
		Laptop provision, Brand, Model Number and Specifications		

		Refrigeration Unit, Brand and specification		
		Two Fans		
		Emergency Window, Dimensions and Material		
		Electrical Points		
		Tea/Coffee Maker, Brand and Specifications		
		Cupboard and Center Table, Dimensions and Material		
		Lighting Arrangement described		
		Wifi Provision, Router – Brand and specifications		
	<b>Storage Cabin</b>	Overall Dimensions of the Cabin		
		Material used to make cabinets/storage elements, Dimensions of each cabinet		
		Ease of loading and unloading		
		Shock Absorbers to prevent damage to fragile exhibits		
		Hydraulic pallet / trolley : Brand and Specifications		
		Arrangement for holding exhibits firmly in place		
		Lighting details		
		Two Fans		
		Ventilations		
	<b>Driver's Cabin</b>	Overall Dimensions of the Cabin		
		Standard Features in the cabin		
		MapmyIndia Navigation Device - Provide all technical specifications, user manual, warranty details.		
		MapmyIndia GPS tracker device - Provide all technical specifications, user manual, warranty details.		

**Table 2.1: Dimensions of Boxes in which exhibits will be packed.**

This is the minimum requirement to be accommodated inside the storage cabin.

Sr.	Item	Qty	Height	Length	Width
1	Satellite Model Type 1	3	26"	12"	14"
2	Satellite Model Type 2	2	27"	13"	13"
3	Apple Model	1	21"	22"	17"
4	Bhaskara Model	1	18"	18"	17"
5	Ayrahatta Model	1	15"	17"	17"
6	Components / Materials	1	18"	32"	24"
7	Small Payloads / Models	3	14"	28"	20"
8	Water Dispenser	1	22"	14"	15"
9	PSLV Box 1	2	12"	42"	13"
10	PSLV Box 2	2	9"	54"	10"
11	GSLV Box 1	1	16"	48"	16"
12	GSLV Box 2	1	8"	56"	8"
13	GSLV Mk III Box 1	2	10"	50"	26"
14	GSLV Mk III Box 2	2	10"	41"	11"
15	Working Model	2	43"	33"	32"
16	55" LED TV Box	3	52"	32"	7"
17	Flat Static Panels	50	72"	48"	0.5"
18	Boxes for Exhibition Panels	30	18"	18"	38"

### Annexure 3: Terms & Conditions

Vendor has to provide compliance to the Terms & Conditions as follows:

Sl. No.	Terms & Conditions	Compliance (Yes/No)
1.	The vendor has to participate in a <b>pre-bid meet</b> where all the requirements will be presented to the vendors and their doubts cleared.	
2.	Vendor agrees to carry out all the activities as given in the <b>Scope of Work</b> of this RFP document. Partial or incomplete offer shall not be considered.	
3.	Vendor shall <b>attach a detailed document</b> explaining proposed solution along with schematic drawings with detailed dimensions, system/connectivity diagram, technical details, product/subsystem information, clients list, etc.	
4.	Purchase order shall be placed to a <b>single vendor</b> for all the items and shall not be split considering seamless integration.	
5.	Vendor shall <b>complete</b> the items delivery, turnkey installation & commissioning preferably <b>within 60 days from the date of the purchase order</b> . If extension is necessarily required, the vendor may have to explicitly seek an extension by submitting proper justification in writing. However, <b>SAC reserves the right</b> to extend the delivery, installation/completion period with or without liquidated damages only after examining the causes of hindrance in the delivery of goods & service.	
6.	Vendor may <b>seek clarifications in writing</b> through SAC purchase dept. in respect of the bidding documents. If required, vendor may conduct site visit for assessment by seeking formal permission from SAC/ISRO. A request may be sent at least one day in advance at <b>psoa@sac.isro.gov.in</b> . All clarifications and the site visit request will be entertained only <b>till the last 3 working days</b> before the date of submission of bids.	
7.	Bids submitted by the vendors shall remain <b>valid at least for a period of 180 days</b> from the date of deadline of submission of bids.	
8.	Vendor shall certify that the supplied goods are <b>brand new, genuine/authentic</b> , not refurbished, conform to the description and quality as specified in this RFP and are free from defects in material, workmanship and service.	
9.	Vendor shall supply all the <b>software with genuine licenses</b> (Perpetual) under the name of SAC with all the updates and patches, <b>free of cost</b> .	
10.	Entire Hardware supplied by vendor should be <b>interoperable</b> . In case any additional device/software are required for interoperability, the same shall be provided, installed and maintained by the vendor at no extra cost for entire warranty period.	
11.	Vendor should not quote any equipment/item which is <b>already obsolete</b> . It should be ensured that the quoted equipment parts for repair/maintenance are available for at least 5 more years. Only in case of the specifications by us leads to <b>obsolete item, an equivalent or better</b> make/model shall be considered. Vendor shall provide the complete technical details of the alternate product and shall also be liable to provide the obsolete certification from the OEM.	
12.	Vendor has to supply & integrate <b>all additional attachments/components</b> like Ethernet Switch, Wall/Floor Plates, Switching/Patch Panel, Mounting Rack/Brackets, Inter-connection kits, Remote Control, Accessories, Cables & Connectors, etc. to meet the complete requirement and to ensure smooth operations.	
13.	Vendor has to supply all the <b>installation material/accessories/consumables</b> (e.g. screws, clamps, fasteners, wires, etc.) necessary for the installation of the systems.	
14.	Wherever the required item costs are not indicated separately it is assumed that vendor has <b>included in the total cost</b> . Vendor shall be liable to supply the required item to execute the work and ensure the required system functioning.	
15.	All electronic systems/sub-systems should smoothly operate as per Indian standards i.e. <b>Power Supply: 230V, 50Hz AC, Temperature: 10°C - 35°C, Humidity: 20% - 80 % (Non-condensing)</b> .	
16.	Vendor shall prepare desired number of <b>Earth Pits</b> (as per applicable standards), in consultation with our Electrical Engineers that may be required for installation of UPS and other equipments. This will be duly verified and inspected by the SAC Executives.	
17.	Entire installation should be carried <b>as per best industry practices</b> . The Vendor shall <b>follow all Safety Regulations and practices</b> . The system shall be subjected to	

	inspection at various stages and one final inspection before dispatch.	
18.	Vendor has to implement <b>Air-Conditioning, Fire Safety systems, Emergency Lights &amp; CCTV Systems</b> in the mobile platform, so that it is in aesthetic as well as technical coherence with the proposed solution.	
19.	Vendor has to carry out the <b>Civil &amp; Electrical works</b> like cabling, laying of conduits, digging and cutting of flooring, etc as per requirement of mobile platform	
20.	Vendor has to <b>take approvals on the colour &amp; lighting schemes</b> to be used for all interior works. Samples of the item to be provided for obtaining approvals.	
21.	Vendor has to prepare and submit an <b>Acceptance Test Plan (ATP)</b> mutually agreeable to SAC as per tender specifications & shall demonstrate based on SAC approval specifications as per SAC RFP. All the costs towards testing & commissioning will be borne by the vendor.	
22.	Vendor shall provide <b>comprehensive on-site warranty of at 3 years</b> from the day of commissioning, which shall include preventive & unlimited break-down maintenance calls including repair/replacement of material, spares, modules, software etc. Warranty shall start from the date of acceptance of system. Vendor shall offer post-warranty Comprehensive AMC charges for 1 <sup>st</sup> and 2 <sup>nd</sup> year.	
23.	Supplier/Vendor shall deliver <b>all goods F.O.R SAC</b> basis.	
24.	Vendor shall <b>arrange all logistical support</b> and make their <b>own arrangements</b> such as lodging, boarding, transportation, etc., while executing this project.	
25.	Vendor should provide a <b>Helpdesk for Complaint Registration</b> with proper Address and Telephone numbers, Email IDs of the contact persons for registering complaints. Any complaint should be attended to <b>immediately</b> on registering it.	
26.	The supplier/vendor shall <b>keep confidential</b> and shall not, without the written consent of the other party hereto, divulge to any third party any drawings, documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract	
27.	<b>Bank Guarantee (PBG):</b> Vendor shall submit bank guarantee of <b>10% of order value</b> for three years. Bank guarantee shall be released/refunded after the successful of completion of warranty period.	
28.	<b>Payment Terms:</b> 70% of the order value of materials shall be paid against delivery of materials at site by supplier. 30% of order value of materials shall be paid only after successful turnkey implementation, demonstration, training, operations and <b>acceptance by SAC</b> . Installation & Commissioning charges, if payable separately, shall be paid on the final acceptance	
29.	Vendor has to clearly indicate in their quotation, all <b>taxes &amp; duties</b> as applicable to this project (VAT, Service Tax, Excise, etc.) with rates specified in <b>percentage (%)</b> .	
30.	Vendor may note that the <b>Income Tax</b> as applicable shall be <b>deducted at source</b> .	
31.	SAC/ISRO will <b>not be responsible for any compensation for injury/loss of life</b> to those personnel deployed by the Supplier due to their negligence/incompetence.	
32.	SAC may at any time <b>terminate the Contract</b> by giving a written notice of at least 30 days to the supplier/ selected vendor, if the supplier/selected vendor fails to deliver any or all quantities or fails to perform any other obligation under the contract within the time period specified in the contract, or any extension thereof granted by SAC.	
33.	<b>Arbitration:</b> Dispute, if any, shall be settled mutually	
34.	Vendor shall <b>provide compliance statement to all points</b> , functional requirements and technical specifications as well as to the Terms & Conditions supported by relevant literature. Deviations, if any shall be clearly explained with effect on the performance of the system. SAC may or may not accept the deviation. Vendor's offer shall be rejected without asking for any clarification if any one or more deviations are not acceptable to SAC. In compliance table for any specification or terms & conditions, left blank shall be treated as non-complied to SAC specification and offer shall not be considered. <b>Offer without compliance statement shall not be considered at all.</b>	

#### Annexure 4: Bill of Material (BoM)

Note: Vendor has to prepare the BOM as per the formats given below. All additional attachments/components/parts/accessories/software/etc., which are necessary for execution of the complete projects as per our requirement should be included in the Essential items (Table-1). The corresponding prices should be masked in the technical bid and should clearly indicate in the price bid (Part II). The addition of sub-total prices of Table-1 & Table-2 will constitute the Total price of the turnkey project, which will be used for the final comparison of the price bid (Part II).

