



Federal Communications Commission
Washington, D.C. 20554

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DA 15-549

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RE: Application File Nos. 0006225158 and 0006225216

Dear Ms. Farquhar:

For the reasons discussed below, the Mobility Division of the Wireless Telecommunications Bureau (Bureau) hereby grants the above captioned applications for an exchange of 220-222 MHz band (220 MHz Band) spectrum licenses between PTC-220, LLC (PTC-220), a joint venture of the nation's seven Class I freight railroads,¹ and the Association of American Railroads (AAR), a trade association whose members include the seven Class I and other railroads.² We also grant to the extent described below certain related waiver requests and an extension of time, until December 31, 2015, for AAR to make the required substantial service construction and renewal showings for the licenses it seeks to acquire from PTC-220.

BACKGROUND

Pursuant to the Rail Safety Improvement Act of 2008 (RSIA), most freight, intercity passenger, and commuter railroads are required to install and operate interoperable positive train control (PTC) systems by December 31, 2015.³ PTC systems, once implemented, are intended to reduce the risk of rail accidents caused by human error, including train-to-train collisions, derailments caused by excessive speed, and unauthorized train movements in work zones. PTC wireless communications networks are intended to enable real-time information sharing between trains, rail wayside devices, and control centers, regarding train movement authorities, speed restrictions, train consist, position, speed, and the state of signal and switch devices.

PTC-220 has acquired nationwide and other 220 MHz Band spectrum licenses to enable the deployment of PTC systems by its members and other railroads, including commuter railroads, in the United States.⁴ PTC-220's 220 MHz licenses include six regional economic area licenses (the "J Block Licenses"),⁵ which together form a *de facto* nationwide license.⁶

¹ PTC-220's seven members are: BNSF Railway Company, Canadian National, Canadian Pacific, CSX Corporation, Kansas City Southern, Norfolk Southern Corporation, and Union Pacific Corporation.

² AAR members also include smaller non-Class I and passenger railroads including Amtrak. See <https://www.aar.org/Pages/AboutUs.aspx> (website last visited April 30, 2015).

³ Rail Safety Improvement Act of 2008, Pub. L. No. 110-432, § 104, 122 Stat. 4848, 4857 (2008).

⁴ See PTC-220, LLC, Request for Waiver to Facilitate Deployment of Positive Train Control Systems, WT Docket 13-59, *Memorandum Opinion and Order*, DA 15-332, 2015 WL 1205196 (F.C.C.) ¶3 (WTB Mobility Div. 2015) (*PTC-220 2015 Waiver Order*) (summarizing PTC-220's 220 MHz Band spectrum holdings).

⁵ The J Block includes paired 75 kHz spectrum blocks (220.925-221.000 and 221.925-222.000 MHz). PTC-220's J Block Licenses include paired 40 kHz spectrum blocks (220.960-221.000 and 221.960-222.000 MHz); the remaining J Block spectrum is not held by PTC-220.

AAR holds certain spectrum licenses for the benefit of its members, including a nationwide 220 MHz license (WPWY753, the “Nationwide License”).⁷ Several AAR freight railroad members use the Nationwide License for the remote control of locomotives (RCL) to assemble and disassemble trains in rail yards.⁸ RCL is intended to increase the safety of rail workers during train assembly and disassembly by replacing hand signals and voice commands between railroad personnel with remote control operations.

PTC-220 and AAR seek Commission consent to the assignment of the J Block Licenses to AAR and the Nationwide License to PTC-220.

