THE PRESIDENT'S
NATIONAL SECURITY TELECOMMUNICATIONS
ADVISORY COMMITTEE

LEGISLATIVE AND REGULATORY GROUP REPORT

SEPTEMBER 1998

LEGISLATIVE AND REGULATORY GROUP REPORT
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EXECUTIVE SUMMARY

The National Security Telecommunications Advisory Committee's (NSTAC) Industry Executive Subcommittee (IES) charged the Legislative and Regulatory Group (LRG) to examine the implementation of the Telecommunications Act of 1996 (Telecom Act) and other legislative, regulatory, and judicial actions for their potential impact on national security and emergency preparedness (NS/EP) telecommunications.[1] The LRG monitored the implementation of the Telecom Act based on a framework for analysis it established in 1997 to consider the impact of the law's implementation on NS/EP telecommunications. The LRG also monitored regulatory developments with respect to the Internet. Although the LRG's analysis to date has not revealed any significant implications that are unique to NS/EP telecommunications, the LRG plans to continue monitoring the implementation of the Telecom Act for potential effects in this area.

In addition to monitoring the implementation of the Telecom Act, the IES tasked the LRG to address several other issues following NSTAC XX.

The IES charged the LRG to examine options for enhancing communication on NS/EP telecommunications matters between and among industry, the Federal Communications Commission (FCC), and other relevant Government organizations. Numerous discussions with National Communications System (NCS), FCC, and Office of Science and Technology Policy (OSTP) staff prompted the LRG to develop procedural guidelines to help telecommunications carriers and the FCC restore critical emergency telecommunications services in a timely manner.

Also, the IES charged the LRG to continue assessing the implementation of the Network Reliability and Interoperability Council's recommendations on National Services. The LRG subsequently formed a National Services subgroup, which developed a forward-looking analytical approach to help the Government and the telecommunications industry, including the NSTAC and its subordinate groups, address the potential effects of emerging National Services on NS/EP telecommunications. The subgroup's analytical approach formed the basis of a white paper to facilitate public awareness of selected NS/EP-critical telecommunications functions and promote the continued consideration of NS/EP telecommunications requirements by the Government and the telecommunications industry during the National Services planning process.

In addition, the IES charged the LRG to review the legislative and regulatory recommendations of the President's Commission on Critical Infrastructure Protection (PCCIP) for their potential implications for NS/EP telecommunications. The LRG's analysis revealed that many of the PCCIP's legal and regulatory recommendations were consistent with previous NSTAC work and recommendations. Also, the LRG conducted a preliminary analysis of a Presidential Decision Directive on critical infrastructure protection (PDD-63), which built on the PCCIP's recommendations. Concerns raised by the LRG regarding the lack of specific roles for the NSTAC and the NCS in the Administration's new infrastructure protection policy framework were communicated to the IES and investigated by the Operations Support Group.

[1] In recognition of the ever-increasing convergence of technologies for transmitting voice and data communications, the LRG intends that references to "telecommunications" in this report refer to services capable of carrying voice (e.g., elements of the traditional public switched telephone network) or data traffic, or both.

Based on its work in the above areas, the LRG proposes the following recommendations.

Recommendations to the NSTAC

The NSTAC should task the IES to—

- continue to examine the change, complexity, and convergence issues arising from legislative, regulatory, and judicial actions driving the next-generation public network (PN) for their potential impact on NS/EP telecommunications, and

- continue assessing Government and telecommunications industry actions regarding National Services for their potential effect on NS/EP telecommunications.

Recommendation to the IES

The IES should continue to facilitate increased internal discussions among the NSTAC, NCS, OSTP, and FCC with regard to policy issues associated with resolving telecommunications emergencies in the changing environment.

1.0 INTRODUCTION

As the first major overhaul of telecommunications policy since 1934, the Telecommunications Act of 1996 (Telecom Act) redefined competition and regulation in virtually every sector of the communications industry. In response to passage of the Telecom Act and the evolving telecommunications environment, the Industry Executive Subcommittee (IES) of the National Security Telecommunications Advisory Committee (NSTAC) established the Legislative and Regulatory Group (LRG). Recognizing the Telecom Act's potential to affect national security and emergency preparedness (NS/EP) telecommunications and information services, the IES charged the LRG to examine the Telecom Act and other legislative, regulatory, and judicial actions for their possible impact on NS/EP. In 1997, the group established a framework for analysis to consider the impact of implementation of the new law on NS/EP telecommunications. In addition to monitoring implementation of the Telecom Act, the LRG addressed several other issues, including intergovernmental NS/EP telecommunications relationships, National Services, and the legal and regulatory recommendations of the President's Commission on Critical Infrastructure Protection (PCCIP).

2.0 CHARGE

Following NSTAC XX, the IES charged the LRG to—

- examine options to enhance communication on NS/EP matters between and among industry, the Federal Communications Commission (FCC), and other relevant Government organizations,
- continue to assess implementation of the Network Reliability and Interoperability Council's (NRIC) recommendations regarding National Services,
- review the final report of the PCCIP for potential legislative and regulatory implications for NS/EP telecommunications, and
- continue to assess the implications of the Telecom Act implementation on NS/EP telecommunications.

3.0 ACTIVITIES

3.1 Intergovernmental NS/EP Telecommunications Relationships

At NSTAC XIX, the Assistant to the President for Science and Technology asked the NSTAC to investigate the possibility of widespread public network outages in the newly deregulated telecommunications environment. As part of its response, the NSTAC's Network Group approached the LRG to analyze the legal and regulatory obstacles that might hinder service restoration during widespread service outages, and those findings were presented in the LRG's report to NSTAC XX. The LRG found the most significant legal and regulatory obstacle to be the uncertainty about who could expeditiously address carriers' concerns regarding their compliance with relevant laws or regulations during emergency situations.

As a result of the LRG's findings reported to NSTAC XX, the IES charged the LRG to examine options for enhancing communication on NS/EP telecommunications matters between and among industry, the FCC, and other relevant Government organizations. Toward that end, the LRG investigated the role of the FCC Defense Commissioner and the need for an NS/EP industry advisory body to the FCC, and documented the intergovernmental relationships among the FCC, National Communications System (NCS), and Office of Science and Technology Policy (OSTP) regarding NS/EP responsibilities.

3.1.1 Analysis

The LRG met with the NCS, FCC, and OSTP staffs to discuss widespread telecommunications outages and the individual and collective responsibilities of these and other agencies during telecommunications emergencies. Discussions with the agency officials prompted the LRG to work with the Network Group's Widespread Outage Subgroup (WOS) to review emergency response procedures at the FCC.

3.1.2 Conclusions

As a result of the LRG's analysis, the group found that, to date, operational relationships among the NCS, FCC, and OSTP were sufficient to address emergency telecommunications situations. However, the LRG found that the changing regulatory and market environment (e.g., deregulation, new carriers, Internet and other unregulated telecommunications services, new technologies, increased foreign ownership, and convergence) and potential emergence of new threats may challenge the existing relationships among the various agencies in the future. Also, in reviewing the white paper, *The Clinton Administration's Policy on Critical Infrastructure Protection: Presidential Decision Directive 63* (PDD-63), which outlined the key elements of the Clinton Administration's policy on critical infrastructure protection, the LRG found that PDD-63 might challenge existing relationships among the various agencies in the future.

Working jointly, the LRG and WOS determined that carriers could benefit from documentation outlining emergency telecommunications response procedures for FCC officials or telecommunications carriers. Consequently, the joint group developed procedural guidelines to help telecommunications carriers resolve issues with the FCC when critical emergency telecommunications services needed to be restored in a timely manner. (The Procedure for Problem Resolution is attached as Annex B.) Further, the LRG and WOS determined that, because of the varying nature of emergency situations, the FCC would resolve issues on a per-case basis.

3.1.3 Recommendations

3.1.3.1 Recommendation to the NSTAC

The NSTAC should task the IES to examine the change, complexity, and convergence issues arising from legislative, regulatory, and judicial actions driving the next-generation public network (PN) for their potential impact on NS/EP telecommunications.

3.1.3.2 Recommendation to the IES

The LRG recommends that the IES continue to facilitate increased discussions among the NSTAC, NCS, OSTP, and FCC with regard to policy issues associated with resolving telecommunications emergencies in the changing environment.

3.2 National Services

In July 1997, the NRIC provided the FCC with a series of recommendations aimed at improving the planning process for National Services-telecommunications services intended or required to be deployed on a national or regional basis. The LRG agreed that a National Services planning process, as conceived by the NRIC, could serve as an effective means for promoting NS/EP telecommunications requirements. Consequently, the LRG assessed what actions should be taken to ensure that NS/EP requirements were considered during such a planning process. In its report to NSTAC XX, the LRG presented its findings and recommended that the IES continue to assess the development of the NRIC recommendations regarding National Services. Following NSTAC XX, the IES charged the LRG to further assess the implementation of the NRIC's recommendations on National Services.

During the NSTAC XXI cycle, the LRG continued to track the status of the NRIC's National Services recommendations. To that end, the LRG formed the National Services Subgroup to study the implications and potential feasibility of defining NS/EP telecommunications programs as National Services. The subgroup also developed a forward-looking analytical approach to help Government and the telecommunications industry, including the NSTAC and its subordinate groups, address the potential effects of emerging National Services on NS/EP telecommunications.

