

SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND  
DEVELOPMENT (D3)

Systems and Infrastructures to Implement Future Building Blocks in Space Exploration and Development  
(2)

Author: Dr. Nikolay Sokolov

Central Research Institute of Machine Building (FSUE/TSNIIMASH), Russian Federation,  
sokolov@mcc.rsa.ru

Dr. Alexander Milkovskii

Federal state unitary enterprise "Central Scientific Research Institute of machine-building" (TsNIIMASH),  
Russian Federation, snl@mcc.rsa.ru

Mr. Alexander Belyavsky

Federal state unitary enterprise "Central Scientific Research Institute of machine-building" (TsNIIMASH),  
Russian Federation, snl@mcc.rsa.ru

Dr. Maxim Matjushin

Federal state unitary enterprise "Central Scientific Research Institute of machine-building" (TsNIIMASH),  
Russian Federation, snl@mcc.rsa.ru

Mr. Denis Zelenov

Central Research Institute of Machine Building (TSNIIMASH), Russian Federation, zelenov@mcc.rsa.ru

THE RUSSIAN MISSION CONTROL CENTRE - AN IMPORTANT ELEMENT OF SPACE  
EXPLORATION BY THE WORLD COMMUNITY

**Abstract**

At present Russian Space Agency has Intergovernmental Agreements on cooperation in space activities with more than 19 countries. This list includes USA, Japan, India, Brazil, Sweden, Argentina and ESA countries. Russian Space Agency interacts with Canada, USA, Japan and ESA countries in the framework of Intergovernmental Agreement of January, 29, 1998. Most of the above-mentioned Agreements imply creation and further safe utilization of space systems and complexes by certain programs and different branches. The successful realization of space missions depends on co-ordinated interaction of cooperation, integration and operability of decision tasks for preparation and control of flight systems, and regulated access of scientific society to payload information which is the main result of space activities. It should be noted that International Mission Control Centres are the most important and complicated instruments of space exploration which provide the complexity of task decision during the control of dissimilar constellations. The principles of establishing and development of the Russian Mission Control Centre ensure possibility of its operative integration in the distributed control system of space exploration. The main cooperation lines of space exploration for establishing of the world-wide distributed control system of space complexes are as follows: - development of international distributed management facilities of space vehicles already partially realized during the ISS control; - creation and development of detection means of hazardous situations and international common database of space objects catalogues in the near-earth space and providing its high availability; - creation and development of international databank of scientific information and providing its high availability for the world scientific community; - creation and development of international space data relay system with elaboration of regulations for the use of its resources; - securing the required level of failure-resistance of international control facilities, payload information receiving and processing facilities; - establishing of the international further training for the

specialist of mission control centres; - collaborate research and complex innovation in space activities. Phased implementation of the major cooperation lines allows increasing the efficiency of receiving and utilization of space activity results, decreasing the expenses for maintenance and service of space objects and also consolidating the international cooperation lines during space exploration.