

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

Reply Comments – Public Safety and) ET Docket No. 04-35
Homeland Security Bureau Seeks Comment on)
Whether the Commission’s Rules Concerning) WC Docket No. 05-271
Disruptions to Communications Should Apply)
To Broadband Internet Service Providers and) GN Docket Nos. 09-137, 09-51, 09-47
Interconnected Voice over Internet Protocol)
Service Providers)

To: Chief, Public Safety and Homeland Security Bureau

REPLY COMMENTS OF T-MOBILE USA, INC.

T-Mobile USA, Inc. (“T-Mobile”) hereby replies to comments filed in response to the Public Safety and Homeland Security Bureau’s (the “Bureau”) July 2, 2010 *Public Notice* seeking comment and information on “whether, and if so how, the Commission should expand its Part 4 rules” to interconnected Voice over Internet Protocol (“VoIP”) and broadband Internet service providers (“ISPs”).¹ T-Mobile joins many commenters in urging the Bureau – before it even considers specific changes to Part 4 – first to evaluate the important threshold issue of whether and to what extent a broadband ISP or interconnected VoIP provider genuinely experiences a service “outage.” Insofar as outages genuinely occur, the Bureau should then assess whether a formal broadband industry reporting regime truly is necessary given the dynamic nature of broadband networks and service providers’ ongoing efforts to enhance network reliability and survivability. If the Bureau determines there is a public interest benefit to

¹ See *Public Safety and Homeland Security Bureau Seeks Comment on Whether the Commission’s Rules Concerning Disruptions to Communications Should Apply to Broadband Internet Service Providers and Interconnected Voice Over Internet Protocol Service Providers*, Public Notice, ET Docket No. 04-35, WC Docket No. 05-271, et al., DA 10-1245, at 2 (PSHSB rel. July 2, 2010) (“*Public Notice*”). All comments referenced herein were filed in this proceeding on August 2, 2010.

creating some sort of reporting regime, it should work closely with industry to develop appropriate reporting metrics for a voluntary program. Accordingly, T-Mobile agrees with numerous commenters that it would be premature and unnecessarily intrusive for the Commission to initiate a Notice of Proposed Rulemaking (“NRPM”) at this time to explore specific Part 4 reporting obligations for broadband ISPs and interconnected VoIP providers.

I. The Bureau First Should Consider Threshold Issues of Whether and to What Extent Outage Reporting is Necessary for Broadband ISPs and Interconnected VoIP Providers

The importance of reliable and resilient broadband networks for users of interconnected VoIP and innumerable other applications dependent on those networks is beyond dispute. Competitive market forces already drive T-Mobile and other service providers to undertake numerous measures to enhance the redundancy and resiliency of their broadband networks.² Today’s broadband networks have been designed and deployed under best practices that have ensured that broadband service providers can take steps necessary to provide a robust and reliable customer experience in a flexible and economical manner.

The Commission’s rigid Part 4 network outage reporting rules, though, are premised on a service provider’s deployment of a legacy circuit-switched telephony network and are not relevant to an IP environment.³ T-Mobile agrees with those commenters who have argued that the Bureau should evaluate the merits of any sort of outage reporting regime for broadband ISPs and interconnected VoIP using a clean slate, independent of the service-specific reporting

² See Alliance for Telecommunications Industry Solutions (“ATIS”) Comments at 3-4; AT&T Comments at 5-6; MetroPCS Comments at 5; USTelecom Comments at 3; Verizon and Verizon Wireless Comments at 3-6.

³ See *New Part 4 of the Commission’s Rules Concerning Disruptions to Communications*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 16830, ¶ 112 (2004) (“The circuit switch part of a MSC is very similar if not identical to a wireline switch, and the MSC’s traffic management function is based on the same statistical methods.”).

methodologies of the Part 4 rules.⁴ The Part 4 framework arose after over a decade of experience under the old Part 63 rules, and after years of industry and Commission experience in observing the strengths and shortcomings of the Public Switched Telephone Network in emergency situations. The Commission and industry have begun that learning process in earnest at ATIS and the Communications Security, Reliability, and Interoperability Council for broadband Internet access and interconnected VoIP services, and the Commission should allow those processes to continue before considering mandatory reporting obligations.

