



ATIS-0500032.v003

ATIS Standard on -

**ATIS STANDARD FOR IMPLEMENTATION OF AN IMS-BASED NG9-1-1  
SERVICE ARCHITECTURE**



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.

ATIS is accredited by the American National Standards Institute (ANSI). The organization is the North American Organizational Partner for the 3rd Generation Partnership Project (3GPP), a founding Partner of the oneM2M global initiative, a member of and major U.S. contributor to the International Telecommunication Union (ITU), as well as a member of the Inter-American Telecommunication Commission (CITEL). For more information, visit [www.atis.org](http://www.atis.org).

---

### **Notice of Disclaimer & Limitation of Liability**

The information provided in this document is directed solely to professionals who have the appropriate degree of experience to understand and interpret its contents in accordance with generally accepted engineering or other professional standards and applicable regulations. No recommendation as to products or vendors is made or should be implied.

NO REPRESENTATION OR WARRANTY IS MADE THAT THE INFORMATION IS TECHNICALLY ACCURATE OR SUFFICIENT OR CONFORMS TO ANY STATUTE, GOVERNMENTAL RULE OR REGULATION, AND FURTHER, NO REPRESENTATION OR WARRANTY IS MADE OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS. ATIS SHALL NOT BE LIABLE, BEYOND THE AMOUNT OF ANY SUM RECEIVED IN PAYMENT BY ATIS FOR THIS DOCUMENT, AND IN NO EVENT SHALL ATIS BE LIABLE FOR LOST PROFITS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES. ATIS EXPRESSLY ADVISES THAT ANY AND ALL USE OF OR RELIANCE UPON THE INFORMATION PROVIDED IN THIS DOCUMENT IS AT THE RISK OF THE USER.

NOTE - The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights. By publication of this standard, no position is taken with respect to whether use of an invention covered by patent rights will be required, and if any such use is required no position is taken regarding the validity of this claim or any patent rights in connection therewith. Please refer to <https://www.atis.org/policy/patent-assurances/> to determine if any statement has been filed by a patent holder indicating a willingness to grant a license either without compensation or on reasonable and non-discriminatory terms and conditions to applicants desiring to obtain a license.

---

*Published by*

**Alliance for Telecommunications Industry Solutions  
1200 G Street, NW, Suite 500  
Washington, DC 20005**

Copyright © 2024 by Alliance for Telecommunications Industry Solutions  
All rights reserved.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher. For information contact ATIS at 202.628.6380. ATIS is online at < <http://www.atis.org> >.

# **ATIS Standard for Implementation of an IMS-based NG9-1-1 Service Architecture**

**Alliance for Telecommunications Industry Solutions**

Approved July 11, 2024

## **Abstract**

This Standard defines the Stage 2 (architecture) and Stage 3 (protocol) specifications for an IMS-based NG9-1-1 Service Architecture. This Standard includes the architecture, functional elements, call flows, protocols, and interfaces which were derived from the Stage 1 requirements in ATIS-0500023, "Applying Common IMS to NG9-1-1 Networks".

## Foreword

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between carriers, customers, and manufacturers.

The ESIF IP Multimedia Subsystem for 9-1-1 (IMS911) subgroup led this joint work effort that addresses the application of common IMS (Stage 1, 2, and 3) for the processing, transport, and/or delivery of Emergency Service calls within the NG9-1-1 network to the appropriate Public Safety Answering Point (PSAP). This is a joint effort with the Emergency Services Interconnection Forum Next Generation Emergency Service (ESIF NGES) Subcommittee, Packet Technologies and Systems Committee (PTSC) and the Wireless Technologies and Systems Committee Systems and Network Subcommittee (WTSC SN). The Emergency Services Interconnection Forum (ESIF) provides a forum to facilitate the identification and resolution of technical and/or operational issues related to the interconnection of wireline, wireless, cable, satellites, Internet and emergency services networks.

