National Research Council
Committee on Radio Frequencies

National Telecommunications and Information Administration

Office of Spectrum Management

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Spectrum Innovation Sharing Test-Bed Pilot Program

- NTIA and the FCC established a spectrum sharing Test-Bed Pilot Program where federal and non-federal users can study the feasibility of increasing the efficient use of the spectrum
- 10 MHz of spectrum for shared federal and non-federal use
- Evaluate emerging technologies to improve sharing
- Request public comment through Federal Register Notices
- The Commerce Spectrum Advisory Committee provided recommendations on how to implement the Test-Bed
- Sought advice from federal agencies on the Interdepartment Radio Advisory Committee

Spectrum Innovation Sharing Test-Bed Pilot Program

- Equipment employs Dynamic Spectrum Access (DSA) sharing techniques
- NTIA identified 410-420 MHz & the FCC designated 10 MHz in the 470-512 MHz band
- Three phases:
  - Phase I : Equipment Characterization (test plan)
  - Phase II : Evaluation of Capabilities
  - Phase III : Field Operation Evaluation
- Organizations were selected to participate in the program
- March 2009 Testing of the first DSA device
- Information on the Test-Bed Pilot Program is available at: http://www.ntia.doc.gov/ntiahome/frnotices/2006/spectrumshare/comments.htm

Spectrum Efficiency and Effectiveness

- Methods for evaluating efficiency of spectrum use by the federal government
- Review the federal government spectrum use over a five-year period
- Determine and characterize current spectrum use by the federal government
- How current approval process influences spectrum efficiency and effectiveness
- Propose potential improvements
- Propose reforms to spectrum management polices that affect efficiency

Spectrum Engineering
Best Practices Handbook

- Develop and coordinate a series of individual technical memoranda on specific technical topics to be included in a Best Practices Handbook
- Combine the individually coordinated technical memoranda to create the Best Practices Handbook.
- Solicit comments from the public by issuing a public notice.
- Adopt portions of the Best Practices Handbook in NTIA *Manual of Regulations and Procedures for Federal Radio Frequency Management.*
- Apply or refer to appropriate portions of the Best Practices Handbook in future FCC rulemaking proceedings.

Develop Analytical Tools for Spectrum Management

- NTIA will provide federal and non-federal spectrum managers with analytical tools to manage the spectrum efficiently
- New analytical and procedural methodologies developed in the Best Practices Handbook will serve as the technical basis for more advanced spectrum management tools
- NTIA with assistance of the federal agencies and the FCC, will develop and maintain a comprehensive document of all activities regarding ongoing spectrum engineering and analysis model development
- This information will be made available to the federal agencies to be used in the development and purchase of spectrum management tools

