

Agency Agreement Status

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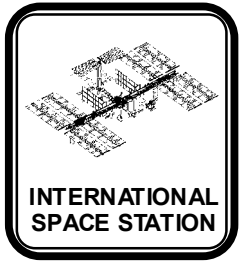
ARISS meeting at CSA

April 4, 2002



ISS Ham Accomplishments

1. 1996 Amateur Radio on the International Space Station (ARISS) Team was formed per the request of NASA.
 - NASA wanted a single focus for amateur radio equipment on ISS.
2. 1997 Amateur radio organizations from 8 of 16 nations representing ISS signed the MOU chartering ARISS.
 - U.S., Russia, Canada, Japan, Germany, Italy, France, U.K.
3. Nov. 1998 protocol signed by RSC-Energia/S. Bronnikov.
 - Hardware manifested (originally on 2A.1, being evaluated for 2A.2B).
4. Jan. 1999 - mini-TIM in Houston.
 - Agreement (Doc. 1) and Technical Team Charter (Doc. 2) started.
 - Roles & responsibilities defined and antenna systems concept defined.
5. July 1999 - mini-TIM in Moscow.
 - Negotiated terms of Agreement (Doc. 1) and developed Doc. 2 and 3
6. March and Dec. 2001 meetings at ESTEC and GSFC



ISS Ham Document Status - 05-04-01

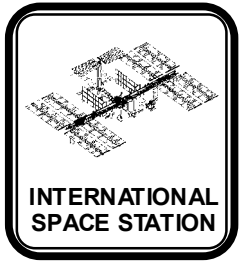
Document 1. Agreement

Agreement is between NASA, Rosaviacosmos and RSC-Energia.

- RSC-Energia represented Rosaviacosmos.
- NASA and Rosaviacosmos establish a Technical Team to implement amateur radio on ISS. This team will report to Team 0.
- ISS amateur radio system is a developing system located in the Russian and American modules.
- Rosaviacosmos and NASA develop hardware, firmware, software, procedures, and operations jointly.
- Rosaviacosmos is responsible for equipment installed in ISS-ROS.
- NASA is responsible for equipment installed in ISS-AOS.
- All proposals will be deferred to the ISS Ham Technical Team.

Agreement status:

- Team 0 signed (NASA/T. W. Holloway and RSC-Energia/ V. Ryumin).
- Rosaviacosmos is still reviewing and has not signed.



ISS Ham Document Status

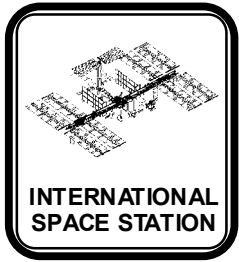
Document 2. Technical Team Charter

Technical Team Charter Specifics:

- Technical Team serves as the interface between ARISS and ISS (ESA, NASA, NASDA, Rosaviacosmos/ RSC-Energia).
- RSC-Energia represented Rosaviacosmos.
- Technical Team
 - Negotiates resources on ISS.
 - Identifies manifest opportunities and ensures ARISS meets schedules.
 - Coordinates integration of amateur radio equipment on ISS.
 - Coordinates crew training and equipment operations.
 - Ensures crew, amateur radio community and education customer's requirements are met
- Current Technical Team reps from Rosaviacosmos/RSC-Energia and NASA.
- Future reps from ASI, Brazil, CSA, ESA, NASDA

Technical Team Charter Status:

- Team 0 signed (NASA/K. Shireman plus 2 support persons and Rosaviacosmos/ RSC-Energia/ V. Ryumin signed, plus 4 support persons).



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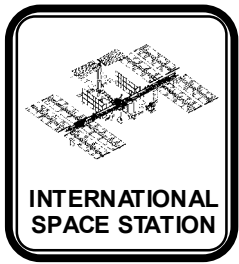
Document 3. ARISS Interactions with ISS Ham Technical Team

ARISS Interactions Specifics:

- Interactions between the Technical Team and ARISS are defined.
- ARISS serves as the point of contact between the international amateur radio community and the Technical Team.
- Interactions include:
 - Define objectives for the operation of amateur radio on ISS.
 - Organize international competitions for future hardware.
 - Review all proposals.
 - Develop integrated plan.
 - After the ISS Ham Technical Team approves flight projects, develop, qualify and deliver hardware, software, procedures, etc.
 - Ensure safety and flight certification.
 - Coordinate amateur operations on ISS via ISS Ham Technical Team.
 - Support crew training, as requested by the ISS Ham Technical Team.

ARISS Interactions Status:

- NASA, RSC-Energia and ARISS signed



ISS Ham Open Items

1. Expand Document 2 Technical Team Charter to multilateral participation.
2. Plan ISS Ham expansion into the multilateral, mature ISS:
 - Pallet