

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Amendment of Sections 15.35 and 15.253 of the Commission’s Rules Regarding Operation of Radar Systems in the 76-77 GHz Band)	ET Docket No. 11-90 RM-11555
)	
Amendment of Section 15.253 of the Commission’s Rules to Permit Fixed Use of Radar in the 76-77 GHz Band)	ET Docket No. 10-28
)	

**REPLY OF
HONEYWELL INTERNATIONAL, INC.**

Honeywell International, Inc. (“Honeywell”), by its attorneys, hereby replies to the oppositions that were filed¹ in response to Honeywell’s petition for reconsideration of the Commission’s rule regarding the use of 76-77 GHz radar systems by aircraft on the ground.²

Honeywell proposes an urgently-needed application of the 76-77 GHz band for use in wingtip anti-collision systems to protect aircraft during taxi and ground maneuvering. The oppositions concentrate almost exclusively on procedural arguments and fail to present any technical impediments to Honeywell’s proposed use. Instead, the oppositions appear largely calculated to delay Commission action on Honeywell’s service. Honeywell therefore urges the Commission to further the public interest by granting its petition for reconsideration forthwith.

¹ Opposition of Xsight Systems Inc. to Petitions for Reconsideration, ET Docket No. 11-90, RM-11555, ET Docket No. 10-28 (Dec. 3, 2012) (“*Xsight Opposition*”); Opposition of Robert Bosch LLC to Petitions for Reconsideration, ET Docket No. 11-90, RM-11555, ET Docket No. 10-28 (Dec. 3, 2012) (“*Bosch Opposition*”); Opposition of the Mercedes-Benz, LLC to Petitions for Reconsideration, ET Docket No. 11-90, RM-11555, ET Docket No. 10-28 (Dec. 3, 2012) (“*MBUSA Opposition*”).

² The deadline for oppositions to Honeywell’s petition was December 3, 2012. Replies are due 10 days after this, or December 13, 2012. Honeywell is permitted three additional business days because it was served by mail, resulting in a deadline for this filing of December 18, 2012.

I. THERE IS AN URGENT AND RECOGNIZED PUBLIC INTEREST NEED FOR ANTI-COLLISION AIDS SUCH AS HONEYWELL’S WINGTIP RADAR

Wingtip collisions are a priority issue because of the enormous impact they have on air traffic operations and the frequency of such occurrences. Earlier this month an Indian airline Boeing 737 clipped a light tower while taxiing to the runway.³ Another accident occurred in August 2012 when a Boeing 767 maneuvering on the ground struck and damaged a parked MD-80.⁴ As more aircraft are being added to already congested airports and as larger aircraft (e.g., Airbus A380) are entering fleets, the frequency of these accidents is increasing. This underscores the vital public interest need in developing systems to meet the objectives given in the September 4, 2012 recommendation of the National Transportation Safety Board (“NTSB”) that the FAA require the use of anti-collision aids to provide cockpit indication “that will help pilots determine wingtip clearance and path during taxi.”⁵

Although incidents such as these do not involve a high safety risk, they do involve substantial costs, both in terms of repairs to aircraft and ground facilities and in lost time for passengers due to flight delays and cancellations.⁶

³ Hakeem Irfan, Passengers have close shave after SpiceJet airplane loses part of its wing after it hits lamp post, *The Daily Mail* (Dec. 7, 2012) (available at <http://www.dailymail.co.uk/indiahome/indianews/article-2244883/SpiceJet-plane-loses-wing-takeoff.html>).

⁴ Mike Ahlers, Miami Dolphins plane clips another at Dallas airport, *CNN*, Aug. 30, 2012 (available at <http://www.cnn.com/2012/08/30/travel/miami-dolphins-plane-accident/index.html>).

⁵ Letter from Deborah A. P. Hersman, Chairman, NTSB, to the Honorable Michael P. Huerta, Acting Administration, Federal Aviation Administration, Re: A-12-48, 49 (Sept. 4, 2012) (available at <http://www.nts.gov/doclib/reclatters/2012/A-12-048-049.pdf>).

⁶ The Flight Safety Foundation estimates that losses from apron damage are costing the world’s air carriers in the vicinity of US\$4 billion every year. *Equipment Damage and Human Injury on the Apron – Is it a cost of doing business?*, PROCEEDINGS OF THE 35TH ANNUAL INTERNATIONAL SEMINAR OF INTERNATIONAL SOCIETY OF AIR SAFETY INVESTIGATORS, USA, VOL. 8, 67-72 (2004) (available at http://www.isasi.org/docs/Proceedings_2004.pdf).