The ESIF Next Generation Emergency Services (NGES) Subcommittee coordinates emergency services needs and issues with and among SDOs and industry forums/committees, within and outside ATIS, and develops emergency services (such as E9-1-1) standards, and other documentation related to advanced (i.e., Next Generation) emergency services architectures, functions, and interfaces for communications networks.

The Packet Technologies and Systems Committees (PTSC) 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 developments and takes or recommends appropriate actions.

The Wireless Technologies and Systems Committee (WTSC) develops and recommends standards and technical reports related to wireless and/or mobile services and systems, including service descriptions and wireless technologies. WTSC develops and recommends positions on related subjects under consideration in other North American, regional, and international standards bodies.

The WTSC Systems and Networks Subcommittee (WTSC SN) develops, maintains, amends and enhances American National Standards and ATIS deliverables related to system aspects, networks, and terminals within the GSM family (GSM/EGPRS/UMTS) such as circuit-switched, packet-switched and IP Multimedia services including future developments.

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

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

B. Abley, ESIF Chair (NENA)

P. McCollum, First Vice-Chair (Comtech)

J. Torres, ESIF Second Vice-Chair (Verizon Wireless)

T. Reese, ESIF IMS911 Co-Chair, ESIF NGES Co-Chair (Ericsson)

Ed Amoah, ESIF IMS911 Co-Chair, ESIF NGES Co-Chair (Verizon Wireless)

M. Dolly, PTSC Chair (AT&T)

V. Shaikh, PTSC Vice-Chair (Peraton Labs)

M. Younge, WTSC Chair (T-Mobile)

T. Brooks, WTSC SN Chair (T-Mobile)

P. Musgrove, WTSC SN Vice-Chair (AT&T)

T. Reese, Technical Editor (Ericsson)

## Table of Contents

Preface .....	1
1 Scope, Purpose, & Application .....	2
1.1 Scope.....	2
1.2 Purpose .....	2
1.3 Application .....	2
2 Normative References .....	2
3 Informative References.....	5
4 Definitions, Acronyms, & Abbreviations .....	5
4.1 Definitions .....	5
4.2 Acronyms & Abbreviations.....	7
5 Introduction.....	10
6 Assumptions & Requirements .....	10
6.1 Basic Assumptions .....	10
6.2 Requirements .....	11
7 Architecture .....	12
7.1 Overview.....	12
7.2 IMS-Based NG9-1-1 Service Architecture Functional Elements .....	13
7.2.1 <i>Emergency Call Session Control Function (E-CSCF)</i> .....	13
7.2.2 <i>Interrogating Call Session Control Function (I-CSCF)</i> .....	13
7.2.3 <i>Location Retrieval Function (LRF)</i> .....	14
7.2.4 <i>Routing Determination Function (RDF)</i> .....	14
7.2.5 <i>Location Server (LS)</i> .....	14
7.2.6 <i>Interconnection Border Control Function (IBCF)</i> .....	14
7.2.7 <i>Legacy Network Gateway (LNG)</i> .....	15
7.2.8 <i>Emergency Call Routing Function (ECRF)</i> .....	15
7.2.9 <i>Legacy PSAP Gateway (LPG)</i> .....	15
7.2.10 <i>Application Server (AS)</i> .....	16
7.2.11 <i>Multimedia Resource Function Controller (MRFC)</i> .....	16
7.2.12 <i>Multimedia Resource Function Processor (MRFP)</i> .....	16
7.2.13 <i>Transit Function (TRF)</i> .....	16
7.3 Support for Secure Telephone Identity (STI) Services .....	17
7.3.1 <i>STI Verification of 9-1-1 Originations</i> .....	18
7.3.2 <i>STI Authentication of PSAP-Originated Calls</i> .....	19
7.4 Resource-Priority Header Signing and SIP Priority Header Signing.....	22
7.5 Reference Protocols .....	25
8 Stage 2 Call Flows.....	27
8.1 Legacy Wireline Origination to i3 and Legacy PSAPs .....	27
8.1.1 <i>Delivery of Legacy Wireline Emergency Call Origination to i3 PSAP</i> .....	27
8.1.2 <i>Delivery of Legacy Wireline Emergency Call Origination to Legacy PSAP</i> .....	30
8.2 Legacy CMRS Origination to i3 and Legacy PSAPs .....	32
8.2.1 <i>Delivery of Legacy Wireless Emergency Call Origination to i3 PSAP Using WCM</i> .....	32
8.2.2 <i>Delivery of Legacy Wireless Emergency Call Origination to Legacy PSAP Using WCM</i> .....	36
8.2.3 <i>Delivery of Legacy Wireless Emergency Call Origination to i3 PSAP using NCAS</i> .....	40
8.2.4 <i>Delivery of Legacy Wireless Emergency Call Origination to Legacy PSAP using NCAS</i> .....	44

