CHARTER
of the
NETWORK RELIABILITY and INTEROPERABILITY COUNCIL - VII

A. The Committee's Official Designation

The official designation of the advisory committee will be the "Network Reliability and Interoperability Council VII" (hereinafter, the "Council").

B. The Council's Objectives and Scope of Its Activity

The purpose of the Council is to provide recommendations to the FCC and to the communications industry that, if implemented, shall under all reasonably foreseeable circumstances assure optimal reliability and interoperability of wireless, wireline, satellite, cable, and public data networks.[1] This includes facilitating the reliability, robustness, security, and interoperability of communications networks including emergency communications networks. The scope of this activity also encompasses recommendations that shall ensure the security and sustainability of communications networks throughout the United States; ensure the availability of adequate communications capacity during events or periods of exceptional stress due to natural disaster, terrorist attacks or similar occurrences; and facilitate the rapid restoration of telecommunications services in the event of widespread or major disruptions in the provision of communications services. The Council shall address topics in the following areas:

1. Emergency Communications Networks Including E911

The Council shall report on ways to improve emergency communications networks and related network architectures and facilitate the provision of emergency services through new technologies.[2] This means ensuring that emergency communications networks are reliable, survivable and secure. It also means that emergency communications networks (including E911[3]) can be accessed with currently available technologies as well as with new technologies (e.g., Voice-over-the Internet-Protocol (VoIP), text, pictures, etc., as appropriate).

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[1] Public data networks are networks that provide data services for a fee to one or more unaffiliated entities

[2] Dale N. Hatfield concluded in *A Report on the Technical and Operational Issues Impacting the Provision of Wireless Enhanced 911 Services* that the current platform for E911 "has serious limitations in terms of speed, scalability, and adaptability. Additionally . . . these limitations not only burden the development of wireless E911 services, but . . . also constrain our ability to extend E911access to a rapidly growing number of non-traditional devices (e.g., PDAs), systems (e.g., telematics) and networks (e.g., voice networks that employ Voice-over-the Internet-Protocol – VoIP)."

[3] "E911" is an acronym for Enhanced 911 service.

The Council shall address the following topics:

a. Near Term Issues for Emergency/911 Services

The Council shall, by December 16, 2005 provide a report that contains near term emergency communications network Best Practices with supporting documentation.

In addition, the Council shall study specific issues that are identified below. The Council shall coordinate with other forums (e.g., Emergency Services Interconnection Forum (ESIF), National Emergency Numbering Association, etc.) so that each issue can be addressed as efficiently and completely as possible. The Council shall:

- Recommend accuracy requirements for location information particularly for rural, suburban, and urban areas and recommend ways to verify that accuracy requirements are met.[4] Investigate location technologies that could improve accuracy and/or reduce cost.
- Develop recommendations that will lead to a consistent format for information passed to Public Service Answering Points (PSAPs) for Phase 1 and 2 call and location information. This format must resolve any inconsistencies that would otherwise result from using vendor specific formats for transmitting information from Mobile Positioning Centers to PSAPs.
- Develop a consistent, common set of timing thresholds for the database queries and for obtaining location information.
- Specify the information that is to be sent to callers when major E911 network elements fail.
- Enumerate and evaluate the factors that should be considered in deciding whether redundant E911 tandems and alternate PSAPs should be provided to avoid a "fast busy" or a recorded message when one or more non-redundant network elements fail.
- Identify all major traffic concentration points in E911 architectures, such as E911 tandems, Selective Routing Databases (SRDB), Mobile Positioning Centers, and Automatic Location Identification (ALI) databases. The Council shall then define metrics and thresholds that should be used to determine where traffic concentrations are unacceptably high. The Council shall develop Best Practices to reduce traffic concentration wherever it has been determined to be too high. This includes developing Best Practices for the size and diversity of different databases. This may also include developing Best Practices

[4] The work of ESIF Study Group G will be considered in this effort.

aimed at improving the database process or reducing the number of database queries.

- Recommend ways to extend E911 services to satellite communications.
- Recommend ways to provide location information to PSAPs for calls originating from multi-line telephone systems (MLTS).

Interim Milestones

By December 17, 2004, the Council shall present a report recommending accuracy requirements for Phase 2 and ways by which compliance with these requirements can be objectively verified.

By April 4, 2005, the Council shall present a report recommending a consistent format for information that is to be passed to PSAPs for Phase 1 and 2 location information; and a consistent set of thresholds for the time required to complete database queries, and the metrics/thresholds for determining unacceptably high traffic concentration points.

By April 4, 2005, the Council shall present a report recommending the ways by which E911 services can be extended to satellite communications. That report shall also specify the information to be sent to the person originating the E911 call when major failures occur in E911 networks.

