Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)
	)
GARMIN AT, INC.	)
	)
Request for Waiver of Part 87 Rules to Permit Equipment Authorization and Use of Universal Access Transceivers on the Frequency 978 MHz	)

ORDER

Adopted: June 24, 2004 **Released:** June 28, 2004

By the Chief, Public Safety and Critical Infrastructure Division, Wireless Telecommunications Bureau:

1. *Introduction*. On April 1, 2004, GARMIN AT, Inc. (GARMIN) filed a request for waiver of the Commission's Part 87 rules to permit the authorization of Universal Access Transceiver (UAT) equipment and to permit UAT operation on the frequency 978 MHz.[1] For the reasons discussed herein, we grant the Waiver Request subject to conditions set forth below.

2. *Background*. UAT is a radio datalink technology that has been developed to provide Automatic Dependent Surveillance – Broadcast Service (ADS-B) and other services to the aviation community.[2] Deployment of ADS-B will enhance safety of flight by enabling aircraft in the same airspace to precisely track each other's movement, reducing the risk of mid-air collisions. On October 16, 2003, the Commission issued a *Report and Order and Further Notice of Proposed Rule Making* in WT Docket No. 01-289, in which it proposed to amend the Part 87 Rules governing the Aviation Radio Service to, *inter alia*, authorize UAT operations on the 978 MHz frequency.[3] Specifically, the Commission proposed to amend or add Sections 87.137(a) (to specify the emission designator F1D for UAT operations on 978 MHz), 87.139(l)(1) (to impose emission limitations on UAT operations), 87.141(k) (to impose modulation requirements on UAT operations), 87.173(b) (to list 978 MHz in the table of frequencies as available for UAT operations), and 87.187(ff), 87.263(g), 87.345(f), 87.349(e), 87.375(e), 87.417(c), and 87.475(b)(9) (all to authorize the use of 978 MHz for UAT data transmission).[4]

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[1] Letter dated April 1, 2004, from Larry S. Solomon, Attorney for GARMIN AT, Inc., to D'wana R. Terry, Chief, Public Safety and Critical Infrastructure Division, FCC (Waiver Request).

[2] ADS-B Service automatically broadcasts Global Positioning System-derived information on the location, velocity, altitude, heading, etc. of an ADS-B equipped aircraft to other ADS-B equipped aircraft and also to ADS-B ground stations for distribution to air traffic control systems. For a more detailed description of both UAT and ADS-B, see www.alaska.faa.gov/capstone/docs/uat.htm.

[3] *See* Review of Part 87 of the Commission's Rules and Concerning the Aviation Radio Service, *Report and Order and Further Notice of Proposed Rule Making*, WT Docket No. 01-289, 18 FCC Rcd 21432, 21468 ¶ 77 (2003) (*Part 87 FNPRM*).

[4] *See Part 87 FNPRM* Appendix B, 18 FCC Rcd at 21505-15.

These proposals remain pending before the Commission.

3. GARMIN filed the Waiver Request seeking a waiver of Sections 87.137, 87.145 and 87.187 of the Commission's Rules[5] and any other applicable provisions of the Commission's Rules so that GARMIN's UAT Model No. GDL 90 may be certified and authorized for operation on 978 MHz in accordance with the Commission's UAT proposal in the *Part 87* FNPRM in advance of a Commission decision on whether to adopt the proposal.[6] GARMIN represents that its UAT is designed to broadcast on the 978 MHz frequency with the emission designator 1M70F1D and 50 watts output power, and that the transceiver complies with both the relevant Federal Aviation Administration (FAA) Technical Standard Order, FAA TSO-C154 and with the RTCA DO-282 Minimum Operating Performance Standards (MOPS) that were jointly developed by government and industry.[7]

4. GARMIN says that it has supported the FAA's trials of UAT technology in Alaska, and continues to support FAA efforts to deploy UAT technology in the lower 48 states.[8] According to GARMIN, many members of the aviation community, including a number of flight schools, want to use UAT.[9] It adds that implementing the service in high density flight training areas, where radar services are costly or unavailable, will greatly enhance public safety.[10] The FAA supports grant of the requested waiver, indicating in an accompanying letter that the GDL 90 is the first UAT brought to market that complies with the RTCA MOPS and the FAA TSO standard, and that expeditious certification and operational approval of the GDL 90 will benefit aviation safety.[11] Both GARMIN and the FAA assert that waiver relief is essential now because there is an immediate need to deploy UAT in the interest of flight safety, and the benefits of UAT should not be delayed until the release of an order addressing this and the other issues raised in the *Part 87 FNPRM*.[12]

5. On April 15, 2004, the Public Safety and Critical Infrastructure Division (Division), Wireless Telecommunications Bureau, issued a Public Notice requesting comment on the Waiver Request.[13] In response to the Public Notice, Embry-Riddle Aeronautical University, a flight training

[5] 47 C.F.R. §§ 87.137, 87.145, 87.187.

