ESA ENTRUSTS INDRA WITH DEVELOPMENT OF A KEY SYSTEM FOR VERIFYING THE ESA ESTRACK SYSTEM

- Indra has been awarded a contract to develop the fourth version of the intermediate frequency IMBU Mk4 integrated modem and baseband unit

- The system will support communications between ESTRACK telemetry, tracking, and control (TT&C) stations, which monitor satellites in space

- Indra is a leader in the development of land segments, with more than 25 years of experience working in the space industry

**Madrid, March 17, 2016.**- The European Space Agency (ESA) has awarded Indra a contract to develop the fourth version of the intermediate frequency modem IMBU Mk4, or Integrated Modem and Baseband Unit, which plays a key role in checking and verifying communications across the agency's ESTRACK network, used to communicate with and monitor satellites and space missions. Indra will deliver the first of the ten ordered units in 2017.

The ESTRACK tracking station network is operated by ESA and has locations all over the world. The network provides ESA's European Space Operations Center (ESOC) in Darmstadt, Germany, with communication links to its satellites and missions. The network includes the Cebreros deep space satellite tracking station in Spain.

The PSS, or Portable Satellite Simulator, provides a testbed for ESTRACK stations. The system simulates communications with satellites and runs key validation and verification checks on communications between ESTRACK TT&C (Tracking, Telemetry and Command) stations and satellites.

The IMBU Mk4 is part of the simulator and provides Telecommand (TC) receipt and Telemetry (TM) transmission modem functions, simulating communications issued by satellites, and is managed by the GSTVI (Ground Station Test and Validation Infrastructure) SW module.

The telecommand transmission and telemetry receipt links, developed by Indra, will comply with ECSS (European Cooperation for Space Standardization) and CCSDS (Consultative Committee for Space Data Systems) standards for TT&C.

This new ESA contract sees Indra gain further experience working with such TT&C link standards, adding to its already extensive experience in ground segment satellite control stations.

**Leader in satellite control**

Indra develops systems used to control satellites and space missions, right from initial stages - LEOP (Launch and Early Orbit Phase) - to the end of their operating lives.

Its projects include deployment of the entire TT&C and Uplink stations network that currently manages Galileo satellites, as well as delivery of central computers and control and processing software for the GSS station network that monitors signals sent by Galileo satellites.
Indra has over 25 years of experience operating in the space industry. It competes in communications, control centers, Earth observation and satellite navigation in more than 25 countries. Half of its sales are made on international markets.

About Indra

Indra is one of the main global consulting and technology companies and the technology partner for core business operations of its clients’ businesses throughout the world. It offers a comprehensive range of proprietary solutions and cutting edge services with a high added value in technology, which adds to a unique culture that is reliable, flexible and adaptable to its client’s needs. Indra is a world leader in the development of comprehensive technological solutions in fields such as Defense & Security, Transport & Traffic, Energy & Industry, Telecommunications & Media, Financial Services and Public Administrations & Healthcare. Through its Minsait unit, it provides a response to the challenges of digital transformation. In 2015 it reported revenues of €2.850m, had a workforce of 37,000 professionals, a local presence in 46 countries, and delivered projects in more than 140 countries.