Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
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
	)	

COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

Cinnamon Rogers
Senior Vice President, Government Affairs

Colin Black Andrews
Policy Counsel, Government Affairs

TELECOMMUNICATIONS INDUSTRY ASSOCIATION
1320 N. Courthouse Road
Suite 200
Arlington, VA 22201
(703) 907-7700

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Telecommunications Industry Association ("TIA") fully supported the enactment of Kari's Law earlier this year and appreciates the Commission's efforts now to implement it. The law takes an important step to promote public safety by requiring that multiline telephone systems ("MLTS") be capable of direct-dialing 911 and providing notification that a 911 call has been made. TIA members support these requirements and will ensure that their equipment can comply with them. For that reason, TIA supports the swift adoption of rules to implement what is specifically required by Kari's Law – namely the direct dial and notification requirements.

The Commission, however, must be mindful of the specific statutory language. For example, the Commission proposes to interpret MLTS in a manner that is much broader than the statute's narrowly-tailored focus. The Commission's proposed interpretation would cover a broad array of complex technologies, ranging from legacy circuit-based on-premises equipment to mobile, wireless, and virtual private network solutions, some of which cannot currently meet the *NPRM*'s proposed callback number and dispatchable location information requirements. In addition, the requirement that MLTS be "pre-configured" to support direct dialing and notification must be implemented in a manner that accounts for how such systems actually operate. Importantly, the notification requirement must provide flexibility to MLTS owners and operators while being technically feasible. Finally, the Commission must clarify several ambiguities in the *NPRM* regarding the effective date, enforcement, complaint mechanisms, and the equipment authorization process.

As the Commission considers both the specific requirements of Kari's Law and potential additional steps, such as requiring dispatchable location information to be included with the notification, it must first consider the diversity of the MLTS marketplace. TIA members offer state-of-the-art platforms to enable enterprises to meet their communications needs, including public safety, in a rapidly evolving technological environment. These platforms include MLTS that have moved from more traditional circuit-based on-premises equipment to cloud and web-based technology that are IP-enabled. In addition to allowing for mobility within the premises of an enterprise, many MLTS solutions can now be used off-premises, so that employees can work remotely using softphones that use an application on a laptop, mobile phone or tablet. The broad variety of MLTS configurations, and the many different stakeholders involved, increases the complexity of enabling access to 911 via such systems.

For that reason, while TIA appreciates the Commission's efforts to examine the feasibility of mandating the transmission of dispatchable location information – which RAY BAUM's Act requires the agency to *consider* but does not mandate – it presents a far more challenging issue. Simply put, the currently-proposed effective date for providing dispatchable location information for *all* MLTS emergency calls is not feasible. Even in cases where it might be possible, it would substantially raise the cost of MLTS solutions, especially for smaller enterprises, and could reduce the options available in the MLTS marketplace. The Commission should therefore refrain from adopting a dispatchable location requirement on an unreasonable timeline, and instead allow public safety representatives, the ICT industry, and building owners/managers to continue working on establishing standards and best practices for how MLTS can deliver location information in an effective and accurate manner.

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The Telecommunications Industry Association ("TIA") respectfully submits these comments in response to the Federal Communications Commission's ("Commission's") *Notice of Proposed Rulemaking* ("*NPRM*")[1] in the above-captioned dockets.

I. INTRODUCTION

TIA fully endorsed the enactment of Kari's Law,[2] and supports the Commission's current effort to implement it. Specifically, TIA applauds the Commission's efforts to promulgate rules for direct dialing and on-site notification of 911 calls from multi-line telephone systems ("MLTS") consistent with the statute's requirements. To effectively implement the 911 direct dialing and on-site notification requirements, the agency must ensure its rules are technically feasible and not impose undue burdens on manufacturers and enterprises subject to such rules. Ensuring such feasibility requires taking into consideration the wide-ranging capabilities of different systems and the many permutations of MLTS configurations and installations. To do

[1] *Implementing Kari's Law and Section 506 of RAY BAUM'S Act; Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems*, Notice of Proposed Rulemaking, FCC 18-132, (rel. Sept. 26, 2018) ("*NPRM*").

[2] Kari's Law Act of 2017, Pub. L. No. 115-127, 132 Stat. 326 (2018) ("Kari's Law").

otherwise—*e.g.*, to adopt a "one-size-fits-all" definition of MLTS and approach to Kari's Law's requirements—would be to risk creating a set of requirements with which industry cannot technologically comply and a set of expectations by consumers/employees and the public that cannot always be met. Therefore, it is critical that any new rules are based on a full understanding of the MLTS marketplace.

