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

In the Matter of	)	
	)	
New Part 4 of the Commission's Rules	)	
Concerning Disruptions to Communications	)	ET Docket No 04-35
	)	

NOTICE OF PROPOSED RULE MAKING

Adopted: February 12, 2004 **Released: February 23, 2004**

COMMENT DATE: [60 days after publication in the Federal Register]
REPLY COMMENT DATE: [90 days after publication in the Federal Register]

By the Commission: Chairman Powell, Commissioners Abernathy, Martin and Adelstein issuing separate statements.

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Appendix A Proposed Rules

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I. Introduction

1 In recognition of the critical need for rapid, full, and accurate information on service disruptions that could affect homeland security, public health and safety, as well as the economic well-being of our Nation, and in view of the increasing importance of non-wireline communications in the Nation's communications networks and critical infrastructure, we propose to extend our disruption reporting requirements to communications providers who are not wireline carriers.[1] In this connection, we also propose to move the outage-reporting requirements from Part 63 of our rules to Part 4.[2] By moving the outage-reporting requirements out of Part 63 and into Part 4, we are taking cognizance that, although these requirements were originally established within the telecommunications common carrier context, it is now appropriate to adapt and apply them more broadly across all communications platforms to the extent discussed herein. Further, in an effort to promote rapid reporting and minimal administrative burden on covered entities, we also propose to streamline compliance with the reporting requirements through electronic filing with a "fill in the blank" template and by simplifying the application of that rule.[3] We believe that these proposals will allow the Commission to obtain the necessary information regarding services disruptions in an efficient and expeditious manner and achieve significant concomitant public interest benefits.

II. The Need for Communications Disruptions Reporting

A. Homeland Security

2 The terrorist acts of September 11, 2001 starkly illustrate the need for reliable communications during times of crisis. First responders and medical personnel were notified by pagers, cellular telephones, wireline telephones, and the Internet of the tragic events that had occurred, and were occurring, and the immediate need for their services. Long distance communications, including satellite communications, were used to initiate the movement of equipment and personnel into the affected areas for restoration purposes and to coordinate their work. All levels of government (municipal, county, state, and Federal) coordinated their restoration and Homeland Defense efforts through wireless and wireline phones, public data networks (including dial-up telephone, wireless, and cable modem access to the

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[1] By the term "communications provider" we mean an entity that provides two-way voice and/or data communications, and/or paging service, by radio, wire, cable, satellite, and/or lightguide for a fee to one or more unaffiliated entities.

[2] Section 63.100 of the Commission's rules currently requires only wireline carriers to report significant service disruptions. Section 63.100 of the Commission's rules, which is codified at 47 C.F.R. § 63.100, was first adopted in 1992. *Notification by Common Carriers of Service Disruptions*, CC Docket No. 91-273, *Report and Order*, 7 FCC Rcd 2010 (1992), *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 8 FCC Rcd 8517 (1993), *Second Report and Order*, 9 FCC Rcd 3911 (1994), *Order on Reconsideration of Second Report and Order*, 10 FCC Rcd 11764 (1995). As discussed below, our proposal stems from the Commission's broad responsibilities under Title I of the Communications Act of 1934, as amended to ensure that radio and wire communications effectively serve the public's interest in the safety of life and property and in the national defense. Communications Act of 1934, 48 Stat. 1064, as amended, 47 U.S.C. § 151 *et seq.* (hereinafter, "the Act" or "the Communications Act"). *See infra* ¶ 4.

[3] *See infra* Appendices A and B. We note as an initial matter, the actual text of the final rules and the final reporting template that will be adopted may differ from the text and template that are contained in Appendix A and Appendix B to this Notice of Proposed Rulemaking (hereinafter, "Notice"). We accordingly invite interested parties to file comments and reply comments to address the issues that are discussed in this Notice as well as the specific rules that are proposed in Appendix A and the reporting template that is proposed in Appendix B. *See generally infra* ¶¶ 58-61, concerning the filing of comments and reply comments in this proceeding, and the Commission's rules of procedure, which may be found at 47 C.F.R. §§ 1.1-1.120, 1.399-1.429, 1.1200-1.1206, 1.1210-1.1216.

Internet),[4] and pagers. In this context, the need for immediate, secure, and reliable communications services is obvious.

3 In addition, our Nation has become totally dependent on communications services that are now essential to the operation of virtually all government, business, and critical infrastructures throughout the United States as well as to our Nation's economy.[5] One illustration should suffice, although many are available. Consider, for example, our financial infrastructure which, in large measure, consists of computers, databases, and communications links. If the communications links were severed, or severely degraded, ATM machines would not be able to supply cash, credit card transactions would not "go through," banks would not be able to process financial transactions (including checks), and the financial markets would become dysfunctional.[6] In a short time, economic activity would grind to a halt and consumers' ability to purchase food, fuel or clothing would be severely limited if not destroyed. This single example leads, ineluctably, to the conclusion that the people of the United States must have secure communications that they can rely upon for their daily needs, as well as during terrorist attacks, fires, natural disasters (such as hurricanes, earthquakes, and tornadoes) and war. Ensuring that the United States has reliable communications requires us to obtain information about communications disruptions and their causes to prevent future disruptions that could otherwise occur from similar causes, as well as to facilitate the use of alternative communications facilities while the disrupted facilities are being restored.

B. Commission Responsibilities

4 The responsibilities of the Commission are stated in the Communications Act.[7] That Act states that the Commission was created for the "purpose of regulating interstate and foreign commerce in communication by wire and radio so as to make available, so far as possible, to all the people of the United States *a rapid, efficient, Nation-wide, and world-wide wire and radio communication service with adequate facilities . . for the purpose of the national defense, [and] for the purpose of promoting safety of life and property* through the use of wire and radio communication."[8] Section 4(o) of the Act also states "[f]or *the purpose of obtaining maximum effectiveness from the use of radio and wire communications in connection with safety of life and property*," the Commission "shall investigate and study all phases of the problem and the best methods of obtaining the cooperation and coordination of these systems."[9] And, to assist the Congress in performing its normal oversight responsibilities, the Act

[4] In this *Notice*, we are using the phrase "public data network" to refer to a network that provides data communications for a fee to one or more unaffiliated entities. We are not proposing, at this time, to adopt reporting requirements for public data networks.

[5] The Communications Act defines the United States to include Alaska, the District of Columbia, Hawaii, the forty-eight contiguous Commonwealths and States, American Samoa, the Commonwealth of the Northern Mariana Islands, the Commonwealth of Puerto Rico, Guam, Howland Island, and the U.S. Virgin Islands. *See* 47 U.S.C. § 153(51).

[6] For a very localized example of this, see "The Economic Effects of September 11," Economic Policy Review, Federal Reserve Bank of New York, Vol. 18, No.2 (Nov. 2002) at 46 (On September 12, 2001, Government Securities Corporation settlement fails were $440,000,000,000.00.)

[7] Communications Act of 1934, 48 Stat. 1064, as amended, 47 U.S.C. § 151 *et seq.* (hereinafter, "the Act" or "the Communications Act").

[8] Section 1 of the Act, 47 U.S.C. § 151 (emphasis supplied). All subsequent sections of the Act are to be read, and construed, in light of the statements of purpose that are contained in Section 1 of the Act. *U.S. v. Southwestern Cable Co.*, 392 U.S. 157, 167-168, 172-173 (1968); *see also Building Owners and Managers Assoc. Int'l. v. FCC*, 254 F.3d 89, 94 (D.C. Cir. 2001) *and* Sections 4(i)-(j) and 403 of the Act, 47 U.S.C. §§ 154(i)-(j), 403 (additional authority to acquire information needed to perform the Commission's responsibilities).

[9] Section 4(o) of the Act, 47 U.S.C. § 154(o) (emphasis supplied).

requires the "Commission [to] make an annual report to Congress . . [which] shall contain. (1) such information and data collected by the Commission as may be considered of value in the determination of questions connected with the regulation of interstate and foreign wire and radio communication and radio transmission of energy; . and (4) specific recommendations to Congress as to additional legislation which the Commission deems necessary or desirable "[10] Thus, the Communications Act authorizes the Commission to collect information it needs to perform its duties, and wireline service disruption reporting has assisted us in that effort. In the case of wireline carriers, outage reports have triggered investigations and, where sufficient cause for concern existed, we initiated corrective actions with those carriers Service disruption reports have also been used, on a continuing basis, to analyze wireline vulnerabilities This, in turn, has assisted the Network Reliability and Interoperability Council in developing industry best practices and in recommending actions for the Commission to take [11] Service disruption reporting has also permitted us to assess trends in wireline reliability and determine the extent to which our policies need modification. This proceeding was initiated because we expect that service disruption reporting by non-wireline communications providers will provide benefits similar to those that have been achieved by requiring service disruption reports from wireline communications providers. We seek comment on this conclusion.

C. Convergence

5 Many technological changes have occurred since our initial service disruption reporting requirements were adopted more than ten years ago These changes have facilitated the rapid deployment of new communications technologies that have become increasingly important as substitutes for, and complements to, older communications services Today, a majority of people in the United States use cell phones.[12] In addition, mobile satellite service[13] is being used to provide global connectivity for people with critical as well as non-critical communications needs None of these services were included in the wireline service disruption reporting requirements that we adopted in the early 1990's

D. Our Existing Approach to Reporting Has Worked Well

1. Background

6 The Commission first required wireline common carriers to provide service disruption reports after massive telephone outages occurred simultaneously on the East and West coasts in 1991.[14]

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[10] Section 4(k) of the Act, 47 U S C § 154(k) More generally, Section 4(i) of the Act, 47 U.S C § 154(i), provides that the "Commission may perform any and all acts and issue such orders, not inconsistent with this Act, as may be necessary in the execution of its functions "

[11] The work of the Network Reliability and Interoperability Council is described *infra* ¶¶ 8-9

[12] As of December 31, 2002, the number of cellular telephone users in the United States was estimated to be 140 8 million, as compared with 189 1 million wireline telephone subscribers as of June 30, 2002. *Compare* http //www wow-com com/industry/stats/surveys (visited June 3, 2003) *with Local Competition Status as of June 30, 2002*, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission (Dec 9, 2002)

[13] Mobile satellite service refers to telephone communications that are achieved through portable transceivers that are connected through satellite systems. This type of service has the advantage of being available over most of the earth's surface with very limited interaction with terrestrial facilities and is, therefore, particularly useful in communicating and restoring service when terrestrial facilities have been destroyed or impaired.

[14] These massive outages, which occurred on June 26, 1991, arrived in the aftermath of an accumulating series of outages, which had been increasing in severity from 1988 through 1991, and the introduction of legislation to require the FCC to enforce network reliability and quality standards on telephone common carriers. *Asleep At The*

(continued .)

