



## **ROSKOSMOS REPORT**

ISO TC 20/SC 13 Meeting  
Colorado Springs, Colorado, USA  
**Report for the period October 2005 – September 2006**

1. The ISO/TK20/CK13 International Standards have and will continue to be applied in the streamlining of Russia's "Unified State Ground Automated Control Complex", within Pirit and Klyon complexes as well as the majority of the new developments of space data and telemetry transmission assets (see Appendix). As mentioned above, the requirements of ISO/TK20/CK13 International Standards have been broadly applied to national and international projects by leading space companies – prime hardware contractors and developers of space telemetry and data transmission equipment (RSC "Energiya", NPO PM, TsSKB "Progress", Khrunichev Center, RNII KP, NPO IT and others, see Appendix).

However, Pirit is currently the only onboard telemetry system in which the batch principles of data transmission are implemented according to the requirements of CCSDS Recommended Standards and Standards ISO TC 20/SC 13 (the NPO IT facility).

2. During the period after the Moscow meeting of CCSDS Managerial Council in the fall of 2006, the Federal Space Agency and its member enterprises and research organizations carried out some work aimed at recommending ROSKOSMOS experts to be assigned to the CCSDS WG's. ROSKOSMOS enterprises officially appointed their representatives to WG's of CCSDS. According to the agreement, information about the experts appointed by ROSKOSMOS was sent to the CCSDS Secretariat.

3. The Federal Space Agency has reviewed and has approved the "ISO/DIS 26868: Space data and information transfer systems-Image data compression (CCSDS 122.0-B-1)" project and is currently reviewing the applicability of "ISO/DIS 22666: Space Data Link Protocol (CCSDS 732.0-B-2)".

4. We thank Dr. Jack Kelley for his work as the General Secretary to CCSDS.

We wish him the best of health and all the best in the new position!

A. Mutafjn, V. Starostin

## The appendix

### The list ISO/TK20/SC13 Standards, used by enterprises Federal Space Agency

Number	Document Number	Title	Enterprise Company
1	ISO 11104	Space data and information transfer systems - Time code formats	RNII KP NPO IT
2	ISO 11754	Telemetry Channel Coding	NPO PM NPO IT NII KP RNII KP
3	ISO 12171	Telecommand Part 1- Channel Service	NPO IT RNII KP NPO PM
4	ISO 12172	Telecommand Part 2-Data Routing Service	RNII KP NPO IT NPO PM
5	ISO 12173	Telecommand Part 2.1-Command Operation Procedures	RNII KP NPO IT NPO PM
6	ISO 12174	Telecommand Part 3-Data Management Service	RNII KP NPO IT
7	ISO 12175	Standard formatted data units - Structure and construction rules	RNII KP
8	ISO 13419	Space data and information transfer systems - Packet telemetry	RNII KP NPO IT NPO PM
9	ISO 13420	Advanced Orbiting Systems, Networks and Data Links: Architectural Specification	RNII KP
10	ISO 13764	Standard Formatted Data Units . Control Authority Procedures	RNII KP
11	ISO 15887	Data systems - Lossless data compression	RNII KP NPO IT
12	ISO 15888	Standard formatted data units - Referencing environment	RNII KP
13	ISO 15892	Space Communications Protocol Specification (SCPS)-Security Protocol (SCPS-SP)	RNII KP
14	ISO 15893	Space Communications Protocol Specification (SCPS)-Transport Protocol	RNII KP
15	ISO 15894	Space Communications Protocol Specification (SCPS)-File Protocol (SCPS-FP).	RNII KP
16	ISO 17355	CCSDS File Delivery Protocol (CFDP)	RNII KP
17	ISO 17433	Packet Telemetry Service Specification	RNII KP
18	ISO 22641	TM Synchronization and Channel Coding	NPO PM NPO IT
19	ISO 22642	TC Synchronization and Channel Coding	NPO IT OKB MEI

20	ISO 22645	TM Space Data Link Protocol	NPO IT OKB MEI
21	ISO 22646	Space Packet Protocol	OKB MEI
22	ISO 22647	Space Link Identifiers	OKB MEI
23	ISO 22663	Proximity-1 Space Link Protocol--Data Link Layer	NII KP
24	ISO 22664	TC Space Data Link Protocol	NPO IT OKB MEI
25	ISO 22667	Communications Operation Procedure-1	NPO IT OKB MEI
26	ISO 22669	Space Link Extension – Return All Frames Service Specification	RNII KP

**The note:**

NPO PM - ACADIMICIAN RESHETNYOV APPLIED MECHANICS RESEARCH AND PRODUCTION ASSOCIATION

NPO IT - RESEARCH AND PRODUCTION ASSOCIATION OF MEASUREMENT NECHNICS

NII KP - INSTITUTE OF SPACE DEVICE ENGINEERING

OKB MEI - SPECIAL DESINDN BUREAU OF MOSCOW POWER ENGINEERING INSTITUTE

RNII KP - RUSSIAN SCIENTIFIC RESEARCH INSTITUTE OF SPACE INSTRUMENT MAKING

TsNIImash - CENTRAL SCIENTIFIC RESEARCH INSTITUTE FOR SPACE OF MACHINE BUILDING