TIA also appreciates the Commission's examination of whether and how to require the transmission of "dispatchable location" information as part of MLTS 911 calls, in keeping with RAY BAUM'S Act.[3] However, as the Commission explores this issue, it must not amalgamate the very different requirements in Kari's Law and in RAY BAUM'S Act respectively. The challenges posed by enabling direct dialing and on-site notifications are far less complex than the difficulty associated with producing granular location information from MLTS 911 calls. Technical solutions to enable location information for such 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.

The benefits of providing accurate dispatchable location information to public safety answering points ("PSAPs") is beyond question—but as with any Commission proceeding seeking to impose new 911 obligations, the Commission must balance its desire to improve 911 access with the need for rules that are technologically feasible and commercially reasonable. Before imposing costly and technically challenging rules with which compliance may be difficult or even impossible, the Commission should hear from industry, enterprises of all types and sizes,

[3] Section 506 of the Repack Airwaves Yielding Better Access for Users of Modern Services Act of 2018, Pub. L. No. 115-141, 132 Stat. 348, 1095 (codified as a note to 47 U.S.C. § 615) ("RAY BAUM'S Act").

and the public safety community on current efforts to improve location detection capabilities for the wide variety of MLTS systems and the many settings in which such systems are used. Similarly, as the nation's 911 systems continue the transition to Next Generation 911 ("NG911"), there may be significant advances in how 911 calls can be located and how that information is delivered compared to the limitations of the legacy 911 environment, and the Commission should further explore those possibilities.

For now, the Commission should prioritize the adoption of rules to implement congressional directives in Kari's Law, and proceed with deliberation and precision before adopting dispatchable location requirements. The Commission must take the time necessary to understand the scope of the problem, location solutions already in development, and the very real costs associated with producing and delivering granular dispatchable location for MLTS 911 calls before adopting such requirements. Moreover, the Commission should seek to buttress the record with information on the types of MLTS from which 911 calls are made and the relative frequency of such calls. While there is some information in the record about MLTS 911 calls, it is sparse and lacking in detail about the types of MLTS that are used to make such emergency calls. The record is, however, clear that consumers are almost universally turning to their mobile wireless phones to dial 911, in all settings. As such use increases, the Commission must consider this fact and obtain more detailed information about MLTS 911 dialing frequency and patterns than is currently available.

Finally, TIA supports the *NPRM*'s proposed consolidation of the Commission's 911 rules into a single section.

II. THE MLTS MARKETPLACE IS EXTREMELY BROAD AND COMPLEX.

Businesses have broadly adopted new technologies in order to adapt to a highly mobile workforce whose employees increasingly expect to be able to communicate anywhere, anytime,

on any device. The MLTS marketplace is therefore extremely competitive and innovative. The universe of enterprises that use MLTS solutions is equally diverse, including small businesses, multinational corporations using distributed systems connected via the cloud, hotels, college campuses, and government organizations. Very often such entities employ a multitude of different MLTS solutions from the same company and often a combination of solutions from multiple service providers. In short, as compared to consumer mobile wireless service and interconnected VoIP (as defined by the FCC),[4] industries for which 911 rules have already been adopted, the complexity and amount of variation in MLTS equipment and deployment configurations is staggering.

Types of MLTS solutions. MLTS manufacturers are required to constantly innovate their products in order to maintain market share, which has resulted in a broad array of technically unique solutions for MLTS that go far beyond the traditional understanding of MLTS. In addition to legacy on-premises private branch exchange ("PBX"), Centrex and Key Telephone Systems, MLTS systems are now increasingly hosted in the cloud, web-based, and Internet Protocol ("IP")-enabled. In addition to utilizing technology, such as Digital Enhanced Cordless Telecommunications ("DECT") phones, that allows for mobility within the premises of an enterprise (which may include multiple locations as part of a diverse campus), many MLTS solutions can now be used off-premises, as enterprises can allow employees to work remotely using softphones that use an application on a laptop, mobile phone or tablet, all of which can be configured to make it appear as if an employee is calling from the office. When off-premises, users can also place calls via the public Internet or a virtual private network ("VPN") which

[4] 47 CFR § 9.3.

makes it virtually impossible for the MLTS system to determine the physical location of the caller.

The procurement and installation process for MLTS adds another layer of complexity. Some providers offer a turnkey solution that takes care of all aspects of the system, including installation on-premises or a cloud-based call management solution. Some offer a cloud-based service packaged with a pre-approved telecommunications service partner that enables Public Switched Telephone Network ("PSTN) connectivity. Others offer a cloud-based system that requires the enterprise to purchase a separately provided gateway from a local telecommunications company to reach the PSTN. And others sell only components of the system, such as the phone, but rely on others to configure the MLTS to enable connectivity. Finally, in many cases, equipment manufacturers market their equipment to national and regional distributors, who then sell to local entities. These local entities can then integrate third-party service solutions with the equipment prior to offering it for sale to enterprises, complicating any "out of the box" requirement for emergency calling. An MLTS installer then sets up the system, configures it to fit the needs of the enterprise, and programs relevant data, including a callback number and location information where possible.

