Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550- 3650 MHz Band	)	GN Docket No. 12-354
	)	

To: Marlene H. Dortch
Office of the Secretary, Federal Communications Commission

COMSEARCH REPLY COMMENTS

H. Mark Gibson
Director, Regulatory Policy
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147

Date: August 15, 2014

TABLE OF CONTENTS

I. INTRODUCTION **2**

II. REPLY COMMENTS **2**

An industry-led multi-stakeholder group should be formed to develop recommendations and manage certification for the SAS. **2**

The SAS introduces many new questions regarding enforcement. **4**

Contained Access Facilites need better definition for use by the SAS. **6**

III. CONCLUSIONS **7**

COMSEARCH REPLY COMMENTS

In response to the above-mentioned *Further Notice of Proposed Rulemaking* (FNPRM)[1], Comsearch hereby submits the following comments.

I. INTRODUCTION

Comsearch applauds the Commission's efforts to make more spectrum available through the new Citizens Broadband Service in the 3550-3650 MHz band (3.5 GHz band). As an FCC-designated TV White Space (TVWS) database administrator, we are acutely aware of the complex issues associated with the Spectrum Access System (SAS) proposed by the FCC as part of this rulemaking. Our comments highlight several key areas that we believe require further consideration by the Commission (and all stakeholders) as we move in the relatively new arena of automatic database-controlled spectrum management.

II. REPLY COMMENTS

An industry-led multi-stakeholder group should be formed to develop recommendations and manage certification for the SAS.

Comsearch agrees with commenters who suggest the formation of a multi-stakeholder group to address issues such as data-sharing among SAS administrators, recommendations for Citizens Band radio Service Device (CBSD) interaction with the SAS, SAS certification, authentication procedures, protection criteria, etc.[2] We believe strongly that a *bona fide* multi-stakeholder group with the proper mandate to develop and promulgate the necessary standards,

[1] See "Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band", Further Notice of Proposed Rulemaking, GN Docket No. 12-354, FCC 14-49 (April 23, 2014) (FNPRM).

[2] For example, See FNPRM Comments of AT&T, The Wireless Innovation Forum and Motorola Solutions Inc.

recommendations and guidelines will help ensure that the SAS is developed and managed more quickly and efficiently than if left *per se* to industry participants.

In the FNPRM, the Commission describes the SAS in terms relative to the TVWS database as a way to govern interactions among devices in the 3.5 GHz Band.[3] In addition, the FNPRM suggests that, "Following the TVWS database model… industry participants will take it upon themselves to develop technical implementations of these requirements and, where applicable, to develop industry-wide standards."[4]

We believe that the TVWS database systems and the developing visions for the SAS are vastly different. We agree strongly with comments such as those from T-Mobile who say that, "…the SAS extends the TVWS concept into uncharted territory"[5].

As an FCC-designated TVWS database administrator (WSDBA), we have found that while the process of working together with other WSDBAs was ultimately successful in developing a set of recommendations for data-sharing and interoperation, it has been time-consuming and does not obligate all WSDBAs to participate. This prolonged development of interoperation guidelines and caused unnecessary delays. A multi-stakeholder group should be able to ensure full participation among all participants and establish a broad and inclusive framework for collaboration.

While several models have been suggested by those commenting on multi-stakeholder groups, we also suggest the Commission also consider an approach similar to UTAM.[6] UTAM,

---

[3] NPRM at Subpart F – Spectrum Access System.

[4] *id* at¶ 90.

[5] See T-Mobile FNPRM Comments at Section A.

Inc. was designated by the Commission to coordinate and manage the transition of the 1910–1930 MHz band from microwave to unlicensed PCS. It was established as a non-profit, membership corporation with members consisting primarily of equipment manufacturers wishing to develop and deploy UPCS devices (see www.utam.org). UTAM developed a funding model, established guidelines and recommendations, held regular meetings, and established multiple working groups. UTAM ultimately had over 60 members. We believe a similar model for a multi-stakeholder group could address data-sharing, recommendations for device interaction with the SAS, certification, authentication procedures, protection criteria, etc. We suggest the Commission study this approach.

The SAS introduces many new questions regarding enforcement.

The Commission asks several questions in the FNPRM related to enforcement.[7] However, we suggest that the notion of devices whose operating frequencies are managed by third-party databases raises numerous new issues around enforcement.

