**Before the**
**Federal Communications Commission**
**Washington DC 20554**

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| In the Matter of | ) | |
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| Wireless Telecommunications Bureau Seeks Comment Regarding Request For Relief Of Certain WCS Construction Requirements | ) | WT Docket No. 16-181 |
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## COMMENTS OF THE UTILITIES TECHNOLOGY COUNCIL

The Utilities Technology Council ("UTC")[1] hereby files the following comments in response to the Commission's *Public Notice* in the above-referenced proceeding.[2] UTC supports AT&T's Petition for Limited Waiver of Interim Performance Requirement for WCS C and D Block Licenses[3] and its Supplement.[4] UTC agrees with AT&T that granting the petition will serve the public interest by ensuring the efficient use of spectrum and the expeditious provision of service to the public.[5]

Specifically, additional time is needed beyond the final buildout deadline of September

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[1] UTC was formerly the "Utilities Telecom Council". *See* www.utc.org.

[2] Wireless Telecommunications Bureau Seeks Comment Regarding Request For Relief Of Certain WCS Construction Requirements, WT Docket No. 16-181, *Public Notice*, DA 16-606 (June 2, 2016).

[3] AT&T Mobility Spectrum LLC, BellSouth Mobile Data, Inc., New Cingular Wireless PCS, LLC, and SBC Telecom, Inc., Petition for Limited Waiver of Interim Performance Requirement for WCS C and D Block Licenses, filed March 29, 2016 (Petition).

[4] AT&T Mobility Spectrum LLC, BellSouth Mobile Data, Inc., New Cingular Wireless PCS, LLC, and SBC Telecom, Inc., Supplement to Petition for Limited Waiver of Interim Performance Requirement for WCS C and D Block Licenses, filed May 18, 2016 (Supplement).

[5] Petition at 21 (quoting *Amendment of Part 27 of the Commission's Rules To Govern the Operation of Wireless Communications Services in the 2.3 GHz Band*, Order on Reconsideration, 27 FCC Rcd 13,651, 13,706 ¶ 135 (2012) ("2012 Order on Reconsideration")).

13, 2019, as well as the interim buildout deadline of March 13, 2017.[6] Extending the deadline to September 13, 2021, as requested by AT&T, will allow utilities sufficient time for pre-deployment planning and construction of systems for smart grid and other utility applications.

Furthermore, UTC supports AT&T's request that the performance requirement should be set at 30 links per million persons in the Regional Economic Area Grouping ("REAG") covered in whole or in part by the license, based on 2010 Census data; and that a link should be defined as each transmission path between a base station and a field device such as individual household meters or devices that aggregate meter readings without regard to whether it satisfies the minimum payload requirement in Section 27.14(p)(4) of the rules. UTC agrees with AT&T that revising the performance requirements to correspond to the use of the spectrum by utilities for smart grid systems is sufficiently similar to the performance requirements that were designed for point-to-point systems when the rules were written. Moreover, the public interest would be served by revising the performance requirements and would ensure that the spectrum is being intensively used, consistent with the Commission's goals when it developed the buildout requirements.

UTC also agrees with AT&T that measuring performance by REAG is appropriate and consistent with the way that the 2.3 GHz band was originally licensed. By contrast, measuring performance in each partition would increase the odds that the Commission will again be forced to confront the many complex interference and other problems that plagued the 2.3 GHz band for many years. Finally, UTC agrees that excluding populations within 45 kilometers of an AMT receiver facility is appropriate to protect AMT facilities without penalizing utilities for doing so; and that eliminating the minimum payload requirements would effectuate the underlying purpose of the rule without measuring every link to see if it satisfies the minimum payload requirement.

[6]Petition at i. *See also* Supplement at 3.

As AT&T and Nokia have agreed to provide interim reports on the progress of the deployment of systems in the band, the Commission will be able to avoid "the construction of skeletal systems and fulfill Congress' mandate …[to] 'prevent stockpiling or warehousing of spectrum…and to promote investment in and rapid deployment of new technologies and services.'"[7]

**Introduction**

Created in 1948, UTC is the global trade association for the telecommunications and information technology interests of electric, gas and water utilities and other critical infrastructure industries ("CII"), such as pipeline companies.[8] Its members include large investor-owned utilities that serve millions of customers, often across multi-state service territories as well as smaller cooperative or municipal utilities that may serve only a few thousand customers in rural areas or isolated communities. All of these members own, manage or control extensive private internal communications networks that they use to support the safe, reliable and efficient delivery of essential services to the public at large. These communications networks are used both for voice and data communications for routine dispatch as well as for emergency response during service restoration in the aftermath of hurricanes, storms and other natural disasters, which can affect large areas for extended periods.