As discussed more fully below, these reporting requirements have been successful in permitting the causes of certain types of disruptions in telephone networks to be identified and corrected [15] This, in turn, has permitted organizations[16] voluntarily to develop more than seven hundred "best practices" for use by carriers and manufacturers in reducing the likelihood, and length, of network outages, and has also resulted in the development of best practices to facilitate the restoration of failed communications services [17] In addition, we believe that mandatory reporting has permitted operators of private communications networks to improve the reliability of their networks.[18]

7 One benefit of this process has been that public access to outage reports has enabled individual communications providers, as well as manufacturers, to learn directly from each other's outage experiences This, in turn, has created an environment for the wireline telephone industry that has fostered reliability in telephone networks even as the number of competitive, interconnected telephone and data networks has increased throughout the United States. As a consequence, this network outage reporting requirement has enabled a successful public-private partnership to emerge in which the telephone industry and manufacturers have voluntarily developed best practices that telephone companies have been encouraged, but have not been required, to adopt.[19] The validity of those best practices has been continuously confirmed (or, in some cases, invalidated) through outage reports that have been filed in compliance with our reporting requirements The steady stream of new outage reports, in turn, has permitted existing best practices to be refined and has permitted the development of new best practices Our outage reporting requirements have been, however, directed only to the wireline telephone industry with the consequence that the available communications disruption data has not taken into account newly emerging forms of communications (*e g* , wireless and satellite) upon which our Nation has now become so vitally dependent We tentatively conclude that this data-driven, self-improvement model should be extended to these other communications providers, and we seek comment on this conclusion

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Switch? Federal Communications Commission Efforts To Assure Reliability Of The Public Telephone Network, U S House of Representatives Committee On Government Operations, House Report 102-420 (Dec. 11, 1991) (hereinafter, *"Asleep At The Switch"); Notification by Common Carriers of Service Disruptions,* CC Docket No. 91-273, *Report and Order,* 7 FCC Rcd 2010 (1992), *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking,* 8 FCC Rcd 8517 (1993), *Second Report and Order,* 9 FCC Rcd 3911 (1994); *Order on Reconsideration of Second Report and Order,* 10 FCC Rcd 11764 (1995), and references cited therein. The rules codifying the Commission's service disruption reporting requirements may be found at 47 C F R § 63.100

[15] For example, filings of Initial Service Disruption Reports generally declined as follows 219 (1996), 222 (1997), 217 (1998), 230 (1999), 142 (2000), 200 (2001), and 142 (2002)

[16] These organizations include the Network Reliability Council, the Network Reliability and Interoperability Council, and the Network Reliability Steering Committee

[17] These best practices may be found at www nric.org (visited January 21, 2004)

[18] Many business, government, and educational organizations operate their own networks for a variety of reasons that include increased security, increased reliability, lower cost and, in some cases, the provision of telecommunications services that would not otherwise be available Our service disruption reporting requirements have enabled these private network operators to learn from the operating experiences of reporting carriers and to benefit from best practices that were developed through analysis of the causes of reported network outages

[19] For example, network operators should provide duplicate facilities that are physically separate, for all critical resources, such as electrical power, timing sources, and Signaling System 7 communications links. See, generally, www nric org (last visited Feb 9, 2004) for the text of best practices that have been developed through December 5, 2003

2. Evolution of "Best Practices"

8 Before the Commission became actively involved in reliability issues and affirmatively required wireline telephone companies to report network outages, significant network outages had been increasing.[20] In 1992, the Commission adopted outage reporting rules which, among other things, required each "Final Service Disruption Report" to contain "all available information on the service outage, including any information not contained in [the] Initial Service Disruption Report and detailing specifically the root cause of the outage and listing and evaluating the effectiveness and application in the immediate case of any best practices or industry standards identified by the Network Reliability Council to eliminate or ameliorate outages of the reported type."[21] With the information provided by these reports, the Network Reliability Council,[22] other carriers, and manufacturers were able to understand the root cause of each outage and determine whether an existing best practice adequately addressed the cause of that outage or whether a new best practice, or standard, had to be developed to avert the cause of that outage in the future After enough information had been received, the Network Reliability Council made a series of recommendations to the telecommunications industry, to manufacturers, and to the Commission to improve network reliability [23] Communications service providers, manufacturers, and other entities voluntarily came together, under the aegis of the Network Reliability Steering Committee ("NRSC"),[24] to formally study wireline telephone network outages and develop additional best practices

9 Building upon the work of the first Council, as well as the large number of additional network outage reports that have been filed, subsequent Network Reliability Councils[25] and the NRSC have been able to refine the best practices that were developed by earlier Councils and create new best practices to address newly-identified sources of wireline network failure [26] Initially, the fifth and sixth Network Reliability and Interoperability Councils took the best practices that had been developed for telephone companies and tried to adapt them to wireless, Internet, satellite, and cable providers. These efforts, however, were hampered by the absence of useful network outage reports from wireless, satellite, and public data network providers. This absence of useful outage data prevented the NRIC and the NRSC from being able to validate or improve the best practices that they had initially recommended for such providers.

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[20] *See supra* note 14, and references cited therein

[21] Section 63 100(b) of the Commission's Rules, 47 C F R § 63 100(b)

[22] The Network Reliability Council was created by the Commission in compliance with the requirements of the Federal Advisory Committee Act, Pub L 92-463, Oct 6, 1972, as amended, 5 U S C Appendix 2

[23] Network Reliability. A Report to the Nation, Compendium of Technical Papers, Network Reliability Council (June, 1993)

[24] The NRSC is now a subcommittee of the Alliance for Telecommunications Industry Solutions ("ATIS"), which is an American National Standards Institute accredited standards body

[25] After the Telecommunications Act of 1996 was enacted, the Network Reliability Council was renamed the Network Reliability and Interoperability Council to reflect the addition of Section 256 (47 U.S.C. § 256) to the Act. The sixth council will complete work under its current charter by January 6, 2004. See, generally, www.nric.org for the sixth council's charter and the work that is being accomplished to achieve the objectives expressed in that charter

[26] See www.nric.org for the best practices that have been developed so far As noted above, this is a dynamic process in which continuing best practices development, and refinements, are driven by the provision of required data which validate or disprove conclusions contained in the then-existing best practices New best practices developed through this process are, in turn, validated or modified as new network outage data become available

10. In general, a significant benefit of this process has been that public access to each outage report enabled individual service providers, as we well as manufacturers, to learn from each other's outage experiences This, in turn, has facilitated the development of new best practices, has provided a mechanism for refining and improving those best practices, and has provided a basis for confirming, or refuting, the effectiveness of the best practices that have been developed This process would likely not have been possible or so successful if service disruption reporting had not been mandatory and if those reports had not been available to communications providers, manufacturers, and the public.[27]

11. On several occasions beginning in 1999 and extending through 2003, the Commission, through NRIC, charged the telecommunications industry with developing and implementing, on a trial basis, a voluntary service disruption reporting process for providers not subject to Section 63 100 of our rules The results of this effort have not provided us with the quality or quantity of information that we need to accurately track outages Less than three dozen service providers agreed to enroll in the trial, and few participated actively throughout the entire trial [28] Recently, however, we have observed an improvement in the results from the NRIC trial reporting process insofar as the percentage of entities that were actively participating (*i e* , either filing initial service disruption reports or filing a report indicating the absence of a service disruption) increased However, important fields in most reports were not completed

12 Bearing in mind the experiences described above and industry's desire for a voluntary reporting regime, we seek comment as to how a voluntary service disruption reporting process would assure the Commission that accurate, useful and complete reports would be filed dependably, even during periods of high service disruption and/or management turnover. In particular, we seek comment on possible ways to assure voluntary reporting of all major outages. In addition, we question how this Commission will be able to be certain that, as service provider management and other staff changes occur, service providers will continue to be committed to filing voluntary, accurate, and complete service disruption reports.

3. Proposed Rules for Communications Disruption Reporting

13 We seek to determine the specific levels of disruption reporting that will be most useful in refining voluntary best practices and in developing new best practices In each case for the reporting thresholds identified below, we propose specific outage circumstances, applicable to the communications technology that is there being discussed, that in our view would warrant an investigation into whether the development, and/or refinement, of best practices would avert similar outages in the future There may be additional thresholds, which are not identified below, that should also be included to improve the process of developing, and refining, best practices for wireline, wireless, satellite, and cable communications providers We encourage interested parties to address these issues in the context of each of the technologies that we discuss below and to develop their comments in the context of the ways in which the proposed information collection would facilitate best practices development and increased communications reliability throughout the United States and its Territories.

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[27] Mandatory reporting also provides information on the extent to which best practices are not being used effectively, thereby providing further insight into the ways by which the implementation of best practices can be made more effective

[28] During NRIC VI, 28 companies were asked to respond either by filing an outage report or by stating that the company did not have an outage for that month. On average, 17.5 companies participated each month during that trial (a 63% participation rate). During the third quarter of 2003, the number of participating companies increased to 23 (an 82% participation rate) but, during the last quarter of 2003, participation dropped by 16% to 19.3 (a 69% participation rate) from the previous quarter but was still higher than the average for the entire trial

E. Proposed Application to Non-Wireline Communications

1. Application to Wireless Communications

14 Since 1990, wireless communications have grown rapidly and are now increasingly gaining acceptance as an alternative to wireline telephony Advances in technology, increased investment, and the advent of Personal Communication Services (PCS)[29] and digital technologies have fueled a rapid expansion of commercial mobile wireless networks carrying cellular-type service[30] and the number of wireless providers has increased substantially. In 1990 there were approximately 5,283,000 cellular users served by 5,600 cell sites throughout the United States and, by 2002, cellular service had grown to encompass approximately 140,766,842 users served by 131,350 cell sites.[31] Since then, wireless services have continued to grow steadily Six wireless providers now offer nationwide services and others offer regional and local services [32] Some CMRS licenses remain to be auctioned, and additional spectrum is being made available for third generation wireless services (3G) [33] Today, unlike the situation that existed in 1992, many Americans depend exclusively on wireless telephony for emergency communications and expect, for example, to have E911 connectivity in the event of an emergency.[34] Consumers are beginning to substitute wireless phones for their landline telephones, making wireless phones even more critical In 1996, the Commission adopted rules requiring cellular, PCS and certain SMRS providers to ensure compatibility with E911 emergency calling systems [35] In adopting those rules, the Commission stated that almost 18 million wireless calls were made to 911 and other public service telephone numbers in 1994.[36] By 2001, there were more than 128,374,000 wireless subscribers nationwide and Public Safety Answering Points ("PSAPs") received approximately 56,879,000 wireless 911 calls.[37] Wireless and satellite paging have also increased in importance and are now commonly used by 911 "first responders," medical personnel, emergency rescue teams, police, fire fighters, and government officials It is, of course, essential that all of these forms of wireless communications

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[29] PCS provides voice and data services at frequencies that were not initially used by cellular service providers

[30] From this point forward, we use the phrase "wireless services" to refer to communications that are provided using cellular architecture in the Cellular Radio Telephone Service ("CRTS") (Part 22 of the Commission's Rules); Personal Communications Service ("PCS") (Part 24), and enhanced Special Mobile Radio Service ("SMRS") (Part 90) (such as that provided by NEXTEL) It is also our intention to include Short Message Service ("SMS") communications, which consist of short text messages (typically 20 octets or less), as well as CMRS paging services (see 47 C F R §§ 20 9(a) (1), (6), 22.99, 22 507(c), and 90 7) and narrowband PCS (Part 24), as wireless services. Entities that provide wireless services will be referred to as "wireless service providers "

[31] *See* http ://www wow-com.com/industry/stats/surveys (visited June 3, 2003)

[32] *Seventh Annual CMRS Competition Report,* 17 FCC Rcd 12985, 12997 (2002).