[6] Waiver Request at 1.

[7] *Id*. RTCA is an FAA-sponsored association of aeronautical organizations with diverse membership. Organized in 1935 as the Radio Technical Commission for Aeronautics, RTCA today includes over 200 government, industry, and academic organizations from the United States as well as other nations, who seek technical solutions to problems involving the application of electronics and telecommunications to aeronautical operations.

[8] *Id*. at 2.

[9] *Id*.

[10] *Id*.

[11] Letter date-stamped Mar. 19, 2004, from George K. Sakai, Spectrum Policy and Management, FAA, to D'wana R. Terry, Chief, Public Safety and Critical Infrastructure Division, FCC (FAA Letter).

[12] Waiver Request at 2; FAA Letter at 1. The FAA adds that since it maintains a data base of all avionics, including UAT, on all aircraft authorized to fly in the United States, it will be able to assist the Commission "in maintaining configuration control" should any final Commission Rules governing UAT differ from those proposed.

[13] *See* Wireless Telecommunications Bureau Seeks Comment on GARMIN AT Inc. Request for Waiver of Part 87 Rules to Authorize Certification and Use of Universal Access Transceivers, *Public Notice*, 19 FCC Rcd 6884 (2004). Comments were due by May 17, 2004 and reply comments were due by May 27, 2004.

school, filed comments strongly supporting the Waiver Request, stating that UAT is a vital part of ADS-B, which will assist flight instructors and students in maintaining situational awareness, warn them of nearby traffic, and provide them with currently unavailable safety options.[14] GARMIN filed reply comments reiterating that an expeditious grant of the requested waiver would serve the public interest, and noting that no comments in opposition to the Waiver Request have been filed.[15]

6. *Discussion*. Section 1.925 of the Commission's Rules specifies that the Commission may grant a waiver upon a showing either that (i) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or (ii) in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.[16] Based on our review of the record, we conclude that the Waiver Request should be granted because the public interest in aviation safety would be furthered by such action and the underlying purpose of the waived rules – promotion of flight safety, and efficient and effective aviation radio communication – would be frustrated absent a waiver. Accordingly, subject to conditions described below, we hereby waive Sections 87.137, 87.139, 87.141, 87.145, 87.173, 87.187, 87.263, 87.345, 87.349, 87.375, 87.417, and 87.475,[17] as necessary to permit equipment authorization and operation on 978 MHz of GARMIN UAT Model GDL 90.

7. The Commission already has tentatively concluded that amending the Part 87 Rules to accommodate UAT technology on 978 MHz would serve the public interest.[18] Nothing in the instant record calls that conclusion into question. No party has opposed the Waiver Request or suggested any reason to deny the Waiver Request. GARMIN, supported by Embry-Riddle Aeronautical University and, most significantly, by the FAA,[19] has cogently explained how and why grant of the requested waiver relief would provide immediate benefits to aviation safety, including but not limited to pilot training benefits, without any apparent countervailing public harm. The potential benefits of UAT-facilitated ADS-B service in allowing pilots to keep better track of other aircraft in their vicinity and thus avoid mid-air collisions, are clear. As noted in the *Part 87 FNPRM*, moreover, UAT technology has been field-tested extensively not only in

[14] Embry-Riddle Aeronautical University Comments (filed May 3, 2004).

[15] GARMIN Reply Comments (filed May 27, 2004). GARMIN also noted in its Reply Comments that it has received the requisite Technical Standard Order authority from the FAA for operation of the GDL 90, that testing of the unit had been completed by a Telecommunications Certification Body, and that it anticipates being ready to file an equipment certification application in early June if allowed to do so. *Id*. at 2.

[16] 47 C.F.R. § 1.925(b)(3).

[17] 47 C.F.R. §§ 87.137, 87.139, 87.141, 87.145, 87.173, 87.187, 87.263, 87.345, 87.349, 87.375, 87.417, and 87.475. We are waiving, as needed, both the rules specifically identified by GARMIN in the Waiver Request and the other rules that the Commission, in the *Part 87 FNPRM*, proposed to amend to accommodate UAT operations, to better ensure that there is no unanticipated obstacle to providing GARMIN with the full scope of the waiver relief intended.