As the Commission is well-aware, utilities need access to additional spectrum to support their increasing communications needs. Utilities are challenged by increasing congestion and interference in existing bands, and they have been affected by several licensing freezes and reallocations in their bands of operation, as well. Moreover, they lack access to any contiguous blocks of licensed broadband spectrum, despite the fact that smart grid is a national priority for

[7] 2010 Report and Order and Second Report and Order, 25 FCC Rcd at 11,794 ¶209 (explaining the reasons for a minimum payload requirement.)

[8] *See* www.utc.org.

energy security and reliability and it requires access to additional capacity for IP-based communications from millions of devices deployed across vast service territories.[9] The need for additional capacity is well-documented, recognized and understood, and UTC continues to urge the Commission to make spectrum available that is suitable to meet the necessary communications requirements of utilities in terms of coverage, capacity and reliability.

The opportunity to lease access to 2.3 GHz spectrum from AT&T and use LTE equipment from Nokia should enable utilities to meet some of their near-term communications requirements. Hence UTC supports such a lease arrangement because it provides utilities with the option to use the spectrum as part of a private LTE network that utilities would manage and control. In turn, that provides both capacity and reliability. It also provides access to standardized equipment that will promote interoperability and economies of scale. At the same time, the equipment will enable utilities to switch to the AT&T commercial network as necessary to provide additional reliability. In short, it will not solve all of utilities' needs, but it will address some of them.

Having access to licensed spectrum to provide wide-area, high-capacity communications provides the reliability that utilities need for mission critical utility applications. Although unlicensed spectrum offers capacity and flexibility, it doesn't provide the same level of reliability, because it is subject to interference from other operations and it is subject to power limitations which can reduce coverage. Utilities need access to additional licensed spectrum for their field area communications networks in order to maintain safety, reliability and security of their their electric, gas and water services. Leasing the 2.3 GHz band from AT&T will help to address the lack of access to licensed high-capacity spectrum that utilities need for their mission

[9] *See also* Petition at 19 (stating that "A smart grid for just one of the top 35 ("Tier One") utilities likely will consist of hundreds of base stations and tens of thousands of field devices once it is fully deployed.")

critical communications.

Wherefore, UTC hereby files the following comments in support of the petition and the supplemental filing by AT&T for a limited waiver to extend the buildout requirements for the 2.3 GHz spectrum and to revise the performance metrics. UTC appreciates the opportunity for utilities to lease spectrum from AT&T and to use LTE equipment from Nokia. Despite its limitations, the 2.3 GHz spectrum does represent a promising option for utilities to meet their increasing communications needs, and AT&T and Nokia provide utilities with flexibility to design their networks to maintain operational reliability, security and resiliency. As such, UTC urges the Commission to grant the petition and the supplemental filing by AT&T to extend the buildout requirements and to revise the performance metrics, which will help to provide utilities with sufficient time to negotiate the terms and conditions for access to the spectrum, as well as to design, test, and deploy systems in the 2.3 GHz band.

## I. A Limited Waiver of the Interim Performance Requirement Will Promote The Public Interest by Allowing Time for Utilities to Deploy Smart Grid Systems in The 2.3 GHz Band.

UTC agrees with AT&T that the public interest would be served by granting AT&T a limited waiver of the Commission's rules to extend the deadline for the interim and final performance requirements for the 2.3 GHz band, as well as to revise the performance metrics. In that regard, UTC agrees with AT&T that the Commission should grant the petition because "the underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and…grant of the requested waiver would be in the public interest."[10] In addition, UTC agrees that Commission-grant of the petition is warranted here, because of the "unique or unusual factual circumstances of the instant case, [such that] application of the rule(s)

[10] 47 C.F.R. § 1.925(b)(3)(i)-(ii).

would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative."[11]

In summary, the underlying purpose of the rule would not be served by strict application of the buildout deadlines, because utilities are interested in accessing this spectrum and putting the spectrum to effective use for smart grid and other applications, while protecting adjacent SDARS and AMT operations from interference. The public interest would be served, because granting the waiver would allow utilities to promote smart grid, which is an overriding national policy objective and which delivers important public interest benefits in terms of energy security, reliability and safety. In addition, unique or unusual factual circumstances support granting the petition, because utilities do not have sufficient time to negotiate the terms and conditions of access, nor to design, test and deploy systems in the band before the deadlines would go into effect. These unique factual circumstances are such that application of the buildout requirements and the performance metrics would put be inequitable, unduly burdensome and contrary to the public interest.