Final Milestone

By December 16, 2005, the Council shall present a report recommending ways and describing Best Practices to address near-term E911 issues. The report shall include issues from the earlier interim reports as well as recommend ways to extend E911 to MLTS. Finally, the report shall recommend Best Practices addressing high E911 network concentration points.

b. Long Term Issues for Emergency/E911 Services

The Council shall present a report recommending specific architecture properties that emergency communications networks are to provide by the year 2010 along with a generic network architecture that meets those properties. A set of architectures may be recommended depending on the characteristics of the area served. A plan as to how that architecture can be achieved, and how the current architecture can be evolved into the future architecture, shall be provided.

The Council shall:

- Recommend whether the Internet Protocol (IP) technology should be used to improve E911 services and, if so, how it may be used. In this

regard, the Council shall address the future dependence of emergency communications networks on IP networks, and in particular, whether IP technologies should be used to get information to and from the PSAPs as communications networks continue to evolve. The potential use of IP to streamline the E911 network shall be addressed.

- Recommend what additional text and data information that emergency communications networks should be capable of receiving. This additional information may include text information (e.g., Instant messaging, e-mail, Short Message Service), pictures (e.g., from cellular phones), paging information, information from concierge services, Intelligent Vehicle Systems, automatic crash notification systems, etc. Recommend generic emergency communications network architecture(s) that will enable PSAPs to receive the recommended information.

- Recommend generic architecture(s) that will allow PSAPs to receive Voice-over-IP (VoIP) E911 calls and their associated call and location information.

- Recommend a long term strategy for processing overflow traffic from PSAPs.

- Recommend ways to modernize and improve the existing methods to access PSAPs (e.g., replacing Centralized Automatic Message Accounting (CAMA) trunks).

- Evaluate the feasibility and advisability of having a National/Regional PSAP to process overflow traffic efficiently from local PSAPs and to provide an interface for national security connectivity. Recommend whether the existing PSAP structure is adequate and whether alternate designs such as regional PSAPs should be explored.

Interim Milestones

By September 25, 2004, the Council shall present a report recommending the properties that network architectures must meet by the year 2010. These shall include the access requirements and service needs for emergency communications in the year 2010.

By June 24, 2005, the Council shall present a report recommending generic network architectures for E911 that can support the transmission of voice, pictures (e.g., from cellular telephones), data, location information, paging information, hazardous material messages, etc. The report shall describe how IP technology should be used.

By September 29, 2005, the Council shall present a report that identifies, in detail, the transition issues for the recommended generic network architectures and how the methods of accessing PSAPs should be modernized.

Final Milestone

By December 16, 2005, the Council shall present a final report describing the properties of the network architectures, the recommended generic network architectures, the transition issues, and the proposed resolutions of these transition issues along with recommended time frames for their implementation. The report shall also present conclusions on the feasibility and advisability of having a National/Regional PSAP and how the existing PSAP structure should be altered.

c. Analysis of Effectiveness of Best Practices Aimed at E911 and Public Safety

The Council shall determine the effectiveness of all Best Practices that have been developed to address E911 and Public Safety. The Council shall also:

- Analyze all outages related to E911 that have been reported pursuant to 47 C.F.R. § 63.100 and determine which Best Practices most clearly apply to E911 outages. The Council shall present recommendations on ways to reduce E911 outages. In addition it shall make recommendations on ways to improve the relevance of the FCC-Reportable Outage data for improving Emergency Communications. This includes defining direct causes and root causes which are better attuned to E911.
- Analyze 63.100 outages related to E911 to identify E911 architecture vulnerabilities.
- Make the language that is contained in the E911 NRC/NRIC Best Practices more precise so that E911 outages will be prevented and the level of compliance with each Best Practice can be reliably measured.

Interim Milestones

By September 25, 2004, the Council shall present a report containing its analysis of 63.100 outages related to 911/E911 and the Best Practices that are most applicable to E911 outages. The report shall also identify E911 architecture vulnerabilities.

By June 24, 2005, the Council shall present a report on its survey to determine how effective Best Practices have been for emergency communications.

Final Milestone

By December 16, 2005, the Council shall submit a report containing the newest version of each of the Best Practices for emergency communications. The report shall be based on its Best Practices survey and shall include revised language for the Best Practices to make them

more precise. The report shall also summarize conclusions from its analysis of 63.100 outages.

d. Communication Issues for Emergency Communications Beyond E911

The Council shall present a report defining the long term network requirements for transmitting emergency services information emergency services personnel that is beyond the scope of E911 networks. E911 networks handle transmitting information from those originating E911 calls to PSAPs but not from PSAPs (or from some other network element) to emergency services personnel. The Council shall identify target architectures that will be able to transmit the needed information about the emergency event from PSAPs to emergency services personnel and to aid in coordinating emergency services activities. The Council shall also define the long term communication networks that shall be needed to transmit information from E911 calls to the Department of Homeland Security.

In this regard, the Council shall:

- Recommend whether IP architectures should be used for communications between PSAPs and Emergency Communications systems and personnel and, if so, how it may be used.
- Recommend how methods for accessing Emergency Services Personnel by PSAPs should be modernized.
- Recommend architectures that will allow PSAPs (or other network elements) to send text, pictures and other types of data, such as automatic crash information, to Emergency Services Personnel.
- Recommend the most appropriate role of 911/E911 in major disasters and for terrorist attacks.

