

three billion SIP calls and verified more than two billion such calls. By June 30, 2021, AT&T expects that it will sign or verify more than two-thirds of inter-carrier SIP calls on AT&T's VoLTE and consumer VoIP networks—more than 20 billion minutes of use each month.

Despite these efforts, AT&T recently discovered two issues, as a result of which, a very small percentage of its VoLTE traffic routing over legacy portions of AT&T's IP-based network that does not support STIR/SHAKEN. The first issue results from a network routing adjustment implemented in mid-2020 to address network congestion during the COVID-19 global pandemic. As a result of this adjustment, a tiny amount of AT&T's VoLTE-*originated* traffic travels AT&T's network on an IP end-to-end basis, but over a portion of the network that lacks STIR/SHAKEN signing capabilities. The second issue, also resulting from recent routing adjustments and impacting a small volume of VoLTE traffic, involves calls entering AT&T's network on its wholesale IP platform and *terminating* to AT&T's VoLTE customers using network elements that cannot retain the SHAKEN header information. For the impacted traffic, AT&T cannot verify the calls at termination.

To resolve these discrete issues, AT&T is seeking a one-year extension of the June 30, 2021 STIR/SHAKEN implementation deadline. This extension is required to enable AT&T to achieve compliance by upgrading AT&T's network capabilities and capacity to support STIR/SHAKEN on these platforms, as well as to establish, and migrate traffic to, new traffic routes that are STIR/SHAKEN-enabled.⁴ The narrow extension requested is consistent with the Commission's exercise of discretion to extend the implementation deadline in other contexts involving undue hardship.⁵ Moreover, the requested extension will further the Commission's

⁴ AT&T will make every effort to identify additional options for achieving compliance by June 30, 2021, but at this juncture, AT&T believes that the requested extension is necessary.

⁵ See *Call Authentication Trust Anchor, Second Report and Order, WC Docket No. 17-97, FCC 20-136 ¶¶ 41-42* (rel. Oct. 1, 2020) ("*Second Report & Order*") (acknowledging resource, time, equipment, and other

efforts to promote the IP transition.⁶ For these reasons, AT&T respectfully requests that the Commission grant the limited extension requested herein.

ARGUMENT

AT&T recently discovered two discrete gaps in the implementation of STIR/SHAKEN on its network that result in very small volumes of VoLTE traffic that are not supported by STIR/SHAKEN. In the first instance, AT&T discovered on November 13, 2020 that a network routing adjustment made in mid-2020 to address congestion during the COVID-19 global pandemic established an IP end-to-end path that is not STIR/SHAKEN-capable. Prior to this adjustment, these calls, which traverse AT&T's Domestic SIP Interconnect ("DSIPIC") platform, a legacy IP-based platform, were routed over the time-division multiplexing ("TDM") network prior to exiting AT&T's network in SIP format. However, following the onset of the global COVID-19 pandemic, AT&T was forced to make network routing changes to accommodate increased traffic volumes on its VoLTE network caused by the pandemic. As a result, a very small portion of DSIPIC traffic—less than 10 percent of all traffic on the DSIPIC platform and less than 0.28 percent of AT&T's VoLTE traffic—now travels the DSIPIC platform on an IP end-to-end basis and thus qualifies as a "SIP call" under the Commission's rules.⁷ Because DSIPIC traffic historically routed over the TDM network, AT&T has not implemented signing capabilities in that portion of its network, and the DSIPIC calls exit AT&T's network unsigned.

constraints impacting STIR/SHAKEN implementation); *see id.* ¶ 51 (determining that, for services scheduled for discontinuance, an "extension will decrease costs by obviating the need to upgrade components of a voice service provider's network that will be sunset").

⁶ *See, e.g., id.* ¶ 51 (stating that "voice service provider resources are better spent upgrading networks that will have the potential to reap the full benefits of the IP transition and STIR/SHAKEN"); *id.* ¶ 70 (adopting requirements to promote the IP transition, among other policy goals).

⁷ *See* 47 C.F.R. § 64.6300(h) (defining "SIP call" as "calls initiated, maintained, and terminated using the Session Initiation Protocol signaling protocol").

