

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

In the Matters of)
)
Creation of Interstitial 12.5 kHz Channels in the) WP Docket No. 15-32
800 MHz Band Between 809-817/854-862 MHz) RM-11572

COMMENTS OF MOTOROLA SOLUTIONS INC.

Motorola Solutions, Inc. (“Motorola Solutions”) hereby submits these comments in response to the Commission’s Notice of Proposed Rulemaking to introduce new, full power interstitial 12.5 kHz “offset” channels in the 809-817/854-862 MHz band (800 MHz Mid-Band) under Part 90 of the FCC’s Rules.¹ As further discussed below, Motorola Solutions urges the Commission to carefully consider whether to allow the use of interstitial channels in the 800 MHz Mid-Band as such actions may impede the growth of more efficient, broader bandwidth technologies in the band.

This proceeding was initiated in 2009 with the submission of a Petition for Rulemaking filed by the Enterprise Wireless Alliance (EWA).² The fundamental purpose of the EWA Petition was to enable the adoption of new rules that would provide for the assignment of new, full-power interstitial 12.5 kHz bandwidth frequencies while protecting currently authorized 25 kHz bandwidth systems in the 854-861/809-816 MHz.³ At the time, Motorola Solutions agreed that the adoption of policies and rules consistent with the goals of the EWA Petition would

¹ Creation of Interstitial 12.5 kHz Channels in the 800 MHz Band Between 809-817/854-862 MHz, WP Docket No. 15-32, *Notice of Proposed Rulemaking*, FCC No. 15-17 (rel. Feb. 9, 2015) (“*Notice*”).

² Petition for Rulemaking of the Enterprise Wireless Alliance, RM-11572, filed April 29, 2009 (“*EWA Petition*”).

³ *Id.* at 1.

improve the efficient use of the spectrum and provide enterprise business and industrial users and public safety organizations with needed additional capacity.⁴ Motorola Solutions noted, however, that use of the interstitial channels must be accomplished in a manner that does not interfere with existing systems operating on the regularly assignable channels and urged the Commission to focus on determining the appropriate assignment standards that properly balance the need to protect adjacent channel incumbent facilities.⁵

Released 6 years after the *EWA Petition* was initially filed, the Notice proposes to establish interstitial channels with reduced bandwidth (*i.e.*, 12.50 kHz) in the 800 MHz Mid-Band subject to interference protection criteria and eligibility requirements.⁶ The *Notice* also proposes to continue licensing of standard 25 kHz bandwidth channels in the Mid-Band with channel centers separated by 25 kHz. The full power interstitial channels with 12.5 kHz bandwidth would have center frequencies offset 12.5 kHz above and below the center frequencies of the standard channels in the Mid-Band.⁷

In making this proposal, the *Notice* asks commenters to consider whether the use of 800 MHz interstitial channels “would promote more effective and efficient use of the 800 MHz Mid-Band relative to competing technology that, although requiring greater bandwidth per channel, may achieve greater reliability/resiliency for personnel operating in challenging RF environments.”⁸ In short, the Commission is asking whether the further narrowbanding of the 800 MHz allocation would better serve the private land mobile community as opposed to rules

⁴ Statement in Support of Petition For Rulemaking Motorola, Inc., RM-11572, submitted Nov. 09. 2009.

⁵ *Id.* at 2.

⁶ *Notice* at ¶14.

⁷ *Id.*

⁸ *Id.*

promoting broader bandwidth technologies. At this point in time, Motorola Solutions tentatively believes that it is premature to answer this question.