3.2.1 Analysis

Initial work by the National Services Subgroup included the development of a white paper to facilitate public awareness of several NSTAC-recommended NS/EP-critical telecommunications functions, capabilities, and related prior work by Government. The objective of the white paper is to promote the continued consideration of NS/EP telecommunications service objectives by Government and the telecommunications industry during the future deployment of NS/EP National Services, and to encourage the Government and telecommunications industry to consider NS/EP-critical telecommunications services as potential National Services. (The LRG National Services Subgroup White Paper is attached as Annex C.)

3.2.2 Conclusions

The National Services Subgroup concluded that present-day advances in technology and changes in the telecommunications industry structure, largely driven by the telecommunications industry structure, have the potential to introduce further vulnerabilities into the PN and therefore complicate NS/EP telecommunications planning.

In light of these conditions, the LRG found that—

- To continue meeting NS/EP telecommunications requirements in this dynamic environment, Government and industry together might consider using the National Services planning process to support and supplement, but not replace, traditional contracting mechanisms for implementing NS/EP telecommunications services.

- Government and industry also should consider NS/EP service requirements during the National Services planning process to ensure that those requirements can be met during the implementation of any National Service.

- As the telecommunications industry and FCC apply this planning process, issues (e.g., the net impact of implementing specific candidate National Services in the PN) will surface that will likely be of interest to the LRG and other subgroups of the NSTAC's IES.

- The IES would benefit from actively contributing to the activities of the FCC (e.g., NRIC) and relevant telecommunications industry organizations (e.g., Alliance for Telecommunications Industry Solutions) related to National Services planning and implementation.

3.2.3 Recommendation

3.2.3.1 Recommendation to the NSTAC

The LRG recommends that the NSTAC task the IES to continue assessing Government and telecommunications industry actions regarding National Services for their potential effects on NS/EP telecommunications.

3.3 PCCIP Legal Recommendations and PDD-63 Review

In October 1997, the PCCIP released its final report and recommendations on protecting the Nation's critical infrastructures, including the telecommunications infrastructure. Following NSTAC XX, the IES charged the LRG to review the PCCIP's recommendations for potential legislative and regulatory implications for NS/EP telecommunications.

3.3.1 Analysis

The LRG conducted a thorough review of the PCCIP's legal and regulatory recommendations. In addition to holding several informal discussions, the LRG met with a PCCIP commissioner who outlined the legal and regulatory measures of the PCCIP's final report. Also, LRG members invited their individual companies' legal counsels to review the recommendations and to comment on potential legislative and regulatory implications for NS/EP telecommunications. The LRG found that many of the PCCIP's legal and regulatory recommendations were consistent with previous NSTAC work and recommendations.

Building on the recommendations made by the PCCIP in its final report, President Clinton, on May 22, 1998, signed PDD-63, which established a national policy framework for protecting the Nation's critical infrastructures. PDD-63, among other things, designates a lead Government

agency for each critical infrastructure and requires the appointment of a Sector Liaison Official within each of the agencies. After coordinating with the private sector, each Sector Liaison Official will identify a private sector counterpart for each infrastructure. These two individuals and the departments and companies they represent will provide sector input to a National Infrastructure Assurance Plan. The directive also tasks certain Federal agencies to lead infrastructure protection efforts across the entire Federal Government in those functional areas where the Federal Government must chiefly perform infrastructure protection activities. The directive additionally creates intergovernmental and industry-Government groups. These groups coordinate the implementation of the directive and enhance the effectiveness of public-private partnerships, respectively.

The NSTAC and NCS are longstanding and successful industry-Government and intergovernmental partnerships on NS/EP telecommunications, respectively. Operational programs such as the National Coordinating Center for Telecommunications (NCC) and the separate NSTAC and Government Network Security and Information Exchanges (NSIE) are examples of existing coordinating partnerships developed by the NCS and NSTAC that have established levels of industry-Government trust, cooperation, and information exchange critical to protecting the Nation's telecommunications infrastructure. To determine how these existing partnerships have been considered in the PDD, the LRG conducted a preliminary analysis of the PDD-63 white paper.

3.3.2 Conclusions

Based on this preliminary analysis, the LRG is concerned that the PDD-63, as reflected in the white paper—

- does not specify the role of the NSTAC in industry-Government infrastructure protection activities or in relation to private sector entities identified in the PDD (e.g., whether the NSTAC Chair would serve as the private sector liaison to the Federal Government for the information and communications infrastructure), and

- does not specify the role of the NCS in intergovernmental and industry-Government infrastructure protection activities (e.g., the relationship of the NCC to the National Infrastructure Protection Center).

In light of the LRG's concerns and the NSTAC's expertise in formulating policy advice on NS/EP matters, the IES decided to undertake a more detailed assessment of the planned implementation of PDD-63, especially as it relates to—

- Government's involvement and interaction with the private sector generally, and
- NSTAC's role in the new critical infrastructure protection structure specifically.

3.4 Implementation of the Telecommunications Act of 1996

In March 1996, the FCC established an ambitious schedule to promulgate rules implementing the Telecom Act. Because the LRG has been charged with examining legislative, regulatory, and judicial actions that potentially affect NS/EP telecommunications and information services, the

implementation of the new law has been a focal point of the LRG's ongoing work. Following NSTAC XX, implementation of the Telecom Act remained incomplete and its effects on NS/EP telecommunications had not fully been realized. As a result, the IES charged the LRG to continue assessing the implementation of the Telecom Act for its effect on NS/EP telecommunications.

3.4.1 Analysis

The LRG established a framework to analyze issues for NS/EP telecommunications arising from implementation of the new law, including, but not limited to, carrier interconnection agreements and regional Bell operating companies' (RBOC) provisioning of in-region interLATA service. (The LRG Legislative and Regulatory Analysis and Internet Matrix for NS/EP telecommunications is attached as Annex D.)

3.4.2 Conclusion

To date, the LRG's analysis of Telecom Act implementation has revealed no significant implications for NS/EP telecommunications. However, recognizing that many relevant Telecom Act issues are being considered by the courts (i.e., interconnection agreements, BOC applications for the provision of new services), the LRG decided to continue monitoring implementation of the Telecom Act for its potential effect on NS/EP telecommunications.

4.0 SUMMARY OF RECOMMENDATIONS

In summary, the LRG proposes the following recommendations:

The NSTAC should task the IES to—

- continue to examine the change, complexity, and convergence issues arising from legislative, regulatory, and judicial actions driving the next-generation PN for their potential impact on NS/EP telecommunications,

- continue assessing Government and telecommunications industry actions regarding National Services for their potential effect on NS/EP telecommunications, and

- continue to facilitate increased internal discussions among the NSTAC, NCS, OSTP, and FCC with regard to policy issues associated with resolving telecommunications emergencies in the changing environment.

ANNEX A

LEGISLATIVE AND REGULATORY GROUP MEMBERS

LEGISLATIVE AND REGULATORY GROUP MEMBERS

COMSAT	Dr. Jack Oslund, Chair
ITT	Mr. Joe Gancie, Vice-Chair
NTA	Mr. Bob Burns, Vice-Chair
AT&T	Mr. Dave Bush
CSC	Mr. Guy Copeland
GTE	Mr. Scott Randolph
Hughes	Ms. Jennifer Smolker
Lockheed Martin	Mr. Tom Brownell
MCI	Mr. Rein Kiewel
Motorola	Mr. Glenn Whited
Nortel	Mr. Raymond Strassburger
Rockwell	Mr. Ken Kato
Teledesic	Mr. Gordon Booker
USTA	Dr. Vern Junkmann

INDUSTRY PARTICIPANTS

Bellcore	Ms. Louise Tucker
GTE	Ms. Ernestine Gormsen
SAIC	Mr. Hank Kluepfel

ANNEX B

PROCEDURE FOR PROBLEM RESOLUTION WITH THE FCC AND NCC DURING EMERGENCY TELECOMMUNICATIONS DISRUPTIONS

THE PRESIDENT'S
NATIONAL SECURITY TELECOMMUNICATIONS
ADVISORY COMMITTEE

LEGISLATIVE AND REGULATORY GROUP

Procedure for Problem Resolution with the Federal Communications Commission and the National Coordinating Center for Telecommunications During Emergency Telecommunications Disruptions

SEPTEMBER 1998

Procedure for Problem Resolution with the Federal Communications Commission (FCC) and the National Coordinating Center for Telecommunications (NCC) During Emergency Telecommunications Disruptions

Background

During past major telecommunications disruptions, regulatory issues have arisen causing a delay in the provision and restoration of critical emergency telecommunications services.

Purpose

This document outlines a procedure for seeking to resolve regulatory issues with the Federal Communications Commission (FCC), on an expedited basis, which will minimize delays in the provision and restoration of emergency telecommunications services during major service disruptions. This procedure is intended for use during and outside of normal business hours.

Procedure

1. If a telecommunications licensee or carrier encounters situations or has questions concerning the provision and restoration of certain emergency telecommunications services involving FCC jurisdiction (Title 47 of the *Code of Federal Regulations*) during real-time service disruptions, the licensee or carrier should contact the FCC Communications and Crisis Management Center (CCMC) for assistance in resolving the issue. (See Appendix A for the CCMC mission statement.)

