

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Call Authentication Trust Anchor)	WC Docket No. 17-97
)	
Implementation of TRACED Act Section 6(a))	
—Knowledge of Customers by Entities with)	WC Docket No. 20-67
Access to Numbering Resources)	

**COMMENTS
OF
NTCA—THE RURAL BROADBAND ASSOCIATION**



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Executive Summary

RLECs support widespread industry implementation of STIR/SHAKEN, as these operators are committed to combatting spoofing and the scams and harassing/annoying robocalls that this practice enables. Unfortunately, the inability of these rural operators to obtain IP interconnection for voice traffic, as a reasonable substitute for current interconnection agreements, stands as the most imposing barrier to RLECs' implementation of STIR/SHAKEN. While most NTCA members have IP-enabled switches and thus have the capability to implement STIR/SHAKEN within at least parts, if not all, of their networks, not every provider has been so forward-looking. The "TDM barrier" actually arises often due to the manner in which voice traffic is routed between RLECs and other providers. In many cases, NTCA's RLEC members subtend TDM tandem switching facilities owned by upstream carriers that are critical for the exchange of traffic between these RLECs and other carriers.

Moving forward, as RLECs attempt to overcome this barrier, in the absence of default "rules of the road" for what will happen once such existing interconnection arrangements are scrapped, it is all but certain (as described further below these providers have clearly indicated their intentions here) that larger providers will seek to shift *all* transport costs to these small carriers. This will require these small, rural operators to deliver calls to distant points of interconnection that may be several states and hundreds or even thousands miles away from the rural area where such calls originate. RLECs will, for the first time, be responsible financially for transport costs to and from distant points of interconnection – and these costs will, for the first time, be extracted from small, rural customers bases. *RLEC subscribers may therefore only be able to benefit from STIR/SHAKEN at the expense of affordable voice service going forward.*

Fortunately, a simple approach that creates a default preservation of existing transport and interconnection (or “network edge”) responsibilities used for voice calls today as that exchange moves into an IP environment is the *only* step the Commission need take to ensure widespread use of the STIR/SHAKEN framework *across* networks. These non-prescriptive rules that would only preserve existing transport responsibilities for RLECs in the absence of other privately negotiated terms are, as noted below, consistent with and authorized by the TRACED Act provisions that direct the Commission to remove barriers to STIR/SHAKEN adoption by all classes of voice providers. They would also be every bit as “consumer-protection oriented” as a STIR/SHAKEN mandate itself, as widespread adoption that strengthens the effectiveness of the standard would be achieved while also preserving rural consumers’ access to high-quality and affordable voice service.

With this as background, NTCA urges the Commission to tie any compliance deadline to resolution of this barrier – RLECs that certify to the inability to pass call authentication beyond their network edge at reasonable terms and conditions should be granted an exemption until such time as they can obtain such an agreement or find a suitable alternative (if one exists) that meets their needs and does not impose undue costs. The failure to adopt such a provision would, quite simply, force a small rural carrier to expend tens of thousands of dollars per year to implement a system that serves no practical purpose as call authentication information they generate would disappear at the network edge. Even worse, such would be the case not due to their own technical inability but that of the upstream carrier with whom the RLEC is interconnected. Indeed, the Commission would be hard pressed to produce any cost-benefit analysis that supports this approach. Moreover, this barrier will not resolve itself – a delay of a year or two will not

change larger carriers' desire for and leverage to obtain IP interconnection agreements that favor them and push new costs onto RLECs.

The Commission should also adopt compliance timeframes tied to RLECs' ability to obtain and integrate into operating budgets vendor solutions for implementing STIR/SHAKEN. Even those RLECs able to overcome the IP interconnection barrier – and certify as to having such agreements in place as proposed above – will face “substantial hardship” in putting vendor solutions in place. They should at the very least have more than a year delay on top of that granted to fortune 500 companies. Thus, RLECs should have until June 2023 – and such a deadline should specifically be tied to their ability to obtain IP interconnection on reasonable terms and conditions through a default rule for such interconnection.

The Commission should also encourage industry-wide cooperation on endeavoring to complete the Out-of-Band STIR standard. This standard has the potential to serve as a “bridge” to an all-IP environment and the Commission should strongly encourage voice service providers of all sizes and technologies to work together on completing it.

Finally, any robocall mitigation rules should be non-prescriptive while at the same time setting the clear expectation that voice service providers will cooperate with law enforcement and industry traceback efforts. Any prescriptive rules will fail to keep up with spoofer's ever-changing tactics and could in fact serve as blueprint for these bad actors' efforts to avoid mitigation techniques.

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**COMMENTS
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NTCA—THE RURAL BROADBAND ASSOCIATION**

I. INTRODUCTION

NTCA—The Rural Broadband Association (“NTCA”)¹ hereby submits these comments in response to the Further Notice of Proposed Rulemaking² adopted by the Federal Communications Commission (“Commission”) in the above-captioned proceedings implementing the TRACED Act.³ NTCA offers herein justification for an extended implementation deadline for RLECs beyond the June 2022 date as proposed in the *Further Notice* for those voice providers that experience “substantial hardship” in gaining access to the solutions necessary to authenticate calls pursuant to STIR/SHAKEN.⁴ That said, NTCA urges the Commission to expressly recognize that even an extended implementation deadline for RLECs will still not bring the promise of STIR/SHAKEN to these operators and their

¹ NTCA represents approximately 850 rural rate-of-return regulated telecommunications providers (“RLECs”). All of NTCA’s members are full service local exchange carriers and broadband providers, and many of its members provide wireless, cable, satellite, and long distance and other competitive services to their communities.