### A. Granting the petition is consistent with the purpose of the rule to make effective use of the band.

Utilities would use the 2.3 GHz band to support millions of smart grid devices all across their service territories. These devices would support a variety of applications, including supervisory control and data acquisition (SCADA), advanced metering infrastructure (AMI), distribution automation and distributed energy resources, just to name a few. Given the criticality of some of these applications and the need for wide-area coverage, they will need access to licensed spectrum for reliable communications, which the 2.3 GHz band would help to provide. As such, utilities would make effective use of the band. In addition, the smart grid

[11] *Id.*

communications networks would be deployed in a point-to-multipoint configuration with a given neighborhood network node supporting multiple links to end-use devices in the network. While this is distinct from the point-to-point configuration that the Commission envisaged when the performance metrics for the 2.3 GHz band were originally written, the point-to-multipoint configuration is consistent with the underlying purpose of the performance metrics and the public interest would be served by revising the performance metrics, as requested by AT&T in its petition and supplemental filing. In short, strict application of the existing performance metrics would put "form over substance."

Extending the buildout deadlines is necessary to provide utilities with sufficient time to make effective use of the band, and revising the performance metrics as requested by AT&T is necessary to support the unique network designs of utility smart grid communications systems. Utilities have only recently been afforded the opportunity to lease spectrum from AT&T, and equipment in the band is not expected to be available for testing until later this year at the earliest. UTC agrees with AT&T that the March 13, 2017, interim performance deadline would not provide utilities with sufficient time to negotiate the terms and conditions for leasing the spectrum and to deploy networks in numbers that would meet the Commission's performance metrics for the 2.3 GHz band. However, the utility trials should be sufficiently robust by the time of the March 2017 deadline for AT&T report on their progress and for the Commission to effectively determine AT&T's compliance with the interim buildout requirements.[12] UTC also agrees with AT&T that utilities will need more time to meet the final buildout deadline of

[12] *See* Petition at 18 (explaining that "[t]he only difference between a trial and a full commercial deployment will be scale; [and that] the trial system will have the full range of capabilities and functionality" of a commercial deployment such that "the trials will be robust enough for AT&T to be able to report on the trial systems' performance and customer feedback in March 2017.")

September 13, 2019. To be sure, the ability of AT&T to meet the final deadlines will be limited by the pace of utility deployment,[13] and utilities will likely need until September 13, 2021, for AT&T to meet its performance requirements.

### B. The public interest would be served by providing access to spectrum for smart grid.

Moreover, the use of the spectrum for smart grid would drive important public interest benefits in energy security, reliability, efficiency and safety.[14] The Department of Energy has reported that smart grid technologies have helped utilities to significantly reduce the amount of time to restore power in the aftermath of an outage.[15] Also, the integration of distributed energy resources -- such as wind and solar for energy reliability and clean power -- is aided by smart grid technologies, which help to manage the flow of intermittent sources of energy onto the grid.[16] The communications network lies at the core of the smart grid, and having access to sufficient and suitable spectrum will help to enable the public interest benefits of the smart

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[13] *See* Supplement at 3 (explaining that "[i]n contrast to most radio services, AT&T is not building a network to provide service to its own customers," and that [t]he pace of deployment, therefore, will be dictated largely by a decentralized set of utilities.")

[14] *See generally* "A Policy Framework for the 21st Century Grid: Enabling Our Secure Energy Future" Executive Office of the President, National Science and Technology Council (June 13, 2011), visited at https://www.whitehouse.gov/sites/default/files/microsites/ostp/nstc-smart-grid-june2011.pdf . *See also* "Understanding the Benefits of the Smart Grid", National Energy Technology Laboratory, Department of Energy (June 18, 2010), visited at https://www.netl.doe.gov/File%20Library/research/energy%20efficiency/smart%20grid/whitepapers/06-18-2010_Understanding-Smart-Grid-Benefits.pdf.

