THE SPECTRUM CERTIFICATION PROCESS

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AUTHORIZATION PROCEDURES FOR FEDERAL RADIO STATIONS

- Certification Spectrum Support
- Frequency Assignment

CERTIFICATION OF SPECTRUM SUPPORT

- Collects Spectrum-Dependent Equipment Characteristics
- Provides Guidance to Developers
- Provides Guidance on Permissible Operating Modes
- Analogous to FCC's "Equipment Authorization

FREQUENCY ASSIGNMENT

- Authorization to Operate a Radio Station with Specific Transmitter & Receiver Characteristics
- Analogous to the FCC's "License"

SPECTRUM CERTIFICATION

What Is It?

TYPES OF RISK:

- Scheduling
- Budgetary
- Mission/Performance

RISK MANAGEMENT

- Acquisition/Planning Function
- Deployment/Operations Function

RISK MANAGEMENT

- Resource Allocation & Utilization
- Interference Mitigation

Certification Requirement: OMB Circular No. A-11

"You must obtain certification by the National Telecommunications and Information Administration, Department of Commerce, that the radio frequency required is available before you submit estimates for the development or procurement of major communications-electronics systems, including all systems employing space (satellite) techniques."

SYSTEM REVIEW

Procedure used to develop recommendations on behalf of the IRAC for the Associate Administrator, OSM, regarding certification of spectrum support for telecommunications systems or sub-systems submitted under the provisions of Chapter 10 of the NTIA manual.

SYSTEM REVIEW

Spectrum Planning Subcommittee reviews new radiocommunication systems at up to 4 stages of development from conceptual to operational.

OBJECTIVE

(Continued)

Assesses conformity to:

- Allocations
- RF spectrum standards
- Applicable spectrum management policies
- Electromagnetic compatibility

OBJECTIVE
(Continued)

Provides guidance to help developers ensure compatibility of new systems when deployed.

SYSTEM REVIEW STEPS

1. **SUBMISSION** - Request for spectrum support
2. **REVIEW** - NTIA preliminary assessment
3. **RECOMMENDATION** – Subcommittee recommendation to NTIA
4. **CERTIFICATION** - NTIA guidance and direction to sponsoring agency

SUBMISSION DATA REQUIREMENTS

- Equipment Characteristics
  - Transmitter(s)
  - Receiver(s)
  - Antenna(s)

SUBMISSION DATA REQUIREMENTS

- Modulation Parameters
  - Amplitude Modulation
  - Frequency/Phase Modulation
  - Pulsed Emissions
- Specialized Information
- Related Analysis Data

PRELIMINARY ASSESSMENT BY NTIA STAFF

SPECTRUM REQUIREMENTS OVERVIEW

Brief summary description of system including frequency band(s), location, purpose, emission, etc.

DATA ADEQUACY

Review completeness and accuracy of data in the submission and review scheduling requirements relative to program milestones.

CONFORMANCE

Determine conformance with:

- International and National Tables of Frequency Allocations
- Spectrum Standards (Chapter 5, NTIA Manual)

COMPLIANCE

POLICY AND COORDINATION

Determines compliance with specific policy or coordination procedures applicable to proposed station, service, frequency band, etc., if any.

ELECTROMAGNETIC COMPATIBILITY

- Examination of potential for harmful interference between the proposed system and the electromagnetic environment
- Degree of evaluation ranges from GMF record retrievals to suggested means of mitigating potential interference

OSM System Review Branch briefs SPS:

- Recommends whether or not SPS should approve spectrum support for the new system
- Recommends technical adjustments to mitigate potential interference problems
- Recommends operating constraints as needed to ensure compatibility

DISCERNMENT

- Each agency reviews requests and NTIA technical assessment in light of own agency's requirements to reach consensus recommendation for NTIA action.

SPS RECOMMENDATIONS

- Approval of spectrum support:
  - Without qualifications
  - Subject to limitation on proposed system and/or existing systems
- Disapproval of spectrum support

NTIA CERTIFICATION

NTIA guidance and direction to sponsoring agency.

