

Fletcher, Heald & Hildreth

The Law of Communications

Are Two Spectrum Agencies Too Many?

National Spectrum Management Association

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Overview

- ★ NTIA and FCC respectively manage Federal and non-Federal spectrum users
 - separation of powers made sense 35 years ago (when NTIA was formed)
 - then, plenty of empty spectrum; little conflict between agencies
- ★ Now, spectrum in short supply
 - friction between NTIA and FCC increasing
- ★ Should Congress merge FCC and NTIA spectrum functions?

One Spectrum, Many Users – 1

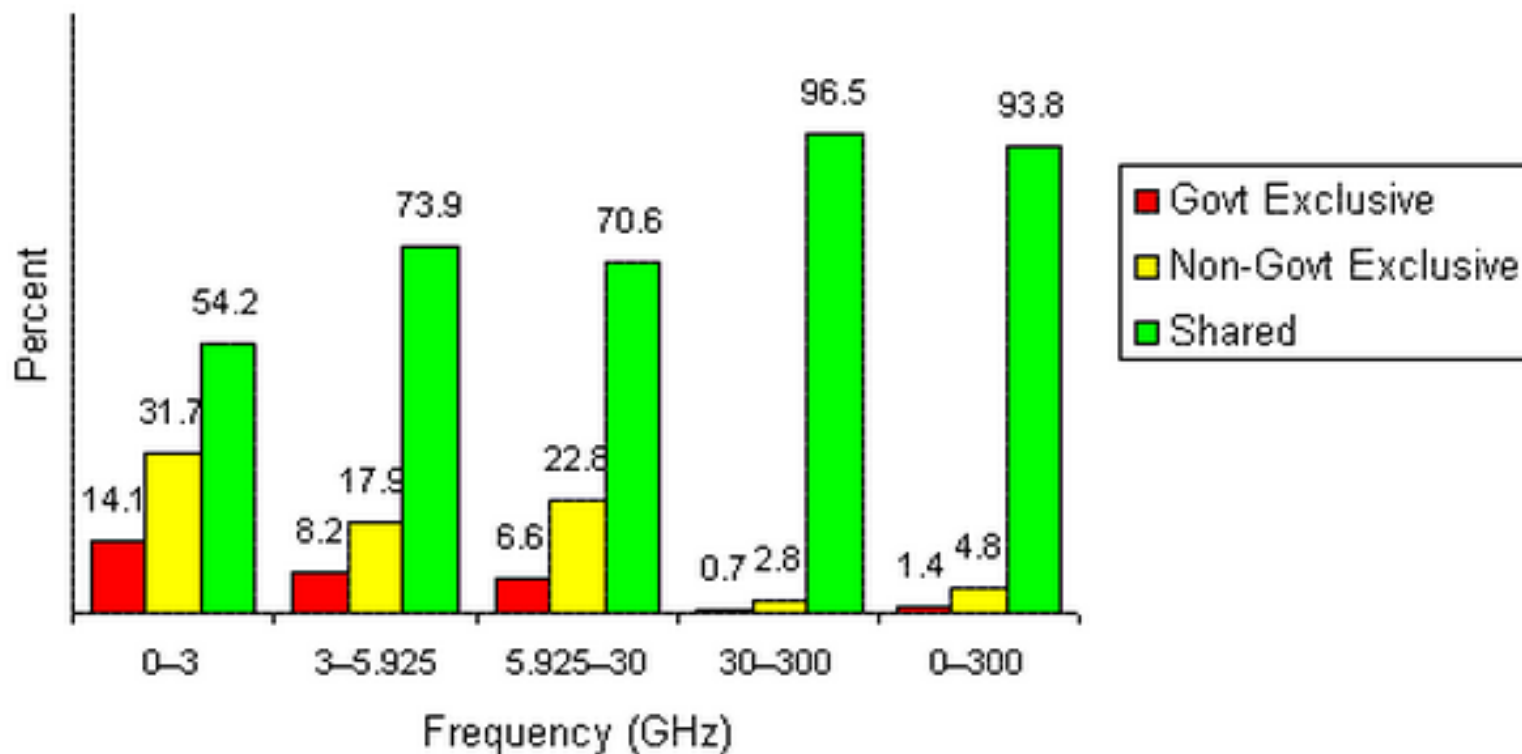
- ★ Two spectrum management agencies:
 - National Telecommunications and Information Administration (NTIA)
 - oversees Federal Government users
 - Federal Communications Commission (FCC)
 - oversees all other users (commercial, individuals, state and local government, etc.)
- ★ NTIA and FCC each has jurisdiction over entire spectrum
- ★ Bands allocated for Federal users, private users, shared
 - incorrect (but convenient) to refer to Federal, private, and shared spectrum.

