

**BEFORE THE FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20054**

In the Matter of)	
)	
Unlicensed Use of the 6 GHz Band)	ET Docket No. 18-295
)	
Expanding Flexible Use in Mid-Band)	GN Docket No. 17-183
Spectrum Between 3.7 and 24 GHz Band)	
)	

COMMENTS OF THE SMALL UAV COALITION

The Small UAV Coalition (“Coalition”)¹ hereby submits comments in response to the above-captioned proceeding.² As a group, we support and advocate for a range of law and policy changes that will not only embrace, but encourage, the growth of the UAV industry. We believe that in order to realize the vast economic potential and consumer benefits possible through the integration of UAVs around the country, our government must implement thoughtful regulations that reflect and anticipate the rapid growth of the industry.

The Coalition provides these comments out of concern for the Commission’s proposal to prohibit the use of the two sub-bands that would be made available for outdoor use by unmanned aircraft systems (UAS).³ As an alternative to an outright ban, the Coalition urges the Commission to adopt a more measured approach that provides opportunities for access by UAS

¹ A full list of members can be found at <http://www.smalluavcoalition.org/members/>.

² Unlicensed Use of the 6GHz Band; Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz; ET Docket No. 18-295; GN Docket No. 17-182; Federal Communications Commission, FCC 18-147 (Oct. 24, 2018) (“6 GHz Band NPRM”).

³ The Commission proposes allowing outdoor operations in the 5.925-6.425 GHz (U-NII-5) and 6.525-6.875 GHz (U-NII-7) sub-bands. 6 GHz Band NPRM at para. 22. The Commission also proposes excluding UAS from operating in the sub-bands. *Id.* at para. 85.

for low altitude (below 400 feet) operations or for operations over limited areas where such uses are capable of complying with technical parameters established as part of a final order issued by the Commission.

The Commission Should Adopt a Measured Approach to Allow UAS Operations in the U-NII-5 and U-NII-7 Sub-Bands

The Coalition supports the efforts by the Commission to make more spectrum available for unlicensed use. We agree with the Commission that making these “broad spectrum swaths” available for unlicensed use will promote new technologies and services.⁴ The Coalition’s member companies are exploring new technologies and services as part of offerings they are making available to consumers and businesses, and understand the important role that spectrum plays as a critical input to their businesses. As such, the Coalition has urged other agencies, as well as the Commission, to focus spectrum policies on promoting technology-neutral rules focused on providing access for a broad range of uses and to rely on technical rules and operational limitations to prevent harmful interference. The Coalition supports the Commission’s efforts to pursue such policies and as this and other spectrum access proceedings demonstrate, the Commission has, in many regards, sought to implement spectrum access policies consistent with greater flexibility.

While the current proceeding offers flexibility for some unlicensed uses in the 6 GHz band, the Coalition is concerned with the outright prohibition for use of the U-NII-5 and U-NII-7 bands by UAS. In the *6 GHz NPRM*, the Commission proposes to prohibit UAS use of these bands because it is “concerned that airborne operations can cause interference over a wide area.”⁵ This reasoning does not take into account the many use cases that commercial UAS

⁴ *Id.* at para. 1.

⁵ *6 GHz NPRM* at para. 85.

operators are developing that will use UAS for low altitude operations or operations within a limited area that may not present the harmful interference concerns that aircraft flying at high altitudes present.

Lower Altitude Operations. UAS operations at lower altitudes (below 400 feet) do not present the longer line-of-sight distance concerns the Commission notes as a reason for exclusion on aircraft flying at “typical aircraft altitudes.”⁶ In a study conducted by RKF Engineering Services, LLC, and filed as part of the record in this proceeding, there is some evidence that lower altitude operations may not present the concerns raised by the Commission.⁷ Specifically, the Coalition notes that the *RKF Study* includes corner cases of operations at building heights of 10 stories (section 3.2.3), which represent 0.02 percent of the use cases, with no increased interference to existing licensed users.⁸ The *RKF Study* noted that “studying taller buildings does not impact the analysis in any significant way.”⁹ The Coalition notes that while there is no explicit case made for airborne operations in the 6 GHz band in the study, the propagation models are similar.

