COMMERCE SPECTRUM MANAGEMENT ADVISORY COMMITTEE (CSMAC)

Transitional Sharing Subcommittee

(DRAFT) FINAL REPORT
February 5, 2015

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Executive Summary

The Transitional Sharing subcommittee was intended to pick up where the CSMAC AWS-3 WGs left off. The subcommittee's goal was to establish guidelines and a framework to allow for coordinated operation within protection zones.

While the subcommittee met several times and developed a set of recommendations, its work was overtaken by events related to the AWS-3 auction and the work of other subcommittees.

Nonetheless, the Transitional Sharing subcommittee does recommend that the NTIA should study the subcommittee's recommendations with the goal of further consideration as necessary.

1 Introduction

This subcommittee was suggested following the Commerce Spectrum Management Advisory Committee's (CSMAC) analysis of ways to facilitate the implementation of commercial wireless broadband systems in the AWS-3 bands (1695-1710 MHz and 1755-1780 MHz). The subcommittee met several times and developed a set of questions, areas of study, an approach and a set of draft recommendations.

However, the subcommittee felt that its work was somewhat overtaken by several events and outside activities and decided to suspend its activities with the recommendations provided.

2 Background

Most of the efforts of the five CSMAC Working Groups established to study sharing between commercial wireless broadband and Federal systems in the AWS-3 1755-1850 MHz band focused on the development of sharing criteria and protection zones sufficient to inform the FCCs AWS-3 rulemakings.[1] Transitional Sharing was proposed as the next step in the existing CSMAC work. The goal would be to study and recommend how to implement the future work described in all of the WGs (or at least WG4 & WG5) specifically with respect to coordinated operation in protection zones.

The committee members are listed in Appendix 1.

3 Scope of Work, Analysis and Results

The subcommittee developed the following set of questions and actions:

- What analysis methods should be used to govern transitional sharing?

- Methods differ based upon type of federal system. Need to identify various systems and suggest study on sharing methods.

- How can analysis tools be used to determine the locations and frequencies where two or more specific operations could potentially co-exist at the same or different times without direct negotiation among the parties?
  Need to describe the process to include steps necessary for transitional sharing. See flow diagram from AWS-1 (Appendix 2).

- Would these tools be based on predictions and without direct negotiation among the parties?
  How can the process involve all stakeholders to ensure the analysis methodologies and interactions meet all needs? Stakeholders include both regulators and spectrum users.

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[1] Citation…

- How could such tools be used to better inform or help facilitate direct negotiations among the parties?
  What are the use cases and baseline requirements? How do we collect this information?

- For agencies that do not have adequate staff resources how would such criteria, methodologies, processes and procedures minimize direct negotiations?
  Costs are difficult to nail down
  OMB needs to consider sharing techniques

- Why would federal users be willing to rely on new tools and approaches that they have not been willing to use thus far?
  Consider LTE techniques
  Maintain continued dialog and testing
  Provide a fall-back/stop buzzer in case of interference
  Promote testing of new sharing techniques
  Viability of approaches will depend upon length of transition

The subcommittee proposed the following areas of study:
- Protection Zone determination and analysis
- Applicable coordination processes and procedures
- Analysis methodologies & tools
- Coordination portal(s)
- Obtaining data
- Market prioritization
- How to resource the transitional sharing efforts
- Roles (regulators, agencies, licensees, others)

The subcommittee's approach was:
- Leverage lessons learned from AWS-1
- Review recommendations and study from most recent CSMAC work
- Review/study existing sharing techniques
- Investigate "trusted agent"
- Investigate testing & measurements and review existing measurements results

The subcommittee held several meetings to discuss the above questions and work on the approach and developed the recommendations listed below in Section 4. During the course of the subcommittee's work, our efforts were somewhat overtaken by events and outside activities, specifically:

- Trusted Agent meetings
  - Draft *Framework coordination agreement between AWS-3 Licensees in 1755-1780 MHz and Federal Government SGLS Operations in 1761-1780 MHz*
  - *Refined AMT Sharing Zones*
- Pending release of agency Transition Plans

- Pending release of joint FCC/NTIA Transitional Sharing PN, "Coordination Procedures in the 1695-1710 MHz and 1755-1780 MHz Bands."

In addition, several subcommittee members felt that Recommendation 5 was sufficiently important to commence immediately. Accordingly, a new CSMAC subcommittee was formed with the following goal: "To expand and more effectively enable government/industry collaboration through an aggressive, multi-layered effort to support focused spectrum policy development and the identification of spectrum solutions to the rising demand for consumer and government radio uses."[2]

Considering the above events and the formation of the Government/Industry Collaboration subcommittee, work on the Transitional Sharing subcommittee effectively ceased.