**Table - 1: Essential items**

Item No.	Equipments Make, Model, Specifications	Quantity	Unit Price (INR)	Total Price (INR)
1.				
2.				
3.				
4.				
<b>Sub-Total (1) of Essential Items</b> <i>(including separate charges for additional attachments/components, installation, commissioning, training, 1 year operation through resident engineer, etc.)</i>				

**Table - 2: Comprehensive Annual Maintenance Charges (CAMC)**

Sl. No.	Comprehensive AMC (Post the completion of 3-years Warranty)	Total Price (INR)
1.	1 <sup>st</sup> Year	
2.	2 <sup>nd</sup> Year	
<b>Sub-Total (2) of CAMC</b>		

**Total Price of Turnkey Project = Sub-Total (1) + Sub-Total (2) = Total Project Price in INR**

**Table – 3 : Optional items**

(SAC shall decide the inclusion of optional items at the time of placing the purchase order, if required).

Sl. No.	Consumable/Optional	Quantity	Unit Price (INR)	Total Price (INR)
1.				
2.				
3.				
4.				
5.				
6.				

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II                : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II        :        PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with ‘Tender fee cover’ (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG WITH  
THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

<b>Sr. No.</b>	<b>Commercial terms</b>	<b>Compliance/Remarks/Comments by Vendor</b>
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 90 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1 14.2	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number.	

14.3	Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	
14.4		
14.5	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.6	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.7	Please indicate rate of the Sales Tax/VAT applicable.	
14.8	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required. Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be	

	replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24.	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30. 30.1 30.2 30.2.1 30.3	<p>Bank Guarantees (from Nationalized/ Scheduled Bank/ Bank approved by Purchaser.</p> <p>Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.</p> <p>Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.</p> <p>The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.</p> <p>Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.</p>	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	

37.	<p>Acceptance of Fall clause.</p> <p>“The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase &amp; Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction” .</p>	
38.	<p>You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.</p>	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS**

1. Tenders should be sent in sealed envelopes super scribing the relevant tender No, and the due date of opening. Only one tender should be sent in each envelope. Unsigned bids shall be rejected.
2. Late tenders and delayed tenders will not be considered. Unsigned bids shall be rejected.
3. Tender fee & bid security (EMD) exemption for MSME.
4. Sales Tax and/or other duties/levies legally leviable and intended to be claimed should be distinctly shown separately in the tender.
5. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from the Purchase Officer concerned to avoid any payment of such levies.
6. a) Your quotation should be valid for at least **90 days** from the date of opening of the tender.  
b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
7. Preference will be given to those tenders offering supplies from ready stocks and on the basis of FOR destination/delivery at site.
8. (a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.  
(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of non-acceptance of tender, the tenderer will have to remove the samples at his own expense.  
(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.  
(d) **Specifications:** Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.
9. The Purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

10. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.
11. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.
12. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted.
13. The authority of the person signing the tender, if called for, should be produced.
14. We are exempted from the payment of Central Excise & Custom Duties vide notifications issued by Govt. of India.
15. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.
16. No request for extension for due date for submission of tenders will be entertained.

## **TERMS & CONDITIONS OF TENDER**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assigns.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition is included in the Purchase Order.
- (d) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

### **2. PRICES:**

Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

### **3. SECURITY DEPOSIT:**

On acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding ten percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, 'Security' and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores Contracted at the risk of the



Contractor in terms of Sub-Clause (ii) and (iii) of clause 10(b) hereof and/or to recover from the Contractor, damages arising from such cancellation.

#### **4. GUARANTEE & REPLACEMENT:**

- (a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance.
- (b) For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any part thereof are faulty.
- (c) If, in the opinion of the Purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the Purchaser, provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months from the date of acceptance thereof.
- (d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- (e) The decision of the Purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defect has developed within the said period of 12 months or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor.
- (f) To fulfil guarantee conditions outlined in clause 4 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- (g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of the stores at Purchaser's site.
- (h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications then such a specification shall apply in such cases the period of 14 months referred to in para 4 (b) & (c) shall be the 'asked for' guarantee period plus two months.

#### **5. PACKING FORWARDING & INSURANCE:**

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

## **6. DESPATCH:**

The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on 'said to contain' basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

## **7. TEST CERTIFICATE:**

Wherever required, test certificates should be sent along with the despatch documents.

## **8. ACCEPTANCE OF STORES:**

- (a) The stores shall be tendered by the Contractor for inspection at such places as may be specified by the Purchaser at the Contractor's own risk, expense and cost.
- (b) It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the Purchaser, whose decision shall be final.
- (c) If, in the opinion of the Purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the Purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor.
- (d) If the whole or any parts of the stores supplied are rejected in accordance with Clause No. 8 (c) above, the Purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is made within six months from the date of rejection of the stores as aforesaid.

## **9. REJECTED STORES:**

Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the Purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

## **10. DELIVERY:**

- (a) The time for and the date of delivery of the stores stipulated in the Purchase Order shall be deemed to be the essence of the Contract and delivery must be completed on or before the specified dates.
- (b) Should the Contractor fail to deliver the stores or any consignment thereof within the period prescribed for such delivery, the Purchaser shall be entitled at his option either:
  - (i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%, or
  - (ii) to purchase from elsewhere, without notice to the Contractor on the account and at the risk of the Contractor, the stores not delivered or others of a similar description (where others exactly complying with the particulars, are not, in the opinion of the

Purchaser, readily procurable, such opinion being final) without cancelling the Contract in respect of the consignment (s) not yet due for delivery, or

(iii) to cancel the Contract or a portion thereof and if so desired to purchase or authorise the purchase of stores not so delivered or others of a similar description (where others exactly if complying with the particulars are not, in the opinion of the Purchaser, readily procurable, such opinion final) at the risk and cost of the Contractor. In the event of action being taken under sub-clause (ii) & (iii) of clause 10 (b) above, the Contractor shall be liable for any loss which the Purchaser may sustain on that account, provided that the re-purchase or if there is an agreement to repurchase then such agreement is made within six months from the date of such failure. But the Contractor shall not be entitled to any gain on such re-purchase made against default. The manner and method of such re-purchase shall be at the discretion of the Purchaser, whose decision shall be final. It shall not be necessary for the Purchaser to serve a notice of such re-purchase on the defaulting Contractor. This right shall be without prejudice to the right of the Purchaser to recover damages for breach of Contract by the Contractor.

#### **11. EXTENSION OF TIME:**

As soon as it is apparent that the Contract dates cannot be adhered to, an application shall be sent by the Contractor to the Purchaser. If failure, on the part of the Contractor, to deliver the stores in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final) he may allow such additional time as he considers it to be justified by circumstances, of the case without prejudice to the Purchaser's right to recover liquidated damages under clause 10 thereof.

#### **12. ERECTION OF PLANT & MACHINERY:**

Wherever erection of a plant or machinery is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the erection as and when called upon to do so within the period specified by the Purchaser, the Purchaser shall have the right to get the erection done through any source of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the Purchaser is liable to incur towards erection. The Contractor shall, however, not be entitled to any gain due to such an action by the Purchaser.

#### **13. PAYMENT:**

Contractor's bill will be passed for payment only after the stores have been received, inspected and accepted by the Purchaser.

#### **14. MODE OF PAYMENT:**

Normally payment will be made for the accepted stores within 30 days from the date of receipt of the materials.

#### **15. RECOVERY OF SUM DUE:**

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the Purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the

case may be, shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the Purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the Purchaser on demand the remaining balance due. Similarly, if the Purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the Purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the Purchaser are finally adjudicated upon and paid by the Contractor.

#### **16. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all stores supplied against this Contract are free and clean of infringement of any Patent, Copyright or Trademark, and shall at all times indemnify the Purchaser against all claims which may be made in respect of the stores for infringement of any right protected by Patent Registration of design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for sufficiency of all means used by him for the fulfilment of the contract.

#### **17. ARBITRATION:**

In the event of any question, dispute or difference arising under these conditions or any conditions contained in the Purchase Order or in connection with this Contract (except as to any matter the decision of which is specially provided for by these conditions), the same shall be referred to the sole arbitration of the Head of the Purchase office or some other person appointed by him. It will be no objection that the arbitrator is a Government servant that he had to deal with matter to which the Contract relates or that in the course of his duties as Government servant he has expressed views on all or any other matters in dispute or difference. The award of the arbitrator shall be final and binding on the parties of this Contract.

If the arbitrator be the Head of the Centre/Unit –

- (i) In the event of his being transferred or vacating his office by resignation or otherwise, it shall be lawful for his successor-in-office either to proceed with reference himself, or to appoint another person as arbitrator, or
- (ii) In the event of his being unwilling or unable to act for any reason, it shall be lawful for the Head of the Centre/Unit to appoint another person as arbitrator. If the arbitrator be a person appointed by the Head of the Purchase Office – In the event of his dying, neglecting or refusing to act or resigning or being unable to act, for any reason, it shall be lawful for the Head of the Centre/Unit either to proceed with the reference himself or appoint another person as arbitrator in place of the outgoing arbitrator. Subject as aforesaid the Arbitration & Conciliation Act 1996 and the rules thereunder and any statutory modifications thereof for the time being in force shall be deemed to apply to the arbitration proceedings under this Clause. The Arbitrator shall have the power to extend with the consent of the Purchaser and the Contractor the time for making and publishing the award. The venue of arbitration shall be the place as Purchaser in his absolute discretion may determine. Work under the Contract shall, if reasonably possible, continue during arbitration proceedings. In the event of any dispute or difference relating to the interpretation and application for the provisions of the Contracts, such dispute or difference shall be referred by either party to Arbitration of one of the Arbitrations in the



Department of Public Enterprises. The Arbitration Act 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute provided however any party aggrieved by such award may make a further reference for setting aside or revision of the award to the Law Secretary, Department of Legal Affairs. Ministry of Law & Justice, Government of India. The parties to the dispute will share equally, the cost of arbitration as intimated by Arbitrator.

**18. COUNTER TERMS AND CONDITION OF SUPPLIERS:**

Where counter terms and conditions printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof is obtained.

**19. SECURITY FOR PURCHASE OF MATERIALS:**

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the Purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.

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## STANDARD TENDER FORM

(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

### TENDER FORM

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

(Seal)

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: [publictender@sac.isro.gov.in](mailto:publictender@sac.isro.gov.in)

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराहन 3 बजे तक) Due on (Up to 3 pm)
9.	AHSE 201500342701	THEODOLITE (Two Part Tender)	22/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

M/s

000000

**Our Ref No : AHSE 2015-003427-01**

**Tender Due: 15:00 Hrs ISTon 22/06/2016**

**Dear Sirs,**

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: As per enclosure. )

S.No.	Description of Items with Specifications	Unit	Quantity
1	OPTICAL GRADE DIGITAL THEODOLITE WITH ACCESSORIES(Technical Specifications-As per attched sheet)	Nos.	2

**DELIVERY AT:** SAC AHMEDABAD

**MODE OF DESPATCH** BY AIR FRE

**DUTY EXEMPTIONS** We are exempted from payment of customs duty.

**SPECIAL INSTRUCTIONS** Mention validity, warranty, payment terms & delivery terms.

**SPECIFIC TERMS** As per enclosure.

**INSTRUCTIONS TO TENDERERS:**

Acceptance of Liquidated damages- As per enclosure

Acceptance of Performance Bank Gurantee-As per enclosure

-EMD(Earnest Money Deposit)- As per clause 3 attached Terms & Conditons

- "Quotations shall be submitted by the bidders only by post or by hand in sealed covers. Quotations received by FAX or e-mail shall not be considered as valid offers and will not be accepted for evaluation."