[33] *In the Matter of Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems,* ET Docket No 00-258, *Second Report and Order,* 17 FCC Rcd 23193 (2002) (allocating an additional 90 MHz of spectrum for 3G), *Third Report and Order, Third Notice of Proposed Rulemaking, and Second Memorandum Opinion and Order,* 18 FCC Rcd 2223 (2003).

[34] See, *e g* , "A Wireless World – In a Few Years, Mobile Phones Will Dominate U.S. Communications," *Business Week* (Oct. 27, 2003), at 110-14

[35] *In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems,* CC Docket No. 94-102, *Report and Order and Further Notice of Proposed Rulemaking,* 11 FCC Rcd 18676 (1996)

[36] *Id* at ¶ 6

[37] CTIA, www wow-com com/industry/stats/e911

perform reliably in general use but it is even more essential that they do so during times of local or national emergencies or terrorist attacks [38] In view of the great importance that wireless services now enjoy as part of the Nation's critical communications infrastructure, [39] we propose to extend our outage reporting requirements to wireless providers.[40] This should significantly enable the development and refinement of best practices for these providers and encourage a more effective public/private partnership in which useful best practices would be voluntarily adopted We request comment on these proposed modifications to our rules.

2. Application to Cable Circuit-Switched Telephony

15 As discussed in Section VI, below, circuit-switched telephony provided by cable operators has always been subject to the communications disruptions reporting requirements set forth in Section 63 100 We propose to clarify this point and to modify these requirements in a manner consistent with our proposed changes to the outage-reporting requirements for wireline telephony We request comment on these proposed modifications to our rules.[41]

3. Application to Satellite Communications

16 Since the early 1990's, technological developments have permitted satellites to evolve as a more direct medium for personal communications Newer technology, now in use, allows the end user's

[38] Accordingly, it is our intention to include CMRS paging services along with the CRTS, PCS, and SMRS in our discussion of wireless services See *supra* note 30 and *infra* ¶¶ 36-40 As used in this *Notice,* "paging" is a CMRS service in which coded radio signals, which may represent messages or sounds, are transmitted for the purpose of activating specific pagers Paging signals may be transmitted terrestrially or by satellite *See* Sections 20 9(a) (1), (6). 22.99, 22 507(c), and 90 7 of the Commission's Rules, 47 C.F.R §§ 20 9(a) (1), (6), 22 99, 22 507(c), and 90 7

[39] The President of the United States. by Executive Order 12472, established the National Communications System (NCS), which is a Federal interagency entity responsible for planning and implementing initiatives to enhance national security and emergency preparedness ("NS/EP") telecommunications *See* Executive Order 12472, *Assignment of National Security and Emergency Preparedness Telecommunications Functions*, 49 Fed Reg 13471 (1984) The NCS is now part of the U S Department of Homeland Security The NCS established a priority access service ("PAS") that enables authorized government users and other restoration personnel to have priority wireline access to the public switched telephone network ("PSTN") The emergence of wireless telephony as an alternative way to access the PSTN during an emergency prompted the NCS to develop a priority access plan for wireless. To facilitate those efforts, the Commission amended Section 64 402 of its rules to permit CMRS providers to voluntarily offer PAS to national security and emergency preparedness personnel *See The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Through the Year 2010*, WT Docket No. 96-86, *Second Report and Order*, 15 FCC Rcd 16720, 16721 at ¶ 3 (2000) Under these rules, authorized NS/EP users in emergencies could gain access to the next available wireless channel to originate a call, however, the priority calls would not preempt calls in progress *Id*

[40] *See supra* note 30

[41] We are aware that disruptions occurring within cable system infrastructures can affect the reliability of communications and cause significant consequences As a consequence, during May, 2002, we created the Media Security and Reliability Council ("MSRC") to address one-way broadcast, cable and satellite homeland security issues. The MSRC was created by the Commission in compliance with the requirements of the Federal Advisory Committee Act, Pub L 92-463, Oct 6, 1972, as amended, 5 U S C Appendix 2. For more information on the MSRC, see the MSRC's web site at www.mediasecurity.org We also note that video services (including those delivered over cable) might play a bigger role in the future in transmitting Homeland Security information to the public during emergencies Although this proceeding does not address the reliability of, or disruptions in, broadcast, cable or other video-media infrastructures that deliver one-way multi-video or multi-radio signals, we may revisit this issue if future events so warrant

satellite telephone to connect directly to a satellite without the need for an intervening VSAT terminal [42] It also permits the user to have unconstrained domestic and transoceanic connectivity from any place to any other place, through the PSTN, using handheld phones, pagers or other terminal equipment [43] Satellite technology permits the rapid establishment of communications networks for use in emergency situations (including re-establishing other communications networks). In addition, satellites are being used more frequently for airplane-to-ground telecommunications, to transmit data, to provide GPS location information for commercial as well as governmental users, and to provide secure back-up communications networks for corporations, universities and government instrumentalities The use of satellite communications decreases the vulnerabilities that are associated with relying exclusively on fixed, terrestrial facilities with the consequence that satellite communications are now an important supplement to Homeland Security related communications

17 Thus, commercial satellite communications have emerged as a significant part of our national communications infrastructure, and we anticipate that they will play an ever-increasing role in providing important services to the military, to emergency responders, to other providers of communications services for restoration purposes, and to personnel who are involved in Homeland Defense and Security and emergency preparedness (*e g*, F E M A) functions. Given the increased role played by satellites in our Nation's communications infrastructure, and the likelihood that the importance of satellite communications will grow substantially in the future, we propose to eliminate the satellite exemption in our outage reporting rules and propose to require, as discussed more fully below, disruption reporting that recognizes the unique attributes of satellite communications [44]

F. Conclusion

18. The timely provision of outage information by communications providers, their affiliates, and those who maintain or provide communications systems on their behalf, should provide sufficient information to facilitate the prompt discovery of outage and reliability problems that occur within, and across, communications networks.[45] As a consequence, communications failures (particularly catastrophic failures) should become more easily preventable, and information accumulated through the outage reporting process should further facilitate efforts by communications providers to discover potential vulnerabilities in their own systems. In addition, to fulfill the other statutory objectives identified above, we must have sufficient information to enable us to discharge the duties that have been placed on this Commission by the Communications Act Accordingly, we initiated this proceeding in order to assure that these vital objectives are met

[42] VSAT is an acronym for "very small aperture terminal." VSATs receive and transmit satellite communications

[43] Typically, satellite teleports or gateways are used to link calls between satellite telephones and PSTN telephones.

[44] We note that Section 63.10(c)(3) of our rules requires dominant U S international carriers to file quarterly reports that include, *inter alia*, the number of outages and the intervals between each fault report and service restoration 47 C.F R § 63.10(c)(3). While this information is helpful in determining the extent to which spectrum is not being utilized, it does not provide for the prompt reporting of event-driven outage information that is needed to facilitate the prompt discovery of outage and reliability problems and the refinement of best practices, which are the main policy purposes for Section 63.100 of our rules, 47 C F R § 63 100, and of this proceeding.

[45] See generally, Section 256(a)-(b) of the Act, 47 U.S.C. § 256(a)-(b) ("It is the purpose of this section to promote non-discriminatory accessibility by the broadest number of users and vendors of communications products and services to public telecommunications service . to insure the ability of users and information providers to seamlessly transmit and receive information between and across telecommunications networks ") and Sections 1, 4(o) of the Act, 47 U.S C §§ 151, 154(o) (the Commission shall investigate and study wire and radio communications to achieve the maximum effectiveness of those technologies for the safety of life and property).

III. Consistent Reporting

19 Communications disruptions can be characterized as consisting of: (i) an inability to access a network (*e g*. an inability to acquire dial-tone);[46] or (ii) once a network has been successfully accessed, the inability to complete the communication effectively.[47] Section 63.100 applies to both types of communications disruptions which are further classified into, essentially, two types of reporting requirements: (i) the reporting of disruptions that could have a direct effect on the safety of life or property or on the National defense and security,[48] and (ii) the reporting of outages that are otherwise sufficiently significant that they warrant reporting.[49] We propose to retain this basic type of reporting framework with modifications to improve its usefulness that we discuss in more detail below

20 Section 63 100(c) requires that an outage report be filed when 30,000 customers are affected for 30 minutes or more.[50] The determination that outages of that size warrant reporting resulted from the investigation into the 1991 Signaling System 7 outages that blocked communications on both the East and West coasts for extended periods of time Those conjunctive criteria have, in general, worked well and we propose to apply those criteria to all communications platforms with modifications that are discussed in more detail below The first issue that we need to address concerns the criterion of 30,000 affected customers This criterion presents two issues The first concerns the use of the word "customers" The outage reporting criteria currently set forth in subsections 63.100(b) and (c) are based on the number of "customers" potentially affected Subsection 63 100(a) (2) defines a customer as "a user purchasing telecommunications service from a common carrier "[51] In the past, reporting carriers have tended to apply this definition literally, so that if an outage affected a large business or governmental customer with tens of thousands of telephone lines, the business was nevertheless counted as a single customer for outage reporting purposes. We tentatively conclude that application of the reporting requirements in this way disserves the public interest The reporting thresholds were meant to require the reporting of outages that could potentially affect significant numbers of end users, that is, people, regardless of whether they may be viewed, collectively, to be part of a single commercial or governmental customer. As a consequence, we propose to utilize the word "user," rather than "customer," to address the problem posed by a single customer (*e g*, the U S Government or General Motors) having hundreds of thousands of "users" even though, in each case, there is only one affected "customer." In the absence of making this change, hundreds of thousands of users could be without service without a communications disruption report having to be filed

21 The second issue concerns how the current rule conjoins the length of time (at least 30 minutes) for which users suffer loss of service with the number of potentially-affected users (at least 30,000) in determining whether a communications disruption report must be filed As Section 63 100(c) is presently configured, 29,999 or fewer customers could be without service for decades without

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[46] We shall refer to this as a lack of generally-useful availability of communications

[47] We shall refer to this as a lack of generally-useful connectivity of communications Combining these two related concepts, we shall refer to the user's normal expectations for communications as having "generally-useful availability and connectivity."

[48] These include, for example, airports, military installations, key government facilities, 911 facilities and nuclear power plants *See* 47 C F.R. § 63 100(a) (3)-(4)

[49] *See, e g*, 47 C F R § 63 100(c).