MLTS capabilities. The majority of TIA's members that manufacture MLTS products sell systems that can enable the ability to direct dial 911. Similarly, most TIA member-provided MLTS solutions can enable a notification that a 911 call has been made. The provision of a callback number with such calls is also technically possible. However, depending on the type of configuration involved in which a single number can ring multiple devices, and whether or not a direct inward dialing ("DID") number is used, it is not always possible to provide a callback number that enables a callback to a specific user, as opposed to calling a central location. With

respect to determining a dispatchable location from such a multitude of MLTS configurations, the ability to locate a caller becomes more challenging as the user's mobility increases on premises and even more difficult when they are off premises. All of this complexity inherent in the MLTS marketplace makes adherence to a "one-size-fits-all" approach to emergency calling requirements difficult for both MLTS managers industry manufacturers.

III. THE COMMISSION SHOULD SWIFTLY ADOPT A *REPORT AND ORDER* IMPLEMENTING THE REQUIREMENTS OF KARI'S LAW.

TIA strongly supported the enactment of Kari's Law and is equally supportive of the Commission's efforts to implement the law. Rules requiring direct dialing and on-site notification of 911 calls from MLTS are clearly required by Kari's Law,[5] and the Commission should be applauded for taking quick steps towards the promulgation of such rules. The Commission should move swiftly following the close of the record in this proceeding to establish 911 direct dialing and technically-feasible notification requirements that ensure sufficient flexibility for an enterprise to make such notifications as it deems appropriate.

As described above, the challenges posed by enabling direct dialing and on-site notifications are far less complex than generating and delivering a dispatchable location with MLTS 911 calls. Even where it may be technically feasible to enable the location of 911 calls from certain MLTS solutions, the complexity, effectiveness, and cost associated with implementing location capability significantly rises as the mobility of MLTS users increases. For this reason, in RAY BAUM's Act Congress only charged the Commission with *considering* dispatchable location, while *mandating* direct dialing and on-site notifications in Kari's Law.[6]

[5] 47 U.S.C. § 623.

[6] *Compare* RAY BAUM's Act § 506(a) ("Not later than 18 months after the date of the enactment of [RAY BAUM'S] Act, the Commission shall conclude a proceeding to *consider* adopting rules to ensure that the dispatchable location is conveyed with a 9-1-1 call, regardless of

Therefore, the Commission should focus its efforts first and foremost on the direct dialing and on-site notification mandates, while separately conducting a fact-finding inquiry regarding the provision of dispatchable location information. Specifically, the Commission should promulgate a Report and Order effectuating Kari's Law immediately, before considering the feasibility of provisioning dispatchable location information in MLTS 911 calls.[7]

A. The Commission Should Reasonably Interpret the Definition of MLTS.

As a preliminary matter, the definition of MLTS contained in the Next Generation 9-1-1 Advancement Act of 2012 ("NG911 Act")[8]—cross-incorporated by Congress into both Kari's Law and RAY BAUM'S Act—is best read in a manner narrower than the *NPRM*'s proposed interpretation. Specifically, the *NPRM* proposes to interpret the statutory definition to include "the full range of networked communications systems that serve enterprises, including circuit-switched and IP-based enterprise systems, as well as cloud-based IP technology and over-the-top applications."[9] However, it is far from clear that Congress intended Kari's Law or RAY BAUM'S Act to reach such a wide universe of technologies with respect to MLTS. Indeed, the statutory definition of the term is narrower:

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the technological platform used and including with calls from [MLTS]" (emphasis added)) *with* Kari's Law, 47 U.S.C. §§ 623(a), (b), (c) (affected entities "*may not* manufacture or import" and "*may not* install, manage or operate" MLTS absent direct dialing-rule adherence; affected entities "*shall* … configure [their MLTS] to provide a notification to a central location or facility" (emphases added)).

[7] As touched on in section IV *infra*, to the extent the Commission *does* move forward with a dispatchable location requirement at the same time as it implements Kari's Law, such a rule should be limited to a technically-reasonable baseline requirement applicable only to on-premises fixed-location hardwired phones.

[8] Pub. L. No. 112-96, title VI, chap. 13, subchap. V, 126 Stat. 237, codified at 47 U.S.C. § 1471 *et seq*.

[9] *NPRM* ¶ 29.

