

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Amendments to Part 4 of the Commission's)	PS Docket No. 15-80
Rules Concerning Disruptions to)	
Communications)	
)	
New Part 4 of the Commission's Rules)	ET Docket No. 04-35
Concerning Disruptions to Communications)	
)	
The Proposed Extension of Part 4 of the)	PS Docket No. 11-82
Commission's Rules Regarding Outage)	
Reporting to Interconnected Voice Over)	
Internet Protocol Service Providers and)	
Broadband Internet Service Providers)	

COMMENTS OF THE VOICE ON THE NET COALITION

VOICE ON THE NET COALITION

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TABLE OF CONTENTS

BACKGROUND AND SUMMARY 2

DISCUSSION 3

I. The Commission lacks authority to expand IVoIP outage reporting obligations...... 3

 A. The proposed performance metrics are not necessary or well-suited to IVoIP. 4

 B. Changes to the reporting process are not feasible or necessary..... 7

II. The *Further Notice*'s cost-benefit analysis is overly optimistic...... 10

CONCLUSION 12

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)	

To: The Commission

COMMENTS OF THE VOICE ON THE NET COALITION

The Voice on the Net Coalition (the “VON Coalition”)¹ respectfully files these comments in response to the Commission’s Further Notice of Proposed Rulemaking in the above-captioned proceedings.² The VON Coalition opposes the Commission’s proposed amendments to the outage reporting rules applicable to interconnected voice over IP (“IVoIP”) service providers. For the reasons discussed herein, the proposed changes are both unnecessary and unworkable.

¹ The VON Coalition is the leading advocacy organization for the Internet communications industry, working with legislators, regulators, and other policymakers to develop policies that support the availability and adoption of Internet communications products and services. For more information see www.von.org.

² *Amendments to Part 4 of the Commission’s Rules Concerning Disruptions to Communications, et al.*, PS Docket Nos. 15-80, 11-82, ET Docket No. 04-35, Report and Order, Order on Reconsideration, and Further Notice of Proposed Rulemaking, 31 FCC Rcd 5817 (2016) (“*Further Notice*”).

BACKGROUND AND SUMMARY

Since 1992, the FCC has required covered service providers to report communications outage information to the Commission. The rules were amended in 2012 to include IVoIP service providers. The basis for the expansion of the rules included providing (1) an “effective method for the Commission to know whether and how well providers are meeting their statutory obligations to provide 9-1-1 and [E9-1-1] service”; (2) analyzing “communications vulnerabilities” as they pertain to 9-1-1 services; and (3) “shar[ing] aggregate information with industry to help prevent future outages.”³ The current rules require IVoIP providers to notify the Commission of a complete loss of service or connectivity within 24 hours of discovering the outage and to submit a more detailed report within 30 days.

When the Commission adopted the current rules, it considered—and ultimately rejected—the proposals that it raises again in the *Further Notice*.⁴ Specifically the Commission declined to extend reporting requirements to outages based on performance degradation or to the “loss of generally-useful availability and connectivity.”⁵ Such proposals were “sharply opposed on several bases, but especially based on the expected costs to implement.”⁶ The Commission also recognized that difficulties in identifying IVoIP outages necessitated a longer notification and reporting period than what applied to legacy voice services.

³ *In the Matter of the Proposed Extension of Part 4 of the Commission’s Rules Regarding Outage Reporting to Interconnected Voice over Internet Protocol Serv. Providers & Broadband Internet Serv. Providers*, 27 FCC Rcd. 2650, 2654 ¶ 7 (2012) (“2012 Order”); see also *id.* at 2651 ¶ 1 (“Collecting this data will help the Commission help ensure the Nation’s 9-1-1 systems are as reliable and resilient as possible and also allow us to monitor compliance with the statutory 9-1-1 obligations of interconnected VoIP service providers.”).

⁴ *Id.* at 2683 ¶ 80 (2012) (declining to adopt the concept of a “loss of generally-useful availability and connectivity” that was proposed in the NPRM).

⁵ *Id.* at 2669 ¶ 47.

⁶ *Id.* ¶ 48.

