

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
)
Waiver of Part 25 Licensing Requirement for) IB Docket No. 17-16
Receive-Only Earth Stations Operating with the)
Galileo Radionavigation-Satellite Service)
)

PETITION FOR RECONSIDERATION AND CLARIFICATION

Pursuant to Section 1.106 of the Commission’s rules,^{1/} the GPS Innovation Alliance (“GPSIA”) hereby submits this Petition for Reconsideration and Clarification (“Petition”) of the Commission’s Order in the above-referenced proceeding that granted in part and denied in part the request of the European Commission (“EC”) for waiver of the Commission’s rules to permit non-federal, receive-only earth stations within the United States to operate with signals of the Galileo Radionavigation-Satellite Service (“RNSS”) (“Galileo”).^{2/}

GPSIA applauds the Commission’s action allowing U.S. Global Navigation Satellite System (“GNSS”) devices to operate with the Galileo E1 and E5 signals. This action will remove uncertainty regarding operation of those devices, enhance their utility, and promote the global harmonization of GNSS operations. However, instead of denying the EC request that

^{1/} 47 C.F.R. 1.106.

^{2/} *In the Matter of Waiver of Part 25 Licensing Requirement for Receive-Only Earth Stations Operating with the Galileo Radionavigation-Satellite Service*, Order, IB Docket No. 17-16, FCC 18-158 (rel. Nov. 16, 2018) (“*Galileo Order*”). Section 1.106(b)(1) of the FCC’s rules states that if a petition for reconsideration is submitted by a person not a party to the proceeding, it shall state the manner in which the person’s interests are adversely affected and show good reason why it was not possible for it to participate in the earlier stages of the proceeding. In this case, GPSIA members Trimble Inc. (“Trimble”) and Deere & Company (“Deere”) participated in the earlier phase of this proceeding. Both Trimble and Deere are members of GPSIA and endorse the submission of this Petition. The Commission should therefore consider this Petition as submitted by Trimble and Deere (and GPSIA) pursuant to Section 1.106(a)(1) of the rules.

receive-only stations be permitted to receive signals in the 1240-1300 MHz band (the “E6 signal”), the Commission should defer action on that issue until it assesses whether GNSS devices can co-exist with potential operations in the adjacent 1300-1350 MHz band when these possible uses are better defined. The Commission should also clarify that the Commission’s decisions (or lack thereof) in intergovernmental waiver proceedings only address the issue of whether the users of devices which receive foreign signals can invoke the benefit and protection of U.S. law (*e.g.* protection from interference).

I. INTRODUCTION AND BACKGROUND

The *Galileo Order* is the result of the EC’s request, initiated in October 2013, that the Commission waive its rules that otherwise prohibit U.S. devices from operating with signals from foreign RNSS systems.^{3/} In its decision, the Commission granted the request with respect to U.S. devices that operate with the E1 and E5 signals, which operate in the same bands as the U.S.-based Global Positioning System (“GPS”). The Commission noted that both the E1 and E5 signals overlap with existing GPS signals and fall almost entirely within existing allocations for RNSS in the U.S. It also noted the benefits to the public interest from allowing use of the Galileo signals in the U.S., in particular in improving GNSS device accuracy, reliability, and availability of a RNSS signal. GPSIA agrees with that assessment.

^{3/} The EC request was originally submitted to the Department of State. The National Telecommunications and Information Administration (“NTIA”) then reviewed the technical, operational, policy, and other considerations underlying the waiver request and submitted it to the Commission with its recommendation that it be granted. The EC sought permission for U.S. devices to operate with the E1 signal (operating at 1559-1591 MHz, overlapping with the GPS L1 signal), E5 signal (operating at 1215-1219 MHz, overlapping with the GPS L5 signal), and E6 signal transmitted from the EC Galileo constellation.

The Commission denied the waiver request for the E6 signal, which does not correspond to any GPS signal.^{4/} In that part of its decision, the Commission stated that grant of the waiver with respect to the E6 signal would “result in significant uncertainty regarding the nature of any harmful interference protection rights that could be afforded operations with the E6 signal now or in the future” given potential future terrestrial mobile operations in the adjacent 1300-1350 MHz band.^{5/}

In their comments in response to the *Public Notice*, Trimble and Deere noted the unnecessary complexity of the process for obtaining a waiver such as the one sought by the EC for Galileo, in particular given the nature of, and lack of interference from, receive-only satellite systems.^{6/} In response, the Commission reaffirmed its procedures, explaining the need for regulatory control over non-U.S. satellites transmitting to U.S. earth stations, but did not specifically address the changed nature of such earth stations.^{7/}

II. THE COMMISSION SHOULD RECONSIDER REJECTION OF THE EU REQUEST RELATED TO THE E6 SIGNAL

As detailed in comments filed in response to the *Public Notice*, the ability to receive multiple GNSS signals benefits users in the U.S., including consumers and businesses, in a wide variety of ways by improving location accuracy, availability, and reliability, and increasing the precision of timing coordination.^{8/} The Commission’s action granting the EC’s waiver request

^{4/} *Galileo Order* at ¶ 42.