Interim Milestones

By December 17, 2004, the Council shall present a report describing the properties that network architectures for communications between PSAPs and emergency services personnel must meet by the year 2010. These recommendations shall include the access requirements and service needs for emergency communications in the year 2010.

By September 29, 2005, the Council shall present a report that recommends the network architectures for communications between PSAPs and emergency service personnel that can support the transmission of voice, pictures (e.g., from a cellular phone), data, location information, paging information, hazardous material messages, etc. The report shall describe whether and how IP technology should be used.

By December 16, 2005, the Council shall present a report describing the transition issues for the recommended target architectures along with its recommended role for 911/E911 in major disasters and terrorist attacks.

Final Milestone

By December 16, 2005, the Council shall present a final report describing the properties of the target architectures for PSAP to emergency services personnel communications, the recommended network architectures, the transition issues, and a proposed resolution of these transition issues along with a time frame for their implementation.

2. Homeland Security Best Practices

By December 16, 2005, the Council shall present a final report that describes, in detail, any additions, deletions, or modifications that should be made to the Homeland Security Best Practices that were adopted by the preceding Council.

3. Best Practices for Wireless and Public Data Network Services

Building on the work of the previous Councils, as appropriate, this Council shall continue to develop Best Practices and refine or modify, as appropriate, Best Practices developed by previous Councils aimed at improving the reliability of wireless networks, wireline networks, and public data networks. In addition, the Council shall address the following topics in detail.

a. Best Practices for the Wireless Industry

The Council shall evaluate the efficacy of all Best Practices that have been developed for the wireless industry. The Council shall perform a gap analysis to determine areas where new wireless Best Practices are needed. The Council shall survey the wireless industry concerning the effectiveness of the Best Practices. The Council shall focus on the special needs of the wireless industry and refine existing Best Practices to focus their applicability to the wireless industry.

Interim Milestones

By December 17, 2004, the Council shall provide a report describing the results of the gap analysis of Best Practices aimed at the reliability of wireless networks.

By April 4, 2005, the Council shall complete its survey of the effectiveness of the Best Practices for the wireless industry.

Final Milestone

By September 29, 2005, the Council shall provide a report recommending the Best Practices for the wireless industry including the new Best Practices that particularly apply uniquely to wireless networks.

b. Best Practices for Public Data Network Services

The Council shall evaluate the applicability of all Best Practices that have been developed for public data network providers. The Council shall perform a gap analysis to determine areas where new Best Practices for these providers are needed. The Council shall survey providers of public data network services, including Internet data services providers, concerning the efficacy of existing Best Practices. The Council shall focus on the special needs of public data services providers and refine existing Best Practices to improve their applicability to Internet data services and other public data network services.

Interim Milestones

By December 8, 2004, the Council shall provide a report describing the results of the gap analysis of Best Practices aimed at the reliability of Internet data services.

By April 29, 2005, the Council shall complete its survey of the effectiveness of the Best Practices for Internet data services.

Final Milestone

By September 25, 2005, the Council shall provide a report recommending the Best Practices for Internet data services providers including the new Best Practices that particularly apply to public data network service providers.

4. Broadband

The Council shall present recommendations to increase the deployment of high-speed residential Internet access service. The Council shall include Best Practices and service features that are, and will be, technology-neutral. The Council's recommendations shall be prepared in such a way as: (1) to ensure service compatibility; (2) to facilitate application innovation; and (3) to improve the security, reliability and interoperability of both residential user systems and service provider systems.

C. Period of Time Necessary for the Council to Carry Out Its Purpose

The Council will have two years to carry out the purposes for which it was created.

D. Official to Whom the Council Reports

The Council shall report to the Chairman of the Federal Communications Commission.

E. Agency Responsible for Providing Necessary Support

The Federal Communications Commission will provide the necessary support for the Council, including the meeting facilities for the committee. Private sector members of the Council shall serve without any government compensation and shall not be entitled to travel expenses or per diem or subsistence allowances.

F. Description of the Duties for Which the Council is Responsible

The duties of the Council will be to gather the data and information necessary to submit studies, reports, and recommendations for assuring optimal communications services within the parameters set forth in Section B above.

G. Estimated Annual Operating Costs in Dollars and Staff Years

Estimated staff years that will be expended by the Council are three (3) for FCC staff and 12 for private sector and other governmental representatives. The Council's estimated operating cost to the FCC is $100,000 per year.

H. Estimated Number and Frequency of Council Meetings

The Council will meet at least three times per year. Informal subcommittees may meet more frequently to facilitate the work of the Council.

I. Council's Termination Date

Original filed on January 6, 1992; December 4, 1998 (amended); December 9, 1999 (renewed); December 26, 2001 (renewed); December 29, 2003 (renewed); April 15, 2004 (amended).