Despite this well-publicized and widely-acknowledged risk, one of Honeywell's opponents, Xsight, attempts to downplay the urgent public need for anti-collision aids. Xsight transparently mischaracterizes the NTSB recommendation as “merely a letter to the FAA.”⁷ In fact, NTSB recommendations are a very important component of the FAA rulemaking process and, of the literally thousands of recommendations the NTSB has made, the NTSB and the FAA agree on a course of action for about 88 percent of them.⁸

Xsight also asserts that “the FAA no doubt would like to consider [the NTSB Safety Recommendation] in great detail before the FCC takes a position on Honeywell's novel technology.”⁹ As the Commission is well aware, the FAA's deliberative process can function concurrently with the FCC's consideration of Honeywell's petition. Section 15.253(a) of the Commission's rules currently precludes the FAA from authorizing the use of Honeywell's technology even if the FAA decides that it would serve the public interest. If the FCC grants Honeywell's position, rather than encumbering the FAA's flexibility, it would enable it.

To this end, Honeywell is working with the FAA on its technology and has regularly updated the FAA, including its spectrum management office, regarding this FCC proceeding and the status of Honeywell's petition. The FAA is fully capable of communicating its views on Honeywell's technology to the FCC and Honeywell has encouraged the FAA to do so.

Finally, Xsight claims the NTSB recommendation “deals only with visual aids” when the text of the letter explicitly contradicts this interpretation, consistently phrasing its

⁷ *Xsight Opposition* at 2.

⁸ FAA & NTSB's “Most Wanted” Recommendations, Federal Aviation Administration (Feb. 18, 2010) (available at http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=11186).

⁹ *Xsight Opposition* at 2.

recommendation as “the need for an anti-collision aid, *such as* a camera system.”¹⁰ A radar-based system may prove to be a superior solution, providing anti-collision warning and spatial awareness without requiring pilots to divert visual attention from maneuvering the aircraft.

The need for anti-collision aids such as Honeywell’s system is urgent, well documented, and recognized by aviation authorities. Therefore, consideration of Honeywell’s petition is strongly in the public interest and the Commission should grant the petition and revise its rules to permit operation of anti-collision radar in the 76-77 GHz band on aircraft while maneuvering on the airport surface.

II. THE OPPOSITIONS PRESENT NO TECHNICAL REASON WHY AIRCRAFT RADAR CANNOT OPERATE IN THE 76-77 GHZ BAND

The oppositions of Bosch and MBUSA express concern that Honeywell should “establish[] the level of compatibility with deployed automotive radar systems in the 76-77 GHz band,” and that Honeywell does not provide “conclusive evidence” that aircraft-mounted systems can co-exist with vehicle radar systems.¹¹ None of the oppositions, however, offer any technical explanation as to how Honeywell’s proposed use differs from the uses and environments for which the band has been allocated and is currently being used.

A. The Band is Appropriate and Necessary for Aircraft Anti-Collision Systems

The 76-77 GHz band is well suited for use by anti-collision radar systems for taxiing aircraft for the same reasons it is appropriate for other vehicles. The extremely limited space in an aircraft wingtip requires the use of a very small sensor utilizing an operating band with sufficiently narrow beamwidths to provide the required angular resolution in both the horizontal

¹⁰ *NTSB Recommendation* (emphasis added).

¹¹ *Bosh Opposition* at 16; *MBUSA Opposition* at 5.

and vertical planes. The 76-77 GHz band provides this capability and is already allocated for anti-collision systems. Honeywell's petition seeks only to clarify that vehicular ground operations include use of this band on aircraft when the aircraft is operated in a mode identical to other ground vehicles, with no greater potential for interference than such systems.

In fact, the impact of aircraft wingtip radars on vehicular radars will likely be lower than the effect of vehicular radars on each other. This is because anti-collision radar systems for aircraft need only perform at taxi speeds (generally not exceeding 25 miles per hour) compared with freeway speeds for automobile radars. Because of this, and to improve vertical resolution (important for establishing wingtip clearance), a wider pattern antenna with a lower Equivalent Isotropic Radiated Power ("EIRP") is likely to be used. This would result in an EIRP of 31 dBm, which is 800 times lower than the 50 dBm allowed for the both vehicular and fixed radars operating at airports.

The design of Honeywell's wingtip radar system dramatically reduces the range of such radar and with it the potential for interaction with other radar systems. Even if other manufacturers choose to produce aircraft anti-collision radar systems that operate at the maximum permitted power, they could cause no more interference than currently authorized vehicular radar systems, including those on cars and trucks that operate on airport movement areas. In addition, the separation of aircraft at airports from vehicles on public roadways is substantially greater than the lane and traffic separation between individual vehicles on public roadways, further limiting the potential for interference.

