

4th International Conference and Exhibition on

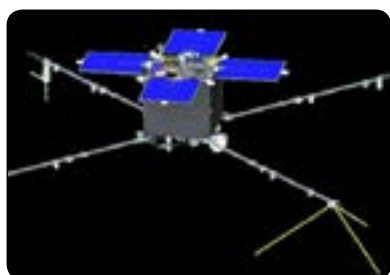
Satellite & Space Missions

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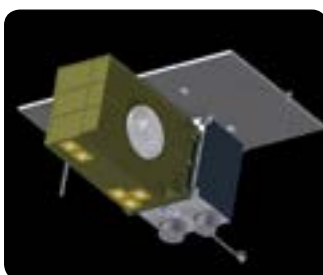
Advanced space technologies in interests of scientific researches in the near earth and interplanetary space

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Development of spacecraft in the context of scientific research of space was from the very start one of the prioritized directions of Yuzhnoye's activities. Nowadays Yuzhnoye proposes satellite platforms for scientific research as a reasonably priced and available means for scientific and technological experiments implementation. Depending on the payload type, specific orbit parameters, required type and accuracy of orientation there is a possibility to outfit the satellite platforms in terms of the following: increasing data rate; increasing attitude control accuracy; increasing power supply performance. Currently Yuzhnoye ensures technical implementation of Microsat project, the main purpose of which is observation of dynamic processes in the earth's ionosphere. To perform ionosphere measurements Microsat-M spacecraft, developed on the basis of MS-2 satellite platform, is equipped with scientific instruments including: magnetic-wave complex; particles density analyzer; electric field spectrum analyzer; ionic driftmeter; scientific data collection system. Further phase of the project shall be development of satellite cluster for researching earth ionosphere based on Yuzhsat satellite platform providing simultaneous multi-point measurements of ionosphere parameters. Aerosol-UA project is currently being developed. It is intended for conducting global measurements of the detailed physical characteristics of natural and anthropogenic aerosols in the earth atmosphere as well as assessment of their chemical composition. For this project implementation Yuzhnoye also proposes Yuzhsat satellite platform equipped with a payload including scanning polarimeter (ScanPol) and multi-spectrum image-polarimeter (MSIP). The report also contains the results of "Lunar Industrial and Researching Base" conceptual design (concept of Lunar Industrial and Research Base, its configuration and infrastructure at different phases of operation, duration of the project implementation, main technical characteristics of the Lunar Base). A number of key elements are based on available technologies (the reliability of some of them was confirmed by flight tests). Technologies and strategy of Lunar Industrial and Research Base creation proposed by Yuzhnoye bring us closer to practical implementation of such a global idea with lower expenses and short time period.



a) MS-2 with payload MicroSat;



b) YuzhSat with payload Aerosol-UA.

Figure 1: Yuzhnoye satellite platform intended for scientific and technological experiments



Figure 2: Lunar Industrial and Research Base project.

Biography

Serhii Moskalov has his expertise in the field of system designing space hardware. He participated in development of the Earth observation satellite Egyptsat-1 as well as the Earth observation and scientific satellites Sich-1M and Sich-2 that were launched in 2007, 2004 and 2011 respectively. Now Serhii Moskalov is a deputy Chief Designer and Head of Spacecraft and Systems Design Office. Under his leadership modern Earth observation and scientific satellites and buses for satellites of different classes are now being developed.

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