



UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and
Information Administration
Washington, D.C. 20230

October 21, 2021

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street, NE
Washington, DC 20554

Re: In the Matter of Part 80 of the Commission's Rules and the Use of the Automatic Identification System for Devices that Can Be Used to Mark Fishing Equipment (WTB Docket No. 21-230)

Dear Ms. Dortch:

The National Telecommunications and Information Administration (NTIA) hereby submits additional brief comments in the above-referenced proceeding, including views of the United States Coast Guard (U.S. Coast Guard) expanded upon in the attached letter to NTIA.¹ In the letter, the U.S. Coast Guard expresses its readiness to work with the Radio Technical Commission for Maritime Services in an effort to modify the appropriate standards to safely accommodate the use of the Automatic Identification System to mark fishing equipment. The U.S. Coast Guard letter also responds to concerns from the American Association of Railroads (AAR) regarding the potential for harmful interference from devices operating on Channel 2006 (160.9 MHz).

In addition to the questions that the U.S. Coast Guard raises regarding AAR's technical analysis, NTIA also understands that the land mobile radios the railroads operate generally have authorization to utilize multiple channels such that, if their mobile operations experience harmful interference on a particular channel, they should be able to continue to communicate on other channels.

¹ Letter from Jerry Ulcek, Division Chief, Spectrum Management and Telecommunications, U.S. Coast Guard, to Charles Cooper, Associate Administrator, Office of Spectrum Management, NTIA (Sept. 28, 2021); *see also* Comments of the NTIA in WT Dkt. No. 21-230 (Aug. 6, 2021), available at <https://www.fcc.gov/ecfs/filing/1080666913417>.

Please let us know if you have any questions concerning the foregoing.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Kathy Smith".

Kathy Smith
Chief Counsel

cc: Joel Taubenblatt, Acting Chief, Wireless Telecommunications Bureau
Charles Mathias, Deputy Chief, Wireless Telecommunications Bureau
Kari Hicks, Senior Legal Advisor, Wireless Telecommunications Bureau

U.S. Department of
Homeland Security

**United States
Coast Guard**



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United States Coast Guard

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Re: WT-Docket No. 21-230
September 28, 2021

Mr. Charles Cooper
Associate Administrator
Office of Spectrum Management
National Telecommunications and Information Administration (NTIA)
U.S. Department of Commerce
1401 Constitution Avenue, NW
Washington, DC 20230

Dear Mr. Cooper,

Upon review of the comments filed with the Federal Communication Commission's (FCC's) Notice of Proposed Rulemaking (NPRM) WT Docket No. 21-230, regarding Part 80 of the Commission's Rules and *The Use of the Automatic Identification System (AIS) for Devices that Can Be Used to Mark Fishing Equipment (FCC 21-69)*, the United States Coast Guard (Coast Guard) would like to specifically reply to comments raised by the Radio Technical Commission for Maritime Services ("RTCM") and the Association of American Railroads ("AAR").

AIS devices transmitting on AIS-1 (159.675 MHz) /AIS-2 (162.025 MHz)

Fishing industry comments urged that Automatic Identification System (AIS) devices be allowed to be used to mark fishing equipment such that they are visible by all nearby AIS-equipped vessels. As the Coast Guard indicated in its comments, to accomplish this, these AIS devices would need to transmit on VHF channels AIS 1 and/or AIS 2 and do so in accordance with appropriate International Maritime Organization (IMO) requirements and relevant International Telecommunications Union (ITU) and International Electrotechnical Commission (IEC) technical standards. This would require that standards be developed and equipment manufactured and made available such that transmissions from such devices would be displayed on other ships as what they actually are (e.g. fish nets) and must not be displayed as what they are not (e.g. other ships, or ships or persons in distress). The Radio Technical Commission for Maritime Services (RTCM) in its comments noted that it may be possible to successfully accomplish this standards development in a safe and effective manner. RTCM noted its "willingness, if asked and supported, to develop standards necessary to accomplish the goals of this rulemaking while ensuring navigation safety." The Coast Guard agrees in principle with the comments provided by RTCM and proposes that RTCM establish a special committee to develop procedures and/or standards necessary to allow AIS devices operating on VHF channels AIS 1/AIS 2 be used to mark fishing equipment in a safe and effective manner. The USCG will participate in such a committee if one is established.

