

SATCOM and SATNAV Applications

Subsystem Requirements (From industry):

SAC is actively involved in design & development of ground systems and user applications in both satellite communication and navigation areas. It provides end-to-end solutions to the end users based on various societal development programs as well as disaster requirements in the country. SAC is working on various state-of-art SATCOM navigation technologies related to communication protocol, compression techniques, tracking system, signal processing, mobility management, robust streaming, routing, encryption etc. ISRO has a culture of knowledge sharing and always encourages private/public industry to take part in many of its development programs towards its goal of making excellent end products. Development activities SAC is willing to work in collaboration with industries are as follows:

Satellite Navigation - Ground System Development

- Kintex-7 based FPGA development board with in-built ADC/DAC and CORTEX-A9 processor
- Low cost GNSS Signal simulator
- Low cost user receivers
- Multiband GNSS Antenna with Integrated LNA
- Navigation Application Development
- Integration of IRNSS receiver with user mobile devices
- IRNSS data encryption algorithm development



Satellite Communications - Ground System Development

- Antenna for Handheld Terminal (L and S band).
- Miniaturized and low power Low Noise Amplifier (LNA) for S/L band.
- Miniaturized and power efficient linear power amplifiers (S-band, ½, 1, 2 Watt).
- S-band / L-band/ IF (70 MHz) miniaturized low power reconfigurable bandwidth transceiver.
- Reconfigurable Baseband with Multimedia capability (Low Power, miniature modules with all popular user interfaces like USB, Ethernet etc) based on ARM / DSP / FPGA / DM37xx etc.
- Packaging of SATCOM Terminals (Rapid Proto-typing etc).
- Next Generation Network Management Systems for Mobile Applications
- Bit- Rate efficient Codec's (Efficient Voice and Video Codecs) and transcoder development.
- Efficient implementation of broadcast standards like DVB-S/DVB-S2/DVB-SH (Modulator, IP En-capsulation etc).
- Satellite Mobile Talk-group Hub and Terminal
- PCB Design, Fabrication and Testing of RF subsystems as a turnkey solution based on proposed design for ground systems.
- PCB Design, Fabrication and Testing of base-band Sub-System based on proposed design for ground systems.
- PCB Design, Fabrication and Testing of base-band Sub-System based on proposed design for ground systems
- Satellite Communication Applications Development