One Spectrum, Many Users – 2

- ★ Most spectrum is shared:
 1. Federal only (1.4%)
 2. non-Federal (private) only (4.8%)
 3. shared between Federal and non-Federal (93.8%)
- ★ Band-by-band breakdown in Table of Frequency Allocations:
 - FCC rules : 47 C.F.R. § 2.106
 - www.spectrumwiki.com
- ★ Totals are misleading: Federal-only frequencies are concentrated in the most useful parts of the spectrum.

One Spectrum, Many Users – 3

Spectrum Allocation Distributions



Graphic: NTIA

Examples of Federal / Non-Federal Issues

★ Airport body scanner

- marketed to TSA under FCC waiver
- operates in Federal/private shared spectrum 24.25-30 GHz
- waiver needed NTIA review



★ Surveillance robot

- marketed to state and local police under FCC waiver
- operates in military radar spectrum 430-448 MHz
- waiver needed NTIA review

More Examples

- broadband over power line
- expanded U-NII band
- ultra-wideband:
 - communications
 - radar
 - location
 - perimeter detection
- Wi-Fi b/g/n
- body-implanted nerve stimulator
- 60 GHz unlicensed
- through-wall surveillance radar
- level-probing radar
- mining radar
- remote meter reading
- remote power
- RFID
- many more.

Regulatory Regimes Compared

- ★ NTIA: created by Congress in 1978
 - merger of White House Office of Telecommunications Policy and Commerce Dept. Office of Telecommunications
 - housed in Department of Commerce
 - executive agency: reports to the President
- ★ FCC: created by Congress in 1934
 - succeeded Federal Radio Commission (from 1926)
 - independent agency: reports to Congress.

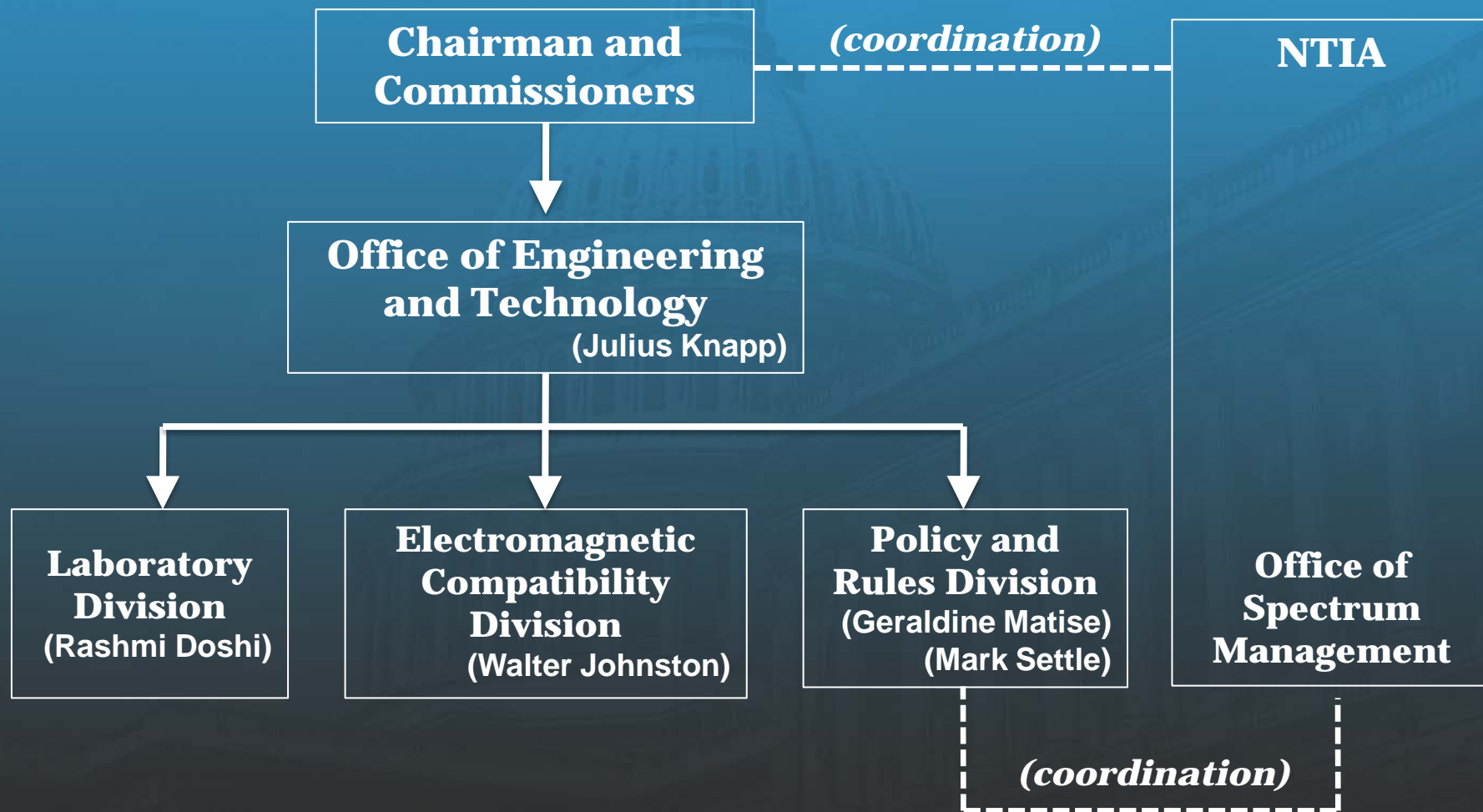
Who Regulates Whom

End User	Spectrum Allocation		
	Non-Federal	Shared	Federal
Non-Federal	FCC	FCC (coordinates with NTIA)	FCC (experimental license or UWB)
Federal	FCC or NTIA (unlicensed)	NTIA (coordinates with FCC)	NTIA