DISCUSSION

The parties state that the J Block Licenses have limited utility for PTC deployment because of a 2 watt effective radiated power (ERP) limit and a maximum antenna Height Above Average Terrain of 20 feet for transmissions on base station transmit Channels 196-220,⁹ but the licenses are well suited for RCL operations, which could operate consistent with the 2 watt ERP limit.¹⁰ PTC-220 states that it will be able to efficiently deploy PTC service on the Nationwide License by combining it with its other nationwide 220 MHz licenses with similar power and height limits, thereby simplifying PTC network design.¹¹ After the spectrum swap, AAR members would also use the J Block Licenses for specialized low-power PTC applications (in tunnels for example), primarily in the Northeast and Mid-Atlantic, where RCL operations are not currently envisioned.¹² The parties state that current RCL operations are directly adjacent to PTC operations, creating a potential for interference and that relocating RCL operations to the J Block Licenses will remove this adjacency.¹³ In most areas, the swap would create between 118 and 200 kHz of spectral separation, with 100 kHz of spectral separation yielding roughly 30 dB of advantage.¹⁴

We find that the contemplated spectrum swap will serve the public interest in rail safety and spectrum efficiency because it will increase the amount of usable spectrum available for PTC and RCL operations,¹⁵ while reducing the risk of interference between the two services. We also find that the contemplated spectrum swap will serve the public interest because it will facilitate the deployment of

⁶ ULS File No. 0006225158 (assignment of the J Block Licenses to AAR). The J Block licenses include: WPOI702 (Northeast), WPOI703 (Mid-Atlantic), WPOI704 (Southeast), WPOI705 (Great Lakes), WPOI706 (Central/Mountain), and WPOI708 (Pacific).

⁷ ULS File No. 0006225216 (assignment of the Nationwide License to PTC-220).

⁸ ULS Files Nos. 0006225158 and 0006225216, Description of Transaction at 3 (Transaction Description). A typical RCL installation involves a control unit on a switching locomotive that is connected via a direct radio frequency link (or via repeater) to a portable remote unit worn by the operator. RCL enables the remote operator to control certain functions of the switching locomotive (for example, speed, brake, direction, and horn) and has a built-in safety feature that automatically stops the locomotive in the event of “man down” or loss of communications. *Id.* at 3, n.8.

⁹ See 47 C.F.R. § 90.729(c).

¹⁰ Transaction Description at 3.

¹¹ *Id.* at 4.

¹² For a detailed description of these proposed PTC uses, see AAR Request for Extension of Time at 7 (attachment to Form 603, ULS File No. 0006225158) (Extension Request).

¹³ Transaction Description at 3-4.

¹⁴ Extension Request at 5. In markets where PTC-220 holds 220 MHz Band E Block licenses, the separation would be at least 78 kHz. *Id.* at n.10.

¹⁵ AAR would receive 80 kHz—enough for three 12.5 kHz duplex RCL channels—in exchange for its 50 kHz license that currently can only support two RCL channels. See Extension Request at 5.

Congressionally-mandated PTC systems, and “promot[e] safety of life and property.”¹⁶

Rule Waivers. The Commission may grant a request for a waiver when: (i) the underlying purpose of the rules(s) would not be served or would be frustrated by application to the instant case, and a grant of the requested waiver would be in the public interest; or (ii) in view of the 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.¹⁷ The Commission also may waive a rule, in whole or in part, on its own motion or on petition if good cause therefor is shown.¹⁸

AAR requests that two rule waivers granted in the *PTC-220 2009 Waiver Order*¹⁹ to facilitate the use of the J Block Licenses for PTC service—waivers of Section 90.715(a) (base/mobile configuration)²⁰ and 90.735 (station identification)²¹—be assigned with that spectrum to AAR.²² It states that waiver of Section 90.715(a)’s base/mobile provisions, relief provided to it in the *2003 AAR Waiver Order* to facilitate RCL deployment,²³ is necessary because RCL service can provide mobile-to-mobile and portable-to-mobile connectivity.²⁴ AAR explains that on the J Block, RCL will need to operate on an inverted duplex mode, so that the lower-powered portable and mobile RCL radios can transmit in the lower portion of the J Block (the base transmit band) where the 2 watt ERP limit applies, with fixed stations transmitting in the upper (base receive) portion of the band.²⁵ AAR further states that because AAR members will also use the J Block Licenses for low-power, specialized PTC applications in certain spectrum constrained areas,²⁶ waiver of the base/mobile provisions is appropriate.²⁷ We agree with AAR’s stated rationale and find that waiver of the base/mobile provisions will serve the public interest in rail safety by facilitating both RCL and PTC operations and find that the underlying purpose of this rule would not be served by strict application here.²⁸ We also agree with AAR that a waiver of Section 90.735 (station identification) is appropriate because the J Block Licenses form a *de facto* nationwide license, and AAR will be readily identifiable in Commission records as the licensee of the J Block Licenses.²⁹

¹⁶ 47 U.S.C. § 151.

