ATIS-0300104

ATIS Standard on -

Next Generation Interconnection Interoperability Forum (NGIIF)

Next Generation Network (NGN) Reference Document

NGN Basic, Emergency Services, NGN Testing, and Network Survivability

As a leading technology and solutions development organization, the Alliance for Telecommunications Industry Solutions (ATIS) brings together the top global ICT companies to advance the industry's most pressing business priorities. ATIS' nearly 200 member companies are currently working to address the All-IP transition, 5G, network functions virtualization, big data analytics, cloud services, device solutions, emergency services, M2M, cyber security, network evolution, quality of service, billing support, operations, and much more. These priorities follow a fast-track development lifecycle — from design and innovation through standards, specifications, requirements, business use cases, software toolkits, open source solutions, and interoperability testing.

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Alliance for Telecommunications Industry Solutions

Updated September 2019

Abstract

This document provides basic information regarding Next Generations Networks, as applicable to the Next Generation Interconnection Interoperability Forum (NGIIF).

Foreword

The Alliance for Telecommunications Industry Solutions (ATIS) serves the public through improved understanding between service providers (SPs), customers, and manufacturers. The Next Generation Interconnection Interoperability Forum (NGIIF) addresses next-generation network interconnection and interoperability issues associated with emerging technologies. Specifically, it develops operational procedures which involve the network aspects of architecture, disaster preparedness, installation, maintenance, management, reliability, routing, security, and testing between network operators. In addition, the NGIIF addresses issues which impact the interconnection of existing and Next Generation Networks (NGNs) and facilitate the transition to emerging technologies.

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. The word may denotes an optional capability that could augment the standard. The standard is fully functional without the incorporation of this optional capability.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, NGIIF, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time of consensus on this document, NGIIF, which was responsible for its development, had the following leadership:

K. Riepenkroger, NGIIF Co-Chair (Sprint)

R. Ryan, NGIIF Co-Chair (Comcast)

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NGN Basics, Emergency Services, NGN Testing, and Network Survivability

1 Scope, Purpose, & Application

1.1 Scope

The suite of NGN Reference Documents provides basic information regarding Next Generation Networks (NGNs), as applicable to the Alliance for Telecommunications Industry Solutions (ATIS) Next Generation Interconnection Interoperability Forum (NGIIF). The NGN is a multi-service, multi-vendor, multi-provider managed packet-based network, which is able to provide telecommunication services and is able to make use of multiple broadband, quality of service (QoS)-enabled transport technologies and in which service related functions are independent from underlying transport related technologies.

This document identifies items that could potentially impact government-managed emergency services, such as Government Emergency Telecommunications Service (GETS), Wireless Priority Service (WPS), and Telecommunications Service Priority (TSP) when telecommunications facilities in the NGN are consolidated and newer technologies (e.g., IP, fiber, Ethernet) are implemented.

It also describes the effects of adoption of NGN National Security and Emergency Preparedness (NS/EP) priority services. Included in the document are descriptions regarding Enhanced Overload Performance (EOP) precedence in Code Division Multiple Access (CDMA) networks, Universal Mobile Telecommunications Standard (UMTS) handover to Global System for Mobile Communications (GSM), and the transition to Next Generation 9-1-1 emergency services.

Additionally, this document has been developed to assist network managers by providing guidelines to serve as a general framework in planning for traffic management during high level congestion events or disaster conditions, such as the following (not all-inclusive):

- Network congestion due to facility failures or abnormal calling periods
- Switch or network failures or extended outages
- SS7 network failures
- Voice over IP (VoIP) network failures
- Natural disasters
- Pandemic events
- Major accidents
- Civil disturbances

It also addresses survivability of communications networks and the services those networks provide under failure conditions. Communications networks should be designed and should operate to meet users' expectations regarding network survivability. There should be a common understanding of network survivability assessment techniques. This document references the architectures and services of communications industry segments (i.e., wireline, Internet, wireless, cable, and satellite) and provides references for further information.