

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

In the Matter of

Amendment of Part 90 of the Commission's
Rules

WP Docket No. 07-100

**COMMENTS OF HARRIS CORPORATION ON THE
FURTHER NOTICE OF PROPOSED RULEMAKING**

In response to the Commission's Further Notice of Proposed Rulemaking,¹ the Public Safety and Professional Communications Unit of Harris Corporation's RF Communications Division ("Harris") submits these comments on proposed frequency coordination procedures for permanent fixed 4.9 GHz links. Harris applauds the Commission's leadership in improving the usability of public safety's broadband spectrum, through its adoption of its *Report and Order* amending Part 90 of its Rules.²

In the *4.9 GHz FNPRM*, the Commission expressed concern that the coordination requirements in Section 90.1209(b) might not ensure that applicants for primary permanent fixed stations would provide sufficient protection to other primary permanent fixed stations and other

¹ *Amendment of Part 90 of the Commission's Rules*, Further Notice of Proposed Rulemaking, WP Docket No. 07-100, 24 FCC Rcd. 4315 (2009) ("*4.9 GHz FNPRM*").

² *Amendment of Part 90 of the Commission's Rules*, Report and Order, WP Docket No. 07-100, 24 FCC Rcd. 4298 (2009) ("*4.9 GHz R&O*").

co-primary users, and thus believes that additional measures are required to minimize the potential for interference. Therefore, the Commission proposed to modify Section 90.1209(b) to require applicants for primary fixed stations providing point-to-point and point-to-multipoint communications to successfully complete the prior coordination procedures of Section 101.103(d), which govern coordination of fixed microwave stations. Nevertheless, the Commission also invited commenters to suggest alternate measures that would serve its purposes.³

Rather than impose a coordination process designed for a technically different type of link, Harris suggests that the Commission would better achieve its objectives by using the coordination process designed for 4.9 GHz networks. Imposing Section 101.103(d) microwave coordination procedures is inconsistent with the Commission's proposal to reinstate the certified coordination exemption, and is not appropriate for 4.9 GHz fixed links being deployed in an *integrated* 4.9 GHz broadband network on a non-exclusive license basis. Rather, the Commission should use the coordination process for 4.9 GHz networks already provided for in its rules. Section 90.1211 provides that the Regional Planning Committees ("RPCs") will manage coordination for mobile and temporary links.

Harris believes that the Commission should therefore modify Section 90.1211 to cover permanent fixed links as well. Public safety 4.9 GHz networks can use the same infrastructure for fixed and nomadic links, so it is most efficient for the same entity – the appropriate RPC - to manage coordination for all links in a 4.9 GHz network.

³ See *id.* at ¶ 45.

I. Background

Harris is an international communications and information technology company serving government and commercial markets in more than 150 countries. Harris has extensive experience and operations in the telecommunications sector, including public safety, health IT, and cybersecurity. As the leading supplier of interoperable solutions for defense communications and public safety communications systems worldwide, Harris shares the Commission's interest in enhancing public safety functionality.

In May 2009, Harris acquired the worldwide wireless systems business of Tyco Electronics Ltd. Previously, this business operated under the M/A-COM brand, leading technology developer and manufacturer of mission-critical wireless communications for the land mobile and public safety markets. Harris combined this wireless system business with its Government & Public Safety Unit to form the Public Safety and Professional Communications Unit of the Harris RF Communications Division. The Public Safety and Professional Communications Unit is even better positioned post-merger to serve the needs of public safety. Through the acquisition of Tyco Electronics' wireless systems business, Harris has cemented its place in and further enhanced its knowledge of the public safety market.

In the *4.9 GHz R&O*, the Commission adopted rules to maximize flexibility for first responders and to encourage the deployment of broadband applications to enhance sharing of data and video.⁴ Harris supports the concept of frequency planning and coordination, since effective coordination among overlapping licensees is required to ensure that the 4.9 GHz band remains optimized for mission-critical public safety communications. However, Harris accepts

⁴ See *id.* at ¶ 10.

the Commission's offer to suggest alternative, less burdensome coordination measures that better serve the Commission's purposes for the 4.9 GHz band.

II. Harris Supports the Commission's Proposal to Reinstate the Exemption for Certified Coordination

Certified coordination is not required for 4.9 GHz public safety networks, since those frequencies are intended to be shared among public safety entities. Certification of coordination is also unnecessary, given local government's interest in maximizing use and avoiding interference among its various public safety agencies. Moreover, as more public safety communications planning (particularly with regard to interoperable communications like that envisioned for the 4.9 GHz band) is done at the state level, there is inherently more state and local-government coordination amongst public safety agencies. For instance multi-jurisdiction, multi-disciplinary Statewide Communications Interoperability Plans (SCIPs) are now required from every State as a condition of receiving Homeland Security Grant Program and Public Safety Interoperable Communications grants.⁵ Local governments have a strong monetary incentive to coordinate and plan with state agencies, in order to benefit from such grants, as well as state budgets.