¹⁷ 47 C.F.R. § 1.925(b)(3).

¹⁸ 47 C.F.R. § 1.3.

¹⁹ Request of PTC-220, LLC for Waivers of Certain 220 MHz Rules, *Memorandum Opinion and Order*, 24 FCC Rcd 8537, ¶¶18, 20 (WTB 2009) (*PTC-220 2009 Waiver Order*) (granting PTC-220 a waiver of Section 90.715(a)’s base/mobile limits to enable deployment of time division duplex (TDD) PTC systems that utilize both band segments for base and mobile operations; also granting PTC-220 additional time to meet the construction requirements for certain licenses and other relief).

²⁰ 47 C.F.R. § 90.715(a) (assigning frequencies in pairs, with base station frequencies taken from the 220-221 MHz band, with corresponding mobile and control station frequencies taken from the 221-222 MHz band).

²¹ 47 C.F.R. § 90.735.

²² Transaction Description at 5-6.

²³ Application for Consent to the Assignment of a Five-Channel 220 MHz Nationwide License (Call Sign WPWY753, formerly WPTC968) from Rush Network Corp. to the Association of American Railroads and Request by Rush Network Corp. for Waiver of the Ten-Year Construction Requirement, *Order*, 18 FCC Rcd 24711, 24714 ¶9 (WTB 2003) (*2003 AAR Waiver Order*).

²⁴ Transaction Description at 5.

²⁵ *Id.*

²⁶ For a detailed description of these proposed PTC applications, see Extension Request at 7 (attachment to Form 603, ULS File No. 0006225158).

²⁷ Transaction Description at 5.

²⁸ 47 C.F.R. § 1.925(b)(3)(i).

²⁹ Transaction Description at 5-6.

PTC-220 requests that certain waivers granted in the *2003 AAR Waiver Order*³⁰ for the Nationwide License—waivers of Section 90.715(a) (base/mobile configuration)³¹ and Sections 90.713(a) and 90.717(b) (limiting the use of the Nationwide License to commercial operations)³²—be assigned with that spectrum to PTC-220 because the same relief is relevant to PTC service.³³ We agree and find that waiver of Sections 90.713(a) and 90.717(b) is appropriate because PTC-220 members and other railroads operate PTC systems on a private, non-commercial basis. We note that PTC-220 employs time division duplex (TDD) technology. In the *PTC-220 2009 Waiver Order*, the Bureau granted PTC-220 waiver relief to use both the upper and lower portions of the 220 MHz Band for base and mobile transmissions, finding that there was limited potential that such operations would cause co-channel interference because there will be no co-channel users in close geographic proximity.³⁴ A waiver of Section 90.715(a)'s base/mobile provisions here will enable PTC-220 to similarly transmit and receive on any of the frequencies included in the Nationwide License.³⁵ We find that waiver of Section 90.715(a) will serve the public interest in rail safety by facilitating PTC operations, and find that the underlying purpose of this rule would not be served by strict application here.³⁶

We also note that the Bureau previously determined and we reiterate here that the waivers requested above are in the public interest. In the *2003 AAR Waiver Order*, the Bureau found that a waiver of Sections 90.713(a) and 90.717(b) to permit the private use of 220 MHz spectrum for RCL would serve “the public interest because of its public safety, spectrum, and efficiency benefits,” and would serve “the Commission’s policies regarding flexible spectrum use.”³⁷ In the *PTC-220 2009 Waiver Order*, the Bureau recognized these same benefits in waiving Sections 90.713(a) and 90.717(b) to permit the private use of certain 220 MHz spectrum licenses for PTC.³⁸ The Bureau has also previously determined that a waiver of the base/mobile use restrictions for RCL and PTC operations is in the public interest noting that the waiver will facilitate PTC in “highly congested areas shared by multiple freight and commuter railroads”³⁹ and will permit RCL portable-to-mobile and mobile-to-mobile communications.⁴⁰

