



# An Overview of Spectrum Management: *What, Why and How...*

Eric Rosenberg

NTIA Office of Spectrum Management  
Spectrum Affairs and Information Division  
[erosenberg@ntia.gov](mailto:erosenberg@ntia.gov)

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# What is Spectrum Management?

*Wikipedia says:*

“Spectrum management is the process of regulating the use of radio frequencies to promote efficient use and gain a net social benefit.”

*Is this too simplistic?*

What do you think?



# Why is Spectrum Management Important?

Spectrum is a basic building block for the future of telecommunications.

Effective spectrum management allows government and private industry to achieve their goals, co-exist and grow.



# Why is Spectrum Management Important?

## Spectrum supports

- *Government:* public safety, infrastructure and services (utilities, weather reporting and forecasting, air traffic control, etc.), science and research.
- *Private Industry:* broadcasting, various wireless services, data monitoring, mobile and fixed broadband (Wi-Fi), “traditional” land mobile and microwave services, Bluetooth.



# Why is Spectrum Management Important?

## NTIA's Spectrum Management Functions

- Foster economic growth
- Ensure our national and homeland security
- Maintain U.S. global leadership in communications technology development and services
- Satisfy other vital U.S. needs in areas such as public safety, scientific research, Federal transportation infrastructure, and law enforcement.



# Why is Spectrum Management Important?

If there are no controls, the result is  
CHAOS:

Interference, decreased performance, inability to expand existing services or introduce new and enhanced services.

Results could be life-threatening!



# How is Spectrum Management Carried Out?

- Development of policy and rules:  
Collaboration with all stakeholders and legislators
- Implementation of policy and rules:  
Set realistic milestones
- Enforcement of rules:  
Active monitoring of the spectrum



# Is Spectrum Management A New Concept?

**NO!**

The International Telecommunications Union established the International Radio Consultative Committee or CCIR in 1927 (became the ITU-R in 1992).

The U.S. established the Interdepartment Radio Advisory Committee in 1922 (transferred to the Department of Commerce in 1927).



# Is Spectrum Management Still Important?

**YES!**

As the demands for spectrum increase, the importance of effective spectrum management and the role of the spectrum manager is that much more important.



**TRANSMITTERS**

**ALLOCATIONS**

**RADIO SPECTRUM, FREQUENCY and WAVE LENGTH ALLOCATIONS**

**MARITIME**  
FIXED

**RADIO BEACON**  
San Francisco  
Hawaii

**AERONAUTIC**  
PLANE No. 5 REPORTING

**DIRECTION FINDING**  
SOS

**BROADCASTING**  
550 k. c.  
1500 k. c.

**POLICE**  
CALLING ALL CARS

**AMATEUR**  
CALLING C Q!  
HELLO W9vs

**TELEVISION**  
Lights  
Image Pickup Camera  
Voice Pickup Mike  
Voice Amplifier and Transmitter  
Image Amplifier and Transmitter  
Short Wave Antennae

**AERONAUTICS**  
**AMATEUR**  
**BROADCASTING**  
**DIRECTION FINDING**  
**FIXED**  
**MARITIME**  
**MOBILE**  
**RADIO BEACON**  
**EXPERIMENTAL**

Revised Radio allocations will be found in the "Key" to this chart

**FREQUENCY** (IN KILOCYCLES PER SEC.)  
10 100 1000 10,000

**WAVE LENGTH** (IN METERS)  
10,000 8000 6000 4000 2000 1000 800 600 400 200 100 10



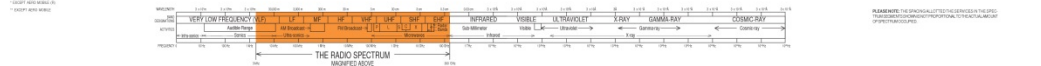
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# UNITED STATES FREQUENCY ALLOCATIONS









Questions?

Comments?