In the Matter of

Review of the Commission’s Rules Governing the 896-901/935-940 MHz Band

Realignment of the 896-901/935-940 MHz Band to Create a Private Enterprise Broadband Allocation

Amendment of the Commission’s Rules to Allow for Specialized Mobile Radio Services Over 900 MHz Business/Industrial Land Transportation Frequencies

WT Docket No. 17-200
RM-11738 (Terminated)
RM-11755 (Terminated)

COMMENTS OF THE UTILITIES TECHNOLOGY COUNCIL

Utilities Technology Council

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SUMMARY

UTC opposes expanding commercial use of existing Business and Industrial/Land Transportation channels in the 900 MHz band, because it is concerned that doing so will exacerbate the shortage of available channels for private internal communications and will encourage speculation by commercial entities. The Commission should promote utility access to broadband to meet utilities’ increasing communications needs, but ensure that any realignment of the 900 MHz band protects incumbent utility narrowband communications systems and enables them to access additional channels to increase capacity and coverage. In that regard, the Commission should reserve the 900 MHz band for utilities going forward. Finally, the Commission should retain existing site-by-site licensing in the 900 MHz band and should not adopt geographic area licensing and auctions.
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Before
Federal Communications Commission
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Pursuant to sections 1.415 and 1.419 of the Federal Communications Commission’s (“FCC” or “Commission”) Rules, the Utilities Technology Council (“UTC”) hereby submits its comments in response to the Commission’s Notice of Inquiry (“NOI”) in the above-referenced proceeding.¹

As more fully explained herein, utilities rely on the 900 MHz band to support a variety of mission critical voice and data communications that are essential for ensuring the safe, reliable and secure delivery of electric, gas and water services to the public at large. Moreover, utilities compose one of the largest groups of licensees--if not the largest--within the 900 MHz band, and they have made significant investments in 900 MHz systems. As the Commission considers changes to the existing regime in the 900 MHz band, it should protect these utility communications systems against interference and ensure that utilities will continue to be able to access channels to expand capacity and extend coverage for these systems. On the other hand and as has been made clear in other filings, utilities need access to broadband spectrum.² Access to such broadband spectrum, however, should not come at the expense of safety,


² See Reply Comments of the Utilities Telecom Council in RM-11738 at 2 (filed. Jan. 27, 2015)(stating that “[u]tilities and other CII generally agree that they need broadband spectrum,” and citing comments by numerous
reliability and availability. Utilities already have difficulty finding available channels for narrowband 900 MHz operations; UTC is concerned that changes to the rules could exacerbate the shortage of spectrum in the 900 MHz band.

The bigger context here is that utilities have been forced by the FCC’s previous decisions to move out of other bands to make room for commercial providers and other players. Utilities’ essential services and needs for the highest levels of reliability have been dismissed by the FCC’s current and previous staff, despite ample evidence that utilities’ communications needs are crucial to restore electric service after hurricanes and other natural disasters. Electricity is in turn essential for commercial communications needs. Instead, the FCC’s policies have squeezed utilities into bands, such as 900 MHz, where these critical communications reside for many incumbents. At the same time, utilities are seeking broadband spectrum to underpin more flexible, interactive and efficient distribution grids. These needs are a direct result of both federal and state policies as well as customer demands and advances in technology. Therefore, the debate about the 900 MHz band and the sometimes countervailing needs of utilities could be alleviated with a different perspective from the FCC that is more aligned with the expectations of other federal agencies and the public.

In terms of the matter at hand, the Commission should preserve the 900 MHz band for private internal communications for critical infrastructure providers. In this regard, UTC continues to oppose auctioning licenses in the 900 MHz band, which would effectively prevent utilities from being able to compete for channels, particularly in metropolitan areas where the cost of acquiring channels would be highest. The Commission was right in its previous decision not to introduce auctions in the 900 MHz band, and there is no reason to revisit that decision in this proceeding. Utilities still urgently need access

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other utilities on the record that report that they need access to broadband). See also Comments of the Utilities Telecom Council in GN Docket No. 09-51, et al (filed Oct. 2, 2009)(explaining that utilities need access to broadband spectrum and attaching a survey of utility communications conducted by the Utilities Telecom Council in preparation for the FCC’s Public Notice Seeking comment on the implementation of smart grid technology.)