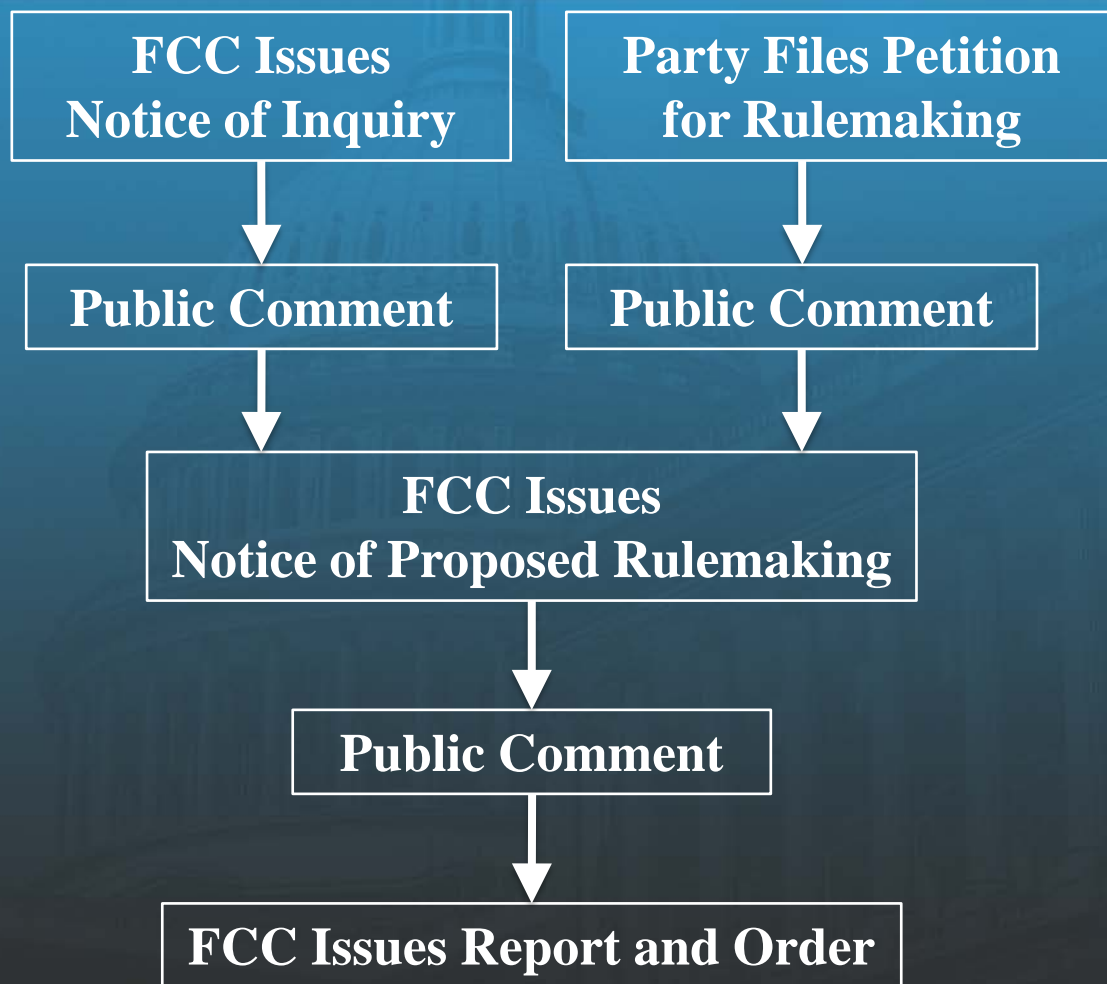
FCC Procedures – New Spectrum Uses

- ★ FCC: RF emitters must comply with technical rules in 47 C.F.R.
 - cover frequencies, power, bandwidth, modulation, etc.
- ★ Innovative devices often fail to comply
- ★ Procedures for new kinds of devices:
 1. Rulemaking: amends FCC rules to allow new use of spectrum
 - may affect frequency band, power, modulation, etc.
 2. Waiver: allows marketing of device despite non-compliance
 - usually with conditions
- ★ Most rulemakings and waivers are opposed
- ★ Rulemaking or waiver in shared spectrum requires NTIA coordination
 - applies to most rulemakings and wavers.