Harris therefore agrees with the Commission's tentative conclusion that the public interest would be served by the restoration of the exemption for 4.9 GHz applications from certified frequency coordination requirements.⁶ As the Commission correctly observed, even with an exemption, 4.9 GHz licensees have an incentive to cooperate and coordinate with each

⁵ See 6 U.S.C. § 194 (f); http://www.safecomprogram.gov/NR/rdonlyres/E7E70605-12FB-492F-ABD3-5BA708EA5FD3/0/SCIImplementationFactSheet_March2009.pdf

⁶ See *4.9 GHz FNPRM* at ¶ 43.

other in the use of the spectrum.⁷ A formal, certified coordination process is therefore not required.

III. Harris Agrees that Coordination Is Important for Primary Fixed Links But Urges the Commission to Extend to Permanent Fixed Links the Existing Regional-Plan Approach to Temporary Fixed and Mobile Base Stations

When the Commission adopted the 4.9 GHz *FNPRM*, it stated that “[t]his proceeding is part of our continuing effort to provide clear and concise rules that facilitate the use of new wireless technologies, devices and services, and that are easy for the public to understand.”⁸ Consistent with those goals, Harris notes that Section 90.1211 already specifies a process for ensuring coordination of 4.9 GHz links. Harris proposes that Section 90.1211 be amended to cover permanent fixed links, as well as mobile and temporary fixed links. Using the process already known and understood for mobile and temporary fixed links for permanent fixed links will best meet the variety of Commission goals for the band. Specifically, Section 90.1211 already requires Regional Plans to incorporate “[a] description of the coordination procedures for both temporary fixed and mobile operations, including but not limited to, mechanism for incident management protocols, interference avoidance and interoperability.”⁹ Harris proposes that the Regional Plans also describe coordination for permanent fixed stations at 4.9 GHz. This is the simplest approach, and eminently consistent with the Commission’s intent to adopt clear, concise, understandable rules. Given that public safety 4.9 GHz networks can use the same infrastructure for fixed and nomadic links, it would make the most sense—and therefore be the most understandable—for the same entity – the appropriate RPC - to manage coordination for all links in a 4.9 GHz network.

⁷ *See id.*

⁸ *See id.* at ¶ 1.

⁹ 47 C.F.R. § 90.1211 (b)(4).

Section 90.1209(b) already provides that “All licensees shall cooperate in the selection and use of channels in order to reduce interference and make the most effective use of the authorized facilities.”¹⁰ Moreover, §90.1209(b) provides that licensees “causing harmful interference are expected to cooperate and resolve this problem by mutually satisfactory arrangements.”¹¹ There is already a substantive rule requiring 4.9 GHz licensees to avoid and resolve interference, and given the statewide planning for interoperable public-safety communications already in place through the SCIPs, there is no need to create yet another, potentially burdensome coordination process.

Modifying §90.1211 to apply to permanent fixed 4.9 GHz links, as well as to mobile and temporary fixed links, is also consistent with the Rules’ existing orientation towards service area. Section 90.1207 states that licenses will be issued for the geographic area encompassing the legal jurisdiction of the licensee. Harris believes that by having the RPCs manage frequency coordination for all 4.9 GHz links, such coordination would better implement the Commission’s intended licensing based on the geographic jurisdiction of the state or local government licensee.

The RPCs would be aware of operational links within a defined area on a map of a jurisdiction in which a licensee uses a specific channel and can provide “coverage sectors” or “frequency coverage” where a network is deployed on that frequency. The RPCs have a vested interest in ensuring proper frequency coordination among public safety agencies for all 4.9 GHz links. The RPCs should manage frequency use in a given area, and manage the overlap of licensee service areas, ultimately aiding in the process of assigning different channels to individual users in order to manage “overlapping” service areas. The Commission created Part 101 to govern fixed microwave services. Specifically, it adopted Section 101.103 for coordination of fixed

¹⁰ 47 C.F.R. § 90.1209(b).

¹¹ *Id.*

microwave links, with Section 101.103(d) intended for very high-powered, highly directionally microwave links. The Commission did not develop the Section 101.103 coordination rules for the low-power, less-directional, geographically-dispersed links in a 4.9 GHz network.