3 “Narrowband” operations refer to 12.5 kHz channels that are used currently in the 900 MHz band.

4 See Amendment of Part 90 of the Commission’s Rules to Provide for Flexible Use of the 896-901 MHz and 935-940 MHz Band Allotted to the Business and Industrial Land Transportation Pool, Notice of Proposed Rulemaking
to 900 MHz channels, and auctioning the band will only make channels scarcer and more expensive.

Similarly, the Commission should not consider realigning the 900 MHz band for broadband operations unless incumbent narrowband systems are protected and can continue to access channels to expand capacity and coverage. Utilities do need access to broadband, but have different views on the need for broadband communications, as they have varying degrees of investments in existing systems. As such, the Commission should not force realignment of the band on utilities. Instead, the Commission should refrain from realigning the band at this time, and incumbent utilities must be assured that realignment is technically and economically feasible, such that it will not result in interference. Incumbent utilities must also be assured that there is sufficient capacity to expand existing systems while at the same time supporting broadband networks that are cost effective to deploy and operate.

UTC submits that at present, insufficient information exists to demonstrate that a realignment of the band could be accomplished without adversely affecting utility mission critical communications or that broadband networks could be deployed that would provide the same reliability on a cost-effective basis for utility communications. More information is needed to determine if the public interest would be served by realigning the 900 MHz band to support broadband. UTC looks forward to working with the Commission and the parties in this proceeding to develop further evidence to consider whether a realignment of the band could be accomplished and still meet or exceed utility performance requirements for safety, reliability, coverage, capacity, availability and resiliency.

I. Introduction

UTC is the international trade association for the telecommunications and information technology interests of electric, gas and water utilities and other critical infrastructure industries. Its members include all kinds of utilities, ranging in size from large investor-owned utilities that may serve millions of customers in multi-state service territories to smaller rural electric cooperative and municipal utilities that may serve only a few thousand customers in remote areas or isolated communities. All utilities have

extensive private internal communications networks that they own, operate and maintain in order to ensure the safe, reliable and secure delivery of essential electric gas and water services to the public at large.

Many utilities operate systems in the 900 MHz band and in the adjacent narrowband Personal Communication Service (PCS) channels. These systems are used to support mission critical voice communications, as well as data communications for Supervisory Control and Data Acquisition (SCADA), protective relaying, distribution automation and Advanced Metering Infrastructure (AMI). Any failure of these communications systems could jeopardize the safety of utility personnel and the public and could result in catastrophic events and widespread outages. Owing to the critical nature of the services that these communications systems help to provide, they are designed, built, operated and maintained to exceptionally high standards for reliability, availability and resiliency. As such, these networks are extensive and reach into remote and metropolitan areas. They are designed with extended back-up power and diverse routing to maintain operations in the aftermath of storms and other events which could potentially interrupt communications.

Literally, these 900 MHz systems need to be able to support utilities recovering from a “black start” scenario, underscoring their importance for national security and public safety.⁵ They are also critical for outage monitoring and service restoration in the aftermath of hurricanes, such as hurricanes Harvey and Irma, as well as Superstorm Sandy.⁶ Utilities do not or will not rely on commercial

⁵ In a black start scenario, utilities must bring back power onto the grid themselves independently from any outside transmission system. This process must be carefully coordinated to restore power and bring on load gradually while maintaining load balance. While a black start scenario is rare, utilities are required to test their systems annually and must meet North American Electric Reliability Corporation Critical Infrastructure Protection (NERC-CIP) mandatory standards that apply to generators and other critical assets that are necessary to bring plants back online. Utility private internal communications systems, including 900 MHz systems, must maintain reliability for these kind of extreme events and to comply with their reliability, industry and regulatory requirements.

