

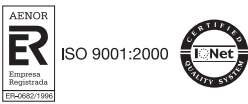


SPACE

COMMERCIAL SATELLITE COMMUNICATIONS

Satellite communications, earth observation, navigation and positioning and control stations

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COMMERCIAL SATELLITE COMMUNICATIONS



Nowadays commercial communication is barely conceived without the existence of satellites, an advance encouraged by Indra

Introduction

For more than 20 years, Indra has been offering turnkey solutions and equipment to answer the diverse needs of the commercial sector for satellite communications: Emergency and backup communications, mobile communications, access to remote areas with little terrestrial infrastructure and secure corporate communications.

Through its constant and innovative efforts, complemented by strategic agreements with leading world manufacturers, Indra collaborates with its customers to resolve their needs for information exchange for voice, fax, data, videoconferencing, images, processing and transport of television and radio signals, as well as internet access.

Indra offers the following services:

- Consultancy
- Product development
- Integration of turnkey systems
- Integrated logistics service

Consultancy

Indra has acquired extensive knowledge in the area of satellite communications which allows to offer a complete range of consultancy services:

- Needs analysis
- Technical viability analysis
- Definition of strategic plans
- Technical definition of projects. Concept development
- Project management

Product development

Indra has at its disposal comprehensive resources, both human and material, for hardware and software development which are used to design and manufacture equipment to be integrated into existing infrastructure or for commercial products to configure turnkey solutions:

- VSAT CDMA/DAMA network. Master station and terminals
- Monitoring and surveillance system: for terrestrial satellite stations, station networks carriers monitoring and other terrestrial communication infrastructures
- Stable platforms for mobile communications in boats or trains
- Antenna control unit
- Radiofrequency equipment: Frequency converters, modems, switching units for redundancy, radiofrequency branching networks and antenna feeds
- Base band equipment: Interfaces for connecting terrestrial networks with satellite networks, routing and power supply systems

Integration of turnkey systems

Indra can draw on its extensive experience in providing turnkey solutions and offers expert engineering know how to provide its clients with competitive solutions fully adapted to their needs.

- Terrestrial base stations, transmit-receive or receive only, for all commercial frequency bands (L, C, Ku, Ka)
- Portable terrestrial stations (fly-away model), vehicle or container mounted

- Extension of GSM service to boats, in remote areas and to temporarily augment the service
- Extension of TETRA service to remote areas
- Internet access in high-speed trains
- Communication networks for voice and data by satellite for air traffic control
- Communication networks for voice, data and videoconferencing by satellite for emergencies and backup (civil defence and security)

- Corporate networks for voice, data, videoconferencing and/or internet access with fixed and portable terminals. Transaction networks. Data acquisition networks
- Transport networks for TV and radio signals: Contribution and distribution. Platforms for MPEG-2 and MPEG-4 digital compression. DSNG and DENG
- Digital television headends for DVB-S, DVB-C and DVB-T platforms

Integrated logistics service

Indra's guiding principle is to build long-term relationships with our customers. We place great importance on providing a logistics service at all phases throughout a project, from the planning stage to its operation beyond the warranty.

We offer a broad range of standard and optional services which includes needs analysis for spares, documentation, training, warranty, operational support, preventative maintenance, corrective maintenance and permanent technical support.

Indra also offers a full outsourcing service for infrastructure utilisation, either for backup purposes or as a complete resource.