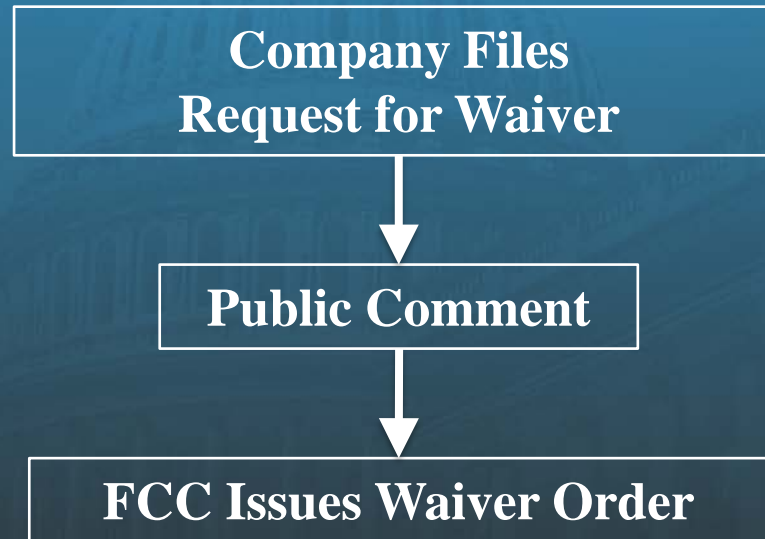
FCC Spectrum Functions (Simplified)



FCC Rulemaking (Much Simplified)



FCC Waiver Procedure (Much Simplified)



Character of FCC Procedures

- ★ FCC publicly announces proposed action
- ★ Proceeding is open to public
 - anyone can comment
- ★ Transparent: most filings available to public
- ★ Process: contention between proponents and opponents
- ★ Decision process follows legal principles
- ★ FCC explains decision, responds to comments
- ★ Public can seek reconsideration, court review of decision.