> The term "multi-line telephone system" or "MLTS" means a system comprised of common control units, telephone sets, control hardware and software and adjunct systems, including network and premises based systems, such as Centrex and VoIP, as well as PBX, Hybrid, and Key Telephone Systems (as classified by the Commission under Part 68 of Title 47, Code of Federal Regulations), and includes systems owned or leased by governmental agencies and non-profit entities, as well as for profit businesses.[10]

If Congress had intended its definition to capture "the full range" of all technologies in the enterprise communications marketplace, including "over-the-top applications" as the Commission contemplates, it could have done so in the definition. Instead, the definition refers by name to numerous traditional MLTS technologies and points to Part 68 of the FCC's rules—regulations established decades ago to govern interconnection with the PSTN for traditional telephony services. The Commission is right to think about the modern enterprise communications market which has certainly expanded beyond traditional locally-hosted PBX systems, but it should not expand the scope of Kari's Law as intended by Congress.

Nor is the *NPRM*'s proposed definition consistent with the Commission's own historic understanding of MLTS as describing a physical network that allowed businesses the opportunity to use multiple lines on-site within an enterprise. Indeed, just last year the Commission noted that MLTS "historically denoted systems that use circuit-switched telephone technology to support enterprise voice communications" and may "not capture the full array of existing and emerging IP-based enterprise systems, including cloud-based systems."[11] As a result of that understanding, announced after the statutory definition of MLTS discussed above was already in

[10] 47 U.S.C. § 1471(2).

[11] *Inquiry Concerning 911 Access, Routing, and Location in Enterprise Communications Systems*, Notice of Inquiry, 32 FCC Rcd 7923, 7924 n.2 (2017).

effect, the Commission determined it was necessary to propose a new definition of enterprise communications system ("ECS") to capture "the full range of networked communications systems that serve enterprises."[12] Thus, just over a year ago, the Commission understood that the term MLTS did *not* capture all forms of enterprise communications. This does not square with the proposed interpretation in the *NPRM* and nothing about Kari's Law or RAY BAUM'S Act addresses the definitional deficiency. As a result, the Commission should carefully consider what types of regulations may be achievable, consistent with the statutory text and the agency's precedent.

Finally, some manufacturers only sell components of an MLTS, such as IP phones, and not the full system. As statutorily defined, an MLTS is a "s*ystem comprised of* common control units, telephone sets, control hardware and software and adjunct systems… ."[13] When a company is merely providing a component of an MLTS, it cannot be subject to a rule that clearly only applies to entities that manufacture and sell the entire "system" that makes up an MLTS, and the Commission should so clarify.

B. The Commission's Definition of "Pre-Configured" Must Reflect the Manner in Which Technologies are Sold and Installed.

Kari's Law requires that every new MLTS be "pre-configured,"[14] and the *NPRM* proposes to define the term to mean that an MLTS must "come[] equipped with a default configuration or setting that enables users to dial 911 directly ... so long as the system is installed

[12] *Id.*

[13] 47 U.S.C. § 1471(2).

[14] 47 U.S.C. § 623(a).

and operated properly."[15] The *NPRM* describes a "default configuration" as "the preexisting, 'out of the box' settings of a user-configurable software application, computer program, or device."[16]

While a seemingly logical requirement, direct 911 dialing "out of the box" is not always technically possible for all MLTS. Specifically, the Commission must recognize that a significant portion of the MLTS market is served by distributed systems where the call control is not necessarily located on the premises of the enterprise where the 911 call would be placed. Distributed systems require configuration of a gateway that routs calls on a premises through established PSTN connections before any calls can be made, including 911. Configuring the dialing pattern for emergency calling is part of that MLTS configuration process. The number of gateways, their location, and local PSTN connectivity are all specific to each enterprise deployment, and dependent upon enterprise decisions and actions. To reflect this reality, the Commission should clarify that the direct dialing requirement is met as long as an MLTS manufacturer enables an MLTS to direct dial 911 upon proper installation as part of enabling PSTN connectivity.

C. Rules Regarding On-Site Notifications Must Provide Flexibility to Enterprises—And Must Be Technically Feasible.

While Kari's Law mandates the provision of an on-site notification when a 911 call is placed,[17] it does not define what must be *included* in such a notification. Despite the *NPRM*'s

[15] *NPRM* ¶ 31.

[16] *Id.* n.59.

[17] 47 U.S.C. § 623(c).

proposal,[18] Kari's Law does *not* require a dispatchable location or callback number to be included with a notification. To the contrary, Congress was clear in adopting Kari's Law that flexibility in meeting the notification requirement without imposing undue burdens on enterprises is important.[19] Therefore, the Commission should provide sufficient flexibility to enterprises to determine the form and content of such notifications without providing overly prescriptive requirements concerning a callback number or location.

