ETSI TC SES

TC-SES produces all of the Harmonized Standards needed for satellite systems under the European RTTE directive. TC-SES also produces specifications for the radio interfaces (air interfaces) and the network architectures of satellite systems.

**Technical activities include:**

- **Fixed Satellite Services (FSS)**
  - Fixed satellite system architectures (e.g. Broadband Satellite Multimedia (BSM))
  - IP over Satellite
  - NGN integration
  - Earth Stations onboard Vehicles, Vessels Trains and Aircraft (VMES/ESV/EST/AES)
  - Very Small Aperture Terminals (VSATs) and other Fixed Satellite Terminals (ST, SIT & SUT)

**ETSi TC-SES is responsible for producing standards for all types of satellite communication services**

- **Mobile Satellite Services (MSS)**
  - Mobile satellite system architectures for 2G, 3G and Future Evolution (IMT advanced)
  - Satellite Mobile Radio interfaces (e.g. GMR/GMPRS/GMR-3G)
  - Mobile Earth Stations, including Vehicle-mounted, maritime, aeronautical

- **Broadcasting Satellite Service (BSS)**
  - Fixed and mobile broadcast systems: audio, video and multimedia (e.g. Satellite Digital Radio (SDR)).

**About ETSI**

**ETSI’s MISSION**

ETSI plays a major role in developing a wide range of standards and other technical documentation as a contribution to world-wide standardization in information and communication technologies. ETSI’s prime objective is to support global standards harmonization by providing a forum in which all the key players can contribute actively.

**ETSI’s STRUCTURE**

Based in Sophia Antipolis (France), ETSI is a non-profit making organization which unites nearly 700 members from 56 countries inside and outside Europe, representing administrations, network operators, manufacturers, service providers, technical bodies and users. The Institute’s work programme is determined by its members, who are also responsible for approving its deliverables. As a result, ETSI's activities are maintained in close alignment to the market needs expressed by its members.

ETSI is an independent organization, but operates in close collaboration with many other organizations, notably the CEPT, ITU, CEN and CENELEC, the European Commission and the EFTA Secretariat, plus numerous other regional and world-level bodies with the ultimate goal of achieving common global standards.

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Earth Stations for Aircraft, Vessels, Vehicles and Trains (MAR-ESV)

A new trend has appeared for more and more mobile satellite services: Broadband services with ships (ESV), trains (EST), aircraft (AES) and vehicle-mounted (VMES).

**Satellite Emergency Communications (SatEC)**

This activity focuses on the definition of architecture for communication networks using satellite during emergency situations and disaster relief.

**TC-SES is taking a leadership role in developing new standards for communications via satellite**

**Mobile Satellite Systems**

The MSS Working Group (MSS-WG) covers all Mobile Satellite Systems operating in frequency bands allocated to Mobile Satellite Services including:

- Satellite component of the Universal Mobile Telecommunication System (S-UMTS) and of the International Mobile Telecommunications (IMT-Advanced).
- Satellite access to terrestrial core networks, in particular the GMR specifications which provide access to GSM/GPRS core networks and UMTS core networks.
- Interworking with terrestrial wired and wireless networks.
- Future evolution of all these systems.

**Harmonized standards**

ETSI TC-SES is responsible for producing standards for all types of satellite communication services including fixed, mobile and broadcast and for all types of earth station equipment.

**ETSI TC-SES produces radio interface standards used by current and future satellite systems worldwide**

- GEO-Mobile Radio Interfaces (GMR)
- Broadband Satellite Multimedia (BSM)
- Satellite UMTS (S-UMTS)
- Satellite Digital Radio (SDR)

**Wide range of standards for satellite communications**

**Satellite Digital Radio (SDR)**

A first set of specifications for radio interfaces for satellite digital radio - to receive signals from the satellite and from their complementary terrestrial transmitters, have been published. This group is a focal point for these new projects for digital radio via satellite.

Several digital audio broadcasting satellite systems over Europe are planned. Reception of a large number of high quality audio channels with accompanying program information will be possible within moving vehicles with the typical satellite footprint providing national or greater coverage for these users. The SDR technology is also capable of supporting multimedia services, including video or television.

**New areas for satellite standards**

**IP over satellite**

TC-SES has published a range of standards for broadband satellite multimedia (BSM) communications that are designed for use in IP-based satellite access networks. All of the standards are designed around a modular BSM architecture which combines families of satellite-dependent transmission technologies with a set of common, satellite-independent IP interworking functions such as quality of service, addressing, multicasting and security.

**NGN integration and Interworking with terrestrial systems**

Further development of SES Standards are planned to take account of the European Framework Directive and the move towards Next Generation Networks (NGN). This activity will focus on Interoperability and integration of Mobile Satellite Systems (MSS) and Fixed Satellite Systems (FSS) with Next Generation Networks and the associated IP-based services.