^{5/} *Galileo Order* at ¶¶ 45-49.

^{6/} *Comments of Trimble Inc. and Deere & Company*, IB Docket No. 17-16 (Feb. 21, 2017) (“*Trimble and Deere Comments*”) at 17-18.

^{7/} *Galileo Order* at ¶ 10.

^{8/} *See, e.g. Comments of AIRBUS Defense and Space, Inc.*, IB Docket No. 17-16 (Feb. 21, 2017); *Comments of Hexagon Positioning Intelligence*, IB Docket No. 17-16 (Feb. 21, 2017) (“*Hexagon Comments*”); and *Trimble and Deere Comments*. The value of RNSS, in particular GPS, to the U.S. is well established. In addition to its military use, it is considered an “enabling technology” by the Department of Homeland Security because of its crucial role in 14 of the 16 industries the Department

for the E1 and E5 signals will therefore result in meaningful improvements in GNSS device capabilities, as those commenters indicated; however, the full benefits of the Galileo system will be denied to U.S. users without the ability to operate with the E6 signal. While plans for the use of the E6 signal have not been finalized, it may be utilized to provide complementary commercial services which support use of GNSS, an important economic driver for the U.S. economy.

RNSS is a world-wide service. GNSS devices operate globally and are transported across borders. Moreover, manufacturers of GNSS devices market and sell their products globally. All of this means that the Commission's decision not to permit U.S. devices to operate with the Galileo E6 signal could have several negative effects. Depending on how the ruling is applied, users that employ devices that originate in Europe or other countries may be required to adjust operation of those devices for use in the United States (and, as described above, those devices will have diminished utility). Conversely, users with devices produced for the U.S. market may not be able to take advantage of the E6 signal when those devices are operated elsewhere. The results of the *Galileo Order* for manufacturers are similar. Manufacturers may be required to produce two forms of products – one for sale in the U.S., where users are not permitted to operate with the E6 signal and one for sale elsewhere. The need to produce two versions of what is otherwise the same device will unnecessarily drive up user costs and potentially place U.S. manufacturers that market GNSS devices globally at a competitive pricing disadvantage vis-à-vis

classifies as part of the country's critical infrastructure. It is similarly crucial in a variety of civilian industries, including agriculture, transportation (land, sea, and air), timing, construction, and mining. It is also utilized in personal civilian use and in a number of public safety applications. One estimate found that GPS provided between \$37 and \$75 billion dollars in value to the U.S. economy 2013. See Irv Leveson, *GPS Civilian Economic Value to the U.S.*, Interim Report (v.3), ASRC Federal Research and Technology Solutions, Inc., Aug. 31, 2015. Once the indirect economic benefits of business, applications and services that rely upon GNSS are considered, the economic value of GNSS is far greater.

manufacturers that produce only for non-U.S. markets. The increased cost of producing and designing equipment solely for the U.S. market as compared to equipment that can be used worldwide will also hinder innovation in GNSS device manufacturing and new applications in the U.S. markets.

It is for these reasons, among others, that the United States has participated in efforts to harmonize the international parameters governing GNSS use. In addition to the agreement between the U.S. and EU that ensured GPS and Galileo compatibility, which stated that the U.S. would not restrict “use of or access to” Galileo signals in the U.S.,^{9/} the U.S. is also a party to the World Trade Organization’s General Agreement on Trade in Services, which was noted by NTIA as one of several grounds on which it recommended full grant of the EC waiver.^{10/} Similarly, the U.S. Space-Based Positioning, Navigation, and Timing Policy notes that a goal of U.S. policy is the “encourage[ment of] foreign development of positioning, navigation, and timing services...interoperable with the civil services of the [GPS] in order to benefit civil, commercial, and scientific users worldwide.”^{11/} The 2010 update to the National Space Policy affirmed this goal, noting the use of foreign RNSS to “augment and strengthen” GPS, and instructed all departments to “engage with foreign [RNSS] providers to encourage compatibility and interoperability, promote transparency in civil service provision, and enable market access

^{9/} See, e.g. *Agreement on the Promotion, Provision, and Use of Galileo and GPS Satellite-Based Navigation Systems and Related Applications*, June 26, 2004, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/235915/8667.pdf.

^{10/} See Letter of Paige Atkins, Associate Administrator, Office of Spectrum Management, National Telecommunications and Information Administration, to Mindel De La Torre, Chief, International Bureau and Julius Knapp, Chief, Office of Engineering and Technology, Federal Communications Commission, Jan 30, 2015.

^{11/} *U.S. Space-Based Positioning, Navigation, and Timing Policy*, Dec. 15, 2004, available at <https://www.gps.gov/policy/docs/2004/>.

for U.S. industry.”^{12/} These international agreements and domestic policy statements also suggest that the Commission should reconsider its outright denial of the EC request regarding the E6 signal.