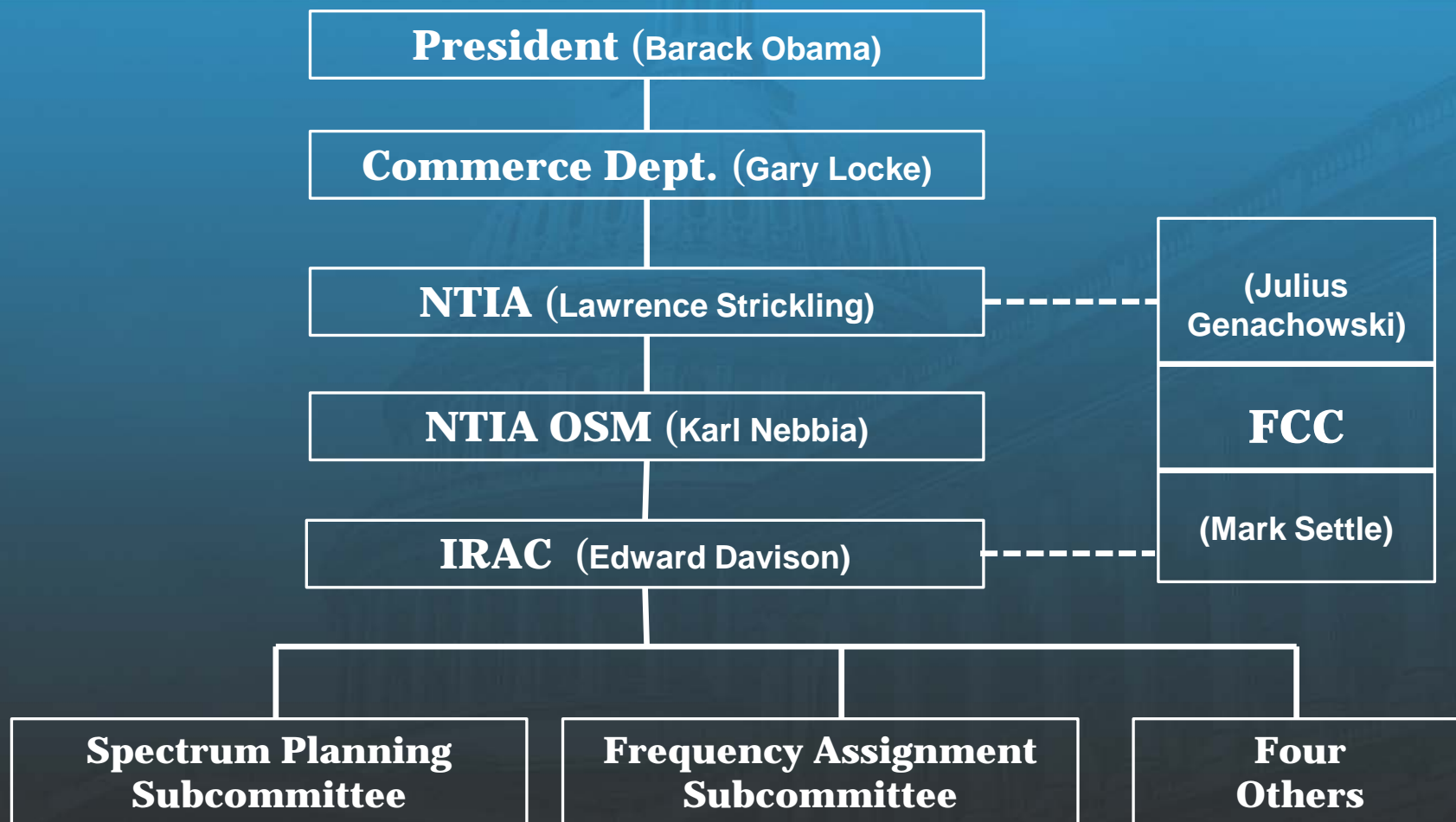
About NTIA – In General

- ★ Responsibilities include:
 - spectrum planning and administration
 - participation in international spectrum negotiations
 - U.S. representation on Internet domain names
 - advice to President on telecommunications and information policies
 - helping U.S. companies compete globally in information technology and telecommunications sectors
 - many more
- ★ Spectrum work through NTIA Office of Spectrum Management (OSM).

About NTIA – Spectrum Responsibilities

1. NTIA (OSM) is the “Federal Government’s FCC”:
 - allots Federal spectrum for specific applications
 - assigns frequencies to Federal users
 - acts on requests for new Federal equipment and applications
 2. Collaborates with FCC on:
 - any use of shared Federal / non-Federal spectrum
 - non-Federal use of Federal spectrum, *e.g.*:
 - experimental license applications in Federal spectrum
 - FCC waivers in Federal spectrum
 - spectrum allocation proceedings
- ★ Chairs Interdepartment Radio Advisory Committee (IRAC).

