CORF Presentation

Activities That May Impact
RAS, EESS, and SRS

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Overview

- Proceedings of Interest
- The FCC's preparation for WRC-07
- How can CORF help?
- Wrap-up

Proceedings of Interest

- Broadband over Power Lines (BPL)
- Advanced Wireless Services (AWS)
- Ultra-wideband (UWB) Systems
- Aeronautical Mobile-Satellite Service (AMSS)

Broadband Over Power Line (BPL)

ET Docket No. 04-37, FCC 04-245
FCC Contact: Anh Wride, 418-0577

- Adopted October 14, 2004
  - No change in Part 15 emission limits
  - Must operate on a non-interference basis
  - Requires BPL systems to incorporate dynamic interference mitigation capabilities
  - Establishes a database of active BPL installations
- 15 petitions for reconsideration are pending

BPL Rules

- Protects RAS observatories by requiring that BPL operators:
  - Not operate in 73-74.6 MHz within either 29 or 11 km of 10 VLBA stations.
    - ✓ Distance depends on the voltage level and whether power line is buried or overhead.
    - ✓ On reconsideration, NTIA has determined that only one of these facilities needs to be protected.
      - BPL using overhead lines may not operate within 65 km of the VLA station located at San Agustin, NM.
      - BPL using underground lines may not operate within 47 km of the VLA station located at San Agustin, NM.
  - Notify before operating within 4 km of the US311 facilities in the band 1.7-38.25 MHz.

Advanced Wireless Services (AWS)

ET Docket No. 00-258
FCC Contact: Jamison Prime, 418-7474

- The FCC has allocated the Government transfer band 1710-1755 MHz to fixed and mobile services on a primary basis for non-Federal use.
- Paired with 2110-2155 MHz band, currently used by FS microwave and Broadband Radio Service (formerly MDS).
- Auction of this 90 MHz of AWS spectrum (Auction No. 66) targeted for June 2006.

Advanced Wireless Services (AWS)

- Per footnote US311, RAS may operate in 1718.8-1722.2 MHz on an unprotected basis at 16 sites.
- AWS band plan splits the 1718.8-1722.2 MHz spectrum as follows:
  - Block A (1710-1720/2110-2120 MHz) will consist of 734 RSA/MSA licenses
  - Block B (1720-1730/2120-2130 MHz) will consist of 176 EA licenses
- Stations in the band 1710-1755 MHz are limited to 1 W peak EIRP, and thus this spectrum is likely to be used for mobile station transmit.

Ultra-wideband (UWB) Systems

FCC Contact: John Reed 418-2455

- In the 2002 UWB Report and Order, the FCC authorized the following:
  - Communications in 3.1-10.6 GHz
  - Vehicle radars in 22-29 GHz
  - Imaging systems below 10.6 GHz
- UWB devices may not operate onboard an aircraft, a ship or a satellite.
- Petitions for reconsideration have largely been addressed.
  - Satellite Industry Association's concern that UWB systems will cause harmful interference to satellite reception remain.

Ku-band AMSS NPRM

IB Docket No. 05-20

FCC Contact: Arthur Lechtman (202) 418-1465

- The band 14-14.5 GHz is allocated to the mobile-satellite service (Earth-to-space) (MSS uplinks) on a secondary basis for non-Federal use.
  - The aeronautical mobile-satellite service (AMSS) is a subset of MSS.
- Aircraft Earth Stations (AESs) in the AMSS can be used to provide broadband telecommunications services on commercial, private, and Federal aircraft.
  - Federal space stations will not be authorized in the band 14-14.5 GHz.
- The Boeing Company and Aeronautical Radio, Inc. (ARINC) have been granted conditioned licenses to operate AMSS systems in U.S. airspace.
  - 11.7-12.2 GHz (FSS downlinks) and 14-14.5 GHz (MSS uplinks) (Ku-band)
- A proceeding is pending at the Commission for the development of a regulatory framework for licensing AESs.
  - AMSS *Notice of Proposed Rulemaking* (FCC 05-14):
    - ✓ Proposed coordination (through NTIA) with SRS (specifically, TDRSS) and RAS for AMSS operations in the 14-14.5 GHz band as a prerequisite to licensing.
    - ✓ Sought comment on updating the list of observatories in US203.
      - CORF and the National Radio Astronomy Observatory commented.
    - ✓ Comment cycle closed on August 3, 2005.