² *Call Authentication Trust Anchor*, WC Docket No. 17-97, *Implementation of TRACED Act Section 6(a) — Knowledge of Customers by Entities with Access to Numbering Resources*, WC Docket No. 20-67, Report and Order and Further Notice of Proposed Rulemaking, FCC 20-42 (rel. Mar. 31, 2020) (“*Report and Order*” or “*Further Notice*”)

³ Pallone-Thune Telephone Robocall Abuse Criminal Enforcement and Deterrence Act, Pub. L. No. 116-105, § 4(b)(1)(A), 133 Stat. 3274, 3277 (2019) (“TRACED Act”).

⁴ *Further Notice*, ¶ 78.

subscribers. This is because the lack of IP interconnection for voice traffic will continue to constitute a significant barrier to many RLECs' participation in the STIR/SHAKEN caller-ID authentication framework – and this will not change in the foreseeable future absent Commission action to adopt “default” rules that enable such an IP transition. Fortunately, this can be easily done without minimal disruption to existing arrangements and while allowing flexibility for the marketplace ultimately to operate against a backdrop established by the Commission. Specifically, to promote IP interconnection and ultimately to enable STIR/SHAKEN to work as Congress intended and as the Commission desires, the agency need only make a simple declaration that existing meet points and transport responsibilities will serve as the “default” (i.e., a default in the absence of otherwise negotiated terms) for the exchange of IP voice traffic between RLECs and operators with whom they exchange traffic. This minimally intrusive step would at the same time represent the most pivotal step the Commission can take to ensure that all consumers, in rural and urban areas alike, can reap the benefits of call authentication.

II. THE INABILITY TO OBTAIN IP INTERCONNECTION FOR VOICE TRAFFIC AS A REASONABLE SUBSTITUTE FOR CURRENT INTERCONNECTION ARRANGEMENTS STANDS AS THE MOST IMPOSING BARRIER TO RLECS' IMPLEMENTATION OF STIR/SHAKEN; A DELAYED IMPLEMENTATION DEADLINE WILL NOT BY ITSELF REMOVE THIS BARRIER.

A. TDM facilities operated by upstream carriers serve as RLECs' connection for the exchange of voice traffic with the rest of the world – and the continued presence of such TDM facilities stands in the way of STIR/SHAKEN implementation.

As the *Further Notice* acknowledges, the STIR/SHAKEN caller-ID authentication standard requires end-to-end IP connectivity between every provider in a call path⁵ – for example, caller-ID authentication information is lost if an originating carrier generates it yet

⁵ *Id.*, ¶ 7.

hands a call to an upstream provider that utilizes TDM facilities. For most RLECs, this poses a substantial barrier to successful implementation of STIR/SHAKEN. This is not generally a problem of the RLEC's own making, however; to the contrary, as NTCA has previously noted, survey data indicate that 93 percent of the association's members have IP-enabled switches within their networks, meaning that most RLECs have the capability to implement STIR/SHAKEN within at least parts, if not all, of those networks.⁶

Rather, the "TDM barrier" arises due to the manner in which voice traffic is routed between RLECs and other providers. Specifically, in many cases, NTCA's RLEC members subtend tandem switching facilities owned by upstream carriers – these facilities are most often TDM and represent each RLEC's connection with the rest of the world, where voice traffic destined for other providers in the same local or extended calling area, and interexchange carriers as well, is handed off by the RLEC.

Because these tandem and related transport facilities operated by the upstream carriers are TDM, it matters little that many RLECs have been leaders in the IP transition within their own networks. Despite the capability to generate and hand off traffic in IP format – and the capability (subject to potentially significant implementation costs) to generate caller-ID authentication information – RLECs are compelled to hand off traffic in TDM format for routing to, from, and through these third-party tandems. Thus, even the most forward-looking, technologically-advanced small, rural carrier seeking to adopt STIR/SHAKEN cannot realize the benefits of doing so for its customers because any caller-ID authentication information generated on the RLEC network would be lost as it is delivered to the TDM facility upstream.

⁶ Broadband/Internet Availability Survey Report, NTCA–The Rural Broadband Association, Dec. 2019, p. 9 available at: [https://www.ntca.org/sites/default/files/documents/2019-12/2019%20Broadband %20Survey %20Report.pdf](https://www.ntca.org/sites/default/files/documents/2019-12/2019%20Broadband%20Survey%20Report.pdf).

It should also be noted that intercarrier compensation is *not* the driving force behind this barrier to IP interconnection or ultimately STIR/SHAKEN implementation. Even as such revenues continue to be important for RLECs, the real concern when it comes to interconnection is not revenue but *cost*. Setting aside for a separate debate whether or not RLECs get paid for the use of their networks to originate or terminate calls for other operators, the larger immediate concern in the interconnection context is which operators bear what costs to interconnect at a given point. If RLECs are made to bear the costs of interconnecting at distant points located dozens, hundreds, or even thousands of miles from the RLEC's serving area, this will foist onto these operators costs that they do not bear today – costs which will then need to be piled on top of the already higher costs of serving a rural area *and* the costs of implementing STIR/SHAKEN within their own networks. This will all need to be recovered from a small customer base while also maintaining voice service rates that must remain reasonably comparable with those charged in urban areas. These cost issues represent a difficult, if not impossible, balancing act to say the least, and one that is entirely independent of the question of intercarrier compensation revenues. Thus, the Commission must ignore baseless arguments that NTCA's interconnection concerns relate to intercarrier compensation, as such assertions are disingenuous "red herrings" meant to distract from the real issues or are reflective of a misunderstanding of the mechanics of the costs of interconnecting networks, especially those that operate in far-flung rural markets.