A similar issue recently was discovered on AT&T’s wholesale VoIP platform (AT&T Voice over IP Connect Service, or “AVOICS”) for a small volume of calls that terminate to AT&T VoLTE customers. Here again, although most AVOICS traffic routes to the TDM network, AT&T made limited network adjustments for efficient traffic management to enable an all-IP path from AVOICS to AT&T’s VoLTE customers using legacy mobile switching centers (“MSCs”). Testing conducted on November 12, 2020 revealed that the MSCs connecting the AVOICS platform to AT&T’s Mobility customers do not retain the SHAKEN header information, thus preventing AT&T from verifying any authenticated calls that traverse the AVOICS platform. Again, like the DSIPIC issue described above, only a small volume of VoLTE traffic is at-risk—approximately four percent of AT&T’s VoLTE traffic.⁸

Immediately upon discovering the issues, AT&T began taking steps to address the implementation gap impacting its VoLTE network. In particular, AT&T is aggressively moving to reduce traffic volumes on the DSIPIC and AVOICS platforms by migrating the traffic to STIR/SHAKEN-enabled portions of its network. On or before June 30, 2021, AT&T expects it can reduce the (already very small) volumes of SIP traffic on the DSIPIC platform by approximately 70 percent, and by as much as 50 percent on the AVOICS platform.⁹ Such traffic volumes will then travel over STIR/SHAKEN-enabled routes on AT&T’s network and will be authenticated/signed or verified as appropriate, and as required under the Commission’s rules.¹⁰

For the remaining SIP calls on these platforms, the age and limited capabilities of the DSIPIC and AVOICS platforms present challenges to AT&T’s efforts to resolve the identified

⁸ An even smaller percentage of traffic entering AT&T’s network on the AVOICS platform actually is signed and thus eligible for verification.

⁹ Because the traffic issues were only recently discovered, the traffic volumes that AT&T estimates it can migrate from the legacy platforms, particularly the AVOICS platform, are preliminary.

¹⁰ See 47 C.F.R. §§ 64.6301(a)(2)-(3).

implementation gaps. AT&T thus plans to build new STIR/SHAKEN-enabled routes and capacity in other portions of its network and transition the impacted VoLTE traffic to that new infrastructure. This plan is consistent with the Commission’s acknowledgement that providers’ “resources are better spent upgrading networks that will have the potential to reap the full benefits of the IP transition and STIR/SHAKEN,”¹¹ which is precisely what AT&T presently intends to do.

Nevertheless, this undertaking will require implementation of new network capabilities and the associated deployment of significant network capacity, all of which cannot feasibly be completed by June 30, 2021. Most significantly, AT&T’s 2021 network plans include launching a new generation of session border controllers (“SBCs”) that are expected to deliver improved performance over the class of devices deployed in 2019 and 2020. AT&T is exploring ways to accelerate the timeline for operationalizing the new SBCs, but the devices currently are being designed and constructed by AT&T’s vendor and thus are not presently available for network deployment.¹² Indeed, the first devices are not expected to be in use until the second-half of 2021, following an initial deployment and required network compatibility testing. At the same time, introducing new technology to a network as large and complex as AT&T’s can be expected to encounter technical issues and delays that are unknowable at this stage.

The limited time remaining to achieve compliance, the legacy nature of the DSIPIIC and AVOICS platforms, and the need to complete design and test new equipment necessary to address these issues warrant a narrow extension of the June 30, 2021 deadline under Section

¹¹ *Second Report & Order* ¶ 51.

¹² *See id.* ¶ 42 (citing equipment availability issues to justify, in part, an extension of the STIR/SHAKEN mandate for small voice service providers).

4(b)(5)(a)(ii) of the TRACED Act and Section 64.6304(e) of the Commission's rules, consistent with the Commission's articulation of the standard in the *Second Report & Order*.

CONCLUSION

Based on the undue hardship described herein, AT&T respectfully requests that the Commission grant a one-year extension of the June 30, 2021 STIR/SHAKEN implementation deadline limited to the small volumes of SIP traffic on AT&T's DSIPIC and AVOICS platforms.

Respectfully submitted,

/s/ Amanda E. Potter

Amanda E. Potter

Gary L. Phillips

David Lawson

AT&T SERVICES, INC.

1120 20th Street, NW

Washington, DC 20036

Its Attorneys

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