SPECTRUM CERTIFICATION OUTCOME

DEFINED OPERATING PARAMETERS

SPECTRUM CERTIFICATION OUTCOME

OPERATING CONSTRAINTS

SPECTRUM CERTIFICATION OUTCOME

DESIGN & DEVELOPMENT GUIDANCE

SPECTRUM CERTIFICATION OUTCOME

RISK AWARENESS

&

INTERFERENCE MITIGATION METHODS

Spectrum Certification

CASE STUDIES

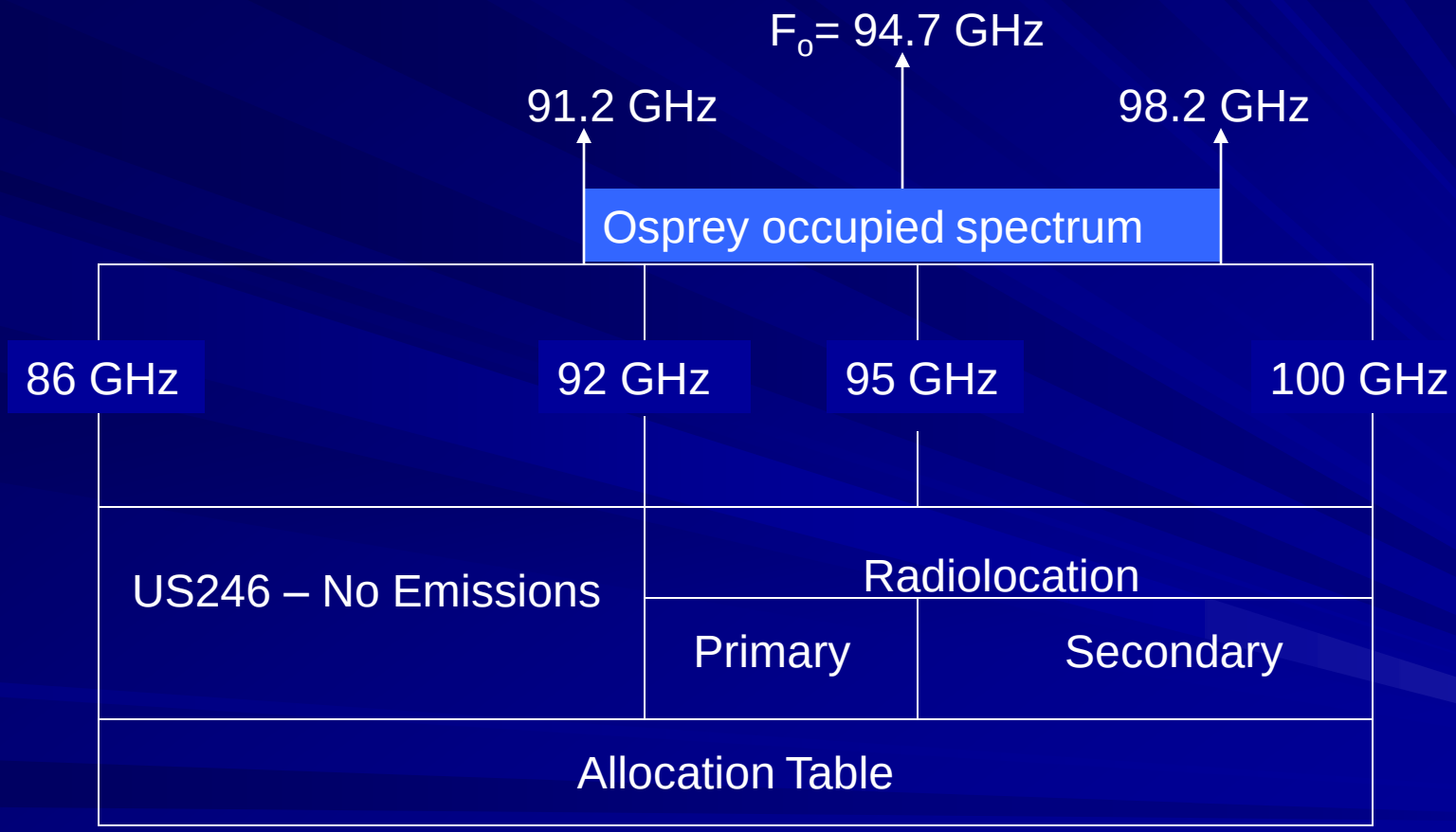
- Allocation Issue
- Standard Issue

Osprey Blade Tracker Radar

Operating Characteristics

- Center Frequency = 94.7 GHz
- Emission Bandwidth = 7.0 GHz
- Spectrum Occupied = 91.2 – 98.2 GHz

Osprey Blade Tracker Radar



Low Power Color Radar (LPCR)

Operating Characteristics

- Frequency = 9300 – 9500 MHz
- Power = 150 Watts peak, 12 Watts avg.
- Spurious Levels = -20 to -30 dBc
- Multiple Frequencies in hop set

LPCR

(Continued)

- Power = 150 Watts ← exempt from RSEC
- General Standard ← Spurs no greater than 50 microwatts (mean power)
- Measured data analyzed → RFI to PARs
- Problem resolution → Frequency Hop Set Changed