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Submitted January 2, 2022

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of

Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No 18-122
	)	

To: The Commission

IN SUPPORT OF AIRLINES FOR AMERICA (A4A) EMERGENCY PETITION TO STAY INITIATION OF 5G OPERATIONS AT CERTAIN DESIGNATED AIRPORT LOCATIONS

The **Air Line Pilots Association, International ("ALPA")**,[1] pursuant to sections 1.41, 1.43 and 1.44 (e) of the Commission's Rules, 47 C.F.R. §§ 1.41, 1.43, and 1.44 (e), hereby files these comments in support of the petition[2] by Airlines for America ("A4A"), requesting the Commission stay initiation of new 3.7 GHz flexible licensee services, also known as the "C-Band", currently set to commence on January 5, 2022, in certain designated airport locations as described in their petition. Time is short and the action requested by A4A to the Commission is urgently needed, so we ask for your immediate attention and response to this request.

[1] The Air Line Pilots Association, International, is the world's largest pilots union and represents over 61,000 pilots flying for 37 airlines in the United States and Canada, and is a member of the International Federation of Air Line Pilots Associations representing 100,000 pilots worldwide.

[2] https://ecfsapi.fcc.gov/file/123022756098/Emergency%20Petition%20for%20Stay%20--%20Final.pdf

The adjacent band of 4.2-4.4 GHz is a protected Aeronautical Radionavigation assignment used by radio altimeters aboard civilian air transport aircraft. Radio altimeters are devices installed on the airframe, which determine the height of the aircraft above the terrain by bouncing a radio signal off of the ground and measuring the round-trip time. These are the only devices installed on the aircraft which can directly measure the height above ground. Radio altimeter systems are universally installed in air transport (passenger and cargo) aircraft and are a critical component for both all-weather instrument approach and landing procedures as well as Terrain Awareness and Warning Systems (TAWS). In addition, radar altimeter information feeds many other aircraft systems that provide safety alerting and is also used by aircraft flight controls to alter the handling qualities of aircraft in the vicinity of the runway on every takeoff, approach, and landing.

The radio altimeter system is used as part of all-weather approach and landing procedures as a means for pilots to verify their progress on an approach and to detect an unsafe situation. These procedures are critical in enabling safe arrivals to airports especially during periods of poor visibility and low cloud layers ("low ceilings"). Interference from adjacent bands on the radio altimeter system could pose a hazard to aircraft in flight if they were to cause faulty radio altimeter readings to be reported. For example, in 2009 a Turkish Airlines flight experienced faulty radio altimeter readings while on approach, which contributed to a crash landing with fatalities at Amsterdam-Schiphol Airport[3].

Because there is no other source of height-above-terrain information, radar systems onboard aircraft are not capable of validating the data that they present. In other words,

[3] https://web.archive.org/web/20120322020140/http://www.aviationweek.com/aw/generic/story_generic.jsp?channel=comm&id=news/ALT030509.xml&headline=Boeing%20Warns%20of%20Possible%20737%20Altimeter%20Fault

interference may not be detectable, and would likely cause hazardously misleading information to be presented to the flight crews, as detailed in the report[4] filed to the FCC Docket by RTCA in October 2020. Misleading information would easily increase the likelihood of approach and landing accidents and incidents. Even if the interference were known to the flight crew, its presence would require pilots to disable or otherwise stop reliance on the radio altimeter, which would effectively prevent procedures from being used.

As noted in A4A's petition, the Federal Aviation Administration (FAA) is taking action to prevent hazardous operations from taking place, by the issuance of Airworthiness Directives[5] (AD's) which will be activated by Notices to Air Missions (NOTAMs) for locations affected by C-Band 5G transmissions. ALPA recognizes the need to prohibit operations and applauds the FAA for taking action to ensure aviation safety.

However, these ADs will effectively prevent access to airports during periods of low clouds or visibility and would not only cause significant disruption to individual flights as they divert to other airports, but also to the broader air transportation system which relies upon flight schedule integrity to efficiently serve the flying public and transport air cargo. As also noted in A4A petition, this will result in billions of dollars of financial harm to just the airlines, with further billions of dollars of impacts to travelers, shippers, and the larger U. S. economy.

In prior comments opposing any changes to the Commission's order, the telecommunications industry lobbying organization CTIA has made false and misleading claims about 5G deployments in the C-Band outside of the U.S., by suggesting that 5G deployments elsewhere have occurred without any impact on aviation. As you know, the deployments in

[4] https://ecfsapi.fcc.gov/file/1008783828641/SC-239%205G%20Interference%20Assessment%20Report_274-20%20PMC-2073%20Submitted.pdf

[5] https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgad.nsf/0/625b2b44ac41e39a862587a600628feb/$FILE/2021-23-12.pdf

other countries are in all cases either at frequencies further away from the radar altimeter band than contemplated here, or are at lower maximum power transmission levels, or both.

