CSMAC Topics and Questions

January 25, 2017

Mark Gibson
Larry Alder
CSMAC Co-Chairs

CSMAC Topics and Questions Summary

- Topic Categories have been proposed
  - 5G
  - Reconciling U.S. and international spectrum policy
  - Enforcement
  - Process for identifying suitable bands for repurposing
  - Developing the next generation of spectrum professionals
  - Incentives and spectrum efficiency
- Goal is to identify 3 or 4 topics and subcommittees and to compete the work in 1 year
  - Subcommittees to be formed after this meeting (in Feb)
  - Work on questions and brief full CSMAC roughly quarterly on progress, questions, issues, etc.
  - Preliminary findings/recommendations presented in August meeting
  - Final recommendations done in November meeting.

5G

- What technologies (including waveforms and architectures) might be included in 5G standards to facilitate sharing between federal and non-federal systems?
  - Among other things, please consider specifically the key receiver performance requirements for sharing, particularly with respect to IoT devices, including a device's capacity for resilience and interference detection and avoidance.
  - Consider any 5G-specific technologies that might facilitate interference prevention, detection, and resolution.
  - Identify the standardization challenges with respect to such technologies and what actions NTIA should take to address these challenges
- In the 37-40 GHz band that is included in the FCC Spectrum Frontiers rulemaking there are federal allocations for space research, fixed, and mobile service operations. What deployment options exist for the various types of 5G applications that maximize the shared use of this spectrum, including dynamic shared access between federal and non-federal users in 37-37.6 GHz?

Reconciling U.S. and International Spectrum Policy

- Should the United States seek to develop international recommendations and reports prior to finalizing U.S. domestic rules in order to better harmonize U.S. and International policy?
- What specific type of outreach (i.e. ITU, Regional Preparatory Groups, Standards Bodies, etc.) should the U.S. regulators focus on to best advocate international acceptance of emerging and already established U.S. policy?

Enforcement

- What do you see for automation of enforcement (i.e., preventing interference or identifying and responding to interference when it does occur) in the near or longer term?
  - What are the principal technical and operational options for automating enforcement, at both the network and device levels? Please consider, among others, options related to: station IDs; data cloud/fog architectures; and crowd-sourcing.
  - What options for automated enforcement are unique to the development and deployment of 5G?
  - What steps do you recommend the Federal Government, specifically NTIA, take to implement automated enforcement processes? What steps will the private sector need to take? Please consider steps relating to both technical and policy issues, as well as possible negotiated (contractual) approaches

Process for Identifying Suitable Bands for Repurposing

- What factors should we include in our processes, other than the likelihood of successful repurposing, that affects the desirability of a particular federal, non-federal or shared frequency band as a candidate for repurposing to meet future commercial requirements for licensed and unlicensed spectrum?
- What frequencies constitute the low-, medium-, and high-frequency ranges of required spectrum, and what proportion of bandwidths in these three ranges would best meet commercial requirements?
- With regard to spectrum sharing, what particular commonalities or compatibilities between federal and commercial interests could be exploited in prioritizing bands for repurposing? These might include, for example, applications that could coexist (technically and/or operationally) or common technologies

Developing the Next Generation of Spectrum Professionals

- What are the future roles/responsibilities of professionals involved in spectrum engineering, spectrum management, spectrum policy and regulation; and how should these spectrum professionals be developed? Please consider the following issues, among others?
  - What are the necessary skills required to fulfill the responsibilities of spectrum professionals and how will those skills evolve over the next 5-10 years?
  - How have existing spectrum professionals acquired the necessary skills (e.g., by education and/or previous work experience); and how can this development be improved (e.g., should the federal government provide training prior to assuming the role and/or as professional development thereafter; who should provide the training (NTIA, federal agencies, separate entity)?

Incentives and Spectrum Efficiency

- As part of the recommendations on incentives for federal users to be more spectrally efficient while protecting critical agency missions, CSMAC in 2011 made recommendations around language for OMB A-11 and uses of the Spectrum Relocation Fund (SRF) that have been adopted. In this context:
  - What additional changes to the language in OMB A-11 Section 31-12 could be made to strengthen implementation? Are there additional regulatory, procedural, or policy changes that could strengthen implementation.
  - With respect to the current Spectrum Relocation Fund (SRF), are there additional changes that could strengthen the potential incentives for federal agencies to share, relocate, or otherwise improve spectrum efficiency and effectiveness?
  - Are there additional regulatory, procedural, or policy changes that NTIA should consider to incentivize federal agencies to use their spectrum resources more efficiently and effectively