

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

Implementing Kari’s Law and Section 506 of RAY BAUM’S Act)	PS Docket No. 18-261
)	
)	
Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems)	PS Docket No. 17-239
)	

To: The Commission

REPLY COMMENTS OF CISCO SYSTEMS, INC.

Cisco Systems, Inc. (“Cisco”) files these reply comments in response to the Commission’s Notice of Proposed Rulemaking (“*NPRM*”) soliciting input on Congress’s directives in the Kari’s Law Act of 2017 (“Kari’s Law”) and RAY BAUM’S Act.¹ As discussed in more detail below, the comments submitted in response to the *NPRM* reflect a widespread recognition by stakeholders that the problems that led to the enactment of Kari’s Law are serious and must be immediately addressed. However, it is equally important that the Commission provide the clarity that is needed for the various stakeholders in the multi-line telephone system (“MLTS”) ecosystem to comply with the regulatory framework that the Commission adopts. This includes (but is not limited to) the “pre-configuration” and notification requirements of Kari’s Law, which the Commission should implement in a manner that reflects the technological realities of MLTS systems and how they are deployed. Furthermore, consistent with the positions taken by several commenters, Cisco urges the Commission to take a deliberate and measured approach to the issue of dispatchable location, recognizing the current technological

¹ *Implementing Kari’s Law and Section 506 of RAY BAUM’S ACT*, Notice of Proposed Rulemaking, FCC 18-132 (rel. Sept. 26, 2018) (“*NPRM*”).

limitations of certain forms of MLTS and the significant operational and financial challenges that would confront enterprises under a one-size-fits-all mandate.

I. THE RECORD ESTABLISHES THE NEED FOR THE COMMISSION TO PROVIDE CLARITY TO ALL MLTS STAKEHOLDERS.

The comments underscore the need for careful stewardship by the Commission in this proceeding, as virtually all parties recognize that the agency is moving into a previously-unregulated area involving stakeholders that are not traditionally subject to its jurisdiction. Based on Cisco's review of the record, many commenters raise legitimate questions or make constructive recommendations on how the Commission can provide additional clarity to its proposed rules.² Commenters also correctly emphasize the need for the Commission to clearly identify the roles and responsibilities of the various entities in the MLTS ecosystem, appropriately identify the entity or entities responsible for compliance with each requirement that the Commission adopts, and clearly state *when* compliance is required.³

Moreover, in crafting its compliance framework for Kari's Law and any dispatchable location requirements that it might adopt, it is imperative that the Commission articulate clear goals and provide concrete guidance to the various stakeholders in the MLTS ecosystem. If the FCC is not clear on what is required and does not make explicit any exceptions,⁴ there will

² See, e.g., Ad Hoc Telecommunications Users Committee Comments at 7 ("Ad Hoc") (seeking clarification from the Commission on the requirements of legacy MLTS in use prior to the proposed compliance deadline); ACA Comments at 5 (noting the potential for overlap between any dispatchable location requirements adopted by the Commission and existing state laws); TIA Comments at 12-13 (urging the Commission to clarify ambiguities concerning the effective date of Kari's Law, liability for compliance, and informal complaint resolutions); VON Coalition Comments at 10 (noting that the Commission's proposed definition of MLTS blurs the lines between MLTS and interconnected VoIP services).

³ See, e.g., AT&T Comments at 6; Bandwidth Inc. Comments at 5; RingCentral, Inc. Comments at 8-9; USTelecom Comments at 1.

⁴ As Cisco explains in these reply comments, the provision of dispatchable location requirements for all forms of MLTS is not technically feasible at this time. To the extent the Commission

continue to be a wide diversity of interpretations and opinions, which will engender confusion and provide a dangerous opportunity for stakeholders to avoid their respective responsibilities. Thus, it will be critical for the Commission to draw a strict line between those technologies that should reasonably be expected by MLTS users to deliver location information, and those that should not. Although it may not be possible for the Commission to reasonably inform itself about the universe of service variations in the MLTS market today, if the Commission clearly specifies the ends and means of its regulatory framework, then stakeholders will be well-positioned to determine where and how to generate location information and assure its accuracy.