[50] "Outage" is defined as "a significant degradation in the ability of a customer to establish and maintain a channel of communication as a result of failure or degradation in the performance of a carrier's network" 47 C F R § 63 100(a) (1)

[51] 47 C F R § 63 100(a) (2)

triggering the need to file an outage report This, in turn, would foreclose our ability to understand, and address, extended outages that may be occurring on a routine basis, because the duration of the outage is not taken into account where fewer than 30,000 users are affected [52] We propose to address both of these concepts through the use of a "common metric," which is discussed below, that can be applied to wireline, wireless, cable, and satellite communications Although the concept of a uniformly applied common metric is properly based on the number of people potentially affected by, and duration of, an outage, irrespective of the communications system, differences may necessitate variations in developing the metric for these communications systems or even alternative approaches We seek comment on such approaches

A. Common Metric

22 To address these anomalies and to create a metric that accords more precisely with the true intent of the rule, we intend to cease using the number of "customers" in the threshold criteria for communications outage reporting Instead, we propose to base the criteria on a newly-defined measurement, the number of user-minutes potentially affected by the outage. We define "user-minutes" as the mathematical result of multiplying the outage duration, expressed in minutes, by the number of end users potentially affected by the outage We will address how the number of potentially affected end users is determined, below, in each section devoted to a particular form of communications (*e g* , wireline, wireless, cable, *etc*) for which we propose outage reporting requirements [53] In general, however, we propose the following as revised threshold criteria for communications outage reporting:

- The outage duration must be at least 30 minutes, *and*
- The number of "user-minutes" potentially affected per outage must equal or exceed 900,000.[54]

In other words, outages of at least 30 minutes duration would have to be reported whenever the mathematical result of multiplying the outage's duration (expressed in minutes) by the total number of end users potentially affected by the outage is at least 900,000 In developing these criteria, we have continued to retain the current rule's conceptualization of a metric that is based on the number of people who may be *potentially affected* by the outage. That is, the proposed metric focuses on the number of people who would have been affected by the outage if, for example, they had attempted to make or receive telephone calls during the outage, regardless of whether they, in fact, had actually attempted to do so This reflects expectations that these forms of communication should be available at all times, that people rely on voice and data communications to serve needs that arise unexpectedly in emergency situations as well as every day needs, and that outages could prevent communications providers from knowing which people unsuccessfully sought access during the outages

23 The proposed threshold criteria will enable us to better assess the reliability of voice and data communications platforms For example, the individual failures of more than four-fifths of the wireline telephone switching centers in the United States would not be reportable under our current rule.[55]

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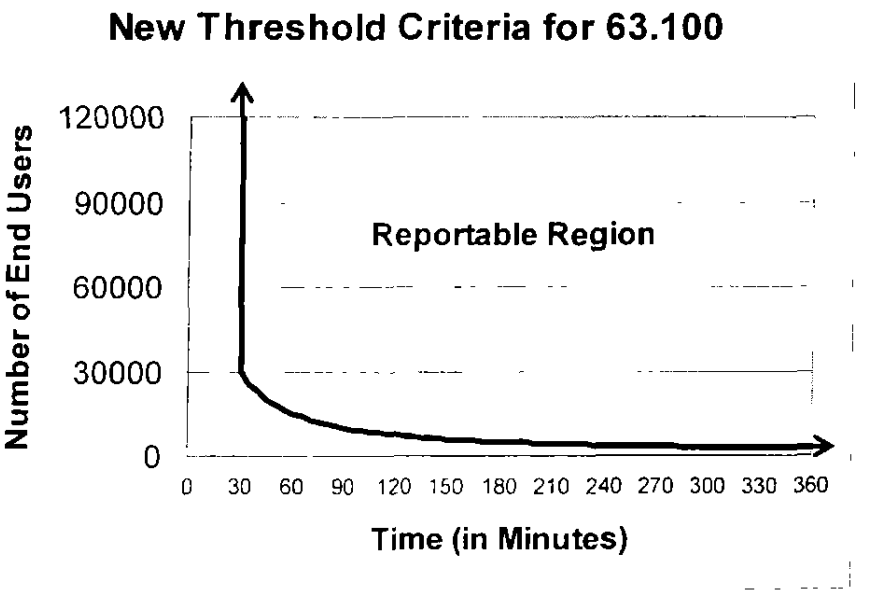
[52] We note that more than eighty percent (80%) of the telephone company switches and end offices in the United States have fewer than 30,000 assigned telephone numbers

[53] For example, for wireline telephony the number of "end users" is the number of assigned telephone numbers By the term "assigned telephone numbers," we mean the sum of "assigned numbers" and "administrative numbers" as currently defined in Sections 52 15(f) (i) and (iii) of the Commission's Rules, 47 C F R. §§ 52 15(f) (i), (iii)

[54] 900,000 user-minutes is the product of 30,000 users times 30 minutes

[55] Section 52 15(f) of our rules requires telecommunications carriers to report telephone number utilization, 47 C F R § 52 15(f) Analysis of that data shows that, as of December 31, 2001, there were 27,293 switches with one or more "assigned telephone numbers" (see *supra* note 53 and *infra* ¶ 33, for an explanation of the meaning of the (continued .)

One implication of the proposed approach is that outages in non-urban areas (*i e*, most of the United States), where the end users potentially affected are likely to be smaller in number than for urban area outages, would nevertheless be required to be reported if those outages persisted for an excessively long time In addition, urban area outages potentially affecting less than 30,000 end users would nevertheless have to be reported whenever their duration reaches the 900,000 user-minute threshold criteria. Graphically, the proposed criteria can be illustrated as follows:



We request comment on these conclusions and proposed modifications to our rules and note that it is not our intention, in proposing these rules, to preclude the voluntary filing of outage reports where the size of the outage falls below the proposed threshold criteria for mandatory reporting

B. Simplified Reporting for Special Offices and Facilities and 911 Services

24 We also propose to simplify the requirements for reporting communications outages that potentially affect special offices and facilities or potentially affect the ability to complete 911 calls.[56] Section 63.100(e) of our rules presently requires the reporting of outages of at least 30 minutes duration that potentially affect special offices and facilities.[57] We will keep this requirement substantively intact with a minor modification that will make it applicable to all airports, not just major airports. Section 63.100(e), however, only applies to local exchange carriers, interexchange carriers, and competitive access providers In light of the rapid changes that have occurred since this rule was adopted, we

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phrase "assigned telephone numbers") These switches were located in 23,482 buildings Only 15 5% of these switches and 16 4% of the buildings had 30,000 or more assigned telephone numbers and thus, in the event of a local switch or office failure, would have been subject to the reporting requirements set forth in Section 63 100(c) of our rules. *See* 47 C F R § 63 100(c) Put somewhat differently, more than 83% of the telephone company central offices in the United States had fewer than 30,000 assigned telephone numbers and outages in any one of those offices would not have been reportable under our existing rules *See id*

[56] "Special offices and facilities" are defined as "major airports, major military installations, key government facilities, nuclear power plants," and include 911 facilities *See* 47 C F.R § 63.100(a) (3).

[57] 47 C F R § 63 100(e)

anticipate that special offices and facilities will increasingly take advantage of new communications technologies and services as they become available, with decreasing regard for the particular technological platform over which they are provided As a consequence, we propose to extend the requirement to report outages potentially affecting special offices and facilities to include all communications providers for which we are proposing general communications outage-reporting requirements These include wireline, wireless, cable, and satellite communications providers [58]

25. In addition, the current requirements for reporting outages that potentially affect 911 services are differentiated by the length of the outage, the number of lines potentially affected, and other factors [59] We tentatively conclude that these requirements are overly complex. We propose to revise these rules and simply require the reporting of all communications outages of at least 30 minutes duration that potentially affect the ability to originate, complete, or terminate 911 calls successfully (including the delivery of all associated name, identification, and location data) Because we anticipate that the public safety community and 911-type services will also evolve to utilize new technologies, services, and platforms, we propose to apply this requirement to all communications providers for which we are proposing general outage-reporting requirements In a separate proceeding, however, we have been considering E911 implementation issues for Mobile Satellite Service providers and have concluded that MSS providers of interconnected two-way voice service have an E911 compliance obligation, specifically to establish call centers for the purpose of answering 911 emergency calls and forwarding these calls to an appropriate PSAP [60] Although we propose that MSS providers of interconnected voice service be subject to E911 outage reporting requirements, we propose to delay implementation of these requirements until the implementation issues raised in the *2nd Further Notice* portion of the separate proceeding are resolved. We seek comment on these conclusions and proposals.

C. Elimination of Separate Reporting Requirement for Fires

26 A separate reporting requirement, set forth in Section 63.100(d), pertains to the reporting of outages caused by fires Carriers are required to report fire-related incidents that affect 1,000 or more service lines for a period of 30 minutes or more [61] Only a few outages have been reported pursuant to this subsection and these have tended to be very minor outages. In general, major fire outages have met the more general reporting criteria because they exceed the current 30-minute, 30,000-customer threshold criteria Such outages would also exceed the proposed 900,000 user-minute threshold criterion. Thus, retention of separate outage reporting criteria for fire-related incidents appears to be an unnecessary complication for reporting carriers that does not appear to provide any significant benefit to the Commission or to the public We therefore propose to eliminate this requirement We seek comment on this conclusion and our proposed elimination of this rule.

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[58] As discussed *infra* Section VIII, we also propose to require disruption reports to be filed by providers of critical facilities irrespective of whether they would, or would not, otherwise be characterized as providers of wireline, wireless, cable, or satellite communications.

[59] *See* Section 63 100(h) (1) of the Commission's Rules, 47 C.F.R § 63 100(h) (1)

[60] *In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems and Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements et al*, CC Docket No 94-102 and IB Docket No 99-67, *Report and Order and Second Further Notice of Proposed Rulemaking*, FCC 03-290, released December 1, 2003, at ¶¶ 20-48 and 111-112 (adopting 911 service call center requirements and seeking further comment on how to implement E911 requirements for the MSS)

[61] Section 63 100(d) of the Commission's Rules, 47 C F R § 63.100(d)

D. Simplified Time Calculation for Filing Initial Report

27 An initial outage report is required to contain contact information so that additional information can be obtained if necessary Initial reports are helpful in determining whether an immediate response is required (*e g* , terrorist attacks or systemic failures) and whether patterns of outages are emerging (*e g* , phased terrorist attacks) that warrant further coordination or other action.[62]

28 Section 63.100 of our rules currently distinguishes between how quickly outages, of at least 30 minutes duration, are required to be reported, based on whether the number of customers potentially affected meets or exceeds a threshold criterion of 50,000 If this secondary threshold is exceeded, the carrier's initial report must be made "by facsimile or other record means delivered within 120 minutes of the carrier's first knowledge. . "[63] Otherwise, when such outages potentially affect less than 50,000 customers (but satisfy the primary threshold criterion of 30,000 customers), the initial notification must be delivered within "3 days of the carrier's first knowledge "[64] We believe that this distinction complicates the outage reporting requirements without any off-setting benefit and should, therefore, be eliminated

29 The current rule requires that the filing be made "by facsimile or other record means."[65] In the future, the ability to file initial reports electronically (*e.g* , over the Internet), coupled with the "fill in the blank" template[66] that we are proposing in this Notice, should make it possible for communications providers to notify us more promptly, and more easily, when communications disruptions arise

30 The improvements in filing requirements, as well as the electronic filing process that we are proposing, should make it easy for communications providers to file initial disruption reports within 120 minutes of discovering a reportable outage. This, in turn, will facilitate more rapid action in the event of a serious crisis, and will also facilitate more rapid, more coherent, and more accurate responses when multiple outages are occurring during simultaneous (or virtually coincident) crises. We therefore propose to require all initial outage reports to be filed electronically within 120 minutes of becoming reportable and all final outage reports to be filed within 30 days of the initial report. We seek comment on these conclusions and proposed requirements We also seek comment as to whether, given the rapid response time that the Internet and circuit-switched telephony (*e g* , dial-up modems) enable, we should require the filing of initial outage reports over the Internet within a shorter period of time than the 120-minute period discussed above

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[62] The initial service disruption report "shall identify a contact person who can provide further information, the telephone number at which the contact person can be reached, and what information is known at the time about the service outage [l]ack of any of the above information shall not delay the filing of this report " Section 63 100(b) of the Commission's Rules, 47 C F R. § 63.100 (b) Final service disruption reports, which are due not later than thirty days from the date of the outage, shall provide "all available information on the service outage, including any information not contained in [the] Initial Service Disruption Report and detailing specifically the root cause of the outage and listing and evaluating the effectiveness and application in the immediate case of any best practices or industry standards identified by the Network Reliability Council to eliminate or ameliorate outages of the reported type " *Id*

[63] Section 63 100(b) of the Commission's Rules, 47 C F R § 63.100(b).