Introduction

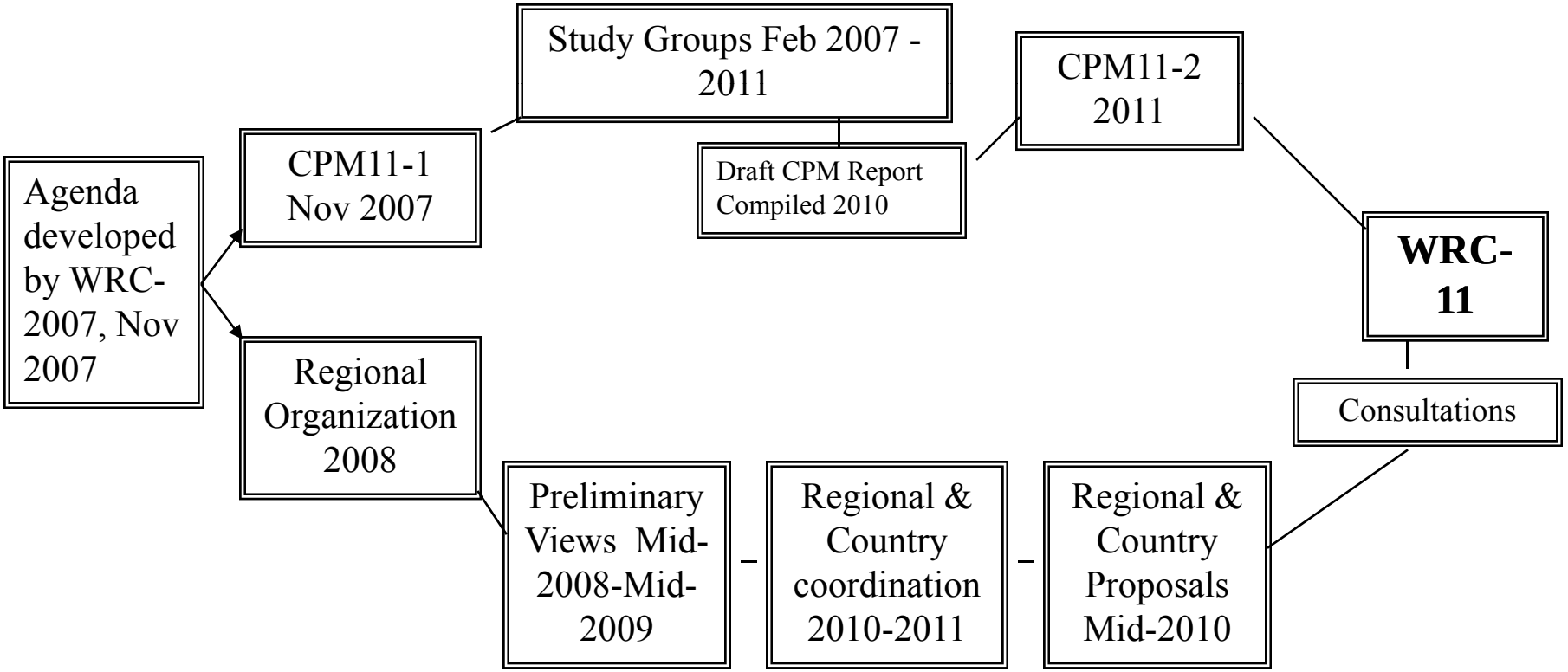
- International Forum for world agreement
- Review and revise the Radio Regulations
- Held every 4 years
- Operates by consensus, voting on occasion
- Sets the world stage for future technological development
- Greater emphasis on consolidated regional positions and proposals

