

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
Protecting Against National Security Threats to the) WC Docket No. 18-89
Communications Supply Chain Through FCC Programs)

COMMENTS OF NOKIA

Nokia respectfully submits these Comments in response to the Order and Further Notice of Proposed Rulemaking (FNPRM) proposing to require as a condition on the receipt of any Universal Service Fund (USF) support that carriers remove and replace equipment in their network acquired from covered companies.

A. Summary

In these Comments, Nokia addresses how to achieve the Commission’s goal of securing U.S. networks, while also minimizing the negative impact to the carriers and communities affected by this important initiative. We first describe Nokia and our heritage serving the market segment most affected by the Commission’s recent Order and FNPRM. Next, we discuss the tension between (1) the undisputed national interest in securing U.S. networks; and (2) the fact that covered company equipment is currently deployed in USF-recipient networks that must be maintained in the near-term to ensure continuity of quality services. Short-term waivers will likely be required to ensure the financial viability of service providers that rely on USF so they can maintain their existing networks while working to replace unsecure equipment. We conclude these Comments with a discussion of the need for flexibility in implementing equipment removal and replacement, with respect to timing as well as the precise

replacement equipment chosen. The Commission should not engage in proscriptive technology mandates, but rather should permit carriers to purchase equipment that will best fit the needs of individual carriers' networks¹ and the communities they serve.

B. Nokia's Strong Heritage

Nokia delivers the industry's only end-to-end portfolio of network equipment, software, services and licensing that is available globally. Our customers include communications service providers whose combined networks support 6.1 billion subscriptions, as well as enterprises in the private and public sector that use our network portfolio to increase productivity and enrich lives. A leader in each generation of wireline and wireless communications equipment, we are leading the world to adopt end-to-end 5G networks that are faster, more secure and capable of revolutionizing lives, economies and societies.

Nokia is proud of our heritage working to improve service in a wide range of deployment scenarios, including improving communications services to unserved and underserved communities. While our service to the largest carrier networks is well-known, Nokia also has over 40 regional and rural operator-customers in the U.S., the key market segment impacted by the Commission's Order and FNPRM. Nokia is able to leverage products developed at scale for the larger Tier 1 operators and position the identical hardware and software to regional and rural operators. These operators get the benefit of a robust carrier grade ecosystem with cutting-edge advanced features when we are able to use the same equipment for large, medium and small networks. It is our experience working closely with this market segment, along with our end-to-end portfolio, that uniquely positions Nokia to Comment in this proceeding.

C. The Commission Should Mitigate the Hardship and Uncertainty for Companies and Communities with Covered Company Equipment

The Commission correctly recognized in the FNPRM that a funded reimbursement program should be implemented before requiring recipients that receive USF to remove and replace covered equipment from their networks.¹ The whole purpose of USF high cost support is to provide funding for serving communities where there is no viable business case without such funding. The recognition in the FNPRM that funding is needed for replacement of covered company equipment provides context for the conundrum caused by the Order's prohibition on the near-term use of USF to "maintain, improve, modify or otherwise support [already-installed, covered] equipment in any way."²

For many carriers, the prospect of running their networks for an extended period of time without using USF is simply not realistic. Even for USF recipients that *can* devise a short-term business plan for maintenance of covered company equipment outside of USF funds, the Commission indicates skepticism that a USF recipient could prove USF funds are excluded from such maintenance activities. Rather than provide carriers with a blue print of how to navigate the new rules, the Order states, "We believe it unlikely that many USF recipients will be able to show the detailed records necessary to demonstrate that no USF funds were used on equipment or services from a covered company on any part of that project."³ This leaves these carriers with unacceptable legal risk.

¹ *Protecting Against National Security Threats to the Communications Supply Chain Through FCC Programs*, Report and Order, Further Notice of Proposed Rulemaking, and Order, WC Docket No. 18-89, FCC 19-121, ¶ 122 (rel. Nov. 26, 2019) ("*Order and FNPRM*").

² *Id.* ¶ 85.

³ *Id.* ¶ 72.

We agree federal funds should not support unsecure equipment, but also urge the Commission to recognize the tension caused by its pronouncement that USF recipients may not maintain such equipment in any circumstance due to difficulties segregating USF and non-USF funds. Indeed, the Commission even recognizes that, in the absence of funding, carriers may be forced to, “run[] outdated and inadequately maintained equipment.”⁴ This is not a hypothetical issue, but one that threatens continuation of quality services to many communities across the United States.

The Commission should be open minded to proposals from carriers that seek creative ways to migrate to trusted carrier equipment. For example, it would be a step in the right direction for a company currently served by a covered company’s core and radio access network (RAN), to transition to a hosted core solution wherein it would have its current RAN supported on the core of another carrier that is not using a covered company’s equipment. The carrier using a covered company’s equipment could effectively replace its equipment in stages, first by deactivating and replacing its core while hosting the RAN elsewhere to prevent service disruption, and then replacing the RAN. Nokia and other trusted vendors are very experienced at live RAN swaps without service disruption.