   [Title 47 of the *Code of Federal Regulations*, Parts 27 (addressing application, licensing, and processing rules for wireless communications service), 63 (regarding extension of lines and discontinuance, reduction, outage, and impairment of service by common carriers), 73 (regarding rules applicable to radio broadcast stations), and 76 (regarding rules applicable to cable TV service) pertain to the FCC's emergency situation responsibilities and are attached respectively as Appendices C, D, E, and F.]

   Contact information for the FCC CCMC is as follows:

   Communications and Crisis Management Center
   Compliance and Information Bureau
   Federal Communications Commission
   1919 M Street, NW Room 749
   Washington, DC 20554

   Voice: (202) 632-6975
   Fax: (202) 418-2813
   Email: commctr@fcc.gov
   http://www.fcc.gov
   Telex: (202) 418-2372

2. The telecommunications licensee or carrier should also advise the National Coordinating Center for Telecommunications (NCC) of its concerns. (See Appendix B for the NCC mission statement.) The NCC will assist as appropriate.

Contact information for the National Coordinating Center for Telecommunications is as follows:

National Coordinating Center for Telecommunications
National Communications System
701 South Courthouse Road
Arlington, VA 22204-2198

Voice: (703) 607-4900
Fax: (703) 607-4998
Email: ncs@ncs.gov
http://www.ncs.gov/ncc/

This document formalizes an existing procedure for resolving regulatory issues with the FCC.

Signed:_____ Date: _____

Richard D. Lee
Chief
Compliance and Information Bureau
Federal Communications Commission

APPENDIX A

FCC Communications and Crisis Management Center (CCMC) Mission Statement

The CCMC is the U.S. centralizing office for international radio interference resolution. The CCMC coordinates resolution of radio interference affecting safety of life and law enforcement activities and is the 24-hour operational coordinator for resolution of radio interference problems and queries for FCC licensees, as well as local, State, and Federal Government. The CCMC is the liaison for international radio interference queries. The center also maintains an around-the-clock interface with the Department of Justice National Crime Information Center (NCIC) network.

Also, the CCMC serves as the point of contact for reporting telecommunications outages to the FCC per Title 47 of the *Code of Federal Regulations*, Part 63.100. (See Appendix D for Part 63.100.)

APPENDIX B

National Coordinating Center for Telecommunications (NCC) Mission Statement

The NCC is a joint industry Government operation. The NCC is staffed with representatives from the U.S. telecommunications industry and Federal Government agencies responsible for responding to the Federal Government's national security and emergency preparedness (NS/EP) telecommunications service requirements. The mission of the NCC is to assist in the initiation, coordination, restoration, and reconstitution of NS/EP telecommunications services.

APPENDIX C

CODE OF FEDERAL REGULATIONS
TITLE 47—TELECOMMUNICATION
CHAPTER 1—FEDERAL COMUNICATIONS COMMISSION
SUBCHAPTER B—COMMON CARRIER SERVICES
PART 27—WIRELESS COMMUNICATIONS SERVICE
SUBPART E—APPLICATION, LICENSING, AND PROCESSING RULES FOR WCS
Current through May 1, 1998

§27.314 Application for temporary authorizations.

In circumstances requiring immediate or temporary use of facilities, request may be made for special temporary authority (STA) to operate new or modified equipment. Such requests may be submitted as informal applications (see §22.105 of this chapter) and must contain complete details about the proposed operation and the circumstances that fully justify and necessitate the grant of STA. Such requests should be filed in time to be received by the FCC at least 10 days prior to the date of proposed operation or, where an extension is sought, 10 days prior to the expiration date of the existing STA. Requests received less than 10 days prior to the desired date of operation may be given expedited consideration only if compelling reasons are given, in writing, for the delay in submitting the request. Otherwise, such late-filled requests are considered in turn, but action might not be taken prior to the date of operation. Requests for STAs must be accompanied by the proper filing fee.

(a) Grant without Public Notice. STAs may be granted without being listed in a Public Notice, or prior to 30 days after such listing, if:

(1) The STA is to be valid for 30 days or less and the applicant does not plan to file an application for regular authorization of the subject operation;
(2) The STA is to be valid for 60 days or less, pending the filing of an application for regular authorization of the subject operation;
(3) The STA is to allow interim operation to facilitate completion of authorized construction or to provide substantially the same service as previously authorized; or
(4) The STA is made upon a finding that there are extraordinary circumstances requiring operation in the public interest and that delay in the institution of such service would seriously prejudice the public interest.

Limit on STA term. The FCC may grant STAs valid for a period not to exceed 180 days under the provisions of section 309(f) of the Communications Act of 1934, as amended, (47 U.S.C. section 309(f)) if extraordinary circumstances so require, and pending the filing of an applications for regular operation. The FCC may grant extensions of STAs for a period of 180 days, but the applicant must show that extraordinary circumstances warrant such an extension.

APPENDIX D

CODE OF FEDERAL REGULATIONS
TITLE 47—TELECOMMUNICATION
CHAPTER 1—FEDERAL COMUNICATIONS COMMISSION
SUBCHAPTER B—COMMON CARRIER SERVICES
PART 63—EXTENSION OF LINES AND DISCONTINUANCE, REDUCTION, OUTAGE, AND IMPAIRMENT OF SERVICE BY COMMON CARRIERS; AND GRANTS OF RECOGNIZED PRIVATE OPERATING AGENCY STATUS EXTENSIONS AND SUPPLEMENTS
Current through May 1, 1998

§63.04 Special provisions relating to temporary or emergency service.

(a) For the purpose of this section the following definitions shall apply:

(1) "Temporary service" shall mean service for a period not exceeding 6 months;
(2) "Emergency service" shall mean service for which there is an immediate need occasioned by conditions unforeseen by, and beyond control of, the carrier.

(b) Requests for immediate authority for temporary service or for emergency service may be made by letter or telegram setting forth why such immediate authority is required, the nature of the emergency, the type of facilities proposed to be used, the route kilometers thereof, the terminal communities to be serviced, the airline kilometers between such communities; how these points are presently being served by the applicant or other carriers; the need for the proposed service, the cost involved including any rentals, the date on which the service is to begin, and where known, the date or approximate date on which the service is to terminate.

(c) Without regard to the other requirements of this part, and by application setting forth the need therefor, any carrier may request continuing authority, subject to termination by the Commission at any time upon 10 days' notice to the carrier, to provide temporary or emergency service by the construction or installation of facilities where the estimated construction, installation, or acquisition costs do not exceed $35,000 or an annual rental of not more than $7,000 provided that such project does not involve a major action under the Commission's environmental rules. (See Subpart 1 of Part 1 of this chapter.) Any carrier to which continuing authority has been granted under this paragraph shall, not later than the 30th day following the end of each 6-month period covered by such authority, file with the Commission a statement in writing making reference to this paragraph and setting forth, with respect to each project (construction, installation, lease, including any renewals thereof), which was commenced or, in the case of leases, entered into under such authority, and renewal or renewals thereof which were in continuous effect for a period of more than one week, the following information:

(1) The type of facility constructed, installed, or leased;
(2) The route kilometers thereof (excluding leased facilities);
(3) The terminal communities served and the airline kilometers between terminal communities in the proposed project;
(4) The cost thereof, including construction, installation, or lease;
(5) Where appropriate, the name of the lessor company, and the dates of commencement and termination of the lease.

(d)(1) A request may be made by any carrier for continuing authority to lease and operate, during any emergency when its regular facilities become inoperative or inadequate to handle its traffic, facilities or any other carrier between points between which applicant is authorized to communicate by radio for the transmission of traffic which applicant is authorized to handle.

(2) Such request may be made by letter or telegram making reference to this paragraph and setting forth the points between which applicant desires to operate facilities of other carriers and the nature of the traffic to be handled thereover.

(3) Continuing authority for the operation thereafter of such alternate facilities during emergencies shall be deemed granted effective as of the 21st day following the filing of the request unless on or before that date the Commission shall notify the applicant to the contrary: provided, however, Applicant shall, not later than the 30th day following the end of each quarter in which it has operated facilities of any other carrier pursuant to authority granted under this paragraph, file with the Commission a statement in writing making reference to this paragraph and describing each occasion during the quarter when it has operated such facilities, giving dates, points between which such facilities were located, hours or minutes used, nature of traffic handled, and reasons why its own facilities could not be used.

[28 FR 13229, Dec. 5, 1963, as amended at 41 FR 20662, May 20, 1976; 58 FR 44906, Aug. 25, 1993]

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§63.100 Notification of service outage.

(Subsections (a), (b), (e), (f), (g), and (h) omitted.)

(c) Any local exchange or interexchange common carrier or competitive access provider that operates transmission or switching facilities and provides access service or interstate or international telecommunications service, that experiences an outage which potentially affects at least 30,000 and less than 50,000 of its customers on any facilities which it owns, operates or leases, must notify the Commission if such outage continues for 30 or more minutes. Satellite carriers and cellular carriers are exempt from this reporting requirement. Notification must be served on the Commission's Duty Officer, on duty 24 hours a day in the FCC's Communications and Crisis Management Center in Washington, DC. Notification may be served on the Commission's Watch Officer on duty at the FCC's Columbia Operations Center in Columbia, MD, or at such other facility designated by the Commission by regulation or (at the time of the emergency) by public announcement only if there is a telephone outage or similar emergency in Washington, DC. The notification must be by facsimile or other record means delivered within 3 days of the carrier's first knowledge that the service outage potentially affects at least 30,000 but less than 50,000 customers, if the outage continues for 30 or more minutes.

