

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Amendment of Parts 1, 2, 15, 90 and 95 of the Commission’s Rules to Permit Radar Services in the 76-81 GHz Band	)	ET Docket No. 15-26
	)	
Amendment of Part 15 of the Commission’s Rules to Permit the Operation of Vehicular Radar Services in the 77-78 GHz Band	)	RM-11666
	)	
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
	)	
Amendment of the Commission’s Rules to Permit Radiolocation Operations in the 78-81 GHz Band	)	WT Docket No. 11-202

**COMMENTS OF XSIGHT SYSTEMS**

Xsight Systems, Inc. (“Xsight”) hereby submits these comments in response to the Notice of Proposed Rulemaking and Reconsideration Order released by the Federal Communications Commission (“FCC” or “the “Commission”) in the above-captioned proceeding.<sup>1</sup> Xsight appreciates the Commission’s recognition of the critical role radar technologies continue to play in the modern, integrated public safety ecosystem of the twenty-first century. Xsight generally supports the Commission’s efforts to unify these radar technologies under one licensing model

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<sup>1</sup> *Amendment of Parts 1, 2, 15, 90 and 95 of the Commission’s Rules to Permit Radar Services in the 76-81 GHz Band, et al.*, ET Docket No. 15-26 *et al.*, Notice of Proposed Rulemaking and Reconsideration Order, FCC 15-16 (rel. Feb. 5, 2015)(the “NPRM”).

and one allocated frequency band, provided that doing so does not result in interference to Xsight's existing or future operations.

## I. INTRODUCTION

As the Commission is aware, the story of Xsight begins with the 2000 crash of the Concorde in France, resulting in 113 deaths.<sup>2</sup> The French Bureau of Enquiry and Analysis for Civil Aviation Safety determined that a metal strip lying on the runway cut one of the aircraft's tires on takeoff, causing a shockwave that ruptured the plane's fuel tank and contributed to the crash.<sup>3</sup> Since starting work on this important safety issue in 2001, the Xsight team's mission has been to design and build products that successfully identify and locate foreign object debris ("FOD") on airport surfaces. The Xsight FODetect technology not only results in more efficient, streamlined takeoff and landing schedules for flights, but on a daily basis Xsight's products enhance aviation safety for air travelers across three different continents.<sup>4</sup>

Collocated with a runway's edge lights spaced roughly 200 feet apart, Xsight's FOD detection units constantly scan the entire runway for any form of FOD, including metal, wildlife, and snow. A typical deployment involves FOD detection units containing both an electro-optical camera and a radar operating in the 76-77 GHz band.<sup>5</sup> These independent, dual-technology sensors provide automatic notification when FOD is detected and enable operators to quickly

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<sup>2</sup> See, e.g., *Concorde crashes in France, 113 Killed*, ABC News, Jul. 25, 2000, available at: <http://abcnews.go.com/International/story?id=83071>.

<sup>3</sup> Bureau of Enquiry and Analysis, *Accident on 25 July 2000 at La Patte d'Oie in Gonesse (95) to the Concorde registered F-BTSC operated by Air France*, Jan. 15, 2002, at 14, available at: <http://www.bea-fr.org/docspa/2000/f-sc000725a/pdf/f-sc000725a.pdf>.

<sup>4</sup> Xsight's products are currently operational at four airports: Tel Aviv Ben Gurion, Paris Charles de Gaulle, Boston Logan, and Suvarnabhumi Bangkok.

<sup>5</sup> The Commission previously reviewed and approved Xsight's FODetect product. See *Grant of Equipment Authorization*, FCC ID ZNWFODE6MWR (granted May 2, 2013).

locate and identify the object. Xsight’s products are fully integrated with mobile platforms, facilitating efficient removal of detected FOD by allowing runway crews to access Xsight’s software on their tablets and mobile devices. Unsurprisingly, Xsight’s innovative products have been favorably reviewed by the Federal Aviation Administration (“FAA”)<sup>6</sup> and continue to be the preferred choice for airports looking to implement a modern FOD solution.<sup>7</sup> The Xsight FODetect systems currently installed around the world have proved themselves to be effective by successfully detecting and identifying numerous hazardous objects that could have caused major damage to aircraft, had they gone undetected.

## **II. XSIGHT SUPPORTS THE COMMISSION’S PROPOSAL TO ADOPT A SINGULAR LICENSING MODEL FOR RADAR TECHNOLOGIES**

As an initial matter, Xsight supports the Commission’s proposal to “consolidate the FOD detection radar operations in the 76-81 GHz band under Part 95 on a non-exclusive licensed basis.”<sup>8</sup> Xsight is intrigued by the administrative efficiencies that can be realized through operation of its products in a “singular licensing model” offered under Part 95 of the Commission’s rules.<sup>9</sup> Avoiding any unnecessary “application and licensing burdens” will enable Xsight to continue to quickly and proactively deploy its FOD detection units in support of the rapidly growing commercial aviation industry.<sup>10</sup>

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<sup>6</sup> See DOT/FAA/TC-12/22, *Performance Assessment of a Hybrid Radar and Electro-Optical Foreign Object Debris Detection System* (June 2012).