The Commission now seeks to revive these rejected proposals without identifying any problems with the current regime or changes in technology since 2012 that would justify adoption of these more burdensome standards. The Commission simply states that it “has not received consistent, timely, or sufficiently detailed reporting needed to promote greater interconnected VoIP service.”⁷ But the *Further Notice* fails to explain how the proposed changes will resolve these purported concerns. Nor does the Commission tether its proposals to the stated justifications or its legal authority for extending Part 4 to IVoIP in the first place.

DISCUSSION

I. The Commission lacks authority to expand IVoIP outage reporting obligations.

The Commission may only act pursuant to statutory authority.⁸ Here, the Commission relies on two statutes for its authority to update the outage reporting rules for IVoIP: the NET 911 Improvement Act⁹ (“NET 911”) and the Twenty-First Century Communications and Video Accessibility Act of 2010 (“CVAA”).¹⁰ NET 911 permits the Commission to amend regulations “as necessitated by changes in the market or technology, to ensure the ability of an IP-enabled voice service provider to comply with its obligations.”¹¹ Under the CVAA, the Commission may promulgate rules as recommended by the Emergency Access Advisory Committee (“EAAC”) or “as are necessary to achieve reliable, interoperable communication that ensures

⁷ *Further Notice* at 5881 ¶ 160.

⁸ *See, e.g., Iowa League of Cities v. E.P.A.*, 711 F.3d 844, 876 (8th Cir. 2013) (“[T]he APA authorizes courts to strike down as ultra vires agency rules promulgated without valid statutory authority.”).

⁹ 47 U.S.C. § 615a-1.

¹⁰ Twenty-First Century Communications and Video Accessibility Act of 2010, Pub. L. No. 111-260, 124 Stat. 2751 (2010) (codified in various sections of Title 47 of the United States Code)(“CVAA”).

¹¹ 47 U.S.C. 615a-1.

access by individuals with disabilities to an Internet protocol-enabled emergency network, where achievable and technically feasible.”¹²

These statutes do not grant the Commission authority to adopt the proposed amendments. The Commission may have had authority to extend Part 4 to IVoIP to ensure E-9-1-1 availability and compliance with CVAA obligations. But the proposed expansion of reporting obligations does nothing to further advance those goals. In fact, the proposed amendments will divert resources that could be used to resolve and prevent outages. The Commission has not demonstrated that any of its IVoIP proposals are necessitated by changes in the IVoIP market or technology, recommended by EAAC, or necessary to advance CVAA’s mandate.¹³ It should therefore reject, again, these proposals.

A. The proposed performance metrics are not necessary or well-suited to IVoIP.

In 2012, the Commission “proposed to require reporting as outages both loss of service/connectivity as well as situations where, though service is technically being provided, packet loss, latency or jitter were experienced at a level that effectively prevented communication.”¹⁴ The Commission also proposed to require IVoIP providers to report outages that reflect losses of “general useful availability and connectivity” based on yet-to-be defined “specific metrics.”¹⁵ Heeding industry’s concerns regarding the inapplicability of such metrics

¹² 47 U.S.C. 615c.

¹³ EAAC merely recommended that the Commission “issue regulations as necessary to require that target entities, in the development and deployment of NG9-1-1 systems, take appropriate steps to support features, functions and capabilities to enable individuals with disabilities to make multimedia NG9-1-1 emergency calls.”

¹⁴ 2012 Order at 2669 ¶ 47.

¹⁵ *Id.* at 2682 ¶ 76; *Proposed Extension of Part 4 of the Commission’s Rules Regarding Outage Reporting to Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers*, Notice of Proposed Rulemaking, 26 FCC Rcd 7166, 7178-79 ¶ 27 (2011) (“2011 NPRM”).

to IVoIP and the significant costs that would be incurred to comply, the Commission wisely opted to require reports only in the event of an actual loss of service.

The *Further Notice* renews those once rejected proposals to report losses of general useful availability based on alleged performance degradation related to packet loss and latency.¹⁶ But there have been no technological or market changes that would necessitate the use of such service quality metrics in outage reporting. Nor would collection of such information enhance IVoIP providers' ability to comply with their NET 911 or CVAA obligations, or provide the Commission useful information to detect or prevent future outages. The Commission provides nothing to suggest otherwise.