Notification shall identify the carrier and 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 including: the date and estimated time (local time at the location of the outage) of commencement of the outage; the geographic area affected; the estimated number of customers affected; the types of services affected (e.g. interexchange, local, cellular); the duration of the outage, i.e. time elapsed from the estimated commencement of the outage until restoration of full service; the estimated number of blocked calls during the outage; the apparent or known cause of the incident, including the name and type of equipment involved and the specific part of the network affected; methods used to restore service; and the steps taken to prevent recurrences of the outage. When specifying the types of services affected by any reportable outage, carriers must indicate when 911 service was disrupted and rerouting to alternative answering locations was not implemented. The report shall be captioned Initial Service Disruption Report. Lack of any of the above information shall not delay the filing of this report. Not later than thirty days after the outage, the carrier shall file with the Chief, Common Carrier Bureau, a Final Service Disruption Report providing all available information on the service outage, including any information not contained in its 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.

APPENDIX E

CODE OF FEDERAL REGULATIONS
TITLE 47—TELECOMMUNICATION
CHAPTER 1—FEDERAL COMUNICATIONS COMMISSION
SUBCHAPTER C—BROADCAST RADIO SERVICES
PART 73—RADIO BROADCAST SERVICES
SUBPART H—RULES APPLICABLE TO ALL BROADCAST STATIONS
Current through May 1, 1998

§73.1250 Broadcasting emergency information.

(a) Emergency situations in which the broadcasting of information is considered as furthering the safety of life and property include, but are not limited to the following: Tornadoes, hurricanes, floods, tidal waves, earthquakes, icing conditions, heavy snows, widespread fires, discharge of toxic gases, widespread power failures, industrial explosions, civil disorders, and school closing and changes in school bus schedules resulting from such conditions. See also §73.3542, Application for Emergency Authorization, for requirements involving emergency situations not covered by this section for which prior operating authority must be requested.

(b) If requested by responsible public officials, a station may, at its discretion, and without further FCC authority, transmit emergency point-to-point messages for the purpose of requesting or dispatching aid and assisting in rescue operations.

(c) If the Emergency Alert System (EAS) is activated for a national emergency while a Local Area or State emergency operation is in progress, the national level EAS operation must take precedence. If, during the broadcasting of Local Area or State emergency information, the EAS codes or Attention Signal described in §11.12 of this chapter are used, the broadcasts are considered as being carried out under a Local Area or State EAS plan.

(d) Any emergency operation undertaken in accordance with this section may be terminated by the FCC if required in the public interest.

(e) Immediately upon cessation of an emergency during which broadcast facilities were used for the transmission of point-to-point messages under paragraph (b) of this section, or when daytime facilities were used during nighttime hours by an AM station in accordance with paragraph (f) of this section, a report in letter form shall be forwarded to the FCC in Washington, D.C., setting forth the nature of the emergency, the dates and hours of the broadcasting or emergency information, and a brief description of the material carried during the emergency. A certification of compliance with the noncommercialization provision of paragraph (f) of this section must accompany the report where daytime facilities are used during nighttime hours by an AM station, together with a detailed showing, under the provisions of that paragraph, that no other broadcast service existed or was adequate.

(f) AM stations may, without further FCC authority, use their full daytime facilities during nighttime hours to broadcast emergency information (examples listed in paragraph (a) of this section), when necessary to the safety of life and property, in dangerous conditions of a general nature and when adequate advance warning cannot be given with the facilities authorized. Because of skywave interference impact on other stations assigned to the same channel, such operation may be undertaken only if regular, unlimited-time service, is non-existent, inadequate from the standpoint of coverage, or not serving the public need. All operation under this paragraph must be conducted

on a noncommercial basis. Recorded music may be used to the extent necessary to provide program continuity.

(g) Broadcasting of emergency information shall be confined to the hours, frequencies, powers and modes of operation specified in the station license, except as otherwise provided for AM stations in paragraph (f) of this section.

(h) Any emergency information transmitted by a TV station in accordance with this section shall be transmitted both aurally and visually or only visually. TV stations may use any method of visual presentation which results in a legible message conveying the essential emergency information. Methods which may be used include, but are not necessarily limited to, slides, electronic captioning, manual methods (e.g., hand printing) or mechanical printing processes. However, when an emergency operation is being conducted under a national, State, or Local Area Emergency Alert System (EAS) plan, emergency information shall be transmitted both aurally and visually unless only the EAS codes are transmitted as specified in §11.51(b) of this chapter.

[43 FR 45847, Oct. 4, 1978; 50 FR 30947, July 31, 1985; 59 FR 67102, Dec. 28, 1994; 60 FR 56000, Nov. 6, 1995]

APPENDIX F

CODE OF FEDERAL REGULATIONS
TITLE 47—TELECOMMUNICATION
CHAPTER 1—FEDERAL COMUNICATIONS COMMISSION
PART 76—CABLE TELEVISION SERVICES
SUBPART B—REGISTRATION STATEMENTS

§76.29 Special temporary authority.

(a) In circumstances requiring the temporary use of community units for operations not authorized by this Commission's rules, a cable television system may request special temporary authority to operate. The Commission may grant special temporary authority upon a finding that the public interest would be served thereby, for a period not to exceed ninety (90) days, and may extend such authority, upon a like finding, for one additional period, not to exceed ninety (90) days.

(b) Requests for special temporary authority may be submitted informally, by letter, and shall contain the following:

(1) Name and address of the applicant cable system.
(2) Community in which the community unit is located.
(3) Type of operations to be conducted.
(4) Date of commencement of proposed operations.
(5) Duration of time for which temporary authority is required.
(6) All pertinent facts and considerations relied on to demonstrate the need for special temporary authority and to support a determination that a grant of such authority would serve the public interest.
(7) A certificate of service on all interested parties.

(c) A request for special temporary authority shall be filled at least ten (10) days prior to the date of commencement of the proposed operations, or shall be accompanied by a statement of reasons for the delay in submitting such request.

(d) A grant of special temporary authority may be rescinded by the Commission at any time upon a finding of facts which warrant such action.

ANNEX C

LEGISLATIVE AND REGULATORY GROUP NATIONAL SERVICES SUBGROUP WHITE PAPER

THE PRESIDENT'S
NATIONAL SECURITY TELECOMMUNICATIONS
ADVISORY COMMITTEE

LEGISLATIVE AND REGULATORY GROUP

National Services Subgroup White Paper

SEPTEMBER 1998

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1.0 INTRODUCTION

In response to the requirements placed on it by the Telecommunications Act of 1996 (Telecom Act), the Federal Communications Commission (FCC) solicited the advice of the Network Reliability and Interoperability Council (NRIC) on how best to oversee coordinated network planning by the telecommunications industry. In 1997, the NRIC provided the FCC with a series of recommendations aimed at improving the National Services planning and implementation process. The Legislative and Regulatory Group (LRG) of the President's National Security Telecommunications Advisory Committee (NSTAC) recommended at NSTAC XX that the NSTAC assess the implementation of the NRIC's National Services recommendations on an ongoing basis to ensure that national security and emergency preparedness (NS/EP) related issues were considered.

To help the Government and the telecommunications industry, including the NSTAC and its subordinate groups, address the potential effects of emerging National Services on NS/EP telecommunications, this paper provides an analytical approach that—

- facilitates public awareness of selected NS/EP-critical telecommunications functions, capabilities, and related prior work by Government, the NSTAC, and the telecommunications industry,

- promotes the continued consideration of NS/EP telecommunications service objectives—particularly call recognition, call completion, and redundancy—by Government and the telecommunications industry during the future deployment of National Services, and

- encourages the Government and the telecommunications industry to consider NS/EP-critical telecommunications services as potential National Services.

With this approach, the LRG does not intend to advocate a particular position on such additional (and likely more contentious) issues regarding National Services development and implementation, such as funding burdens and mandatory versus voluntary service offerings. The LRG recognizes, however, that such complex issues must be addressed during the planning for any National Service.

2.0 BACKGROUND

2.1 National Services

"National Service" designates a telecommunications service intended or required to be deployed on a national or widespread basis in the public networks (PN).[1] This designation is only a notional definition; planning for each National Service will probably begin with the development of a unique service definition that provides the feature characteristics for that particular service,

[1] Numerous widely available services are recognized as National Services. Network Reliability and Interoperability Council (NRIC Report), *Network Interoperability: The Key to Competition*, section 4.2.1, "Key Learnings," July 15, 1997 (NRIC Report) (available at http://www.fcc.gov/oet/nric).

including its geographic scope (e.g., nationwide), service provider scope (e.g., all cellular providers), backward compatibility requirements, and the extent of interconnection and interoperability required.[2] National Services are deployed according to industry-led planning and standards-setting processes designed to promote service interoperability across the PN. These planning and standards processes typically evaluate many network architectural alternatives, including National Services' effects on operations support activities, network switching, and transmission elements.