The 76-77 GHz band is allocated for anti-collision aids, as well as for radar use at airports. The band is spectrally well suited for this application, and has characteristics required for wingtip radar. The oppositions have not shown any reason why Honeywell's proposed use is

inconsistent with the current use of the band, and Honeywell has affirmatively shown that its system is consistent with the current allocation and operating environment of the band. Therefore the Commission should grant Honeywell's position without delay.

III. HONEYWELL'S JULY 5TH LETTER SHOULD CONTINUE TO BE TREATED AS A PROCEDURALLY PROPER PETITION FOR RECONSIDERATION

The oppositions' near total reliance on procedural arguments implicitly concedes the lack of substantive or policy objection to Honeywell's petition. In addition to Honeywell's technology being urgently needed and technically sound, Honeywell's petition is procedurally proper and should be granted.

Honeywell initially filed a letter with the Commission on July 25, 2012 in order to seek review of the Commission's *Order* regarding the proper interpretation of Section 15.253(a) of the Commission's rules with respect to whether it prohibited operation of a radar system on aircraft while on the ground.¹² On October 1, 2012, Honeywell notified the Commission of its desire for the July 25 letter to be treated as a petition for reconsideration.¹³ The opposing parties objected to this treatment, asserting various procedural reasons why the July 25 letter cannot be treated as such a petition. In fact, there is substantial precedent for the Commission's treatment of Honeywell's letter as a petition for reconsideration – the issues raised by Honeywell are within the scope of the Commission's rulemaking proceeding and Honeywell has adequately explained why it could not have participated previously in the rulemaking proceeding.

¹² Letter from Jay S. Newman, Honeywell International, Inc., to Bruce Romano, Federal Communications Commission, July 25, 2012.

¹³ Letter from Bruce A. Olcott, Squire Sanders (US) LLP, to Marlene H. Dortch, Federal Communications Commission, October 1, 2012.

A. Honeywell’s Petition for Reconsideration is Timely

Honeywell’s petition is timely because its July 25, 2012 letter was filed after the Commission action and well in advance of the September 12 deadline for petitions for reconsideration. Xsight’s claim that the July 25 letter does not “state[] that Honeywell is seeking reconsideration of a Commission decision”¹⁴ is unavailing because Commission has ample authority and precedent for treating improperly captioned pleadings as petitions for reconsideration when they “clearly seek review of Commission action.”¹⁵ The Commission has also concluded that a request for “clarification” should properly be treated as a petition for reconsideration “because it requests that we reconsider our decision.”¹⁶ This policy preserves the Commission’s ability to consider meritorious arguments in timely pleadings as well as to clearly apply Sections 1.106(f) or 1.429(d) of the Commission’s rules to dismiss untimely pleadings.¹⁷ Therefore, the Commission should continue to treat Honeywell’s pleading as a petition for reconsideration and address the important substantive issues it raises.

B. Honeywell’s Request for Modification of Section 15.253(a) Was Well Within the Scope of the 76-77 GHz Proceeding

The issues raised in Honeywell’s petition are well within the scope of the 76-77 GHz proceeding and the *Order* reflects that the parties discussed at length the spectral environment of the 76-77 GHz band and, in particular, the use of 76-77 GHz band radars on moving vehicles and

¹⁴ *Xsight Opposition* at 5.

¹⁵ See e.g. *RECONROBOTICS, INC. Request for Waiver of Part 90 of the Commission’s Rules, WP Docket No. 08-63*, Order on Reconsideration, DA 11-675, ¶ 1 n.5 (rel. Apr. 15, 2011).

¹⁶ *800 MHz SMR Licensees*, Order, FCC 98-167, ¶ 9 (rel. Aug. 27, 1998).

¹⁷ *Richard Mann d/b/a The Antique Radio Collector*, Order, DA 12-745, ¶ 1 n.4 (rel. May 11, 2012) (treating pleading as a petition for reconsideration to allow the Bureau the opportunity to consider novel issues of law and fact not previously raised).

at airports. The two rationales for the Commission’s rule changes were “improved collision avoidance...and... improved safety for airport personnel and equipment”¹⁸ with the goal of “enabling the automotive and aviation industries to develop enhanced safety measures for drivers and the general public.”¹⁹ Concluding that “airport runways, taxiways, and other non-public areas at airports are generally not near public roadways” the Commission rejected concerns that only vehicular radars should be able to operate under the Part 15 rules.²⁰ In addition, the Commission noted that then, as now, “there are no conclusive test results indicating that there would be incompatibility issues between [vehicular and fixed] radar.”²¹