Any rule adopted by the Commission regarding on-site notification must be technically feasible and commercially reasonable. Providing a callback number to a specific station is difficult—even impossible—in certain situations, such as enterprise calling platforms that are not supported by Direct Inward Dialing ("DID") numbers. A callback requirement may be difficult and highly burdensome for small businesses in particular. In contrast, Kari's Law requires a notification that a 911 call has been placed, and no more.[20] Indeed, the House committee report on Kari's Law makes clear that Congress intended to "allow[] the MLTS owner or operator some flexibility in determining the most appropriate contact, whether in the building or otherwise."[21] Accordingly, if the Commission requires a callback number as part of a notification, the enterprise should be afforded flexibility in determining how and to whom the information is delivered, and should be able to provide a callback number consistent with the technical

[18] *NPRM* ¶ 22.

[19] H.R. REP. NO. 114-579 (2016).

[20] 47 U.S.C. §623(c) (the system must "provide a notification to a central location at the facility where the system is installed or to another person or organization regardless of the location, *if the system is able to be configured to provide the notification without an improvement to the hardware or software of the system*." (emphasis added)).

[21] H.R. REP. NO. 114-579 (2016).

capability of the MLTS employed. In some instances, this may not be a callback directly to the caller/device from which the 911 call was initiated, but instead 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.

With respect to the inclusion of dispatchable location information as part of a notification, for the reasons discussed *infra*, the Commission should delay the consideration of such a requirement at this time and complete a more thorough inquiry on potential solutions to this issue. However, to the extent that the Commission proceeds with a dispatchable location requirement, it should be a technically reasonable baseline requirement, such as including a street address, and should only be required for the types of systems for which the determination of location is readily achievable, does not require undue expense for the enterprise, and on which an end-user would reasonably expect to be able to reach 911.

D. The Commission must clarify several ambiguities in the *NPRM* regarding the effective date, enforcement, complaint mechanisms, and the equipment authorization process.

Effective Date. The Commission needs to clarify exactly what is required as of the effective date. When adopting rules for implementing Kari's Law, the Commission must be clear and unambiguous. Industry manufacturers must be assured that any equipment that has been produced and offered for public sale at any point prior to the Effective Date will remain in compliance with the Commission's new rules in order to avoid a situation where manufacturers are suddenly rendered with warehouses full of MLTS equipment that is not in compliance with federal rules. Additionally, the Commission should launch a public education campaign aimed at educating the public on the capabilities of legacy MLTS equipment. As part of this program, the Commission should take steps to ensure potential MLTS users are aware of their system's capabilities.

Enforcement. The Commission should address who will bear responsibility for compliance with Kari's law. In the event where an enterprise owner manages or contracts with an outside MLTS manager, that manager should bear primary responsibility for compliance with implementing Kari's Law.[22] As a principle, equipment manufacturers should not be liable for noncompliance of an MLTS manager with Commission rules unless the reason the MLTS is out of compliance is the result of the equipment's design.

Complaint Mechanisms. While TIA agrees that the Commission can rely on existing Commission complaint mechanisms to facilitate the filing of complaints for potential violations of Kari's Law, the Commission should consider establishing procedures to remove uncertainty.[23] The Commission could establish an informal complaint resolution procedure, providing timetables and an opportunity for interested parties to respond, similar to how accessibility complaints are handled under the 21st Century Communications and Video Accessibility Act or Section 255.[24] As a threshold issue, the Commission should establish an opportunity for any target of a complaint to respond prior to any enforcement action, as the Commission has done for complaints concerning accessibility for certain types of equipment.[25]

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[22] *NPRM* at ¶ 44.

[23] *Id.* ¶ 45.

[24] Twenty-First Century Communications and Video Accessibility Act of 2010, Pub. L. No. 111-260 as amended by Pub. L. No. 111-265, 124 Stat. 2751 as amended by 124 Stat. 2795; *see also Consumer Complaint Center – Learn More About Filing an Informal Accessibility Complaint*, FCC, https://consumercomplaints.fcc.gov/hc/en-us/articles/204417770-Learn-More-About-Filing-an-Informal-Accessibility-Complaint (last visited Dec. 10, 2018).

[25] *Consumer Complaint Center – Take Action: Options for Filing an Accessibility Complaint*, FCC, https://consumercomplaints.fcc.gov/hc/en-us/articles/202939874-Take-Action-Options-for-Filing-an-Accessibility-Complaint (last visited December 10, 2018).

Equipment Authorization. In the NPRM, the Commission seeks comment on modifying equipment authorization rules as they apply to MLTS equipment manufactured after February 16, 2020.[26] As discussed above, MLTS covers a broad array of technology, both hardware and software focused. Modified equipment authorization would only apply to hardware-based solutions, however, and constitute an unequal burden. Should the Commission decide to modify their equipment authorization rules, TIA would support a self-declaration of conformity limited to the product as designed and not how a product is configured post-sale.