[64] Section 63 100(c) of the Commission's Rules, 47 C F R § 63.100(c). This distinction between how quickly outages must be reported is a historical vestige of how the original reporting criteria were developed See Network Reliability A Report to the Nation – Compendium of Presentations, Section I (June 1993) at 3.

[65] Section 63 100(b) of the Commission's Rules, 47 C F R § 63.100(b).

[66] See *infra* Appendix B for the template that we are proposing for Internet reporting of outages by communications providers

E. Other

31 Our experience in administering Section 63.100 has enabled us to understand more completely other aspects of the existing reporting requirements that should be revised As a consequence, we find that existing requirements for final disruption reports should be modified to include the following information

- A statement as to whether the reported outage was at least partially caused because the network did not follow engineering standards for full diversity (redundancy),[67] and
- A statement of all of the causes of the outage Outages may result from the occurrence of several events The current rule requires that the final report identify the root cause.[68] Experience in administering this part of our rules has convinced us that there may be more than one root cause and that, to facilitate analysis, all causes of each outage should be reported

In addition, as the communications market evolves, we anticipate that communications may increasingly be offered through complex arrangements among communications providers and other entities (which may or may not be affiliated with the provider) that maintain or provide communications systems or services for them For example, local exchange carriers have long provided Signaling System 7 ("SS7") communications for their own use as well as for their customers, but some entities have more recently emerged to provide SS7 for such carriers We propose to require these entities to comply with any disruption reporting requirements that we may adopt to the same extent as would be required of the communications provider if it were directly providing the voice or data communications or maintaining the system We seek comment on these proposals

IV. Outage Reporting Requirements for Wireline Communications

A. Voice Telephony

32 In this *Notice*, we use the term "wireline provider" to refer to an entity that provides terrestrial communications through direct connectivity, predominantly by wire, coaxial cable, or optical fiber, between the serving central office (as defined in the glossary to Part 36 of the Commission's Rules)[69] and end user location(s) [70] As noted in the preceding section, we propose to require wireline providers to report outages that meet the following criteria

- The outage duration must be at least 30 minutes; *and*
- The number of "user-minutes" potentially affected must equal or exceed 900,000.

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[67] *See, e g*, the following requirements for Signaling System 7 systems ANSI T1 111-2001 Signaling System No 7, Message Transfer Part, ATIS/NIIF-5001 Network Interconnection Interoperability Forum Reference Document – January 2002 – Issue 4, GR-246-CORE, Telcordia Technologies Specification of Signaling System Number 7 (SS7), and GR-905-CORE, Common Channel Signaling Network Interface Specification (CCSNIS) Supporting Network Interconnection, Message Transfer Part (MTP) and Integrated Services Digital Network User Part (ISUP). Full diversity encompasses electronic, logical, optical, and physical diversity

[68] 47 C F R § 63 100(h) (1)

[69] 47 C F R Part 36, Appendix-Glossary.

[70] Wireline communications may also be augmented through the use of micro-wave links and other links that use other radio frequencies It is our intention to include these fixed service technologies with the other wireline technologies described above.

33 For telephony, we propose to define the number of end users as the number of "assigned telephone numbers," by which we mean the sum of "assigned numbers" and "administrative numbers" as defined in Section 52.15(f)(i) and (iii) of the Commission's Rules.[71] Assigned numbers are defined as "numbers working in the Public Switched Telephone Network ("PSTN") under an agreement such as a contract or tariff at the request of specific end users or customers for their use, or numbers not yet working but having a customer service order pending."[72] Administrative numbers are "numbers used by telecommunications carriers to perform internal administrative or operational functions necessary to maintain reasonable quality of service standards."[73] As noted in the preceding section, we believe that the combination of these two measurements will provide a better assessment of the actual number of users that are potentially affected by the communications disruption, as distinguished from the number of "customers" that may be potentially affected.[74]

B. IXC and LEC Tandem Outages

34 Section 63.100(g) states that, for the tandem facilities of interexchange or local exchange carriers, "carriers must, if technically possible, use real-time *blocked calls* to determine whether criteria for reporting an outage have been reached. Carriers must report IXC and LEC tandem outages . . . where more than 90,000 calls are blocked during a period of 30 or more minutes for purposes of complying with the 30,000 potentially affected customers threshold."[75] We propose to modify this rule to replace the "customer" metric with the "assigned telephone number-minute" metric, in order to be consistent with the modifications that we have proposed above. We also note that the term "blocked calls" is not clearly defined in Section 63.100 and that some companies count only *originating* calls that are blocked, while other companies count both *originating* and *terminating* blocked calls. To eliminate this ambiguity and permit the Commission to gain an understanding of the full impact of each outage, as well as to promote consistent reporting by all carriers, we propose to require that all blocked calls, regardless of whether they are originating or terminating calls, be counted in determining compliance with the outage reporting threshold criteria.

35 For those outages where the failure prevents the counting of blocked calls in either the originating or terminating direction, or in both directions, historical data may be used.[76] Three times the actual number of carried calls for the same day of the week and the same time of day should be used as a surrogate for the number of blocked calls that could not be measured directly.[77] We also wish to clarify

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[71] 47 C.F.R. § 52.15(f)(i), (iii).

[72] 47 C.F.R. § 52.15(f)(iii). That subsection also states "[n]umbers that are not yet working and have a service order pending for more than five days shall not be classified as assigned numbers."

[73] 47 C.F.R. § 52.15(f)(i).

[74] See *supra* ¶¶ 20-23.

[75] 47 C.F.R. § 63.100(g) (emphasis supplied). This subsection further provides that: "[c]arriers may use historical data to estimate blocked calls when required real-time blocked call counts are not possible. When using historical data, carriers must report incidents . . . where more than 30,000 calls are blocked during a period of 30 or more minutes for purposes of complying with the 30,000 potentially affected customers threshold."

[76] For example, if 70,000 calls were carried during the historical period, the assumption would be made for reporting purposes that 70,000 calls would have been carried during the outage.

[77] The proposed multiplicand of three is based on the total number of times (three) that an average subscriber would attempt to redial a number after first not being able to complete a telephone call. *In the Matter of Amendment of Part 63 of the Commission's Rules to Provide for Notification by Common Carriers of Service Disruptions*, CC Docket No. 91-273, *Second Report and Order*, 9 FCC Rcd 3911, 3914 at ¶ 14 (1994). Providers should use larger multiplicands for determining whether the outage should be reported if their experience has been that three is too (continued .)

that "blocked calls" are a "running measurement" made for the total duration of the outage That is, an outage that blocks only 50,000 calls in the first 30 minutes may nevertheless reach the 90,000 blocked-call threshold criterion if the outage lasts, for example, for one hour. In relatively rare cases, it may be possible to obtain the number of originating blocked calls only, or the number of terminating blocked calls only, but not both For these cases, we propose to require that the blocked-call count be doubled to compensate for the missing data, unless the carrier certifies that only one direction of the call set-up was affected by the outage We seek comment on this proposed rule.

V. Outage Reporting Requirements for Wireless Communications

A. Common Metric for Wireless Services

36. Consistent with the 30 minutes/900,000 user-minutes criteria discussed above, we propose to require wireless service providers to report outages of at least 30 minutes duration that potentially affect 900,000 user-minutes. We seek comment on this proposal [78] While we believe in the importance of a common metric that is based on outage impact on people irrespective of the communications system involved, we also seek comment on possible alternative criteria that would yield outage data that would be useful in developing best practices Paging remains an important technology for emergency responders and therefore we are proposing to include paging service providers within the scope of the outage reporting requirements for wireless service providers For those paging systems in which each individual user is assigned a telephone number, we propose to define an end user as an assigned telephone number, and the number of potentially-affected user minutes would be the mathematical result of multiplying the outage's duration (expressed in minutes) by the number of potentially-affected assigned telephone numbers It is our understanding that for other paging systems in which a caller must first dial a central number (*e g*, an "800 number") and then dial a unique identifier for the called party, the paging provider maintains a database of identifiers for its end users and would therefore know how many of its end users are potentially affected by any particular outage. The number of potentially-affected end users for those paging systems would simply be the mathematical result of multiplying the outage's duration (expressed in minutes) by the number of end users potentially affected by the outage We seek comment on this interpretation and proposed addition to our rules We also seek comment on whether there are alternative approaches for measuring the extent of the impact of the outage of CMRS paging systems. For other wireless services, the determination of the number of potentially affected users can be more complex.

B. Related Criteria for Wireless Communications

37. To measure the extent of wireless services system degradation, we propose to require the use of blocked calls instead of using assigned telephone numbers as a proxy for the usefulness of the system

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small a number (*i e*, that their subscribers try, on average, to redial a number more frequently than three times after first not being able to complete a telephone call) Thus, if 70,000 calls were carried during the historical period, the assumption for reporting purposes would be that each of those calls would have been attempted three times, which means that 210,000 calls would have been blocked during the outage.