Moreover, these metrics are not any better-suited to IVoIP now than they were in 2012. Indeed, the same facts that cautioned against using service level metrics in outage reporting in 2012 continue to exist today. Determining what constitutes a "loss of generally-useful availability and connectivity" is still more complicated in the broadband environment in which IVoIP operates than in the legacy voice network context.¹⁷ Service degradation issues often originate with the underlying broadband provider, rather than the IVoIP provider. And if the Commission adopts the proposed reporting requirements for broadband internet access service ("BIAS") providers, there would be no reason to require IVoIP providers to report on service degradation related to those facilities that they neither own nor control (and may not have access to such information).

The Commission's proposed 0.5% packet loss standard and 100 ms latency standard are likewise unworkable in the IVoIP context. Over the top (or "OTT") VoIP providers, for example,

¹⁶ 2012 Order at 2683 ¶ 80 (declining to adopt the concept of a "loss of generally-useful availability and connectivity" that was proposed in the NPRM).

¹⁷ See, e.g., 2011 Comments of the VON Coalition at 9-10.

would be continuously reporting outages even where there is no customer impact. Such low standards would therefore not provide any insight into when an IVoIP customer actually loses the ability to access emergency services. At a minimum, packet loss would need to be in the 5-7% range and latency in the 250-300 ms range to seriously degrade VoIP service, but even these measurements do not reveal consistent “outage reporting” across the industry. Because IVoIP providers use different codecs, and those codecs have different tolerances for packet loss, there is no set of quality of service standards that could uniformly apply to all IVoIP providers to distinguish between “good” and “degraded” service.¹⁸ In fact, an IVoIP provider’s ability to accommodate packet loss and latency challenges is one way in which providers compete. Such standards are not necessary for outage reporting anyway, as packet loss due to fiber cuts in the network is generally already reportable to the Commission for other reasons, and voice traffic is hardly impacted because it is priority traffic.

The proposed throughput-based metric, which the Commission proposes to apply to BIAS, is even more problematic in the IVoIP context. A Gbps measurement may be well-suited for BIAS providers (i.e., providers of throughput), but does not apply to IVoIP (i.e., the service that flows over that throughput).¹⁹ Throughput end-to-end is at the device level and is impossible to track on every device. For mobile IVoIP, existing tools are not sufficient to detect performance or throughput issues, particularly where consumers use soft-clients or OTT applications. And because IVoIP providers compete to best manage quality services over poor

¹⁸ As the VON Coalition explained in its 2011 comments, “there are many types of IVoIP, including hosted VoIP, premise-based VoIP and VoIP services available through cloud-based applications.” As a result, the VON Coalition continues to believe that outage information collection is of limited utility with respect to developing “best practices.” See 2011 Comments of the VON Coalition at 1-2.

¹⁹ As an analogy, if throughput is a road, then bits (IVoIP or otherwise) are the cars riding over the road. There is much more to the performance, handling, and speed of a car than the condition of the road. For example, some automobiles are designed to perform well on poor roads (i.e., Jeeps), while others are not.

broadband conditions, one provider's throughput challenge could be another provider's ideal throughput. A throughput-based metric could penalize providers that offer HD voice or that utilize codecs that use more bandwidth.²⁰ Thus, not only would reporting based on the proposed throughput metric be difficult or impossible for IVoIP providers, but it would not reliably indicate when customer service is impacted.²¹

In sum, the scope of the proposed amendments is not tailored to ensuring that IVoIP providers meet their 9-1-1 and E9-1-1 obligations or aggregating information to develop industry best practices. While packet loss, latency and throughput are metrics that IVoIP providers monitor, these metrics are not useful for measuring across the board what constitutes a poor quality call. The amendments would require providers to file reports even where a user is able to access emergency services and otherwise has a working voice service. And, contrary to one of the Commission's stated goals in this proceeding, reporting based on such metrics would increase inconsistency. The Commission should accordingly maintain the approach it adopted in 2012.

