

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
Wireless Telecommunications Bureau and)
Office of Engineering and Technology Seek) GN Docket No. 19-356
Comment on Unmanned Aerial System)
Operations in the 960-1164 MHz and 5030-)
5091 MHz Bands, Pursuant to Section 374 of)
the FAA Reauthorization Act of 2018)

COMMENTS OF GPS INNOVATION ALLIANCE

The GPS Innovation Alliance (“GPSIA”) hereby responds to the Public Notice issued by the Wireless Telecommunications Bureau (“WTB”) and the Office of Engineering and Technology (“OET”) related to operations by unmanned aerial systems (“UAS”) in the 960-1164 MHz and 5030-5091 MHz bands.¹ To help the Commission and other agencies prepare a report mandated by the FAA Reauthorization Act of 2018,² the Public Notice seeks comment on (i) whether and on what basis UAS operations should be permitted to operate on spectrum allocated for Aeronautical Mobile Route (R) Service (“AM(R)S”) and UAS control links at 960-1164 MHz in the L-Band and 5030-5091 MHz in the C-Band; (ii) any technological, statutory, regulatory, and operational barriers to such use; and (iii) recommendations of other appropriate frequencies for such regulation.

The GPSIA was formed in February 2013 to protect, promote, and enhance use of Global Positioning System (“GPS”) and Global Navigation Satellite System (“GNSS”) technologies.

¹ *Wireless Telecommunications Bureau and Office of Engineering and Technology Seek Comment on Unmanned Aerial System Operations in the 960-1164 MHz and 5030-5091 MHz Bands, Pursuant to Section 374 of the FAA Reauthorization Act of 2018*, Public Notice, DA 19-1207 (rel. Nov. 25, 2019) (“Public Notice”).

² See FAA Reauthorization Act of 2018, § 374, Pub. L. No. 115-254, 132 Stat. 3185, 3313-14.

Members and affiliates of the GPSIA are drawn from a wide variety of fields and businesses reliant on GPS, including manufacturing, aviation, agriculture, construction, defense, transportation, first responders, surveying, and mapping. The GPSIA also includes organizations representing consumers who depend on GPS for boating and other outdoor activities and in their automobiles, smart phones, and tablets. GPS and GNSS systems, as well as augmentations to GNSS systems, operate in various frequency bands, including 1164-1215 MHz, which is allocated to the Radio Navigation Satellite Service (“RNSS”).

The GPSIA is uniquely qualified to comment in this proceeding because of the spectral adjacency of the RNSS band to the AM(R)S frequencies at issue in the Public Notice, as well as the importance of GPS/GNSS technology to the development of the UAS industry and aviation safety overall. GPS/GNSS technology enables precise positioning and navigation for UAS operations and is vital to a myriad of innovative UAS applications, such as emergency services, agriculture, and package delivery. The GPSIA has no position on whether UAS operations of any particular kind should be permitted in aeronautical service spectrum within the 960-1164 MHz band. It does, however, comment as a potentially affected stakeholder interested in ensuring protection of RNSS spectrum uses in the upper adjacent 1164-1215 MHz band.

The GPSIA seeks to ensure that WTB and OET consider that the International Telecommunications Union (“ITU”), when it adopted a co-primary AM(R)S allocation at 960-1164 MHz in 2012, included several regulatory and technical conditions relevant to WTB’s and OET’s inquiry. The allocation in the 960-1164 MHz band for the AM(R)S service is expressly subject to provision No. 5.327A of the ITU Radio Regulations, which states:

The use of the frequency band 960-1 164 [sic] MHz by the aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international

aeronautical standards. Such use shall be in accordance with Resolution 417 (Rev.WRC-15).³

Resolution 417, in turn, sets forth various protections for RNSS, including GPS and GNSS, which operate in the 1164-1215 MHz band, against harmful interference that AM(R)S systems in the adjacent 960-1164 MHz band may cause.⁴ These protections are critically important. As WTB and OET evaluate comments and contribute to the Congressionally mandated report on UAS, the GPSIA urges them and other stakeholders to be cognizant of these obligations, which constitute a relevant “barrier to the use” of the spectrum under consideration.⁵

Recently, the FCC’s Technological Advisory Council (“TAC”) subcommittee studying communications strategies for UAS provided a preliminary review of the use of the 960-1164 MHz band for UAS operations.⁶ The TAC cited the same ITU-related limitations as noted above. Because of these restrictions and other reasons, the TAC reported that the 960-1164 MHz band “is unlikely to be available for UAS use.”⁷

Enabling and integrating safe UAS operations into the National Airspace System must be balanced with protecting existing navigation and aviation operations and incumbent spectrum use. As WTB and OET consider this balance, they must broadly evaluate all relevant

³ International Telecommunication Union, Radio Regulations Articles, Volume 1, at 99 (2016) (5.327A), <http://search.itu.int/history/HistoryDigitalCollectionDocLibrary/1.43.48.en.101.pdf>.

⁴ International Telecommunication Union, Radio Regulations Resolutions and Recommendations, Volume 2, at 269-72 (2016), <http://www.oh3ac.fi/RR/RR2016-VolIII-eA5.pdf#page=291>. The limitation expressed in No. 5.327A means both that Resolution 417 is mandatory and that any AM(R)S use of the 960-1164 MHz band can only be made by systems operating in accordance with the standards of the International Civil Aviation Organization.

⁵ Public Notice at 2.

⁶ Joseph Cramer & Scott Kotler, *Communication Strategies for Unmanned Aircraft Systems (UAS) – Use of Spectrum Designated for Aviation Use for UAS*, FCC, Technological Advisory Council, at 42 (Dec. 4, 2019), <https://transition.fcc.gov/oet/tac/tacdocs/-meeting12419/TAC-Presentations-12-4-19.pdf>.

⁷ *Id.*

constraints, proposed uses, and other factors regarding UAS necessary to ensure the preparation of a comprehensive report. At a minimum, the ITU provisions specified above, including the TAC's evaluation of them, should be taken into account and included in the report.

Respectfully submitted,

By: /s/ J. David Grossman

J. David Grossman
Executive Director

GPS INNOVATION ALLIANCE
1800 M Street, NW
Suite 800N
Washington, DC 20036
202-628-9586

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