II. KEY DEFINITIONS ADOPTED BY THE COMMISSION MUST REFLECT TECHNOLOGICAL REALITY.

The record makes clear that the Commission must clarify the “pre-configuration” requirement of Kari’s Law to reflect the technological reality of distributed MLTS that are being deployed by numerous enterprise customers today. For these systems, Cisco explained that the availability of the “911” direct dialing pattern can be “pre-configured” in the sense that the MLTS manufacturer can make this dialing pattern available to the MLTS installer, but the ability of a MLTS to support an emergency call using a specific dialing pattern must be configured by the MLTS installer at the time public switched telephone network (“PSTN”) connectivity is initially established.⁵ Contrary to the assumptions in the *NPRM*, however, MLTS solutions of

does require dispatchable location for all forms of MLTS, however, it must provide crystal clear guidance as to what the requirements are for different types of services. For example, when mobile voice service is unavailable or unsupported on an application platform, is dispatchable location always required, or are there exceptions depending upon the nature of the network infrastructure and/or who operates it? What are the requirements if an MLTS end-user is utilizing a softphone application that is installed on an Android smartphone, which has its own wireless location fix? Must the call be routed based on that location data, with that data provided to the PSAP? Given the complexity of the MLTS marketplace, these are the kinds of issues that would need to be addressed in advance.

⁵ See Cisco Comments at 10-11.

this type have no capability “out of the box” to make or complete a PSTN call, including an emergency call.⁶

Cisco is not alone in this regard – several other commenters make the case that the Commission’s proposed rules regarding the “pre-configuration” requirement would impose unnecessary and technically infeasible burdens on MLTS manufacturers. Microsoft, for example, notes that its MLTS offerings are not “plug and play” and therefore are “not ‘pre-configured’ to do anything.”⁷ Instead, according to Microsoft, it is the customer’s responsibility “to configure the system’s numerous capabilities, including the direct dialing functionality.”⁸ For this reason, Panasonic correctly observes that the “[i]mproper installation of a system that could, but does not, enable direct access to 911 cannot be considered the fault of a manufacturer for not ‘pre-configuring’ the phone to direct dial 911.”⁹

In light of the foregoing, Cisco and Microsoft separately proposed modified definitions of “pre-configured” in their initial comments.¹⁰ Whatever definition the Commission ultimately elects to adopt, the term should be defined “in a manner that recognizes the responsibilities of the

⁶ See *NPRM* ¶ 31 n.59. See also NASNA Comments at 2 (asserting that pre-configuration “is the default way the system is set up at the factory”). Distributed MLTS are also distinguishable from other MLTS described in the record, such as BluIP’s “Hospitality Hosted PBX” solution. According to BluIP, this hosted PBX service “enable[s] direct 911 dialing as a default configuration, even when combined with legacy PBX systems.” BluIP, Inc. Comments at 2-3. While a default 911 configuration may be feasible for this specific type of architecture, this says nothing about the types of services that Cisco and others are deploying.

⁷ Microsoft Comments at 6.

⁸ *Id.* Likewise, RedSky notes that a manufacturer of MLTS is responsible for providing desired capabilities, “but it is up to the end user or their agent to configure the MLTS to meet their needs.” RedSky Comments at 6.

⁹ Panasonic Comments at 9.

¹⁰ See Cisco Comments at 12; Microsoft Comments at 6.

customer with respect to the implementation and provision of the service.”¹¹ Given the inherent problems and ambiguities associated with pre-configuration under Kari’s Law, the Commission should also reject requests to include any dispatchable location requirements that the Commission might adopt pursuant to its authority under RAY BAUM’S Act within the definition of “pre-configure.”¹² As is the case with direct dialing, distributed MLTS are not pre-configured to provide dispatchable location; rather, the initial configuration of dispatchable location (and the maintenance of that configuration over time) can only effectively be the responsibility of the MLTS installer and operator, *not* the manufacturer.