Further complicating matters for most of these rural operators, alternative arrangements, such as the use of another party for the provision of tandem services in the same geographic area, are often unavailable. Even when such services are in theory available, they may be so only if the RLEC is willing and able to assume financial responsibility for substantial transport costs they heretofore have not been forced to incur – in effect, flipping financial responsibility for

interconnection on its head, and foisting it on the smallest and most rural operators. This reality, as noted in detail below, could force RLECs to operate under the threat of an implementation deadline that does not account for these interconnection challenges properly. As also discussed further below, while the Commission has acknowledged the IP voice interconnection barrier to some extent, a delay of a year or even more will not address this reality. Put another way, the mere passage of time (and thus a mere extension alone) will not overcome the “TDM barrier” to implementation of STIR/SHAKEN, because implementation must occur not only *within* networks but also *across* them. Thus, just as some action has been necessary to drive implementation *within* networks, something must be done to propel implementation *across* them.

B. Simple, default rules specific to RLECs’ exchange of IP voice traffic with upstream operators is the most important step that the Commission can take to deliver the promise of STIR/SHAKEN to rural consumers while also preserving their access to quality and affordable voice service.

With an understanding that IP voice interconnection poses a distinct challenge, the *Further Notice* proposes to “provide an implementation extension pursuant to TRACED Act section 4(b)(5)(A)(ii) to voice service providers that will not be able to carry authentication information to the next intermediate or voice service provider in the call path due to an inability to interconnect in IP.”⁷ NTCA urges the Commission to recognize that an extension of the June 2021 deadline contained in the *Report and Order* – absent additional efforts to help address the interconnection concern – will not by itself enable nationwide realization of the benefits of STIR/SHAKEN authentication efforts.

As noted above, RLECs typically route voice traffic through tandem facilities that in effect serve as their gateway for connections with the rest of the world. Pursuant to these

⁷ *Further Notice*, ¶ 85.

arrangements, RLECs typically exchange such traffic at or near existing “network edges,” either at their central office or some mutually agreed upon meet point. Most importantly for purposes of the instant discussion regarding “network edges,” under these arrangements, RLECs serving small, rural customer bases are financially responsible for outbound voice calls only to the point of their originating switch or, at most, for transport of such calls to a meet-point boundary. Moving forward, in the absence of default “rules of the road” for what will happen once existing interconnection arrangements are scrapped, it is all but certain (as described further below) that larger providers will seek to shift *all* transport costs to these small carriers, requiring them to deliver calls to and from distant points of interconnection that may be several states and hundreds or even thousands miles away from the rural area where such calls originate. To be clear, this means that RLECs will, for the first time, be responsible financially for transport costs to and from distant points of interconnection – and these costs will, for the first time, be extracted from small, rural customers bases.

There can be little doubt with respect to the likelihood of such a result. One need only look at the prior filings of larger providers advocating for precisely such a result. These operators have clearly and repeatedly and recently yet again flagged to the Commission that this is the very objective of such a transition from their perspective – that IP interconnection for voice traffic move to a small number of meet points across the country that are convenient and “efficient” only for the largest national and perhaps some regional providers.⁸ Indeed, existing

⁸ See T-Mobile, *ex parte* letter, WC Docket No 18-156 (fil. Apr. 27, 2020) (proposing to “migrate from one POI per LATA to no more than a few dozen POIs for the entire country.”); See also AT&T, *ex parte* letter, GN Docket No. 13-5, WC Docket No. 13-97, WC Docket No. 10-90 (fil. Jan. 24, 2014) (asserting that “IP interconnection will take place on a nationwide basis, and at a relatively small number of places”); Sprint, *ex parte* letter, WC Docket Nos. 10-90, 07-135, 05-337,03-109; CC Docket Nos. 01-92, 96-45; and GN Docket No. 09-51 (fil. Oct. 3, 2011) (arguing for “the more efficient regional interconnection arrangements typically used for non-voice IP traffic”).

arrangements for the provision of broadband Internet access service operate in this very same manner today – NTCA’s RLEC members typically contract (and thus pay) for “middle-mile” transport and transit services, obtained on a “best efforts” basis, to deliver broadband traffic to distant points of interconnection. It is difficult to believe that such arrangements would not inevitably carry over to the IP voice world, absent Commission intervention. In particular, this is likely to happen *if the Commission fails to address it while adopting an authentication mandate on rural carriers*. The carriers with whom RLECs exchange voice traffic and with whom they need to find common ground on IP voice interconnection agreements will be able to use the leverage granted by a STIR/SHAKEN mandate to their ultimate advantage – knowing that RLECs have little choice but to submit to delivering traffic to and from such distant points under penalty of not complying with a STIR/SHAKEN mandate, such larger providers are unlikely to retain current more “localized” points of interconnection closer to rural areas and consumers on their own initiative.