FCC Prep for WRC-07

- FCC established WRC-07 Advisory Committee
  - Committee is currently preparing recommendations for WRC-07.
  - The FCC (with advice from the committee), NTIA, and industry advise the State Department on the appropriate actions.
  - FCC's web site for WRC-07 preparation is http://www.fcc.gov/ib/wrc-07.

Where is the action?

There are five active groups:

- Two report to the WRC-07 Advisory Committee
  - Informal Working Group 1 (IWG-1)
  - Informal Working Group 2 (IWG-2)
- Three report to the State Department
  - U.S. Working Part 7C
  - U.S. Working Party 7D
  - U.S. Task Group 1/9

IWG-1
Terrestrial and Space Science Services

- Chair: Jennifer Warren, Lockheed Martin Corporation, (703) 413-5970, jennifer.warren@lmco.com
- CORF should participate in Agenda Item 1.20:
  - Task is to consider the results of studies, and proposals for regulatory measures, if appropriate, regarding the protection of the Earth exploration-satellite service (passive) from unwanted emissions of active services in accordance with Resolution 738.
- Next Meeting starts at 1:30 pm on April 20, 2006 at Lockheed Martin Corporation, 1550 Crystal Drive, Suite 300, Arlington, VA.

IWG-2
Satellite Services and HAPS

- Chair: Steve Baruch, Leventhal Senter & Lerman PLLC, (202) 416-6782, sbaruch@lsl-law.com.
- CORF should participate in Agenda Item 1.21:
  - Task is to consider the results of studies, regarding the compatibility between the radio astronomy service and the active space services in accordance with Resolution 740, in order to review and update, if appropriate, the tables of threshold levels used for consultation that appear in the Annex to Resolution 739.
- Next meeting is 1:30-3:30 on April 19, 2006 at Leventhal Senter & Lerman, 7th Floor Conference Room, 2000 K Street, N.W., Washington, D.C.

U.S. Working Party 7C
Remote Sensing Systems

- Chaired by John Zuzek 216-433-3469, jzuzek@grc.nasa.gov
- EESS protection criteria of likely interest to CORF:
  - SA.1029-2 (May 2003): Interference criteria for satellite passive remote sensing
  - SM.1633 (June 2003): Compatibility analysis between a passive service and an active service allocated in adjacent and nearby bands

U.S. Working Party 7D
Radio Astronomy

- Chaired by Tom Gergely of NSF (703) 292-4896, tgergely@nsf.gov
- RAS protection of likely interest to CORF:
  - RA.517: Protection from transmitters operating in adjacent bands
  - RA.611: Protection from spurious emission
  - RA.1031: Protection in bands shared with other services
- Next meeting is a teleconference on April 11, 2006 that starts at 2:00 pm.

U.S. Task Group 1/9
Compatibility between Active & Passive Services

- Chair: Rob Hains, NTIA, (202) 418-4096.
- EESS and RAS protection of likely interest to CORF:
  - Agenda Item 1.20: Protection of the EESS (passive) from unwanted emissions from active services in accordance with Resolution 738.
  - Agenda Item 1.21: Compatibility between RAS and the active space services in accordance with Resolution 740.
- Next meeting: Joint meeting with USWP 1A/1B/1C at 10:00 on May 3rd, 1212 New York Ave, Washington, D.C.

How can CORF help?

- Review the registration process for radio observatories (codified at 47 CFR §2.107) in order to make it more useful
- Ensure that all RAS footnotes are up-to-date
  - Scrub current RAS footnotes and report needed changes
  - Build process to ensure continuing updates

Wrap-up

- Monitor FCC actions and offer solutions.
- File timely comments to ensure full public record is developed for your issues
- Participate in the WRC-07 preparation process
  - Domestic input does influence ITU decisions
- Consider making a public presentation at the FCC
  - Provide an overview of RAS
  - Explain spectrum issues and the impact FCC actions can have

Closing Details

- The FCC Online Table, the FCC Allocation History File, and the FCC Service Rule History File are at www.fcc.gov/oet/spectrum/

- For questions about this presentation, contact Tom Mooring at (202) 418-2450; Tom.Mooring@fcc.gov