In addition, the Commission should implement the suggestion advanced by Panasonic and clarify that individual system components (such as phones) do not qualify as MLTS.¹³ As Panasonic points out, the statutory definition of MLTS is a “system comprised of” various components.¹⁴ As a matter of common sense, individual system components are not even capable of dialing 911 or reaching the PSTN unless and until they are assembled by an installer. By the same token, Cisco endorses RingCentral’s call for the Commission to clarify that “manufacturers and sellers are not installers simply by virtue of providing systems; rather, manufacturers and sellers become installers *only* when their customers specifically retain them for installation by, for example, purchasing installation or other professional services.”¹⁵ By incorporating these distinctions into its definitions, the Commission can more clearly delineate the roles and responsibilities of manufacturers, sellers, and installers of MLTS.

¹¹ Microsoft Comments at 6.

¹² See West Safety Comments at 5, 9.

¹³ See Panasonic Comments at 7.

¹⁴ *Id.*

¹⁵ RingCentral, Inc. Comments at 9.

Finally, notwithstanding some commenters' assertions that the direct dialing and notification requirements of Kari's Law should immediately apply to *all* MLTS on the February 16, 2020 compliance date,¹⁶ the statute is clear that the law applies only to systems that are manufactured, first offered for sale, or replaced after that date. As West Safety has correctly noted, this grandfathering framework should be adopted because it will afford market participants with the flexibility they need "to make informed manufacturing, planning, and purchasing decisions."¹⁷ For similar reasons, Cisco agrees with Ad Hoc that grandfathering existing MLTS would be warranted with respect to any dispatchable location requirements that the Commission might adopt.¹⁸ Given the expanding variety of MLTS options that are available to enterprise customers, the Commission can best advance public safety goals by establishing a reasonable glide path towards compliance in this proceeding.

III. THE COMMISSION'S IMPLEMENTATION OF KARI'S LAW SHOULD ALLOW FOR FLEXIBILITY IN NOTIFICATIONS.

There is strong record support for the Commission to quickly implement the direct dialing and notification requirements of Kari's Law, contingent upon the Commission's acknowledgment that, consistent with Congressional intent, MLTS managers or operators must be given sufficient flexibility to determine the contents of notifications.¹⁹ As Cisco explained in its initial comments, the information that is conveyed in a notification can vary based on the

¹⁶ See APCO Comments at 3; BluIP, Inc. Comments at 6-7; RedSky Comments at 10.

¹⁷ West Safety Comments at 4.

¹⁸ See Ad Hoc Comments at 15-16. Cisco also agrees with other commenters that the notification requirement of Kari's Law or any other new requirements that the Commission adopts in this proceeding should not be triggered unless and until an enterprise customer elects to make substantial upgrades to core MLTS functions. See AT&T Comments at 3; Panasonic Comments at 11-12.

¹⁹ See Verizon Comments at 2 (noting that Kari's Law "focuses on the *system's* notification capability, not how the customer chooses to configure it") (emphasis in original).

technology deployed in the enterprise.²⁰ Thus, it may not always be possible for a callback number to be provided that will enable a return call to the specific phone that initiated the 911 call. Like Cisco, other commenters stress the importance of allowing MLTS operators flexibility to customize the content of notifications, especially in the situation where internal enterprise extensions are not registered with a Direct Inward Dialing (“DID”) number.²¹ As TIA observes, in this scenario a callback from a public safety answering point (“PSAP”) may go to “a central number that will be answered by an individual who may have access to information concerning the identity and location of the caller—information that can still assist emergency responders.”²²

To be sure, the Commission may be able to ameliorate these concerns if it exempts small businesses from the notification requirement, as some have proposed.²³ As Panasonic observes, the practice of assigning internal extensions often occurs in small businesses because DID number assignments are not cost-effective.²⁴ But in no event should the Commission impose a blanket mandate for specific notification content that would impose an undue burden on enterprises, without providing them with an exception to determine the content and form of a notification based on the technical capabilities of the MLTS that is deployed on-site.

