Commerce Spectrum Management Advisory Committee

Draft Work Program 2011-1012

Working methods

NTIA will be more specific than in the past regarding the questions asked.

Responses should be specific to the questions, short (Not more than 5 pages. Background and tutorial generally not needed) and clearly stated as "NTIA should…". We will not be looking for broad reports on general subjects.

The agendas will facilitate discussion of issues during the meetings, not just an at the end presentation of the outcome.

Minority views are welcome though effort to reach consensus is appreciated.

Working Groups will be created to work on issues regarding the following topics: Search for 500 MHz, Sharing, Unlicensed and Spectrum Management Improvements. The Committee will be given the opportunity to add to, take away from, prioritize and select the questions under each topic. However, the Working Groups will consider and answer one, or no more than a couple questions at one time.

The primary focus in first months has to be on the Search for 500 MHz.

Search for 500 MHz

1. Consideration of reallocation of 1755-1850 MHz
    a. Review of government operations – Karl Nebbia will present at first meeting
    b. How should the impact of exclusion areas (for satellites or other specific operations) on the value of spectrum for commercial services be measured?
    c. Given the need for spectrum in high density areas, what is the value of spectrum in specific, limited geographic areas?
    d. What commercial wireless technical characteristics should be used in sharing analysis? (See Appendix B of the "Fast Track" report). Worst case analysis will overestimate interference and make exclusions zones larger. What assumptions should be made about how commercial systems will be deployed (e.g., base station height, density) when assessing interference? Is there anything that can be done with the base station antennas to limit the gain above certain elevation angles?
    e. What percentage of time can industry live with interference? Is there a way to estimate the impact of increasing interference on spectrum value?
    f. How does the industry define the impact of interference to the systems, particularly with the availability of multi-band phones?

g. If there will be interference to industry at some location or time within an agreed sharing approach, what is needed in terms of service rules to incorporate the interference into the terms of the license and licensee expectations?
h. How does staged release of portions of the spectrum impact spectrum valuation?
i. Band pairing of 1780-1850 MHz/separation requirements – What will industry do in terms of band pairing with 1780-1850 MHz if NTIA can free that portion of the spectrum, or will it implement TDD?
j. Comparable spectrum for Federal operations. What is the impact of moving Federal operations to other bands (A list of potential bands will be provided.)?
k. How can the mechanism or process of new entrants coordinating with remaining Federal operations during a relocation transition be better defined? How can the transition steps be defined to avoid day by day, location by location compatibility analysis and coordination?

2. Fast Track Report Outcomes
    a. Implementation of 1695-1710 MHz – What uses would be appropriate for this band given the need to protect the meteorological-satellite earth stations? Can there be flexibility in terms of systems or services?
    b. Implementation of 3550-3650 MHz – Exclusion zones were intended to ensure protection of industry from continued government use in certain areas. Is that required? Can the distances be decreased using better characteristics of industry systems? What kind of regulatory text would ensure that, if greater access is given to new commercial uses, DOD will not have to modify its systems ex post to interference complaints when interference occurs?
3. Other bands of interest to industry
    a. If 1780-1850 MHz can be reallocated, how might industry use it?
    b. Would it have to be combined with other spectrum? If so, what spectrum?
    c. What other bands do the commercial operators see as having potential?

<u>Spectrum sharing</u>

4. Spectrum Sharing
    a. What kinds of sharing are workable for industry in the long term?
        i. Geographic licensing (Exclusion zones)
        ii. Dynamic sharing (Sensing, database)
        iii. Sensing in a mobile frequency-hopping or spread spectrum radar environment
        iv. Other methods
    b. Test Bed - What do you define a testbed to be? Is a test bed a specific focused test operation? A facility? An open geographic area? A band? How can they best be used to facilitate the development of sharing capabilities? How do you best ensure agreement and acceptance of test outcomes?
    c. What can realistically be done in terms of sharing acceptance of interference?

d. How do we set up sharing arrangements, when the primary service may continue or has the right to continue to evolve?
e. What other near or mid-term approaches can be recommended?

Unlicensed

5. Unlicensed
    a. Enforcement
        i. How should federal agencies deal with complaints of interference received by unlicensed users?
        ii. How should federal agencies deal with interference from unlicensed users in the hands of citizens who don't understand the rules?
        iii. How should we prevent software modifications that alter the compatibility characteristics of a device?
        iv. With widely distributed products, what is the best approach to enforcing rules when the number of offenders may be significant?
    b. Dedicated bands – Do unlicensed need dedicated bands? Which? How would relocation be paid for if a dedicated unlicensed band is created?
    c. What method should be used to "inventory" or identify where in the spectrum specific unlicensed devices operate.

Spectrum Management Improvements

6. Spectrum Management Improvements (Distribute GAO Report)
    a. Expansion of data to support compatibility analysis – Use of automated processes for frequency selection, and compatibility analysis require more data that is commonly provided in licenses or assignments. How do we make a transition to a more complete data set? Is it important?
    b. Some uses have not traditionally required licenses. Recent examples that had a significant impact on NTIA's fast track review included Federal and non-Federal use of meteorological-satellite receive earth stations and radar altimeters. What approach should be taken to ensure that these uses are considered in any analysis when they don't exist in assignment and license databases?
    c. Techniques for verification of data – How does industry (band managers or frequency coordinators) ensure the accuracy of data? What steps does the FCC take to ensure the accuracy of data on licenses that are not prepared via a band manager or frequency coordinator)? What role does individual accountability play (e.g. required signatures)?
    d. Federal and National Strategic Planning – What specifically should a federal or national strategic plan actually look like? What does it have to include? What elements are required? Does NTIA's 1998 Federal Strategic Spectrum Plan meet the goal? Given the support role that agency spectrum offices play in agency mission accomplishment, how can agencies develop agency strategic spectrum plans that are anything beyond

statements of systems that they plan to deploy. Do the agency strategic spectrum plans that have been provided to NTIA meet the goal?