



January 30, 2019

Mr. Donald Stockdale
Bureau Chief, Wireless Telecommunications Bureau
Federal Communications Commission
445 12th Street
SW Room TW-B204
Washington, DC 20554
(Submitted Electronically)

Re: Petition for Rulemaking, Aeronautical Utility Mobile Stations, 47 C.F.R. §87.345 and §87.349

Dear Mr. Stockdale:

On behalf of our airport members, Airports Council International-North America (ACI-NA) respectfully requests that the Federal Communications Commission (FCC) amend its rules governing aeronautical utility mobile stations (AUMS) broadcasting on the Universal Access Transmitter (UAT) frequency of 978.0 MHz to transmit outside of airport movement areas, to encompass the full air operations area (AOA) to enhance the safety and efficiency of airport airside operations.

ACI-NA is the premier trade association that represents airport operators across United States and Canada. Our members operate 366 airports in North America, enplaning over 95% of domestic and almost 100% of international passengers and cargo in the United States and Canada. These airports include numerous large hub airports that have already deployed or are planning to deploy AUMSs and are seeking to maximize the safety and operational benefits associated with them.

BACKGROUND

Airport operators and their regulators have long recognized the safety benefits of being able to track ground vehicles on the airport surface. Such tracking information can be displayed on surface surveillance displays in airport traffic control towers, on moving map displays in aircraft cockpits or ground vehicles, or in airport operations centers. Moreover, such surveillance data can also be used by critical safety systems—notably runway incursion warning systems—to prevent potentially catastrophic collisions between aircraft and ground vehicles in the runway environment.

Since the early 1990s, the FAA, airport operators, and technology providers have been seeking ways in which ground vehicles can be tracked on airfields so that air traffic controllers and airport and/or airline ramp controllers have better situational awareness of the locations of these vehicles, especially in low visibility conditions when visual surveillance from airport traffic control towers or ramp control facilities may be difficult or impossible.

More recently, industry attention has turned to the use automatic dependent surveillance-broadcast (ADS-B) transponders to provide accurate and rich surface surveillance data to the

FAA, flight operators, and airport operators. The FAA has invested tens of millions of dollars to provide a robust network of ground stations to facilitate use of ADS-B for aircraft surveillance both on the ground and in the air. Flight operators—facing a mandate to equip their aircraft by 2020—are also spending millions of dollars to equip their aircraft with necessary ADS-B.

Much like aircraft, ground vehicles can be equipped with ADS-B transponders, enabling entities with the ability to receive ADS-B transmissions to track these vehicles and assess their proximity to other vehicles (ground vehicles or aircraft) or critical airside facilities (e.g., runways, taxiways, taxilanes, aircraft parking positions).

Both airport operators and the FAA have recognized the robust safety benefits that come with enhanced surface situational awareness that comes with ADS-B equipped ground vehicles. As noted stated in FAA Advisory Circular 150/5220-26¹:

Every year, there are incidents and accidents involving aircraft and vehicles at airports that have potentially serious consequences. Many of these events occur in periods of reduced visibility, which can result in a loss of situational awareness for flight crews and air traffic controllers. The FAA is in the process of deploying several systems and technologies to help reduce the number and severity of these incidents. Automatic Dependent Surveillance – Broadcast (ADS-B) has been identified as a cornerstone technology in the FAA’s Next Generation Air Transportation System (NextGen) initiative to modernize the safety, efficiency, and capacity of the National Airspace System. ADS-B will provide improved surveillance in the terminal, en route, and on surface environments, and will provide equipped aircraft with shared situational awareness via a cockpit display of proximate traffic. In order to achieve the benefits of ADS-B on the airport surface, surface vehicles and aircraft should be equipped with the ability to transmit ADS-B messages.

At airports with no surface surveillance, ADS-B can serve as a means to improve situational awareness for both air traffic control and aircraft operators equipped with the ability to receive and display ADS-B messages. This capability provides for a high level of safety. The inclusion of airport vehicles into the surface surveillance picture gives air traffic controllers and operators one more way to identify traffic issues, understand the most efficient way to proceed on the airport surface, and avoid incursions.

At airports already equipped with surface surveillance, such as Airport Surface Detection Equipment – Model X (ASDE-X), ADS-B will provide pilots with improved communication with air traffic control and efficiency of operations. ASDE-X information is fed into the Traffic Information Service-Broadcast (TIS-B) service and could provide pilots with a complete surface picture. This situational awareness can be employed to provide supplemental benefits to existing surface surveillance and provide an additional resource for future applications of ADS-B in the surface environment.

