The U.S. Federal Government: Spectrum Management Processes

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Topics To Be Covered

- Review: Basic Concepts & Functions of Spectrum Management
- The U.S. Approach to Spectrum Management
- Overview of Federal Spectrum Uses
- How the Federal Government Manages Its Spectrum Use
  - Legal framework
  - Regulatory framework
- Who Carries Out Key Functions of Federal Spectrum Management
- Coordination with Other Spectrum Managers & Policymakers
  - National
  - International

Policy, Regulation & Management

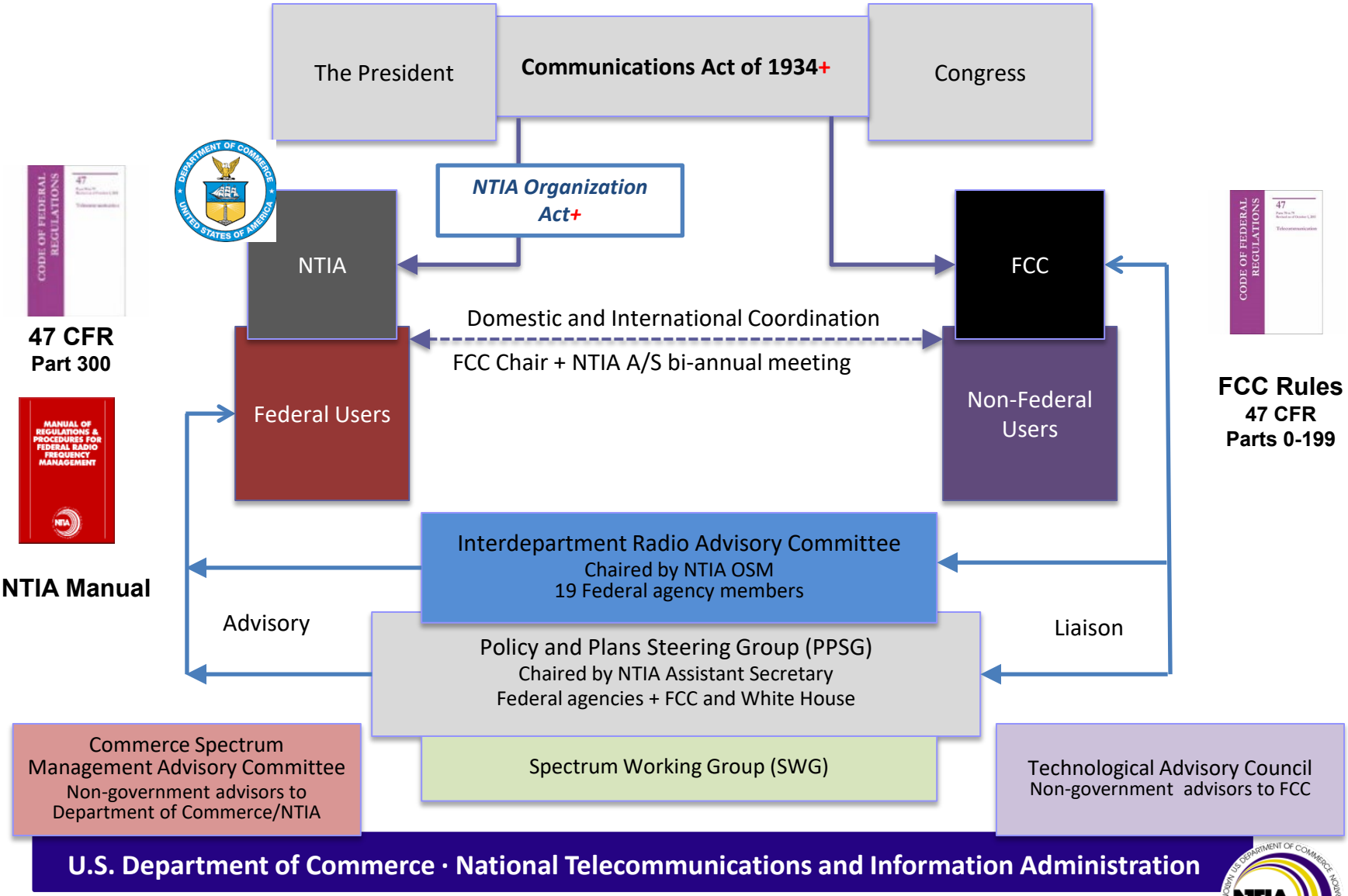
- **Policy** = High-level government goals and objectives.
  - Policy is set & articulated by Congress, the President and the Courts.
- **Regulation** = Rules that are applied to achieve policy goals.
  - Regulators develop rules and apply them to market players or stakeholders.
  - Regulations are expressed through legal or regulatory codes, with enforcement regimes.
- **Management** = Expert-level administration of standard processes needed to implement policy and regulatory decisions.
  - Examples include equipment certification, frequency assignment, coordination of satellite operations.
- All three are developed through public input, informed by multiple interests & constituencies, and (should be) applied by experts.
- Spectrum use is recognized as a legitimate area for policy, regulation & management.