Before the Telecom Act, AT&T (pre-divestiture) and the Regional Bell Operating Companies and other established carriers (post-divestiture) conducted de facto planning for nationally available services. The Telecom Act's procompetition, deregulation-oriented policy framework for the Nation's telecommunications industry, however, has complicated National Services planning. Increased interconnection to the PN and technological innovations have heightened Government and industry's concern about whether the services (including National Services) offered in this new procompetition environment will be both interoperable and reliable.

The FCC, in response to these concerns and to the requirements placed on it by Section 256 of the Telecom Act, "Coordination for Interconnectivity," revised the charter of the Network Reliability Council (NRC), its Federal advisory committee. This Council was chartered with advising the Commission on how it might best establish procedures to oversee coordinated network planning by telecommunications service providers.[3] The FCC also changed the council's name to the "Network Reliability and Interoperability Council" to reflect this new mission.

On July 15, 1997, the NRIC released a report recommending ways the FCC and industry should address various interoperability and reliability issues affecting the PN in the deregulated environment fostered by the Telecom Act.[4] In its report, the NRIC noted, among other observations, that the newly expanded telecommunications industry had minimal experience planning and implementing National Services in a deregulated environment. The NRIC consequently made a series of recommendations aimed at maintaining the reliability and interoperability of National Services. These recommendations included the telecommunications industry's adherence to a series of open and closed forum National Services planning, design, and implementation activities designed to balance industry's need to protect proprietary information with the need to ensure that industry cooperation was maintained throughout the process.[5] The NRIC also recommended that the FCC develop a short list of National Services during the planning stage of the process.[6]

[2] Ibid., section 4.2.2.1, "Service Definition for National Services."
[3] This section requires, among other things, that the FCC establish procedures to oversee coordinated network planning by telecommunications service providers and permits the FCC to participate in developing PN interconnectivity standards by appropriate industry standards-setting bodies.
[4] NRIC Report, *Network Interoperability: The Key to Competition.*
[5] Ibid., section 4, "Interoperability Planning."
[6] Ibid., section 7.1.2.2.

2.2 NSTAC Action Regarding National Services

The NRIC's report led the NSTAC's LRG to consider whether the telecommunications industry's implementation of the NRIC's National Services planning recommendations could preserve, and even enhance, the reliability and interoperability of NS/EP telecommunications. In a report to NSTAC XX (December 11, 1997), the LRG concluded that industry's implementation of the NRIC's National Services planning recommendations could be an effective means for recognizing and promoting NS/EP telecommunications service requirements. The LRG determined that implementation of the NRIC's recommendations could help ensure that NS/EP services would be reliable, interoperable, and available on a widespread basis during crisis situations.[7] The LRG also concluded that the Office of the Manager, National Communications System (OMNCS), should play an active role in the National Services planning process on behalf of the entire NS/EP telecommunications community.[8]

The FCC has not yet developed a short list of National Services, as the NRIC recommended. Although the LRG found that the National Services planning process might positively benefit NS/EP telecommunications, there is a concern that some prospective participants and technological requirements resulting from this process may fail to recognize how certain NS/EP-critical telecommunications services might be negatively affected by the development of National Services [e.g., local number portability (LNP)]. There is an additional concern that NS/EP-critical services might be overlooked as potential National Services candidates. In anticipation of FCC action on National Services, the LRG has developed this white paper to facilitate potential participants' awareness of selected NS/EP-critical telecommunications functions and services as the planning process moves forward.

3.0 DISCUSSION

3.1 Increasing Awareness

In an early effort to raise awareness of the NS/EP problems associated with the changing telecommunications industry, a committee of NRC completed a report in 1989 entitled, *The Growing Vulnerability of the Public Switched Networks: Implications for National Security Emergency Preparedness*. The NRC identified and considered the implications of two opposing trends in network development-a trend toward the provision of many networks and a trend toward decreasing interoperability and restorability of networks during emergencies. The NRC made a series of recommendations based on the trends. Although the recommendations were contentious, they were effective in highlighting the problems associated with the evolving telecommunications environment. Essentially, the council discovered that the network

[7] The LRG's effort was not the first attempt to link network reliability and emergency preparedness issues. The FCC in 1994 asked the NRIC's predecessor, the Network Reliability Council, to provide guidelines for improving access to telecommunications services for emergency services. The Network Reliability Council's findings are documented in its February 1996 report, *Network Reliability: The Path Forward* (available at http://www.fcc.gov/oet/nrc).

[8] See *Reports Submitted for NSTAC XX*, Volume II, Legislative and Regulatory Group Report, Annex C, Legislative and Regulatory Group Issue Paper: Review of the Network Reliability and Interoperability Council's Recommendations Concerning "National Services." Copies of the reports are available from the OMNCS, 701 South Courthouse Road, Arlington, Virginia, 22204-2198 (http://www.ncs.gov).

vulnerabilities developing because of changes in network regulation, technology, competition, and customer demand were not significantly offset at that time by any trends that would counter those vulnerabilities. The NSTAC tasked their Industry Executive Subcommittee (IES) to establish the NRC Task Force to evaluate the NRC report. The task force's findings supported the NRC's conclusion that the PN had vulnerabilities, but found that advances in technology and the benefits of a competitive telecommunications market would continue to enhance the ability of industry to respond to daily operations and emergency situations.[9] Further, the task force found that the competitive telecommunications industry's application of advanced technologies would help reduce vulnerabilities and would contribute to a more resilient PN.[10] (The various activities of the NSTAC since that time related to network reliability and security have sought to develop and assess the need for countermeasures.)

Given the dynamic state of today's telecommunications industry, it has become increasingly important to raise awareness of selected NS/EP-critical telecommunications functions. Although evolving telecommunications technologies provide an expanding array of services and features and facilitate network robustness, these same technologies can introduce vulnerabilities that could adversely affect the reliability and availability of telecommunications services, including NS/EP services.[11] For example, deregulation has resulted in an increased number of carriers (see Table 1), new technologies, and network growth. The subsequent competition has reduced the incentives for some providers to build redundancy into their networks, while technologies have driven network assets into fewer, and more critical network nodes. NS/EP issues, however, have not stimulated deployment of network assets that address the full range of NS/EP contingencies.[12]

It is imperative, therefore, that NS/EP telecommunications objectives be pursued in the context of the procompetition, deregulatory framework the Telecom Act created. Independent of a Government mandate, maintaining critical NS/EP telecommunications features will require an increased reliance on voluntary standards setting by industry stakeholders, as advocated by the NRIC. Facilitating public awareness and continued industry support of selected NS/EP-critical telecommunications functions, capabilities, and related efforts, is key to obtaining industry's voluntary participation.

[9] *Reports Submitted for NSTAC XII*, National Research Council Report Task Force, *NRC Task Force Final Report*, May 1990.
[10] Ibid.
[11] *Reports Submitted for NSTAC XX*, Volume I, Network Group Widespread Outage Subgroup Report, *Report on the Likelihood of a Widespread Telecommunications Outage*, p. 5. Copies of the report are available from the OMNCS (http://www.ncs.gov).
[12] See, e.g., *Reports Submitted for NSTAC XX*, Volume I, Network Group Widespread Outage Subgroup Report, *Report on the Likelihood of a Widespread Telecommunications Outage*.

Table 1
Number of Carriers Reporting by Type of Carrier, 1993 to 1996

Telecommunications Industry Classification	Number of Carriers Reporting			
	1993	1994	1995	1996
Local Exchange Carriers (LEC)	1,281	1,347	1,347	1,371
Competitive Access Providers (CAP)/ Competitive Local Exchange Carriers (CLEC)	20	30	57	109
Cellular & Personal Communications Services (PCS)	798	790	792	804
Mobile Service Carriers & Paging	126	117	138	172
Interexchange Carriers (IEC)	83	97	130	143

Source: FCC Telecommunications Relay Service Fund Worksheets 1993-1996.
Notes: Categories do not include resellers, Internet service providers, or enhanced service providers. Figures for 1997 were unavailable at the date of publication of this paper.

3.2 Review of Prior NSTAC Work on NS/EP Technical Features

In addition to the NSTAC's response to the NRC report noted previously, in June 1990 the NSTAC's IES charged the Funding and Regulatory Working Group (FRWG) (later the LRG) to investigate NS/EP issues affecting assured access to the PN. The group determined that assured access, defined as the NS/EP caller's ability to search for an alternative long distance carrier in an emergency situation, was only one component of the Government's need for enhanced NS/EP call completion. Consequently, the FRWG recommended that the NSTAC establish the Enhanced Call Completion (ECC) Task Force to further investigate the issue and to more accurately define the Government's enhanced NS/EP calling requirements.