This safety critical ground vehicle location information is equally important in both movement and non-movement areas. Unfortunately, the FCC’s current regulations regarding aeronautical mobile utility stations (AUMS)—a group of radio transmitters that include ground vehicle mounted ADS-B transponders that transmit data on both the 978.0 MHz UAT and 1090 MHz frequencies—prevents these transponders from being utilized effectively in non-movement

¹ FAA Advisory Circular 150/5220-26, *Airport Ground Vehicle Automatic Dependent Surveillance - Broadcast (ADS-B) Out Squitter Equipment*, FAA, November, 14, 2011.

areas, precludes the full value of the technology from being realized, and ultimately degrades business case decisions associated with airport acquisition of this safety-enhancing technology.

PRIMARY OBJECTIVES OF PROPOSED RULE CHANGES

The primary objectives of the proposed rule changes detailed in the following section of this petition are as follows:

1. To clarify how ADS-B transponders can be use on airports.
2. To enable safety-enhancing use of 978 MHz UAT transponders by ground vehicles in airport non-movement areas.

PROPOSED CHANGES TO 47 C.F.R. §87.345 AND §87.347

We request that the FCC make the following changes to 47 C.F.R. §87.345 and §87.347 as shown below. New text is shown in grey highlight. Proposed deletions are shown as strikethroughs.

Changes to §87.345

§87.345 Scope of service.

Aeronautical utility mobile stations provide communications for vehicles that are authorized to operating on an airport movement area, except for operations under §87.345 (f) below. An airport movement area is defined as the runways, taxiways and other areas utilized for taxiing, takeoff and landing of aircraft, exclusive of loading ramp and parking areas. Except as noted in §87.345 (c) and (f) below, aeronautical utility mobile stations shall only transmit when the vehicle is in the airport movement area, just prior to entering the airport movement area, and just after exiting the airport movement area.

(a) An aeronautical utility mobile station must monitor its assigned frequency during periods of operation except for operations under §87.345 (f) below.

(b) At an airport which has a control tower, control tower remote communications outlet station (RCO) or FAA flight service station in operation, communications by an aeronautical utility mobile station are limited to the management of ground vehicular traffic.

(c) Aeronautical utility mobile stations which operate on the airport's unicom frequency or the frequency 122.900 MHz are authorized only to transmit information relating to safety, such as runway conditions and hazards on the airport. These stations are authorized primarily for monitoring communications from and to aircraft approaching or departing the airport.

(d) Transmissions by an aeronautical utility mobile station are subject to the control of the control tower, the FAA flight service station or the unicom, as appropriate. When requested by the control tower, the flight service station or the unicom, an aeronautical utility station must discontinue transmitting immediately.

(e) Communications between aeronautical utility mobile stations are not authorized.

(f) Transmissions at frequency of 978 MHz by aeronautical utility mobile stations for Universal Access Transceiver service are authorized within all portions of the air operations area of the airport.

Changes to §87.349

§87.349 Frequencies.

(e) The frequency 978.0 MHz is authorized for Universal Access Transceiver data transmission.

(f) The Commission will assign frequency either 978 MHz or 1090 MHz for use by aeronautical utility mobile stations for ground vehicle identification and collision avoidance after coordination with the FAA, subject to the following conditions:

(1) The applicant must notify the appropriate Regional Office of the FAA prior to submission to the Commission of an application for a new station or for modification of an existing station. Each application must include the FAA Regional Office notified and date of notification.

(2) Eligibility is restricted to airport operators holding an FAA Airport Operating Certificate, and other entities approved by the FAA on a case-by-case basis to use frequency 1090 MHz for use by aeronautical utility mobile stations for ground vehicle identification and collision avoidance;

(3) No more than either two hundred 978 MHz or two hundred 1090 MHz aeronautical utility mobile stations will be authorized at one airport;

(4) Licenses are limited to only those locations that are within the vicinity of an FAA ASDE-X multilateration system or ADS-B equipment, and/or where the primary purpose for seeking transmit authorization is to provide surface data to aircraft and air traffic control authorities.