The use of anti-collision wingtip radar on aircraft is a natural application of this technology and a logical outgrowth of the Commission’s conclusions of fact and law. In its analysis of vehicular anti-collision systems and fixed radar at airports, the Commission considered all the factors relevant to the operation of 76-77 GHz anti-collision radar for aircraft maneuvering on the ground. The fact that the wingtip radars will operate on taxiing aircraft rather than on other vehicles does not substantively alter the Commission’s analysis. The oppositions’ attempts to draw a distinction between these services appear to be motivated less by earnest concern and more by an attempt to manufacture delay in the implementation of these important services.

¹⁸ *Amendment of Sections 15.35 and 15.253 of the Commission’s Rules Regarding Operation of Radar Systems in the 76-77 GHz Band, Amendment of Section 15.253 of the Commission’s Rules to Permit Fixed Use of Radar in the 76-77 GHz Band, ET Docket No. 11-90, RM-11555, ET Docket No. 10-28, Report and Order, FCC 12-72, ¶ 1 (“Order”).*

¹⁹ *Id.*, ¶ 2.

²⁰ *Id.*, ¶ 26.

²¹ *Id.*, ¶ 10.

C. Critical Facts Arose After the Close of the 76-77 GHz Proceeding Further Justifying Honeywell’s Petition for Reconsideration

Honeywell’s confirmation of the feasibility of its wingtip radar and the NTSB’s release of its wingtip collision recommendation on September 2, 2012 are circumstances that occurred after the release of the *Order* and could not have been known by Honeywell prior to the last opportunity to present these facts to the Commission.²² Although Bosch urges that Honeywell “should have realized [...] that the proceeding would or could have a profound effect on its technology,”²³ this assumes that Honeywell had such a technology in a viable form.²⁴ As Honeywell has explained, the wingtip radar system at issue was in the research and development phase and had not been determined to be a feasible technique from an engineering standpoint, much less a market-ready product subject to regulation.

It would be a curious and chilling burden on innovation to require research and development engineers to constantly canvas all existing and potential federal rulemaking proceedings for their potential impact on exploratory research into unproven applications with uncertain specifications. Further, none of the parties have alleged, much less provided, any technical support showing that Honeywell’s system is materially different from that of the vehicular applications that are well understood technically and exhaustively discussed in the record. Honeywell’s petition is therefore based on facts and circumstances that arose after the last opportunity to present them to the Commission, and Honeywell’s petition falls within the

²² 47 C.F.R. 1.429(b)(1-2).

²³ *Bosch Opposition* at 15.

²⁴ *Id.* at 1. Ironically, Bosch’s argument that Honeywell should have acted more expeditiously is raised in an opposition that Bosch filed two days after the deadline for oppositions, purportedly because of the need to secure “necessary approvals within Bosch.” *Id.* at 1 n.1. Honeywell, however, will not attempt to hide behind procedural arguments and is not seeking the dismissal of Bosch’s petition as untimely.

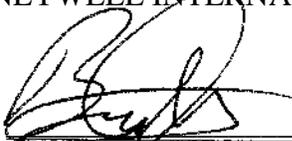
scope of the proceeding's extensive record. Therefore, Honeywell's petition is procedurally proper and consideration of its substance is in the public interest. The Commission should therefore continue to treat it as a petition for reconsideration and promptly grant Honeywell's request for modification to Section 15.253(a) of the Commission's rules.

IV. CONCLUSION

Honeywell, in close cooperation with the air transport industry, is seeking to take advantage of extensive prior art in the 76-77 GHz band to deploy a wingtip anti-collision radar system that can rapidly improve the reliability and efficiency of aircraft operations while lowering costs. The oppositions present no convincing legal, technical, or policy reasons against the use of the 76-77 GHz band for aircraft ground operation. Instead, the primary objective of the filed oppositions appears to be achieving delay for competitive reasons. Honeywell's petition is technically and procedurally sound and demonstrably in the public interest. The Commission should therefore grant Honeywell's petition for reconsideration without delay.

Respectfully submitted,

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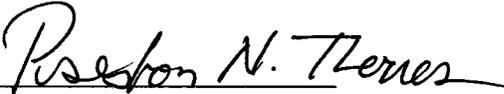
CERTIFICATE OF SERVICE

I, Preston N. Thomas, hereby certify that on this 18th day of December, 2012, I caused copies of the foregoing "Reply of Honeywell International, Inc." to be placed in the U.S. Postal Service, first class postage prepaid, addressed to the following persons:

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