Such a mandate without attendant interconnection provisions is likely to have severe, negative repercussions on rural consumers – the very consumers that Congress and the Commission are seeking to protect through the promotion of widespread STIR/SHAKEN adoption. More specifically, a mandate to adopt STIR/SHAKEN (and one with a delay but not basic “rules of the road” for IP voice interconnection) will force most RLECs to either: (1) absorb significant transports costs heretofore not incurred or (2) resort to “public Internet” best efforts routing of voice traffic. The former will undoubtedly place significant upward pressure on voice rates, something policymakers would no doubt find troublesome not long after the voice “rate floor” was eliminated specifically because of concerns about the affordability of such

services for rural consumer.⁹ The latter could adversely affect voice quality even while also imposing additional costs that spread among small rural customer bases. Moreover, NTCA believes that most operators today typically route voice traffic over dedicated or specialized and managed connections (whether TDM or IP) precisely to ensure service quality – public Internet routing would be a clear step backward in that respect.

Thus it becomes clear that the current state of affairs – a “wild west” in which IP voice traffic must be exchanged to fulfill a national goal of call authentication – will force RLECs to make difficult choices, to the detriment of their subscribers. Specifically, they can choose to protect their subscribers from spoofers/scammers and meet the terms of any Commission STIR/SHAKEN mandate at the expense of either affordability or quality of voice service. Such a result would run counter to the very concept of universal service, and indeed is a result that Congress could not have envisioned when enacting the TRACED Act.

Fortunately, there is an easy path to sidestep this anti-rural consumer conundrum. As NTCA has repeatedly noted, the mere default preservation of existing transport and interconnection (or “network edge”) responsibilities used for voice calls today as that exchange moves into an IP environment is the most important – indeed the *only* – step the Commission need take to ensure widespread use of the STIR/SHAKEN framework *across* networks. Simply adopting a “default” rule that retains existing interconnection points and transport responsibilities between RLECs and those parties with whom they exchange IP traffic would be a surgical means of hastening SHAKEN/STIR implementation (and the broader IP transition) for the benefit of all consumers, in rural and urban America alike. To be clear, these “rules of the road” need not and

⁹ *Connect America Fund*, WC Docket No. 10-90, Report and Order, FCC 19-32 (rel. Apr. 15, 2019), ¶ 1.

in fact should not be in any way prescriptive – they would simply preserve existing meet points and financial transport responsibilities as a “default” in the absence of otherwise privately and mutually agreed upon, negotiated terms and conditions.

Such rules, in addition to protecting rural consumers, would have several additional benefits that will indeed hasten the widespread adoption of STIR/SHAKEN as well as the availability of IP interconnection for voice traffic. For one, all underlying networks – the very real physical assets that are necessary to take data or traffic in whatever format from one location to another – would continue to bear the same well-known and well-understood responsibilities to meet at the same places for the exchange of voice calls as they have in the past (in the absence of mutual agreement to change them). This preservation of existing well-known and well-defined constructs should in fact expedite the implementation of IP voice interconnection and the ensuing implementation of STIR/SHAKEN across all networks. Moreover, many parties have long touted the “efficiencies” inherent in IP routing of voice traffic, and presuming these are real, this approach would simply ensure that these “efficiencies” are shared among all networks. On the other hand, the failure to preserve existing interconnection meet-points as underlying technology migrates from TDM to IP would only ensure that any “efficiencies” gained in such a transition will accrue entirely and exclusively to the benefit of larger providers. Even worse, smaller rural operators would now be forced to pay for “voice transit” (*i.e.*, transport) to reach those distant points of interconnection. Put another way, even if the *overall* costs of routing calls may be reduced by the migration to IP routing technology, RLECs’ share of those transit/transport costs will undoubtedly rise without targeted “rules of the road” surrounding network edges – and the result would be RLECs needing to recover those increased costs from a small rural customer base in defiance of universal service objectives.

With all of this in mind, the Commission should view the IP voice interconnection issues raised here as every bit as “consumer-protection oriented” as a STIR/SHAKEN mandate itself. In other words, adoption of the default rules as proposed herein is the most important step the Commission can take to promote widespread adoption of the STIR/SHAKEN framework. The benefits of the framework will be felt most through widespread adoption – the broader the universe of authenticated calls, the more effective is STIR/SHAKEN.¹⁰ And, rural consumers deserve access to the benefits of this framework, and they should not and must not be forced to obtain that *only* at the expense of affordable and quality voice service. Nothing in the TRACED Act can be construed to mean that Congress had that Hobson’s choice in mind, and decades of universal policy make it clear that neither legislators or the Commission would countenance such a result.

C. A delayed implementation timeline for RLECs will not enable these operators to sidestep the interconnection barrier; the availability of IP interconnection at reasonable terms and conditions should be the starting point for determining RLECs’ implementation deadline.

With the discussion on the availability of vendor solutions for the purposes of implementing STIR/SHAKEN as background and as discussed in Section III, *infra*, it is critical that the Commission not lose sight of the overarching IP interconnection barrier that this class of providers faces and the ramifications of that barrier. Simply put, neither an additional year or two, nor the availability of equipment necessary to implement STIR/SHAKEN, can enable these small providers to overcome the interconnection challenge. Put another way, an IP-enabled RLEC with a vendor solution in place can only – in the absence of an IP interconnect with upstream carriers – generate caller-ID information that will *disappear as it leaves the RLEC’s*

¹⁰ *Further Notice*, ¶ 2.

network. As long as this is the case, it makes little sense to adopt an implementation timeline for such providers that fails to take a holistic view of the challenges that STIR/SHAKEN poses for certain operators (or, stated differently, fails to understand the “interconnected” nature of STIR/SHAKEN). The failure to do so would, quite simply, force a small rural carrier to expend tens of thousands of dollars per year to implement a system that serves no practical purpose – and such would be the case not due to their own technical inability but that of the upstream carrier with whom the RLEC is interconnected. Indeed, the Commission would be hard pressed to produce any cost-benefit analysis that supports this approach. Yet, a one-year delay as proposed by the NPRM would force RLECs unable to obtain IP interconnection on reasonable terms and conditions to generate “SIP identity headers to nowhere” in a couple years.