[78] On May 15, 2003, we adopted a Report and Order and Further Notice of Proposed Rulemaking to improve the efficiency with which spectrum is used by permitting wireless radio licensees that hold "exclusive use" licenses to lease spectrum usage rights to third parties seeking access to spectrum *In the Matter of Promoting Efficient Use of Spectrum through Elimination of Barriers to the Development of Secondary Markets*, WT Docket No 00-230, *Report and Order and Further Notice of Proposed Rulemaking*, FCC 03-113, 30 Communications Reg. (P&F) 661, 2003 WL 22289295 (2003) As a consequence, we request comment as to whether the lessor, the lessee, or both should be subject to the reporting requirements that we propose here.

to users [79] In the wireless telephony service, a call is deemed "blocked" whenever the MSC[80] cannot process the call request of an authenticated, registered user Call blocking can result from a malfunction or from an overloaded condition in the wireless service network Usually when calls are blocked, users newly attempting to access the system cannot be registered on the system until the underlying problem is corrected Because wireless service networks typically provide user access through several MSCs, an outage on a single MSC affects only those subscribers served by that MSC. Accordingly, call blocking on a single MSC would be reportable if it were to result in an outage of at least 30 minutes duration that meets or exceeds the 900,000 user-minute criterion described *supra* Section III

38 To estimate the number of potential users affected by a significant system degradation[81] of wireless service facilities, we propose to require providers to determine the total call capacity of the affected MSC switch (or, in the case of a MSC that has more than one switch, the total call capacity of all switches in the affected MSC) and multiply the call capacity by the concentration ratio [82] Although the concentration ratio may vary among MSCs, we believe that, on average, the concentration ratio used for determining the outage reporting threshold should be uniform to facilitate correlative analyses of outage reports from different wireless providers Based upon discussions with telecommunications engineers and our understanding of typical traffic loading/switch design parameters, we propose that the concentration factor be ten.[83] Thus, a MSC switch that is capable of handling 3,000 simultaneous calls would have 30,000 potentially affected users (*i e* . (3,000) x (10) = 30, 000) Our analysis suggests that this proposed concentration factor should adequately account for those users that are in the service area of the MSC and are thus eligible for immediate service This factor would also take into account users that are assigned to the local home location register database for the MSC as well as potential visitors.[84] Thus, under the general outage-reporting criteria that we are proposing, wireless service providers would be required to report MSC outages of at least 30 minutes duration that potentially affect at least 900,000 user-minutes. We seek comment on this proposed addition to our rules and on whether there are specific types of wireless systems for which a concentration factor of other than ten should be applied. As with CMRS paging providers, we also seek comment on possible alternative criteria for wireless service providers and approaches to measure the extent of the impact of system degradation that would yield useful outage data on which to base the development of best practices

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[79] "Degradation" differs from the term "outage" in that it connotes a reduction in the quality of service that could be perceived by some (but not necessarily all of the) users as a total outage

[80] "MSC" is an acronym for Mobile Switching Center, which is also frequently referred to as a Mobile Telephone Switching Office, or MTSO The MSC coordinates calls among cells, participates in Signaling System 7 switching, and serves as a point of aggregation for calls originating from a group of cell sites and as a point for distribution of incoming calls to individual cell phone subscribers

[81] Section 63 100(a)(1) of our rules defines an "[*o]utage*" as "significant degradation in the ability of a customer to establish and maintain a channel of communications as a result of failure or degradation in the performance of a carrier's network " 47 C F R § 63 100(a)(1)

[82] Concentration is based on the premise that not all users eligible to place and receive calls on a particular switch do so simultaneously Accordingly, more users can be assigned to a switch than the actual capacity of that switch The concentration ratio is the quotient of the number or users eligible for service from a particular MSC switch at any given time divided by the call capacity of the switch A concentration ratio of 10-to-1 means that for every ten users eligible to access service from a particular switch there is one communication channel available to handle calls. This ratio and similar ones are frequently used in the design of cellular system architectures.

[83] *See* Bellamy, John, *Digital Telephony*, 2nd ed., John Wiley and Sons (2000) at 234, for a description of call blocking and the development of a concentration ratio

[84] "Visitors" are wireless service users whose transceivers are active in areas that are not served by the physical facilities of their particular service provider

39 We further propose to require the filing of an outage report whenever a MSC is incapable of processing communications for at least 30 minutes, without regard to the number of user-minutes potentially affected by the outage Our reason for this specific proposal on MSC-outage reporting is based on our continuing need to be aware of the underlying robustness, as well as the overall reliability, of wireless networks The MSC, in this regard, is a critical architectural component in wireless systems that is designed to address significant levels of traffic aggregation and call routing that is dependent upon SS7 signaling We seek comment on these additional conclusions and further proposal.

C. E911 Communications

40 We have been aware for some time that the use of wireless telephony to place emergency 911 calls has been increasing Accordingly, we adopted rules requiring wireless providers to facilitate the work of E911 service responders by providing to Public Safety Answering Points ("PSAPs")[85] both the automatic name information (ANI) and automatic location information (ALI) associated with the handset The reliability of E911 service continues to be of vital concern to this Commission and is an essential part of our responsibilities We therefore propose to require wireless service providers to report any failure of a wireless network element[86] that prevents a MSC from receiving, or responding to, 911 calls (including the delivery of all associated data) for at least 30 minutes.[87] We seek comment on this proposed rule and whether local network element failures or degradations should also be reported to the affected PSAPS in real time In addition, we seek comments as to whether a 30 minute outage is the most appropriate time metric to measure a significant failure of call completion to a PSAP. Finally, if a commenting party were to conclude that 30 minutes is not, we request that such a party include in its comments its reasoning for that conclusion and a recommendation for a more appropriate time interval for E911 emergency calls

VI. Outage Reporting Requirements for Cable Circuit-Switched Telephony

41 Failures in various portions of cable systems infrastructures[88] can cause disruptions to cable circuit-switched telephony service. For example, failures within the cable distribution plant, the fiber distribution plant, cable headend systems, and voice terminating equipment, as well as failures within Local Exchange Carrier ("LEC") facilities such as switches and other points within the Public Switched Telephone Network ("PSTN") can cause cable telephony to be disrupted.[89] Circuit-switched telephony

[85] Responses to E911 calls are typically made by personnel in call centers that are funded by local, county, and state governments As a consequence, the function of the wireless service provider in this context is to provide two-way connectivity (from the user to the PSAP and from the PSAP to the user) and identification of the subscriber's handset and its location (these later functions are analogous to the data that are provided to PSAPs by wireline telephone companies)

[86] For reporting purposes this also includes an outage, or significant degradation of information (i) from a wireless provider's network, (ii) from a wireless provider's location vendor, (iii) from a wireless provider's point of connection to the PSTN, (iv) from a wireless provider's other point of connectivity to the PSAP (if that provider does not connect to the PSAP through the PSTN); (v) from a failure or degradation in the trunk(s) that connect the mobile switching center to other LECS that serve PSAPS, or (vi) from a failure in the trunking from the LEC that is supplied to the wireless provider to connect it to the PSAP Failure or significant degradation in any of these *components could affect delivery of a 911 call to a PSAP.*

[87] We note that not all MSCs provide accessibility to E911 services.

[88] "Cable system infrastructure" refers to the physical paths, switches, routers, and databases that the cable system operator uses to provide connectivity for its subscribers to the PSTN (in the case of cable telephony)

[89] Of course, failures that occur outside of the cable infrastructure (*e g*, at the switch or elsewhere within the PSTN) are also covered by the outage reporting requirements as they relate to the communications provider whose facility failed

provided by cable operators has always been subject to our communications disruption reporting requirements, and outage reports have been filed by cable operators.[90] Nonetheless, we propose to amend Section 63 100 to make it explicitly clear that cable circuit-switched telephony is subject to our service disruption reporting requirements The current thresholds for reporting cable telephony outages are the same as those for wireline telephony -- outages must last at least 30 minutes in duration and potentially affect at least 30,000 customers. We propose to apply to cable telephony the same revised threshold reporting criteria (30 minutes/900,000 assigned telephone number-minutes potentially affected) that we are proposing for wireline telephony outage reporting and seek comment on this proposed addition to our rules

VII. Outage Reporting Requirements for Satellite Communications

42 Section 63 100 of our rules does not contain outage reporting requirements that are applicable to satellite communications [91] We propose however, that because of the increasing role and importance of satellites in our national communications infrastructure, the prudent course is to require all major failures to be reported by U S. space station licensees and by those foreign licensees that are providers of satellite communications to the American public. This would apply to satellites or transponders used to provide telephony and/or paging Thus, our proposal does not include satellites or transponders used solely to provide intra-corporate or intra-organizational private telecommunications or solely for the one-way distribution of video or audio programming.

43 Satellite communications have space components and terrestrial components The reporting requirements that we propose cover all satellite communications outages, regardless of whether they result from failures in the space or terrestrial components Specifically, we propose to require the reporting of any loss of complete accessibility to a satellite or any of its transponders for 30 minutes or more Such outages could result, for example, from an inability to control a satellite, a loss of uplink or downlink communications, Telemetry Tracking and Command failures, or the loss of a satellite telephony terrestrially-based control center, and we regard such outages to be major infrastructure failures. Analogous to the cases of wireline, wireless. and cable communications, we also propose to require the reporting of the loss, for 30 minutes or more, of any satellite link or its associated terrestrial components that are used to provide telephony and/or paging, whenever at least 900,000 user-minutes are potentially affected [92] We request comment on this proposed addition to our rules.[93]

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[90] Section 2(a) of the Act states that cable service is subject to the provisions of the Act, 47 U S C § 152(a), and Subsections 621(b) (3) and (d) of the Act state that cable service providers may provide telecommunications services but these services are outside the scope of the regulatory provisions of Title VI of the Act, 47 U S C § 621(b) (3) and (d) Cable circuit-switched telephony providers fall within the definition of telecommunications carriers, which have always been subject to the requirements of Section 63 100 of the Commission's Rules, 47 C F R § 63 100

[91] As discussed below, satellite licensing and several technical portions of our rules require the limited disclosure of information on some satellite outages in the context of determining the extent to which the electromagnetic spectrum is being used efficiently. *See* 47 C F R §§ 25 142(c), 25 143(e), 25.144(c), 25 145(g), 25 149(b), and 25 210(k). With the exception of the requirement that those Mobile Satellite Service (MSS) licensees using ancillary terrestrial components (which use spectrum terrestrially) must report certain outages within 10 days of their occurrence (47 C F R §§ 25 149(b)(2)(iii)), these rules require the filing of reports on an annual basis As a consequence, these rules do not provide for the prompt and detailed disclosure of information that is needed to develop best practices and assure that satellite telecommunications infrastructures and networks are reliable and secure.

[92] We anticipate that the satellite provider's Network Operations Center would be aware of the loss of satellite system components and their potential impact on end users. For telephony and many paging systems, one user-minute would be defined as one assigned telephone number-minute See *supra* ¶¶ 33, 36, and 41

44 As previously noted.[94] Part 25 of the Commission's Rules provides that certain satellite licensees file annual reports that contain some information on outages and that Mobile-Satellite Service (MSS)[95] Ancillary Terrestrial Component (ATC) licensees report certain outages within 10 days of their occurrence These rules were adopted to provide the Commission with information necessary to assess the commercial and technical development of satellite services, including the efficiency of spectrum utilization by satellite licensees,[96] and, in the case of MSS ATC licensees, to ensure that the terrestrial use of spectrum remains ancillary to satellite use[97] We believe that our proposed additional reporting requirements may be necessary so that we can more rapidly acquire information that will be more useful in achieving our objectives of increasing reliability and security in satellite communications We seek comment on these proposals and on alternative ways to accomplish our objectives in this proceeding while minimizing any duplication of reporting requirements or unnecessary burdens on satellite communications providers

45 Finally, we note that in the E911 Scope proceeding,[98] we decided to require MSS providers of voice service that is interconnected with the PSTN to establish E911 call centers We also directed NRIC to study several E911 implementation technical issues for satellite systems. Finally, we sought comment on whether transition periods are necessary for MSS providers with an ancillary terrestrial component (ATC) to comply with the terrestrial wireless E911 requirements and on proposed reporting

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[93] In a separate proceeding, we have sought comment on whether we should adopt reporting requirements regarding aspects of spacecraft operations that may affect the ability of operators to complete appropriate satellite end-of-life procedures *See In the Matter of Mitigation of Orbital Debris*, IB Docket No 02-54, *Notice of Proposed Rule Making*, 17 FCC Rcd 5586 (2002) This issue will be addressed in that proceeding

[94] See *supra* note 91

[95] "Mobile Satellite Service" is defined as a radio communication service between mobile earth stations and one or more space stations, between space stations used by this service, or between mobile earth stations by means of one or more space stations Section 2 1(c) of the Commission's Rules, 47 C F R § 2 1(c)

[96] *See Amendment of the Commission s Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service,* CC Docket No 92-76, *Report and Order*, 8 FCC Rcd 845 at ¶ 11 (1993) (Section 25 142(c) reporting requirements, including listing of non-scheduled space station outages lasting more than thirty minutes and their causes, provides information by which the Commission assesses the commercial and technical development of a satellite service, including its spectrum utilization), *accord Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to Mobile Satellite Service in the 1610-1626 5/248 5-2500 MHz Frequency Bands*, CC Docket No 92-166, *Report and Order, Memorandum Opinion and Order, and Further Notice of Proposed Rulemaking,* 12 FCC Rcd 5754, 5799 at ¶ 10 (1997) (Section 25 144(c) with respect to DARS), CC Docket No 92-297, *Third Report and Order*, 12 FCC Rcd 22310, 22335 at ¶ 62 (1997) (Section 25 145(g) with respect to the FSS in the 20/30 GHz bands), and *Amendment of Part 25 of the Commission's Rules and Regulations to Reduce Alien Carrier Interference Between Fixed-Satellites at Reduced Orbital Spacing and To Revise Application Processing Procedures for Satellite Communication Services,* CC Docket No 86-496, *Second Report and Order and Further Notice of Proposed Rulemaking,* 8 FCC Rcd 1316 at ¶¶ 21-23, (current Section 25 210(l) – then subsection (j) – with respect to the technical requirements for FSS space stations).