Spectrum Management Elements

- **There are several basic elements of spectrum management & regulation:**
  - Planning
  - Allocation
  - Assignment
  - Setting rules/regulations
  - Monitoring
  - Enforcement

In the U.S., there are two agencies that divide and coordinate spectrum management roles and duties: The Federal Communications Commission (FCC) and the Department of Commerce's National Telecommunications and Information Administration (NTIA

U.S. Spectrum Management Framework

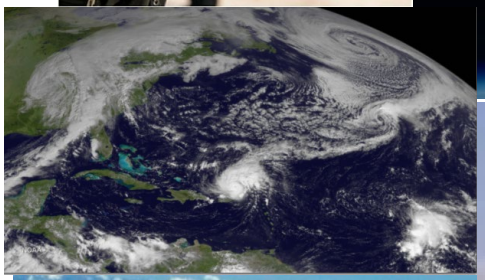
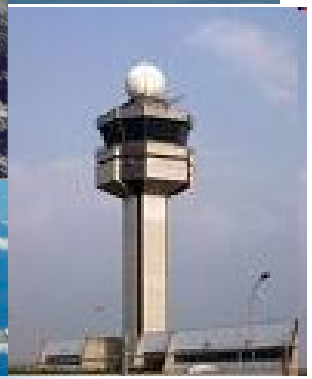


Overview of Federal Spectrum Uses

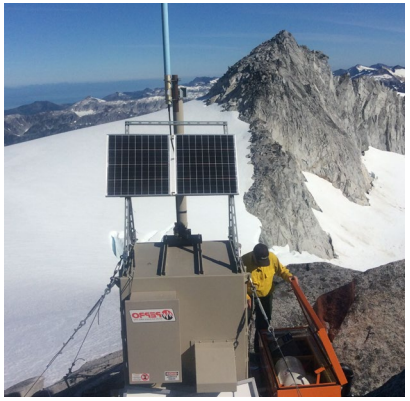
- National defense
- Law enforcement and public safety
- Air traffic control
- Space exploration and science
- Weather and earth science
- Resource management & recreation

Just to name a few….