Due to the nature of Internet traffic, which is not dependent on a single established transmission path, and the manner in which broadband ISPs have deployed their networks to handle such traffic, the overwhelming number of facility disruptions will have limited, if any, impact on an end user.⁵ As ATIS explains, broadband networks “allow providers to maintain control and dynamically react to congestion or outages and interconnected VoIP service providers [to] engineer their networks to be self-healing.”⁶

Even though the Commission should not shoehorn these new services into its Part 4 rules, the existing definition of “outage” is instructive here: “a significant degradation *in the ability of an end user* to establish and maintain a channel of communications as a result of failure or

⁴ See ATIS Comments at 4; AT&T Comments at 6; CTIA Comments at 3-4; NCTA Comments at 7-8 (“Commission should not simply shoehorn VoIP and broadband Internet services into existing outage reporting standards); Qwest Comments at 12 (Part 4 framework is “not appropriate”); Comments of Verizon and Verizon Wireless at 6 (differences “call for . . . a different approach from its rules requiring outage reports for PSTN voice networks”); see also USTelecom Comments at 4-5 (“[d]ecentralized, non-hierarchical, autonomous systems-based networks simply do not lend themselves to traditional regulated legacy reporting systems”).

⁵ See, e.g., ATIS Comments at 3-4; CTIA Comments at 3-4; MetroPCS Comments at 6; NCTA Comments at 4-5; Qwest Comments at 4-5; USTelecom Comments at 5.

⁶ See ATIS Comments at 3.

degradation in the performance of a communications provider's network."⁷ Before considering any reporting rules, the Bureau first should address the basic question of when, if ever, an end user genuinely experiences a "significant degradation" of its broadband or interconnected VoIP service, and calibrate this initiative accordingly.

Unless the Bureau first addresses these threshold issues, it is likely that future reporting requirements would simply result in an information gathering exercise with limited value in assessing the actual impact on an end user's ability to use the broadband network. Such an outcome, in turn, could distract service providers from their efforts to improve further the reliability and resilience of their networks.⁸ Moreover, in providing and collecting potentially unhelpful data, industry and policymakers could be distracted in their efforts to develop industry best practices that are more meaningfully targeted at preventing or mitigating the types of service-related incidents of concern to the Commission.⁹ As discussed below, several commenters already have begun to touch on how the Bureau might develop a voluntary reporting regime that avoids such an outcome.

II. The Bureau Should Work Closely with Stakeholders to Develop a Voluntary and Administratively Straightforward Reporting Regime

T-Mobile shares the view of several industry stakeholders that an outage reporting program for broadband and interconnected VoIP providers should be voluntary, industry-driven, and premised on objective criteria targeted at significant incidents involving facilities they

⁷ 47 C.F.R. § 4.5 (emphasis added).

⁸ See CTIA Comments at 6; United States Internet Service Provider Ass'n ("USISPA") Comments at 4; Verizon and Verizon Wireless Comments at 10.

⁹ See ATIS Comments at 4.

control and into which they have visibility.¹⁰ Rather than pursue specific reporting obligations, the Bureau should take this opportunity not only to compile an administrative record (as the *Public Notice* seeks to do) but to work with stakeholders both in industry and government to help develop a voluntary program, which T-Mobile suggests be under the auspices of ATIS, through which the agency can obtain practical, hands-on experience in this area and better understand the type of information regarding broadband networks that will be useful for industry and policymakers.

A. The Bureau Should Participate in the Development of a Voluntary Outage Reporting Program for Broadband and Interconnected VoIP Providers

Numerous commenters have aptly described why incorporating broadband and interconnected VoIP providers into the Commission's mandatory network outage reporting regime is premature and unnecessary.¹¹ As discussed above, the traffic, networks and services in question are configured so fundamentally differently from the circuit-switched services covered by the Part 4 rules that no apples-to-apples comparison is possible. Several commenters have highlighted a number of additional factors militating strongly in favor of a voluntary program.

For example, a number of commenters have described existing sources of information regarding broadband service disruptions, such as the QuEST Forum, Arbor Networks' Active Threat Level Analysis System ("ATLAS"), and others.¹² Moreover, the Commission's existing outage reporting rules for DS3 circuits will continue to capture many of the large facility outages

¹⁰ See ATIS Comments at 6-7; AT&T Comments at 6; CTIA Comments at 4; MetroPCS at 7; NCTA Comments at 11-12; Verizon and Verizon Wireless Comments at 10; see also USTelecom Comments at 7-9.