-Please note that this is a TWO-PART TENDER. Send your quotation as per attached instructions only. Quotation not conforming to the instructions will be rejected. Fax & email quotations will not be accepted.

-Technical & Commercial Compliance statement confirming compliance with all the point of Tech & Commercial annexures enclosed with the tender document shall be submitted along with the offer. In the absence of the same, your offer shall be summarily rejected

ANIL N VAIDYA  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

Table: 1.1: Specifications for Digital Theodolites

SL No.	Specifications	Requirements
1.	<b>Angular measurement</b> Accuracy, (standard dev. In Horizontal and vertical direction ) Unit of measurement	$\leq 0.5$ arc seconds Degree, Gon , mil
2.	<b>Display</b> Type Display least count	LCD (liquid crystal display) $\leq 0.01''$
3.	Shortest focusing distance	$\leq 0.6$ m
4.	Data storage	Memory card
5.	Interfaces	RS232 Programmable interface /USB
6.	Power supply	Plug-in battery packs, rechargeable with $220 \pm 10$ V AC
7.	Telescope type	Pan-focal alignment telescope
8.	Auto collimation device	Built-in auto collimation eyepiece
9.	Image	Erect
10.	Objective aperture	$50 \pm 5$ % mm
11.	Clear objective diameter	$\geq 75$ % of objective aperture
12.	Field of view diameter	$\geq 2$ meter at 100m $\geq 0.2$ meter at 10m
13.	Magnification	$\geq 12x$ at 0.6 meter of focusing distance $\geq 30x$ at 10meter of focusing distance
14.	Minimum Range of inclination of telescope	$-55^{\circ}$ to $+47^{\circ}$
15.	Reticule	A crosshair with central open
16.	<b>Compensator</b> Setting accuracy	$\leq 0.5$ arc seconds
17.	<b>Environmental</b> a) Temperature range b) Storage temperature c) Protection d) Humidity range	Operational $0^{\circ}\text{C}$ to $+50^{\circ}\text{C}$ $-40^{\circ}\text{C}$ to $+70^{\circ}\text{C}$ Against rain and dust Better than 10% to 80 %
18.	Illumination	Plug-in lamp, keyboard switch
19.	Weight (w/o battery)	$\leq 7.5$ kg
20.	Warranty	Minimum 3 years

21.

Installation and training

Installation is to be done at user's site and training is to be given by manufacturer's authorized service personnel.

Quantity: 02

Table 1.2: Accessories

SL No	Accessories	Specifications	Quantity
1	Tripod	<ul style="list-style-type: none"> <li>Aluminum tubing</li> <li>flat, non-slip feet</li> <li>Bracing and height adjustment for setting up the instrument at a height of up to 2.8 meters.</li> </ul>	02
2	Targets	Reflective tape targets	01
3	Diode laser	<ul style="list-style-type: none"> <li>Operating at 635 nm wavelength</li> <li>With intensity regulator (0 to 100%)</li> <li>Maximum emitted power of 0.95 mW.</li> </ul>	01
4	Memory card	<ul style="list-style-type: none"> <li>PCMCIA or better version</li> <li>Capacity <math>\geq</math> 2Mb when used in offline mode.</li> </ul>	02
5	Corner Cube Reflector (CCR)	1.5 " diameter magnetic mount	01
6	Spare Lamps	Plug in lamps	02

➤ Vendors should provide compliance matrix against each specifications given in the table 1.1 and 1.2.

➤ Delivery Schedule: 4 months from receiving order acknowledgement (after placement of PO) from vendor.

➤ Additional 3 years warranty should be quoted separately (optional)

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II                : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II        :        PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with ‘Tender fee cover’ (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER**

1. The Tenderers should submit quotations in sealed envelope, superscribing the Tender No. and due date of opening and complete in all respects with technical specifications, including pamphlets and catalogues. Separate instructions, if any in this regard should be strictly complied with.
2. A Proforma Invoice may also be given which should contain the following information:
  - a) The FOB/FCA value, for import by Sea freight / Air freight up to Ahmedabad and for air parcel post up to Ahmedabad should be separately indicated.
  - b) Agency Commission: The amount of commission included in the price and payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an Invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. This payment will be released to the Indian Agent after receipt and acceptance the goods in India.
  - c) The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor's invoice should separately reflect the amount of commission payable to his Indian Agent.
  - d) The earliest delivery period and country of origin of the Stores.
  - e) Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor.
  - f) The approximate net and gross weight and dimensions of packages / cases.
  - g) Recommended spares for satisfactory operation for a minimum period of one year beyond warranty.
  - h) Details of any technical service, if required for erection, assembly, commissioning and demonstration.
3. "Bidders shall submit an amount of **₹ 3,12,000 (Rupees Three Lakh Twelve Thousand Only)** with the bid / before the date of tender opening as stipulated in tender schedule towards Earnest Money Deposit (EMD).

The EMD shall be submitted in the form of DD/Banker's cheque/Bank Guarantee/Fixed Deposit Receipt (FDR) made in the name of Accounts Officer, Space Applications Centre, and be payable at par at Ahmedabad.

Bids received without EMD shall be treated as invalid and shall not be considered. In case of two-part (multi-part) tenders, EMD must be submitted either in separate sealed cover clearly marked as 'EMD against tender no. \_\_\_\_\_' or with technical bid, so that it should be available at the time of opening of the first part of bid document itself. Tenders not complying with this requirement shall be rejected.

The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):



- Vendors already registered / empanelled with SAC as authorized vendors.
- Overseas bidders submitting offers directly without involving an Indian Representative.
- Central PSUs/PSEs and autonomous bodies
- Micro and Small Enterprises
- Khadi and Village Industries Commission
- National Small Industries Corporation
- Any other establishments specifically exempted from paying EMD by an order of the Government of India.

The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

EMD of successful tenderer may be retained and converted to Security Deposit, if applicable.”

4. The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country.
5. The offer should be valid for a minimum period of 120 days or longer if called for from the due date of opening of the tender.
6. Samples, if called for, should be sent free of all charges.
7. Late and delayed tenders will not be considered. Quotations by fax must be followed by detailed offers.
8. Offers made by Indian Agents on behalf of their Principals, should be supported by the Proforma invoice of their Principals.
  - a) In a tender either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
  - b) If an agent submits bid on behalf of the principal/OEM, the same agent shall not submit a bid on behalf of another principal/OEM in the same tender for the same item/product.
9. We are exempted from Customs/Excise Duties.
10. The details of Import Licence will be furnished in the Purchase Order.
11. The authority of person signing the tender, if called for, shall be produced.
12. Instructions / Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents / correspondence should be in English language only.
13. The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason.
14. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.
15.
  - a) Part shipment is not allowed unless specifically agreed to by us.
  - b) As far as possible stores should be despatched by Indian Flag Vessels / Air India through an Agency nominated by us.
16. Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractor.



17. Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility.
18. For items having shelf life, those with maximum shelf life should be supplied if order is placed.
19. No request for extension for due date for submission of tenders will be entertained.
20. Unsigned quotations will be rejected.
21. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.

## **TERMS AND CONDITIONS**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assignees.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's Successors, representatives, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by duly authorised officer intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores, plant, machinery or equipment or part thereof.
- (d) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.

### **2. PRICES:**

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations. However, such clauses will be subject to final acceptance by Purchaser.

### **3. TERMS OF PAYMENT:**

- 3.1 Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon.
- 3.2 The Sight Draft / Letter of Credit will be operative on presentation of the under mentioned documents:
  - a) Original Bill of Lading / Airway Bill
  - b) Commercially certified invoices in triplicate, describing the stores delivered, quantity, unit rate and their total value. The invoice should indicate discounts, and Agency Commission if any separately.
  - c) Packing List showing individual dimensions and weight of packages.
  - d) Country of Origin Certificate in duplicate.
  - e) Test Certificate.



- f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.
- g) Warrantee and guarantee Certificate/s vide Clause 20 herein below

#### **4. IMPORT LICENCE:**

Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide Para 3.2.

#### **5. DEMURRAGE:**

Supplier shall bear demurrage charges, if any, incurred by the Purchaser due to delayed presentation of shipping documents as prescribed in Para 3.2 to the bankers beyond a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

#### **6. ADDRESS OF INDIAN AGENT:**

.....

#### **7. GUARANTEED TIME OF DELIVERY:**

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

#### **8. INSPECTION AND ACCEPTANCE TESTS:**

8.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under the Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the Purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.

8.2 For tests on the premises of the Contractor or of any of his sub- Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.

8.3 When the stores have passed the specified test, the Purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the Purchaser as may be required.

#### **9. MODE OF DESPATCH:**

Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the Purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

#### **10. PORT OF ENTRY:**

FOR AIR SHIPMENTS: AHMEDABAD (Via Mumbai, if required)



FOR SEA SHIPMENTS: NHAVASHEVA/Mumbai Seaport

**11. CONSIGNEE:**

Sr. Purchase & Stores Officer,  
Central Stores,  
Space Applications Centre (SAC),  
Ahmedabad

**12. SHIPPING MARKS:**

The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow:

PURCHASE ORDER NO. ....

DATED .....

GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE

Destination: ..... &

Port of Entry: .....

**13. INSURANCE OF THE STORES:**

The necessity or otherwise of insurance will be as indicated in the Purchase Order.

**14. CONTRACTOR'S DEFAULT LIABILITY:**

14.1 The Purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

- a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.
- b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

15. In the event the Purchaser terminates the Contract in whole or in part as provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores.

15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

- a) Any completed stores.
- b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores



delivered to and accepted by the Purchaser and for manufacturing material delivered and accepted.

15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the Purchaser for liquidated damages for delay as set out in Clause 19 until the stores are accepted.

#### **16. REPLACEMENT:**

If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the Purchaser agrees, the price towards replacement items shall be paid by the Purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.

#### **17. REJECTION:**

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the Purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may at his option either:

- a) Replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or
- b) Terminate the Contract for default as provided under Clause 14 above, or
- c) Acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice any other rights of Purchaser's under the Contract including recovery of liquidated damages for delay.