⁶ Utilities such as Florida Power and Light and Lower Colorado River Authority (LCRA) as well as Cleco operate 900 MHz systems in the areas affected by Hurricane Irma and Hurricane Harvey. Note that LCRA shares its 900 MHz systems with public safety entities. These 900 MHz systems are used for a variety of voice and data applications that are critical for field area communications with personnel and with devices for monitoring outages and responding to them. New Jersey’s Public Service Electric and Gas Company relied exclusively on its 900 MHz trunked radio system for all restoration efforts during Superstorm Sandy and, like LCRA, shares its system with public safety agencies.
communications from common carriers to recover from a black start scenario or restore power in the aftermath of hurricanes and other disasters, due to concerns about the reliability of those common carrier services in the event of significant power outage. In addition, commercial communications carriers are phasing out circuits that utilities lease to support substation communications, protective relaying and distribution automation, which is also driving an increased reliance on 900 MHz systems by utilities to support these applications.

In addition to these extensive voice and data communications systems that operate in the 900 MHz band, there are also literally millions of smart meters deployed by utilities that rely on narrowband PCS channels that are adjacent to the 900 MHz band. Utilities have made significant investments in these systems. Smart meters are important for outage detection and power restoration, and they will be increasingly important for supporting demand response and distributed energy resources, as well as plug-in electric vehicles (PEVs).

UTC has been an active participant in the proceedings leading up to the NOI, as well as other proceedings related to the 900 MHz band. UTC’s interest in these proceedings has been to protect existing utility communications systems from interference and congestion while promoting the opportunity for access to broadband spectrum for the deployment of new systems to meet increasing demands for utility communications. As such, UTC has filed comments regarding the petition by Pacific DataVision and the Enterprise Wireless Alliance which proposes to realign the 900 MHz band. In addition, UTC has filed comments regarding the petition by M2M Spectrum Networks, LLC which

7 Utilities such as Southern Company, Entergy, Exelon and Portland General Electric use the 900 MHz narrowband PCS channels to support millions of smart meters. See Comments of Sensus Flexnet Users Group in RM-11738 (filed Jan. 27, 2015)(listing the 66 U.S. and 27 Canadian electric, gas and water utilities that are members of the Sensus Flexnet Users Group).

proposes to revise the rules to allow applicants to apply for new B/ILT\textsuperscript{9} channels and use them for commercial communications systems.\textsuperscript{10} Finally, UTC has opposed proposals to auction channels in the 900 MHz band.\textsuperscript{11} Therefore, UTC is pleased to file its comments in response to the NOI, which invites comments on these petitions and this proposal, as well as other ideas for revising the rules for the 900 MHz band.

II. Retaining the Existing Band Configuration but Increasing Operational Flexibility

In the NOI, the Commission invites comment on numerous issues related to retaining the existing band configuration but increasing operational flexibility. Specifically, the Commission asks what rule changes would be appropriate to help promote this type of flexibility. More specifically, the Commission asks whether it should permit expanded opportunities for commercial providers to offer service to B/ILT users on B/ILT spectrum, and whether it should consider broader flexibility, such as making the current B/ILT channels available for site-based B/ILT or Specialized Mobile Radio (SMR) use without the current eligibility requirement and allowing greater channel aggregation.\textsuperscript{12} As a policy matter, the Commission asks whether new services could become available if commercial use of the band was expanded. Specifically, the Commission asks for comment on whether there are low-bandwidth Internet-of-Things (IoT) applications that might benefit from the propagation characteristics of the 900 MHz band but which do not squarely fit within the B/ILT eligibility requirements. Moreover, the Commission asks whether there is demand for such services and whether it can be met more efficiently in other bands.\textsuperscript{13}

\textsuperscript{9} B/ILT refers to the “Business and Industrial Land Transportation pool of channels in the 900 MHz band.


