



International Committee on
Global Navigation Satellite Systems

Introduction to National Spectrum Agencies and National Applications

Disclaimer

The views and opinions expressed herein do not necessarily reflect the official policy or position of any government agency

Purpose

- The International Telecommunications Union (ITU) regulates spectrum at the international level
 - Treaty Based Process
- At the national level, the spectrum is managed by each nation's own management office
- The purpose of this presentation is to share a few examples of national spectrum management organizations and illustrate differences in allocation and protection with respect to the ITU

National Spectrum Agency

- National Spectrum Agencies are working to provide an environment in which anyone can safely use radio waves with peace of mind.
- National Spectrum Agencies play an important role, which is to improve/maintain the safety and reliability of radio-communication networks, by such as:
 - Maintaining national laws/regulations/guidelines
 - Managing radio licenses
 - Maintaining radio monitoring systems to counter illegal/unlicensed radio emissions



EU National Spectrum Agencies

- In the EU there is no overall agency responsible for spectrum across the EU
- EU Member States manage their own spectrum individually
- but, there is extensive cooperation both within the EU and in the pan-European collection of regulators "CEPT"
- EU regulators such as ANFR, BNetzA, Ofcom, and Ficora are very active within the EU and CEPT to coordinate European positions for discussion at ITU level
- The Radio Regulations form the basis for spectrum management in Europe

Japan's National Spectrum Agency

- Telecommunication Bureau of MIC (Ministry of Internal Affairs and Communications) is responsible for spectrum management in Japan.
- In Japan, the Radio Regulatory Laws consist of Radio Law, Cabinet Ordinances and Ministerial Ordinances (such as Enforcement Regulations and Regulations for Radio Equipment).
- For Reference;
http://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/index.html
<http://www.tele.soumu.go.jp/e/index.htm>

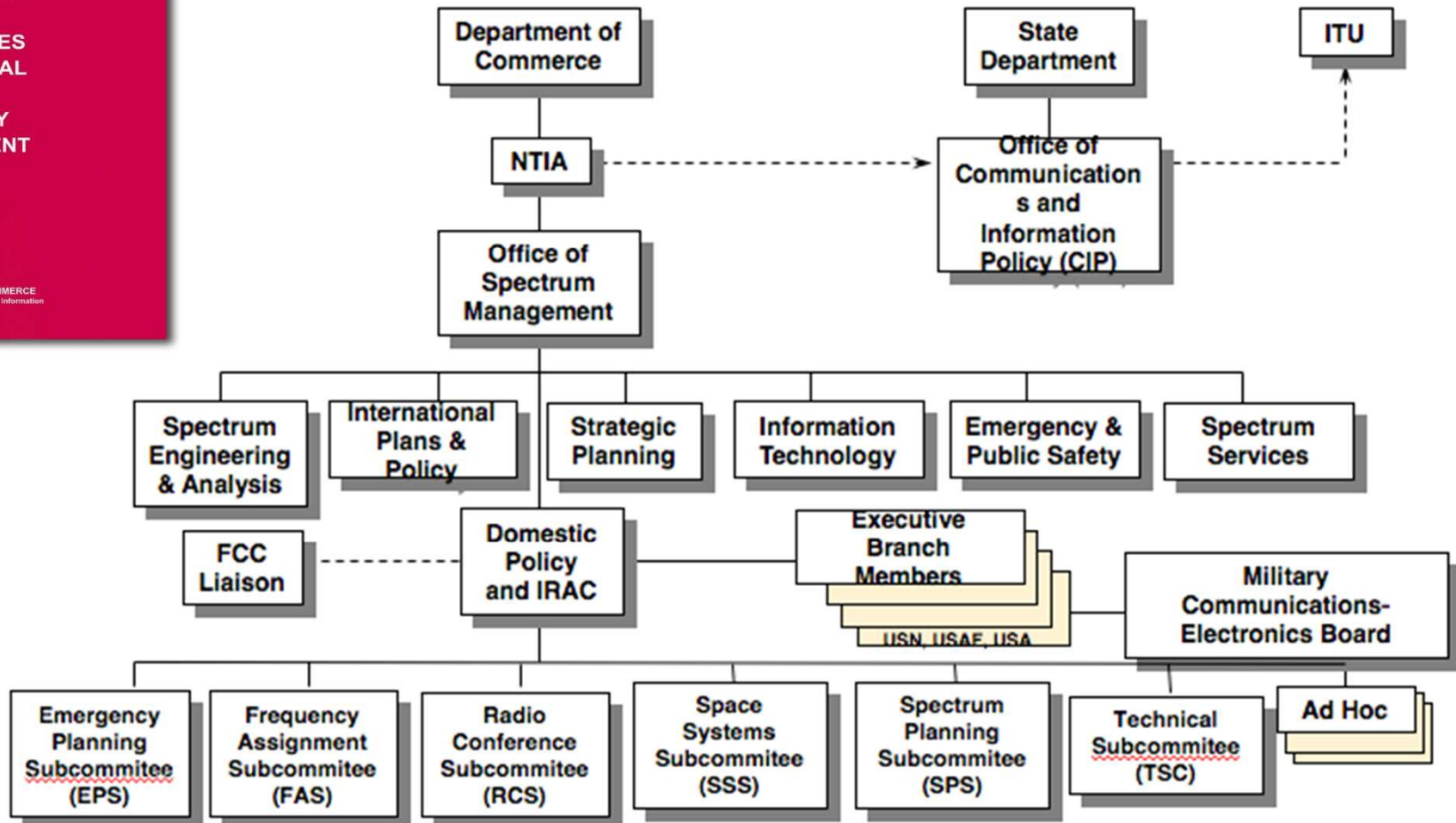
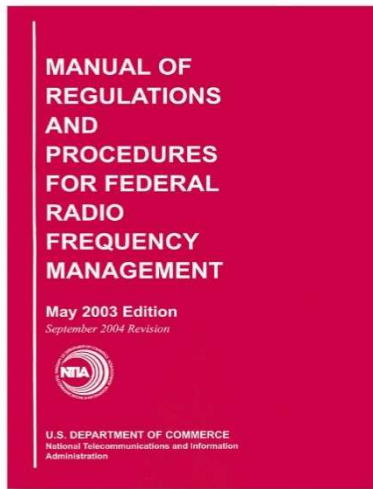
US National Spectrum Agencies