#### **18. EXTENSION OF TIME:**

If the completion of supply of stores is delayed due to reasons of *force majeure* such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the Purchaser in writing of his claim for an extension of time. The Purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.

#### **19. DELAY IN COMPLETION / LIQUIDATED DAMAGES:**

If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the Purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5%) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 %) of the Contract price of the portion of stores so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.



## **20. GUARANTEE & REPLACEMENT:**

- a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance.
- b) For a period of twelve months (or such period as agreed upon by the parties) after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months (or such period as specified in Contract) from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty.
- c) If in the opinion of the Purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the Purchaser provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months (or such period as specified in Contract) from the date of acceptance thereof.
- d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- e) The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects has developed within the said period of 12 months (or such agreed period) or as to whether the nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor.
- f) To fulfill guarantee conditions outlined in Clause 20 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser - Bank Guarantee format enclosed) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at Purchaser's site.
- h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months.**

## **21 REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:**

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the Purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

## **22. PACKING:**

- a) The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space



qualified stores. The Contractors shall be held responsible for all damages due to improper packing.

- b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.
- c) The Contractor shall notify the Purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.
- d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.
- e) Transshipment of equipment shall not be permitted except with the written permission of the Purchaser.
- f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the Purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:
  - a) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt.  
(Two non-negotiable copies)
  - b) Invoice (3 copies)
  - c) Packing List (3 copies)
  - d) Test Certificate (3 copies)
  - e) Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.

### **23. ARBITRATION:**

If at any time any question, dispute or difference whatsoever shall arise between the Purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by Purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India.

### **24. LANGUAGE AND MEASURES:**

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

### **25. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent,



Registration of design or Trade Mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract.

**26. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:**

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the bidder, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.

**27. SECURITY INTEREST:**

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, Purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the Purchaser in accordance with the terms of the Contract. Such security interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

**28. BANK CHARGES:**

While the Purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising amendment commissions.

**29. TRAINING:**

The Contractor shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores. Number of such personnel to be mutually agreed upon.

**30. APPLICABLE LAW:**

The Contract shall be interpreted, construed and governed by the laws of India.



## **PACKING INSTRUCTIONS**

1. In tune with the requirement of international plant protection convention of the FAO, UN the following has become mandatory with immediate effect.
2. All packing materials of any kind of plant origin used for packing shall require treatment including hear-kiln treatment at 56 degree centigrade for a minimum of 30 hours of methylbromide fumigation at 48g/cum for 32 hours of chemical impregnation as per international standards.
3. If the consignments are sent without the aforesaid certificate, all demurrages and other charges for treatment etc. will be to the account of the suppliers.
4. This aspect also should be taken care of while submitting the offers.
5. If the packaging material being used for your product does not come under the category "material of plant origin" (i.e. Leaves, grass, wood etc.) Please certify the same in your quote and ignore the above instructions. However, the same should be ascertained at the time of actual shipment if the order is awarded to you.

.....



**STANDARD TENDER FORM**  
(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

**TENDER FORM**

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG WITH  
THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

<b>Sr. No.</b>	<b>Commercial terms</b>	<b>Compliance/Remarks/Comments by Vendor</b>
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1 14.2	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number.	

14.3	Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	
14.4		
14.5	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.6	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.7	Please indicate rate of the Sales Tax/VAT applicable.	
14.8	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required. Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be	

	replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24.	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30. 30.1 30.2 30.2.1 30.3	<p>Bank Guarantees (from Nationalized/ Scheduled Bank/ Bank approved by Purchaser.</p> <p>Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.</p> <p>Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.</p> <p>The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.</p> <p>Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.</p>	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	

37.	<p>Acceptance of Fall clause.</p> <p>“The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase &amp; Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction” .</p>	
38.	<p>You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.</p>	

भारत सरकार  
अंतरिक्ष विभाग  
अंतरिक्ष उपयोग केंद्र(इसरो)  
आंबावाडी विस्तार पी.ओ.  
अहमदाबाद - 380 015 (भारत)  
दूरभाष: +91-79-2691 3051/98  
फैक्स नं. : +91-79-2691 5835/02/48



Government of India  
Department of Space  
**SPACE APPLICATIONS CENTRE (ISRO)**  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015 (INDIA)  
Telephone : +91-79 – 2691 3051/98  
Fax No. : +91-79 – 2691 5835 / 02 /48  
Email: [publictender@sac.isro.gov.in](mailto:publictender@sac.isro.gov.in)

**निविदा सूचना सं.: सैक/पीटी /03/2016-17**  
**Tender Notice No.: SAC/PT/03/2016-17**

क्र. सं. Sr.No	निविदा नं. Tender No.	संक्षिप्त विवरण Brief Description	नियत तिथि (अपराह्न 3 बजे तक) Due on (Up to 3 pm)
10	AHAS 201600001301	RATE CONTRACT FOR CHEMICAL ETCHING (Two Part Tender)	22/06/2016

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

**INVITATION TO TENDER**

Our Ref No : AHAS 2016-000013-01

M/s

Tender Due: 15:00 Hrs ISTon 22/06/2016

Dear Sirs,

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues / pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure( Form No: ----- )

S.No.	Description of Items with Specifications	Unit	Quantity
1	Rate Contract for Film Generation with Inspection Charges.	each	1200000
2	Rate Contract for Chemical etching for single sided PCB with Inspection Charges.	each	900000
3	Rate Contract for Chemical etching for Double sided PCB with Inspection Charges.	each	1000000
4	Handling and Packaging of Etched PCB's Charges.	each	3000000

**DELIVERY AT:** SAC-STORES,AHMEDABAD

**MODE OF DESPATCH** ON SITE

**DUTY EXEMPTIONS** -----

**SPECIAL INSTRUCTIONS** NIL

**SPECIFIC TERMS** -----

**INSTRUCTIONS TO TENDERERS:**

- (1) This is a Public Tender on Two part basis. Please send your offer as per enclosed instructions only.Offer not confirming to the instructions will be rejected.Fax offer will not be accepted.Your offer should be valid for 90days.
- (2) In Case, vendors are falling under the category of MSME, registered under NSIC & would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemption under Public Procurement Policy.
- (3) Compliance Statement required to be filled & enclosed along with the technical & commercial bid by the vendors attached, (4) Tender Terms and Conditions attached, (5) Request For Proposal (RFP) attached, (6) Earnest Money Deposit (E.M.D.), Security Deposit (S.D.), Performance Bank Guarantee (P.B.G.), Liquidated Damages (L.D.) are as per "Annexure-A" attached.
- (7) Please submit your offer along with tender Fee Rs. 545.00 (in the form of Demand Draft) in favour of "Accounts Officer, SAC Ahmedabad". The draft should be submitted with the technical Bid.
- (8) Pre-Bid meeting is scheduled on 01.06.2016, 1100hrs at Purchase Conf. Room. Bidders willing to participate in the meeting shall submit details by e-mail to Purchase & Stores Officer (e-mail: rsingh@sac.isro.gov.in, psoa@sac.isro.gov.in) at least 3 working days in advance.

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
AHMEDABAD 380 015, INDIA  
PURCHASE & STORES**

Ph No: 079-2691 3067  
Fax 079-2691 5848/02/35

Date :21/05/2016

---

RAJESH SINGH  
PUR & STORES OFFICER  
For and on behalf of the President of India  
The Purchaser

**"ANNEXURE – A"**

**AHAS 201600001301**

"Bidders shall submit an amount of **Rs 5,00,000/- (Rupees Five Lakh Only)** with the bid towards Earnest Money Deposit (EMD). The EMD shall be submitted in the form of DD/Banker's cheque/Bank Guarantee/Fixed Deposit Receipt (FDR) made in the name of Accounts Officer, Space Applications Centre, and be payable at par at Ahmedabad.

Bids received without EMD shall be treated as invalid and shall not be considered. In case of two-part (multi-part) tenders, EMD must be submitted either in separate sealed cover clearly marked as 'EMD against tender no. **AHAS 2016-000013-01**' or with technical bid, so that it should be available at the time of opening of the first part of bid document itself. Tenders not complying with this requirement shall be rejected.

The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):

- Vendors already registered / empanelled with SAC as authorized vendors.
- Overseas bidders submitting offers directly without involving an Indian Representative.
- Central PSUs/PSEs and autonomous bodies
- Micro and Small Enterprises
- Khadi and Village Industries Commission
- National Small Industries Corporation
- Any other establishments specifically exempted from paying EMD by an order of the Government of India.

The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

EMD of successful tenderer may be retained and converted to Security Deposit, if applicable."

(2) **SECURITY DEPOSIT:** - Security Deposit shall be obtained at 10% of the value of the Purchase Order. Security Deposit can be submitted through Bank Guarantee or fixed deposit receipt from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and should be valid for a period of sixty days beyond the date for completion of the Purchase Order. In case the vendor fails to furnish the security deposit within the specified date or extended due date, the Purchase Order/Contract shall be cancelled, and the EMD made earlier shall be forfeited. In the event of non-execution of the Purchase Order or breach of any terms and conditions of the Purchase Order, the Security Deposit shall be forfeited. After completion of period as mentioned above, the Security Deposit will be returned without any interest.

(3) **PERFORMANCE BANK GUARANTEE:** - Successful vendor have to furnish a Performance Bank Guarantee worth 10% of the contract value in 100 Rupees non-judicial stamp paper of the basic value and shall be valid for a period of sixty days beyond the date for completion of expiry date of warranty period. After completion of period as mentioned above, Performance Bank Guarantee will be returned without any interest.

(4) **LIQUIDATED DAMAGES:** - The delivery date stipulated in the orders released by SAC is the essence of the order. If the contractor fails to deliver the stores within the time specified in the order or any extension thereof purchaser shall recover from the supplier as liquidated damages a sum of one half percentage (0.5%) of the ordered price of the un-delivered stores for each calendar week of delay. The total liquidated damages shall not exceed Ten percent (10%) of the order price of the unit or units so delayed.

(Rajesh Singh)  
Purchase & Stores Officer

# **REQUEST FOR PROPOSAL**

**For**

**RATE CONTRACT FOR FABRICATION OF  
NON-PTH DOUBLE SIDED COPPER CLAD  
PTFE LAMINATES & POLYIMIDE  
LAMINATES**

**Space Applications Centre  
Ahmedabad**



***RFP for Rate Contract for chemical etching of Double sided  
Copper clad PTFE laminates & single sided Polyamide  
Laminates***

**CONTENTS**

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2. Scope of work
3. R & QA Requirements
4. List of deliverables/checklist by vendor
5. Quotation format
6. Handling and Packaging of Etched PCB's
7. Other terms and conditions
8. Responsibilities of SAC and Vendor
9. General

**List of Annexure:**

1. Visual Inspection Check List for Print & Etch (NPTH) PCB
2. Guideline for generation of Process Identification Document (PID)
3. Format for Non-conformance Review Report



## ***RFP for Rate Contract for chemical etching of Double sided Copper clad PTFE laminates & single sided Polyamide Laminates***

### **1.0 OVERVIEW**

Large size Multilayer printed array antenna has been envisaged and requirement is to achieve thin PCBs with required tolerance by using established PCB fabrication process on copper clad PTFE or Polyamide laminates. The PCB fabrication work includes,

- a. Film generation
- b. Chemical etching on thin laminates.