\textsuperscript{11} See Joint Comments of the Association of American Railroads, the American Petroleum Institute, MRFAC, Inc., the National Association of Manufacturers, and the United Telecom Council in WT Docket No. 05-62 (filed May 18, 2005).

\textsuperscript{12} NOI at ¶19-20. See also Id. at ¶24.

\textsuperscript{13} Id. at ¶21.
A. The Commission Should Not Expand Commercial Use of Existing B/ILT Channels.

UTC opposes expanding commercial use of the 900 MHz band, and removing the eligibility restrictions to make it easier for B/ILT channels to be available for site-based B/ILT or SMR use. As noted above, utilities have ongoing needs for narrowband operations, and they have difficulty finding available channels to meet their needs for coverage and capacity for existing communications systems in the 900 MHz band.\(^\text{14}\) Expanding commercial use of the band would exacerbate the shortage of available frequencies for utilities to use. Moreover, doing so would not create new services to utilities for IoT applications, because utilities would not purchase access to this spectrum from commercial providers. Such services would be inherently unreliable, and utilities cannot risk the potential that these commercial networks would go down during a power outage or would be rendered unavailable due to other commercial traffic on the network. UTC continues to believe that proposals to expand commercial use of the 900 MHz band is a ploy by speculators to warehouse spectrum and/or force utilities to have to use commercial services in the 900 MHz band.\(^\text{15}\) Moreover, UTC believes that safeguards, such as allowing opportunistic use of commercial channels when they are not in use or requiring commercial licensees to initiate service promptly, will not prove effective as a practical matter to prevent warehousing of spectrum and exhaustion of channels for private internal communications.\(^\text{16}\) For all of these reasons, UTC opposes expanding commercial use of B/ILT channels in the 900 MHz band.

III. Reconfiguring the Band to Create a Broadband Service

In the NOI, the Commission invites comment on the potential realignment of the 900 MHz band

\(^\text{14}\) Id. at ¶22 (asking whether there are ongoing needs for narrowband communication that are sufficient to warrant less flexibility, and whether sufficient spectrum would remain available for B/ILT entities to operate and expand their private internal communication systems in the 900 MHz band or in other bands if the Commission increased flexibility to allow commercial use of B/ILT channels.)

\(^\text{15}\) See Comments of the Utilities Telecom Council in WT Docket No. 14-100 (filed Jul. 30, 2014). See also Reply Comments of the Utilities Telecom Council in WT Docket No. 14-100 (filed Aug. 11, 2014) (opposing numerous applications by Spectrum Networks Group and others seeking a waiver of the Commission’s rules to convert new B/ILT channels to commercial use.)

\(^\text{16}\) Id. at ¶23 (asking about negative effects of expanding commercial use of B/ILT channels and whether restrictions on commercial licensees could address concerns about warehousing of spectrum.)
to support a broadband and narrowband segment. In that regard, it asks what would be the appropriate bandwidth for the broadband segment of the band, taking into account the evolution of wireless technical standards such as Long Term Evolution (LTE). It also asks where the broadband and narrowband segments of the band should be located. Moreover, it asks whether the entire band should be converted to a 5X5 MHz block for broadband operations, and whether it might be possible to share the same spectrum in a more dynamic manner than by frequency division. Finally, the Commission asks about the costs and benefits of any potential substantial change to the configuration of the 900 MHz band, particularly in light of the relatively small swath of spectrum and its current usage by a variety of entities. In that regard, the Commission invites comment on whether utilities and others in the band will need broadband communications services in the future or whether they will rely primarily on narrowband communications services. Finally, the Commission asks about whether these needs can be met by existing commercial networks or other current or future service options, including opportunities in other bands. It also asks if B/ILT entities should be entitled to priority access on a broadband service that is created in the 900 MHz band, and if so what form would it take and how would it be enforced.