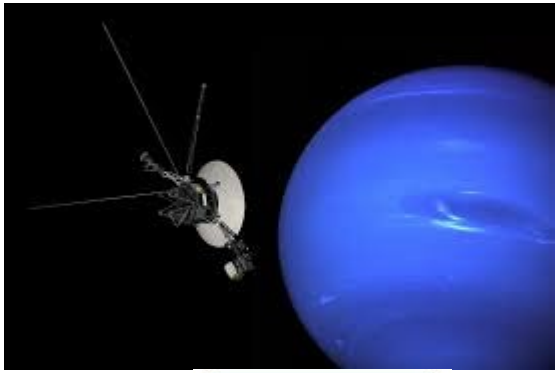


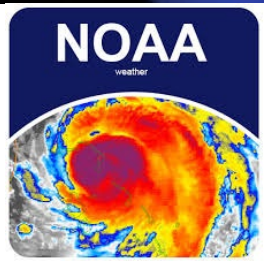





Scale & Scope of Federal Usage



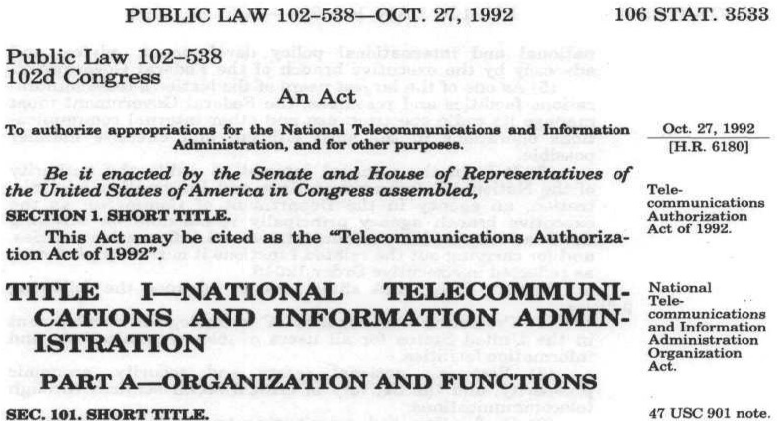
- The U.S. Federal government is among the most diverse & sophisticated users of spectrum in the world.
- In CY 2022, there were 85,222 requests for frequency assignment actions, plus an additional 1,624 requests for Special Temporary Authority.
- This covers space-based, aeronautical, maritime and terrestrial domains.
- Includes radars, satellites, sensors, communications – the mast majority of ITU-defined services.





How the Federal Government Manages Its Own Spectrum

- **Legal Authority**: The Communications Act of 1934, Section 305, reserves to the U.S. President the authority to regulate spectrum used by government stations.
  - Presidential authority has been delegated to NTIA through a series of executive actions.
    - President Nixon created the Office of Telecommunications Policy in 1970.
    - President Carter created NTIA in the Dept. of Commerce in 1978.
  - The NTIA Organization Act, passed by Congress in 1992, codified NTIA's statutory role as manager of the Federal Government's spectrum use.



PUBLIC LAW 102–538—OCT. 27, 1992 106 STAT. 3533

Public Law 102–538
102d Congress

An Act

To authorize appropriations for the National Telecommunications and Information Administration, and for other purposes.

Oct. 27, 1992
[H.R. 6180]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Tele-communications Authorization Act of 1992.

SECTION 1. SHORT TITLE.

This Act may be cited as the "Telecommunications Authorization Act of 1992".

TITLE I—NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

National Tele-communications and Information Administration Organization Act.

PART A—ORGANIZATION AND FUNCTIONS

SEC. 101. SHORT TITLE.

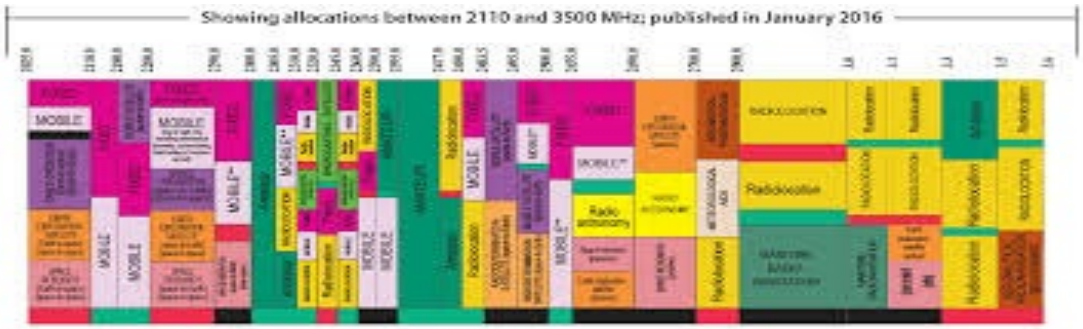
47 USC 901 note.