GPSIA appreciates that the Commission does not wish to take any action with respect to devices that may operate with the E6 signal based on concerns that such action could foreclose the potential use of the 1300-1350 MHz band – adjacent to the band in which the E6 signal is transmitted – for wireless operations. GPSIA has consistently supported the Commission’s ongoing efforts to expand broadband access and increase the availability of spectrum for that purpose; however, the *Galileo Order* rejects the potential operation of devices with the E6 signal without fully considering how those devices may co-exist with wireless services in the adjacent band in the future. That is not the correct approach. The Commission presents a reasoned engineering concern, but one that it and interested stakeholders may be able to successfully address, and they should be provided an opportunity to do so. Until the Commission undertakes the analysis to determine how the two services can co-exist in adjacent bands, it should not reject the EC request. Instead, it should hold the EU request in abeyance rather than denying it.

The Commission also observed that no part of the spectrum that the E6 signal utilizes is allocated for RNSS.^{13/} While the Commission was willing to waive the allocation issue with regards to the edge of the E5 signal, which extends beyond the allocation for RNSS,^{14/} it expressed concern with doing so for the entire E6 signal in a waiver, rather than a rulemaking,

^{12/} *National Space Policy of the United States of America*, June 28, 2010, available at https://obamawhitehouse.archives.gov/sites/default/files/national_space_policy_6-28-10.pdf.

^{13/} *Galileo Order* at ¶ 43.

^{14/} *Galileo Order* at ¶ 35.

proceeding.^{15/} Like the adjacent band issue, this also does not require a *denial* of the waiver request. If the Commission is unwilling to waive the Table of Frequency Allocations for the E6 signal, as it did for the E5 signal, then it may hold the EC request in abeyance until it changes the Table of Frequency Allocations – a process that would likely overlap with decisions regarding the compatibility of GNSS devices with potential terrestrial operations in the 1300-1350 MHz band, a designation which will also require amendment of the Table of Frequency Allocations.

III. THE COMMISSION SHOULD CLARIFY THE STATUS OF DEVICES CAPABLE OF RECEIVING FOREIGN SIGNALS

Tens of millions of users of GNSS devices should not be confronted with having to discover the characteristics of their devices. It is unrealistic, for example, to expect smartphone users to assess whether their devices are capable of receiving foreign signals and whether that capability is active or not. To maximize efficiencies, those devices may be manufactured with the capability to receive a range of signals and sold with that functionality active – which the user may not realize. The current rules date back to a very different era and were intended to address a much more limited category of devices. The *Galileo Order* provided the Commission with the opportunity to clarify the applicability of the existing rules in present circumstances, and multiple parties requested that the Commission do so.

As commenters^{16/} and Commissioners themselves have observed,^{17/} the reason the rules overlook this is because they are outdated. The rules reflect a world that bears little resemblance

^{15/} *Galileo Order* at ¶ 45.

^{16/} *See e.g. Trimble and Deere Comments* at 17-19.

^{17/} *See Comprehensive Review of Licensing and Operating Rules for Satellite Services*, IB Docket No. 12-267, Second Report and Order, FCC 15-167 (2015) (Statement of Commissioner Ajit Pai) (discussing how the Commission's Part 25 rules are outdated, as initial drafting of the rules dates back to the 1960s).

to twenty-first century GNSS receivers, which are no longer large, stationary pieces of infrastructure but instead are essential devices found in the pockets of nearly every American.^{18/} As noted above, GNSS enabled devices also move freely across national borders, and are often intended for the global market, not just U.S. outlets, meaning they are designed to receive RNSS signals from multiple constellations, not just GPS.

GPSIA appreciates the need for the United States to observe appropriate international protocols in approving requests by operators of foreign satellites to obtain approval for devices to receive those foreign signals in the U.S., and NTIA's required assessment of the technical, operational, policy and other considerations presented in those requests. But while a full reevaluation of the application of these procedures was not part of the EC's waiver request, the Commission should still take this opportunity to clarify that the Commission's decisions (or lack thereof) in intergovernmental proceedings only address the issue of whether the users of devices which receive foreign signals can invoke the benefit and protection of U.S. law (*e.g.*, protection from interference).

IV. CONCLUSIONS

The Commission's actions in the *Galileo Order* bring welcome improvements to the RNSS landscape in the U.S. by authorizing devices to operate with two signals from the Galileo system. This will improve functionality of compatible GNSS devices for the benefit of both consumers and businesses. Nevertheless, the Commission acted prematurely by denying, instead of deferring, the EC request that devices be permitted to operate with the E6 signal. It should

^{18/} See, *e.g.*, Liang Wang, et. al, *Smart Device-Supported BDS/GNSS Real-Time Kinematic Positioning for Sub-Meter-Level Accuracy in Urban Location-Based Services*, U.S. NAT'L LIBR. MED. (Dec. 21, 2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5191179/>.

have also clarified that, based on marketplace realities, the status of users who operate GNSS devices capable of receiving foreign RNSS signals.

Respectfully submitted,

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