



Space project IONOSAT- MICRO – goals and realization

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The IONOSAT-MICRO project is a first stage of IONOSAT program devoted to the multi-point global monitoring of dynamic processes in the ionosphere. The IONOSAT program is planned to be realized in 2015-2020 with the help of three satellites at coordinated low Earth orbits (LEO). IONOSAT-MICRO is the forerunner project scheduled for launch in 2014 at sun-synchronous orbit with the aim to test the IONOSAT mission scientific postulates and preliminary collection of related space data. The main goal of the IONOSAT-MICRO project is the systematic study of the dynamic response of the ionosphere to the influence “from above” (sun, geomagnetic activity) and “from below” (powerful meteorological, seismic and anthropogenic impacts). More in details, the study of following formations in the ionosphere is foreseen:

- Space-temporal structure and global distribution of inhomogeneities in neutral atmosphere and ionosphere;
- Global structure and dynamics of quasi-stationary electric currents, electric and magnetic fields;
- Wave structures and turbulences at different spatial and temporal scales.

To realize such a research, the scientific payload of the MICROSAT spacecraft will provide the measurements of following parameters:

- Neutral gas and plasma parameters - concentration, temperature;
- DC-ELF-VLF electromagnetic field vectors and ELF-VLF plasma current fluctuations;
- Total electron content (TEC);
- Spectral content of plasma oscillations.

Synchronous experiments with ground support facilities – both active and passive ones – are also foreseen.

The IONOSAT-MICRO project will be realized onboard of MICROSAT microsatellite platform, manufactured by Yuzhnoye Design Office with new experimental models of ammonia propulsion system, battery, solar arrays and panels with thermal control coating, the in-flight tests of which are also planned in frames of the project.

The composition of the scientific equipment developed by the international team of participants and sensors positioning at the platform will be reported.

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