IV. PRIOR TO ADOPTING DISPATCHABLE LOCATION REQUIREMENTS, THE COMMISSION SHOULD CONSIDER COSTS, TECHNICAL CHALLENGES AND THE IMPACT ON THE MLTS INDUSTRY.

It is important to differentiate between the mandates placed on the Commission by Kari's Law and the permissive authority granted the Commission under the RAY BAUM'S Act.[27] Kari's Law does not require the provision of location information with an MLTS 911 call, a purposeful decision by Congress that recognized the technical challenges and costs associated with the ability to locate MLTS 911 calls.[28] Nor does the RAY BAUM'S Act mandate immediate action with regards to dispatchable location contemporaneous to the implementation of Kari's Law. Instead, Congress directed the FCC in the RAY BAUM'S Act to "conclude a proceeding to consider"[29] requiring dispatchable location information within eighteen months of

[26] *NPRM* ¶ 46.

[27] *See supra* note 6.

[28] *Cf.* 47 U.S.C. § 623.

[29] RAY BAUM'S Act §506 (a).

the statute's enactment. And legislative history makes clear Congress carefully recognized the challenges associated with the provision of dispatchable location as part of an MLTS 911 call.[30]

While the *NPRM*'s objectives are noble, any promulgated rule must be respectful of implementation cost and burden, technical feasibility, end-user expectations, and the potential impact on the MLTS marketplace. Even where enabling a dispatchable location may be technically possible, particularly for softphones and over-the-top applications that can be accessed via laptops, tablets and smartphones, there are very real costs in one-time expenses, monthly fees, and ongoing operational expenses for MLTS managers. These expenses are particularly impactful for small businesses.

Beyond cost and technical challenges, the Commission must consider the expectations of MLTS users. The significant majority of 911 calls in the United States are from mobile devices—by one estimate, approximately 80 percent—and according to the most recent federal data, the number of MLTS 911 calls is on the *decline*.[31] Meanwhile, there is very little information, if any, about MLTS user expectations regarding the ability to access 911 on different types of MLTS. For example, while one might reasonably expect to dial 911 on a desk phone, it is less likely that an employee using a tablet would dial 911 via a software application

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[30] 163 CONG. REC. H590 (daily ed. Jan. 23, 2017) (statement of Rep. Gohmert) (Distinguishing between Kari's Law's mandate and a mandate to "identify exactly where someone is within [a] multiline system," describing location data as a separate issue and urging Congress to "please pass [Kari's Law] … and then let's have a full and thorough debate on the part that will cost money. … .").

[31] *9-1-1 Statistics*, NENA https://www.nena.org/page/911Statistics (last visited Nov. 27, 2018); 911.GOV, 2017 NATIONAL 911 PROGRESS REPORT 2 (Nov. 2017), https://www.911.gov/pdf/National-911-Program-Profile-Database-Progress-Report-2017.pdf ("The Majority of 911 Calls Are Increasingly Received from Cellular Phones. … [T]he majority of 911 calls are from cellular phones. … [Our] 2017 report shows that about 80 percent of consumers are using cellular phones to make 911 calls[.] … MLTS[] has decreased[.]").

rather than relying on their cell phone. The Commission should factor in end-user expectations as it contemplates whether to require the transmission of dispatchable location information and on what types of MLTS.

Finally, the Commission should also consider the potential impact on the MLTS marketplace of overly prescriptive requirements. If the requirements are too costly or impose significant ongoing 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. Many businesses are extremely dependent on their enterprise communications platforms and are unlikely to abandon them altogether, but they may decide to limit the availability of telephone service that connects to the PSTN. Other enterprises, such as hotels and large campuses, could decide that the 911 costs and potential exposure to liability are simply too high to continue to support the availability of phones in rooms, electing instead to allow visitors to rely on cell phones. In addition to the overall technical issues associated with locating MLTS 911 calls, the Commission should weigh these factors carefully.

Determining whether and when to require dispatchable location information, and the specificity of such information, is a challenging issue. The Commission would therefore be better served by issuing a Further Notice of Proposed Rulemaking on this issue after reviewing the record in this proceeding and allowing for sufficient coordination among relevant stakeholders. This would allow more time for interested parties to work on a solution, similar to how the Commission, prior to adopting detailed location accuracy requirements for mobile wireless 911 calls, provided sufficient time for the wireless industry and the public safety community to work together to develop the "Roadmap for Improving E911 Location Accuracy"

upon which FCC rules were ultimately based.[32] If the Commission does adopt a dispatchable location requirement at the same time as it implements Kari's Law, such a rule should be limited to a technically-reasonable baseline requirement applicable only to on-premises fixed-location hardwired phones which are assigned a DID number.