Opening of WRC-07

WRC-11

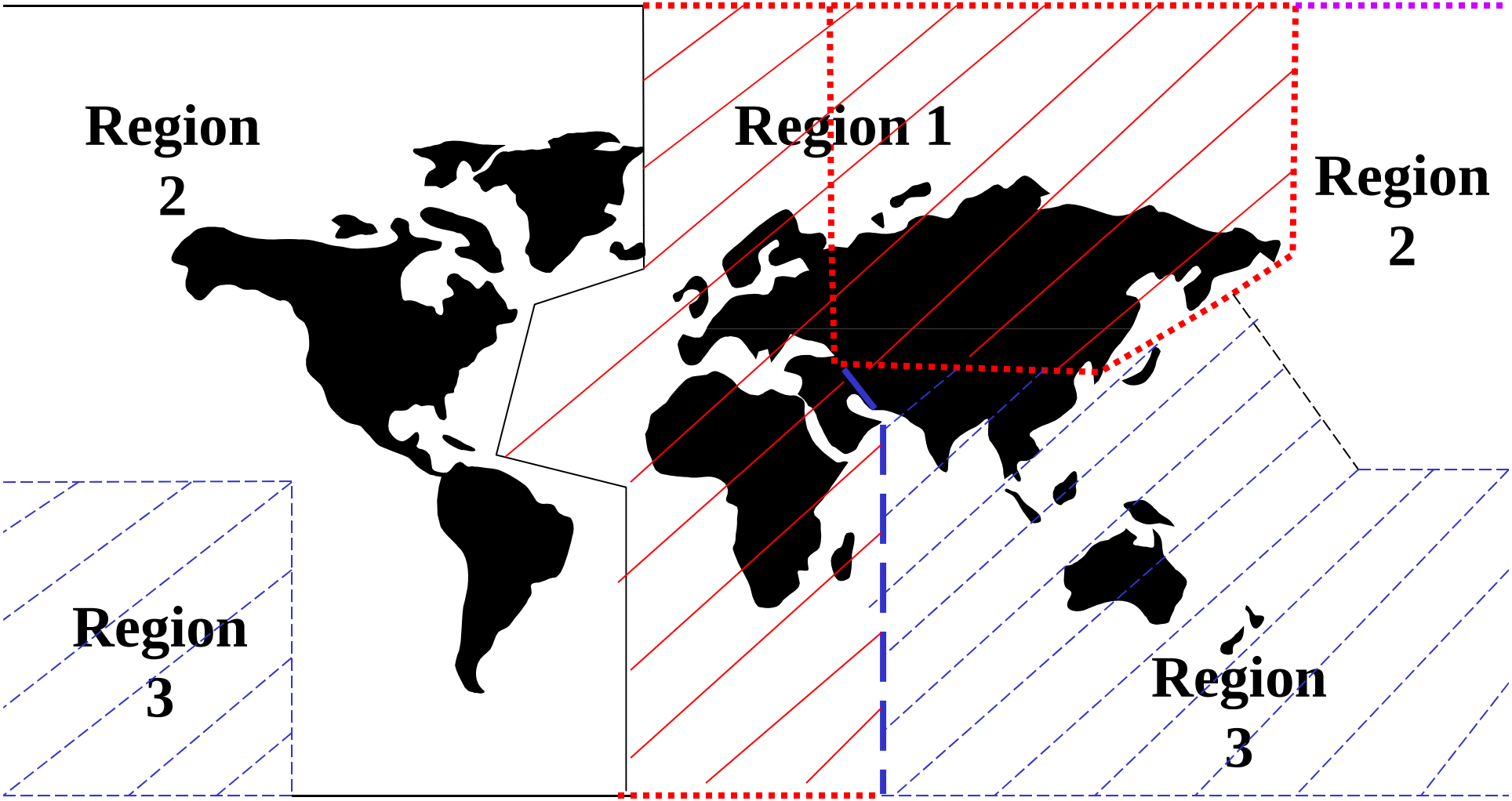
International Preparatory Process

Technical Preparations



Proposal Preparations

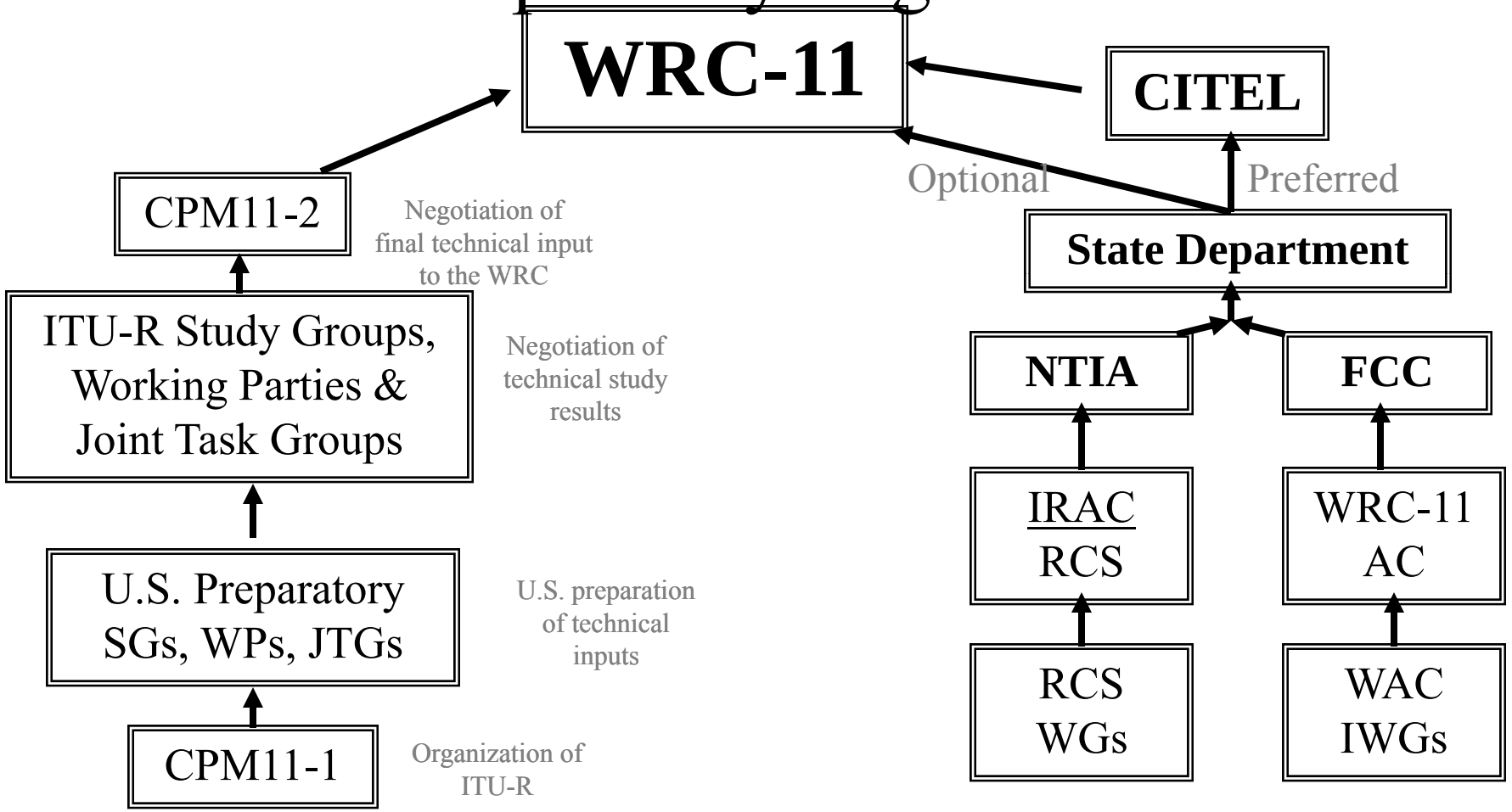
ITU Regions



Regional Spectrum Management Fora

Each Nation has Sovereignty Over the Use of its Spectrum

U.S. Preparatory Organization



U.S. Preparatory Process

NTIA - Federal Government Agencies

The RCS of the IRAC develops preliminary views and proposals

NTIA forwards views and proposals to the FCC

FCC - Commercial

The WAC develops preliminary views and proposals

The WAC forwards views and proposals to the FCC

FCC Bureaus analyze & modify proposals and forwards to NTIA

NTIA & FCC coordinate, modify & approve proposals

State Department submits proposals to ITU and CITEL

Interdepartment Radio Advisory Committee (IRAC)
Radio Conference Subcommittee (RCS) – WRC-11

Working Groups

WG1 – Maritime and Aeronautical Issues

WG2 – Radiolocation Service

WG3 – Fixed, Mobile, Amateur, and Broadcasting Issues

WG4 – Science Issues

WG5 – Satellite Issues

WG6 – Future Work Program and Other Issues

Federal Communications Commission (FCC)

WRC Advisory Committee (WAC) WRC-11