B. Changes to the reporting process are not feasible or necessary.

The Commission proposed in 2012 to adopt a reporting process for IVoIP providers that would be the same as legacy voice providers. Upon review of the record, however, the Commission agreed with industry commenters that "lengthening the initial notification . . . is particularly important since data networks operate differently than voice networks, and the cause of some degradations of service may not be as clearly identifiable, which can lead to inaccurate

²⁰ Voice codecs can impact the correlation of bandwidth to user minutes because they consume different amounts of bandwidth and do not show true customer impact.

²¹ One VON Coalition member reports that most of its customers have multiple 1 to 10 Gbps circuits, and typically pair unprotected Gbps circuits with backup circuits. A single outage, therefore, may not impact these customers at all.

reporting, or over-reporting, under strict time constraints.” The Commission concluded that IVoIP providers should have 24 hours after discovery of an outage to submit an initial notification, and 30 days thereafter to submit a more detailed final report.²²

The *Further Notice* proposes to drastically shorten the timeframe for IVoIP providers to notify the Commission of an outage—from 24 hours to 2 hours. Additionally, the Commission proposes to add an interim report to the process that would be due 72 hours after discovery. But the Commission does not explain how the proposed amendments will enhance IVoIP consumers’ access to 9-1-1 services or prevent outages in the future. Nor does the Commission suggest that it would be in a better position to remediate an outage if it learned of it in 2 hours rather than 24. Instead, the Commission simply complains that “in one recent instance” a IVoIP outage was reported 23 hours after discovery. Similarly, the Commission laments that it may have to wait up to 30 days to receive detailed information about the cause of the outage or to verify that a reportable outage occurred. But none of this should come as a surprise, as these are the timeframes the Commission adopted in 2012 after careful review of the record. There is no technological or market change at play here that necessitates the Commission’s drastic amendments to the reporting process. Nor is there an explanation what benefit the Commission expects from receiving the information in those shorter timeframes.

In fact, the same difficulties in identifying IVoIP outages that cautioned against the two hour window in 2012 remain today. Due to the complexity of IVoIP service, and the fact that IVoIP providers cannot conduct end-to-end troubleshooting when a customer is accessing its service over an unaffiliated provider’s broadband network, service failures are difficult to detect

²² 2012 Order at 2688 ¶ 95.

and isolate.²³ Providing notification within two hours will be challenging, if not impossible. For example, when IVoIP providers learn that a fiber jack is offline, it takes time to determine whether the power has gone off, the power has been cut, or the customer simply unplugged it. And because IVoIP service is not tethered to a particular geography, IVoIP providers must parse user data to determine if a given country has a reportable outage. Following that initial analysis, providers need time to draft and review the notification before submitting.²⁴

These issues cannot be remedied by automated reporting or through contractual provisions with broadband providers, as the *Further Notice* suggests. Though some portion of the reporting process may be more reliably automated in the future, tough judgment calls inherent in IVoIP outage reporting require human input. One major disadvantage of automating IVoIP outage reporting is the potential for false positives associated with system issues and/or planned changes. And while IVoIP providers already rely on transaction-based alerts to detect network problems, such contractual provisions do not reduce the time required after detection to analyze and submit notifications.

Even if notification within two hours was feasible—and the VON Coalition submits it is not—IVoIP providers' time would be better spent in the critical hours following discovery of an outage working to research the root cause, identify a solution, and resolve the outage. Further, little new information, if any, would be added by submission of another report 70 hours later.

²³ If anything, IVoIP service components are now more resilient to isolated outages, making it more difficult to determine the true impact of a given server, rack, or data center outage.

²⁴ The Commission expects notifications to include (i) the date and time of the onset of the outage; (ii) a brief description of the problem, including root cause information and whether there were any failures of critical network elements, if known; (iv) service effects; and (v) the geographic area affected. *See Further Notice* at 5868 ¶ 121. Often times, much of this information is not available to IVoIP providers in the initial 120 minutes—particularly root cause information.