NTIA's Principal Responsibilities and Functions

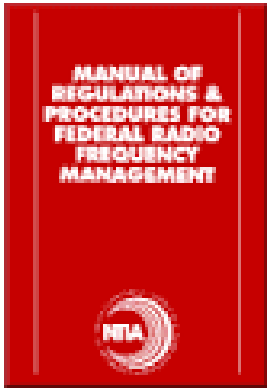
- Serving as the principal executive branch adviser to the President on telecommunications and information policy;
- Prescribing policies for and managing Federal use of the radio frequency spectrum;
- Developing and presenting U.S. plans and policies at international communications conferences and related meetings;
- Serving as the principal Federal telecommunications research and engineering laboratory, through NTIA's Institute for Telecommunication Sciences (ITS), headquartered in Boulder, CO.

NTIA's Spectrum Regulatory Structure

- NTIA's spectrum management activities are carried out by two offices:
  - The **Office of Spectrum Management** (OSM)
  - The **Institute for Telecommunication Sciences** (ITS)
- NTIA works through an inter-agency group representing major federal users:
  - The **Inter-Department Radio Advisory Committee or "IRAC**."
- Federal spectrum rules are published in the NTIA Manual or "Red Book"



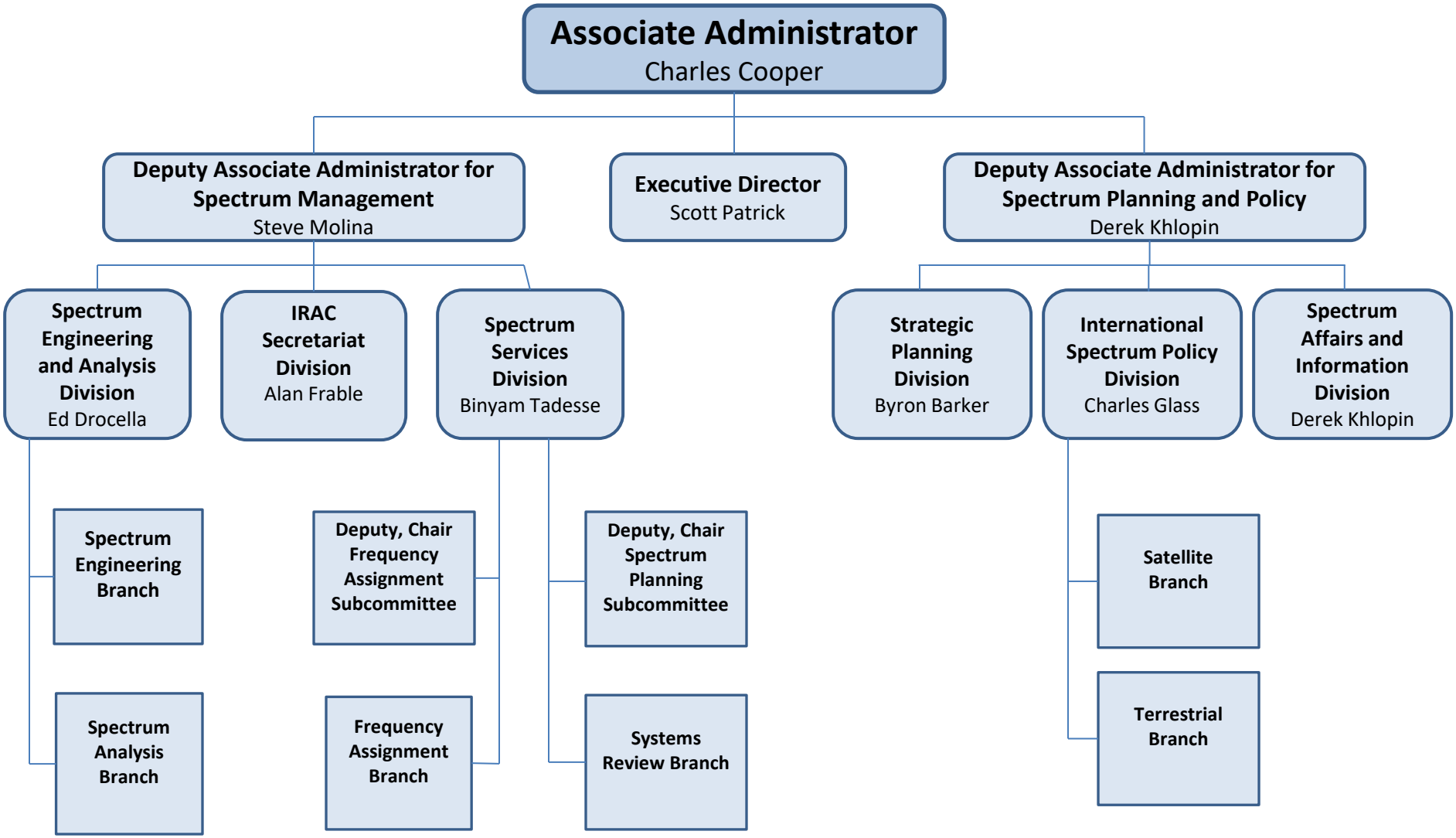
Office of Spectrum Management



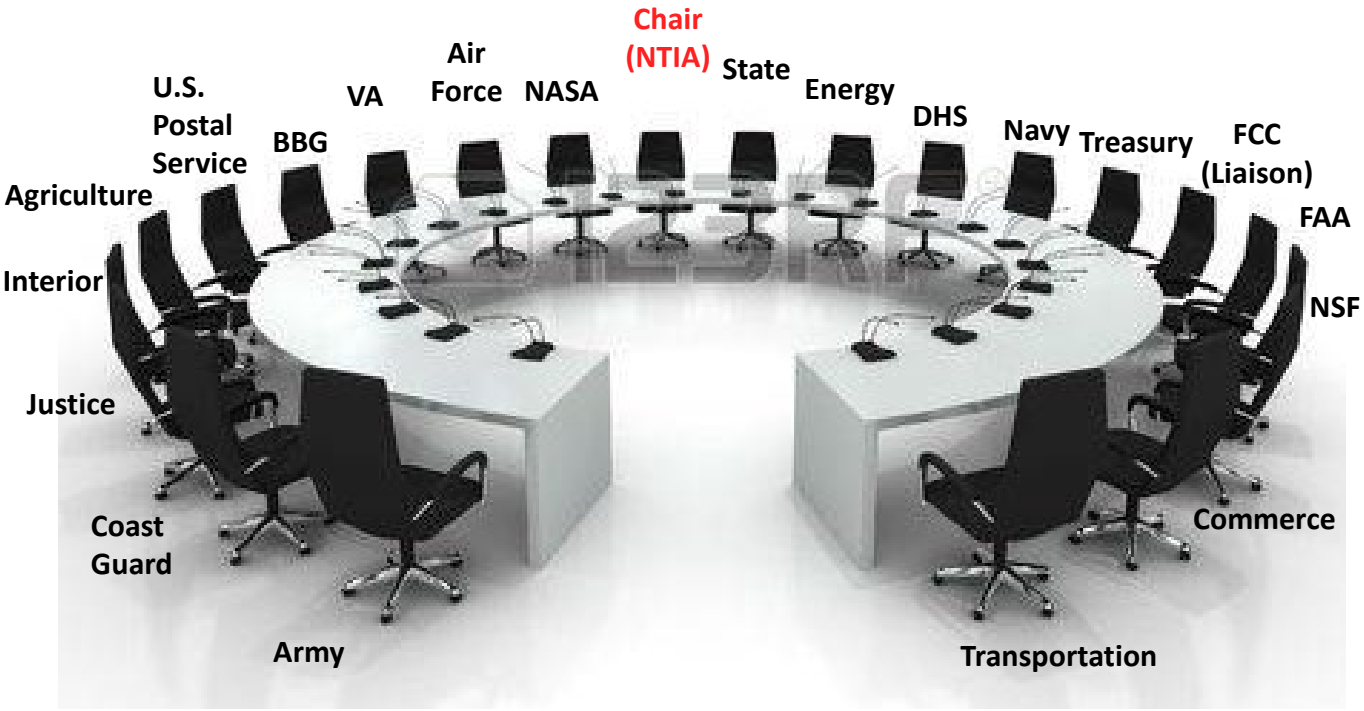
- **Manages all federal government use of the radio spectrum**
- **Develops policy & regulations governing spectrum use by federal agencies and departments**
- **Supports national spectrum policy priorities, initiatives, and programs**