A. The Specificity of Dispatchable Location Information Contemplated in the *NPRM* Is Not Currently Technically Feasible for All Systems.

RAY BAUM'S Act defines a "Dispatchable Location" as "the street address of the calling party, and additional information such as room number, floor number, or similar information necessary to adequately identify location of the calling party."[33] In the *NPRM*, the Commission tentatively concludes that "it is feasible for 911 calls that originate from MLTS to convey dispatchable location to the appropriate PSAP."[34]

Yet as discussed in Section II, *supra*, the *NPRM*'s proposed interpretation of the definition of MLTS covers a too-broad array of technological solutions—not all of which have the technical ability to provide the location information contemplated by the *NPRM*. While the majority of TIA members' MLTS products are able to comply with the direct dial requirement of Kari's Law subject to the caveat on pre-configuration discussed above, configuring *all* MLTS, as the Commission proposes to interpret the definition, to convey dispatchable location information is far more complex, and cannot be solved with one-size-fits-all regulation.

For some traditional, on-premises MLTS equipment, providing accurate location information is, or can be, manageable, even if at a significant cost. For example, traditional

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[32] *Wireless E911 Location Accuracy Requirements*, Fourth Report and Order, 30 FCC Rcd 1259 (2016).

[33] RAY BAUM'S Act §506 (c)(2).

[34] *NPRM* ¶ 60.

fixed-location devices can be programmed to associate an address with the device. It is feasible that legacy, fixed-location MLTS hardware could be designed to require end-users to update their location information whenever the device is moved, enabling accurate and up-to-date location data, and there are even automated add-on services available at a cost to manage moves. However, the more granular the required location information—*e.g.*, floor number, floor quadrant, specific room number—the more difficult and costly it is to ensure and maintain accuracy.

As contemplated in the *NPRM*, providing dispatchable location information from cloud-based, VoIP, and other wireless MLTS poses greater challenges than traditional hardwired MLTS, which the Commission's rules must reflect.[35] For non-fixed location devices (*e.g.* laptops, tablets, and smartphones) that can be used by an employee anywhere in an enterprise—which may span multiple physical locations—the challenge of locating the caller increases. Even on-premises wireless MLTS solutions, such as Wi-Fi or DECT phones, can pose challenges, such as systems that allow wireless handsets to connect to multiple fixed base stations. The range of such systems can be hundreds of meters and it is possible that wireless devices will connect to a base station that is one or two floors above or below where the caller is located. While each handset can be designated to an employee with its own extension, the handsets themselves are mobile by their wireless nature and may be incapable of transmitting a location with the granular specificity contemplated by the Commission.

As employees move off premises, the challenges of locating a user on a network over which the enterprise has no control is even more daunting. Ensuring accurate location data is difficult, if not impossible, for an end-user connected remotely to an enterprise via a VPN.

[35] *See generally id.* ¶ 61.

While an employee could be calling from thousands of miles away, the IP address is typically configured to correspond to the enterprise end of the IP tunnel, and would therefore transmit the enterprise's location information. Based on the current technology available, it is not possible to generate an accurate location for VPN callers based on local hardware and transmit this information over an emergency call.[36]

As for supplemental information conveyed to PSAPs, such as X/Y/Z coordinates, TIA agrees with the Commission's conclusion that any final regulations adopted in this proceeding should not explicitly preclude any alternatives to dispatchable location information, but should also not require such information.[37] A requirement to convey X/Y/Z coordinate information with every emergency call would substantially raise the cost of MLTS equipment to enterprises, with only a marginal corresponding benefit (if any) to PSAPs. It is also noteworthy that the National Emergency Address Database is not currently configured with MLTS devices in mind. The ability to locate MLTS 911 calls based on the location of wireless access points may offer a potential long-term solution to automatically locating such calls,[38] but further efforts are necessary before this capability becomes a reality.

B. The Commission Should Allow Sufficient Time for Stakeholder Collaboration and Standards Development.

TIA and our members are aware that providing dispatchable location information solutions with MLTS services is a priority for customers and for the public safety community. Many of our members are already involved in discussions with their enterprise customers and

[36] *See* Comments of Cisco Systems, Inc., PS Docket No. 17-239, at 16-17 (filed Nov. 15, 2017) (Cisco ECS NOI Comments).

[37] *NPRM* ¶¶ 64-65.

[38] Cisco ECS NOI Comments at 18.

public safety representatives and are participating in industry standards efforts exploring how to provide this information in an efficient and accurate way.