AIS devices transmitting on 160.9 MHz – Autonomous Maritime Radio Devices (AMRD) Group B

The American Association of Railroads (AAR) in its comments requests that fishing equipment markers not be permitted to operate in the 160.900 MHz band largely on the basis of its concerns with potential interference to railroad use of the band. As discussed further below, the AAR technical analysis is insufficient to support its concerns. The Coast Guard is prepared to work with AAR and others to prepare a more appropriate analysis. Although AMRD Group B devices operating on 160.9 MHz may not be the solution to all of the problems raised in this proceeding, AMRD Group B use of 160.9 MHz was adopted internationally¹ with U.S. support, and we will therefore need to address their eventual use. Now that they are recognized by ITU, AMRD Group B will be developed and used internationally and it will be difficult to keep them out of U.S. waters. The U.S. should work with the international community to ensure AMRD Group B devices operate safely in whatever waters they operate, including in U.S. waters, without causing interference with those who share this internationally-allocated spectrum.

AAR's initial technical studies of a simulated beacon signal at 160.9 MHz raises a number of questions. For example, AAR stated that "In a controlled test environment, Union Pacific measured railroad receiver desensitization at frequencies near 160.900 MHz caused by a simulated maritime beacon signal at 160.900 MHz."² What exactly was that controlled signal? Was it based on the operating parameters of an AIS technology, operating at a very short duty cycle (i.e. 27 msec) once per minute, as mandated by Rec. ITU-R M.2135?

When AIS was being deployed during the early 2000s, the United States Coast Guard requested that the Department of Defense Joint Spectrum Center (DOD JSC) perform an electromagnetic compatibility analysis of the potential for interference from an Automatic Identification System (AIS) transmitter to a Public Correspondence (PC) VHF/FM receiver (in both voice and data modes). JSC Report (JSC-PR-04-007) – *EMC Analysis of Universal Automatic Identification and Public Correspondence Systems in the Maritime VHF Band*, is useful in assessing this type of co-channel and adjacent channel interference. The report is available on the USCG NAVCEN website: <http://www.navcen.uscg.gov/enav/ais/JSC-PR-04-007.pdf>. This JSC report was based on AIS operating at higher power (25w on ships, 50w ashore), at much higher antenna heights and duty cycles. For example, ships can transmit at reporting intervals as short as every two seconds, depending on their operation. Group B AMRD reporting intervals are limited³ to once per minute, e.i.r.p. limited to 100mw and antenna height limited to 1m, restrictions which do not apply to shipboard AIS and which will significantly reduce the possibility of interference even further than that reported by JSC. Results of the DOD JSC study should be considered in any AMRD Group B interference analysis. AAR's analysis assumed free space propagation rather than an arguably more realistic model such as that in Recommendation ITU-R P.1546. Any analyses should be based upon such a model.

AAR in its reply comments noted "any limitations on the use of these (AMRD Group B) devices would be unenforceable because it would be virtually impossible to determine which device was violating the rules."⁴ Recommendation ITU-R M.2135 in fact requires that every AMRD Group B transmit the precise latitude and longitude of the device. The USCG is asking ITU-R Working Party 5B to add "AMRD Group and Owner Identity" as well. The AMRD Group B standard is an

¹ ITU World Radiocommunication Conference 2019 (WRC-19) Final Acts, Appendix 18 footnote r). The FCC's own World Radiocommunication Conference Advisory Committee (WRC-19 Advisory Committee or WAC) proposed and the FCC adopted this proposed use of 160.9 MHz, including footnote r) under WRC-19 Agenda 1.9.1, which WRC-19 later adopted.

² AAR comments, page 7

³ Recommendation ITU-R M.2135

⁴ AAR reply comments, p11.

open standard, and the Coast Guard expects that low cost commercially available devices will be available displaying AMRD locations and owner identities, as they are now available for AIS.

The USCG believes that with adequate care, it is possible for low power AIS devices to operate on 160.9 MHz without causing harmful interference to railroad systems even if a thorough study shows interference to be possible. For example, AMRD Group B could employ a geofencing capability to prevent their use in areas where the nation's railroads are vulnerable to interference on 160.9 MHz, as suggested by RTCM in its comments for devices⁵ using the AIS frequencies, and supported by AARC.⁶ Geofencing need not be costly and would preclude the possibility of interference over waters shown by a more thorough study to require protection.⁷

Sincerely,

Jerry L. Ulcek
Spectrum Management and
Telecommunications
Division Chief
U. S. Coast Guard

⁵ RTCM comments, page 6.

⁶ ARCC reply comments, page 4.

⁷ AAR's reply comments on p11 discounted geofencing due to cost and expectation of interference over thousands of miles of fishable waters.