NTIA / IRAC Organization



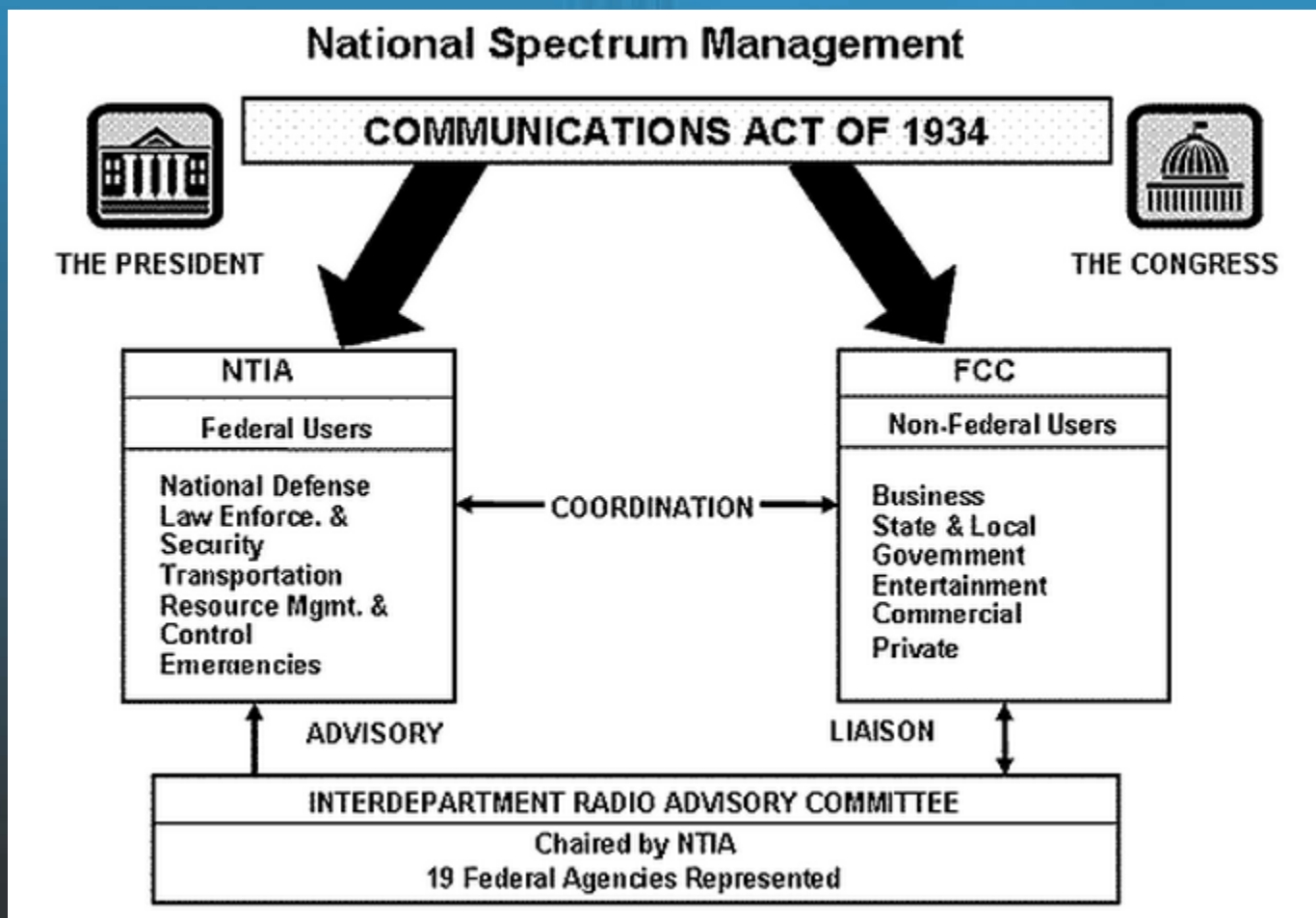
About IRAC – 1

- ★ Dates from 1922
- ★ Composed of 19 spectrum-using Federal agencies:
 - Agriculture
 - Air Force
 - Army
 - BBG
 - Coast Guard
 - Commerce
 - Energy
 - FAA
 - Homeland Security
 - Interior
 - Justice
 - NASA
 - National Science Foundation
 - Navy
 - State
 - Transportation
 - Treasury
 - U.S. Postal Service
 - Veterans Affairs
- ★ Also includes FCC liaison (Mark Settle), DoD and NSA observers
- ★ Chaired by Edward Davison, NTIA OSM.

About IRAC – 2

- ★ Advisory only; no decision-making authority
- ★ Coordinates frequency use:
 - among U.S. agencies
 - between Federal government and non-Federal users (via FCC)
- ★ Advises NTIA on policies, programs, procedures, technical criteria pertaining to spectrum
- ★ Meets in person every two weeks
 - considers most requests promptly—usually at next meeting
 - sometimes accepts outside presentations.

NTIA / FCC Interaction



Graphic: NTIA

NTIA Spectrum Approval (Federal User)

1. “Major” systems
 - proposal to IRAC Spectrum Planning Subcommittee
 - roughly analogous to FCC rulemaking
 - requires very extensive data, reviewed in four stages
2. “Non-major” systems
 - proposal to IRAC Frequency Assignment Subcommittee
 - roughly analogous to FCC license application
 - application data must follow specific, complex format
 - addresses only spectrum usage, not equipment approval
3. Low-power equipment
 - FCC Part 15 or NTIA “Annex K” (similar).

NTIA Spectrum Approval (Non-Federal User)

- ★ NTIA participates in FCC rulemakings, waivers in shared spectrum
 - conducts technical studies
 - consults with affected agencies through IRAC
 - consults with FCC either on or off the record
 - NTIA has *ex parte* exemption: can present to FCC without public disclosure
- ★ FCC need not follow NTIA recommendations, but usually does.

Character of NTIA / IRAC Procedures

- ★ Party dealing with NTIA is Government agency
 - procuring agency for Federal system
 - FCC for use of shared spectrum
- ★ Limited public participation
- ★ IRAC advises NTIA by consensus
 - NTIA need not accept IRAC recommendation
- ★ NTIA final recommendations to FCC usually not public
- ★ Disappointed party cannot challenge NTIA recommendations.

Friction Increasing Between Agencies

- ★ As spectrum fills up, less room for new applications
- ★ Some recent trouble spots:
 - expanded 5 GHz U-NII band interferes with airport weather radar
 - 315 MHz military radios interfere with garage door openers
 - ultra-wideband: NTIA asked FCC to impose severe power and usage limitations
 - broadband over power line: ditto
 - NTIA required to identify 500 MHz for FCC wireless broadband
 - many routine waivers and rulemakings.

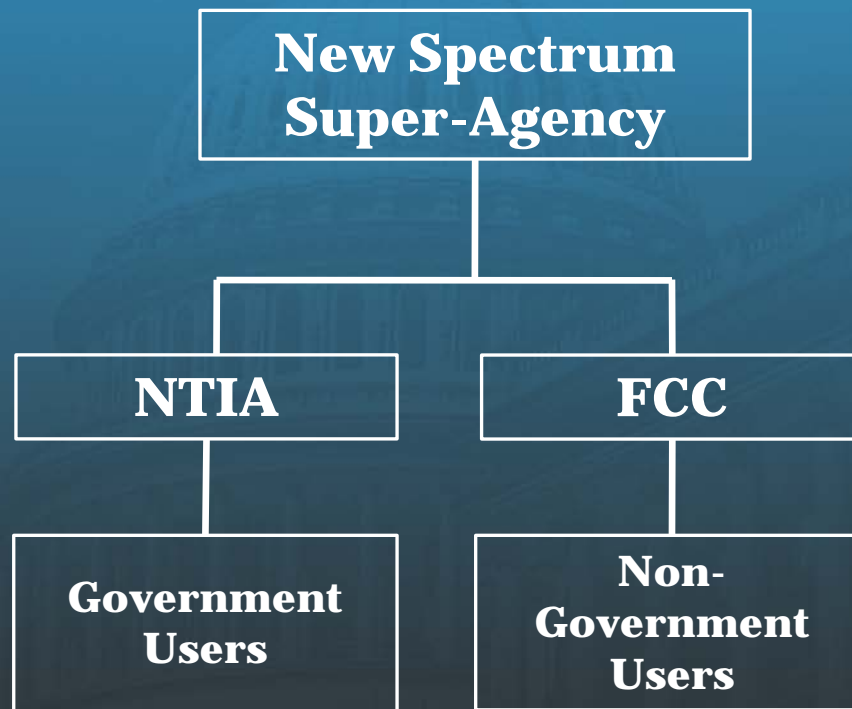
Would One Agency Work Better?

