# Regulatory Structure of U.S. Radiocommunications

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## 1. Introduction

The fundamental law providing for the regulation of telecommunications by radio (as well as by wire) in the U.S.A. is the 1934 Telecommunications Act (the Act), as amended. The Act established a management structure that is unique to the U.S.A. with respect to the use of the radio spectrum. It created the Federal Communications Commission (FCC), and put it in charge of regulating matters related to private sector (including State and Local Government) telecommunications. Functions related to the Federal Government's use of the radio spectrum, on the other hand, were conferred upon the President. Through re-delegation, these functions were transferred at various times to other government entities; for over 20 years this entity has been the National Telecommunications and Information Administration (NTIA), a bureau of the Department of Commerce. This dual structure with respect to the management of the radio spectrum is reflected in all related activities, including scientific uses of the spectrum. The NSF Electromagnetic Spectrum Manager is charged with securing access to the spectrum for the government science enterprise, mostly radio telescopes operated by the national centers (NRAO and NAIC). The Committee on Radio Frequencies (CORF) of the National Academy of Sciences (NRC) represents radio astronomy interests, when it comes to proceedings of the FCC. There is extensive coordination at all levels between the entities representing government and non-government radio spectrum interests. Consensus is sought between the FCC and NTIA with regard to spectrum issues, with the State Department retaining authority over the decision when formal representation is required at international fora (e.g. World Radiocommunication Conferences), and a consensus position between the government (NTIA) and non-government (FCC) position cannot be reached.

Spectrum policy regarding scientific research is contained in the Telecommunications Policy statement detailing US Government spectrum policy objectives, that states that:

"The United States is vitally dependent upon the use of the radio spectrum to carry out national policies and achieve national goals."…

...

"Specifically, in support of national policies and the achievement of national goals, the primary objectives are:

...

…i) to promote scientific research, development and exploration;"

" Priorities among these areas of interest are normally determined on a case-by-case basis, and are dependent upon many factors, including past and foreseen political and administrative decisions." [1]

## 2. The US regulatory structure

*a) Government spectrum regulation*

NTIA, headed by the Assistant Secretary for Telecommunications and Information, houses the Office of Spectrum Management (OSM) that is directly responsible for managing the spectrum for the Federal Government. NTIA/OSM spectrum management functions include, but are not limited to:

-Serving as the President's principal advisor on telecommunications policies,

-To develop (in cooperation with the Federal Communications Commission) a comprehensive plan for management of all electromagnetic spectrum resources, including jointly determining the National Table of Frequency Allocations,

-To develop (in coordination with the Secretary of State and other interested agencies) plans, policies, and programs which relate to international telecommunications issues, conferences, and negotiations,

-To assign frequencies to radio stations belonging to and operated by the United States

-To acquire, analyze and disseminate data and perform research on the description and prediction of electromagnetic wave propagation, and the conditions which affect propagation, on the nature of electromagnetic noise and interference, and on methods for the more efficient use of the electromagnetic spectrum for telecommunications purposes

-To conduct research and analysis of radio systems characteristics and operating techniques affecting the utilization of the electromagnetic spectrum, in coordination with specialized, related research and analysis performed by other Federal agencies in their areas of responsibility.

The Interdepartment Radio Advisory Committee (IRAC) advises the Assistant Secretary for Telecommunications and Information on the spectrum requirements of the agencies of the federal government, and about related issues. The IRAC, made up of representatives of 20 member departments or agencies and an FCC liaison member, meets twice monthly chaired by a Deputy Assistant Secretary for Telecommunications

[1] Manual of Regulations and Procedures for Federal Radio Frequency Management, Chapter 2.1.

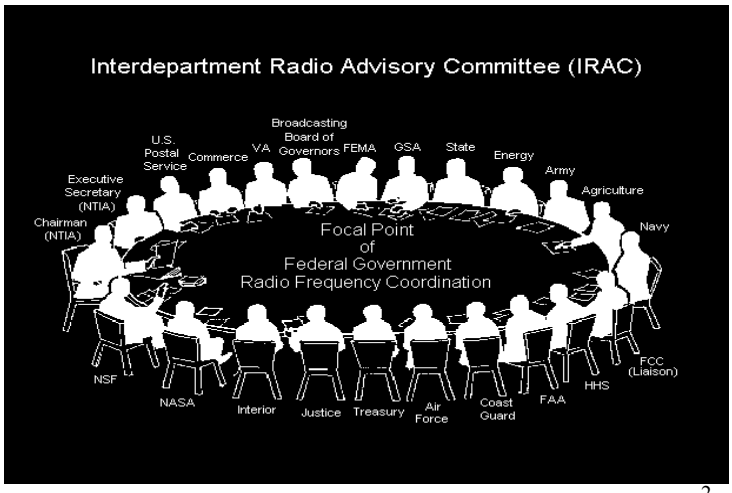


Fig. 1. Composition of the Interdepartment Radio Advisory Committee [2]

and Information, who represents NTIA on the committee. Since 1974, NSF has been one of the member agencies of the IRAC. The composition of the IRAC is shown in Fig. 1.