ALPA especially wants to highlight the work performed in Canada and France. The FAA and the Commission should consider taking a page from the playbooks used in both countries to resolve this exact same issue. They have found a way forward for the continued growth and expansion of their economies and well-being, and it can be described in one word: collaboration.

Innovation, Science and Economic Development Canada (ISED) is the Canadian spectrum regulator. Last year, when aviation industry subject-matter experts, including ALPA, provided comments on the Canadian plan to issue a 5G spectrum license, ISED evaluated the data and, in consultation with Canada's equivalent to the FAA, Transport Canada, placed restrictions on 5G deployment near 26 large airports which would be subject to the highest risk from interference. They also implemented a national antenna down-tilt requirement to protect aircraft used in low-altitude military operations, search and rescue operations, and medical evacuations all over the country. Both the airport restriction and the down-tilt restrictions are *in addition* to further spectrum distance between 5G and radar altimeters.

Furthermore, ISED is performing testing of radar altimeters on its own and has not found reasons to lift their restrictions. ISED has also consulted with radar altimeter manufacturers on their designs. ISED's mindset is to protect the public by ensuring aviation safety, and currently the burden of proof is on the telecommunications industry to prove how 5G restrictions can be eased. To help with that, ISED convened the Radio Advisory Board of Canada (RABC), which is co-chaired by one aviation representative and one telecom representative. The work in the RABC as overseen by ISED and Transport Canada will continue through 2022 to ensure that both aviation safety and 5G mobile wireless expansion can be successful.

In France, the C-Band 5G frequency spacing from radar altimeters is the same as in the United States for this initial deployment of C-Band. Upon the publication of the RTCA report analyzing the risks to radar altimeters, the French equivalent to the FAA, the Direction Générale de l'Aviation Civile (DGAC), requested that measures be taken to protect radio altimeters operating in frequencies close to 5G from the risks of interference exposed in the RTCA report. The DGAC then worked with the French spectrum regulator, Agence Nationale des Fréquences (ANFR), to bring together representatives of the ministries and assignees concerned, as well as operators, 5G equipment manufacturers, and aeronautics manufacturers, resulting in a two-level action plan. Pending further studies, C-Band 5G is prohibited from areas around airports, and additional antenna pointing requirements including around heliports have been imposed.

It is very clear that the Canadian and French government agencies involved in aviation and radio spectrum management have figured out how to collaborate to the benefit of their aviation and telecommunications industries. Both countries are solving difficult situations proactively and responsibly. Safety is assured and 5G mobile wireless is expanding. The Commission and the FAA need to take the same collaborative approach to achieve the same outcome for the United States of America, as quickly as possible. This is needed to protect the safety of the flying public, avoid major disruptions to passenger movement, and to avoid additional stress to the already burdened supply chain on the fast- approaching January 5, 2022, activation of 5G.

ALPA agrees that A4A's emergency petition meets the long-established test for grant of a stay. *See, e.g.*, *Virginia Petroleum Jobbers Ass'n v. Federal Power Commission*, 259 F.2d 921 (D.C. Cir. 1958); *Washington Metropolitan Transit Comm. v. Holiday Tours*, 559 F.2d 841 (D.C. Cir. 1977). Without a stay, the airline industry, ALPA's members and the flying public will all

suffer irreparable harm -- the margin of safety will be degraded for the reasons stated in A4A's Petition and for the reasons stated herein. In addition, carriers, pilots, the traveling public and the American economy, which heavily depends on the air transportation system, particularly during the pandemic, will greatly suffer with numerous flight schedules and travel plans disrupted and irretrievably lost, on a daily basis.

ALPA also agrees that the aviation stakeholders will prevail on their legal claims that the Commission has failed to adequately explain why it did not substantively consider and address record documented evidence of the safety impact to commercial air transport of interference from 3.7 GHz licenses on radio altimeters. Further, the balance of harms and the public interest tips decidedly in favor of stay to protect safety and prevent such massive disruption while this issue is safely and appropriately resolved. See, e.g., *Nken v. Holder*, 556 U.S. 418, 434 (2009); *Wisconsin Gas Co. v. F.E.R.C.*, 758 F.2d 669, 673-74 (D.C. Cir. 1985). ALPA fully agrees that a stay should be granted.

ALPA appreciates the Commission's efforts to keep this important safety and operational issue in focus going forward. It is our belief that there are compelling reasons to stay the

activation of C-Band 5G and the Commission's timely actions to grant the stay as requested by A4A would be greatly appreciated.

Respectfully submitted,

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