



# Libya's **MULTISATELLITE** receiving station is operational

**THE NEW SPOT RECEIVING STATION IN MURZUK, LIBYA, OFFICIALLY BEGAN OPERATING AT THE START OF OCTOBER.**



The official opening of the station took place after the International Conference on Remote Sensing and GIS, held in Tripoli on 5-6 October. Spot Image was on hand to support LCRSSS, which organized the conference that brought together more than 400 people to discuss a variety of topics directly related to applications of satellite imagery in North Africa and the Middle East, including legal and statutory aspects.



The station opening ceremony attended by the Director General of the Libyan Center for Remote Sensing & Space Sciences (LCRSSS), Hadi Gashut, brought together a big gathering from local and overseas institutions, with close to 80 people making the trip to Tripoli. Managed by LCRSSS, the government agency with responsibility for space, astronomy and seismology projects, the station is more than 750 kilometres south of Tripoli. LCRSSS is overseen by the National Organisation for Research and Development (NORD).



## International cooperation

Libya has joined forces with the United Nations Food and Agriculture Organization (FAO) to establish a comprehensive map of the country and provide data for the map of the African continent, as well as sub-regional publications with other countries in the Arab world and specialist remote-sensing bodies.

Libya has also been chosen, through LCRSSS, to chair the Association of Arab Remote Sensing Centres, which is charged with training and honing the skills of science and engineering leaders in the Arab world, setting up remote sensing centres, and space science outreach.

LCRSSS will also help to digitize the largest mineral map in the Arab world to support industrial development in the region.

### ► Site selection

The idea of setting up a receiving station took shape in 1991, when LCRSSS first began working with Spot Image, after an initial proposal put together by Agnès Hoareau. The project—dubbed MOSAIC for Multi-Observation Satellite Acquisition Integrated Capacity—got underway in 2006. MOSAIC was designed to receive data from SPOT 4, SPOT 5 and Envisat-ASAR, as well as from other satellites in the future. A 5.40-metre X-band antenna, protected by a radome, was erected and a control centre was installed at Murzuk, 140 kilometres south of Sebha, the country's third largest city after Benghazi, in the province of Cyrenaica. Spot Image evaluated potential sites for the station with LCRSSS in the spring of 2007. Murzuk was chosen as the site for the antenna to extend its receiving footprint over the African continent in pursuit of a resolutely African de-

velopment vision. The antenna covers Libya, Morocco, Algeria, Tunisia (with which radar cooperation projects are already ongoing), Egypt, Sudan, Chad, Niger, Mauritania, Nigeria, the Central African Republic, Burkina Faso and Benin.

### From reception to production

Spot Image has granted LCRSSS a government licence to distribute SPOT imagery to Libyan users, thereby enabling public agencies to obtain products without adding to their costs. A big effort is being made to get data to users as quickly and easily as possible, with an online catalogue through which they can select and order archive imagery directly, and satellite tasking for custom data coverage. LCRSSS's engineering and operations teams also received intensive training on the station's systems, in Toulouse and Tripoli.





**At the station opening, Hadi Gashut gives a guided tour of the receiving antenna and its protective radome.**

## **National development policy**

LCRSSS has been a partner of Spot Image since the early 1990s, as a distributor of SPOT imagery in Libya. It has a station for receiving data from the VEGETATION instrument on SPOT 4. The centre's 400-strong staff conducts operations for all of the country's geoinformation projects. It is also highly respected in the Arab world for its annual astronomical calendar, which indicates the dates of religious celebrations that follow the lunar calendar. The centre also has offices in virtually every town across the country and has forged close ties with centres in Tunisia, Morocco, Egypt, Sudan, Syria and other foreign nations. The new receiving station intends to give users a modern, operational infrastructure capable of inspiring the nation's youth. The Director General Hadi Gashut and his team are looking to provide young professionals with sophisticated tools for managing Libya's environmental and cultural heritage. As in many countries across the Maghreb, the Libyan population is mostly young—more than 50% are under the age of 25—and development projects are needed to harness their energies. A nascent space industry and data from the receiving station are supporting efforts to achieve sustainable development in response to the major environmental challenges of the day. In this sense, the project is integral to a true national development policy. ■

The imagery post-processing centre is at LCRSSS's facility in Tripoli, which also handles all requests from both public and private clients and users. The Tripoli centre has set up an ANDORRE production line to generate automatically orthorectified products and 2.5-metre SPOT 5 colour products, and to extract digital elevation model tiles of areas of interest. Spot Image teams have set up a SPOT 5 Terminal that manages telemetry from the satellites. Raw data are archived at Murzuk and products are sent to Tripoli for use by Libyan or overseas remote-sensing projects. There are two terminals for receiving ASAR data, one in Murzuk and the other in Tripoli. Data are usually transferred from Murzuk to Tripoli by aircraft, but a VSAT link between the control centre and the post-processing centre is also available for more urgent transmissions when needed.

### **FOR MORE INFORMATION**

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Applications of space science—like detecting water, protecting soils, monitoring desertification or forecasting weather—could generate 1% of Africa's Gross Domestic Product (GDP). This is the view affirmed by Mustapha Masmoudi, president of ATU-COM, the Tunisian communication and space science association, at the International Conference on Remote Sensing and GIS in Tripoli.

Tunisia's former junior minister for information, also an expert in communication, called on Africans to grasp the importance of space applications and remote sensing in general and of other associated applications that have a significant impact on development.

To illustrate the importance of space and remote-sensing technologies, he took Bangladesh as a case in point. Bangladesh reckons that simply controlling water resources with remote-sensing technologies has improved its yields by 8%. Mustapha Masmoudi therefore called on Africans to adopt such technologies for the continent's future development.

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