[97] *See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, et al*, IB Docket Nos 01-185 and 02-364, *Report and Order and Notice of Proposed Rulemaking,* 18 FCC Rcd 11030 at ¶ 78 (2003)

[98] *In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems and Amendment of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements et al*, CC Docket No 94-102 and IB Docket No 99-67, *Report and Order and Second Further Notice of Proposed Rulemaking*, FCC 03-290, released December 1, 2003, at ¶¶ 20-48 and 111-112 (adopting 911 service call center requirements and seeking further comment on how to implement E911 requirements for the MSS)

and recordkeeping requirements in connection with implementation of the emergency call center rule We now propose that MSS providers of interconnected voice service will be subject to E911 outage-reporting requirements, including those proposed in the proceeding paragraph Nevertheless, we propose to delay implementation of these proposed requirements for MSS providers until the implementation issues for the MSS, raised in the *Second Further Notice* in the E911 Scope proceeding,[99] are resolved. We welcome comments on these proposals

VIII. Application to Underlying Infrastructure: Major Infrastructure Failures

46 The communications outage reports that we have received over the past ten years have provided significant insight into some of the major problems affecting circuit-switched voice communications The infrastructure used to provide these services, however, is also used to provide many other services that are essential to Homeland Security and our nation's economy A tiny glimpse into the other uses of our Nation's communications infrastructure was provided in Verizon's network outage report covering the World Trade Center disaster on September 11, 2001.[100] That report states that "some 300,000 dial tone lines and some 3 6 million DS0 equivalent data circuits were out of service" as a result of the damage. The ratio of more than ten times as many DS0[101] equivalent services using the infrastructure as dial tone lines is not unusual in a major metropolitan area. Most of the DS0 equivalent circuits are used to carry what are frequently called "special services " While we have not previously required the reporting of communications outages that affected large numbers of special services, we need to recognize in our communications disruption reporting rules the continuously increasing importance of data communications throughout the United States Our rules should be revised to account for important attributes of special services that have not been fully addressed in the earlier sections of this Notice that focused on different communications platforms Rather than collect information that is limited specifically to "special services," however, we propose to directly address the underlying issue and collect information on the potential impact on all communications services of major infrastructure failures.

A. DS3 Minutes

47. As a consequence, we propose to establish additional outage-reporting criteria that would apply to failures of communications infrastructure components having significant traffic-carrying capacity. This requirement would apply to those communications providers for which we have already proposed outage-reporting requirements and would also apply to those affiliated and non-affiliated entities that maintain or provide communications systems on their behalf.[102] We believe that the threshold reporting criterion for such infrastructure outages should be based on the number of DS3[103] minutes affected by the outage because DS3s are the common denominator used throughout the communications industry as a measure of capacity A DS3 can handle 28 DS1s (T1s) or 672 DS0 (64 kbps voice or data circuits). On the higher end of the multiplexing hierarchy, an OC3 includes 3 DS3s, an OC48 includes 48 DS3s, and an OC192 includes 192 DS3s Specifically, we propose to require the reporting of all outages of at least 30 minutes duration that potentially affect at least 1,350 DS3

[99] *Id*

[100] Network Outage 01-147, Verizon Final Report (Oct 11, 2001).

[101] A DS0 circuit is normally associated with a 64 Kbps data rate.

[102] For example, an entity that supplies optical fiber transmission links to communications providers or to ISPs would be included in this reporting requirement

[103] DS3 circuits have a data rate of approximately 44 7 megabits per second.

minutes.[104] We propose to count only working DS3s in this measure, by which we mean those actually carrying some traffic of any type at the time of a failure For example, an OC24 could have a maximum of 24 DS3s working, but at the time of a failure might have only 10 DS3s that are in working condition and equipped with the necessary electronics In this case, only the 10 DS3s would be counted in determining whether the threshold reporting criterion had been met In addition, as discussed in Section VII of this Notice, we regard the failure for at least 30 minutes duration of a satellite or any of its in-service transponders as a major infrastructure failure and therefore have proposed to require reporting of such outages We stress that the 1,350 DS3-minute and the satellite/transponder failure reporting criteria would be in addition to the 90,000 blocked-call and the 900,000 user-minute criteria proposed in the previous sections of the Notice Whenever any of these criteria are exceeded, the outage would be reportable and the values of all three measures, if applicable, would be required to be included in the outage report We request comment on these conclusions and proposed rules

B. Signaling System Seven ("SS7")

48 Signaling System 7 (SS7) systems provide information to process, and terminate, virtually all domestic and international telephone calls irrespective of whether the call is wireless, wireline, local, long distance, or dial-up telephone modem access to ISPs.[105] SS7 is also used in providing SMS text messaging services, 8XX number (i e , toll free) services, local number portability, VoIP Signaling Gateway services, 555 type number services, and most paging services Currently our rules do not require outage reporting by those companies that do not provide service directly to end users In addition, even for companies currently subject to outage reporting requirements, no threshold reporting criteria are currently based on blocked or lost SS7 messages.[106]

49 As a consequence, we are proposing the addition of SS7 communications disruption reporting requirements. To be more specific, all providers of Signaling System 7 service (or its equivalent)[107] would be required to report those communications disruptions of at least 30 minutes

[104] The 1,350 figure was derived from the current threshold-reporting criterion of "30,000 customers potentially affected " Each DS3 has a capacity of 672 DS0 circuits (basically, 672 "customers") Therefore, to determine how many DS3s are equivalent to 30,000 customers, we compute 30,000 customers divided by the DS3 capacity of 672 DS0 circuits (customers) equals 44 6 DS3s rounded to 45 Then, 45 DS3s multiplied by 30 minutes equals 1,350 DS3 minutes Note that the figure of 45 DS3s for at least 30 minutes was proposed by Pacific Telesis (now part of SBC Communications, Inc) in the Comments and Reply Comments it filed in CC Docket No. 91-273 in January and February 1994, respectively At that time, however, there was no record of the number of outages that had affected the basic communications infrastructure

[105] See Telcordia Notes on Common Channel Signaling (CCS) Networks, SR-NOTES-SERIES-17, Issue 1, August 2001, at 2-1 for a description of SS7 architecture

[106] Implicit in this statement is that a blocked or lost signaling message will result in a blocked or lost call There are numerous types of failures that have already resulted in lost or blocked signaling messages For example, SS7 failures have occurred when both A-links were cut, when A links were out of service due to a common power pack *failure, when a timing problem on both A links isolated a central office, when all B links became overloaded; when* a common software problem caused a pair of STPs to fail, when a translation error caused both STPs to fail; when a common table entry error caused both SCPs to fail, and when a software upload problem in both STPs resulted in SS7 service failure

[107] Services "equivalent" to SS7 would be those services that currently provide, or will provide, the transmission signaling that SS7 protocols (and their successors) provide Our intention here is to insure that this reporting requirement will continue to apply to future signaling developments that are similar in function to those that are performed through SS7 transmission/router/server architectures and databases

duration for which the number of blocked or lost ISDN User Part (ISUP) messages[108] (or its equivalent) was at least 90,000.[109] This reporting threshold is similar to the one for blocked calls that was addressed in connection with the wireline telephony outage reporting criteria (see *supra* ¶ 35). We request comment on these conclusions and proposed addition to our rules.

IX. Electronic Filing and New Reporting Process

50. Consistent with authority granted by the Communications Act of 1934, as amended,[110] and in furtherance of the objectives of the Government Paperwork Elimination Act,[111] we propose to require that communications outage reports be filed electronically with the Commission.[112] Electronic filing would have several major advantages for the Commission, reporting communications providers, and the public. For example,

- Providers would be able to file reports more rapidly and more efficiently.
- Information would be updated immediately. The expenses and efforts that are associated with the outage reporting process should be reduced substantially which, in turn, should result in continuing productivity gains.
- Changes to outage report data should be more easily accessible by communications providers, the public, and the Commission. Thus, reporting entities should be able to file initial and final report information more easily, and interested parties should also be able to access this information more quickly.
- Changes to electronic input form(s) can be implemented more quickly. Two of the purposes of the reliability database are to help identify causes of outages and to refine best practices for averting failures in communications networks. As networks evolve and experience is gained, the data fields can be more easily revised to improve the quality of the information received to reflect changes in communications infrastructures and management procedures.
- In addition, security precautions can be implemented to authenticate access by authorized users.

51. Our current outage reporting rules do not require, or even refer to, electronic filing (other than by facsimile). Although it is understandable, in retrospect, that our rules did not incorporate electronic filing because the Internet was just beginning to expand in 1992, the time has now arrived to implement electronic filing procedures.[113] These procedures should not only facilitate compliance with

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[108] ISDN User Part (ISUP) is the functional module of the SS7 protocol that supports the signaling interactions responsible for the control of calls and connections for circuit-switched narrowband communications. An explanation of all SS7 messages including ISUP messages can be found in Telcordia Notes on SS7 and CCS Network Evolution, SR-NOTES-SERIES-13, Issue 1, August 2001, at 3-15.

[109] Under this approach, the number of blocked or lost messages could be based on call logs if they are available. Otherwise if call logs are not available, the number of blocked or lost messages could be estimated based on the normal call volumes during the applicable time(s) of day. The 90,000 criterion for blocked ISUP messages is analogous to the criterion of 90,000 blocked calls because an ISUP message is utilized to set up each call.

[110] See *supra* ¶ 4 and references cited therein and *infra* ¶ 63 and references cited theren.

[111] Government Paperwork Elimination Act, 44 U.S.C. § 3504 note, Pub. L. No. 105-277, Div. C, Title XVII, 112 Stat. 2681-749 (1998).

[112] See Appendix B for a description of the proposed data collection fields.