Moreover, in section of 3.2.4 of the *RKF Study*, interference mitigation techniques already in use for unlicensed users in the 5 GHz band could be implemented to render negligible any impact of radio local area network (RLAN) operation, and by extension, airborne operation, to existing licensed users.¹⁰ Further, the *RKF Study* estimates that outdoor units would account for approximately 0.6 percent of all units operating in the band, and the Coalition expects that

⁶ *Id.* at 84.

⁷ RKF Engineering Services, LLC, *Frequency Sharing for Radio Local Area Networks in the 6 GHz Band*, GN Docket No. 17-183 (Jan. 2018) (*RKF Study*).

⁸ *Id.* at 24-25.

⁹ *Id.* at 24.

¹⁰ *Id.* at 26-27.

UAS would comprise only a small fraction of that amount, thus further lessening any potential impact.

In addition, there is extensive work being conducted to determine technical solutions capable of supporting unmanned traffic management (UTM) systems for lower altitude operations.¹¹ That work is looking into utilizing spectrum sharing, dynamic channel assignments and other techniques to mitigate harmful interference while promoting UTM. Further studies to determine whether low altitude operations in specific bands can mitigate harmful interference need to be done on a range of spectrum band alternatives, so foreclosure of the U-NII-5 and U-NII-7 sub-bands would be premature.

The above information demonstrates that at a minimum further consideration should be given to permitting low-altitude UAS use in the U-NII-5 and U-NII-7 sub-bands. The Coalition encourages the Commission to provide access to the band for UAS. To the extent the Commission needs to tailor specific requirements for such access, the Coalition urges the Commission to convene stakeholders to develop an agreement that addresses concerns the Commission and incumbent licensees may have.

The Coalition notes that the automatic frequency coordination (AFC) system along with identification information, both of which are proposed in the notice, will also prove useful in addressing concerns that may be presented by permitting low-altitude UAS use in the U-NII-5 and U-NII-7 sub-bands.¹² Specifically, an AFC system could help drone operators determine

¹¹ *UAS Traffic Management: Research Transition Team (RTT) Plan, FAA and NASA Collaborative Efforts Planned Through September 2020*, at 20-21, available at https://utm.arc.nasa.gov/docs/2017-FAA_NASA_UTM_RTT_Plan.pdf (2017).

¹² *6 GHz NPRM* at paras. 25-28. The Federal Aviation Administration (FAA) is considering remote identification requirements for UAS. A notice of proposed rulemaking is forthcoming from the FAA, as required by the FAA Reauthorization Act of 2018. FAA Reauthorization Act of 2018, Pub.L. 115–254 (2018). Remote id required by 2016 Act, although that provision referred to remote id standards.

what frequencies are available for use along their flight path and would be able to have use of those frequencies dynamically reassigned.¹³ To the extent a UAS is found to be causing interference, identification criteria, which will ultimately be included as a result of the Federal Aviation Administration's Remote Identification rules, will allow the licensed user the ability to identify who is responsible for the UAS causing the interference.

Limited Area Use Cases. A number of the Coalition's member companies and other entities are pursuing innovative opportunities to use UASs to assist companies with infrastructure inspections and other services that are conducted within confined areas or along narrow swaths of land. For example, using UASs to inspect cell towers or power transmission towers has proved very beneficial the owners of these structures by ensuring they can conduct high-quality inspections of the facilities more safely and at a reduced cost. These inspections do not cover wide areas, rather they are quite limited in the area covered, from a single structure to narrow rights-of-way on which transmission facilities are built. Precision agriculture, building inspections, construction site monitoring, pipeline inspections and other use cases are also confined to limited spaces and are conducted in areas where incumbent services would likely not be at risk by use of the spectrum by UAS operators. The Commission should consider such use cases and the opportunities they present before foreclosing access to the U-NII-5 and U-NII-7 sub-bands by UAS.

Conclusion

The Small UAV Coalition appreciates this opportunity to comment on the Commission's *6 GHz NPRM* and urges the Commission not to adopt the proposed ban on UAS operations in the U-NII-5 and U-NII-7 sub-band. Instead, the Coalition urges the Commission to adopt a

¹³ *Id.* at para. 30.

measured approach that takes into account the opportunities that low-altitude UAS services can provide while minimizing the risk of harmful interference to licensed uses already in the bands designated for outdoor use.

Respectfully submitted,

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February 15, 2019