¹¹ See CTIA Comments at 4 n.7; MetroPCS Comments at 6-7.

¹² See NCTA comments at 12 (discussing ATLAS); USISPA Comments at 3 (discussing ATLAS, the Internet Traffic Report, and Internet Weather Report); Verizon and Verizon Wireless Comments at 10 (discussing QuEST Forum).

that affect Internet traffic.¹³ To the extent that the Bureau can obtain relevant information from these sources, it is unnecessary for the Bureau to seek the same information from service providers as well.

In addition, a number of parties correctly note that an end user's Internet experience is largely dependent on the servers and databases of unaffiliated application and content providers, as well as third parties' Internet backbone facilities.¹⁴ Thus, potential outage information from broadband ISPs and interconnected VoIP providers will not reflect disruptions of the application layer that is most significant to many end users' experience, as well as other critical facilities that broadband ISPs and interconnected VoIP providers do not control. Thus, the information obtained from broadband ISPs and interconnected VoIP providers can only provide partial insight into events that affect end users' ability to use the broadband network; the Bureau must necessarily manage its expectations for the usefulness of any reporting system accordingly. Finally, T-Mobile shares concerns that there are important jurisdictional questions the Commission would need to address before imposing mandatory reporting obligations.¹⁵

All of these factors militate in favor of a voluntary program targeted at obtaining limited, carefully defined information from broadband ISPs and interconnected VoIP providers. Similar to other commenting parties, T-Mobile suggests that the Bureau look to the DIRS program as a model for encouraging broad industry participation. While T-Mobile believes that the Commission has previously underestimated the paperwork burden involved in DIRS participation, in T-Mobile's experience the program has nevertheless proven to be manageable and appropriately targeted on the facilities and incidents that should be of most relevance to the

¹³ See CTIA Comments at 4 n.7; MetroPCS Comments at 6-7.

¹⁴ See NCTA Comments at 9; Verizon and Verizon Wireless Comments at 7-9; USISPA Comments at 2.

¹⁵ See AT&T Comments at 9-10; MetroPCS Comments at 8-17; Qwest Comments at 8-10.

Bureau. A similar approach could be warranted with respect to monitoring broadband ISP and interconnected VoIP provider outages if some sort of reporting is deemed appropriate.

B. The Bureau Should Focus Its Information Gathering Efforts Solely on Total Service Outages on Providers' Own Facilities

T-Mobile agrees with AT&T and MetroPCS that the Bureau should focus exclusively on gathering information with respect to *total* service outages, and then only with respect to facilities that a provider directly controls.¹⁶ First, the Bureau should limit voluntary reporting to a facility outage that actually precludes a customer from obtaining Internet connectivity via the provider's own facilities. As noted above, the nature of Internet traffic and the inherent redundancy of broadband networks render it unnecessary to attempt the complex and subjective task of defining a reportable degraded or impaired service that is otherwise imperceptible to end users.

For that reason as well, a focus on the end user's perception of service performance and degradation, or imposing a reporting threshold on the basis of "generally useful connectivity" as described in the *Public Notice*, is too vague and subjective to be translated meaningfully into objective reporting thresholds.¹⁷ The end user's Internet experience cannot always be tied to any particular network impairments. T-Mobile agrees that factors such as end user customer premises equipment, software, or user setup inexperience are simply beyond a service provider's control, and in some cases even beyond the provider's visibility. Moreover, because of the self-healing nature of IP networks and variations in traffic, as well as variations in the RF characteristics of wireless handsets and network RF coverage that may be unique to a particular

¹⁶ AT&T Comments at 8; MetroPCS Comments at 6; *see also* NCTA Comments at 10; Voice on the Net ("VON") Coalition at 7.

¹⁷ *See Public Notice* at 3; ATIS Comments at 4; AT&T Comments at 8; CTIA Comments at 5-6.

wireless service provider's territory, only a total service outage would be an appropriate and administratively feasible metric.