[113] The Commission has adopted mandatory electronic filing requirements in several other contexts. *See Wireline Competition Bureau Initiates Electronic Filing of Automated Reporting Management Information System (ARMIS) Data and Associated Documents by Incumbent Local Exchange Carriers*, Public Notice, 18 FCC Rcd 3245 (Wireline Comp. Bur., 2003); *In the Matter of Amendment of the Commission's Space Station Licensing Rules and* (continued .)

the objectives that are expressed in the Government Paperwork Elimination Act but also should improve service to the public, enhance the efficiency of our internal operations, and virtually eliminate any burden that would be associated with complying with the proposed reporting requirements [114] It may, however, be desirable for other reasons to have alternative ways by which outage reports can be filed with this Commission Accordingly, we request comment on whether there are any circumstances under which electronic filing would not be appropriate and, if so, on what alternative filing procedures should be used in such circumstances Finally, we recognize that as experience is gained with the electronic filing of outage reports, modifications to the filing template may be necessary to fully implement an automated outage reporting system that will maximize reporting efficiency and minimize the time for providers to prepare, and for the Commission staff to review, outage reports Accordingly, we propose to delegate authority to the Chief, Office of Engineering and Technology to make the revisions to the filing system and template that are necessary to achieve these goals [115]

52. Historically, outage reports from wireline carriers have been available to the public. We seek comment as to whether this policy should not be applied, in whole or in part, to outage reports that will be filed by wireless, wireline, satellite, or cable providers and, if so, why.

X. Small Business Alternatives

53 We note that the economic impact on small entities that would result from our proposed action consists of the electronic filing of two outage reports for each significant outage experienced. This impact is likely to not be significant, and we therefore might have chosen to certify this present action under the Regulatory Flexibility Act, 5 U S.C § 605(b) However, out of an abundance of caution and a desire to have a fuller record regarding small entity compliance burdens, we have created the IRFA set forth *infra* paragraph 56 and Appendix C In any event, we believe that our proposals will not have a significant economic impact on a substantial number of small businesses. We anticipate that our

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Policies and 2000 Biennial Regulatory Review (Part 25), IB Docket Nos 02-34 and 00-248, *Third Report and Order and Second Further Notice of Proposed Rulemaking,* FCC 03-154, released July 8, 2003 ("*Space Station Licensing Rules 3rd R&O*"), at ¶ 64 (adopting mandatory electronic filing for routine C- and Ku-band earth station applications), ¶ 66 (adopting mandatory electronic filing for space station applications), ¶ 84 (inviting comment on extending electronic filing requirements to all pleadings governed by Part 25) & n.153, *In the Matter of Amendment of Part 5 of the Commission's Rules to Require Electronic Filing of Applications for Experimental Radio Licenses and Authorizations, Order,* FCC 03-207, released August 20, 2003, *Amendment of the Commission's Rules for Implementation of its Cable Operations and Licensing System (COALS) to Allow for Electronic Filing,* CS Docket No 00-78, *Report and Order,* 19 FCC Rcd 5162 (2003), *Wireless Telecommunications Bureau (WTB) Extends Mandatory Electronic Filing Date,* Public Notice, 15 FCC Rcd 15692 (WTB, 2000); *1998 Biennial Review – Streamlining of Mass Media Applications, Rules and Processes,* MM Docket No 98-43, 13 FCC Rcd 23056, 23060 ¶ 8 (1998). *and Electronic Tariff Filing System (ETFS),* Order, 13 FCC Rcd 12335 (Com Car. Bur.,1998)

[114] Irrespective of any of the reporting requirements that we are proposing here, we expect that communications firms will track, investigate, and correct all of their service disruptions as an ordinary part of conducting their business operations - and will do so for service disruptions that are considerably smaller than those that would trigger the reporting criteria that we propose here As a consequence we believe, in the usual case the only burden associated with the reporting requirements contained in this Notice will be the time required to complete the initial and final reports We anticipate that electronic filing, through the type of template that we have identified in Appendix B, will minimize the amount of time and effort that will be required to comply with the rules that we propose in this proceeding Electronic records and signatures are legally binding to the same extent as if they were filed by non-electronic means *See generally* Sections 101-106 of the Electronic Signatures in Global and National Commerce Act, Pub L 106-229, June 30, 2000, 114 Stat 464, codified at 15 U.S C §§ 7001-7006

[115] *See, generally,* Section 5(c) (1) of the Act, 47 U S.C § 155(c) (1), *Space Station Licensing Rules 3rd R&O, supra* note 113, at ¶ 8

proposals would produce no more than 1,000 communications outage reports filed by all communications providers annually and that the vast majority of these reports will be filed by larger businesses. Our proposals would require the reporting of outages of at least 30 minutes duration that meet specified criteria One of the criteria is that the outage potentially affects at least 900,000 user-minutes for providers of telephony and/or paging services (including wireline, cellular-type wireless, cable telephony, and satellite telephony services) Those communications providers that would qualify as "small businesses" are, we believe, highly unlikely to experience outages of sufficient magnitude to meet the user-minute criterion. If they were to experience such an outage, then a likely inference would be that a small number of users had lost service for several days duration, a situation of which we should be apprised We do not believe that it would be wise to exempt small businesses from the proposed requirements to report outages of at least 30 minutes duration that also satisfy the other proposed reporting criteria (*i e* those criteria that are not expressed in terms of user-minutes), such as the criteria of potentially affecting special facilities, offices, or services (including 911) or presenting major infrastructure failures or SS7 problems

54 We request comment on these conclusions and on any useful alternatives that we should consider that would further reduce the impact of the outage reporting requirements on small businesses We do not at this point believe that additional accommodations for small businesses are necessary, desirable, or advisable, but we will consider any such suggestions that are well supported analytically

XI. CONCLUSION

55 For the reasons stated above, we propose to modify the communications outage reporting requirements currently set forth in Section 63 100 of the Commission's Rules and move the modified rule into Part 4, which we are creating for the purpose of addressing disruptions to communications regardless of the particular technological platform employed, as well as amending Sections 0.241 and 0 31 of the Commission's Rules which delegate authority to, and describe the functions of, the Office of Engineering and Technology. These proposed rule changes are set forth in Appendix A to this Notice of Proposed Rule Making. We request comment on any other changes to our communications outage reporting rules that would eliminate inadequacies in these reporting requirements. Based upon the comments that we receive in this proceeding and on our analysis of the information that is before us, we may make such additional modifications to our existing and proposed communications outage-reporting requirements as may be necessary or desirable to fulfill, more fully, the objectives that are set forth in the Communications Act.

XII. PROCEDURAL MATTERS

A. Initial Regulatory Flexibility Act Analysis

56. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),[116] the Commission has prepared this present Initial Regulatory Flexibility Analysis Act (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in this Notice of Proposed Rulemaking (Notice) The IRFA is set forth in Appendix C. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the Notice provided in paragraph 57 of this Notice The Commission will send a copy of this Notice, including this IRFA, to the Chief Counsel for Advocacy of the Small Business

[116] *See* 5 U S C § 603 The RFA, *see* 5 U S.C §§ 601–612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub L No. 104-121, Title II, 110 Stat. 857 (1996)

Administration (SBA) [117] In addition, the Notice and IRFA (or summaries thereof) will be published in the Federal Register [118]

B. Initial Paperwork Reduction Act of 1995 Analysis

57 This Notice of Proposed Rulemaking would establish both new and modified information collections As part of our continuing efforts to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to comment on the information collections contained in this *Notice*, as required by the Paperwork Reduction Act of 1995, Pub L No 104-13. Public and agency comments are due 60 days from publication of this Notice in the Federal Register Comments should address the following. (a) whether the proposed collections of information are necessary for the proper performance of the functions of the Commission, including whether the information will have practical utility, (b) the accuracy of the Commission's burden estimates, (c) ways to enhance the quality, utility, and clarity of the information collected, and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology In addition to filing comments with the Secretary of the Commission (see *infra* paragraphs 59-60), a copy of any Paperwork Reduction Act comments on the information collections proposed herein should be submitted to Judith B Herman, Federal Communications Commission, Room 1-C804, 445 12th Street, SW, Washington, DC 20554, or via the Internet to Judith-B Herman@fcc gov and to Kristy L. LaLonde, OMB Desk Officer, Room 10236 NEOB, 725 17th Street, NW, Washington, DC 20503. or via the Internet to Kristy_L._LaLonde@omb eop.gov or by fax to 202-395-5167.

C. Comment Filing Procedures

58 Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 C F R §§ 1.415 and 1 419, interested parties may file comments on or before sixty (60) days after publication of this Notice of Proposed Rulemaking ("Notice") in the Federal Register and reply comments on or before ninety (90) days after publication of this Notice in the Federal Register Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies.

59 Comments filed through the ECFS can be sent as an electronic file via the Internet to <http //www.fcc gov/e-file/ecfs html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, U S Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address> " A sample form and directions will be sent in reply.

60 Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rulemaking number Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Natek, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D C. 20002.

[117] *See* 5 U S C § 603(a)

[118] *Id*

The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, S.W., Washington, D.C. 20554. All filings must be addressed to the Commission's Secretary, Marlene H. Dortch, Office of the Secretary, Federal Communications Commission.

61. Parties that are not filing electronically must also send three paper copies and a 3.5"diskette copy of their filings to Dwayne Jackson, Network Technologies Division, Office of Engineering and Technology, Federal Communications Commission, 445 12th Street S.W., Room 7-A226, Washington, D.C. 20554. In addition, commenters must send two (2) diskette copies to the Commission's copy contractor, Natek Inc., Portals II, 445 12th Street, S.W., Room CY-B402, Washington, D.C. 20054.

D. *Ex Parte* Presentations

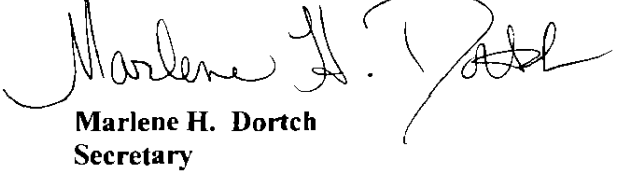
62. In accordance with Section 1.1206 of the Commission's rules, this Notice of Proposed Rulemaking initiates a permit-but-disclose notice-and-comment rulemaking proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided that they are disclosed in accordance with the Commission's rules.[119]

XIII. ORDERING CLAUSES

63. Accordingly, IT IS ORDERED THAT, pursuant to the authority contained in Sections 1, 4(i)-(j), 4(k), 4(o), 218, 219, 230, 256, 301, 302(a), 303(f), 303(g), 303(j), 303(r), 403, 621(b)(3), and 621(d) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i)-(j), 154(k), 154(o), 218, 219, 230, 256, 301, 302(a), 303(f), 303(g), 303(j), 303(r), 403, 621(b)(3), and 621(d), and in Section 1704 of the Omnibus Consolidated and Emergency Supplemental Appropriations Act of 1998, 44 U.S.C. § 3504, this Notice of Proposed Rulemaking IS ADOPTED.

64. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION



Marlene H. Dortch
Secretary

[119] *See generally* Sections 1.1200 *et seq.* of the Commission's Rules, 47 C.F.R. §§ 1.1200 *et seq.*