Indeed, requiring interim reports would increase inconsistency in reporting, as such rushed information gathering may be contradicted later in the final report.²⁵

Speeding up the notification requirement or adding reports will not provide any more incentive to resolve outages than competition and customer service agreements already provide. The VON Coalition therefore asks the Commission to refrain from tightening the notification timeframe at all; but if the Commission adopts a new timeframe, a target of eight hours would be more reasonable. At that point, chances are much greater that the outage will be resolved—or well on its way to being resolved—so it will be less burdensome to divert the technicians and engineers needed to resolve the outage from their primary job of restoring service to completing the FCC’s NORS form. The VON Coalition urges the Commission not to adopt the interim reporting requirement.

II. The *Further Notice*’s cost-benefit analysis is overly optimistic.

The Commission estimates that the IVoIP outage reporting proposals will “impose[] only a \$300 cost burden on the provider.” The *Further Notice*, however, includes nothing but assumptions to support this estimate. For example, the Commission assumes “that relevant data is already routinely collected by interconnected VoIP providers (in real time), so the cost of compliance would only be the cost of filing additional reports.” The Commission then states—without explanation—that it expects that (i) proposals to include service degradation will increase outage reporting by only 10% compared to 2015; and (ii) the new initial (i.e. 72 hour) report will take only 45 minutes to complete at an hourly employee rate of \$80.00.

²⁵ 2012 Order at 2688 ¶ 95 (recognizing that in the IVoIP context, strict time constraints “can lead to inaccurate reporting, or over-reporting.”).

First, as discussed above, reporting based on the service degradation metrics the FCC has proposed could result in daily “outages”—and, thus, daily outage reports—on many IVoIP networks. Therefore, the estimate of a 10% increase in reports misjudges the impact of the metrics the FCC has proposed. Moreover, based on experience with the current reporting process, VON Coalition members can confidently say that the estimated 45 minutes to complete an initial report is wholly inadequate. As Commissioner O’Rielly acknowledged, it takes time “to compile and analyze data, prepare the reports and engage in multiple layers of review to ensure that a report is even required and that it is accurate.”²⁶ This is particularly true considering the amount of information and “specific details” the Commission expects the reports to include.²⁷ The proposed amendments will add an extra report for every outage, and significantly expand what constitutes a reportable outage. Additionally, Commission’s analysis fails to account for the opportunity costs of having engineers draft notifications during the most critical hours after discovery of an outage, or the resources that will be spent training and/or hiring new employees to comply with the requirements.²⁸ These increased costs would have a significant impact on smaller service providers in particular, increase barriers to entry, and harm competition in the VoIP market.

²⁶ *Further Notice* at 5948, Statement of Commissioner Michael O’Rielly, Concurring in Part, Dissenting in Part (“the item summarily dismisses one industry participant’s assessment that it takes 11 to 12 hours to prepare and file and outage report.”).

²⁷ *Id.* at 5883 ¶ 164. (The Commission expects reports to contain a significant “specific details” concerning (i) failure of facilities that might be considered critical network elements and (ii) unintended changes to software or firmware or unintended modifications to a database to the extent relevant to a given outage or service disruption).

²⁸ In addition to the one-time setup cost to implement the reporting systems, processes, and training with the proposed specific interval reports and reporting based on the proposed metrics, providers will also incur costs associated with increased full-time employee support and ongoing product and engineering overhead needed to provide continuous embedded support.

The estimate set forth in the *Further Notice* is therefore seriously flawed and undermines the Commission’s tentative conclusions. Courts have reiterated that “when an agency decides to rely on a cost-benefit analysis as part of its rulemaking, a serious flaw undermining that analysis can render the rule unreasonable.”²⁹ The VON Coalition urges the Commission not to adopt its proposals unless it can support each action with a reliable cost-benefit analysis.

CONCLUSION

For the foregoing reasons, the Commission should refrain from expanding or changing the IVoIP outage reporting obligations.

Respectfully submitted,

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²⁹ *Nat’l Ass’n of Home Builders v. E.P.A.*, 682 F.3d 1032, 1040 (D.C. Cir. 2012); see also *City of Portland v. EPA*, 507 F.3d 706, 713 (D.C.Cir.2007) (noting that “we will [not] tolerate rules based on arbitrary and capricious cost-benefit analyses”); *Owner–Operator Indep. Drivers Ass’n v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 206 (D.C.Cir.2007) (vacating regulatory provisions because the cost-benefit analysis supporting them was based on an unexplained methodology).