Similar collaborative efforts have historically allowed TIA to develop useful MLTS standards that enable enhanced location accuracy for MLTS. For example, TIA-689-A addresses dialing, routing, local notification and network interface technical specifications associated with outgoing 911 calls from MLTS stations.[39] In addition, TIA has also developed TSB-146: Telecommunications IP Telephony Infrastructures IP Telephony Support for Emergency Calling Service. This standard covers issues associated with support of ECS from IP Telephony terminals connected to an Enterprise Network ("EN").[40] As these examples demonstrate, industry collaboration can lead to the formation of important standards.

Similar collaboration between manufacturers, public safety representatives, and building owners/managers is required with regard to providing dispatchable location information from MLTS emergency calls. As part of our Smart Buildings initiative, TIA is actively engaging members and interested parties from the smart buildings sector, ICT industry, and public safety

[39] TIA-689-A addresses technical issues associated with MLTS support of Enhanced 911 Emergency Calling Service. It specifically addresses dialing, routing, local notification, and network interface technical specifications associated with outgoing 911 calls from MLTS stations. It does not address technical issues associated with incoming 911 calls to MLTS equipment that may be used in a PSAP. This standard also does not address the unique considerations that apply to multiple extensions that pick-up on a single line. Nor does it address the unique considerations that apply to 911 calls made by persons with hearing or speech disabilities, which require the use of text telephones. *See* Comments of the Telecommunications Industry Association, PS Docket No. 10-255, at 13 (filed July 5, 2012).

[40] TSB-146 "covers issues associated with support of ECS from IP Telephony terminals" and "describes new network architecture elements needed to support ECS, and the functionality of those new elements, in North America." It addresses "ECS calls placed from fixed, mobile, remote dial-in, or wireless access VoIP terminals," and "illustrates similar access scenarios for ECS calls placed directly through an ISP." *TIA TSB-146, Revision A*, TIA (Nov. 2012) https://global.ihs.com/doc_detail.cfm?&csf=TIA&item_s_key=00409203&item_key_date=870131&input_doc_number=TSB-146&input_doc_title.

community to form a working group focused on MLTS dispatchable location information. The goal of this working group will be to examine how manufacturers and building owners/managers can uniformly ensure that dispatchable location information is delivered to PSAPs in a way that can be easily and efficiently utilized in order to best aid first responders. Through this effort, interested parties will be in the best position to address optimal methods to achieve and validate the level of granularity of information considered by the *NPRM*.[41] As discussed *supra*, the technology does not yet exist to provide granular dispatchable location information for all MLTS calls—and by imposing an unreasonable timeline for this information, the Commission risks frustrating ongoing industry efforts, such as this working group, to find an efficient way to implement these goals.

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Ultimately, a dispatchable location requirement should not be implemented until the Commission has sufficiently analyzed whether it would be feasible for all MLTS to meet such a requirement and has received feedback from interesting parties already working to provide the contemplated information.

V. TIA SUPPORTS THE COMMISSION'S PROPOSAL TO CONSOLIDATE ALL 911 RULES INTO ONE SECTION OF THE CODE OF FEDERAL REGULATIONS.

Seeking to consolidate the existing 911 rules scattered throughout various parts of Title 47 of the Code of Federal Regulations, the Commission has proposed the idea of merging all of these rules into a single Part 9.[42] In doing so, the Commission is also planning to simplify some of the 911 rules to ensure they can be clearly understood, remove duplicative rules from other

[41] *See, e.g.*, *NPRM* ¶ 57.

[42] *Id.* ¶ 103.

rule parts and eliminate obsolete 911 rules rather than recodify them in Part 9.[43] More specifically, the Commission's plan involves moving 911 rules from Parts 12, 20, 25 and 64 to Part 9 and separating them into Subparts A through H, with the proposed MLTS rules occupying Subpart F.[44]

TIA supports the approach proposed by the Commission, as well as any other efforts by the Commission to make it easier to locate, understand and comply with 911 rules. TIA further supports the Commission's removal of rules that have become obsolete, as this will also reduce the costs of compliance.

[43] *Id.* ¶ 104.

[44] *Id.* ¶ 105.

VI. CONCLUSION

For the forgoing reasons, TIA respectfully urges the Commission to (1) more forward as expeditiously as possible with implementation of Kari's Law and with consolidation of its 911 rules, while (2) taking the time to develop a full and robust record on dispatchable location before adopting rules, particularly if such rules will be applicable to all forms of MLTS.

Respectfully submitted,

By: */S/ Cinnamon Rogers*

Cinnamon Rogers
Senior Vice President, Government Affairs

Colin Black Andrews
Policy Counsel, Government Affairs

TELECOMMUNICATIONS INDUSTRY ASSOCIATION
1320 N. Courthouse Road
Suite 200
Arlington, VA 22201
(703) 907-7700

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