Under the network outage reporting rules, moreover, service providers can be responsible for reporting outages that physically occur at third party providers' facilities.¹⁸ As several commenters illustrated, however, an individual broadband provider's network is configured fundamentally differently than a traditional circuit-switched network, as part of interdependent "network of networks."¹⁹ Applying this aspect of the Part 4 approach here would impose an impossible and unnecessary paperwork and administrative burden on service providers.

C. A Voluntary Reporting Program Should Incorporate Realistic, Objective and Meaningful Reporting Criteria

T-Mobile agrees with a number of commenting parties that the outage reporting deadlines and reporting thresholds of the Part 4 rules should not apply to broadband ISPs and interconnected VoIP providers, even in a voluntary program. The Part 4 rules impose reporting requirements on major outages of short duration (30 minutes or more) and require that a Notification be electronically filed with the Commission within just 120 minutes after its discovery.²⁰ These requirements have imposed an enormous paperwork burden on carriers, now replete with significant risks of enforcement action.²¹ The application of the rules in individualized circumstances, moreover, has created uncertainty for service providers,

¹⁸ See, e.g., 47 C.F.R. § 4.9(e) (requiring wireless carriers to report outages "on any facilities that they own, operate, lease, or otherwise utilize ..." (emphasis added)).

¹⁹ See, e.g., CTIA Comments at 3 n. 6; NCTA Comments at 8; USTelecom Comments at 5.

²⁰ See, e.g., 47 C.F.R. § 4.9(e).

²¹ See ATIS Comments at 6-7; AT&T Comments at 1-3; VON Coalition Comments at 8. The Enforcement Bureau has established a base forfeiture of \$40,000 per late Notification filing and \$20,000 per late filing of the Initial and Final Communications Outage Reports. See *Alpheus Communications, LP*, Notice of Apparent Liability for Forfeiture, DA 10-1258, ¶ 11 (EB rel. July 6, 2010). In contrast, failure to properly light and mark an antenna tower is subject to a base forfeiture of \$10,000. 47 C.F.R. § 1.80(b)(4), Note.

notwithstanding the Commission's effort in 2004 to apply a common methodology across technology platforms.

If the Bureau determines it is necessary to move forward with developing a voluntary reporting program, it should work closely with industry and other government stakeholders to develop realistic and objective standards that (1) limit the covered facilities, (2) expand the minimum duration and customer impact size of a reportable outage, (3) and increase the period within which a notification should be filed, each of which is briefly addressed below.

Covered Facilities. Bureau staff should work with industry stakeholders to determine the facility at which an outage would both (1) preclude an end user from obtaining Internet connectivity, and (2) affect a significant percentage of a provider's customer base across a broad geographic region.²²

Minimum Duration and Customer Impact. In developing an appropriate metric for a voluntary program, the Commission should ensure that it targets those incidents that most adversely affect end users on a significant scale, while excluding those events that can be repaired or resolved expeditiously at minimal or no inconvenience to end users. The minimum duration of a reportable outage needs to be substantially higher than the current 30 minute Part 4 threshold and the customer-impact size must be substantially higher than the current Part 4 threshold, which for T-Mobile implicates as little as one-tenth of one percent of customers. In all events, the criteria must be clear and unambiguous in their application.²³

²² T-Mobile agrees with AT&T that reporting metrics such as "packet-loss, latency, or jitter" would "likely require providers to implement burdensome new mechanisms for capturing such data in the first place" and should not be imposed. AT&T Comments at 8.

²³ See AT&T Comments at 7-8; CTIA Comments at 5.

Timing and Nature of Reports. Based on our experience with the Part 4 network outage reports and the DIRS program, and because of the nature of IP data networks and the longer period of time needed to analyze outages, any initial Notification period should be at least doubled from the current Part 4 rules.²⁴ Thus, a Notification would be submitted within a minimum of four hours from the time the provider actually determines that the outage is reportable.

III. Conclusion

For the foregoing reasons, mandatory outage reporting requirements for broadband ISPs and interconnected VoIP providers are unnecessary, and it would be premature to issue an NPRM at this time. The Bureau should instead first evaluate threshold issues to determine whether a formal industry reporting regime is warranted and, if so, then work closely with industry to develop a voluntary program.

Respectfully submitted,

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August 16, 2010

²⁴ See ATIS Comments at 6.