4 Recommendations

The subcommittee makes the following recommendations. The NTIA should:

1. Develop a single portal to support the following requirements (see Appendix 3):
    o Exchange of data
    o Interference/sharing analyses
    o Communication of results
    o Could be used to provide commercial input into initial band-sharing discussions

    Benefits include:
    o Improved interaction with users
    o Streamlined and efficient development
    o Consistent use cases and requirements
    o Scalable

2. Involve commercial users in requirements definition for portal development
    o Hold Stakeholder Requirements Definition meetings to engage all users in development of use cases and requirements definition

3. Support a series of "Coordination Symposia" (much like those conducted for AWS-1) among stakeholders to:
    o To bring together potential AWS licensees, Federal agencies, regulators and other interested parties to:
        ▪ Exchange information;
        ▪ Discuss sharing, relocation and coordination; and
        ▪ Educate each other concerning issues relating to the 1.7 GHz spectrum migration process.
    o To better understand the Federal agency spectrum clearing process and associated issues.

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[2] Government/Industry Collaboration (Citation)

- To discuss the agency and carrier coordination processes suggested or required by CSMAC, the FCC and NTIA.
- To share ideas and address concerns regarding best practices to ensure smooth and timely relocation and transitional sharing prior to relocation.

4. Include Trusted Agents in the early distribution of Transition Plans.
   - Should include non-redacted information
5. Hold regular meetings (quarterly?) with commercial licensees, FCC, NTIA and Federal agencies to discuss and refine process, identify and resolve issues, and share information.
   - Will help deal with progress and conceptional issues
   - Could also serve as Stakeholder Requirements Definition meetings
   - Could also support additional band-specific Coordination Symposia

5 Conclusions

Although the subcommittee is no longer meeting, we still feel there are issues related to transitional sharing that merit continued study, specifically:

- Applicable coordination processes and procedures
- Analysis methodologies & tools
- Coordination portal(s)
- Obtaining data
- Market prioritization
- How to resource the transitional sharing efforts
- Roles (regulators, agencies, licensees, others)

The subcommittee recognizes that some of these issues are being addressed other subcommittees.[3] Nonetheless, the subcommittee suggests that the NITA keep these issues in mind as they address spectrum sharing.

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[3] For example, the Spectrum Sharing via Databases subcommittee is studying the issue of obtaining data and the Government/Industry collaboration subcommittee is studying roles and possibly portals.
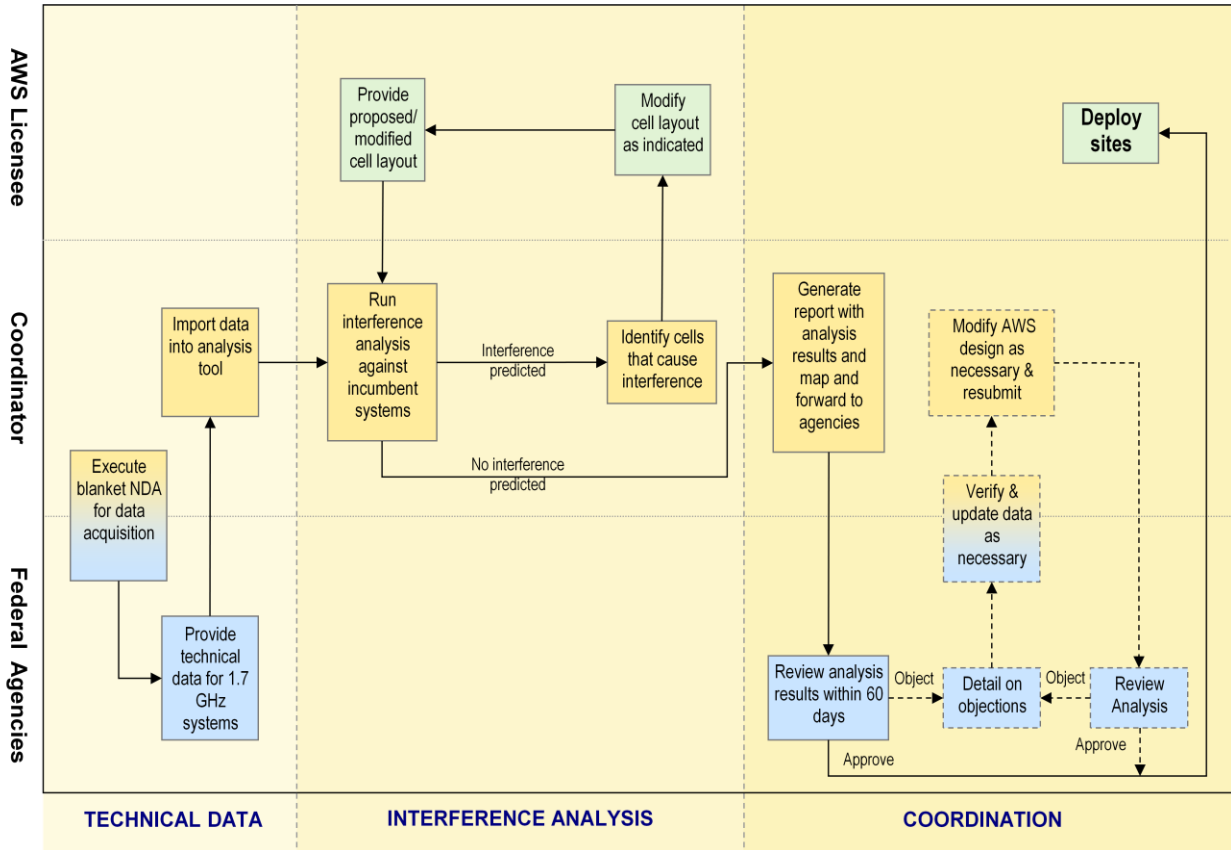
Appendix 1: Working Group Participants

