



May 31, 2018

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

**Re: Expanding Flexible Use of the 3.7 GHz to 4.2 GHz Band, Docket no. 18-122**

Dear Ms. Dortch:

The General Aviation Manufacturers Association (GAMA) appreciates the opportunity to provide comments about the feasibility of allowing commercial wireless services, licensed or unlicensed, to use or share the frequencies between 3.7-4.2 GHz.

GAMA represents over 110 manufacturers of airplanes, helicopters, engines, and avionics, as well as service providers and maintenance organizations. According to PricewaterhouseCoopers LLP<sup>i</sup>, general aviation supported 1.1 million jobs and \$219 billion in output in the United States. Overall, the total GDP impact attributable to general aviation amounted to \$346 per person.

As discussed below, certain spectrum within the frequencies in consideration are used by systems critical to aviation safety. GAMA encourages the FCC to understand the impact of the proposal on aviation safety systems, including through consideration of aviation industry testing currently underway and consultation with the FAA and industry.

**I. IMPORTANCE OF UNDERSTANDING IMPACT THROUGH TESTING**

The aviation industry utilizes certain spectrum within the 3.7-4.8 GHz frequency, including for radio altimeter systems. A radio altimeter is an airborne system capable of measuring the height of an aircraft above terrain immediately below the aircraft. Testing is currently underway within the aviation industry to determine the potential impact of introducing other users into these frequencies on aviation systems, and the potential adverse effect(s) on aviation radio altimeters.

Radio altimeters are integral to different aviation systems including Ground Proximity Warning Systems (GPWS), Enhanced Ground Proximity Warning Systems (EGPWS), and Terrain Awareness and Warning Systems (TAWS), all of which are essential to aviation safety. It is widely accepted that the introduction of these systems has eliminated the risk of Controlled Flight Into Terrain (CFIT), a key safety priority, in air transport aircraft and significantly advanced safety in general aviation.

Radio altimeter systems are also used for landing and takeoff, particularly Cat I and Cat II precision approach operations and are used to provide height above ground information that is used to establish when the aircraft has reached the decision height (DH) for certain precision approaches. Additionally, in Autoland Systems, the radio altimeter information is used to initiate the flare maneuver.

GAMA strongly encourages the FCC to consider the results of the aviation industry's testing in evaluating changes to the use of the frequencies to ensure that essential aviation safety systems are not adversely impacted.

General Aviation Manufacturers Association

**HEADQUARTERS** 1400 K Street NW, Suite 801 | Washington, DC 20005 USA | +1 202 393 1500 **MAIN**  
**EUROPEAN OFFICE** Rue de la Loi 67/3 | 1040 Brussels Belgium | +32 (0) 2 550 39 00 **MAIN**

## II. NEED FOR COORDINATION WITH THE FEDERAL AVIATION ADMINISTRATION

The FCC also should coordinate with the Federal Aviation Administration (FAA) as it evaluates the feasibility of allowing commercial wireless services, licensed or unlicensed, to use or share the Frequencies between 3.7-4.2 GHz to ensure that the FCC's decisions are informed by the unique expertise of the FAA with respect to aviation safety.

The FAA establishes the standards that the aviation industry must use to build equipment for aircraft. The FAA also is the entity that issues the certifications and other approvals for use of equipment on aircraft.

It is essential that the FCC recognize that any changes to the use of the spectrum could impact equipment already certified by the FAA and in use. It would take the FAA and industry years to implement new standards across new aircraft systems and equipment already in operation across the worldwide aircraft fleet which further reinforces the need for a comprehensive and systematic approach to the evaluation of the impact on these systems.

## III. CONCLUSION

GAMA supports the efficient use of spectrum by all parties and enabling innovation by commercial entities across industries. There is, however, a potential impact on certain aircraft systems that serve essential roles in aviation safety. GAMA requests that the FCC, in coordination with the FAA and with support of industry, fully investigate the potential adverse impacts of allowing commercial use of the adjacent spectrum band on aircraft radio altimeters with the objective of protecting the functionality of this important equipment.

Sincerely,



Jens C. Hennig  
Vice President, Operations

Ref: GAMA18-39

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<sup>i</sup> Contribution of General Aviation to the US Economy in 2013 (Feb. 11, 2015)