We generally agree with commenters who express concern about the enforcement challenges posed by an SAS-managed network of devices.[8] In addition to the questions posed in the FNPRM and in comments, we suggest other questions must include the following:[9]

---

[6] See "Amendment of the Commission's Rules to Establish Personal Communications Services", 8 FCC Rcd 7700, 7738 (1993). See also 47 CFR §15.307 Coordination with fixed microwave service.

[7] See FNPRM at ¶ 162.

[8] For example, see CTIA, The Wireless Association FNPRM Comments and Satellite Industry Association FNPRM Comments.

[9] We note that the Commission may have to address these questions for TVWS database administration in light of the band plan changes being proposed in the Incentive Auction proceeding.

- What happens when interference occurs to a protected licensee?
- What are stakeholders' respective responsibilities (i.e., FCC, SAS providers, licensees, device manufacturers, etc.) to identify and mitigate interference?
- What liabilities do SAS providers have in finding and addressing harmful interference?
- How quickly would SAS providers have to shut down devices if necessary? What would be the notification procedures?
- How will the Commission address database errors that lead to interference when the data is provided or entered by a third party? What are the responsibilities/liabilities of SAS providers in these instances?
- Will the Commission employ the current administrative procedures to locate, shut down and fine interferers? Can (and should) licensed operations afford to wait for the administrative procedures to be completed before receiving relief from illegal harmful interference?
- How can the SAS be used to find interferers?
- How can conflicts of interest be avoided if interferers are also customers of the SAS providers?

By way of example, the current enforcement process for TVWS is for the Commission to request any of the WSDBAs to indicate that no channels are available when queried by a specific TV Band Device (TVBD) or model of TVBDs. However, in the event that a specific user is found to be operating numerous devices in a manner that would necessitate enforcement, the Commission could want to shut down only this user's devices. Since this capability is not required, it would put a burden (and perhaps a liability) on WSDBAs to correlate the user to device and shut them down.

The issues of enforcement in the new realm of database-controlled devices beg more consideration. The Commission may want to consider a workshop on the matter.

Contained Access Facilites need better definition for use by the SAS.

The Commission introduces the concept of Contained Access Facilities (CAFs) in the FNPRM.[10] While we appreciate the intent to exploit "RF isolation intrinsic to the CAF"[11], we are concerned that two key questions related to this concept seem to remain: "How would the SAS limit the operation of other GAA users within CAF premises? Would the SAS be able to effectively manage spectrum use by a large number of facilities?"[12]

We are concerned that the SAS will not adequately be able to limit GAA operations around and within CAFs without clear definitions of how to effect such limitations. Presumably, the SAS will know which facilities qualify for CAF operation, and that information could be passed on to the SAS. [13] However, we are unsure how the SAS would limit CAF operations outside the facility sufficient to protect other GAA operations. Presumably, the SAS would have to either capture or predict the signal strength from a CBSD at the CAF boundaries and react accordingly. In addition, if there are several CAF operations in close proximity, the SAS might have CAF operations that could interfere with each other. The question then may arise as to whether first-in-time rights may be afforded CAF operations, or would the SAS need to manage numerous localized CAF operations. This entire process would be complicated by multiple SASs. We suggest that substantial further study is needed to determine the feasibility and requirements for the SAS to perform such tasks.[14]

---

[10] See FNPRM at Subpart D(ii).

[11] *id* at¶ 60.

[12] *id* at¶ 61.

[13] *id* at¶ 60.

[14] This is an example of an issue that could be addressed in a multi-stakeholder group.

III. CONCLUSIONS

While we applaud the Commission's intent to make more spectrum available through the use of database-enabled systems such as the SAS, we are also acutely aware as a TVWS database operator that the issues raised in the FNPRM and addressed herein require further consideration. While there are numerous issues and ideas that require further study, we believe the issues related to multi-stakeholder groups, new enforcement concerns and Contained Access Facilities are of particular concern as we move in the relatively new arena of automatic database-controlled spectrum management.

Respectfully Submitted,

/s/ H. Mark Gibson

H. Mark Gibson
Director, Regulatory Policy
COMSEARCH
19700 Janelia Farm Boulevard
Ashburn, Virginia 20147

Date: August 15, 2014