

Proposed Future CSMAC Work (Dated August 21, 2013)

<i>Topic</i>	<i>Submitter</i>	<i>Chair Volunteer</i>	<i>Others Interested</i>
Enforcement			
<p>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 upon 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 under way in the FCC's Technological Advisory Committee (TAC).</p> <p>How to update the FCC's enforcement tools for new forms of sharing (e.g., coordination zones vs. exclusion zones);</p> <ul style="list-style-type: none"> • How the FCC and NTIA will coordinate when both federal and non-federal users are involved; • What forms of mitigation measures will be used when an operator is found to be interfering (until resolution is reached.) • How can technical showings of compliance be made pre- and post-deployment in these new sharing scenarios to facilitate enforcement measures. <p>What kinds of interference will carriers tolerate from federal systems as part of accepted sharing</p>	Hatfield	Crosby	Obuchowski, Tramont, Alder, Roberson, Donovan, Dombrowsky, Hatfield, Warren

<p>terms to avoid future "garage door" opener situations?</p> <p>NTIA Questions:</p> <p>In a shared spectrum environment involving both federal and non-federal users, what types of sharing criteria would need to be specified in the FCC's <i>ex ante</i> regulations, and what can be subject to post-rulemaking/post-auction negotiated coordination agreements or other sharing arrangements?</p> <p>How would negotiated coordination agreements or other sharing arrangements be enforced and by whom?</p> <p>In a shared spectrum environment where many consumers have widespread access, what additional tools do the FCC and NTIA need to ensure compliance with sharing criteria or arrangements?</p> <p>How can service providers, federal users and regulators quickly identify and stop harmful interference as quickly as possible?</p> <p>How should NTIA and the FCC identify and rectify harmful interference resulting from an aggregate of operations from multiple co-channel or out-of-band emitters?</p>			
Transitional Sharing			
<p>Transitional Sharing is the next step in the existing CSMAC work. We would study and recommend how to implement the future work described in all of the WGs (WG4 & WG5 at least). Topics would include:</p> <ul style="list-style-type: none"> Derivation of Interference Protection Criteria Interference analysis methodologies Coordination processes and procedures <p>NTIA Questions:</p> <p>What analysis methods should be used to govern transitional sharing?</p> <p>Would analysis tools be used to determine, based on predictions and without direct negotiation among the parties, at what locations and frequencies two or more specific</p>	Gibson	Gibson	Povelites, Dombrowsky, Obuchowski, Hatfield

<p>operations could potentially co-exist at the same or different times? How could such tools be used to better inform or help facilitate direct negotiations among the parties? For agencies that do not have adequate staff resources how would such criteria, methodologies, processes and procedures minimize direct negotiations. Why would federal users be willing to rely on new tools and approaches that they have not been willing to use thus far?</p> <p>How should transitional sharing processes and costs be resourced?</p>			
<p>Use of general occupancy measurements of and quantification of federal spectrum use</p>			
<p>Recognizing the varied and in many cases mobile federal operations, how can agencies best quantify their actual spectrum use, and what metrics and other parameters would be reasonably necessary, to determine the extent to which spectrum assigned to the agency could potentially be made available for sharing with or release to commercial users, particularly in major metropolitan areas, without adversely affecting agencies' missions, especially those related to national security, law enforcement, and safety of life. (See 6/14/13 PM Sec. 3(a))</p> <p>We could study the use of occupancy measurements in concert with databases to help quantify federal spectrum use. We could also investigate the feasibility of polls and surveys to help better characterize the database information. This is more or less how we conducted these measurements for the systems currently under study.</p> <p>NTIA Questions:</p> <p>How may general occupancy measurements be performed to reflect or validate actual federal spectrum use (particularly radars and intermittent operations) in a way that can support spectrum management decisions regarding relocation or sharing of spectrum? (See 6/14/13 Executive Memorandum at Sec. 3(c) and NTIA 8/19/13 Notice of Inquiry)</p> <p>Recognizing resource limitations and the lack of real-time reporting of use built within the federal radio infrastructure, how should actual federal spectrum use be quantified with or without supplemental occupancy measurements? (See 6/14/13 PM Sec. 3(a) and (d))</p>	<p>NTIA</p>	<p>Gibson, Crosby</p>	<p>Roberson, McHenry, Dombrowsky, Reaser, Cooper, Calabrese, Kahn, Warren</p>
<p>Spectrum management via databases</p>			
<p>For spectrum management via databases, some of the issues include: how to safeguard classified/sensitive data; what data to provide; how to leverage the 70-90 GHz data-sharing</p>	<p>NTIA</p>	<p>Gibson, Crosby,</p>	<p>Alder, McHenry,</p>

<p>process; interference reporting, determination and avoidance; roles and responsibilities, etc.</p> <p>To make the work most productive, we would want to work with you to find a real problem that the NTIA wants to solve where we think real-time databases could help and then attack that problem rather than work open ended.</p> <p>NTIA Questions:</p> <p>How can sensitive and government classified operations be included and protected using a database-driven sharing approach, particularly one that strives toward real-time responses?</p> <p>How should the development, implementation, and maintenance of spectrum sharing databases be resourced?</p>		Alder	Obuchowski, Reaser, Calabrese, David Borth
Providing government greater flexibility and options through access to non-federal bands			
<p>Federal agencies and particularly the Department of Defense need significant amounts of spectrum for large training exercises, however, the United States cannot afford to obligate so much spectrum all the time for such exercises. What approaches to authorization, coordination would facilitate access to spectrum for training? Should DOD expect to pay license holders for that access? Should DOD expect to pay for access even where the license holder does not provide coverage?</p> <p>NTIA Questions:</p> <p>What methods can be used to allow federal agency access of non-federal bands, particularly for large, intermittent exercises and emergency use?</p> <p>Would federal users be expected to pay for temporary spectrum access?</p> <p>Would such access only be available if the nonfederal licensee does not have an immediate, short-term or long-term need to operate in the spectrum and location in question?</p> <p>What band and location combinations can support large federal exercises or emergency use?</p>	NTIA	Warren, Obuchowski	Tramont, Povelites, Obuchowski
Paying for costs of spectrum sharing when there is no auction			

<p>The CSEA recognizes that agencies need funds to relocate systems. The Tax Relief Act update to the CSEA acknowledged and provided for costs related to sharing spectrum but still requires that the sharing be related to auctioned spectrum. However, the unlicensed device community is also looking for spectrum access and agencies will have to absorb study costs and potentially operational costs if they have to alter their equipment to live with new unlicensed devices.</p> <p>NTIA Questions:</p> <p>How should federal agencies be resourced to develop and implement sharing with non-auction services such as unlicensed devices?</p>	<p>NTIA</p>	<p>Calabrese</p>	<p>Tramont, Alder, Obuchowski, Reaser, Calabrese, David Borth, Warren</p>
---	-------------	------------------	---