[18] *Part 87 FNPRM*, 18 FCC Rcd at 21468 ¶ 77. We emphasize that the instant waiver, granted under delegated authority, does not prejudge the Commission's resolution of the UAT proposals and issues in the WT Docket No. 01-289 rulemaking proceeding. As noted *infra*, the waiver is expressly conditioned on the outcome of that proceeding.

[19] The Commission generally defers to the FAA as expert agency for air safety. *See, e.g*., Streamlining the Commission's Antenna Structure Clearance Procedure, *Memorandum Opinion and Order and Order on Reconsideration*, WT Docket No. 95-5, 15 FCC Rcd 8676, 8679 ¶ 5 (2000).

Alaska, but also at several sites within the continental United States, including the FAA Technical Center near Atlantic City, New Jersey, NASA's Runway Incursion Prevention System test bed at Langley, Virginia, and the Dallas-Ft. Worth Airport.[20] The results from those field tests have persuaded the FAA and others that UAT technology can be safely, effectively and efficiently integrated into existing avionics in a manner that advances aviation safety. On this record, then, we agree with GARMIN and the FAA that it would be counterproductive to completely prohibit additional UAT deployment until the Commission adopts and releases a Report and Order addressing the *Part 87 FNPRM,* inasmuch as this may not occur for several months.[21]

8. In keeping with GARMIN's representations and our intent to authorize UAT operations pursuant to the instant waiver only in a manner consistent with the Commission's proposal in the *Part 87 FNPRM*, we condition the waiver on the GARMIN UAT operating only on the frequency 978 MHz with the emission designator 1M70F1D and a maximum permissible output power of 50 watts. In addition, emissions from the UAT must be attenuated in accordance with the emission mask in the proposed amendment of Section 87.139 as set forth in Appendix B of the *Part 87 FNPRM*; the UAT transmitter must use F1D modulation without phase discontinuities; and the UAT must otherwise comply with both FAA TSO-C154 and with RTCA DO-282. We also incorporate as conditions to the waiver several pledges and acknowledgements made by GARMIN in the Waiver Request.[22] First, use of the GARMIN UAT pursuant to this waiver shall be limited to U.S.-registered aircraft, airport equipment operators (*e.g.*, fuel trucks, tugs, and snow plows), and FAA-sanctioned ground stations. Second, the GARMIN UAT shall be sold only through established avionics distribution channels authorized by the FAA to make major alterations and return aircraft to service. The GARMIN UAT shall not be made available to the general public. Third, under no circumstances may the operation of the UAT cause harmful interference or otherwise become a hazard to air navigation, or violate any international agreement or treaty. Should GARMIN become aware of any such occurrence, it must notify the Commission immediately. Fourth, the waiver granted herein may be terminated at the Commission's sole discretion, without hearing, if the Commission deems such action appropriate. Likewise, the Commission may modify the terms of the waiver at any time, at its sole discretion, including without limitation imposing restrictions on uplink slots, surveillance radius, or maximum power. Finally, the waiver is subject to the outcome of the WT Docket No. 01-289 rulemaking proceeding with respect to UAT issues, and our decision to grant the waiver is without prejudice to the resolution of those issues.

9. *Conclusion*. For the reasons discussed herein, and subject to the conditions described herein, we conclude that grant of GARMIN's Waiver Request would further the public interest and is warranted under Section 1.925 of the Commission's Rules. We therefore conditionally grant GARMIN's request to waive the Part 87 Rules as necessary to permit the certification of its UAT Model GDL 90 and to authorize the use of the UAT Model GDL 90 on the frequency 978 MHz.

10. Accordingly, IT IS ORDERED that pursuant to Sections 4(i) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), and Section 1.925 of the Commission's Rules, 47 C.F.R. § 1.925, the Request for Waiver of GARMIN AT, Inc. filed April 1,

[20] *Part 87 FNPRM*, 18 FCC Rcd at 21468 ¶ 77.

[21] We note that a summary of the *Part 87 FNPRM* Proposed Rules was published in the Federal Register only on April 12, 2004, after GARMIN filed the Waiver Request, and that the pleading cycle still has not run its course as of the release date of this *Order*. *See* 69 Fed. Reg. 19140 (April 12, 2004). *[?verify latter assertion – reply comments due July 6]*.

[22] *See* Waiver Request at 2.

2004, is GRANTED, subject to the conditions set forth above.

11. This action is taken under delegated authority pursuant to Sections 0.131 and 0.331 of the Commission's Rules, 47 C.F.R. §§ 0.131, 0.331.

FEDERAL COMMUNICATIONS COMMISSION

D'wana R. Terry
Chief, Public Safety and Critical Infrastructure Division
Wireless Telecommunications Bureau