A. Utilities Need Access to Broadband Spectrum, But Any Realignment of the 900 MHz Band to Support Broadband Must Ensure That Existing Utility Systems Are Protected and Able to Expand Capacity.

At the outset, UTC reiterates that utilities need access to licensed broadband spectrum to meet their increasing capacity requirements. Utilities must increase capacity to support smart grid deployment and new cybersecurity requirements. They also need access to spectrum because carriers are discontinuing wireline leased line circuits that utilities use for substation monitoring and protective relaying applications, as well as other utility applications that protect the safety, reliability and security of utility operations. While some utilities may use commercial wireless broadband services to meet their needs, they continue to need their own private internal broadband networks and licensed broadband

17 NOI at ¶27.

18 NOI at ¶¶26-40.
Despite these increasing communications needs, utilities do not have access to any licensed private broadband spectrum. Utilities must manage interference in existing licensed spectrum bands that utilities use for land mobile and microwave communications. Utilities have also resorted to using unlicensed spectrum to support higher capacity utility applications, but owing to power restrictions, coverage using unlicensed spectrum is limited. Reliability is also a concern because unlicensed operations must accept interference from licensed services and unlicensed operations must not cause interference to licensed services. Moreover, existing unlicensed bands are increasingly congested, which also can affect reliability. Utilities need access to licensed broadband spectrum in a frequency range that ideally is below 1 GHz. This would help to provide wide area coverage that utilities will need for many of the smart grid applications that are driving the demand for additional capacity. It would also help to avoid line of sight issues that can block signals completely.

As the Commission considers whether to realign the 900 MHz band to support broadband, it must remain mindful of one guiding principle: existing utility narrowband communications systems must be able to continue to operate without interference from broadband operations, and they must be able to expand to meet increasing coverage and capacity requirements. While utilities need access to broadband, the proposed realignment must not impair the performance of existing narrowband systems and their ability to expand capacity to meet future needs. These utility narrowband systems are incredibly important, and it is equally important to preserve and promote the use of the band for utility narrowband operations in the future. While the opportunity to explore broadband in the 900 MHz band is interesting, UTC does not believe that the technology is sufficiently developed to support utility requirements, particularly given the diversity of needs among different utilities. UTC would be open to working with the Commission, equipment providers and other parties to explore future generations of technology that may support utility needs for mission critical applications. Ultimately, and as UTC has explained on the record in its previous comments regarding the proposed realignment of the 900 MHz band, there are many issues that need to be clarified, such as the impact of the broadband block on utility narrowband
systems that operate either within the 900 MHz band or in the narrowband PCS band that is adjacent to it.

Unfortunately, thus far there are still more questions than answers about how the 900 MHz band might be able to be reconfigured to provide the private licensed broadband spectrum that utilities need to support some, if not all, of their increasing communications needs. As such, UTC looks forward to working with the Commission and the parties to the proceeding to address the questions that remain about the rules for the realignment, including the size and location of the broadband block, how to ensure that incumbent licensees as well as broadband licensees are protected from interference, how the broadband network is licensed, what are the estimated costs of deploying and operating the broadband network, whether and to what extent utilities would have priority access on the broadband network, and how incumbents will be reimbursed for the cost of relocation.

As the Commission considers the future of the 900 MHz band, UTC suggests that the Commission should consider reserving this band for use by utilities on a going forward basis. As explained above, utilities already represent the largest group of licensees in the 900 MHz band and they are making effective and efficient use of the band to support essential services that demonstrably serve the public interest by providing light, heat and water services. Reserving the band for utilities would promote the efficient and effective use of the 900 MHz band in the future, as well. Moreover, it would promote the public interest by providing the basic needs for the life and health of consumers, and it would also support public safety by enabling first responders to effectively do their jobs, as well as by coordinating with public safety during emergency response. Congress recognized this when it designated utilities as a class of “public safety radio service” (PSRS) providers that are entitled to access to auction-exempt spectrum. Also, reserving the 900 MHz band for use by utilities would be consistent with the FCC’s implementation of its auction authority, which concluded that utilities are public safety radio service providers and that the Commission would designate spectrum bands as auction-exempt where utilities (and other PSRS providers) represent the dominant users of the spectrum band.¹⁹ Therefore, UTC

respectsfully recommends that the 900 MHz band be reserved for future use by utilities going forward.

