



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Telecommunications and**  
**Information Administration**  
Washington, D.C. 20230

NOV 21 2011

Mr. Julius Knapp  
Chief, Office of Engineering and Technology  
Federal Communications Commission  
445 12th Street SW  
Washington, DC 20554

RE: 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, *Notice of Proposed Rulemaking*, FCC No. 11-79 (rel. May 25, 2011)

Dear Mr. Knapp:

The National Telecommunications and Information Administration (NTIA) has participated in the discussions between the Federal Communications Commission and the Federal Aviation Administration (FAA) with respect to the potential use of unlicensed systems in support of safety operations at airports.<sup>1</sup> Accordingly, NTIA forwards the enclosed FAA comments concerning the use radars at airports to locate foreign object debris for your consideration in the above-referenced docket.

If you have any questions regarding these comments, please contact Mr. Edward M. Davison ([edavison@ntia.doc.gov](mailto:edavison@ntia.doc.gov); 202-482-5526) of my staff.

Sincerely,

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management

Enclosures

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<sup>1</sup> NTIA authorizes the use of the radio spectrum by the U.S. Government, establishes the policies concerning spectrum assignments and the use of radio stations owned and operated by the U.S. Government, and represents the views of the Executive Branch before the Commission. See 47 U.S.C. § 902 (b)(2)(A), (J), (K).



U.S. Department  
of Transportation  
Federal Aviation  
Administration

OCT 18 2011

Mr. Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management  
1401 Constitution Ave., SW  
Washington, DC 20230

Dear Mr. Nebbia:

The Federal Aviation Administration (FAA) would like to advise you of its position on the authorization of Foreign Object Debris (FOD) radars by the Federal Communications Commission (FCC).

The FAA Spectrum Engineering Services:

**1. Supports the authorization of FOD radars by the FCC on a licensed basis to support safety operations at airports; FAA maintains that non-licensed authorization cannot support safety operations at airports.**

Any potential for use by the National Airspace System (NAS) must first go through the proper approval processes. This would include, but is not limited to, required negotiations with any and all affected Unions. If it is decided that Air Traffic Controllers will use FOD radar as an aid to safe airport operations, the radar signals shall be protected from harmful interference. Such interference, if undetected, could cause loss of life and/or property. However, even if detected, such interference could cause significant disruptions to aircraft movement at the airport.

**2. Supports licensing of FOD radars in either radiolocation or radionavigation services.**

The FAA places no conditions on the bands for use, except that the allocations support radiodetermination (radar). The radionavigation service<sup>1</sup> would appear appropriate due to its recognition as a safety service. The radiolocation service may be appropriate with sufficient regulatory and practical measures in place. One regulatory measure would be a primary allocation status for FOD radars. A practical measure would be demonstrated assurance that FOD radars and other systems (licensed or non-licensed) can operate compatibly in the same spectrum.

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<sup>1</sup> **Radionavigation:** Radiodetermination used for the purposes of navigation, including obstruction warning. (International Telecommunication Union Radio Regulation (RR)). Radionavigation services receive specific mention in the definition of harmful interference (RR 1.169), and in that of a safety service (RR1.59). The RR 4.10 ensures that such harmful interference to radionavigation services receives the highest priority in measures to control and clear its effects.

**3. Only supports FOD radars that are compliant with the Advisory Circulars AC 150/5220-24, Airport FOD Detection Equipment, and AC 150/5210-24, Airport FOD Management.**

The Advisory Circulars define the FAA's specifications for the use of FOD radars at airports.

**4. Can support sharing the FOD radar spectrum with the vehicular radar spectrum under special circumstances.**

A question was raised about FOD radars if they share the spectrum with vehicular collision avoidance radars, which now operated on a non-licensed, non-interference basis (NIB). Specifically, *what would be the FAA's position if vehicular radars were elevated to primary status?* Automotive radars on an NIB potentially present operational challenges and regulatory problems if interference to either system occurs. Neither safety service (assuming vehicular radars are considered safety systems) shall accept interference; hence primary status becomes a challenge. Regulatory status alone does not ensure compatibility. Compatibility will have to be designed into both systems.