- ★ Radio waves don't care if source is Federal or non-Federal
 - interference potential is the same
- ★ Might reach better outcomes if all spectrum decision-makers share same mission and priorities:
 - simpler coexistence between Federal and non-Federal users
 - faster coordination of new proposals
 - one-stop lobbying for proponents and opponents
 - less spectrum-hoarding to protect future needs.

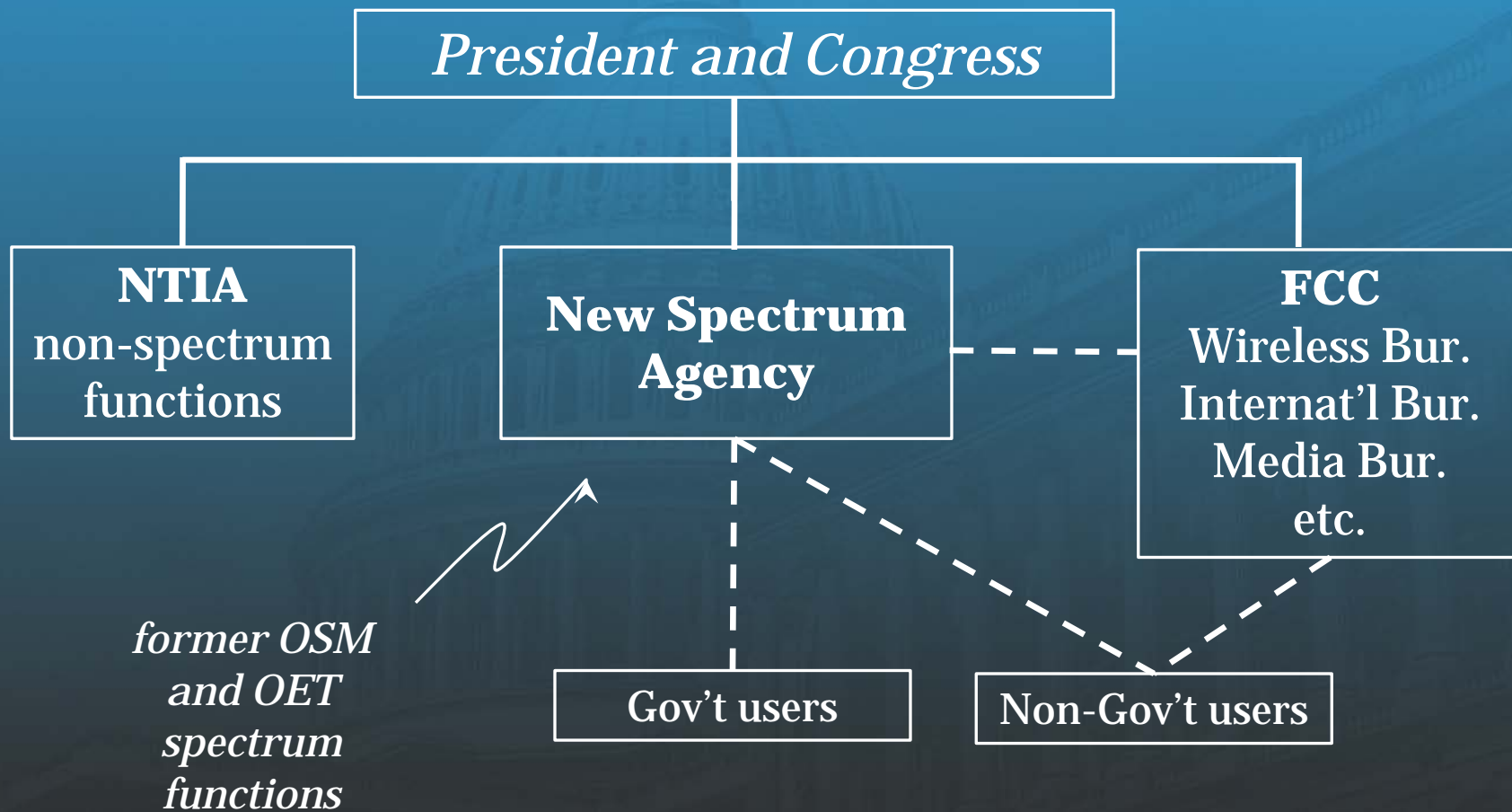
Obstacles to Unification

	FCC	NTIA
Agency Type	independent	executive
Client	public	U.S. Government
Main Mission	facilitate use of radio	protect Gov't users
Priority	public interest	safety; security
Applicant	member of public	FCC; Gov't agency
Public Participation	yes	limited
Decision-Making	contention	consensus
Governing Principles	legal; political	technical; political
Appeal Process	yes	no