IV. THE PROVISION OF DISPATCHABLE LOCATION FOR ALL FORMS OF MLTS IS NOT TECHNICALLY FEASIBLE AT THIS TIME.

In its initial comments, Cisco established that the Commission’s framework for the provision of dispatchable location over MLTS technologies should embrace the significant differences between the capabilities of enterprise solutions and provide MLTS managers with the

²⁰ See Cisco Comments at 13-14.

²¹ See, e.g., AHLA Comments at 7; Panasonic Comments at 12; TIA Comments at 11.

²² TIA Comments at 12.

²³ See AT&T Comments at 4-5.

²⁴ See Panasonic Comments at 13.

flexibility they need to select the technology that best suits the on-premises and off-premises needs of their end-users.²⁵ Given the inherent difficulty of establishing a single dispatchable location requirement that all forms of MLTS will be able to meet for the foreseeable future, Cisco encouraged the Commission to undertake a phased approach that can initially be met by those MLTS that are most likely to be used to call during an emergency and for which solutions are readily available (*i.e.*, on-premises hardwired stations). For these MLTS, the Commission should require MLTS managers to provide the street address of the caller's location, along with providing flexibility to MLTS managers to include other information that is necessary to adequately identify the calling party on a case-by-case basis. Furthermore, based on its view that compliance with dispatchable location requirements may be possible for additional forms of MLTS technologies at some point in the future, Cisco urged the Commission to start down the path towards resolving the more complex questions presented by the *NPRM*, while leaving room for the development of additional standards and the deployment of new location technology solutions for an increasingly mobile workforce. Comments submitted by several other parties in response to the *NPRM* are aligned with this approach.²⁶

At the same time, other commenters have taken the view that the Commission should mandate dispatchable location requirements uniformly across all MLTS technologies contemporaneous with the implementation date of Kari's Law.²⁷ As an initial matter, and

²⁵ See Cisco Comments at 15-20.

²⁶ See, *e.g.*, Verizon Comments at 6 (stating that “[c]ompanies should be able to provide dispatchable location on many fixed services” but cautioning that “[p]roviding dispatchable location uniformly for all IP-based MLTS . . . may take time for new technical standards and to incorporate the capability into new systems so that the format of address information is consistent across service providers”); Panasonic Comments at 4 (“the agency should concentrate first on a baseline rule for hard-wired fixed telephony endpoints assigned a physical location”).

²⁷ See, *e.g.*, NENA Comments at 5; NPSTC Comments at 6.

contrary to the suggestions of some,²⁸ there was no directive from Congress for the Commission to require dispatchable location for MLTS. Congress merely provided the FCC with permissive authority to consider the feasibility of requiring dispatchable location for calls from MLTS and other technological platforms in Section 506 of RAY BAUM'S Act. Moreover, while Cisco certainly supports the objectives of commenters who argue for a regulatory "end-state" whereby verified dispatchable location is provided across all forms of MLTS,²⁹ the record demonstrates that there is a lack of cost-effective and technologically achievable solutions that can account for the complexity and difference in capabilities of the types of MLTS that are available in the market today.³⁰

As Cisco and others have explained, this is especially true when it comes to obtaining dispatchable location for nomadic or remote MLTS.³¹ For its part, RingCentral cautions the Commission that a "dispatchable location requirement, if applied off-site, could force providers to discontinue or substantially modify innovative solutions such as browser-based applications,

²⁸ See West Safety Comments at 2.

²⁹ See *id.* at 6.

³⁰ See, e.g., AT&T Comments at 8-9 ("End user solutions may include any or all of: softphones on laptops, desktops, and tablets, dedicated IP phones, traditional Time Division Multiplexing phones, cordless phones, and mobile wireless devices. We are not aware of a solution that can automatically locate *all* of these types of devices within a building to deliver a dispatchable location.") (emphasis in original); Ad Hoc Comments at 13 (stating that "the solutions available today are not as simple to deploy, reasonably priced, or universally effective for solving the challenge of identifying the precise location of a highly mobile workforce as the record may indicate"); TIA Comments at 2 ("Technical solutions to enable location information for [MLTS] calls do exist, but the complexity, effectiveness, and costs—including one-time expenses, ongoing monthly expenses, and high operational expenses for enterprises—associated with implementing location capability significantly rises as the mobility of MLTS users expands beyond the fixed location of a desk.").