The Part 101 technical rules for fixed microwave links *require* that these microwave links be deployed with a *minimum* antenna gain (typically 38dB) and a *maximum* beamwidth of a few degrees.¹² Due to these rules, these fixed microwave links are *highly directional* links that can be represented as narrow paths on a coordination map. Successful application of Section 101.103 depends on the fact that microwave links are narrow, highly directional paths. The technical rules for 4.9 GHz have *no* minimum antenna gain and beamwidth requirements and in fact have *maximum* antenna gain requirements (which are below the minimum gain allowed for Part 101 fixed microwave services).

In contrast to the microwave rules, the 4.9 GHz technical rules allow for fixed links with an omnidirectional antenna (360 degree coverage), with a *maximum* antenna gain of 26dB, which corresponds to a *minimum* beamwidth of ~ 8-10 degrees. Due to this difference in technical rules, 4.9 GHz fixed links which are in compliance with the existing rules have a *very* different characteristic than fixed microwave links. 4.9 GHz fixed links can be deployed with a very large beamwidth (up to 360 degrees), and thus cannot be represented as a narrow path but must be represented as “service area or sector” on a map. 4.9 GHz fixed links can not be deployed with antenna above 26dB gain, and thus will not have a smaller beamwidth than ~ 8-10 degrees. Typical 4.9 GHz fixed deployments will have a large coverage area.

Therefore, imposition of Section 101.103(d) coordination does not make sense technically or procedurally, and would be against the public interest. In adopting the *4.9 GHz*

¹² See 47 C.F.R. § 101.115.

FNPRM, the Commission sought to encourage “public safety users to more fully utilize the 4.9 GHz band in support of broadband communications.”¹³ The Commission also sought, relative to certified coordination requirements, to relieve licensees from the burdens of that more cumbersome coordination process for 4.9 GHz links.¹⁴ Imposing Section 101.103(d) requirements on Part 90 4.9 GHz licensees would create confusion, be burdensome and would slow the deployment of broadband and data-sharing applications. It would unnecessarily add another party to coordinate only one element of the overall network. Adding another coordination party for just one element of network would confuse licensees, particularly when it is technically possible with 4.9 GHz equipment to utilize the same infrastructure for both permanent fixed links and mobile links simultaneously. The RPCs, currently responsible for coordination of mobile and temporary fixed links, would not know on a real-time basis the current status or coordinates of the permanent fixed links, which are intended to be part of an integrated network, in which frequencies could be dynamically shifted.

Moreover, complying with Section 101.103(d) requires a certified coordinator, which the FCC has exempted in the past. The Commission has just proposed to reinstate that exemption. Imposing Section 101.103(d) coordination procedures is inconsistent with the FCC’s proposal to reinstate the exemption, and is not appropriate for 4.9 GHz fixed links being deployed in an integrated 4.9 GHz broadband network on a non-exclusive license basis.

When the Commission adopted the *4.9 GHz FNPRM*, it stated that it seeks “proper frequency coordination among public safety agencies.”¹⁵ The most proper coordination is one that builds on an existing, understood structure, tailored for 4.9 GHz networks, and is the least

¹³ *4.9 GHz R&O* at ¶ 10.

¹⁴ *See id.* at ¶ 43.

¹⁵ *See id.* at ¶ 9.

burdensome, and most supportive of efficient, dynamic use of 4.9 GHz frequencies. That coordination process is the existing one used by the RPCs, outlined in Section 90.1211. The Commission should therefore modify Section 90.1211 to add permanent 4.9 GHz fixed links, but not impose §101.103(d) certified coordination.

CONCLUSION

Harris believes that the Commission should reinstate the exemption from certified coordination and amend Section 90.1211 to include permanent fixed links in the Regional Plans' coordination procedures, since they already cover mobile and temporary fixed links, which may be no different technically from permanent fixed links. If the Commission imposed Section 101.103(d) requirements on 4.9 GHz operations, the Commission would delay broadband deployment for public safety agencies, by unnecessarily adding additional costs, delay and confusion. Harris believes the Commission could better serve public safety agencies and the public interest by requiring the RPCs to describe coordination procedures for all links in a public safety 4.9 GHz network.

Respectfully submitted,



Kent D. Bressie
Patricia J. Paoletta
Damon C. Ladson*
WILTSHIRE & GRANNIS LLP
1200 18th Street, N.W., Suite 1200
Washington, D.C. 20036-2560
+1 202 730 1300 tel

Counsel for Harris Corporation

Public Safety and Professional
Communications Unit
RF Communications Division
HARRIS CORPORATION

Gregory Henderson
Director, Broadband Products & Technology
1011 Pawtucket Boulevard
Lowell, Massachusetts 01853
+1 978 442 5000 tel

JoAnne Dalton Koravos
Director, Government Relations and
Regulatory Affairs
600 Maryland Avenue, S.W., Suite 850E
Washington, D.C. 20024
+1 202 729 3759 tel

* Technical Policy Advisor

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