

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

In the Matter of)
)
)
Rapidly Deployable Aerial Telecommunications) PS Docket No. 11-15
Architecture Capable of Providing Immediate)
Communications to Disaster Areas)
)

To: The Public Safety and Homeland Security Bureau

***EX PARTE* COMMENTS OF COMSEARCH**

Comsearch submits the following *ex parte*¹ comments in the above-mentioned Public Notice from the Federal Communications Commission’s Public Safety and Homeland Security Bureau issued January 28, 2011.²

Comsearch applauds the Commission’s efforts to advance state-of-the-art communications initiatives and strategies that further strengthen and enhance the security and reliability of the nation's communications infrastructure specifically with respect to Deployable Aerial Communications Architecture (DACA). We submit the following brief comments related to spectrum coordination and interference mitigation techniques.

¹ Comsearch submits these comments in accordance with the Commission’s *ex parte* rules regarding “permit-but-disclose” proceedings., 47 C.F.R. § 1.1206(b).

² See *Public Safety and Homeland Security Bureau Seeks Comment on Rapidly Deployable Aerial Telecommunications Architecture Capable of Providing Immediate Communications to Disaster Areas*, PS Docket No. 11-15 (DA 11-175) (Public Notice) 26 FCC Rcd 666 (PSSHB rel. Jan. 28, 2011).

Headquartered in Ashburn, Virginia, Comsearch is an engineering firm specializing in spectrum management of terrestrial microwave, satellite, and mobile telecommunications systems. Comsearch interacts regularly with the Commission and with the National Telecommunications and Information Administration (NTIA), and actively participates in various industry groups such as the National Spectrum Managers Association (NSMA), the Telecommunications Industry Association (TIA), and the Institute of Electrical and Electronics Engineers (IEEE) to develop rules, industry recommendations, and standards that promote the efficient use of the radio spectrum. Since 1977, Comsearch has been a leading provider of engineering services and software both domestically and internationally for microwave, satellite, and mobile communications systems. In this role, we have gained extensive experience in developing industry-standard coordination processes, creating and maintaining state-of-the-art software and databases, performing interference analyses of complex environments, and understanding regulatory requirements.

Comsearch has been helping trade show organizers implement successful frequency coordination plans for their shows for more than 14 years. We routinely performed spectrum management services at several major wireless industry events in North America. This involves months of pre-show frequency coordination as well as on-site spectrum monitoring and real-time frequency deconfliction.

Comsearch is also an FCC-designated TV bands device database administrator.³ Currently referred to as “TV White Space”, the TV bands database will be used by certain types of wireless

³ See *In the Matter of Unlicensed Operation in the TV Broadcast Bands Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, ET Docket No. 04-186 (DA 11-131) (Order) 26 FCC Rcd 554.

devices to identify unused channels that are available at their geographic locations. These fixed and mobile devices must include both a geo-location capability and the capability to access a database that identifies incumbent users entitled to interference protection.

While DACA systems could be invaluable in the temporary restoration of critical communications in the event of a disaster, they do present a few challenges that we believe should be surmountable. Protection of terrestrial communications systems from harmful interference caused by the DACA systems must be paramount. Accordingly, both prior coordination and real-time coordination should be adopted. Given that any type of frequency coordination has to rely on accurate and complete databases, we suggest the Commission consider the merits of centralizing these databases in order to quickly and effectively perform the frequency coordination efforts. We believe a centralized database approach offers several merits including: standardized data structures and format, efficiency in data provisioning, ease of maintenance, high accuracy and reliability, and streamlined interaction. In addition, a centralized database approach could rely upon multiple separate databases administered under a centralized data management system.

To the extent that the centralized database approach can be adopted, we also suggest that with the increasing availability of cognitive radios, these databases could be used to perform real-time frequency deconfliction and channel allocation for cognitive radio-based unmanned aircraft systems (UAS) and balloon platforms.⁴ We expect that most such systems have or will

⁴ We note that satellite systems typically operate under their own licenses and frequency assignments along with certain balloon-based systems.

have GPS reporting capability.⁵ A UAS or balloon can report its location and radio parameters to the centralized database system where the database can analyze the system against the data on the incumbent systems and return operating frequencies that will avoid harmful interference. Alternatively, the databases could provision the data to the airborne radio platform where the interference analyses can be performed locally.

Comsearch concurs with the Commission's vision for DACA systems, and we believe these systems can provide a vital link in the restoration of critical infrastructure after a disaster. We believe the centralized database and database-enabled cognitive radio concepts outlined above merit further discussion and analysis as the Commission continues to consider and advance state-of-the-art communications initiatives and strategies that further strengthen and enhance the security and reliability of the nation's communications.

Respectfully Submitted,

/s/ H. Mark Gibson

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⁵ Most UAS will be required to employ the FAA's Automatic Dependant Surveillance-Broadcast (ADS-B) service, which mandates GPS position and altitude reporting.