

**CSMAC**  
**Enforcement Working Group**  
**Initial Activity Report – December 13, 2013**

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**Purpose/Mission**

In order to accommodate the explosive growth in wireless networks of all types, wireless communications devices and systems must increasingly operate in closer proximity in frequency, space and time and, accordingly, the risk of disruptive and harmful interference is inevitably increased. In addition, increased sharing of spectrum between federal government and non-federal devices and systems creates new challenges in terms of institutional relationships and interagency processes for detecting, identifying, locating, mitigating and reporting interference sources. Clearly the value of shared spectrum to commercial entities depends on the processes and resources spectrum managers have available to reduce the number of interference incidences and to resolve them quickly and effectively when they do arise. Similarly, the willingness of federal agencies to share larger amounts of spectrum in more dynamic ways depends upon their confidence that the applicable rules and regulations regarding such sharing will be enforced.

The purpose of this proposed work would be to help the NTIA develop new or revised strategies for responding more efficiently and effectively to the fundamental technological, operational and other trends that continue to create an increasingly complex interference and enforcement environment. It is anticipated that, in carrying out this work, the CSMAC will coordinate with similar efforts underway in the FCC's Technological Advisory Committee (TAC).

**Initial Objectives**

The Working Group has agreed that its initial efforts would be best applied towards identifying enforcement measures in those bands that are presently targeted for Federal and non-Federal government spectrum sharing. With that in mind, among others, the Working Group will be discussing and responding to the following questions and requirements associated with an effective enforcement activity with shared Federal Government bands.

1. What Federal Government bands are immediately critical to the Working Group?
2. What is particularly unique about these targeted bands that define how enforcement activities should be implemented?

3. Is it mandatory that there be an enforcement mechanism and process infrastructure in place before sharing may commence?
4. If yes, what interference mitigation protocols should be in place in these bands before sharing commences, and where are these interference mitigation rules/procedures maintained?
5. Should the rules be available for public inspection including how requests for enforcement investigations may be requested/implemented? Or, are enforcement actions and responsibilities limited to FCC commercial license holders operating within shared Federal Government bands and Federal agencies operating systems within the shared bands?
6. Is a definition of harmful interference needed and, should that level of interference be proven or claimed, does that event trigger an enforcement action only? Are simple increases in existing noise floors considered harmful interference? Do different bands have different definitions of what constitutes harmful interference?
7. Who enforces these rules and procedures? Who verifies that an enforcement action is necessary?
8. Who may request an enforcement action and how is the enforcement process funded?
9. Should there be a data base of shared band operations and who should maintain it? Is it available for public access?
10. Is the enforcement process different during the transition to sharing period versus afterwards when the reallocation is more-or-less permanent?
11. What are the penalties for rules violations in the shared bands? Are device operational terminations sufficient for enforcement purposes, or should there be fines levied for shared spectrum rules infractions?
12. When is it opportune to share objectives, mutual efforts and information with the TAC?

### **Initial Working Group Observations (Preliminary Draft)**

- Critical bands include 1695-1710 GHz and 3.5 GHz.
- Interference detection, identification, measurements and collaborative activities that result in interference resolution activities are not particularly enforcement functions. Enforcement functions are required when there is a probability of illegal spectrum

activities that cannot be managed by those that control spectrum utilization, e.g., applicable Federal agencies and telecommunication carriers.

- What constitutes harmful interference in one band may not be considered harmful interference in another band due to the types of incumbent systems and their capability to share spectrum. Increased noise floors within defined geographical “coordination zones” may not, in all cases, constitute “harmful” interference.
- The Technical Advisory Committee (TAC) has conducted a significant amount of work on “Harm Claims Threshold” as an alternative to trying to do the almost impossible job of establishing harmful interference definitions for each band. It is a very complex issue and the definitions would have to be updated almost continuously to reflect changing tradeoffs between transmitter and receiver performance. The Enforcement Working Group will evaluate the Harms Claim Threshold approach.
- Given that the nature of interference is changing, rules and regulations governing interference resolution must be flexible to accommodate emerging trends.
- In the 1695-1710 GHz band where sharing will take place exclusively between Federal Government agencies and licensed telecommunication carriers (Track I Enforcement), it is recommended that:
  - Because sharing in this band will be limited to national carriers and federal agencies, there was a sense that the parties would be able to work out interference issues informally most of the time. Nonetheless, in instances where resolution is not possible, then a more formal approach will be necessary, perhaps Memorandums of Understanding (MOU) between affected Federal Agencies and national carriers.<sup>1</sup>
  - A Memorandum of Understanding shall be developed between NTIA and the FCC addressing the procedures and policies that are to be instituted in the event there are difficulties associated with interference resolution, notwithstanding such provisions contained within a Federal Government/Carrier MOU. The working group needs guidance regarding whether the FCC has jurisdiction over federal entities with respect to interference enforcement. An interagency MOU between the FCC and NTIA may offer an efficient mechanism to establish an enforcement process for both federal and commercial users.

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<sup>1</sup> See EIBASS FCC ex parte which points to an MOU that broadcasters and DoD used previously that may assist in forming the basis for future sharing of the 2025-2110 MHz band. [<http://apps.fcc.gov/ecfs/comment/view?id=6017479259>]

- In the 3550-3650 GHz band where sharing take place exclusively between Federal Government agencies and licensed telecommunication carriers (Track I Enforcement),
  - MOUs are again encouraged between affected Federal agencies and licensed carriers, including an agreement between NTIA and the FCC; however,
  - Segments of the 3550-3650 GHz band will not be limited to federal and national carriers, and will be opened for broad commercial uses among a number of authorized users. As a result, there is a greater probability that this spectrum could attract various users that do not want comply with federal rules. “Harmful” interference incidences and associated enforcement activities become more critical due to rogue operators ignoring interference rules, and the potential influx and use of non-type accepted equipment. As a result, there may be a significant impact to federal entities sharing this band. Under this scenario, the Working Group has observed that enforcement activities need to be more robust to take into account the increased probability of rogue operators. (Track II Enforcement). Accordingly, the working group believes that greater resources must be devoted by the FCC to spectrum enforcement activities. In addition, several amendments to the Communications Act may be necessary to make FCC enforcement more efficient. For example, entities that knowingly allow illegal transmitters to operate on their land or buildings should be held accountable. Changes in the enforcement process that would allow the FCC to go directly to Federal District Court to obtain a “cease and desist order” may be appropriate. The Working Group believes we should explore a number of new enforcement options.

### **Working Group Members**

Mark Crosby  
Dale Hatfield  
Janice Obuchowski  
Bryan Tramont  
Larry Alder  
Dennis Roberson  
David Donovan  
Thomas Dombrowsky, Jr.  
Jennifer Warren  
Mark McHenry  
Steve Sharkey  
Colin Alberts