

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Office of Engineering and Technology Seeks)	ET Docket No. 18-284
Comment on Metrom Rail LLC Request for)	
Waiver of Part 15 Ultrawideband Rules for a)	
Positive Train Control System)	
3.7-4.2 GHz Band)	

**NCTA – THE INTERNET & TELEVISION ASSOCIATION AND
AMERICAN CABLE ASSOCIATION
REPLIES TO COMMENTS ON REQUEST FOR WAIVER**

NCTA – The Internet & Television Association (NCTA) and the American Cable Association (ACA) urge the Commission to require a detailed interference analysis from Metrom Rail LLC (Metrom) to consider how its proposed higher power ultrawideband (UWB) operations would coexist with Fixed Satellite Service (FSS) receive-only earth stations operating on a primary basis in the 3.7-4.2 GHz (C-band) frequency range before considering its request for waiver. Thousands of receive-only earth stations operated by NCTA and ACA members in this band receive television programming by listening for faint signals transmitted from satellites operating over 35,000 km above the earth. The “link margins” of these signals are narrow, leaving little room for error and rendering them highly susceptible to harmful interference. Although NCTA and ACA support Metrom’s goals to promote railway safety for passengers and personnel, Metrom has not demonstrated that operating UWB devices at the higher power levels requested would protect primary C-band users from harmful interference. Moreover, the Commission has an ongoing rulemaking to consider expanding terrestrial wireless access in the

3.7-4.2 GHz band¹ and has instituted an application freeze on new FSS and Fixed operations while it develops and considers a record in that proceeding.² The Commission should proceed to consider Metrom's request for waiver only after (1) Metrom submits detailed technical analysis demonstrating that its proposed operations will not cause harmful interference to C-band downlinks and (2) the Commission resolves its broader 3.7-4.2 GHz rulemaking.

Metrom requests a waiver to obtain equipment authorization for UWB devices in the 3.272-5.014 GHz band that operate above the current radiated power emissions limit, and to install and operate such equipment as fixed wireless infrastructure under the rules for handheld UWB equipment, as part of positive train control (PTC) system deployment.³ Specifically, Metrom requests a waiver to operate directional antennas, not just in underground tunnels, but also outdoors,⁴ at an EIRP of -35.3 dBm, 6 dB higher than the Commission's current rules permit.⁵ While Metrom limits its initial request to operation in three major metropolitan areas (Boston, New York City, and Los Angeles), Metrom states that it would ultimately like to expand the waiver "to the rest of the United States should certain conditions be met."⁶

¹ *Expanding Flexible Use of the 3.7-4.2 GHz Band*, Notice of Proposed Rulemaking, GN Docket No. 18-122, RM-11791, RM-11778, FCC 18-91 (rel. July 13, 2018) (NPRM).

² See FCC, Public Notice, *Temporary Freeze on Applications for New or Modified Fixed Satellite Service Earth Stations and Fixed Microwave Stations in the 3.7-4.2 GHz Band; 90-Day Window to File Applications for Earth Stations Currently Operating in 3.7-4.2 GHz Band*, GN Docket Nos. 17-183, 18-122, DA 18-398 (rel. Apr. 19, 2018).

³ Request by Metrom Rail, LLC for Waiver of Sections 5.519(a) and 15.519(c) of the Commission's Rules, ET Docket No. 18-284, at 1 (filed Sept. 4, 2018) (Waiver Request).

⁴ See *id.* at 14.

⁵ *Id.* at 16.

⁶ *Id.* at 1, 22.

NCTA's and ACA's members rely on C-band spectrum to deliver programming to 100 million American households, including 51.9 million cable video customers. Almost every national programming network and many regional networks are distributed using the 3.7-4.2 GHz downlink spectrum to send programming to earth station antennas at network operations centers and cable headends around the country, which then distribute programming on to customers. Programming networks also rely on C-band satellite spectrum to deliver breaking news, sports, and other live programming from remote locations back to network operations centers where that content can be incorporated into the program stream and delivered to MVPDs. All in all, according to ACA's calculations, nearly 2,000 video channels are transmitted using C-band spectrum today.⁷

C-band earth stations receiving signals from satellites more than 35,000 km away are especially vulnerable to harmful interference, as many commenters have recently noted in response to the Commission's Notice of Inquiry, and later Notice of Proposed Rulemaking, on expanded terrestrial use of 3.7-4.2 GHz.⁸ Additional noise introduced by new co-channel operations poses a significant risk to important C-band operations. Metrom should therefore file detailed technical information, for review by the Commission and other stakeholders, demonstrating how protection from harmful interference can be achieved under real-world

⁷ Comments of the American Cable Association, GN Docket No. 18-122, RM-11791, RM-11778, at 4-5 (filed Oct. 29, 2018).

⁸ *See, e.g.*, Comments of the Satellite Industry Association, GN Docket No.18-122, at 6 (filed May 31, 2018); Comments of the Content Companies, GN Docket No. 17-183, at 6 (filed Oct. 2, 2017); Comments of General Communication, Inc., GN Docket No. 17-183, at 11-13 (filed Oct. 2, 2017); Comments of National Public Radio, Inc., GN Docket No. 17-183, at 10-11 (filed Oct. 2, 2017).

conditions, particularly where the proposed UWB devices would be deployed near existing earth station facilities. For example, one NCTA member operates an earth station facility located just 25 feet from train tracks that are heavily trafficked by cargo trains. Even the train traffic itself has a negative impact on the earth station antennas at the site due to the vibrations caused by the heavy loads and it is unclear how Metrom's proposed operations might impact such sites.

Metrom acknowledges that its requested bandwidth for operation includes a non-federal allocation for "Fixed Satellite (downlink) Services," among other users.⁹ While it discusses at a very high level how it anticipates that its PTC system operating at higher power levels would protect radiolocation, radio astronomy, radionavigation, fixed, and mobile services operating in different portions of the frequencies for which it seeks waiver, the waiver request includes no discussion (and, importantly, no technical analysis) regarding how its equipment, operating at higher power levels than currently permitted, would protect FSS downlink.¹⁰ Although Metrom notes that "there were no reported instances of harmful interference caused to any authorized radio system" during the limited demonstrations it conducted under STA (some of which were underground),¹¹ Metrom's representation is not sufficient to address the potential for harmful interference to FSS if the proposed PTC system were installed nationwide on outdoor tracks, some of which may pass close by FSS earth station facilities. It would be premature for the Commission to consider Metrom's request until Metrom files technical analyses demonstrating

⁹ *Id.* at 17.

¹⁰ *See id.* at 17-20. Note that Aviation Spectrum Resources, Inc., has also raised concerns regarding harmful interference to aviation safety services, and similarly recommends that the Commission require submission of more detailed technical information before the Commission considers the waiver request. Comments of Aviation Spectrum Resources, Inc., ET Docket No. 18-284, at 1, 4 (filed Oct. 22, 2018).

¹¹ Waiver Request at 9.

that its proposed operations would not interfere with FSS systems.

Finally, as NCTA and ACA note above, the Commission has imposed a filing freeze on new FSS and Fixed service operations in the 3.7-4.2 GHz band while it considers proposals for introducing expanded terrestrial wireless services into the band. NCTA and ACA recommend that the Commission proceed to consider Metrom's request for waiver only after Metrom submits detailed technical studies demonstrating that its proposed operations will not cause harmful interference to C-band downlinks and after the Commission resolves its broader 3.7-4.2 GHz proceeding.

Respectfully submitted,

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November 6, 2018