Thus, the Commission should tie any compliance deadline it adopts for RLECs to these providers’ ability to get IP interconnection agreements in place that maintain existing meet points and transport responsibilities. More specifically, an RLEC that certifies its inability to pass call authentication beyond its network edge at reasonable terms and conditions should be granted an exemption until such time as IP interconnection arrangements are in place that can utilize existing meet points and transport responsibilities. Of course, this need not delay RLEC implementation of STIR/SHAKEN if this is paired with the default “rules of the road” as proposed above.

It should be noted here that the Commission has already acknowledged the “interconnected” nature of STIR/SHAKEN in the *Report and Order* with respect to what is technically feasible for all voice providers. Specifically, in adopting a STIR/SHAKEN mandate the *Report and Order* states:

[A] voice service provider that originates a call which it will exchange with another voice service provider or intermediate provider must use an authentication service and insert the Identity header in the SIP INVITE and thus authenticate the caller ID information in accordance with the STIR/SHAKEN authentication framework; it further must transmit that call with authentication to the next voice service provider or intermediate provider in the call path, *to the extent technically feasible*.¹¹

With respect to the definition of “technically feasible,” the *Report and Order* states that the Commission “recognize[s] that the transmission of STIR/SHAKEN authentication information over a non-IP interconnection point is not technically feasible at this time.”¹² Thus, the Commission has already implicitly recognized that a delayed implementation timeline for RLECs, standing alone, is not a route out of the TDM problem.

Thus, the Commission has already acknowledged the “interconnected” nature of STIR/SHAKEN and need only take this one step further through nothing more than the adoption of a default rule with respect to interconnection in IP.

D. The Commission has clear legal authority, backed by precedent, as well as a public policy imperative to promote widespread adoption of STIR/SHAKEN, to address IP interconnection as a means of removing a barrier to RLECs’ adoption of this critical standard.

Clear legal authority – as well as precedent and the public policy imperative of ensuring that rural consumers are not saddled with “second-class” voice networks – provides the Commission with the support to adopt default IP voice interconnection rules as proposed herein.

As an initial matter, as the *Further Notice* notes, Section 4(b)(5)(D) of the TRACED Act requires the Commission to “take reasonable measures” to address “any issues observed in our assessment of the burdens and barriers to the implementation of caller ID authentication frameworks,”¹³ and to “enable as promptly as reasonable full participation of all classes of

¹¹ *Id.*, ¶ 35.

¹² *Id.*, fn. 135.

¹³ *Id.*, ¶ 95.

providers of voice service and types of voice calls to receive the highest level of trust.”¹⁴ As noted above, and as the Commission has itself already found as indicated in the *Report and Order*, IP interconnection stands as the primary barrier to “full participation” of the RLEC “class of providers” in the STIR/SHAKEN framework. And, one cannot doubt that Congress had resolution of this kind of barrier in mind when drafting that provision. For one, the TRACED Act as a whole is based upon the end-to-end all-IP nature of STIR/SHAKEN, granting an exemption to those providers that “materially rely” on “non-IP” networks.¹⁵ Congress understood that any TDM in a call path renders STIR/SHAKEN technically infeasible and thus prevents certain classes of providers from “fully participating” in the STIR/SHAKEN ecosystem. Moreover, the reference to “all classes of providers” indicates that Congress, despite understanding that TDM in a call path renders STIR/SHAKEN technically infeasible, sought to empower the Commission to find and take “reasonable measures” to assist providers that cannot adopt the standard due to the presence of TDM to overcome those barriers. Fortunately, again, the Commission has a “reasonable measure” it can pursue here, as set forth in Section II. b., *supra*.

Beyond the specific direction provided to the Commission by the TRACED Act, the agency has additional, strong public policy reasons for taking action here, specifically the need to protect the reliability of the voice network for rural consumers. The inability to implement in rural areas the STIR/SHAKEN framework is highly likely to lead to a “reverse rural call completion” problem – if calls from rural consumers appear unauthenticated when reaching urban areas because IP interconnection does not exist between larger national operators and

¹⁴ *Id.*

¹⁵ TRACED Act § 4(b)(5)(B).

small rural carriers, there is serious risk that legitimate calls from rural customers will go unanswered by urban consumers because they *appear* “untrustworthy.” Moreover, it is quite possible that ill-intentioned spoofers will migrate to rural telephone numbers, further undermining trust in calls from rural markets and leading to an even greater number of calls failing to be answered by urban consumers. Even worse, the increased use of call blocking applications could result in legitimate calls from rural areas being blocked altogether simply because they cannot be authenticated due to the barriers highlighted above, particularly if such blocking tools cannot differentiate between legitimate calls made from rural areas and those made using rural telephone numbers attached to calls made by spoofers in other parts of the country or the world. Ultimately, the inability to implement SHAKEN/STIR – due in significant part to an inability for RLECs to obtain IP interconnection arrangements on reasonable terms – could leave millions of rural consumers with calls that get blocked far too often in trying to reach the rest of the world.