As the *Notice* recognizes, the Commission recently adopted final rules that permit the use of technologies, including TETRA, that operate with wider bandwidths than previously authorized in a 25 kHz channel.⁹ In large part, this decision was based on the Commission’s conclusion that such technologies pose minimal risk of causing harmful interference to other users provided that the licensee of the wider bandwidth technology “has exclusive use of its channels and all adjacent channels within 18.75 kilohertz of its center frequency.”¹⁰

In response to these newly revised rules, Motorola Solutions has developed technologies that take advantage of these flexible technical standards and increased authorized bandwidth. Essentially, Motorola Solutions has developed non-proprietary deployments of Project 25 and DMR technologies to fit two 12.5 kHz emissions within the maximum 22 kHz authorized bandwidth limitation permitted in a 25 kHz channels while meeting the Adjacent Channel Power limits of Section 90.221 of the Commission’s Rules. Such deployments allow existing licensees to effectively double their capacity without adding new sites. These technologies and other wide band options such as TETRA are poised to provide existing 800 MHz licenses with greater efficiency and capabilities at minimal costs.¹¹

The *Notice* appears to recognize that the introduction of interstitial channels in the 800 MHz band may run at cross purposes to encouraging the use of wider bandwidth technology on

⁹ Amendment of Part 90 of the Commission’s Rules to Permit terrestrial Trunked Radio (TETRA) Technology, WT Docket No. 11-69, ET Docket No. 09-234, Report and Order, 27 FCC Rcd 11569 (2012).

¹⁰ *Id.* at ¶5-7.

¹¹ In developing 22 kHz technologies based on Project 25 and DMR, Motorola Solutions remains one of the world’s leading manufacturers of TETRA equipment.

existing channels. Stations proposing to operate on interstitial channels will need to provide greater interference protection to existing licensees operating on the main channels using 22 kHz equipment. Conversely, authorized stations on the interstitial channels could prevent licensees operating on the main channels from subsequently migrating to 22 kHz technology if the two facilities are located sufficiently close to each other.

The Commission finalized its policies and rules in the TETRA proceeding less than two years ago.¹² Manufacturers of TETRA and other 22 kHz technologies have only recently completed the certification process for compliant new technologies and existing licensees have had insufficient time to design, test, and plan for future migration to the new efficient technologies. Significantly changing the 800 MHz environment at this time could strand significant investment by manufacturers.

If the Commission is to allow the use of the interstitial channels, Motorola Solutions expects that it will likely spur a land rush for new applications – many of which will be speculative in nature. In anticipation of this inevitability, Motorola Solutions further expects that many existing licensees on the main channels will attempt to minimize any preclusive effect from the interstitial applications by prematurely applying for authority to use 22 kHz emissions to their licenses in order to preserve future migration options. Motorola Solutions believes that the filing of speculative and/or strategically defensive applications does not serve the public interest and robs the industry and the FCC of valuable resources. Motorola Solutions urges the FCC to minimize the likelihood of these scenarios.

¹² Amendment of Part 90 of the Commission's Rules to Permit terrestrial Trunked Radio (TETRA) Technology, WT Docket No. 11-69, ET Docket No. 09-234, Order on Reconsideration, 28 FCC Rcd 9639 (2013).

To protect incumbent's spectrum rights, the Commission could adopt interference protection standards rules that consider all operations on the 25 kHz channels to be operating with 22 kHz wide technologies. This would preserve options for 25 kHz licensees to deploy TETRA and other wider bandwidth technologies as encouraged by the Commission.

Alternatively, the Commission could defer consideration of any new rules at this time to get a better sense of the market's direction. This approach would, in part, recognize that enabling the use of the interstitials would make aggregation of 25 kHz channels into broadband pipes forever unlikely.

Motorola Solutions appreciates the Commission's and EWA's thoughtful analysis in the preparation of the *Notice* but questions whether now is the appropriate time to proceed on its proposals. Throughout the long history of the private land mobile services, the always limited quantity of allocated spectrum has continually forced the industry to consider the balance of needs between incumbent users and potential new entrants. After sustaining years of rebanding, Motorola Solutions believes that needs of incumbent users to consider their near-term future options should take precedent over the creation of new interstitial channels.

Respectfully submitted,

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