In the US

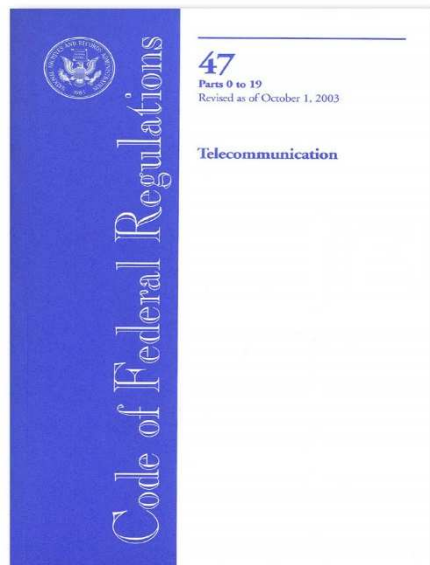
- There are three categories of allocations
 - Government (Federal)
 - Non-government (includes state and local)
 - Shared
- Spectrum is usually separated and is managed by different agencies
 - Government (Federal) spectrum: National Telecommunications and Information Administration (NTIA)
 - Non-Government (includes state and local) allocations Federal Communications Commission (FCC)
 - NTIA and and FCC coordinate actions for those bands that are “shared” as well as others

NTIA Organization

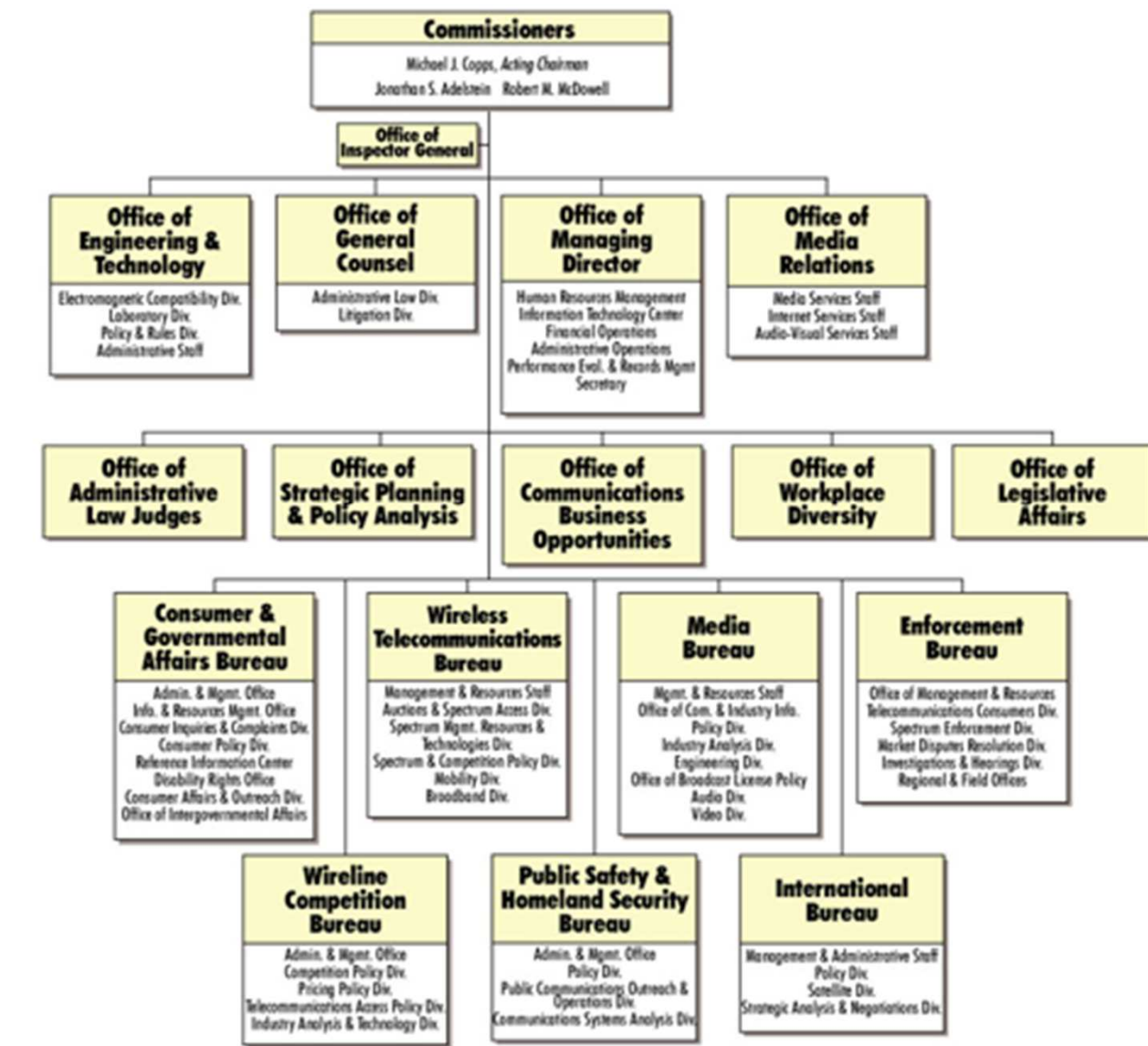
NTIA Manual



FCC Structure



FCC Rules
Code of Federal
Regulations 47



International and National Allocations

- In general, the national frequency allocations and protections are aligned with the ITU table of frequency allocation and protection
- However, they are not identical since each nation has sovereign rights to manage its own spectrum (as long as harmful interference into other countries' radio services is not caused)
- Examples follow:

Example 1: US RNSS Allocations

- The US and International RNSS allocation is identical in the 1164-1215 MHz and 1215-1240 MHz frequency band but there is no US RNSS allocation in the 1240-1300 MHz band

Table of Frequency Allocations			941-1435 MHz (UHF)	
International Table			United States Table	
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table
1164-1215 AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B			1164-1215 AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space)	
5.328A			5.328A US224	
1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active)			1215-1240 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G56 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) G132 SPACE RESEARCH (active)	1215-1240 Earth exploration-satellite (active) Space research (active)
5.330 5.331 5.332			5.332	
1240-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.330 5.331 5.332 5.335 5.335A			1240-1300 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION G56 SPACE RESEARCH (active) AERONAUTICAL RADIONAVIGATION 5.332 5.335	1240-1300 AERONAUTICAL RADIONAVIGATION Amateur Earth exploration-satellite (active) Space research (active) 5.282

Example 2: Spectrum Policy

- GNSS related Policies/Activities

	Protection of GNSS receivers	Protection from Short-range devices
EU	According to the Radio Regulations	No regulation – no short range devices authorized
US	Rules to protect GNSS receivers but not from non-US satellites without waivers	-71.2 dBW/MHz EIRP density limit
Japan	Under development, to protect QZSS receivers	-94.3 dBW/MHz EIRP density limit

Take-away

GNSS spectrum protection needs to be at both international and national levels