

July 9, 2018

Marlene Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

Re: IB Docket No. 11-109; RM-11681; IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091

Dear Ms. Dortch:

We are the President and the Director of Operations at Metro Aviation (“Metro”), and we are writing to reiterate that Metro is fully confident that, if deployed as proposed in its License Modification Amendment, Ligado’s network operations will not interfere with the safe operation of helicopters. Metro disagrees with any suggestion that Ligado’s proposal, particularly as amended, generates interference issues that may negatively impact the operational aviation environment.

We come to this conclusion from the perspective of Metro, a leading provider of air medical services that operates more than 130 rotary and fixed-wing aircraft in 20 states. In partnership with 35 operations customers, we support the safe and rapid transport of thousands of American patients every year. Metro is also a leader in efforts to improve aviation safety specific to Helicopter Air Ambulance (“HAA”) operations. The HAA industry presents unique challenges, requiring operation of aircraft both day and night, outside of the controlled environment of airports and airways.

Metro firmly believes that Ligado’s proposal will not affect the safe operation of helicopters and rejects any suggestion otherwise. To the contrary, Ligado’s proposed operations will *assist* the aviation industry—specifically, helicopters—by providing much-needed specialized services that facilitate aviation operations. For instance, when patients are being transported to hospitals by aircraft, Ligado’s proposed operations will facilitate the delivery of key patient data to hospitals while the aircraft is en route.

In its License Modification Amendment, Ligado requested that the FCC prohibit any Ligado ATC base station antenna in the Lower Downlink Band from operating at a location less than 250 feet laterally or less than 30 feet below an obstacle clearance surface established by the FAA (under 14 C.F.R. Part 77 and implementing orders and decisions). We understand that Ligado worked with the FAA for close to a year to develop and analyze the current proposal. This proposal has been put to the test by the FAA. Ligado’s Amendment adopted the conclusions of the Department of Transportation in setting a new maximum EIRP—9.8 dBW (10

W)—for a tower, which will protect certified aviation GPS receivers operating at any point outside a “standoff cylinder” with a 250-foot radius from the subject tower and extending 30 feet above the antenna.

As we have previously explained, based on our experience and analysis, Metro has concluded that a cylinder of this size will protect safe helicopter operations. Helicopter operations within 250 feet of an obstruction laterally, or 30 feet vertically are exceptionally rare. In addition, safe operation within this space requires a pilot to rely on visual reference information and not solely on instrumentation like GPS to navigate. More specifically, and as set out in our July 25, 2017 *ex parte* submission<sup>1</sup>:

1. **Pilots do not solely rely on GPS receivers near obstacles:** FAA regulations require that any operation closer than 500 feet from a person or object be conducted with extreme care. Helicopter operations are excepted, but only if “the operation is conducted without hazard to persons or property on the surface.” As helicopter operators, in our view, and under Visual Flight Rules (VFR), it would be extremely hazardous to operate closer than 500 feet from an object (including a Ligado antenna tower) while relying on a certified aviation GPS device to provide navigation guidance to avoid that object. Safe operations in such a situation necessarily require pilots to use their eyes rather than their instruments, including GPS receivers. Accordingly, the potential degradation of the GPS signal within 250 feet of a tower does not present safety of flight issues.
2. **Pilots must give ample vertical clearance to terrain and obstacles:** Another FAA regulation requires the pilot-in-command of an HAA operation, while en route, to ensure all terrain and obstacles along the planned route of flight are cleared vertically by 300 ft during day operations and 500 ft during night operations. This regulation applies to the approximately 1,100 HAA aircraft currently operating in the United States.
3. **Absence of GPS interference complaints re: other services:** Although an aircraft’s GPS signal reception could be subject to degradation when operating in close proximity to any emitter of radio transmissions, no reports were found relating to GPS signal degradation issues during VFR operations after a search of Metro Aviation’s SMS reporting system database dating back to 2005.
4. **Overflight protection:** During certain operations, helicopters could conceivably operate safely by overflying towers and other obstructions with less than 100 feet of obstruction clearance (particularly when flying offset laterally from the top of tower). In our view, it would be impractical for all helicopters to be required to operate more than 100 feet above towers. In addition, a pilot will likely not know whether a particular tower contains a Ligado antenna, thus requiring all towers to be over flown with a 100-foot vertical separation.

---

<sup>1</sup> See Letter from Mike Stanberry and Jim Arthur, Metro, to Ajit Pai, Chairman, FCC, IB Docket No. 11-109; RM-11681; IBFS File Nos. SES-MOD-20151231-00981, SAT-MOD-20151231-00090, and SAT-MOD-20151231-00091 (Jul. 25, 2017).

Ligado's proposal addresses this problem in two important ways. First, the cylinder extends only 30 feet above the antenna, so even if the antenna is located at the top of a tower, a helicopter operating safely should be further than 30 feet above such an obstruction. Second, the cylinder extends 30 feet above the antenna, rather than the tower— which actually increases the protected area for an overflying helicopter whenever the antenna is not deployed at the top of the tower (and Ligado has indicated that antenna deployments will often not be at the top of a tower).

5. Protected areas: Ligado has committed to ensuring that no site will be deployed in a location where the antenna's cylinder would encroach upon areas defined in 14 C.F.R. Part 77 (which addresses the safe, efficient use, and preservation of navigable airspace). This commitment from Ligado ensures instrument approach procedures, including Special Instrument Approach Procedures (SIAP) widely used during HAA operations, will not be affected by a Ligado antenna.

We supported these practical and legal measures last year based on Ligado's proposed plans, and they remain convincing. As noted above, Ligado has since committed to a *reduced* EIRP for its Lower Downlink Band based on the Department of Transportation and FAA's conclusion regarding the protection of certified aviation GPS receivers. Accordingly, Metro continues to firmly believe that Ligado's proposal to protect such receivers at all locations beyond a 250 feet cylinder around an antenna is safe, reasonable, and strongly in the interests of aviation and aviation safety.

Please contact us if you have any questions.

Sincerely,



Mike Stanberry  
President



Jim Arthur  
Director of Operations