

**Spectrum Inventory Working Group
Commerce Spectrum Management Advisory Committee**

Background Information

Both the House and the Senate have introduced legislation entitled the “Radio Spectrum Inventory Act” which would, if enacted, require an “inventory of radio spectrum bands managed by the National Telecommunications and Information Administration and the Federal Communications Commission.” The Senate bill (S.649) was introduced on March 19, 2009; and the House bill (H.R. 3125) was introduced on July 8, 2009. The House version provides a broad strategic objective, specifically to “promote the efficient use of the electromagnetic spectrum”, while the Senate version remains silent as to the purpose of the legislation.

The current versions of the legislation are virtually identical, including among other requirements, the following:

- Within 180 days, create an inventory of radio spectrum band managed by the National Telecommunications and Information Administration and the Federal Communications;
- Identify the radio services authorized to operate in each band and provide the identity of the licensees and government users;
- Provide the total amount of spectrum, by band of frequencies, allocated to each Federal or non-Federal user in percentage terms and in sum and the geographic areas covered by the respective allocations;
- Provide the approximate number of transmitters, repeaters, end-user terminals or receivers, or other radio frequency devices authorized to operate, as appropriate to characterize the extent of use of each radio service in each band of frequencies;
- For non-Federal users, any commercial names under which facilities-based service is offered to the public using the spectrum of the non-Federal user, including where the spectrum is being offered via resale and under what commercial names;
- Provide, to the greatest extent possible, contour maps or other information that illustrates coverage areas, receiver performance, and other parameters relevant to an assessment of the availability of spectrum in each band, and for each band or range of frequencies, the identity of each entity offering unlicensed services and the types and approximate number of unlicensed intentional radiators or certified by the Commission that are authorized to operate; and
- Create a centralized portal or website to make the inventory of the bands of frequencies available to the public via an Internet-accessible website.

The legislation differs in the scope of the spectrum inventory and the definition of what information may be excluded in the inventory. The House seeks an inventory from 225 MHz to 10 GHz, and the Senate from 300 MHz to 3.5 GHz. The House is willing to exclude proprietary information, the Senate information of importance to the national security.

Funding

The Working Group is unsure whether additional funding will be provided to NTIA and the FCC to design, develop, implement and maintain a national spectrum inventory that will provide legislators and innovators the information necessary to promote spectrum efficiency and to potentially reallocate spectrum for alternative uses.

Working Group Advice

The Working Group has been tasked with answering a number of questions that will provide policy advice to NTIA regarding the development of a Spectrum Inventory for federal and non-federal spectrum. These questions and suggested responses are as follows:

1. What information is needed from an inventory to reach policy decisions?

Answer - Other than to promote “spectrum efficiency” contained in the House version, the legislation is not particularly clear as to the national policy objective. The ultimate strategic objective will logically shape the contents of the Spectrum Inventory, whether that is transparency, efficient spectrum management, efficient spectrum utilization, reallocation, or a combination of these and other pursuits.

2. What is needed by technology innovators? For example, do groups seeking access to the spectrum need information in the inventory specifying system characteristics?

Answer – Yes, innovators need to know incumbent system characteristics, license terms, spectrum rights, incumbent relocation responsibilities, how the spectrum may be accessed, how long may the spectrum may be used and under what basis (licensed exclusive, license shared or unlicensed), is the technical use of the spectrum flexible, the available geography, available spectrum capacity, and power limits. Additionally, receiver information (ability to reject interference) and duty cycle information (near constant transmission or intermittent use) are relevant in addition to transmitter locations, emitted power and transmit masks.

3. How can the inventory be conducted in the most cost-effective, efficient and transparent way?

Answer – While critical answers are directly related to the amount of funding devoted and made available to the FCC and NTIA, there are questions that should be answered as well, including, among others the following. Is the spectrum inventory static and updated periodically, or is it real-time providing multiple updates daily on new, modified or deleted license records? Who has the authority to update the data? How much administrative and technical system information is to be presented? Will the agencies house the data, or will third-parties be authorized to capture, maintain and provide spectrum use data to the public? Answers to these and other questions provide necessary guidance with respect to cost effectiveness and transparency.

4. What system characteristics should be used to determine what spectrum/geographic areas are underutilized or vacant, and, assuming the completion of federal and non-federal inventories, what follow-up steps are needed to make best use of the inventory?

Answer – System characteristics for licensed spectrum should include, among others, the number and location of authorized sites, power levels, transmitter technology, spectrum bandwidths, application volume trends, [how the incumbent licensees received their spectrum use authority assignment – why is the assignment tool really relevant here?], what the spectrum is used for (e.g., national security purposes, safety of life) and the number of manufacturers that have received type-acceptance for products used within the specific band. Follow up steps might include a requirement for licensees to verify annually actual use of the spectrum for which they are licensed and where geographically.

Work in Progress

The working group intends to prepare a list of the benefits that would be created with the development of an automated and accessible Spectrum Inventory. The working group also plans to meet with representatives from the FCC and NTIA to gather information as to current efforts to respond to the Spectrum Inventory initiative. A further suggestion would be for the FCC and the NTIA to issue a Notice of Inquiry to determine what information would be most useful to be made available through an automated Spectrum Inventory.