8.3	IMS Originating Network to i3 and Legacy PSAPs – LbyV .....	49
8.3.1	<i>Delivery of Emergency Call Origination from IMS Origination Network to i3 PSAP with LbyV .....</i>	49
8.3.2	<i>Delivery of Emergency Call Origination from IMS Origination Network to Legacy PSAP with LbyV .....</i>	51
8.4	IMS Originating Network to i3 and Legacy PSAPs – LbyR.....	55
8.4.1	<i>Delivery of Emergency Call Origination from IMS Origination Network to i3 PSAP with LbyR.....</i>	55
8.4.2	<i>Delivery of Emergency Call Origination from IMS Origination Network to Legacy PSAP with LbyR .....</i>	58
8.5	Non-IMS Originating Network to i3 and Legacy PSAPs – LbyV .....	62
8.5.1	<i>Delivery of Emergency Call Origination from Non-IMS VoIP Origination Network to i3 PSAP with LbyV .....</i>	62
8.5.2	<i>Delivery of Emergency Call Origination from Non-IMS VoIP Origination Network to Legacy PSAP with LbyV.....</i>	66
8.6	Non-IMS VoIP Originating Network to i3 and Legacy PSAPs – LbyR .....	70
8.6.1	<i>Delivery of Emergency Call Origination from Non-IMS Origination Network to i3 PSAP with LbyR. ....</i>	70
8.6.2	<i>Delivery of Emergency Call Origination from Non-IMS Origination Network to Legacy PSAP with LbyR .....</i>	73
8.7	TTY Interworking on Emergency Calls to Legacy/i3 PSAPs .....	78
8.7.1	<i>RTT Calls from IMS Originating Network to Legacy PSAP via NG9-1-1.....</i>	78
8.7.2	<i>TTY Calls from Legacy Originating Network to an i3 PSAP via NG9-1-1 .....</i>	80
8.7.3	<i>TTY Calls from Legacy Originating Network to a Legacy PSAP via NG9-1-1.....</i>	85
8.8	Call Transfer/Bridging.....	89
8.8.1	<i>Support for Attended Emergency Call Transfer Requests from i3 PSAPs to Transfer-to PSAPs/Destinations .....</i>	90
8.8.2	<i>Support for Attended Emergency Call Transfer Requests from Legacy PSAPs to Transfer-to PSAPs/Destinations .....</i>	124
8.8.3	<i>Support for Blind Transfer Requests from i3 PSAPs to Transfer-to PSAPs/Destinations.....</i>	136
8.9	Policy Routing Scenarios .....	142
8.10	Failure Scenarios.....	145
8.10.1	<i>Error Conditions .....</i>	145
8.11	PSAP-Originated Calls .....	146
8.11.1	<i>PSAP Callbacks.....</i>	146
8.11.2	<i>Follow-Up Calls.....</i>	149
8.11.3	<i>Emergency Support Calls .....</i>	151
8.11.4	<i>Non-Emergency Calls.....</i>	153
8.12	Caller Identity and Resource-Priority Header Authentication/Signing and Verification Call Flows .....	154
8.12.1	<i>9-1-1 Origination from an IMS Originating Network.....</i>	154
8.12.2	<i>9-1-1 Origination from a Non-IMS VoIP Originating Network.....</i>	157
8.12.3	<i>Callback to IMS Home Network - Transit Function Interacts with STI-AS.....</i>	158
8.12.4	<i>Callback to IMS Home Network - Exit IBCF Interacts with STI-AS .....</i>	160
8.12.5	<i>Callback to Non-IMS VoIP Home Network – Transit Function Interacts with STI-AS.....</i>	163
8.12.6	<i>Callback to Non-IMS VoIP Home Network – Exit IBCF Interacts with STI-AS.....</i>	164
9	Stage 3.....	166
9.1	Procedures & Header Usage for the Emergency CSCF (E-CSCF).....	167
9.1.1	<i>Header Usage.....</i>	168
9.2	Procedures & Header Usage for the Location Retrieval Function (LRF) .....	168
9.2.1	<i>Processing of Origination from i3-Compliant Originating Network or LNG.....</i>	169
9.2.2	<i>Using Incoming Signaling Information to Facilitate Error Handling .....</i>	169
9.2.3	<i>Header Usage.....</i>	169
9.2.4	<i>Procedures at Policy Routing Function (PRF).....</i>	169
9.3	Procedures at the RDF .....	171
9.3.1	<i>Procedures for Provisioning the RDF .....</i>	171
9.4	Procedures at the LNG .....	172
9.4.1	<i>SS7 Wireline to SIP Header Mapping Example .....</i>	173
9.4.2	<i>CAMA Wireline to SIP Header Mapping Example.....</i>	173
9.4.3	<i>FG D Wireline to SIP Header Mapping Example.....</i>	174
9.4.4	<i>SS7 Wireline Compatibility Mode to SIP Header Mapping Example.....</i>	174