With respect to the “rules of the road” for IP voice interconnection proposed by NTCA, there is specific, on-point precedent for just such a provision. In 2011, the Commission adopted a “rural transport rule” applicable to the exchange of voice traffic in certain circumstances.¹⁶ That provision was enacted under circumstances similar to that which exist here: at that time, the Commission recognized that policy changes being enacted to address broader systemic issues (a move to bill and keep for certain access rate elements) risked shifting transport charges directly onto rural carriers and the customers they serve. The Commission then was concerned that its

¹⁶ *Connect America Fund*, WC Docket No. 10-90, et al., Report and Order and Further Notice of Proposed Rulemaking, FCC 11-161 (rel. Nov. 18, 2011) (“USF/ICC Transformation Order”), ¶¶ 998-999 (adopting a “rural transport rule” to ensure that the obligations of RLECs to carry originating non-access traffic do not extend beyond their service area boundaries, recognizing that absent such a rule, RLECs could be forced to incur unrecoverable transport costs).

attempt to achieve a broader policy goal could have harmed a certain class of consumers, and it took a rather narrow step necessary to ensure that this policy could move forward without unnecessary harm to rural consumers. Here, the impetus to promote rapid implementation of STIR/ SHAKEN both to protect rural consumers from spoofing and from having their unauthenticated calls blocked in error can, if proper care is not taken, harm rural consumers in much the same way by foisting upon them transport costs that have never been thrown atop them before. Yet, as was the case with the rural transport rule, a simple default rule can ensure that the Commission’s larger policy goal (widespread STIR/SHAKEN adoption) can be accomplished in short order while *also protecting rural consumers from having to face the prospect of relief from spoofers but at the expense of quality or affordable voice service.*

III. TESTED VENDOR SOLUTIONS FOR SMALL/RURAL CARRIERS ARE LIKELY TO COME ONLINE IN LATE 2020 AT THE EARLIEST; TESTING MUST TAKE PLACE, AND SMALL OPERATORS NEED ADDITIONAL TIME TO ABSORB THE COSTS INTO THEIR OPERATING BUDGETS BEFORE FULL IMPLEMENTATION.

The *Further Notice* also seeks comment on granting an implementation deadline extension for small carriers based on the TRACED Act’s direction to the Commission to do so for voice providers it finds will experience “undue hardship” in utilizing the STIR/SHAKEN framework.¹⁷ With respect to those operators able to pass call authentication information to upstream providers – i.e., those able to obtain IP voice interconnection on reasonable terms and conditions – NTCA urges the Commission to take into account the availability of vendor solutions enabling RLECs to implement STIR/SHAKEN as well the financial impact the integration of such solutions will have on these small businesses.

¹⁷ *Further Notice*, ¶ 78.

As an initial matter, NTCA members report that vendor solutions for the purposes of implementing the STIR/SHAKEN framework are likely to be available near the end of 2020, at the earliest. As NTCA has noted in several other contexts, and the Commission itself has recognized,¹⁸ RLECs are typically “at the mercy” of vendors that respond to the larger operator community must faster, likely based on the latter’s market share and buying power. Moreover, NTCA members have reported their existing switching vendors offer the simplest and least expensive path to STIR/SHAKEN adoption. While still costly, utilization of these existing switching vendors for STIR/SHAKEN implementation is often the only realistic path to adoption of this standard – other “options” would require no less than entire redesigns of networks and replacement of existing switching facilities at costs that are simply unaffordable. This reality limits these operators’ ability to “shop around” for vendors willing and able to provide solutions on more expedited timeframes.

Even as NTCA members report late 2020 at the earliest as the date for the availability of vendor solutions, this is of course not the only point to consider. Discussions with vendors and members have produced estimates of high-five-figures or low-six-figures *per year* (for “managed” IP services), numbers not shocking to nationwide operators but certainly so for small rural carriers that typically count their subscribers in the four-figure range. At the very least, these operators should be given additional time to absorb these yearly costs into their budget

¹⁸ *Accessibility of User Interfaces, and Video Programming Guides and Menus; Accessible Emergency Information, and Apparatus Requirements for Emergency Information and Video Description: Implementation of the TwentyFirst Century Communications and Video Accessibility Act of 2010*, MB Docket Nos. 12-108, 12-107, Report and Order and Further Notice of Proposed Rulemaking, FCC 13-138 (rel. Oct. 31, 2013) (“Accessible User Interfaces Order”), ¶ 115 (“We recognize that smaller operators generally lack the market power and resources to drive independently the development of MVPD headend or customer premises equipment [and]...it is the large cable operators that generally dictate equipment features to manufacturers and commonly get priority in the delivery of that equipment.”); *Ensuring Continuity of 911 Communications*, PS Docket No. 14-174, Report and Order, FCC 15-98 (rel. Aug. 7, 2015) (“As NCTA/GVNW/Vantage note, [small and rural] providers may not have the same ability as nationwide providers to ‘drive innovation in the equipment market.’”).

planning cycles. In short, the Commission should consider it an “undue hardship” for a small operator to absorb such costs with only a year (based on the Further Notice June 2022 proposal)¹⁹ at best, of planning.

Moreover, the Commission should also consider that the need to test such solutions will consume additional time and may lead to additional delays as rural operators face additional network upgrades necessary to incorporate STIR/SHAKEN solutions and successfully pass call authentication data to and from upstream providers. Again, based on reports from NTCA members as well as discussions with the vendor community, such solutions have not been fully tested on RLEC networks and, in any case, are certainly not simply “plug and play.” Older IP switches, while fully capable, may require additional hardware and software upgrades in order to work with newly installed STIR/SHAKEN solutions in order to successfully generate caller-ID authentication information.