[15] *See* "Smart Grid Investments Improve Grid Reliability, Resilience and Storm Responses", Department of Energy (Nov. 2014 ), visited at http://energy.gov/sites/prod/files/2014/12/f19/SG-ImprovesRestoration-Nov2014.pdf . (reporting that EPB reduced total restoration time by up to 17 hours and prevented power loss or instantly restored power to 40,000 customers using smart grid technologies, and that PECO avoided more than 6,000 truck rolls and reduced service resoration times by 2-3 days following Superstorm Sandy in October 2012 – even with smart meters deployed to only 10% of customers.)

[16] *See* "2014 Smart Grid System Report to Congress", Department of Commerce at 16 (Aug. 2014), visited at http://energy.gov/sites/prod/files/2014/08/f18/SmartGrid-SystemReport2014.pdf (stating that "To effectively integrate thousands of new devices and market participants, utilities across the grid will need advanced controls combined with sophisticated communications and IT to enable stable, reliable, and optimal balance of supply and demand.")

grid.[17] Therefore, the overriding national policy interest in grid modernization would be served by enabling utilities to deliver public interest benefits in the form of energy security, reliability, efficiency and safety.

### C. Unique or unusual factual circumstances merit revising the performance metrics.

As AT&T explains in its comments, the Commission should extend the deadlines and the performance metrics due to unique factual circumstances, such that:

- The performance requirement should be set at 30 links per million persons in the Regional Economic Area Grouping ("REAG") covered in whole or in part by the license, based on 2010 Census data. In addition, for purposes of calculating a REAG's population to determine the required number of links, the population of any Census Block, the center of which is 45 kilometers or closer to any AMT receiver facility for which coordination is required under Section 27.73(a) of the rules, should be disregarded.

- A link should be defined as each transmission path between a base station and a field device such as individual household meters or devices that aggregate meter readings without regard to whether it satisfies the minimum payload requirement in Section 27.14(p)(4) of the rules.

UTC agrees with AT&T that, although the network configuration of smart grid systems may not be a classic point-to-point fixed system, it shares enough of the characteristics of such systems that 30 links per million persons is an appropriate final buildout benchmark.[18] Further, UTC agrees with AT&T that it is important to use REAGs, because "disregarding AT&T's status as the sole licensee in each of these REAGs and requiring AT&T to satisfy performance requirements in each partition would serve no purpose … [and would] likely would hinder,

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[17] *Connecting America: The National Broadband Plan* at 249, 250-253 (2010), http://download.broadband.gov/plan/national-broadband-plan.pdf ("National Broadband Plan").

[18] *See* Supplement at 5-6 (explaining that "[s]ignals will be transmitted from one fixed point (the base station) to another (the field device) or vice versa—much like a 39 GHz backhaul network, for example," and that "Moreover, as with a classic point-to-point fixed system, the information carried on each link will be unique (at least in the uplink direction).")

rather than enhance, overall deployment."[19] Similarly, UTC agrees with AT&T that it is important to exclude populations within 45 kilometers of an AMT receiver facility. It is necessary to protect systems in those areas and utilities should be allowed to bypass AMT coordination zones without being penalized.[20] Finally, UTC agrees that the Commission should refrain from imposing a minimum per-link payload requirement, because it would be difficult to measure the traffic on each link and the importance of the traffic on the network, as well as its overall volume are what really matters.[21]

[19] *Id.* at 6-7.

[20] *Id.* at 7-8.

[21] *See Id.*at 8.

**Conclusion**

For all of these reasons, UTC urges the Commission to grant the petition and the supplemental filing by AT&T for a limited waiver of the buildout requirements and the performance metrics. The public interest would be served by granting the waiver, which would advance the overriding national policy objectives in promoting the deployment of smart grid systems by utilities to enhance the reliability, security and safety of energy and water services. Further, the limited waiver would promote effective use of the 2.3 GHz band, which has been challenging, considering the difficulty of protecting adjacent SDARS and AMT services incumbents. Finally, a waiver is justified due to unique factual circumstances associated with the deployment of smart grid communications systems by utilities, because a slight revision of the performance metrics would be consistent with both the purpose of the rule and the way that smart grid systems would be deployed in the band.

Respectfully,

**Utilities Technology Council**

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