In December 1990, the NSTAC acted on the FRWG recommendation and formed the ECC Task Force. The IES charged the task force to investigate the technical feasibility of enhancing call completion for NS/EP users during periods of PN congestion or damage. The task force's investigation focused on providing NS/EP calls with preferential treatment on the PN. To that end, the task force considered features and capabilities to enhance end-to-end NS/EP call completion. During its 18-month investigation, the ECC Task Force identified 23 current or planned enhanced call completion features and defined their NS/EP application, availability, and acquisition procedures. Later, the task force identified regulatory, competitive, and standards issues with the potential to impede implementation of the 23 ECC features. In 1992, the NSTAC

deactivated the ECC Task Force and established an ad hoc group to work with the Government to advocate and support approval of the High Probability of Call Completion (HPC)[13] standard, investigate potential ECC regulatory issues with the FRWG, and implement ECC network capabilities.[14]

In response to an NSTAC XIV recommendation from the ECC Task Force, the Executive Office of the President issued a memorandum to the NCS Executive Agent on April 14, 1993, directing the NCS to work with the FRWG to investigate potential regulatory issues arising from the implementation of ECC attributes. In particular, the FRWG investigated the regulatory aspect of per-call priority service by common carriers and in November 1993, through the NCS, requested a declaratory ruling from the FCC to clarify the legality of carriers' provisioning per-call priorities over the PN. While the request was pending, lawful tariffs implementing the federally managed Government Emergency Telecommunications Service (GETS) program went into effect. Because per-call priority treatment is a feature of the GETS program, the pending request for a declaratory ruling was dismissed as moot in August 1995. Shortly thereafter, the NSTAC disbanded the ad hoc group.

3.3 ECC Services Implementation Status

In August 1993, the NCS launched an aggressive campaign to promote awareness of planned acquisition activities for the 23 ECC services that the NSTAC's ECC Task Force had identified. In its *ECC Services Implementation Strategy*, the NCS noted that a uniform implementation approach for all the ECC services was infeasible, mainly because of the broad range of capabilities required and the carriers' inconsistent tariffs or costs for offering the services.[15]

In recognition of the challenges to implementing an overarching strategy, the NCS adopted the following three-part strategy:

- Nationwide services affecting all NS/EP calls would be contractually acquired from the IECs and the integration contractor participating in the GETS program.

- Site-specific access and egress enhancements would be acquired and implemented through the individual user agency telecommunications manager or user agency programmed upgrade.

- Services relating to alternative or newly developed technologies would be further developed or engineered into new or supplemental programs for future implementation through the NCS planning process.[16]

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[13] The ECC Task Force determined the importance of the HPC standard in implementing the NS/EP call identifier to provide call-by-call preferential treatment and to enhance existing PN features. The Government obtained approval of the HPC standard, which was published as American National Standards Institute T1.631 in August 1993. ECC Task Force, *Final Report of the Enhanced Call Completion (ECC) Task Force* (July 1992). Copies can be obtained from the OMNCS.

[14] *Final Report of the ECC Task Force*.

[15] NCS, "ECC Services Implementation Strategy," August 18, 1993.

[16] Ibid.

Several ECC services have been successfully implemented since the NCS began adhering to its strategy in 1993. AT&T, MCI, and Sprint, for example, provide the special application of and exemption from network management controls under contract as part of the GETS program. Priority dial tone, local exchange carrier (LEC) bypass, alternative carrier routing, and diverse routing are available in various LEC networks. Additionally, many NS/EP customers have implemented services such as dual homing at their respective facilities.

Despite these successes, the Government's NS/EP telecommunications capability lags advances in technology to varying degrees. For example, measures to override network management controls for the benefit of NS/EP calls have yet to be implemented universally among LECs (e.g., LECs that participate in the GETS program offer automatic call rerouting services only in certain locations). Other services from the ECC Task Force's original list (e.g., position locating and tracking in cellular systems) to date have not been made available at all in the PN.[17]

3.4 The Significance of National Services to NS/EP

In accordance with the NSTAC XXI work plan, the LRG is investigating the legislative and regulatory implications of ECC-like services against the backdrop of the NRIC's National Services planning process. (See Appendix B.) Specifically, the LRG is monitoring FCC and telecommunications industry activities for their potential effects on NS/EP telecommunications service capabilities and requirements and is studying the feasibility of further defining NS/EP telecommunications programs as potential National Services.

The telecommunications industry should consider current ECC and ECC-like service capabilities and shortfalls as it implements the NRIC's National Services planning recommendations. One challenge that must be met is to ensure that the reliability of the NS/EP services being deployed in the PN are not degraded by the future introduction of National Services and the continuing evolution of telecommunications technologies. At a minimum, meeting this challenge will require that new National Services and other technologies interoperate with existing NS/EP-critical services. Such interoperability is critical for maintaining the present level of availability of these NS/EP services to the NS/EP community.

The proposed National Services planning process could become a vehicle for securing the deployment of NS/EP telecommunications services in today's deregulated environment. Before the Telecom Act, legal and regulatory restrictions governing the telecommunications industry resulted in a relatively finite number of telecommunications carriers from which the Government could affordably purchase ECC and other NS/EP-critical services and receive relatively comprehensive service coverage. Moreover, the Government could be confident of the quality of service it received in the previous regulatory environment because the carriers with whom it contracted generally had reliable track records.

[17] Note that the FCC recently upheld a deadline of October 1, 2001, when certain classes of wireless carriers were required to identify the location of mobile units making 911 calls within a radius of no more than 125 meters. See *In the Matter of Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling System* (CC Docket No. 94-102) (December 1, 1997). See the *Final Report of the ECC Task Force* for detailed discussions of each of the services mentioned in this paragraph.

In the post-Telecom Act environment, however, the increase in number and type of new telecommunications service providers could make maintaining a similar level of coverage solely through contractual agreements prohibitively burdensome and inefficient. Additionally, increases in the numbers and types of carriers not subject to regulation (including performance standards) could make it difficult for NS/EP customers to accurately assess the quality of services received.

3.5 Key NS/EP Telecommunications Service Objectives

The earliest stages of the National Services planning process will likely involve high-level discussions among the major public and private sector stakeholders to define specific services as National Services. The NS/EP community, as a recommended participant in this process, may consider NS/EP services during these discussions in the context of broad NS/EP service objectives. The following sections discuss three such objectives—call recognition, call completion, and redundancy.

3.5.1 Call Recognition

Call recognition, or NS/EP call identifier capability, identifies an NS/EP call, accompanies that call through the PN, and enables that call to receive preferential treatment. Call recognition prompts operational elements of the PN to differentiate between NS/EP calls and general public calls and provides NS/EP calls with special handling in signaling, switching, and traffic routing. Call recognition can be implemented through various means, including automatic number identification and a personal identification number (PIN) for an NS/EP caller. In addition to providing call-by-call preferential treatment, call recognition can be used in conjunction with other PN features to enhance call completion.[18] NS/EP call recognition is offered for calls placed through the GETS program via the PIN method and adherence to the HPC standard.[19]

3.5.2 Call Completion

Call completion refers generally to the extent to which NS/EP users can complete calls over the PN without delay during periods of network damage or congestion.[20] For NS/EP users, the optimal level of call completion would be achieved when NS/EP-identified calls are given call-by-call, end-to-end priority treatment over general public calls in the PN. Many technical features exist to enhance call completion that depend on or are improved by the presence of call recognition features. Enhanced alternate routing within IEC and LEC networks, and trunk queuing are two examples.[21] Other features that do not depend on NS/EP call identifiers, such as IEC presubscription override and priority dial tone, can also enhance call completion.[22]

[18] *ECC Task Force Report*, 1992, p. 4-1.
[19] NCS, "Government Emergency Telecommunications Service (GETS)" (fact sheet) (www.ncs.gov/nc-pp/html/new-gets.html). See *ECC Task Force Report*, p. 4-2, for a discussion of the HPC standard.
[20] *ECC Task Force Report*, p. 1-2.
[21] Ibid., 1992, p. 5-1.
[22] Ibid., 1992, p. 5-9.

3.5.3 Redundancy

The implementation of call recognition and call completion features alone will not ensure the availability and reliability of NS/EP telecommunications. Increasing public reliance on fewer transmission technologies (e.g., fiber optics), and consolidation of network nodes by economically motivated carriers, have vastly reduced additional route and network node diversity. As a result, critical elements of the PN are at greater risk of damage from both human and natural forces.

3.6 Feature Characteristics of a Selected Service

Regardless of the particular service being considered, the planning for a National Service inevitably will require a detailed examination of the candidate service's application and its current and future technical availability. The following high-level analysis of one NS/EP service—special application of and exemption from network management controls—is included to highlight the types of characteristics that might be evaluated during attempts to define a service as a National Service.[23]

3.6.1 Special Application of and Exemption from Network Management Controls

3.6.1.1 Description

Network management controls are a set of measures service vendors use to prevent or reduce degradation in PN service and to ensure that the PN is operating with optimum efficiency and effectiveness. Controls may be invoked at the service vendor's discretion; may be based on intercompany agreements in the standards organization; or may be invoked when a customer demands, equipment malfunctions, or other events cause a deviation from engineered traffic loads and result in abnormally high traffic overflow or blockage.

Controls are either protective or expansive. Protective controls limit traffic going to a switch, trunk group, or destination address. Expansive controls generally increase the capability to carry excess traffic by increasing routing choices. Control measures include route cancellation and route expansion and can be implemented in traffic percentages.

Special application of network management controls could provide NS/EP-identified calls with special traffic handling privileges that would not be available to the general public. Exemption from network management protective controls would provide NS/EP-identified calls with immunity from cancellation controls, which could restrict call completion processing functions or routing choices for general public calls. NS/EP calls could continue to be enhanced by expansive controls.

[23] The feature descriptions in Section 3.6.1 are reprinted mainly from the *ECC Task Force Final Report*, but have been edited to reflect changes that have occurred since the report was published in 1992.