The development of such large antennas demands film generation and chemical etching on large size laminates i.e. maximum laminates dimension would be 0.4m X 1.1m.

In this RFP total scope of the work includes the generation of film and chemical etching on copper clad PTFE and polyamide laminates by SAC/ISRO qualified facilities. For the large size antenna realization there would be approximately 12 lacs cm<sup>2</sup> laminates size would require to be etched with different sizes of copper clad thin laminates with maximum size of 0.4m X 1.1m. There will be requirement of single sided and double sided chemical etching, based on the antenna requirements.

### **2.0 SCOPE OF WORK**

The scope of the work includes the following,

1. Film generation: 4 mil (preferably-7 mil) thick film generation of various sizes with maximum size of 0.4m X 1.1m as per the CAD data supplied by SAC.
2. Storage of SAC supplied laminates and generated film prior & after processing at vendor's place as per the SAC QA guidelines / as recommended by laminate manufacturer.
3. Non PTH circuit pattern generation on using films generated by SAC supplied CAD data on single and double sided copper clad PTFE (Type RT/D 6002, 5880LZ with thickness 5, 10 and 15 mil and 17/35-micron copper) and Cu Clad polyimide laminates (1,2 mil/17, 35 micron copper thickness).
4. Vendor shall use only on SAC supplied Cu clad PTFE/polyimide laminates.
5. Approximately 12 lacs cm<sup>2</sup> area of Cu clad PTFE/polyamide laminates is expected to be etched for single side/double sided pattern generation.
6. PCB inspection reports shall be submitted for the individual PCBs as per format given in annexure-1.
7. All patterns generated PCBs shall be packed in N<sub>2</sub> purged or vacuum bags.
8. Transportation kit as per SAC design shall be used for transportation of fabricated PCBs and photo films.



## ***RFP for Rate Contract for chemical etching of Double sided Copper clad PTFE laminates & single sided Polyamide Laminates***

### **3.0 R & QA Requirements for PTFE Laminates Fabrication**

The R&QA requirements are for fabrication PCBs using Cu clad PTFE and Polyamide Laminates by the vendor for the size of 1.1 m X 0.4 m (Maximum). This section identifies the R&QA requirements to be exercised at the various stages of fabrication i.e. storage and processing of laminates, quality audits etc. Special emphasis is given for the storage and handling of thin Cu clad PTFE and Polyamide Laminates during storage, fabrication, inspection and transportation.

#### **3.1 Vendor shall comply the following**

1. Vendor's facility shall be SAC/ISRO "QUALIFIED" by SAC/ISRO. For processing Cu clad PTFE/polyamide laminates. Only certified vendor shall process the Flight Model (FM) PCBs as per the approved PID.
2. Vendor shall prepare work flow (flow-diagram) for the proposed work showing clearly, each step of fabrication activity along with responsibility identification and required inspection stages. This shall be submitted to SAC for approval.
3. Only approved fabrication sequence shall be followed for processing Cu clad PTFE / polyamide Laminates.
4. Visual inspection & dimensional measurements of PCBs shall be carried out on 100% basis as per the checklist given in Annexure-I. Inspection record shall be kept for each processed PCBs and it shall be submitted along with each deliverable PCBs.
5. Storage of film & PCBs shall be done as per the SAC QA guidelines.

#### **3.2 Material Control:**

1. Cu clad PTFE & polyamide Laminates used for the realization of antenna shall have SAC QA approval. Only QA approved laminates shall be used for fabrication.
2. Cu clad PTFE & polyimide Laminates and fabricated PCBs shall be stored in a controlled temperature (18° - 30°C) and normal humidity levels (50% to 60% RH).
3. The adherent polyethylene cover sheet / bag provided for laminate if any shall not be removed at the time & during the laminate storage. It shall be removed only at the time of processing the laminates.
4. Preferably laminates shall be stored keeping the clad surfaces vertical, If storage



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facilities do not permit vertical stacking than following measures shall be taken,

- i. The shelf shall be flat, smooth, and clean.
- ii. The shelf shall extend beyond the full area of the panels being stored.
- iii. Panels shall be interleaved with soft, non-abrasive separator sheets. May be butter paper free from halides (like Chlorine, Sulphur etc.)

5. Storage, handling and transportation of all the items like film, laminates and processed PCB shall be done as per SAC QA guidelines.

### **3.3 Quality Audit Requirements:**

Quality audit shall be carried out by SAC QA to verify that all the laid down procedures are followed for the storage & processing of Flight Model (FM) Cu clad PTFE & polyamide Laminates. SAC shall carry out audit at any stage of fabrication with and without prior information to vendor.

### **3.4 Handling and Packaging of Etched PCB's**

Throughout the development the film, laminates and processed PCBs shall be handled with utmost care and fingerprints, dents and kinks must be avoided. Individual PCBs must be packed in flat condition and well supported in polythene bag with nitrogen purging or vacuum bagging with identity numbers clearly mentioned on the package. All such packages should be further packed in a lightweight and easy to carry transportation kit whose design would be provided by SAC. The vendor has to fabricate the transportation kits to facilitate proper transportation.

### **3.5 Non-Conformance Requirements:**

1. Non-Conformance occurring during the course of fabrication of PCB's for flight model (FM) shall be properly recorded and reported to SAC. All the non-conformance shall be reviewed and disposed through the localized Non-Conformance Review Board (NCRB). NCRB shall comprise of experts from vendors and SAC representative.
2. Each Non-Conformance shall be properly recorded for the deviation and NCRB disposition. Copy of NCRB disposition shall be kept at vendor place and one copy shall be sent to SAC.
3. If decision of NCRB is not unanimous than it shall be referred to respective project executive for further processing as a specific case. Such NCRB minutes / review shall accompanied by the analysis of the NCRB board regards to implications on reliability, schedule and cost etc.
4. Each NCRB shall be recorded as per the format enclosed in annexure-III. Each NCRB minutes shall have unique number for its traceability.
5. Necessary closeout actions, if any, shall be completed before processing next batch of PCBs / delivery of PCBs to SAC.



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**4.0 List of deliverables by Vendor**

1. Vendor shall deliver only processed and accepted PCBs with proper packaging & in transportation kits.
2. The vendor shall also provide films for all the layers. Vendor may retain the film for carrying out repeat jobs based on the SAC request. The storage and handling procedures shall be as per SAC QA.
3. Detailed inspection report of individual PCBs shall be as per SAC supplied format.
4. All Non Conformance (NC) reports also shall be submitted.
5. Transportation by Air to avoid delay.
6. Following documentation / inspection report shall be supplied along with deliverable PCBs
  - i. Certificate by vendor specifying usage of laminate supplied by SAC.
  - ii. Inspection report as per annexure-1.
  - iii. Transportation kit as per SAC design.

**5.0 Quotation Format**

The vendor should separately quote per square cm for film generation and for chemical etching on copper clad material.

Sr. No.	Description	Rate per cm2
1	4 mil film generation with inspection charges	
2	Chemical Etching of Single Sided PCB with inspection Charges	
3	Chemical Etching of Double Sided PCB with Inspection Charges	
4	Handling and Packaging of Etched PCB's Charges	



## ***RFP for Rate Contract for chemical etching of Double sided Copper clad PTFE laminates & single sided Polyamide Laminates***

### **6.0 Other Terms & Conditions**

1. **Bank Guarantee for free issue material:** Vendor shall give bank guarantee for ₹ 2,00,000.00 towards the cost of free issue material till the validity of contract.
2. **Payments:** Payments will be made on pro-rata basis, based on the certification of bills by the Officer designated as Focal Point.
3. **Delivery Schedule:** The Vendor has to complete all the processes and to provide the final PCB's within one month or mutually agreed time from the date of delivery of free issue material.
4. **Liquidated Damage:** Any inordinate delay that could be attributable to party shall attract a Liquidated Damage (LD) at the rate of 0.5% (half percent) of the order value for each fortnight, with a ceiling of 5% (five percent) of the order value as per defined Purchase procedure.
5. **Confidentiality:** Vendor shall not divulge the information relating to the circuits, products, fabrication procedures, quality control methods etc., that are not in public domain and exclusively provided by ISRO for ISRO's own requirements, to any third party and shall not use for Vendor's own commercial purpose, without prior written consent from ISRO. However, Vendor is free to use such methods / procedures for works assigned by any of the Centres / Units of ISRO / DOS.

### **8.0 Responsibilities Identification:**

#### **8.1 Responsibility of SAC:**

SAC shall provide the following details and materials to the Vendor wherever necessary and applicable:

1. Pattern generation data shall be supplied in mutually agreed CAD format.  
(Preferably it shall be in AutoCAD DXF file.)
2. Cu clad PTFE and Polyamide laminates of required size in proper packing.
3. SAC shall inspect the processing facility & process and products of Vendor.
4. Detailed drawings of transportation kit.
5. Inspection formats and audit plan.

#### **8.2 Responsibilities of Vendor:**

1. Vendor shall prepare the detailed fabrication flow sequence along flow chart for each process and shall be submitted for QA review and approval.
2. **Publicity:** No publicity of any kind whatsoever regarding this contract shall be given.
3. Vendor shall not sub-contract any work contracted by SAC, to a third party without prior written approval of SAC.
4. The vendor shall provide the processed PCBs with QA defined packaging & transportation kits.
5. The vendor shall submit generated films for all the layers. Vendor may retain the film for carrying out repeat jobs, based on the SAC request. The storage and handling procedures shall be approved by QA.



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6. All Non-Conformance (NC) shall be closed as per defined procedure in para-3 and reports shall be submitted in defined format.
7. Detailed inspection report of each individual PCBs as per SAC supplied format.
8. Documentation / test report to accompany with deliverable PCB as per para-3.0.