In short, the Commission must recognize that while it may be the most pervasive barrier and one that RLECs alone cannot solve, IP interconnection is not the only hurdle that RLECs face. Even those able to exchange traffic in IP format will face “substantial hardship” as referenced in the TRACED Act and the Commission has clear authority and in fact direction from Congress to take this into account. The proposed June 2022 deadline for these small carriers is simply insufficient, as it would only represent an extension of one year beyond that granted to fortune 500 companies among others, many of whom have themselves been highly involved in the creation of the STIR/SHAKEN standard from its conception, and thus have the ability to pull off, and have likely been long planning for, seamless adoption of this standard. An

¹⁹ *Further Notice*, ¶ 78.

additional year also does not account for the need for RLECs to integrate the large expenditures involved into their investment planning cycles. At the very least, the Commission should grant RLECs until June 2023, and such a deadline should be tied to the vendor community delivering solutions in 2020. Those RLECs unable to obtain vendor solutions by the end of 2020 should be granted additional time beyond June 2023.

Most importantly, this deadline extension must be adopted hand-in-hand with IP interconnection concerns in mind – the deadline extension proposed in this section should be specifically applicable only to those providers able to obtain agreements for the exchange of IP voice traffic on reasonable terms and conditions. As noted in Section II. c., *supra*, the delay as proposed in this section will not benefit those providers unable to pass call authentication information due to the inability to interconnect for voice traffic in IP due to the presence of TDM in upstream networks. The resolution of such issues must be the first focus of the Commission – agency action to enable carriers to surmount that barrier must be adopted in tandem with rules to ensure that RLECs can obtain, test and absorb the costs of vendor solutions.

IV. “OUT OF BAND” CALL AUTHENTICATION HAS THE POTENTIAL TO SERVE AS A “BRIDGE” TO AN ALL-IP ENVIRONMENT AND PROVIDE RELIEF FROM SPOOFERS FOR MILLIONS OF AMERICANS – THE COMMISSION SHOULD ENCOURAGE INDUSTRY-WIDE COOPERATION TO COMPLETE THE TECHNICAL STANDARD.

The *Further Notice* seeks comment on “Out-of-Band” STIR, a standard viewed as a possible alternative for the STIR/SHAKEN standard and the subject of numerous industry discussions.²⁰ While the *Further Notice* is correct that the standard is not complete, industry-wide cooperation on finalizing can likely make it available for operators.

²⁰ *Id.*, ¶ 88.

As discussed above, TDM, or “non-IP,” networks/switching facilities pose a substantial barrier to full STIR/SHAKEN participation by RLECs – and NTCA has no doubt that numerous other classes of voice service providers will confront this barrier as well. Even those carriers “all-IP” within their own networks – NTCA’s RLEC members and similarly situated providers of all kinds and all sizes – cannot pass call authentication information on an “end-to-end” basis if TDM facilities lie in the call path. In addition, voice providers with TDM within portions of their networks will require significant time and resources to move beyond these facilities as well as establish IP interconnection agreements. Consumers seeking relief from an untrustworthy caller-ID system cannot – and should not – be forced to wait for relief.

To be sure, providers of all sizes have long sought to complete the ongoing “IP transition.” NTCA and its members have long been a driver of this transition, not only in terms of most of the associations members moving beyond TDM facilities long ago,²¹ but via a 2012 Petition for Rulemaking that sought to “initiate a rulemaking to examine means of promoting and sustaining the ongoing evolution of the Public Switched Telephone Network from a [TDM]-based platform to an [IP]-based infrastructure through targeted regulatory relief and the establishment of tailored near-term economic incentives.”²² Certainly, the Commission should at the very least take from the IP interconnection discussion found in Section II, *supra*, that, for RLECs, a move beyond TDM facilities owned and operated by upstream carriers in is the formers’ best interest here as it would enable them to implement call authentication.

That said, the continued presence of TDM/non-IP facilities cannot be “wished away,” and it is with this understanding that a closer look at Out-of-Band STIR becomes an imperative.

²¹ See FN 6, *supra*.

²² *Petition of the National Telecommunications Cooperative Association for a Rulemaking to Promote and Sustain the Ongoing TDM-to-IP Evolution* (fil. Nov. 19, 2012) (“NTCA Petition”).

Simply put, this standard that can enable providers to pass call authentication information separate from the “call path,” can serve as a “bridge” to an all-IP voice network. It would enable carriers with TDM in their networks or those that face TDM in the call path as a barrier to STIR/SHAKEN implementation to protect their consumers from spoofed calls and ensure that calls originated with call authentication information are passed to their point of termination with that information intact. Moreover, it would benefit consumers all across the nation – as the *Further Notice* acknowledges, widespread adoption of caller ID authentication is the key to reducing the effectiveness of illegal spoofing.²³

Thus, the Commission is right to strongly encourage the voice service industry to develop effective solutions implementable in non-IP networks, including Out-of-Band STIR. To be clear, the Commission need not be prescriptive here. The proposal to require those with non-IP networks to be active participants in working groups to develop non-IP call authentication solutions or actively test such a solution²⁴ should promote completion of the Out-of-Band STIR (as well as a close look at any other alternatives that may exist or emerge). That said, it is also important that the Commission recognize that the emergence of any call authentication standard for non-IP networks will require the cooperation of providers of all sizes and technologies. While the *Further Notice* states that it is directed by the TRACED Act to “limit or terminate an extension of compliance if [the agency] determine[s] in a future assessment that a voice service provider ‘is not making reasonable efforts to develop the call authentication protocol’ for non-IP networks,”²⁵ it is important that the Commission also understand that industry-wide cooperation is critical to the emergence of any alternatives, Out of Band signaling or otherwise. While the

²³ *Further Notice*, ¶ 2.