Meeting the increasing spectrum needs of the United States while balancing the national and economic security interests of our nation

Office of Spectrum Management



IRAC Members*

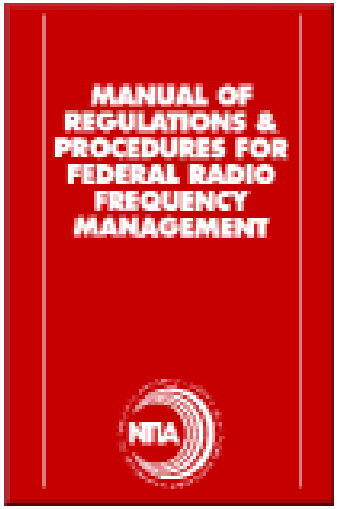


* Observers: Defense (DISA), NSA and FDA

IRAC Subcommittees

- **Emergency Planning Subcommittee (EPS)**
  - Reviews National Security and Emergency Preparedness (NSEP) planning for spectrum-dependent systems.
- **Frequency Assignment Subcommittee (FAS)**
  - Assignment and coordination of radio frequencies.
- **Radio Conference Subcommittee (RCS)**
  - Preparing for CITEL and ITU conferences and meetings.
- **Space Systems Subcommittee (SSS)**
  - International registration of federal government satellite systems with the ITU.
- **Spectrum Planning Subcommittee (SPS)**
  - Apportionment of spectrum space for the support of established or anticipated radio services and among federal users.
- **Technical Subcommittee (TSC)**
  - Addressing issues that relate to the technical aspects of the use of the electromagnetic spectrum, such as technical standards, propagation, EMC, etc.
- **Ad Hoc groups (task groups)**

NTIA Manual or 'Red Book'



- *Manual of Regulations and Procedures for Federal Radio Frequency Management* (Red Book)
- Incorporated by reference into Code of Federal Regulations
  - Specifically, 47 CFR, Section 300.1
- Federal agencies must comply with the Manual when requesting or using radio frequency spectrum
- 11 Chapters and 15 Annexes
- Proposed changes are discussed in the IRAC with final approval by NTIA.

NTIA Manual Contents

1. Authority and Organization
2. Telecommunication Policy
3. International Matters
4. Allocations, Allotments and Plans
5. Spectrum Standards
6. Definitions and Particulars of Assignments
7. Authorized Frequency Usage
8. Procedures and Principles for the Assignment and Coordination of Frequencies
9. Preparation of Applications for Frequency Assignment Action
10. Procedures for the Review of Telecommunications Systems
11. Public Access to the Federal Spectrum Management Process

Plus 15 Annexes

Coordination with Other Regulators

- National Coordination
  - FCC coordination: MOU, meetings, preliminary view of draft decisions on some matters
  - Executive Branch: PPSG and WH/OMB
- International Coordination:
  - ITU-R Study Groups and Working Parties
  - World Radiocommunication Conference prep
  - CITEL – The Inter-American Telecommunications Commission (PCC.II)

Summary & Conclusions

- Different countries have evolved varying ways to manage spectrum resources.
- The U.S. has a uniquely large government sector with advanced wireless systems.
- Government spectrum use can foster technology innovation and dual-use technologies.
- Coordination among all policymakers and regulators is vital to optimize spectrum use.