

NigeriaSat-2 Satellite Launch Announced

SSTL is to launch the NigeriaSat-2 and NigeriaSat-X satellites on behalf of the National Space Research and Development Agency (NASRDA) by a Dnepr launch vehicle from Yasny, Russia on 29th October 2010. NigeriaSat-2 is the most advanced small satellite ever to be launched, defining new standards in Earth observation and avionics. The spacecraft, which is based upon SSTL's flagship SSTL-300i platform, will be used primarily for resource management and mapping of the Nigerian territory.

Its mission objectives include providing high resolution maps of Nigeria every four months, monthly monitoring of Nigerian crops for food supply security, and supporting the development of the Nigerian national Geographical Information System (GIS) by providing high quality geospatial data.

The NigeriaSat-2 spacecraft utilises one of the most capable platforms in its class, which when combined with its two SSTL-built optical payloads provides highly capable and flexible multi-mode operation for spot imaging, strip imaging, area mode imaging and stereo mode imaging.

High resolution images are provided by SSTL's Very High Resolution Imager (VHRI). This sophisticated multispectral imaging payload was developed from the highly successful imager onboard Beijing-1. It provides 2.5m ground sample distance (GSD) panchromatic imagery and 5.0m GSD 4-band multi-spectral imagery at 20km swath widths. The satellite's wide area mapping capability comes from a 32m GSD 4 band Disaster Monitoring Constellation imager that has a very large 300km swath width and can capture up to 400 scenes per day.

The small satellite's imaging capability is further enhanced by the SSTL-300i satellite platform's avionics, allowing 45° roll/pitch off-pointing for high resolution spot imaging and also stereo mode imaging. Stereo mode imaging is an exciting new development that makes it possible to build digital terrain maps which include, for example, heights of buildings, hills and mountains - useful in the planning of wireless communications.

NigeriaSat-2 also features dual 105Mbps downlinks, which can also be operated as a 210Mbps data connection for fast transfer of large images to either the SSTL or Nigerian groundstation. The new satellite can be controlled both directly from Nigeria and also from SSTL's groundstation to provide rapid imaging, with a typical 3-day turnaround from satellite tasking to GIS-ready images.

The NigeriaSat-2 programme includes ground segment equipment and advanced training, and follows on from the successful NigeriaSat-1 programme to provide data continuity for end users.

NigeriaSat-X will be launched into the Disaster Monitoring Constellation, where it will assist with disaster relief and global environmental monitoring campaigns alongside satellites from other consortium members ASAL (Algeria), BLMIT (China), Deimos Space (Spain), and SSTL (UK).

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