COMMERCE SPECTRUM MANAGEMENT ADVISORY COMMITTEE

NTIA

Enforcement Subcommittee

25 April 2018

Subcommittee Members

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- Mark Gibson
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- Paul Kolodzy
- Mark McHenry
- Janice Obuchowski

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- Bryan Tramont
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Objective

Our objective is to "Assess the extent to which SAS/ESC systems and technologies may be able to support automated interference prevention, detection, and resolution" … the Subcommittee has broken this question into three parts, namely:

- Technical Capabilities – What are the technical capabilities that are available today, and what can be the technical capabilities available tomorrow for interference prevention, detection and resolution?

- Legal Issues – What are the legal issues/challenges that must be addressed to implement automated enforcement prevention, detection and resolution mechanisms?

- Policy Issues – What are the policies that could be implemented to generate support for an automated enforcement prevention, detection and resolution mechanism, or conversely, cause fears/concerns from participants?

Status

We have received excellent preliminary feedback from the sub-committee, but have much more information to gather before providing a cohesive response. Preliminary comments and next steps include:

- Current SAS activities limited to sensor technology for interference detection

- SASs today do not *directly* control devices per se to mitigate/resolve interference

- Can SASs measure unauthorized users by correlating emissions with registrations?

- How does the FCC/NTIA enable/authorize "deputized enforcement"?

- Is SAS enforcement participation voluntary or mandated?

Next Steps

- Need to engage with all SASs – research other sources of information (e.g. WINNF SSC Traceability Matrix)

- Need to discuss as this being an enabler of additional sharing

- We need to discuss EXACTLY how a SAS can contribute today and tomorrow

- How can automated enforcement be augmented to enable more intensive sharing (FOR OTHER BANDS)

Background

Spectrum Access System Providers

- Each conditionally approved SAS Administrator must comply with all current and future Commission rules, instructions, and procedures.

- Each conditionally approved SAS Administrator must comply with all instructions issued by WTB and OET pursuant to sections 0.241(j) and 0.331(f) of the Commission's rules.

- Each conditionally approved SAS Administrator must be able to receive reports of interference from non-federal incumbents, i.e., FSS licensees and GWBL, and develop a mechanism to address and remedy, as necessary, such reports of interference and report such interference and its resolution (if any) to the Commission upon request.

- "make CBSD registration information available to the general public, but they must obfuscate the identities of the licensees providing the information for any public disclosures." Publicly disclosed information includes all information required under section 96.45 and must be sufficient to facilitate coordination consistent with section 96.35(e). To protect the identities of individual customers and licensees, conditionally approved SAS Administrators may obfuscate the location of any registered CBSD by up to +/- 50 meters (horizontal) and +/- 3 meters (vertical).

https://apps.fcc.gov/edocs_public/attachmatch/DA-16-1426A1.pdf

CBRS Technical Rules

- *Registration with SAS*
  - A CBSD must operate at or below the maximum power level authorized by an SAS, consistent with its FCC equipment authorization, and within geographic areas permitted by an SAS on the channels or frequencies authorized by an SAS.
  - A CBSD must receive and comply with any incoming commands from its associated SAS about any changes to power limits and frequency assignments. A CBSD must cease transmission, move to another frequency range, or change its power level within 60 seconds as instructed by an SAS.

- Signal Level Reporting. A CBSD must report to an SAS regarding received signal strength in its occupied frequencies and adjacent frequencies, received packet error rates or other common standard metrics of interference for itself and associated End User Devices as directed by an SAS.

Sample WINNF Requirements

- "SAS shall use the NTIA ITS Irregular Terrain Model (ITM) implementation, in point-to-point mode, of the Longley-Rice propagation model for propagation determination for use in non-federal incumbent and ESC sensor protection. SAS shall use the NTIA ITS Irregular Terrain Model (ITM), in point-to-point mode, for propagation determination for use in FSS earth station, DPA protection, and ESC sensor protection"

- Consideration of propagation models, including hybrid or application-specific models, may advance beyond this initial model, subject to FCC approval.

- If the CBSD is indoors, add 15 dB to the computed loss to account for attenuation due to building loss.

- "SAS shall use the propagation models used in the NTIA 3.5 GHz Exclusion Zone Analyses and Methodology for propagation determination for use in PAL Protection Area (PPA), GWPZ and all systems outside 3550-3700. SAS shall use adjustments to the NTIA model given in this requirement for initial certification."