<sup>7</sup> Xsight was recently awarded a contract to install its products at Seattle-Tacoma International Airport and plans to be operational there by the end of 2015.

<sup>8</sup> NPRM at ¶46.

<sup>9</sup> *Id.* at ¶48.

<sup>10</sup> *Id.*

As a corollary to the implementation of the proposed singular licensing regime, Xsight strongly supports the Commission’s proposal to grandfather – for the life of the equipment – “FOD detection radars that are already installed or in use in the 76-81 GHz range.”<sup>11</sup>

Grandfathering existing operations is an important component of the proposed licensing regime and would allow Xsight to continue operating its currently deployed FOD systems. Xsight strongly encourages the Commission to adopt its grandfathering proposal.

### **III. THE SINGULAR LICENSING MODEL IS UNLIKELY TO RESULT IN FOD RADARS INCURRING INTERFERENCE TO THEIR EXISTING OR FUTURE OPERATIONS**

Although Xsight supports the proposed singular licensing model, this simplified model should not be allowed to jeopardize the ability of existing or future FOD detection systems to operate without incurring unacceptable levels of interference. Xsight agrees that “the limited geographic usage of FOD detection radars (*i.e.*, at airports and not illuminating public roadways) along with the propagation characteristics of the millimeter wave band yields negligible risk of interference potential between vehicular and FOD detection radars.”<sup>12</sup> Given that Xsight’s FOD detection products (i) are exclusively confined to an airport’s surfaces, (ii) employ highly directional millimeter wave antennas, (iii) do not incur any interference from currently deployed vehicular radars, and (iv) are equipped to recognize and mitigate transient interference from existing operators in the 76-77 GHz band, Xsight does not anticipate incurring unacceptable levels of interference from vehicular radars in the unified 76-81 GHz band.

Xsight is fully committed to supporting any technology that improves aviation safety and appreciates the “important public benefits” that the operation of wingtip radars in the 76-77 GHz

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<sup>11</sup> NPRM at ¶49.

<sup>12</sup> *Id.* at ¶35.

band could potentially provide.<sup>13</sup> Xsight believes FOD systems and wingtip radars can coexist. This is based on the (i) architecture of the FOD system today, compromising identical radars every 200 feet to avoid intermittent interference, (ii) the proposed transient nature of wingtip radar operations, and (iii) the current indication that the wingtip radars will operate mainly at the gate area and through an airport's taxiways. Further, since the Commission proposes to allocate only 1 GHz of spectrum to the wingtip radars, their operation will necessarily be constrained within the band.<sup>14</sup>

Thus, the Commission is correct to conclude that “it *may* be possible to create time and space separation between FOD detection radar and wingtip radar application uses” which “*may* promote compatibility between the two operations.”<sup>15</sup> Xsight is willing and able to work with Honeywell to engage in mutual exchanges of information and testing to demonstrate that both systems can coexist without interference. Consistent with that approach, Xsight welcomes the opportunity to reinitiate the dialogue it started with Honeywell in 2013, which did not evolve beyond the exchange of correspondence. Given the immediate benefits Honeywell stands to realize should the proposed rules in this proceeding be adopted by the Commission, Xsight anticipates that the discussions between the parties are likely to be more fruitful at this time.

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<sup>13</sup> *Id.* at ¶57. Xsight's experience with both optics and radars at airports causes it to question the effectiveness of a collision avoidance system for aircraft based on radars, since as Honeywell indicated, the pilots cannot see the wingtips, which means that there will be blind reliance on the radar to potentially cause the aircraft to come abruptly to a halt. Our experience suggests that as a minimum, a camera system should be added, if not solely be the sensor of choice for such system.

<sup>14</sup> *Id.* at ¶61. With the expectation that the FOD detection and wingtip radar systems can coexist, and if the Commission wants to take extra precaution, it could potentially allocate a different one gigahertz frequency range (*e.g.*, 80-81 GHz) to wingtip radar applications.

<sup>15</sup> *Id.* at ¶59 (emphases added).

Xsight will supplement the record in this proceeding detailing the results of those meetings and discussions. Xsight hopes and expects that this supplemental information will be valuable to the ongoing record of this proceeding. Regardless of whether the supplemental information tends to support or rebut the stated presumptions and proposed rules in the NPRM, Xsight believes that its submissions should be duly incorporated into any Order issued by the Commission.

#### **IV. CONCLUSION**

For the reasons stated herein, Xsight supports the Commission's proposal to accommodate various radar technologies in the 76-81 GHz band under one unified licensing regime, as long as the record in this proceeding demonstrates that the proposed model will not result in existing or future FOD systems experiencing unacceptable levels of interference.

Respectfully submitted,

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