**9.0 GENERAL**

1. This proposed fabrication contract is on non-exclusive basis.
2. Mention your capability to handle, store and transport the large size (1.1 m X 0.4 m) of Cu Clad PTFE and polyamide Laminates material / processed PCBs.
3. Vendor should mention the process & bath composition details for chemical etching of Cu Clad PTFE and polyamide Laminates in the form of PID.
4. The vendor will bear the cost such as material cost, transportation cost fabrication cost etc. against any failure in achieving the desired tolerance.
5. Payment will be made for those jobs which meets the desired specifications as per the RFP.
6. SAC-ISRO reserves the right to review the progress of work at various stages. SAC-ISRO reserves the right to audit the Vendor's facility at any time to verify adherence of workmanship standards and procedures specified, through visits with or without prior notice.
7. Inspection of all PCB's will be done by SAC QC/QA. Frequency of inspection / audit inspection can be increased / decreased based on the overall workload and fabrication quality. In addition to the hardware audit, documentation audit will also be carried out for this purpose.
8. The technical information, drawings and other related documents given by SAC in the course of the work shall remain the property of Government of India, Department of Space. The given Material / Documents should not be used for any other purpose or be duplicated in any case.
9. Any deviation in technical specifications mentioned in this RFP due to practical difficulties will be mutually discussed and agreed upon.
10. Termination of contract due to non-performance or any other exclusive right requires one month notice.
11. Parallel rate contract may be established with multiple vendors.

**10.0 Rate Contract Execution methodology:**

The CAD file in the AutoCAD DXF format will be given to the vendor with the job card by the SAC focal person. The required laminate material will be dispatched to the vendor through SAC stores. The fabricated PCB(s) will be delivered to SAC, stores by the vendor as per the defined procedure and transportation kit. The SAC focal person will receive the PCBs from SAC, store. The MIRV (Material Inspection cum Receipt Voucher) will be generated by SAC, stores. The MIRV will be cleared by SAC focal person based upon the acceptance of fabricated PCB(s). On submission of MIRV to stores, payment will be given to vendor.



***RFP for Rate Contract for chemical etching of Double sided Copper clad PTFE laminates & single sided Polyamide Laminates***

**Annexure-1**

**Visual Inspection Check List for processed PCBs  
(NPTH – single sided & double sided)**

<b>Project</b>		<b>Model</b>	
<b>Laminate Type</b>		<b>Manufacturer</b>	
<b>Sr. No</b>	<b>Parameter</b>	<b>Specification</b>	<b>Observation</b>
			<b>Remarks</b>
1.	<b>Laminate Related</b>		
	(A) Scratch exposing base laminate	NIL	
	(B) Fold & wrinkles	NIL	
2.	<b>Pattern Related</b>		
	(A) Pattern matching	100% conformity with approved SAC supplied CAD layout	
	(B) Conductor Width & Spacing	±10% of conductor width / spacing or 0.1 mm whichever is less	
	(C) Pattern Quality	<ul style="list-style-type: none"> <li>• Shall be free from unwanted material like un-etched pattern / Copper, photo-resist material etc.</li> <li>• Shall be free from pattern lift-up, void, cracks &amp; bridging etc.</li> <li>• Nicks &amp; projection shall not reduce the Line &amp; gap respectively by more than 10%.</li> </ul>	
3.	<b>NPTH Quality</b>		
	(A) NPTH diameter	Specified Hole dia ± 50µm	
	(B) Hole to hole ( Pitch) distance	Specified dimension ± 0.1mm	
	(C) Cleanliness	Shall be free from metal & laminate burrs	



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4.	<b>Identification Mark</b>	As per approved layout & shall be legible.		
5.	<b>Overall Cleanliness</b>	Laminate shall free from dirt, grease, stains, corrosion, conductive particle, fungus growth etc.		
6.	<b>Mechanical Measurements</b>			
	PCB Thickness	Specified Dimension $\pm 10\%$ or 0.1mm, whichever is less.		
	Length	Specified Dimension $\pm 0.5\text{mm}$		
	Width	Specified Dimension $\pm 0.5\text{mm}$		
	Stacking hole diameter	Specified dimension $\pm 0.1\text{mm}$		

<b>Approval Status</b>	Accept	Reject	Accepted through MRB
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<b>Inspected by:</b>  <b>Date:</b> /     /201	<b>Reviewed by:</b>  <b>Date:</b> /     /201
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## **Annexure -2**

### **Guidelines for Generation of Process Identification Document (PID)**

#### **1.0 Purpose**

The purpose of this document is to provide general guidelines and instruction for the preparation of Process Identification Document (PID) by the processing agency.

#### **2.0 Introduction**

PID, is one among a set of documents that is necessary to obtain the requisite approval of QA for the parts, material, processes, electronic cards, packages, modules, etc, (here after called as product) intended for flight application. The PID, meeting the requirements of this document, shall be submitted to QA of concern centre for approval prior to processing of the product. When PID is approved by QA of concern centre, the flight product shall be processed strictly as per the PID only. All the deviations from the approved PID observed during processing shall be reported to QA, for review and comments. Changes / modification to PID, if required by the processing agency, shall be proposed in writing well in advance and QA approval obtained prior to implementation in the flight product.

This general QA guideline applies for all products that are intended for use in flight application. The requirements specified here in should serve as a 'minimum data' a PID should contain to qualify for the review by QA of concern centre. It is discouraged to limit / restrict the data to meet the requirements specified in this document. The PID shall contain all the technical details necessary to realize the product and no details shall be withheld. Details, which are proprietary, shall be treated as per paragraph 7.5 of this document. Process Identification Document (PID) shall give all the sequence of production, inspection, tests and other steps that are involved in realizing a product. The document shall also clearly identify the personnel responsible for realizing the product, along with an exclusive system of management (both process and quality management), to meet the requirements of ISRO.

#### **3.0 Content of a PID**

##### **3.1 Title page**

This page shall contain

- Title of PID
- Issue number and date, and if applicable revision letter and date
- Revision list, showing revised pages and date of revision
- List of contents, showing PID sections
- Approving authority



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### **3.2 Product specification**

This section of the PID shall describe in detail all the product specification. Details shall also be provided about the heritage of the product in high reliability applications as in the case of space application. In the absence of such data, product history in other high reliability application may be provided. If the product is being developed for the first time, based on the use in industrial or commercial application, the heritage of the product in such application shall be mentioned. Attention shall be paid to include the data pertaining to failures during production and / or use also. Environmental levels in such application shall also be included.

### **3.3 Organization of the Company**

The vendor shall clearly define complete management plan like material control, procurement control, parts control, production / process control, subcontract control, organization of the quality, and structure of the establishment proposing to carry out the process. The person responsible for certifying the quality of the product shall be identified by name and position. Any change in the same shall be intimated to QA of concern centre and approval obtained.

### **3.4 Raw Materials Control**

All the raw materials used for realizing the article shall be listed together with all necessary details like material name / description, supplier name, part number, control specification, brief properties, qualification / acceptance tests procedures, test results for the raw materials, etc. The details of the alternate materials (if any) shall also be listed. Special attention shall be paid to mention the application guidelines specified by the supplier of the raw material(s). The vendor shall keep records to verify that the material used in the process meet the quality level and application requirement.

### **3.5 Process Flow Chart**

This section of PID shall give the process flow chart showing the detailed process sequence, which include manufacturing step, manufacturing specification, inspection procedure and quality control check carried out at each step.

#### **3.5.1 Non-conformance control management**

This section provides details of constitution, execution, operational modality, disposition mechanism etc. of non-conformances encountered during various stages of process, fabrication, testing or any other stage of manufacture of the product. The details and mechanism for the communication with ordering agency shall also be included

#### **3.5.2 Plant layout**

This section shall provide details about the plant layout comprising production area, storage area, inspection area, dispatch area, etc., as applicable. Details of environmental controls (temperature, humidity, cleanliness, ESD, etc.,) shall be addressed.



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### **3.6 Process Specification and Control**

This section of PID shall give detailed process specification and tolerance adhered to shall be indicated against each step, information pertaining to process parameters that need to be monitored, the in-process quality control checks exercised and test carried out along with the test procedures. Mention should be made of the in-process QC acceptance / rejection criteria.

### **3.7 Environmental control**

The vendor shall specify environmental control such as humidity; temperature and particle count in the various work areas. The measures followed to control the same shall be given in this section. Vendor shall give details of maintaining the record of these controls. Contingency plan to take care of failures in environmental controls shall also be addressed.

### **3.8 Equipment list**

The details of all equipment used for realizing the product like make, model, brief features, control parameters, procedure of calibration and frequency of calibration etc. shall be given in this section. This section shall also address procedures for maintenance of equipment giving details of failures, repairs, modifications, augmentations etc.

### **3.9 Process logbook format**

This section of the PID shall address the format of process log book maintained right from initial stage preparation to till final QA checks which adequately covers processing details, batch number, quantity, material trace ability code, Process checks etc. shall be included in this section. These formats shall be strictly followed by the operating personnel in maintaining the process logbook. The process logbook will be audited by QA of concern centre.

### **3.10 Input data package**

This section of PID shall addresses the input data package necessary from the ordering agency for successful processing of the product.

### **3.11 Failure analysis**

This section shall give the list of failure analysis equipment's and standard failure analysis procedure followed for failure of part, material, process and finished product, and failure analysis report.

### **3.12 Handling and Packaging**

The vendor shall furnish the adequate provisions that are in force for the careful handling, storage, and transport of the product. The recommended packing for the finished product should be specified and shelf life, if any for the product should be mentioned. Environmental controls like temperature, humidity, cleanliness, ESD shall also be addressed.



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### **3.13 Certification Format**

Format of certification for each product/ batch /lot indicating the specified procedure followed, on-line checks carried out and all the requisite specifications are met shall be given in this section. Qualification tests, acceptance test, life tests etc. that are required to conform to the quality of the product shall be addressed.

All detailed specifications of test structures shall be prepared by the manufacturer and submitted to ISRO for approval. The same test structures shall be used for process and product qualification as per the requirement of ISRO.

### **3.14 Operator Training**

Only trained and certified operators / inspectors shall be used during realization of the product. This section shall include details of training and certification program that are to be followed by the vendor for their staff.

### **3.15 PID for Sub-Contracted item**

Vendor shall identify all items that are being subcontracted for realizing the product. This section shall give the requirement details of the subcontractor. This shall include evaluation of the subcontractor PID requirement and qualification of the process in case the sub-contractor carries out part of the process. This process will be audited by QA of concern centre. QA of concern centre shall approve the subcontractor. Ordering agency/QA of concern centre reserves the right to review the subcontractor PID, audit the subcontractor facility.

### **3.16 End Item Data Package**

This section of PID shall provide the list and all the details of the data package that will be forwarded along with the product. Attention shall be paid to necessary formats, approving agency, issues related to traceability, process yield, list of non-conformance and its disposal and other data that may affect the quality and reliability of the product.

## **4.0 PID Approval**

Detailed PID including all the above details shall be provided in the form of document to QA of concern centre. This PID will be reviewed and approved Subject to full filing the following condition.