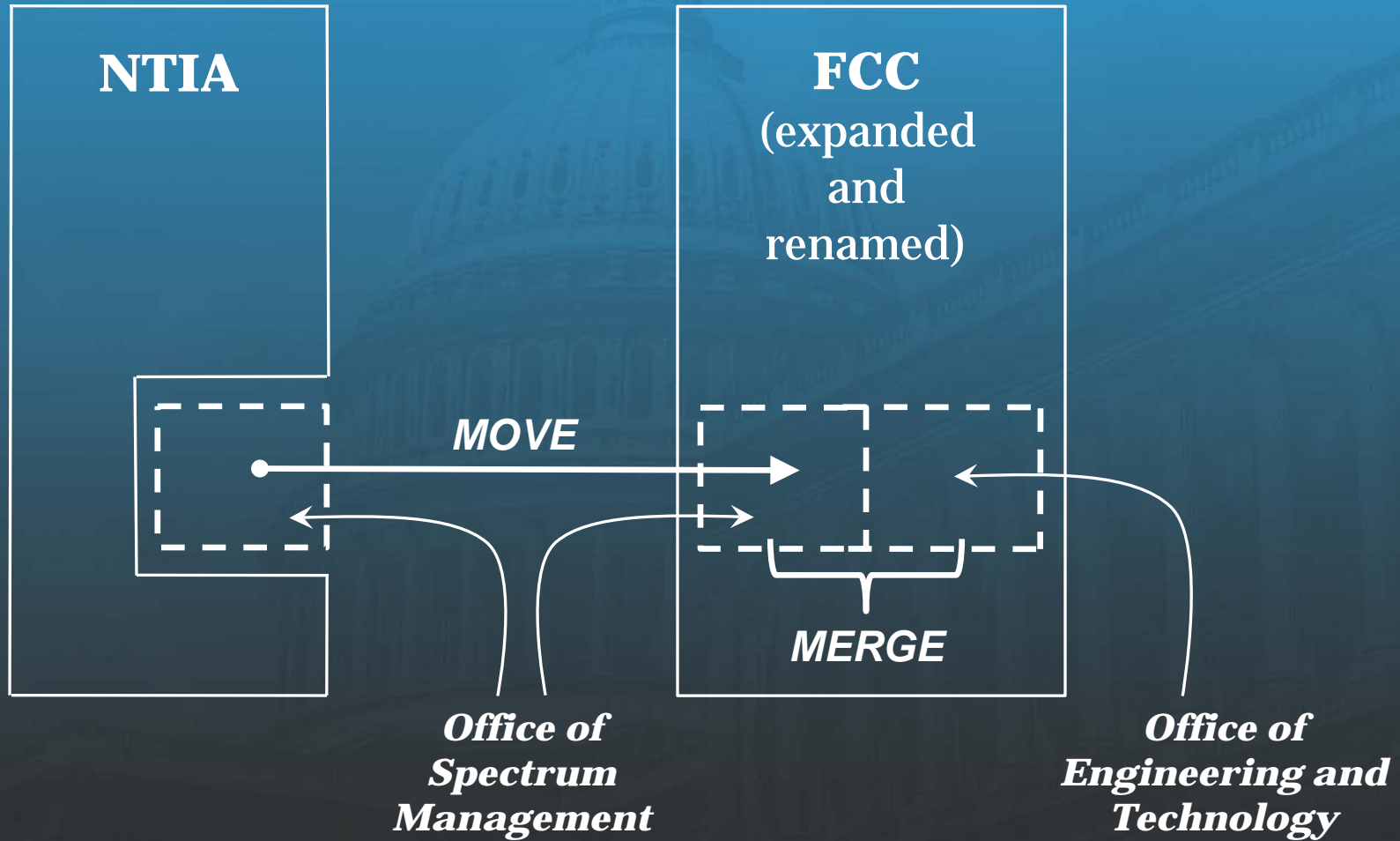
Structural Options (1) – Not Recommended



Structural Options (2) – Not Recommended



Structural Options (3)



Conclusion

- ★ Combining NTIA and FCC spectrum functions may offer faster, better, more efficient spectrum management
- ★ But change would be controversial, disruptive, politically difficult
 - would require an Act of Congress
- ★ Open question whether benefits would justify costs.

Thank you!

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