

Contribution by NASA
CSMAC Process – Lesson Learned
Repurposing and Sharing the 1695-1710 MHz and 1755-1850 MHz Bands

I. Background: Though not a member of CSMAC, NASA appreciates and values the importance of the work of the Advisory Committee and the associated potential impact on NASA's current and planned operations. Given the invitation to participate as a potentially affected Federal Agency, NASA welcomed the opportunity to participate in those working groups that more directly pertained to its current operations.

NASA participated in *Working Group 3* (Satellite Control and Electronic Warfare) as NASA has certain design and procurement responsibilities for MetSat spacecraft that are operated by the Department of Commerce and some of these utilize 1755-1850 MHz for command and ranging uplink transmissions. Also NASA participated in *Working Group 5* (Aeronautical Systems) which addressed the 1755-1850 MHz band. NASA typically has about 20 frequency assignments for Unmanned Aircraft System (UAS) and Aeronautical Mobile Telemetry (AMT) operations in the 1755-1850 MHz band at various locations, including on an "exotic suborbital platform." (Only one of the assignments overlap the 1755-1780 MHz band upon which WG 5 came to focus.)ⁱ

II. General Observation:

Effective Contributory Addition to Current Governmental Processes: The CSMAC Working Group process was well executed and served effectively as a supplement to the existing FCC rulemaking and auction processes. The process and the contributions received enabled considerably more insight and detail than would otherwise be possible. (Of note, this process worked to address a very specific situation that may not always be applicable in other situations.)

NASA believes that it is important to weigh lessons learned in the *fullest* context of governmental actions to include completed and subsequent spectrum management events and processes. NASA found the CSMAC Working Groups to provide significant and additional value to an overarching and existing process. For example,

- Importantly, the FCC & NTIA had already established the feasibility of repurposing and sharing some of the Meteorological-Satellite spectrum below 1710 MHz and at least part of the 1755-1850 MHz band. As a consequence, the terms of reference for the CSMAC Working Groups 3 and 5 were able to focus immediately on administrative considerations as well as terms & conditions.
- The CSMAC Working Groups were positioned as an overlay on the pro forma U.S. spectrum management process for addressing potential revisions to spectrum allocations. The FCC launched its AWS-3 Notice of Proposed Rulemaking with the benefit of preliminary Working Group discoveries and findings but before all final reports were adopted. This provided optimal timing in terms of accelerating the process with proposed rules and procedures, and insightful questions.
- The FCC's forthcoming FCC Report and Order and comments and suggestions provided by NTIA and Federal Agencies will benefit substantially from the CSMAC recommendations and details of the WG Final Reports. Further, the risks of Petitions for

Reconsideration or lawsuits may have been substantially reduced by the robustness of the CSMAC overlay on established spectrum management processes.

III. Key Lessons Learned:

Importance of Terms of Reference: It was essential for the Working Groups to be equipped with terms of reference that were clear but not overly proscriptive. At least one Working Group needed to revert to reading of the terms of reference in order to refocus its work and terminate irrelevant debate.

Effective Use of Side Meetings: Federal Agencies and other parties held their own side-meetings outside the established Working Group sessions to address issues of common perspectives. This seems to have been helpful to advance discussions of all parties and thus resulted in more effective and productive Working Group meetings.

Value of Diverse Expertise: The cross-section of expertise provided by both industry and the Federal Government was extremely beneficial. Attorneys, administrative personnel and engineers all played key roles and helped to educate one another about the range and complexity of governmental and commercial broadband technical and operating parameters.

Federal Budget Requirements: Federal Agencies need to maintain adequate budgets, underlying staffing and analytical tools and databases in order to properly support elements of these kinds of extraordinary efforts. These budgetary efforts are not covered by auction proceeds.

IV. Summary: NASA believes that the CSMAC Working group process was a valuable process and can serve as a key enabler to successful fulfillment of the Presidential and Congressional initiatives toward increasing commercial broadband access to precious spectrum resources.

ⁱ NASA has a joint frequency assignment with the Department of Commerce for a Meteorological Satellite (MetSat) earth station operating just below 1695 MHz at the Goddard Space Flight Center. However, NASA did not participate in the work of Working Group 1, which addressed 1695-1710 MHz MetSat sharing because it could rely on Commerce (NOAA) to expertly cover possible concerns, e.g. potential out-of-band interference.