3.6.1.2 NS/EP Application

Network traffic management enhances NS/EP call completion by expanding the network for all users, expanding portions of the network only for NS/EP users, or selectively reducing nonpreferential traffic to allocate remaining resources for NS/EP. The ability of network traffic management surveillance and control mechanisms to identify and selectively control traffic in favor of NS/EP calls is limited. If NS/EP calls were automatically identified in the network, they could have access to special routing mechanisms and/or expansive controls that would improve their probability of completion. Without a readily identifiable designation, however, a call cannot be identified as an NS/EP call, and the opportunity to selectively favor NS/EP calls in the activation of network management expansive controls could be more difficult. Similarly, NS/EP traffic cannot be shielded from protective controls unless discrete routing mechanisms can be acted upon.

To date, the implementation of an NS/EP call identifier has allowed the following capabilities to be offered on a limited basis:

- exemption from protective controls that cancel NS/EP traffic,
- first access to idle network capacity for NS/EP calls through expansive controls, such as reroutes,
- exemption of NS/EP traffic from code controls such as call gapping, allowing NS/EP personnel to call into emergency areas where normal access is blocked,
- provision of preferential treatment for NS/EP calls through trunk reservation controls, which could be specific to a traffic class, dialed number, or code reserving a specified number of trunks during emergencies,
- automatic alternate routing of NS/EP calls from one carrier to another when problems exist in the network, and
- provision of first preference to initial NS/EP call setup messages in the Signaling System 7 (SS7) network.

3.6.1.3 Availability

Network management controls are implemented by service vendors at their discretion to ensure optimum PN performance. The GETS IEC contractors and the GETS integration contractor are offering this service to the Government. Special applications of or exemption from network management controls for NS/EP traffic could be further developed and implemented in the PN switches and network management programs of additional IECs and LECs as necessary.

3.6.1.4 Acquisition

The steps necessary to obtain the above network management features may be time consuming and difficult. Consensus is required from industry on deployment, implementation, administration, and billing issues to attain a ubiquitous capability.

4.0 CONCLUSIONS

4.1 Findings

For nearly 10 years, the NSTAC and other groups have been concerned about the increasing vulnerability of telecommunications and information networks to serious interruptions of service.[24] Recently, the Widespread Outage Subgroup of the NSTAC's Network Group determined that although United States telecommunications service providers have historically offered robust service, advances in technology and changes in the telecommunications industry structure, largely facilitated by the Telecom Act, have the potential to introduce further vulnerabilities into the PN. These changes also have the potential to complicate NS/EP telecommunications planning.

Because of these conditions, the LRG finds that—

- To continue meeting NS/EP telecommunications requirements in this dynamic environment, Government and industry together might consider using the National Services planning process to support and supplement, but not replace, traditional contracting mechanisms for implementing NS/EP telecommunications services.

- Government and industry should also consider NS/EP service requirements during the National Services planning process generally to ensure that those requirements can be met during the implementation of any National Service.

- The IES would benefit from actively contributing to the activities of the FCC (e.g., NRIC) and relevant telecommunications industry organizations (e.g., Alliance for Telecommunications Industry Solutions) related to National Services planning and implementation.

- As the telecommunications industry and FCC apply this planning process, issues (e.g., the net effect of implementing specific candidate National Services in the PN) will surface that will likely be of interest to the LRG and other subgroups of the NSTAC's IES.

[24] In its 1989 report, the NRC characterized the increasing vulnerability of the national telecommunications and information networks to serious interruptions of service as an "emerging problem." Specifically, the NRC wrote that "changes in regulation, technology, and the interaction between competitive market incentives to cut costs and market-specific customer demand" had placed "tomorrow's networks…at greater risk than today's." NRC, *Growing Vulnerability of the Public Switched Networks: Implications for National Security and Emergency Preparedness* , p. 1.

This paper is intended to provide an analytical baseline for these and other future efforts regarding the relationship of NS/EP to National Services planning.

4.2 Recommendation

The NSTAC should task the IES to continue assessing Government and telecommunications industry actions regarding National Services for their potential effect on NS/EP telecommunications.

APPENDIX A

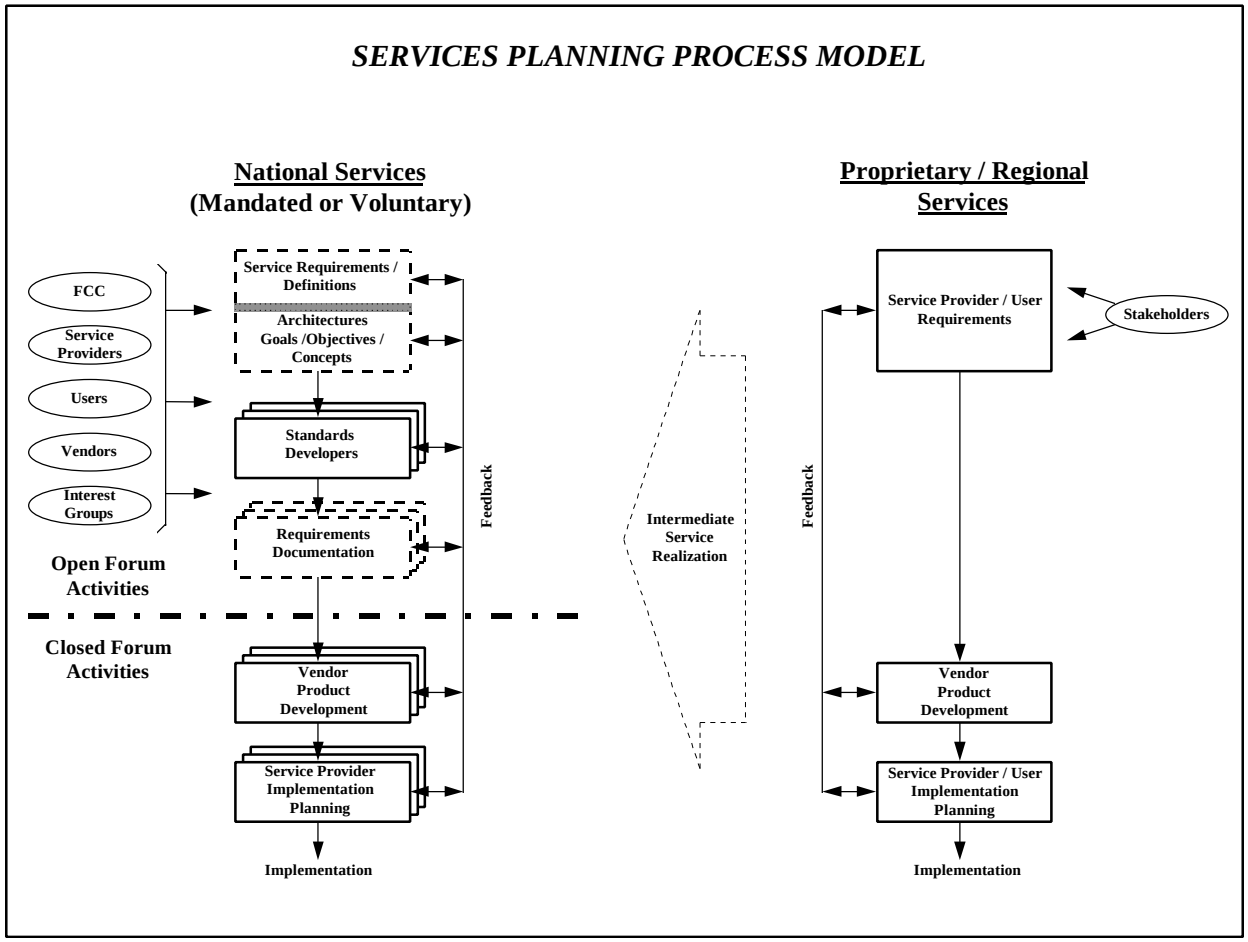
LRG NATIONAL SERVICES SUBGROUP MEMBERS

LRG NATIONAL SERVICES SUBGROUP MEMBERS

SAIC	Mr. Hank Kluepfel, Chair
Bellcore	Ms. Louise Tucker
COMSAT	Dr. Jack Oslund
GTE	Ms. Ernie Gormsen
MCI	Mr. Rein Kiewel
USTA	Dr. Vern Junkmann

APPENDIX B

NETWORK RELIABILITY AND INTEROPERABILITY COUNCIL'S NATIONAL SERVICES PLANNING PROCESS MODEL



Source: Network Reliability and Interoperability Council, *Network Interoperability: The Key to Competition* (July 15, 1997), section 4 (Interoperability Planning).

