CSMAC CBRS Subcommittee

September 21st, 2023

CBRS Subcommittee Members

Co-Chairs: Mariam Sorond, Patrick Welsh, Jennifer McCarthy

NTIA Liaison: Nick LaSorte and Ed Drocella

FCC Liaison: Kevin Holmes and Jessica Quinley

Members

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Reza Arefi	Louis Peraertz
Donna Beathea-Murphy	Dennis Roberson
Michael Calabrese	Steve Sharkey
Thomas Dombrowsky	Rikin Thakker
Mark Gibson	Bryan Tramont
Carolyn Kahn	Jennifer Warren
Karl Nebbia	David Wright

NTIA Question

1. What are general and specific lessons learned from the CBRS framework for commercial operations sharing with federal incumbents - both positive and negative?

2. How could the commercial-federal sharing in CBRS be improved?

3. What from this CBRS spectrum sharing experience should be considered for implementation in other bands/cases?

4. What from this CBRS spectrum sharing experience should be avoided in other bands/cases?

Update

- Kicked off subcommittee in January 2023
- Provided initial observations of the interviews in the July subcommittee report
- Completed 26 interviews across federal and non-federal entities:
  - Non-federal: Ericsson, Spectrum X, Bell Labs and Nokia, 5G Industry Coalition, Columbia Capital, Federated Wireless, Celona, CalPoly, WISPA, Cal.net, Charter, DISH, WinnForum, Google, Sony, Comcast, CTIA, Red, AT&T, Kyndryl, OnGo Alliance, NCTA
  - Federal: ITS, CIO DoD

- Scheduling 9 more interviews by end of October

General Lessons Learned

- The CBRS band provides a unique opportunity to allow various commercial entities to coexist within a hybrid licensing mechanism, permitting use cases across various users including fixed, mobile, wireless operators, equipment vendors and enterprises. It utilized unique solutions (such as a SAS) to address its 3-tired sharing framework

- Across all stakeholders it was unanimously felt that the hybrid CBRS framework promoted sharing and that the lessons learned have been valuable to help fine tune this approach for future use

- The CBRS sharing framework should be considered in other bands if the incumbent situation, policy goals, potential licensees and use cases are similar

- Considering that the SAS/ESC sharing framework is new and that conservative protections and processes were deliberately adopted initially, there should be a better process to address improvements. No defined process currently exists, and any suggested improvements have been slow to be addressed and implemented

- Coexistence among non-federal users, including among CBRS users and between CBRS users and non-federal incumbents, needs to be improved

Improvement Recommendations

- Create a process whereby all stakeholders, NTIA, and FCC are able to drive timely changes to rules, operational settings, and standards if applicable

- Automate sharing mechanisms and include key decision makers in a multi-level implementation process. The subcommittee will formalize its recommendations on details in December

- This formal process will help accelerate some of the following improvements, which are already at some stage of consideration:
  - Update the propagation methodology to include the appropriate model and use of clutter and building data
  - Decide between ESCs and their inherent limitations (e.g., whisper zones) or informing incumbent solutions and their risk of over-scheduling (e.g., IIC, TARDyS3). The feedback on this varies from the interviews
  - Reduce complexity of the process of the aggregate interference protection
  - Improve the methodology of aggregate interference calculations
  - Reduce DPA Neighborhood sizes
  - Reduce heartbeat interval in non-DPA areas
  - Reduce DPA activation timer

Improvement Recommendations Continued

- Improve the limits imposed for higher, above-ground CPEs
- Resolve the reservation of excessive amounts of spectrum for longer than expected periods during federal events
- Improve the timing, pervasiveness, and coordination of advanced notification of events to end users
- Consider TDD synchronization across commercial users
- Increase maximum EIRP where appropriate
- Improve coexistence management for GAA

- The subcommittee in its report will either point to existing forums where the above list is being worked on or provide specific recommendations where appropriate

- We recommend that, for other bands subject to sharing, the NTIA develop a collaborative process that includes all stakeholders.