For all of the reasons stated above, we conclude that the public interest will be served by granting the requested waivers from the *2003 AAR Waiver Order* to PTC-220 and granting the requested waivers from the *PTC-220 2009 Waiver Order* to AAR.

Substantial Service Showings. As explained below, the Bureau recently conditionally renewed the J Block licenses, contingent on PTC-220 making the separate renewal and construction substantial service showings for the licenses by December 31, 2015. AAR requests a waiver so that it too will have until December 31, 2015, to make the separate renewal and construction substantial service showings for

³⁰ *2003 AAR Waiver Order*, 18 FCC Rcd at 24713-14 ¶¶6, 8-9.

³¹ 47 C.F.R. § 90.715(a).

³² 47 C.F.R. §§ 90.713(a) and 90.717(b).

³³ Transaction Description at 6. We note that in the *PTC-220 2015 Waiver Order*, the Bureau granted PTC-220 a conditional waiver of Sections 90.729(b) (power and antenna height limits) and 90.723(f) (coordination requirements) of the Commission’s rules for certain 220 MHz Band licenses including, if acquired, the Nationwide License. *PTC-220 2015 Waiver Order*, 2015 WL 1205196 (F.C.C.).

³⁴ *PTC-220 2009 Waiver Order*, 24 FCC Rcd at 8544-45 ¶18.

³⁵ Transaction Description at 6.

³⁶ 47 C.F.R. § 1.925(b)(3)(i).

³⁷ *2003 AAR Waiver Order*, 18 FCC Rcd at 24713 ¶6.

³⁸ *PTC-220 2009 Waiver Order*, 24 FCC Rcd at 8545-46 ¶20.

³⁹ *Id.* at 8544 ¶18.

⁴⁰ *2003 AAR Waiver Order*, 18 FCC Rcd at 24714 ¶9.

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the J Block Licenses.⁴¹ AAR states that member railroads need more time to transition their RCL operations to the J Block, which will clear the Nationwide License for PTC use.⁴² It states that deployment of RCL on the J Block has already occurred because AAR members have had access to the J Block through PTC-220 spectrum manager leases.⁴³ AAR states that its members believe that most RCL cutovers, as well as construction of planned new RCL locations, can be completed by December 31, 2015.⁴⁴

When AAR filed its application to acquire the J Block Licenses, the deadline for PTC-220 to make the separate renewal and construction showings for the licenses was March 22, 2014. PTC-220 however had previously and timely requested an extension of time, until December 31, 2015, to make these showings,⁴⁵ which we recently granted to PTC-220 to facilitate the deployment of positive train control. We find good cause to provide that same relief here to enable AAR members to intensively use the J Block licenses for RCL and specialized PTC applications, both of which serve the vital public interest in rail safety.

Action taken pursuant to Sections 1, 4(i), 4(j), 5(c), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 154(j), 155(c), and 303(r), and sections 0.331, 1.3, and 1.925 of the Commission's rules, 47 C.F.R. §§ 0.331, 1.3, and 1.925.

Sincerely,

Roger S. Noel
Chief, Mobility Division
Wireless Telecommunications Bureau

⁴¹ See Extension Request and 47 C.F.R. §§ 90.743 (renewal requirements) and 90.767 (construction requirements).

⁴² Extension Request at 2.

⁴³ *Id.* at 9, n.16.

⁴⁴ *Id.* at 9.

⁴⁵ See ULS File Nos. 0006209617 (WPOI702), 0006209618 (WPOI703), 0006209619 (WPOI704), 0006209620 (WPOI705), 0006209621 (WPOI706).