The scenario we outline is an interim cost-effective way to transition away from unsecure gear but would likely require the Commission’s blessing for the hosted core solution to temporarily support the unsecure RAN. This is an example of a stepped approach that should be encouraged to allow both avoidance of service disruptions to rural consumers and provide

⁴ *Id.* ¶ 78.

additional timing and cost impact flexibility to carriers diligently working to replace unsecure network equipment.

It is in this context that Nokia believes that the waiver process is essential to reaching case-by-case compromises for how to attain the national goal of securing U.S. networks without causing short-term harms to the communities the Order seeks to protect. Indeed, Nokia has had numerous conversations with USF recipients about the uncertainties regarding lawful operation of networks including covered company equipment while those carriers plan to replace that equipment. These carriers are grappling with how to comply with the Commission's Order, and some are considering their very survival.

These carriers are the lifeblood of their communities, and it is incumbent on the Commission to work with them to encourage diligent efforts to end reliance on unsecure equipment, while mitigating the legal uncertainty that may come from creative, common sense solutions. The bottom line is that there are myriad scenarios that might emerge that could allow for the goal of removing covered equipment without inflicting irreparable financial damage on small carriers or result in service disruptions, and the Commission should remain open to all of them.

D. Practical Considerations for Removal and Replacement of Unsecure Equipment

Timing. Nokia urges the Commission to consider the practicalities of replacing equipment, and take those practical considerations into account, including the historic context of parallel nationwide and regional 5G roll-outs. As noted above, the obligation to swap equipment – applicable only to companies reliant on USF for their viability – should become a legal mandate only when Federal funding is made available to facilitate that swap. The affected

carriers and the communities they serve are among the most vulnerable. Placing them in jeopardy with unrealistic timelines would threaten degradation in service and exacerbate the digital divide. As such, putting a funding mechanism in place must be done quickly and with urgency.

Once funding is in place, however, there are still concerns with timing. Nokia has substantial experience doing full vendor network swaps without service disruption. From these past experiences, Nokia can attest that these efforts require careful planning and time to accomplish. While time will vary depending on the size and complexity of the swap, Nokia estimates that any given swap will take approximately one to three years. To balance the deployment needs of each carrier and urgency to remove equipment posing potential national security concerns, Nokia urges that the Commission allow carriers flexible timelines to complete the transition, perhaps in conjunction with milestones that ensure the service provider chooses an equipment vendor and demonstrates a concrete plan on a shorter time horizon. A short planning window will help facilitates a fast push towards replacement but balances the flexibility of carriers to communicate to the Commission appropriate timelines needed to accomplish the swap goals for their specific networks.

Beyond the routine timelines, the Commission should also consider the shortage of qualified tower crews already engaged in the effort to implement ongoing large carrier 5G builds. These crews are in high-demand for the nationwide effort to transition to 5G, often requiring new network architectures increasing the number of towers and other infrastructure by orders of magnitude over prior generations of wireless technologies. There is a constant effort to bolster the pool of qualified crews, but it is a struggle to meet demand. Under no circumstances should unqualified workers be pressed into service to meet an inflexible removal and

replacement deadline, potentially creating risks to the networks and the crews. In addition, most of these small rural markets are deployed over vast rural landscapes with shortened climbing windows during winter months that make facilitating large-scale deployments even more challenging with extended deployment timeframes. As such, crew availability is an important factor the Commission should consider in determining the timing requirements for compliance with replacement of covered company equipment.

Flexibility in Replacement Equipment Purchased. In the FNPRM, the Commission proposes “to make available reasonable replacement costs for the equipment and services produced and provided by covered companies”⁵ The Commission also asks in the FNPRM whether USF recipients should be “allowed to seek reimbursement for technology upgrades to their networks”⁶ Nokia urges that carriers replacing equipment need to have the freedom to buy solutions that are not just “like for like.” While concerns about gold plating may be valid, the Commission should also not lock-in carriers to equipment that may become rapidly outdated or threaten to exacerbate the digital divide. Rather, the Commission should support purchase of equipment that is rapidly upgradable to support 5G. Deployment of 5G to rural America already poses unique challenges, and a strict “like for like” requirement risks making the 5G proposition even more expensive and elusive in rural areas.

In addition to avoiding being overly prescriptive on replacing “like for like,” the Commission should also absolutely not condition receipt of any funds on any prescriptive

⁵ *Id.* ¶ 137.

⁶ *Id.*

technology mandates.⁷ No specific technology, network configuration, or other similar mandate will be a one-size fits all appropriate solution to all network deployments. The service providers themselves should be given the flexibility to make these choices; they should not be prescribed through Federal regulation.

E. Conclusion

Nokia respectfully requests that the Commission work closely with USF recipients to ensure a swift and smooth transition to securing U.S. communications networks as described above.

Respectfully submitted,

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⁷ A recently introduced bill in the United States Senate would limit the availability of funding to aid in the replacement of covered equipment on the development of plans to migrate within a certain number of years to open radio access network (ORAN) technology, which is not currently available. In Nokia's view, there is no reasonable policy justification for conditioning access to critical replacement funds on the adoption, or planned adoption of a specific technology.