9.4.5	CAMA MF WCM to SIP Header Mapping Example.....	175
9.4.6	FG D MF WCM to SIP Header Mapping Example .....	175
9.4.7	SS7 NCAS to SIP Header Mapping Example.....	176
9.4.8	CAMA MF NCAS to SIP Header Mapping Example.....	176
9.4.9	FG D MF NCAS to SIP Header Mapping Example .....	176
9.5	Procedures at the LPG .....	177
9.6	Procedures at the IBCF .....	178
9.6.1	Entry Point IBCF.....	178
9.6.2	Exit Point IBCF.....	179
9.7	Procedures at the I-CSCF .....	180
9.8	Procedures at the Conferencing Application Server (AS).....	180
9.9	Procedures at the Multimedia Resource Function Controller (MRFC) .....	181
9.10	Procedures at the Multimedia Resource Function Processor (MRFP) .....	181
9.11	Procedures at the Transit Function.....	181
9.12	Procedures at the STI-AS .....	182
9.13	Procedures at the STI-VS .....	182
10	Location Validation .....	183
11	Test Calls.....	183
12	Logging.....	184
13	Discrepancy Reporting .....	184
14	Security Considerations.....	185
15	Network Monitoring Thresholds .....	186
A	SIP INVITE Profile for Emergency Calls.....	189
B	Message Examples .....	192
B.1	Legacy Fixed Line UE to Traditional Legacy PSAP (Wireline) Example .....	192
B.2	Legacy Mobile UE to Traditional Legacy PSAP (Wireless) Example .....	193
B.3	Fixed Line IP OSP UE to Traditional Legacy PSAP Example .....	193
B.4	Mobile IP OSP UE to Traditional Legacy PSAP Example .....	194
C	Analysis of Network Monitoring Thresholds in IMS-based NG9-1-1 Emergency Services Network .....	195

