ATIS-1000012.2006

SIGNALING SYSTEM NO.7 (SS7) – SS7 NETWORK AND NNI INTERCONNECTION SECURITY REQUIREMENTS AND GUIDELINES

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ATIS-1000012.2006, *Signaling System No.7 (SS7) – SS7 Network and NNI Interconnection Security Requirements and Guidelines*

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SIGNALING SYSTEM NO.7 (SS7) - SS7 NETWORK AND NNI INTERCONNECTION SECURITY REQUIREMENTS AND GUIDELINES

Secretariat

Alliance for Telecommunications Industry Solutions

Approved November 8, 2006

American National Standards Institute, Inc.

Abstract

This document provides security requirements and guidelines for Signaling System No.7 (SS7) network and its network interconnections.

FOREWORD

The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between carriers, customers, and manufacturers. The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between carriers, customers, and manufacturers. The Packet Technologies and Systems Committee (PTSC) -- formerly T1S1 -- develops and recommends standards and technical reports related to services, architectures, and signaling, in addition to related subjects under consideration in other North American and international standards bodies. PTSC coordinates and develops standards and technical reports relevant to telecommunications networks in the U.S., reviews and prepares contributions on such matters for submission to U.S. ITU-T and U.S. ITU-R Study Groups or other standards organizations, and reviews for acceptability or per contra the positions of other countries in related standards development and takes or recommends appropriate actions.

ANSI guidelines specify two categories of requirements: mandatory and recommendation. The mandatory requirements are designated by the word *shall* and recommendations by the word *should*. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, Packet Technologies and Systems Committee (PTSC) Secretariat, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time it approved this document, Packet Technologies and Systems Committee, which is responsible for the development of this Standard, had the following members:

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The Security (SEC) Subcommittee was responsible for the development of this document.

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0 INTRODUCTION

The national telecommunications network is evolving into an environment consisting of multiple interconnected network types based on different transport technologies and signaling protocols/architectures. Specifically, it is evolving from a closed environment to include converged network segments (e.g., Next Generation and Voice Over Packet Networks) using common transport for User Network Interface (UNI) control, Network-to-Network Interface (NNI) control and bearer traffic (e.g., Voice over IP services). Also, direct or indirect connectivity to the public Internet is possible (e.g., interconnection to service providers offering voice services over the public Internet). Survivability of the national telecommunications network against malicious attacks will require coordination of security mitigation measures among the different interconnected networks. This standard identifies basic requirements and guidelines to minimize security risks to the SS7 network and its interconnections. This document is based on current understanding of the applicable technologies and operations environment. However, to be successful, this document must continue to evolve as changes in the technologies and operations conditions warrant. Service providers and their vendors may use this document as a foundation and include other network specific requirements to meet specific security needs over and beyond those described in this document.

1 SCOPE, PURPOSE, & APPLICATION

1.1 Scope

This document is part of a suite of signaling and control security standards. Figure 1 illustrates the relationships among these standards. The scope of this document is a Signaling System No.7 (SS7) Network, and SS7 network interconnections. This includes interconnection to other SS7 networks and to multimedia signaling and control networks such as SIP and H.323 networks. Specifically, this document provides security requirements and guidelines for a Signaling System No.7 (SS7) network and its network interconnections.