Federal & International Regulatory Processes to prevent/address RFI

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NTIA promotes a space policy that minimizes potential interference by …

1. Chairing Federal Regulatory Advisory Process
2. Participating in International Regulatory Process
   • Satellite Frequency Coordination
   • Inter- and Intra-Service Processes
   • Eliminating Interferences
3. Engaging in Evolving Issues: Orbital Slots
The law provides FCC and NTIA authority over users

National Spectrum Management

COMMUNICATIONS ACT OF 1934

THE PRESIDENT

INTERDEPARTMENT RADIO ADVISORY COMMITTEE

Chair by NTIA
19 Federal Agencies Represented

FCC

Non-Federal Users

Business
State & Local
Government
Entertainment
Commercial
Private

THE CONGRESS

Not over spectrum
IRAC FUNCTIONS

• The Interdepartment Radio Advisory Committee (IRAC): Chaired by OSM & Operating Since 1922
  – Assists NTIA in assigning frequencies for U.S. Government uses
  – Develops procedures and technical criteria
  – Advises NTIA on spectrum issues before the FCC

• The IRAC includes 6 subcommittees & Ad Hoc groups
  – Spectrum Planning Subcommittee: Evaluates Spectrum Supportability
  – Frequency Assignment Subcommittee: Assign Frequencies
  – Space Systems Subcommittee: Internationally Registers/Coordinates Federal Satellites
  – Others: Radio Conference Subcommittee (Prepares for WRCs), Emergency Planning Subcommittee, Technical Subcommittee (Standards)
  – Several Ad Hocs: Special Subjects
Int’l Frequency Registration of Space Services

- Advance publication Information (API)
  - Networks subject to coordination process submit general information only
  - Starts clock on 7-Year Bringing into Use period (DBIU)

- Coordination Phase

- Notification Phase

- Recording in Master International Frequency Register (MIFR)
Coordination (RR Article 9)

- Coordination publication contains detailed info about satellite network
- Coordination receipt date at the ITU determines coordination priority to other satellite networks
- ITU determines networks for which a specific filing requires coordination
  - Frequency Overlap, Orbital Separation, Increase in Interference, etc.
- Coordination between Administrations takes place to resolve anticipated difficulties
Notification & Recording
(RR Article 11)

• First Notification takes place prior to the end of the 7 year DBIU period and lists coordination status
  o Includes both successful or in–progress statuses

• ITU Favorable finding
  o Successfully-completed coordinations & those deemed unnecessary
  o Recorded in MIFR
  o Such assignments have international recognition

• ITU Unfavorable finding
  o Required coordinations but not yet completed
  o Operate in an unprotected/non-harmful interference basis (RR No. 11.41 recordings) and continue process
Inter- and Intra-Service Processes

Where required…(frequency band specific)

• Coordination of Terrestrial with Space Systems: RR Nos. 9.14 thru 9.19

• Hard limits to protect terrestrial systems (Power-Flux Density Limits): RR Article 21

• Terrestrial power limits to protect space station receivers (Article 21)…Additional constraints throughout Article 5

• Non-Geostationary systems must not cause unacceptable interference to GSO FSS and BSS (RR No. 22.2)

• Non-Geostationary FSS systems given a certain amount of interference budget from GSO FSS (Article 22 Equivalent Power Flux Density Limits)

• Non-Geostationary systems coordinate on an equal basis with GSO: RR No. 9.11A
Article 15 of the Radio Regulations

- In cases of receiving actual harmful interference, Appendix 10 is used to document the full particulars of the interference.
- Administrations cooperate in the detection and elimination of harmful interference.
- Frequency Assignments recorded under RR No. 11.41 (i.e. assignments that did not successfully complete coordination process) must immediately eliminate the harmful interference (See RR No. 11.42) when informed.
- The ITU may become involved when an administration so requests and it may then make recommendations.
- The Radio Regulations Board (RRB is independent elected body of 12 members) may also consider issues of harmful interference at the request of an administration.
Evolving Issues: Orbital Slots

• WRC-12: U.S. & CITEL strongly advocated for improved provisions on Bringing Into Use, Suspension, & MIFR Maintenance
  – Adopted RR No. 11.44B (Defined BIU for GSO satellites: capability to operate on the frequency assignment & deployed for ninety days)
    • Clear definition: does not require interpretation on the issue of actual operations nor the debate on what additional information would be needed
  – Required administrations to inform the BR within 6 months of suspending an assignment and then follow procedures similar to BIU when recommencing use
  – Increased authority for the ITU to clean MIFR (Revised RR No. 13.6)

• WRC-12: U.S. & CITEL did not support having any further judgment on assignments that did not complete coordination before being recorded in the MIFR
  – Administrations only need to indicate that efforts have been made to effect coordination (New RR No. 11.41.2)
  – Recording Conditions: NIB, unprotected & immediately eliminate any interference Once coordination completed, conditions removed per new RR No. 11.41B
BR Circular CR/343

- January 31, 2013: ITU Radiocommunication Bureau (BR) issues CR/343
  - Contains non-exhaustive list of possible types of information that the BR might request to verify a satellite’s transmitting & receiving capability for BIU
  - Requires an administration to notify within 120 days of the commencement of the BIU 90-day period
  - Requests information on what efforts were made to effect coordination in cases where it was unsuccessful
- U.S. sends letter to BR on March 15, 2013 & joint letter with Luxembourg to RRB on May 31, 2013
  - Sought BR’s clarification on how CR/343 complies with the provisions in adopting a Rule of Procedure (ROP, See RR No. 13.12A)
    - RR No 13.12A requires the BR to draft, circulate to administrations & seek adoption from the RRB for practices and procedures of the BR
  - Exceeds scope of WRC-12 decisions on BIU and RR No. 11.41.2 or any ROP previously adopted on these issues
BR Circular CR/343

• BR’s May 1, 2013 Reply to U.S.
  – Explained how the information requested in CR/343 may be used
  – Did not address the BR’s decision on why the procedures in CR/343 did not need to comply with the provisions in adopting an ROP

• Radio Regulation Board Meeting (June 24-28, 2013)
  – U.S./Luxembourg request the RRB:
    • Instruct BR to revise CR/343 (remove new procedures) or withdraw it
    • Indicate to the BR that it may wish to seek an ROP or document any difficulties with the BIU & RR No. 11.41.2 provisions under WRC-15 Agenda Item 9.2
  – Additional contributions from Canada and Russia submitted to RRB supports Joint U.S./Luxembourg contribution
  – Awaiting RRB decision