³¹ See Cisco Comments at 17-18; DECT Forum Comments at 6; Panasonic Comments at 17; RingCentral, Inc. Comments at 5, 10-11; TIA Comments at 18-19.

even though they have long proven useful to consumers.”³² Like any regulation, public safety requirements impose costs. In the MLTS context, these costs are not just borne by enterprise customers to comply with new rules. Costs may be imposed on consumers as well, in terms of the opportunity cost when new technologies or services are delayed or prevented from expanding choice in the marketplace. Thus, while Cisco agrees that it is a worthy goal for the Commission to encourage the adoption of location detection capabilities for these forms of MLTS to ensure that the most accurate information available to the MLTS manager or operator is conveyed to a PSAP,³³ additional stakeholder engagement is needed before the Commission converts this objective into enforceable rules.

Likewise, APCO’s suggestion that the Commission should adopt a blanket dispatchable location requirement for MLTS and rely on case-by-case waivers should be rejected.³⁴ The Commission’s rules should hew to the realities of the marketplace, not ignore them. A waiver standard that is premised on an enterprise customer’s commitment to achieve compliance with dispatchable location requirements within a specific timeline would be highly problematic, given the state of current technology and the costs associated with third-party solutions. Thus, if the Commission adopts a sweeping prospective mandate, it is highly likely that a significant number of enterprises would require regulatory relief until more cost-effective solutions come to market. The resulting burden on both enterprises and Commission resources would make a case-by-case

³² RingCentral, Inc. Comments at 5. *See also* TIA Comments at 16 (“If the requirements are too costly or impose significant operational costs, some enterprises could decide to abandon the use of MLTS or to employ services that enable internal communications but not the ability to dial out to the PSTN.”).

³³ *See* Microsoft Comments at 9-10 (proposing a “best available location information” standard for MLTS calls).

³⁴ *See* APCO Comments at 5.

waiver process impractical and time-consuming, further complicating the transition to 911 MLTS.

Similarly, the record does not support an obligation for MLTS operators and managers to validate dispatchable location information associated with MLTS 911 calls.³⁵ Some commenters take the view that location validation for MLTS should be required because the Commission imposes similar requirements in the wireless context.³⁶ As Verizon points out, however, Congress recognized that the Commission could reach different conclusions regarding the accuracy of the dispatchable location for 911 calls in RAY BAUM's Act, and "[m]any of the Commission's prior determinations in the mobile wireless context will thus not be relevant to many of the services discussed in the *Notice* (and vice-versa)."³⁷ Furthermore, there is no basis for the Commission to impose this requirement because: (1) location validation is not currently available on a cost-effective basis on large commercial campuses; and (2) local NG911 systems will need to be established before location validation below the building level can occur on a widespread basis.³⁸

A dispatchable location requirement would also amount to a *de facto* mandate for enterprise customers to purchase third-party solutions that may be cost-prohibitive or ineffective.³⁹ To take but one example in the record, West Safety states that "[a]ll modern IP-based MLTS configurations and VoIP/Unified Communications platforms are capable of

³⁵ See NENA Comments at 6; NASNA Comments at 4; Texas 9-1-1 Entities Comments at 4-5; West Safety Comments at 10.

³⁶ See Texas 9-1-1 Entities Comments at 4-5

³⁷ Verizon Comments at 5.

³⁸ See ATIS Comments at 3.