ANNEX D

LRG LEGISLATIVE AND REGULATORY ANALYSIS MATRIX FOR NS/EP TELECOMMUNICATIONS

Telecommunications Act of 1996

ISSUE	AGENCY/DEPARTMENT ACTIONS	JUDICIAL/ CONGRESSIONAL ACTIONS	POTENTIAL NS/EP ISSUE AREAS	RELEVANT IES SUBGROUPS
Interconnection (s.251) ▪ ILECs must provide non-discriminatory access to unbundled network elements at any technically feasible point, operations support systems, outside plant, resale, number portability, dialing parity, access to rights of way, etc.	**Interconnection Order (96-98)** ▪ Enacts TELRIC default pricing methodology ▪ Prescribes network elements and minimum points of interconnection for new entrants **DOD Comments Filed** ▪ Urged FCC to give fundamental consideration to network reliability and risk of harm to network in implementing local competition provisions **Network Reliability and Interoperability Council (NRIC)** ▪ Advises FCC on s.256 implementation ▪ Recommends procedures FCC should implement to oversee coordinated network planning and design by telecom service providers ▪ Recommends means by which FCC could participate in development by industry-standards-setting organizations of public telecom interconnectivity standards ▪ Determines existing barriers to interconnectivity, interoperability, and accessibility of public telecom networks **LCI/CompTel Petition for Expedited Rulemaking to Establish Technical Standards for OSS (RM 9101)** **GSA Comments Filed** ▪ National OSS guidelines are necessary due to proliferation of CLECs serving multiple regions and the needs of larger and geographically dispersed end users ▪ Standards are needed for end users to receive high-quality telecommunications services from any carrier **ILEC/CLEC Access Standards Order (CC 98-56)** ▪ Contains model rules to determine whether CLECs are receiving adequate access to ILEC networks	**Iowa Util. Board v. FCC** ▪ 8th Cir. Court of Appeals declares FCC's forward-looking default pricing scheme unconstitutional (7/97) ▪ Supreme Court grants petition for review of 8th Cir.'s decision (1/98) **CompTel v. FCC** ▪ 8th Cir.'s 6/97 opinion says Congress did not intend to require ILECs to provide transmission and routing in addition to interconnection **Telecommunications Act Progress Report Act (S. 665)** **Summary** ▪ Monitors the progress of the 1996 Telecommunications Act by instructing NTIA, in consultation with the FCC, DOJ, and other executive branch departments and state regulatory commissions to issue an annual report to Congress on telecommunications services in the United States. **Status** ▪ Introduced 4/29/97 ▪ Referred to Senate Commerce Committee **Telecommunications Monopoly Prevention Act (S. 954)** **Summary** ▪ Prohibits Attorney General from approving any merger, takeover, or acquisition involving two or more large telecommunications companies unless such combination would significantly enhance competition in the telecommunications markets served by such companies **Status** ▪ Read twice and referred to Judiciary Committee 6/24/97	▪ Network reliability ▪ Risk of harm to and security of all network elements and operations support systems (OSS) ▪ Coordination with new service providers for maintenance of NS/EP services ▪ ILEC/CLEC interoperability ▪ OSS access standards need to limit vulnerabilities and support coordination of carriers to provide NS/EP services	**Network Group** ▪ Addressed issue in Forward Looking Analysis Report

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Negotiation & Approval of Interconnection Agreements (s.252) ▪ PUC, upon request, may mediate differences in voluntary ILEC□CLEC negotiations, but FCC may preempt PUC for failure to carry out responsibilities (e.g., PUC's determination of cost-based prices of network elements) ▪ Parties harmed by PUC decisions may sue in federal district court	**Interconnection Order (CC 96-98)** ▪ Among other things, sets default (TELRIC) discount rate to be applied to unbundled network elements (Note: the 8th Cir. Court of Appeals struck down this part of the order in 7/97)	**Various Cases** ▪ Several cases pending in Federal district courts across the country; more cases likely to follow	▪ Cost competitiveness could impair quality of service to the extent that NS/EP obligations may not be fulfilled	

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Special BOC Provisions (s.271) ▪ To provide in-region interLATA service, RBOC must meet 14-point checklist	**BOC Applications To FCC to Provide In-Region InterLATA Service** ▪ SBC (Oklahoma), rejected 6/97 ▪ Ameritech (Michigan), rejected 8/97 ▪ Bell South (S. Carolina), rejected 12/97 ▪ Bell South (Louisiana), rejected 2/98 **Congressional Hearings** ▪ Senate Judiciary subcommittee on antitrust, business rights, and competition hearings to examine FCC's s.271 implementation strategies	▪ U.S. District Court for the Northern District of Texas rules (12/31/97) on SBC complaint (filed 7/2/97); finds ss.271□275 of Telecom Act unconstitutionally restricts BOC entry into long distance, electronic publishing, and equipment manufacturing; stay pending appeal to 5th Cir. issued (2/98) ▪ BellSouth asks D.C. Circuit Court of Appeals to review FCC's denial of its s.271 applications for South Carolina (1/14/98) and Louisiana (3/6/98), claims s.271□273 are unconstitutional bills of attainder; Court upholds FCC's denial of SBC's s.271 bid in Oklahoma (3/20/98) ▪ 8th Cir. Appeals Court rules FCC cannot apply its own pricing rules in review of s.271 applications (1/98); FCC/DOJ file petitions for Supreme Court to review 8th Cir. decision (3/98)	▪ One-stop-shopping (single carrier offering multiple services) could more efficiently support NS/EP capabilities	
Access Charge Reform/ Price Cap Regulation ▪ Not specifically mandated by the Act, but is consistent with the Act's local competition (Title II, Part II) and special RBOC (Title II, Part III) provisions and goals	**Access Charge (96-262) and Price Cap (94-1) Orders** ▪ Minute-of-use costs not incurred on per-minute-of-use basis now recovered through flat rate structure ▪ ILECs may not assess interstate access charges on ISPs **GSA/DOD Comments Filed** ▪ FCC should eliminate CC line charges ▪ FCC should change other access rate elements to align traffic-sensitive and non-traffic-sensitive cost responsibilities	▪ Petitions for review of Access Charge Order pending before 8th Cir. Court of Appeals ▪ Petitions for review of Price Cap Order pending before 10th Cir. Court of Appeals	▪ Cost competitiveness could have implications for quality of service and NS/EP obligations	

Internet

ISSUES	AGENCY/DEPARTMENT ACTIONS	JUDICIAL/ CONGRESSIONAL ACTIONS	POTENTIAL NS/EP ISSUE AREAS	RELEVANT IES SUBGROUPS

Internet

Domain Name Registration

- Sept. 30, 1998 expiration of Defense Advanced Research Projects Agency contract with Univ. South. Calif./Internet Assigned Numbers Authority to manage allocation of numerical IP addresses
- Sept. 30, 1998 expiration of Nat. Sci. Foundation (NSF) contract with Network Solutions, Inc. (NSI) to manage registration of generic top-level domains

Internet Telephony

- Transmission of voice communications using Internet protocol

Root Server Operation

- NSI's supervision of Internet root server operation also set to end with expiration of NSF contract

Encryption

- Key recovery debate raises privacy and national security issues

Domain name registration, root server operation

- Dept. of Commerce (DOC) released proposal (2/98) including, among other things, the establishment of 5 new competing generic top level domain (gTLD) registries overseen by nonprofit corp.; proposal also authorizes nonprofit corp.'s supervision of authoritative root server system
- DOC proposal is an alternative to Internet Council of Registrars (CORE) plan, under which CORE would be sole gTLD registrar of 7 new gTLDs
- DOC issues final white paper on domain name registration recommending management by new private nonprofit corp., including international representatives (6/5/98)

Internet telephony

- FCC in 4/98 report to Congress on universal service declared it will take case-by-case approach to evaluating applying taxation/access charges to IP telephony services
- NTIA sent letter to FCC urging it not to change its policy of treating ISPs as end users rather than carriers (4/98)

Root server operation

- Ira Magaziner, in 4/1/98 address to NSTAC's IES, said that industry's advice on the security and technical management of the Internet is needed as DOC plan is activated

Encryption

- DOC Secretary Daly in 4/98 speech concedes Administration's encryption control policy has failed

Domain name registration, Internet telephony

- House of Representatives Commerce Committee, Telecommunications Subcommittee, to schedule hearings in summer 1998 to discuss a host of Internet-related issues (e.g., appropriateness of FCC regulation of Internet, sufficiency of bandwidth, etc.)

Internet Protection Act (H.R. 2372)

- Would prohibit regulation of Internet service rates, charges, practices, classifications, and facilities
- Latest action: referred to House Commerce Committee, Telecom Subcommittee

Thomas v. NSI/NSF

- U.S. Dist. Court for D.C. dismissed 9 of 10 charges in a class action suit alleging NSI's system of fee collection for its domain name registration service constitutes illegal monopoly (4/98)
- Court found that NSI's conduct was immune from antitrust charges because it was part of cooperative agreement with Government
- Court deferred decision on whether fees paid to NSI/NSF should be refunded as revenues from illegal tax

Computer Security Enhancement Act of 1997 (H.R. 1903)

- Among other things, directs the Undersecretary of Commerce for Tech. to promote the development of the national, standards-based infrastructure needed to support commercial and private uses of encryption technologies for confidentiality and authentication
- Latest action: Reported to House from Science Committee with amendment and referred to Senate Commerce Committee (9/97)

- Security of root server system potentially affects NS/EP

Internet

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		Security and Freedom Through Encryption (SAFE) Act (H.R. 695) ▪ Amends Title 18 U.S. Code, to affirm the rights of U.S. persons to use and sell encryption and to relax export controls on encryption ▪ Latest action: reported to House from Commerce Committee, amended (5/30/97) **Secure Public Networks Act (S. 909)** ▪ Creates a voluntary, national key-recovery system ▪ Latest action: amendments proposed that would restrict President's authority to veto policy decisions of the Government□industry Encryption Export Advisory Board that would be created by the Act (3/98)		