1. Completion of Facility audit.
2. Completion of process qualification and subsequent freezing of process parameters.

In case of any part, material / process, plant layout, process, staff change / modification, the PID needs to be revised. Proposal for change shall be forwarded to QA of concern centre for approval. After the approval, the proposed changes shall be incorporated in PID and submitted to QA.



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For specific process / activities that are proprietary in nature, then the PID shall be prepared as follows.

- (i) The complete PID, comprising all called-up specification, shall be kept by the manufacturer at the production plant; which shall be made available to ISRO or its designated representative for review, whenever called for.
- (ii) A condensed PID, comprising all basic information, e.g. flow-chart, lists of specifications, materials and processes along with QC checks, but complemented by copies of only the most important specification, shall be submitted to ISRO.

The PID shall be made available to the ordering agency for inspection. The production flow-chart shall always be made available to the purchaser upon request.



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**Annexure – 3**

**Format for NON-CONFORMANCE REVIEW REPORT**

PROJECT: \_\_\_\_\_ MODEL: \_\_\_\_\_

SYSTEM/ SUBSYSTEM: \_\_\_\_\_

IDENTIFICATION OF PCB/PACKAGE / PART/ PWB: \_\_\_\_\_

INSPECTION REF: \_\_\_\_\_

ORIGINATOR: \_\_\_\_\_ DATE: \_\_\_\_\_

Sr. No.	Deviation	Implication On Reliability, Schedule etc.	Disposition
			ACCEPT / REWORK / REJECT
			ACCEPT / REWORK / REJECT



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RECOMMENDATION(S):

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MEMBERS PRESENT

MRB CHAIRMAN /  
SECRETARY

CM: \_\_\_\_\_

NM: \_\_\_\_\_

MRB NO: \_\_\_\_\_

DATE: \_\_\_\_\_

## INSTRUCTIONS FOR TWO-PART TENDER

We are proposing to invite Tenders in Two Parts Viz. Part I Technical and Commercial & Part II Price.

All Tenderers are requested to follow carefully the following instructions before preparing their offer.

### **I PART I: TECHNICAL & COMMERCIAL BID**

#### **Part – (a) Technical**

- i. This part should contain detailed specifications of the items quoted by you along with Technical literature and leaflets if any.
- ii. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
- iii. Any other information called for in the tender related technical and specifications can also come in this part.
- iv. Prices should not be indicated in this cover.

#### **Part – (b) Commercial terms: (WITHOUT PRICES)**

- i. The commercial terms applicable for the item quoted by you should be indicated in this part.
- ii. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- iii. Prices should not be indicated in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
- iv. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

- Note:
1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
  2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.
  3. Technical and Commercial part as described above shall be prepared and put it in a sealed cover & super scribed and addressed as follows:

Tender No. :

Due Date :

**PART I : TECHNICAL & COMMERCIAL BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**II      PART II      : PRICE BID**

- i.        The prices applicable for the items, item-wise in response to the tender shall come into this part.
- ii.       Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.
- iii.       Price part prepared as above shall be enveloped and superscribed as follows:

Tender No.    :  
Due Date       :  
**PART II        :        PRICE BID**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

- III      The Technical & Commercial envelope (Part I) and Price cover (Part II) prepared as above along with “Tender fee cover” (if applicable) should be inserted in another envelope and superscribed as follows:**

Tender No.    :  
Due Date       :  
**PART I & PART II ARE INDIVIDUALLY SEALED AND KEPT INSIDE:**  
**(DD towards Tender fee also is kept inside)**

**The Sr. Head Purchase & Stores  
Space Applications Centre  
Ambawadi Vistar P.O.  
Ahmedabad – 380 015**

From:

**Important Note:**

**Being a Two-Part Tender, fax quotations will not be accepted. Please ensure your offers are received by mail before due date and time.**

**In case you are going to download the documents from our website and submitting the offer, you are requested to submit the DD towards Tender fee in a separate cover along with a covering letter duly superscribing on the cover “Tender fee in respect of File No. \_\_\_\_\_”.**

Quotations submitted contrary to above instructions are liable to be rejected.

**COMPLIANCE STATEMENT REQUIRED TO BE FILLED AND ENCLOSED ALONG WITH  
THE TECHNICAL AND COMMERCIAL BID BY THE VENDOR.**

<b>Sr. No.</b>	<b>Commercial terms</b>	<b>Compliance/Remarks/Comments by Vendor</b>
1.	Delivery terms -Ex-works/FOB/ FCA etc.	
1.1	Purchaser is having an air consolidation contract and their freight forwarder will arrange to collect the consignment from your premises/will take the responsibility for onward transmission from the point of delivery as per INCOTERMS 2010. This is applicable for import cases.	
2.	Packing charges inclusive/exclusive.	
3.	Delivery period – in weeks/months	
4.	Payment terms : Our standard term is - Sight Draft (import) /within 30 days from the date of acceptance (indigenous).	
5.	Country of origin – to be declared in the invoice.	
6.	Name and address of the Indian Agent.	
7.	Percentage of agency commission included in the quoted price – payable in Indian Rupees only directly to the Indian Agent.	
8.	Validity of the offer- minimum of 120 days from the date of opening.	
9.	If you are an Indian Agent, please enclose the authorization letter of your Principal and confirm that whether you have enrolled with DGS&D as per rules.	
10.	In a tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.	
11.	If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.	
12.	Cost of spares included in the price bid not included.	
13.	Will you be able to provide consumables/spares for 10 years?	
14. 14.1 14.2	Taxes and duties : Taxes in India to the account of Purchaser. Outside India to Seller's/Contractor's account. Please indicate your Tax Registration Number.	

14.3	Wherever installation involved, Income Tax @ 2% will be deducted from the bill and a certificate issued. Installation in India will attract Service Tax @ 12.36%. If required, orders for supply and installation can be issued separately.	
14.4		
14.5	Work order will attract work contract tax as per rules. Please confirm whether you have included WCT in your offer.	
14.6	Customs Duty Exemption Certificate (CDEC) will be issued by Purchaser. Hence no CD is to be included in your offer wherever applicable.	
14.7	Please indicate rate of the Sales Tax/VAT applicable.	
14.8	Octroi Duty/Entry Tax exempted. Exemption certificate will be issued, if required. Purchaser is eligible for full Excise Duty exemption. Excise Duty exemption certificate will be issued.	
15.	No Insurance is required at Purchaser's cost.	
16.	For Single part bids one separate sealed envelope are to be sent duly superscribed as follows : 1. TECHNICAL & COMMERCIAL BID Please refer instructions.	
17.	Wherever EMD/tender fee is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, SAC, Ahmedabad along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name.	
18.	Language to be used in all correspondence – English	
19.	Measurements – Metric system to be followed	
20.	Whether prequalification of your facility procedure completed (if applicable).	
21.	Warranty period – We need minimum 3 years from the date of acceptance. In case the product has a standard warranty of 1 year, confirm that additional 2 years warranty cost is indicated in the price bid/prices. However the warranty requirement if projected in RFP shall prevail.	
22.1	Defective/rejected items if any, are to be	

	replaced free of cost.	
23.	Confirm whether you will be able to provide samples if called for, free of cost.	
24.	Approximate weight (net and gross) of the consignment.	
25.	Instruction/operational manual to be supplied free of cost.	
26.	Supply and installation is subject to Purchaser's acceptance.	
27.	LC extension charges to your account, in case of delay from your side.	
28.	Items from latest production batch only are to be supplied.	
29.	Wherever Export Licence required, payment will be made after getting export licence and after confirmation by the supplier, with a copy of Export Licence.	
30. 30.1 30.2 30.2.1 30.3	<p>Bank Guarantees (from Nationalized/ Scheduled Bank/ Bank approved by Purchaser.</p> <p>Advance payment for the equal value valid till the completion of contract/acceptance, is to be provide by you.</p> <p>Towards issue of "Free Issue Material" by Purchaser for the value of the material issued, is to be provided.</p> <p>The Bill of material for the material used for the Fabrication work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance/payment.</p> <p>Towards Performance of the Contract and Product for 10% value valid till the expiry of warranty period.</p>	
31.	Security Deposit is to be submitted to SAC by the successful bidder (wherever applicable )on awarding the contract	
32.	Training – free of cost – to be imparted at Purchaser's site.	
33.	Bank charges wherever applicable shall be paid by Purchaser/Contractor to their respective Bankers.	
34.	Arbitration proceedings – Within India as per provisions of Arbitration and Conciliation Act 1996.	
35.	Liquidated Damages - @ 0.5% per week for the delayed portion – maximum 10% of the contract value.	
36.	Force Majeure conditions applicable?	

37.	<p>Acceptance of Fall clause.</p> <p>“The rates as per the charges of the Contract should not in any event exceed the lowest rates, the supplier charge to any other party or organization. If at any time during the period of contract, the supplier reduce the charges to any other party, then they shall forth-with notify such reduction to Head, Purchase &amp; Stores, SAC and reduce the contract rates subsequently, from the date of coming into force of such reduction” .</p>	
38.	<p>You are requested to indicate the registration number; you have for Sales Tax/Service Tax as the case may be with concerned Government authorities. Also you are requested to provide company registration details wherever applicable along with copy of the company registration certificate. The offers received without the above information will be summarily rejected.</p>	



**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE  
PURCHASE DIVISION**

**INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER**

1. The Tenderers should submit quotations in sealed envelope, superscribing the Tender No. and due date of opening and complete in all respects with technical specifications, including pamphlets and catalogues. Separate instructions, if any in this regard should be strictly complied with.
2. A Proforma Invoice may also be given which should contain the following information:
  - a) The FOB/FCA value, for import by Sea freight / Air freight up to Ahmedabad and for air parcel post up to Ahmedabad should be separately indicated.
  - b) Agency Commission: The amount of commission included in the price and payable to the Indian Agent of the Contractor shall be paid directly to the Indian Agent by the Purchaser in equivalent Indian Rupees on the basis of an Invoice from him applying T.T. buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. This payment will be released to the Indian Agent after receipt and acceptance the goods in India.
  - c) The Contractor shall invoice only for the net amount payable to him, after deducting the amount of Agency Commission included in the invoice which will be paid to the Indian Agent directly by the Purchaser. However, the Contractor's invoice should separately reflect the amount of commission payable to his Indian Agent.
  - d) The earliest delivery period and country of origin of the Stores.
  - e) Banker's name, address, telephone/fax Nos. & e-Mail ID of the Contractor.
  - f) The approximate net and gross weight and dimensions of packages / cases.
  - g) Recommended spares for satisfactory operation for a minimum period of one year beyond warranty.
  - h) Details of any technical service, if required for erection, assembly, commissioning and demonstration.
3. The FOB/FCA prices quoted should be inclusive of all taxes, levies, duties arising in the tenderer's country.
4. The offer should be valid for a minimum period of 120 days or longer if called for from the due date of opening of the tender.
5. Samples, if called for, should be sent free of all charges.
6. Late and delayed tenders will not be considered. Quotations by fax must be followed by detailed offers.
7. Offers made by Indian Agents on behalf of their Principals, should be supported by the Proforma invoice of their Principals.
  - a) In a tender either the Indian Agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender.
  - b) If an agent submits bid on behalf of the principal/OEM, the same agent shall not submit a bid on behalf of another principal/OEM in the same tender for the same item/product.
8. We are exempted from Customs/Excise Duties.