The FAA codifies its position on non-licensed devices in Order 6050.19<sup>2</sup>, Section 2, paragraph 13.a. that reads in part "Operators of non-licensed devices have no vested or recognized right to continued use of the device. They are not allowed to cause interference to Federal or non-Federal authorized receivers. In addition, non-licensed device operations must accept any interference from any Federal or non-Federal authorized transmission system; that is, they have no right of protection. Due to the severe operational limitations imposed on these non-licensed systems, they are not acceptable for satisfying any radio-communications requirements for safety services.", and paragraph 13.b. that reads "Because of the severe operational constraints associated with the use of non-licensed devices, Spectrum Engineering Services is to be consulted before purchase of any such device. Spectrum Engineering Services needs to ensure that any such device: a) will not cause interference to civil aviation safety service systems, and b) will not be considered for safety service requirements (see a above)." This process is aimed at identifying devices that should be precluded from purchase by the FAA due to their operational unsuitability. "Any federal agency may forbid the operation of any non-licensed device by any user under its authority." The FOD radars are not FAA systems, but their output is intended for the control of air traffic. Therefore, to be suitable for use in the NAS the FOD radars must be compliant with all FAA requirements for National Airspace systems to be considered for use.

It is feasible that an airport authority could allow non-licensed FOD radars to operate under FCC Part 15 authorization. However, the FAA would not be able to use the output as it would fall outside of our required Safety Management System, FAA Orders, Maintenance, Availability and Reliability controls and multiple other requirements all designed to ensure

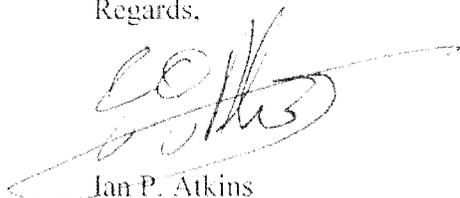
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<sup>2</sup> This Order is being revised.

the safety of the National Airspace System. Further, given our position on the use of non-licensed devices, and the operational requirements set out previously, we believe the deployment of non-licensed FOD radar can not result in use by the FAA.

Please contact Mr. Michael Richmond at (202) 493-4157 or by e-mail [michael.richmond@faa.gov](mailto:michael.richmond@faa.gov) if you have any questions.

Regards,

A handwritten signature in black ink, appearing to read "JP Atkins", with a long horizontal flourish extending to the right.

Jan P. Atkins  
Manager/Director  
Spectrum Engineering Services



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

NOV 17 2011

Mr. Karl B. Nebbia  
Associate Administrator  
National Telecommunications and  
Information Administration  
1401 Constitution Ave., SW  
Washington, DC 20230

Dear Mr. Nebbia:

The Federal Aviation Administration (FAA) would like to advise you of an exception to its position on the authorization of Foreign Object Debris (FOD) radars by the Federal Communications Commission (FCC) that I provide to you in a letter dated October 13, 2011.

The FAA Spectrum Management Group:

Supports the authorization of FOD radars by the FCC on a non licensed basis to support safety operations at airports, if each radar based primary sensor is deployed with at least one other non-radio-frequency based primary sensor (e.g., optical). The non-radio-frequency based primary sensor must comply with the FAA Advisory Circulars AC 150/5220-24, Airport FOD Detection Equipment, and AC 150/5210-24, Airport FOD Management alone (i.e., without the radio-frequency based primary sensor in use).

Any use of FOD radars, directly or indirectly by the National Airspace System (NAS), is likely to affect the movement of aircraft. As a result at least two primary sensors of differing technology are required to maximize detection and reduce false indication. The redundancy is also required in the event that one of the types of primary sensor is disabled by external means.

If you have any questions, please contact Mr. Michael Richmond at (202) 493-4157 or by e-mail [michael.richmond@faa.gov](mailto:michael.richmond@faa.gov).

Regards,

A handwritten signature in black ink, appearing to read "Ian P. Atkins".

Ian P. Atkins  
Group Manager, Spectrum  
Engineering Services