In addition to the main committee, the permanent structure of the IRAC consists of several standing subcommittees that deal with specific processes or issues. Among these, the Frequency Assignment Subcommittee (FAS) coordinates frequency assignments and licenses, the Spectrum Planning Subcommittee (SPS) analyzes major systems for spectrum availab-ility, the Radio Conference Subcommittee (RCS) carries out government preparations for world radio communication conferences, and other major international telecommunication meetings, the Technical Subcommittee (TSC) analyzes technical matters, and the Space Systems Subcommittee (SSS) deals with registration and coordination of satellite systems. A number of ad-hoc committees deal with specialized issues, e.g. implementation of the actions of a specific world radio communication conference (WRC), or coordination of radio stations along the border with the Mexican or the Canadian government.

Details about NTIA, the IRAC and its various subcommittees and ad-hoc committees, as well as about the procedures used in federal government spectrum management can be found in the "Manual of Regulations and Procedures for Federal Radio Frequency Management", often referred to as "the Red Book". The manual is available on-line at:

http://www.ntia.doc.gov/osmhome/redbook/redbook.html

*b) The FCC*

Under the Communications Act, the FCC is responsible for managing the spectrum to meet the needs of the private sector and state and local governments. The Commission

[2]The composition of the IRAC, as shown in fig.1, and a number of other details in this article reflect the situation at the time of the Workshop and may no longer be current. It should be kept in mind that the U.S. spectrum management structure undergoes frequent changes in response to changing requirements; even if it's major features have subsisted for about two decades.

does so by employing multiple instruments it has at its disposal, such as Advisory Committees of limited duration and responsibility, e.g. to prepare for a WRC, rulemaking procedures, etc. The structure of the FCC, a description of the responsibilities of the various Bureaus, and extensive documentation on FCC actions can be found on its very useful website:

http://www.fcc.gov/

The spectrum itself is divided into bands that may be mixed government - nongovernment use, and others that are exclusively used either by the government or by the private sector. Most bands fall into the mixed government - nongovernment use category, and decisions related to these bands require coordinated actions by the NTIA and the FCC.

*c) The ITAC-R*

A standing advisory committee, the U.S. International Telecommunications Advisory Committee-R(adio) (ITAC-R) advises the Dept. of State on matters related to international radiocommunications. The ITAC-R operates under the Federal Advisory Committee Act (FACA), and its structure mirrors that of the various groups that operate within the ITU. In particular, the ITAC-R mirrors the ITU-R Study Group structure. Thus, for example, US Study Group 1 discussing the US documents that are to be submitted to meetings of the international SG 1. US SG 7, the study group dealing with science services, is currently chaired by Dave Struba, from NASA, while I chair US WP 7D. US WP 7D usually holds 4-6 meetings per year that are accessible by phone to participants. Once the corresponding Study Group or Working Party approves a document, they also have to be reviewed and approved by the US National Committee (USNC), prior to being submitted to the corresponding ITU Study Groups. The USNC is composed of ~100 individuals from government agencies, industry and academia. As a rule, documents approved by a US Study Group or Working party are posted to a website for a period of 2-3 weeks, for comment by members of the USNC. If there is a disagreement, and no consensus can be reached, representatives from NTIA, the FCC and the State Department jointly determine the disposition of the paper.

## 3. How to get involved?

Membership in CORF is by invitation of the National Academy of Sciences / National Research Council. Membership in US ITU-R Study Groups, Working Parties and other temporary ITU-R groups is open, as provided by the Federal Advisory Committee Act (FACA) that regulates their functioning. Study group meeting dates and places *have to* be announced in an official publication (the Federal Register), 30 days in advance of the date of the meeting. As they are considered subcommittees of the main group, WP meetings do not need to be similarly advertised. Participation in these groups requires no more than contacting the Chair or showing up at the meeting. The members of US Delegations to World Radiocommunication Conferences (WRCs) are selected by the State Dept., acting on the Recommendation of the NTIA and/or the FCC.