- Co-Chairs:
    - Tom Dombrowsky
    - Mark Gibson
- Members/Participants
    - Carl Povelites
    - Janice Obuchowski
    - Dale Hatfield
    - Doug McGinnis
    - Tom Sugrue
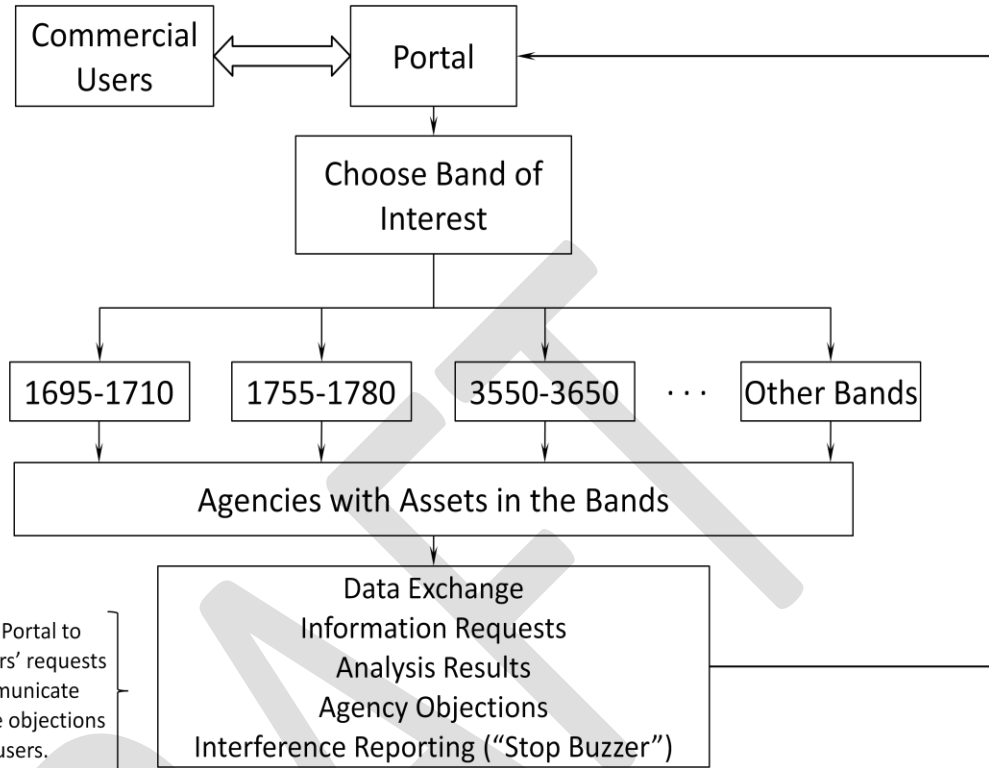   - Gary Patrick

Appendix 2: AWS-1 1.7 GHz Transitional Sharing Process Flow

AWS-1 1.7 GHz Transitional Sharing Process

Appendix 3: Generalized Portal Structure

Commercial users will use Portal to exchange data with Federal users and interact with agencies in the bands of interest.

Federal users will use Portal to address Commercial users' requests for information, communicate analysis results and raise objections with Commercial users.

Commercial Users ⟷ Portal

Choose Band of Interest

1695-1710   1755-1780   3550-3650   · · ·   Other Bands

Agencies with Assets in the Bands

Data Exchange
Information Requests
Analysis Results
Agency Objections
Interference Reporting ("Stop Buzzer")

Generalized Portal Structure