9. The details of Import Licence will be furnished in the Purchase Order.
10. The authority of person signing the tender, if called for, shall be produced.
11. Instructions / Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents / correspondence should be in English language only.
12. The Purchaser reserves the right to accept or reject the lowest or any offer in whole or part without assigning any reason.
13. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.
14. a) Part shipment is not allowed unless specifically agreed to by us.  
b) As far as possible stores should be despatched by Indian Flag Vessels / Air India through an Agency nominated by us.
15. Inspection / Test Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any Inspection by Lloyds or any other testing agency is considered necessary, it shall be arranged by Contractor.
16. Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damage sustained due to delay in fulfilling this responsibility.
17. For items having shelf life, those with maximum shelf life should be supplied if order is placed.
17. No request for extension for due date for submission of tenders will be entertained.
18. Unsigned quotations will be rejected.
19. In case, the vendors are falling under the category of MSME, registered under NSIC and would like to avail exemptions, their quotations should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under Public Procurement Policy.

## **TERMS AND CONDITIONS**

### **1. DEFINITIONS:**

- (a) The term 'Purchaser' shall mean the President of India or his successors or assignees.
- (b) The term 'Contractor' shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractor's Successors, representatives, heirs, executors and administrators unless excluded by the Contract.
- (c) The term 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by duly authorised officer intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores, plant, machinery or equipment or part thereof.
- (d) The term 'Stores' shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.

### **2. PRICES:**

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of



tendering and also the formula for any such variations. However, such clauses will be subject to final acceptance by Purchaser.

### **3. TERMS OF PAYMENT:**

3.1 Being a Department of the Government of India, the normal terms of payment are by Sight Draft. However other terms of payment like establishment of Letter of Credit may be considered by the Purchaser on such terms and conditions as may be agreed upon.

3.2 The Sight Draft / Letter of Credit will be operative on presentation of the under mentioned documents:

- a) Original Bill of Lading / Airway Bill
- b) Commercially certified invoices in triplicate, describing the stores delivered, quantity, unit rate and their total value. The invoice should indicate discounts, and Agency Commission if any separately.
- c) Packing List showing individual dimensions and weight of packages.
- d) Country of Origin Certificate in duplicate.
- e) Test Certificate.
- f) Declaration by the Seller that the contents in each case are not less than those entered in the invoices and the quality of the Stores are guaranteed as per the specifications asked for by the Purchaser.
- g) Warrantee and guarantee Certificate/s vide Clause 20 herein below

### **4. IMPORT LICENCE:**

Reference to Import License No. & date and Contract number & date shall be prominently indicated in all the documents vide Para 3.2.

### **5. DEMURRAGE:**

Supplier shall bear demurrage charges, if any, incurred by the Purchaser due to delayed presentation of shipping documents as prescribed in Para 3.2 to the bankers beyond a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

### **6. ADDRESS OF INDIAN AGENT:**

.....

### **7. GUARANTEED TIME OF DELIVERY:**

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

### **8. INSPECTION AND ACCEPTANCE TESTS:**

8.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractor's premises the material and workmanship of all stores to be supplied under the Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the Purchaser's representative permission to inspect, examine and test as if the equipment



were being manufactured on the Contractor's premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.

8.2 For tests on the premises of the Contractor or of any of his sub- Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.

8.3 When the stores have passed the specified test, the Purchaser's representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the Purchaser as may be required.

**9. MODE OF DESPATCH:**

Generally, stores should be despatched through Indian Flagged Vessel / Air India or through any other Agency nominated by the Purchaser. A copy of the invoice and packing list should invariably be kept inside each of the packages.

**10. PORT OF ENTRY:**

FOR AIR SHIPMENTS: AHMEDABAD (Via Mumbai, if required)

FOR SEA SHIPMENTS: NHAVASHEVA/Mumbai Seaport

**11. CONSIGNEE:**

Sr. Purchase & Stores Officer,  
Central Stores,  
Space Applications Centre (SAC),  
Ahmedabad

**12. SHIPPING MARKS:**

The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow:

PURCHASE ORDER NO. ....

DATED .....

GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
SPACE APPLICATIONS CENTRE

Destination: ..... &

Port of Entry: .....

**13. INSURANCE OF THE STORES:**

The necessity or otherwise of insurance will be as indicated in the Purchase Order.

**14. CONTRACTOR'S DEFAULT LIABILITY:**

14.1 The Purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:

- a) If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.



b) If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

15. In the event the Purchaser terminates the Contract in whole or in part as provided in Clause 14 the Purchaser reserves the right to Purchase, upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in Clause 19 until such reasonable time as may be required for the final supply of stores.

15.1 If this Contract is terminated as provided in Clause 14 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

a) Any completed stores.

b) Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores delivered to and accepted by the Purchaser and for manufacturing material delivered and accepted.

15.2 In the event the Purchaser does not terminate the Contract as provided in Clause 14, the Contractor shall continue the performance of the Contract in which case he shall be liable to the Purchaser for liquidated damages for delay as set out in Clause 19 until the stores are accepted.

#### **16. REPLACEMENT:**

If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the Purchaser agrees, the price towards replacement items shall be paid by the Purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.

#### **17. REJECTION:**

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the Purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may at his option either:

a) Replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or

b) Terminate the Contract for default as provided under Clause 14 above, or



- c) Acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice any other rights of Purchaser's under the Contract including recovery of liquidated damages for delay.

#### **18. EXTENSION OF TIME:**

If the completion of supply of stores is delayed due to reasons of *force majeure* such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the Purchaser in writing of his claim for an extension of time. The Purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.

#### **19. DELAY IN COMPLETION / LIQUIDATED DAMAGES:**

If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the Purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5%) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 %) of the Contract price of the portion of stores so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.

#### **20. GUARANTEE & REPLACEMENT:**

- a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance.
- b) For a period of twelve months (or such period as agreed upon by the parties) after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months (or such period as specified in Contract) from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty.
- c) If in the opinion of the Purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the Purchaser provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 14 months (or such period as specified in Contract) from the date of acceptance thereof.
- d) Should the Contractor fail to rectify the defects, the Purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.
- e) The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects has developed within the said period of 12 months (or such agreed period) or as to whether the nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor.



- f) To fulfill guarantee conditions outlined in Clause 20 (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser - Bank Guarantee format enclosed) from a Bank approved by the Purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.
- g) All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at Purchaser's site.
- h) Even while the 12 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 14 months referred to in Clause 20 (b) and (c) shall be asked for guarantee period plus two months.**

## **21 REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:**

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the Purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

## **22. PACKING:**

- a) The Contractor wherever applicable shall pack and crate all stores for sea / air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space qualified stores. The Contractors shall be held responsible for all damages due to improper packing.
- b) The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.
- c) The Contractor shall notify the Purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.
- d) The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.
- e) Transshipment of equipment shall not be permitted except with the written permission of the Purchaser.
- f) Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the Purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:
  - a) Commercial Bill of Lading / Air Way Bill / Post parcel Receipt.  
(Two non-negotiable copies)
  - b) Invoice (3 copies)
  - c) Packing List (3 copies)
  - d) Test Certificate (3 copies)
  - e) Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.



**23. ARBITRATION:**

If at any time any question, dispute or difference whatsoever shall arise between the Purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by Purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India.

**24. LANGUAGE AND MEASURES:**

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

**25. INDEMNITY:**

The Contractor shall warrant and be deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the Purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent, Registration of design or Trade Mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract.

**26. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:**

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the bidder, the same shall not be deemed to have been accepted by the Purchaser unless specific written acceptance thereof is obtained.

**27. SECURITY INTEREST:**

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, Purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the Purchaser in accordance with the terms of the Contract. Such security interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

**28. BANK CHARGES:**

While the Purchaser shall bear the bank charge payable to his Bankers (State Bank of India), the Contractor shall bear the Bank charges payable to his Bankers including the cheques towards advising amendment commissions.



**29. TRAINING:**

The Contractor shall, if required by the Purchaser, provide facilities for the practical training of Purchaser's engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores. Number of such personnel to be mutually agreed upon.

**30. APPLICABLE LAW:**

The Contract shall be interpreted, construed and governed by the laws of India.

**PACKING INSTRUCTIONS**

1. In tune with the requirement of international plant protection convention of the FAO, UN the following has become mandatory with immediate effect.
2. All packing materials of any kind of plant origin used for packing shall require treatment including hear-kiln treatment at 56 degree centigrade for a minimum of 30 hours of methylbromide fumigation at 48g/cum for 32 hours of chemical impregnation as per international standards.
3. If the consignments are sent without the aforesaid certificate, all demurrages and other charges for treatment etc. will be to the account of the suppliers.
4. This aspect also should be taken care of while submitting the offers.
5. If the packaging material being used for your product does not come under the category "material of plant origin" (i.e. Leaves, grass, wood etc.) Please certify the same in your quote and ignore the above instructions. However, the same should be ascertained at the time of actual shipment if the order is awarded to you.

.....



**STANDARD TENDER FORM**  
(Seal of the Company)

Tender No.: .....

Due on: .....

Ref. No.: .....

Date: .....

**TENDER FORM**

From: .....

.....

.....

To: The Sr. /Purchase & Stores Officer,  
..... (Name of the Centre/Unit)

.....

Dear Sir,

I/We hereby offer to supply the stores detailed below at the price hereunder quoted and agree to hold this offer open till..... I/we shall be bound to supply the stores hereby offered upon the issue of the Purchase Order communicating the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of stores tendered for or any portion of any one or more of the items of such stores. I/We, notwithstanding that the offer in this tender has not been accepted in whole, shall be bound to supply to you such items and such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance:

Sl. No.	Description	Quantity	Unit	Rate Rs.	Delivery Date

**Note: All the rates should be given both in figures and words**

Place at which delivery will be made	
Date by which the ordered item/s will be supplied	

2. I/We have understood the items of the tender annexed to the invitation to tender and have thoroughly examined the specifications/drawing and/or pattern quoted or referred to herein and am/are fully aware of the nature of the stores required and my/our offer is to supply the stores strictly in accordance with the requirements subject to the terms and conditions stipulated in the enquiry and contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Signature of Tenderer

Date: .....