(5) Message transmission rates are limited as indicated in the tables below:

| 978 MHz ADS-B Message | Rate when moving | Rate when stationary |
|--------------------------|-------------------|----------------------|
| Surface Position Message | Once per second | Once per second |
| Mode Status | Every 4-5 seconds | Every 4-5 seconds |

| 1090 MHz ADS-B Message | Rate when moving | Rate when stationary |
|--|--------------------------|---------------------------|
| Surface Position Message (Types 5, 6, 7, 8) | Every 0.4 to 0.6 seconds | Every 4.8 to 5.2 seconds |
| Aircraft Operational Status (Type 31) | Every 4.8 to 5.2 seconds | Every 4.8 to 5.2 seconds |
| Aircraft Identification and Type (Type 2) | Every 4.8 to 5.2 seconds | Every 9.8 to 10.2 seconds |

SAFETY BENEFITS OF THE PROPOSED CHANGES

Specific safety benefits associated with the use of ground vehicle transponders in non-movement areas include:

- The ability for an airport to see its assets, whether for snow removal or ARFF or other equipment, provides several safety benefits. It aids in managing emergency and snow clearance operations in non-movement areas and enable multiple stakeholders to track snow clearance activities and estimate when ramp areas might be returned to service.
- Vehicle tracking in busy non-movement areas ensures that that ramp controllers, airline operations personnel, and airport operations personnel have common situational awareness, even in poor visibility, helping to prevent vehicle-aircraft collisions and other incidents.
- Vehicle tracking also provides valuable historical records of accidents, incidents, and near misses, enabling a more effective and proactive safety risk assessments of ramp hazards and more effective better accident and incident investigation.
- Enabling ground vehicle ADS-B transponders—specifically 978 MHz UAT transponders—to broadcast within non-movement areas eliminates potentially lost transponder signals as ground vehicles cross movement area boundaries, ensuring continuity of vehicle tracking and situational awareness.

PROPOSED CHANGES WOULD HAVE NO DETRIMENTAL EFFECTS

The limitations on the use of ground vehicle transponders in non-movement areas stem from two potential concerns. The first concern is that that ground vehicle broadcasts of position information in the non-movement area could “clutter” surface traffic displays used by FAA ground controllers and prevent controllers from using the displays to maintain effective surface situational awareness. The second concern is that ground vehicle transponder broadcasts could interfere with transponder broadcasts from aircraft and ground vehicles operating in movement areas.

Neither of these potential concerns has merit.

With respect to the first concern—the potential for ground vehicle transponders to create “clutter” on FAA ground controller surface displays—ground vehicle transponder broadcasts from non-movement areas are filtered out of air traffic surface displays addressing any visual clutter issues in tower displays of surface traffic. Thus, no clutter issues would exist.

With respect to the second concern—that ground vehicle transponders broadcasts in the non-movement area could interfere with broadcasts from aircraft or ground vehicles in the movement area, our proposal would not change the maximum number of vehicle transponders currently allowed in the movement area. This maximum number, 200, helps to ensure that the number of UAT transmissions from airport vehicles is well below the capacity of the UAT spectrum.

PROPOSED CHANGES WILL REDUCE REGULATORY BURDENS ON AIRPORT OPERATORS

As noted above, the proposed changes in FCC rules will provide airport operators with more compelling business cases for acquisition and deployment of safety-enhancing ground vehicle transponders. These changes will also reduce the costs and effort associated with UAT

transponder implementation by streamlining the development and approval process of the transmit maps that delineate where transponders can and cannot broadcast and then subsequently configure transponders to broadcast only in these approved areas.

With these reduced regulatory burdens, we expect more U.S. airport operators to invest safety-enhancing ground vehicle transponders.

COORDINATION WITH THE FAA

ACI-NA has been actively coordinating with the FAA's Office of Airports and Air Traffic Organization, who have positively evaluated relevant considerations with system integration and UAT spectrum performance. Accordingly, FAA has expressed support for the proposal in recognition of the safety benefits the proposed changes will provide.

POINT OF CONTACT

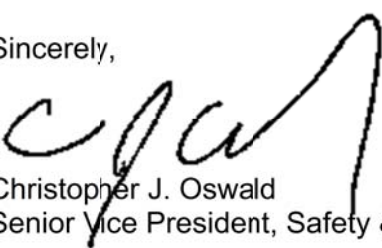
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We encourage the FCC to give consideration to this petition and are prepared to address any questions or concerns that Commission staff have regarding our requested changes to *Aeronautical Utility Mobile Stations*, 47 C.F.R. §87.345 and §87.349.

Sincerely,



Christopher J. Oswald
 Senior Vice President, Safety & Regulatory Affairs

cc: Mr. John Dermody, Director, Office of Airports Safety & Standards, FAA
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