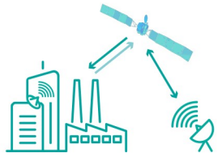
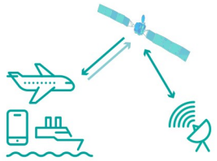
SATCOM SERVICES AND APPLICATIONS

TYPES OF COMMUNICATION SERVICES PROVIDED BY SATELLITES



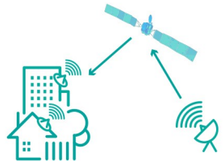
FIXED SATELLITE SERVICE (FSS)

A radiocommunication service between earth stations located at given positions which transmit signals to or receive signals from one or more satellites.



MOBILE SATELLITE SERVICE (MSS)

A radiocommunication service between mobile earth stations which transmit signals to or receive signals from one or more satellites.

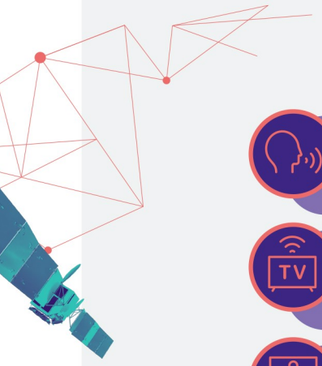


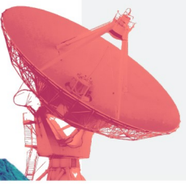
BROADCAST SATELLITE SERVICE (BSS)

A radiocommunication service in which signals transmitted or retransmitted by a satellite are intended for direct reception within a defined area.

SERVICES

- VOICE COMMUNICATIONS
- BROADCAST & MULTICAST DATA TRANSMISSION
- VIDEO CONFERENCING
- VIDEO ON THE MOVE
- HIGH DATA RATE COMMUNICATIONS
- LOW DATA RATE SYSTEMS
- IP SERVICES (EMAIL, MESSAGING, CHAT)
- HIGH-RESOLUTION IMAGES TRANSMISSION
- REMOTE AND SECURE ACCESS TO SPECIFIC INFORMATION SYSTEMS





ENTRUSTED

KEY REQUIREMENTS FOR SATCOM SERVICES

- Very high
- High
- Medium
- Low
- Bandwidth
- Latency
- Very high reliability

Real-time video streaming
one-way communication

Video conferencing
Video and voice, real time

Video streaming (non-real time)
one-way communication

Voice calls
e.g., teleconference, phone

Radio services
e.g., voice messaging, voice broadcasting, push-to-talk

Real-time content sharing
e.g., images, messaging, gaming

Other non-real time data transfer
e.g., e-mail, Internet browsing

Inter-systems data transmission*
e.g., unmanned aircraft vehicle satellite communications, command & control links

Remote and secure access to specific information and databases
e.g., access to local networks

IoT applications**
Machine to machine communications

Network backhauling
e.g., satellite backhaul for 5G networks

* *High bandwidth for transmission of some data, e.g., imagery, video. Very high reliability for command and control links.*

** *Very high reliability for critical apps, e.g., an autonomous car.*

GLOSSARY

BANDWIDTH **a range of radio frequencies** within a given band used for transmitting a signal. It also indicates the maximum amount of data that can be transferred on a link in a given amount of time. In this sense, bandwidth is the number of bits per second that a link can send or receive.

DATA RATE **the amount of data transferred per unit of time** over a communication system. It provides an estimate of aggregated bandwidth required from an earth station, operational centre and a satellite. Data rate indicates the actual speed of data transmission.

EARTH STATION **a terrestrial radio station** which enables communications via one or more satellites.

LATENCY time taken for a signal to go from the sending station through the satellite to the receiving station. Latency represents **the time delay** over a communications link.

RELIABILITY **the probability of correct operation** of a SatCom system (including the satellite and ground stations) during a given lifetime.