The company

Hisdesat Servicios Estratégicos S.A. was founded in 2001 as a government satellite services operator to act primarily in the areas of defense, security, intelligence and foreign affairs. Since 2005 we have been providing secure satellite communications services to government agencies from various countries, and we are currently developing new ground observation and maritime traffic information (AIS) satellite constellations.

Hisdesat is an international commercial provider of X-and Ka-band satellite communications services for government applications only, both military and civilian.

Key aspects

• Institutional shareholders. Important presence by the public sector and by Spain's leading aerospace companies.
• Strategic value of the programs developed by the company.
• Expand use of advanced dual-use technologies.
• Provide high-value technical knowhow to Spanish industry.
• Create highly technical jobs.
• Develop public-private partnership (PPP) programs.

Areas of activity

Secure Communications

In this area Hisdesat has an innovative generation of satellites that provide more flexibility and security to satellite communications in the X and Ka bands. This government communications system relies on two satellites already in operation, that offer communications coverage over two-thirds of the Earth.

The launch in 2006 of SpainSat, the second satellite in Spain's government communications program (SpainSat and Xtar-Eur), helped Hisdesat to consolidate its secure communications offerings both nationally and abroad

- Xtar-Eur

Positioned at 29º east, it offers coverage from Brazil to Indonesia, including Europe, Africa, the Middle East and much of Asia. This satellite has two control centers,one in Ottawa (Canada) and the other in Mt. Jackson (Virginia, USA). Due to the satellite's orbital position, its tracking stations are located in Spain (Arganda and Maspalomas).

- SpainSat

Positioned at 30º west, SpainSat's coverage area includes practically all of the American continent, Africa, Europe and the Middle East. This satellite has two control centers and tracking stations in Spain, one in Arganda (Madrid) and the other in Maspalomas (Canary Islands). The total amount invested was €223 million.

Ground Observation

PNOTS (National Satellite Ground Observation Program) was launched in July of 2007, a collaborative effort of the Ministries of Defense and of Industry, Tourism and Commerce. With this program, Spain becomes the first European country to have a dual-observation. Hisdesat is responsible for placing the satellite into orbit and for the commercial operation of both satellite observation systems, in cooperation with INTA, which will provide the ground control services.

PNOTS employs two satellites, PAZ and INGENIO, currently in development and featuring two space observation techniques: radar (SAR) and optical. Both satellites allow for ground observation for multiple purposes: border control, intelligence, environmental monitoring, protection of natural resources, enforcement of international treaties, surface monitoring, city and infrastructure planning, monitoring of natural catastrophes and high-resolution mapping, among many others.

- Paz

The PAZ (Spanish for "peace") satellite is intended primarily to address the needs of the civilian users. Hisdesat is the owner and operator of the PAZ satellite, which will offer precise information for multiple applications from its polar orbit around the Earth. The launch of the satellite has been entrusted to the Russian launch company DNPER, following the signing of the contract with the Russian company KOSMOTRAS.

From the start, the manufacture of the Paz satellite has given Spain's aerospace industry a significant return on the investments made by the companies involved,allowing them to develop new capabilities that will improve their competitiveness in the global aerospace marketplace. This new satellite will alsosignificantly improve Spain's standing within Europe's Copernicus (formerly GMES) program, a key initiative in ground monitoring led by the European Union and the European Space Agency (ESA).

It will be able to take over one hundred 1-meter resolution daytime and nighttime images a day in any weather conditions.

Designed for a five-and-half year mission, it will cover an area of over 300,000 square kilometers a day. It will orbit the Earth fifteen times a day at an altitude of 514 kilometers and a speed of seven kilometers per second. Thanks to its slightly inclined quasi-polar orbit, PAZ will cover the entire Earth with an average revisit time of 24 hours. Spain's National Institute for Aerospace Technology (INTA) will be charged with overseeing the ground control services for PAZ.

- Ingenio

The INGENIO optical-technology satellite is intended primarily to address the needs of civilian users. The project is led by the Ministry of Industry and by the CDTI. The European Space Agency (ESA) is handling the construction contract.

Ingenio will be in a synchronous solar orbit 670 km above the ground and will orbit the Earth 14 times a day. It will be able to take up to six hundred 2.5-m panchromatic or 10-m multispectral images a day. It will also be able to complete eight full sweeps of Spain in a year.

The satellite-based AIS

The satellite-based maritime traffic information system is managed through the Canadian company exactEarth, which is the result of a joint venture between COMDEV and Hisdesat. The ten satellites in this new constellation receive AIS signals from the over 110,000 vessels that are equipped with this system. The data are then relayed to ground stations, where the information is collated and prepared in accordance with the requirements of the system's various users. This new constellation of satellites will provide an accurate picture of the world's maritime traffic in real time.

Working from space, AIS compiles static, dynamic and route-related data, identifying ships that are close to the coast and those that are on the high seas. All of this information is available via internet to any computer on Earth, where it can be processed and put to use. Accuracy is an essential element of the AIS. The system can offer details on the vessel's identity, its location, course, speed, navigational status, destination and cargo, any maneuvers made, draft, length, registry, surf conditions, rocky areas, fuel consumption, etc. This information can be of great use to government, maritime, port and fishing authorities.

In all, ensuring the safety of seagoing vessels is a tangible reality with the AIS satellite-based maritime traffic control system, which can also facilitate search and rescue operations involving persons and vessels. The system thus also fulfills a high-priority humanitarian need.

Another fundamental aspect is environmental protection. The accuracy available with AIS systems, along with the information that the satellite radar can provide, lets us forecast the spread of maritime pollution, foster a respect for the environment and aid in enforcing international protection protocols.

The preservation of the Earth is an objective that we cannot renounce, and having at our disposal mechanisms that can help prevent natural disasters, prevent and monitor pollution of sea, continental and ground water and ultimately ensure the quality of the environment is a huge leap forward in this regard.

AIS satellite-based maritime traffic control systems address the need for solutions intended to ensure the viability of the broad and significant concept of maritime safety, and they help reduce our impact on the environment. They represent innovative ways of putting outer space at the service of society.