

CORF Presentation

FCC Activities of Interest to RAS, EESS, and SRS

Julius Knapp & Ron Repasi
Office of Engineering and Technology
Federal Communications Commission
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Note: The views expressed in this presentation are those of the authors and may not necessarily represent the views of the Federal Communications Commission

Overview

- Items of Interest
- WRC-07 preparation update
- How can CORF help?
- Wrap-up

Items of Interest

- Satellite Communications
 - General Dynamics Petition (ESV & VMES)
 - V-band Satellite Service Rules
 - Aeronautical Mobile-Satellite Service (AMSS)
- Terrestrial Communications
 - Advanced Wireless Services (AWS)
- Unlicensed Operations
 - MSSl Petition
 - Tank Level Radar Waivers
 - Ultravision Waiver Petition
 - Broadband over Power Lines (BPL)
 - Ultra-wideband (UWB) Systems
- New Technologies
 - Cognitive Radio

General Dynamics Petition

RM No. 11336; FCC Contact: Howard Griboff 418-0657

- Petition to authorize Vehicle Mounted Earth Stations (VMES) use in Ku-band
 - ✓ Proposal for VMES FSS
 - ✓ co-primary at 14.0-14.5 GHz for uplink and 11.7-12.2 GHz for downlink
 - ✓ non-protected basis in the extended Ku-band downlink at 10.95-11.2 and 11.45-11.7 GHz
- Petitioner proposes that VMES rules would be based on the rules previously adopted for Earth Stations on Vessels (ESVs)

General Dynamics Petition (cont.)

- Proposals mirror IRAC coordination obligations for ESV Operations near TDRSS Receive Facilities in the 14.0-14.2 GHz and RAS operations in the 14.47-14.5 GHz band
- May 24, 2006 Petition for Rulemaking Received, put on Public Notice on July 20, 2006

V-band Satellite Service Rules

- *The V-band Second Report and Order*, was issued in 2003, to harmonize U.S. allocations in the 37.5-43.5 GHz band with international allocations and finalize technical rules for sharing between the FS and the FSS in the 37.5-43.5 GHz band
- Next step is for the Commission to implement the “soft-segmentation” approach in the 37.5-43.5 GHz band to promote sharing of the band between FS and FSS operations.

AMSS NPRM

IB Docket No. 05-20

Contact: Arthur Lechtman (202) 418-1465

- Background - Boeing Connexion and ARINC authorized to provide broadband services on airplanes
- Boeing is currently serving only U.S. Government aeronautical stations
- NPRM deals with service rules & procedures to govern the use of AMSS earth stations (planes) in the Ku-bands allocated to the FSS
 - 11.7-12.2 GHz (downlinks) & 14-14.5 GHz (uplinks)
 - Proposes coordination in the band 14-14.5 GHz as a prerequisite for licensing
 - Seeks comment on updating the list of observatories and associated coordinates in US203
 - Pleading cycle closed August 2005

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
- This spectrum has been designated for AWS use
 - Currently used by FS microwave and broadband radio service (BRS) (formerly MDS). Incumbents subject to relocation
 - Fixed and mobile stations are limited to a peak EIRP of 1 W; spectrum expected to be used for mobile station transmit

Advanced Wireless Services (cont.)

- Per footnote US311, RAS may operate in 1718.8-1722.2 MHz on an unprotected basis at 16 sites
- Auction concluded on Sept. 7, 2006 and licenses awarded
 - AWS band plan splits the 1718.8-1722.2 MHz spectrum as follows:
 - Block A (1710-1720/2110-2120 MHz) consists of 734 RSA/MSA licenses
 - Block B (1720-1730/2120-2130 MHz) consists of 176 EA licenses

MSSI Waiver Request

ET Docket 06-216; FCC Contact: Anh Wride 418-0577

- Requests operation of wideband RFID mobile transmitters in the 5925-7250 MHz frequency band at a level 12.75 dB higher than permitted in the rules, to track personnel and assets in petrochemical and similar facilities
- Waiver was filed April 12, 2006, comment cycle completed June 2006

Tank Level Radar Waiver and Petition for Rule Making

ET Docket 06-216; FCC Contact: Anh Wride 418-0577

- Waiver requests operation of a tank level probing radar (TLPR) in the 78-79 GHz restricted band for use in metal or concrete storage tanks
- Petition for rule making requests operation of a TLPR in the 77-81 GHz restricted band for use in storage tanks made of any type material
- Waiver request and Petition for Rule Making filed on November 3, 2006 Comments filed on Jan 5, 2007, replies filed on Jan 22, 2007

Ultravision Waiver

ET Docket 06-195; FCC Contact: Anh Wride, 418-0577

- Ultravision requests waiver of the operating bandwidth in Section 15.511(a) for an ultra-wide band (UWB) surveillance system operating below 700 MHz
- Also requests that the categories of parties eligible to operate UWB surveillance systems be expanded to permit operation by any entity eligible for licensing under Part 90
- Waiver request filed on October 6, 2006. Comments filed on February 22, 2007, replies filed on March 8, 2007

Broadband Over Power Line (BPL) Rules

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

- Report & Order 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

BPL Rules (cont.)

■ 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 recon, NTIA has determined that only one of these facilities needs to be protected (BPL operators must not operate within 47/65 km of a single 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

BPL Rules (cont.)

- On reconsideration (MO&O, August 2006, FCC 06-113), the BPL rules were modified to protect only the New Mexico VLA observatory as requested by NTIA
- The rules were also modified to extend the frequency range of the consultation areas for RAS observatories from 1.7-38.25 MHz to 1.7-80 MHz.

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
- We are now seeing applications to certify equipment for use in the band

Cognitive Radio

ET Docket No. 03-108, FCC 05-57

FCC Contact: Hugh Van Tuyl 418-7506

- R&O adopted March 10, 2005
 - Made changes to certain equipment certification requirements
 - Requires the use of security features that would prevent unauthorized modifications to the RF operating parameters
- CORF expressed specific concerns
 - Transmissions not be allowed in Part 15 restricted bands
 - Out-of-band emissions from transmissions in the band 24-24.25 GHz not interfere with RAS in the band 23.6-24 GHz.
- The Cognitive Radio R&O
 - Made no changes to the restricted bands
 - No changes to power limits

Prep for WRC-07

- FCC WRC-07 Advisory Committee work concluded
- U.S. Delegation to WRC-07 may be selected as early as June
 - Richard Russell, Associate Director of the Office of Science and Technology Policy nominated as US Ambassador to WRC 07
- FCC's web site for WRC-07 preparation is <http://www.fcc.gov/ib/wrc-07>

WRC-07 (cont.)

- **WRC-07 scheduled for October 22 to November 16, 2007**
 - Conference Preparatory meeting held in March; report released
 - CITELE scheduled for April and June
 - CEPT and APT scheduled for July

WRC-07 (cont.)

- **Agenda Item 1.2:**
 - Task is to consider allocations and regulatory issues related to the Earth exploration-satellite (passive) service, space research (passive) service and the meteorological satellite service in accordance with Resolutions **746 (WRC 03)** and **742 (WRC 03)**;
- **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
- **STATE/FCC/NTIA** discussing next steps for U.S. to address Agenda Items 1.2, 1.20

WRC-07 (cont.)

- **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 (WRC-03), in order to review and update, if appropriate, the tables of threshold levels used for consultation

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 continual 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
 - Either directly or through Scientific Community Spokesperson(s)
 - 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 and the FCC Allocation History File are at www.fcc.gov/oet/spectrum/
- For questions about the table or online allocation history resources, contact Tom Mooring at (202) 418-2450; Tom.Mooring@fcc.gov