³⁹ See Ad Hoc Comments at 13-15; NCTA Comments at 6-7.

supporting dispatchable location provisioning and appropriate routing for 9-1-1 *either natively through MLTS equipment or by reliance on 9-1-1 service providers.*⁴⁰ In its initial comments, Cisco described the native capabilities of IP-based MLTS and Unified Communications services based on its extensive experience as a manufacturer of these platforms: dispatchable location is more supportable from on-premises fixed or “hardwired” MLTS stations (such as desk phones), more challenging for on-premises mobile clients (such as softphones), and even more difficult, if not impossible, for off-premises softphones using public Internet or Virtual Private Network connections.⁴¹ Third-party solutions can play a role in filling these gaps, but any mandate that effectively requires enterprise customers to purchase these solutions would jeopardize the “marketplace flexibility” that the Commission is seeking to promote.⁴² Likewise, the Commission should reject calls for the Commission to adopt dispatchable location at a level of granularity that clearly exceeds the amount of information that is necessary for first responders to adequately identify the location of the calling party.⁴³

Finally, the record confirms that Wi-Fi access point location offers tremendous promise as a source of dispatchable location information in the future, but that the National Emergency Address Database (“NEAD”) is not an effective solution at this time.⁴⁴ In addition, Cisco agrees

⁴⁰ West Safety Comments at 8 (emphasis added).

⁴¹ See Cisco Comments at 4.

⁴² See *NPRM* at ¶ 59 (“we do not propose to require implementation of specific location technologies or solutions but rather seek comment on functional requirements that would give participants in the MLTS marketplace flexibility to develop dispatchable location solutions.”).

⁴³ See, e.g., Comtech Comments at 4 (asking the Commission to consider requiring “the inclusion of a caller’s specific location that is shown as a point on a building floor map”).

⁴⁴ See Cisco Comments at 20-21; ATIS Comments at 4; AT&T Comments at 10; Avaya Comments at 9; Comtech Comments at 5; Microsoft Comments at 16.

with commenters who underscore the importance of permitting future solutions that could utilize x/y/z coordinates, so long as the Commission does not require their use.⁴⁵

V. OTHER MLTS IMPLEMENTATION ISSUES.

A. Educating MLTS Users About Emergency Calling Limitations.

For MLTS that are grandfathered under Kari's Law or are not otherwise subject to a dispatchable location requirement, Cisco does not object to a general requirement that MLTS users be educated on any system limitations regarding the user's ability to directly dial 911 or to convey location information to PSAPs. However, Cisco believes that so-called "sticker requirements" have little utility in today's enterprise environment.⁴⁶ Instead, the Commission may need to insist that enterprise managers notify employees on how to reach emergency services, which could occur during the onboarding process for new employees and on an annual basis for existing employees. In meeting this requirement, however, Cisco agrees with Ad Hoc that the enterprise customer of record should have discretion to determine the best method and form for notifying employees.⁴⁷

B. Stakeholder Education and the Compliance Deadline for Dispatchable Location Requirements.

Because the FCC is moving into a previously-unregulated area that involves numerous stakeholders with whom it has no existing relationship, Cisco agrees with NPSTC that a significant awareness campaign is critical to adequately inform stakeholders about the implementation of Kari's Law.⁴⁸ The same is true with respect to any dispatchable location

⁴⁵ See ATIS Comments at 3; Panasonic Comments at 21; TIA Comments at 19.

⁴⁶ See NASNA Comments at 3.

⁴⁷ See Ad Hoc Comments at 17-18.

⁴⁸ See NPSTC Comments at 5.

requirements that the Commission adopts. Indeed, in its initial comments Cisco observed that the need for a concerted effort among federal, state, and local policymakers to educate stakeholders is one of the reasons why a February 2020 compliance date for dispatchable location requirements would not be reasonably achievable.⁴⁹

C. Equipment Authorization Rules.

NPSTC's recommendation that there should be a "formal process" to determine compliance with the Commission's equipment authorization rules is unworkable. Again, many MLTS products and services on the market today are distributed, software-based solutions that need to be configured by installers on-premises. If the Commission does elect to modify its equipment authorization rules, Cisco agrees with TIA and Panasonic that a self-declaration of conformity that is limited to the product as designed and not how a product is configured post-sale would be feasible.⁵⁰

CONCLUSION

Cisco urges the Commission to implement Kari's Law and dispatchable location requirements consistent with these reply comments and Cisco's earlier comments in this proceeding.

⁴⁹ See Cisco Comments at 22-23.

⁵⁰ See Panasonic Comments at 17-18; TIA Comments at 14.

Respectfully submitted,

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