New Possibilities in the Field of Acquisition and Processing of Satellite Images

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During last year, since the last International Scientific and Technical Conference "From imagery to map: digital photogrammetric technologies" in the French city of Fontainebleau, some serious changes happened on the remote sensing market:

1. SCANEX R&D Center first in the world successfully held series of data reception from very-high resolution KOMPSAT-3 satellite on its own antenna systems. Using Korean satellite with the UniScanTM station enables acquiring date with resolution of 0.7 m in panchromatic and 2.8 m multispectral modes on exceptional terms in real time. High precision of geolocation allows large-scale mapping, whereas the ability of emergency tasking extends the monitoring capability in the case of disasters.

Should mention KOMPSAT-5 satellite launch equipped with Synthetic Aperture Radar, which allows making imagery with resolution of up to 1 m. It will increase the possibility of all-weather monitoring of different processes such as natural and flash floods, ship situation and oil spill detection.

2. The SPOT 7 Earth-observation satellite, designed and developed by Airbus Defence and Space, was launched on 30 June by a Polar Satellite Launch Vehicle (PSLV) from the Satish Dhawan Space Centre in India. It will now join the orbit in which its twin, SPOT 6, and the very-high-resolution observation satellites Pléiades 1A and 1B are located, and will be positioned at 180° in relation to SPOT 6. This event has expanded the line of exclusive remote sensing data for Russia and Belarus, being provided by SCANEX. SPOT data have one of the best price-performance ratio. SPOT 6/7 resolution is close to very-high while its price is at a medium and high resolution data levels. Taking into account the performance of 6 million. sqr. km per day, the constellation (SPOT 6 and 7) becomes a unique resource of remote sensing data on the market.

3. The first Russian private remote sensing satellite developed by SPUTNIKS company (a subsidiary of SCANEX), named TabletSat-Aurora was successfully launched in June 2014.

Weight of the satellite is 26 kg; the minimum estimated lifetime is 1 year. Aurora is equipped with a high-precision three-axis system for orientation and stabilization, and the data are planned to be received by SCANEX ground station network and used for commercial, scientific, educational and environmental projects. Data transmission speed on the ground segment — 70 Mbit / s.

Within two months after Aurora was launched, successful test of the onboard X-band transmitter was carried out. The signal was received by UniScanTM station in Moscow at 11:47 and was sustainably observed during operation time.

4. New (4th) generation of ScanEx Image Processor (SIP) software appeared in the market. Performance of DSM/DTM extraction, orthorectification and many other features was significantly increased. Existing classification algorithms were improved and new ones added. Photogrammetric module was extended with new tools for automatic bundle adjustment of satellite imagery data, for mosaic creation, including automated seam lines creation and color-balancing, etc.

Enhanced functionality and performance made SIP more popular and in demand in the global market, e.g. during the last year it began to be supplied through the distribution network in Estonia, Nepal, China, Mongolia, and some Middle East countries.