Informal Working Groups (IWG)

IWG -1 Maritime, Radar and Aeronautical Services

IWG-2 Terrestrial Services

IWG-3 Space Services

IWG-4 Regulatory Issues

WRC-11 Agenda Items

- **25 + Issues**
  - **Aeronautical -** (AM(R)S) and Unmanned Aerial Systems
  - **Maritime** – Port Security and Appendix 17 (HF)
  - **Radar** – 3-30 MHz, 30-300 MHz and 15 GHz
  - **Satellite** – Regulatory Issues, AMS(R)S 1.5/1.6 GHz, RNSS, MSS, BSS
  - **Fixed, Mobile and Broadcasting** – ENG, HAPS, 71-238 GHz, SRD
  - **Science** – Passive Services 275-3000 GHz and free-space optical, space research, metaids, metsat
  - **Regulatory** – Res 951, SDR/CRS
  - **Future Work -** IBR, Res and Recs, future conference agenda

WRC Process Summary

- **Encourage involvement in WRC preparatory process**
  - Participation in ITU-R Study Group work
  - National & Regional Preparation of CPM Proposals
  - National & Regional Preparation of WRC Proposals
  - Consultations with other administrations

- **Keep up to date on U.S. WRC preparations - visit our websites: www.ntia.doc.gov (click on Spectrum Management and scroll down to International Activities) and www.fcc.gov/ib/wrc-11**