²⁴ *Id.*, ¶ 96.

²⁵ *Id.*, ¶ 89, citing TRACED Act § 4(b)(5)(D).

Further Notice proposes to monitor non-IP providers’ progress toward efforts to find an alternative for non-IP networks by reviewing participation in industry working groups or testing and to grant the Wireline Competition Bureau the “authority to determine whether the provider is meeting the [reasonable efforts] standards”²⁶ this is not enough. Simply put, if the Commission hopes to have any alternative to STIR/SHAKEN for TDM/non-IP networks to emerge, it must demand industry-wide cooperation.

V. ROBOCALL MITIGATION MEASURES SHOULD BE NON-PRESCRIPTIVE, REQUIRING ONLY THAT PROVIDERS COMMIT TO COOPERATION WITH INDUSTRY TRACEBACK EFFORTS AS WELL AS LAW ENFORCEMENT.

The *Further Notice* seeks comment on implementation of Section 4(b)(5)(C) of the TRACED Act, which requires voice service providers subject to a delayed compliance deadline with respect to implementing STIR/SHAKEN to adopt a “robocall mitigation program.”²⁷ NTCA supports the *Further Notice* proposal for a “certification” approach, one that eschews prescriptive rules in favor of one that grants “voice service provider[s] discretion to create a program that is workable while ensuring an effective robocall mitigation program.”²⁸ That said, this approach must be centered around voice service providers’ cooperation with both law enforcement and industry “traceback” efforts.

A non-prescriptive approach to robocall mitigation is appropriate for several reasons. For one, spoofers are smart and nimble, and it is unlikely that any Commission efforts can react with the speed necessary to confront these bad actors’ efforts to maneuver around mitigation efforts. In fact, it is highly likely that published, prescriptive rules applicable to all voice providers will only serve as a “blueprint” to bad actors with respect to avoiding mitigation efforts. Such rules

²⁶ *Id.*, ¶ 89.

²⁷ TRACED Act § 4(b)(5)(C)(i).

²⁸ *Further Notice*, ¶ 92.

will therefore be ineffective and indeed could aid bad actors' efforts to avoid voice providers' efforts to combat them. In addition, voice providers should have the flexibility to react to traffic trends they view on their own networks and react accordingly, and they can react much faster than the Commission can in terms of setting forth updated mitigation efforts in response to bad actors' ever-changing attack vectors.

While robocall mitigation rules should be non-prescriptive, as the *Further Notice* proposes,²⁹ underlying them must be the expectation that voice service providers will cooperate with law enforcement and industry traceback efforts.³⁰ With respect to industry traceback efforts, as USTelecom notes, these efforts have led to the source of tens of millions of robocalls and the issuance of several federal subpoenas.³¹ Providers unwilling to cooperate with reasonable requests from those leading these efforts that have and will continue to be an important part of combatting spoofing and unwanted calls should not also be granted any additional time to implement the very STIR/SHAKEN protocols meant to attack these practices at their source.

Thus, the Commission should adopt the USTelecom proposal that would require voice providers subject to an exemption or extension from the STIR/SHAKEN mandate to “confirm that it (i) takes reasonable steps to avoid originating illegal robocall traffic and (ii) that it is committed to cooperating with law enforcement and the industry traceback consortium in investigating and stopping any illegal robocallers that it learns are using its service to originate

²⁹ *Id.*

³⁰ *Id.*

³¹ See *USTelecom Industry Traceback Group, 2019 Progress Report*, p. 5, available at: https://www.ustelecom.org/wp-content/uploads/2020/01/USTelecom_ITG_2019_Progress_Report.pdf.

calls.”³² To “give teeth” to these requirements, as USTelecom also proposes, the Commission should establish a database of every 499 filer that agrees to this certification. Most importantly, the Enforcement Bureau should be empowered to, in the case of a “service provider [that] had actual knowledge of illegal activity and ignored it...bring an enforcement action against the provider...and de-list the provider from the registry of voice service providers...so that downstream service providers are prohibited from accepting its traffic.”³³ Carriers found to have deficient mitigation programs in place – after an Enforcement Bureau investigation – but found to *not* have actual knowledge of illegal activity should be placed on probationary status. It is at that point that the Enforcement Bureau and other Commission staff can impose more prescriptive steps on individual provider.

The approach proposed herein strikes the correct balance between getting at bad actor voice providers that know about or fail to address spoofers while minimizing the burden on operators with a mandate to adopt a robocall mitigation program.

VI. CONCLUSION

For the reasons discussed above, the Commission should adopt simple, default IP interconnection rules to enable RLECs to adopt STIR/SHAKEN while maintaining affordable and quality voice service. The Commission should set any compliance deadline for RLECs tied to the ability to obtain such agreements. Those carriers able to certify as to their ability to do so should also have until June 2023 to adopt the standard.

³² *Further Notice*, ¶ 92, citing Letter from Farhan Chughtai, Director, Policy & Advocacy, USTelecom, to Marlene H. Dortch, Secretary, FCC, CG Docket No. 17-59, WC Docket No. 17-97, Attach. at 3 (filed Mar. 6, 2020).

³³ *Id.*, USTelecom letter, p. 5.

Respectfully submitted,



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