IV. Retaining the Current Licensing and Eligibility Rules

In the NOI, the Commission invites comment on whether to continue to license the 900 MHz band on a site-by-site basis, or whether instead to assign licenses according to geographic areas through competitive bidding (i.e., auctions).\(^{20}\) In that regard, the Commission asks for comment on a variety of related questions, including the costs and benefits of retaining site-by-site licensing, as well as any rule changes that would better meet the current and future needs of B/ILT entities, accommodate developing technologies and ensure that the band is being used efficiently. The Commission also asks whether it should change the rules to permit expanded commercial service, and if so how and whether there should be restrictions placed on the conversion of B/ILT channels for commercial purposes in order to preserve the band for B/ILT use.\(^{21}\) In that regard, the Commission acknowledges that when it amended its rules to allow 900 MHz B/ILT licensees to convert their private land mobile radio (PLMR) authorizations to commercial mobile radio services (CMRS) authorizations or assign their authorizations to others for CMRS use, it did so in large part to accommodate Sprint’s need for “green space” for implementing 800 MHz rebanding.\(^{22}\) Further, as the Commission has recognized, “that need has passed,” and thus it may no longer be appropriate to convert B/ILT channels for commercial use.\(^{23}\) Finally, the Commission

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\(^{20}\) NOI at ¶¶41-43.

\(^{21}\) For example, the Commission asks whether it should establish a holding period before 900 MHz B/ILT channels can be so converted or assigned, as is required for 800 MHz B/ILT channels.

\(^{22}\) Id. at ¶42.

\(^{23}\) Id.
considers whether there are other narrowband B/ILT or other services, like IoT, that could be accommodated with minor adjustments to the rules. Moreover, it asks whether geographic area licensing would be appropriate now, even though the Commission determined not to adopt geographic licensing in the 900 MHz band previously.  

A. The Commission Should Continue to License the 900 MHz Band on a Site-by-Site Basis, and It Should Not Adopt Geographic Licensing or Auctions.

If the Commission retains the current licensing and eligibility rules, UTC supports the continued use of site-by-site licensing in the 900 MHz band, and it opposes geographic area licensing. Site-by-site licensing makes effective use of the 900 MHz band and is tailored to the way that utilities deploy their networks geographically. Conversely, geographic area licensing does not follow the boundaries of utility service territories, and geographic area licenses are either under or over-inclusive in their coverage. Worse, if the license is auctioned, utilities may be forced to pay for geographic areas that do not conform to their service territories. Moreover, utilities are challenged in their ability to compete at auction for access to geographic area licenses, particularly licenses that are large and cover metropolitan areas. For all of these reasons, UTC continues to oppose geographic area licensing and auctions in the 900 MHz band.

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24 See 900 MHz NPRM, supra n. 2.
V. Conclusion

WHEREFORE, the Commission should not revise its rules to enable B/ILT channels to be converted for commercial use. The Commission should promote utility access to broadband to meet their increasing communications needs, but ensure that any realignment of the 900 MHz band protects incumbent utility narrowband communications systems and enables them to access additional channels to increase capacity and coverage. In that regard, the Commission should reserve the 900 MHz band for utilities going forward. Finally, the Commission should retain existing site-by-site licensing in the 900 MHz band and should not adopt geographic area licensing and auctions, nor should it allow B/ILT channels to be converted to commercial use.

Respectfully,

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