## Table of Figures

Figure 7.1:	IMS origination network emergency call architecture from 3GPP TS 23.167 .....	12
Figure 7.2:	IMS-Based NG9-1-1 Service Architecture .....	13
Figure 8.1:	Delivery of Legacy Wireline Emergency Call Origination to i3 PSAP .....	28
Figure 8.2:	Delivery of Legacy Wireline Emergency Call Origination to Legacy PSAP .....	30
Figure 8.3:	Delivery of Legacy Wireless Emergency Call Origination to i3 PSAP Using WCM .....	33
Figure 8.4:	Delivery of Legacy Wireless Emergency Call Origination to Legacy PSAP Using WCM.....	37
Figure 8.5:	Delivery of Legacy Wireless Emergency Call Origination to i3 PSAP Using NCAS41 .....	41
Figure 8.6:	Delivery of Legacy Wireless Emergency Call Origination to Legacy PSAP Using NCAS.....	45
Figure 8.7:	Delivery of IMS Emergency Call Origination to i3 PSAP with LbyV .....	50
Figure 8.8:	Delivery of IMS Emergency Call Origination to Legacy PSAP with LbyV .....	52
Figure 8.9:	Delivery of IMS Emergency Call Origination to i3 PSAP with LbyR.....	56

Figure 8.10: Delivery of IMS Emergency Call Origination to Legacy PSAP with LbyR ..... 59

Figure 8.11: Delivery of Non-IMS Emergency Call Origination to i3 PSAP with LbyV ..... 64

Figure 8.12: Delivery of Non-IMS Emergency Call Origination to Legacy PSAP with LbyV .... 67

Figure 8.13: Delivery of Non-IMS Emergency Call Origination to i3 PSAP with LbyR ..... 71

Figure 8.14: Delivery of Non-IMS Emergency Call Origination to Legacy PSAP with LbyR .... 74

Figure 8.15: RTT Calls from IMS Originating Network to Legacy PSAP via NG9-1-1 ..... 79

Figure 8.16: TTY Calls from Legacy Originating Network to an i3 PSAP via NG9-1-1 – Part I 82

Figure 8.17: TTY Calls from Legacy Originating Network to an i3 PSAP via NG9-1-1 – Part II 84

Figure 8.18: TTY Calls from Legacy Originating Network to a Legacy PSAP via NG9-1-1 – Part I ..... 86

Figure 8.19: TTY Calls from Legacy Originating Network to a Legacy PSAP via NG9-1-1 – Part II..... 88

Figure 8.20: Conferencing Functional Architecture..... 90

Figure 8.21: i3 PSAP Establishes Conference with Conferencing AS/MRFC..... 92

Figure 8.22: i3 PSAP Requests that IBCF/B2BUA be Invited to the Conference ..... 94

Figure 8.23: i3 PSAP Requests that a Transfer-to i3 PSAP be Invited to the Conference ..... 96

Figure 8.24: i3 PSAP Requests that a Transfer-to Legacy PSAP be Invited to the Conference ..... 99

Figure 8.25: Transfer-from i3 PSAP Disconnects from the Conference – Transfer-to PSAP is an I3 PSAP ..... 101

Figure 8.26: Transfer-from i3 PSAP Disconnects from the Conference – Transfer-to PSAP is a Legacy PSAP ..... 102

Figure 8.27: Transfer-to i3 PSAP Completes the Transfer and Terminates the Call ..... 104

Figure 8.28: Transfer-to Legacy PSAP/LPG Completes the Transfer and Terminates the Call ..... 106

Figure 8.29: Transfer-from i3 PSAP Invokes the Conference..... 109

Figure 8.30: Application Server (AS) Bridges Call #1 and Call #2 via IBCF#2 ..... 111

Figure 8.31: Application Server (AS) Invites Transfer-to i3 PSAP to Conference..... 113

Figure 8.32: Application Server (AS) Invites Transfer-to Legacy PSAP to Conference ..... 116

Figure 8.33: Transfer-from i3 PSAP Drops out of Conference with Transfer-to i3 PSAP ..... 119

Figure 8.34: Transfer-from i3 PSAP Drops out of Conference with Transfer-to Legacy PSAP ..... 120

Figure 8.35: Conference AS/MRFC Released by Transfer-to i3 PSAP ..... 122

Figure 8.36: Conference AS/MRFC Released by Transfer-to Legacy PSAP..... 123

Figure 8.37: Legacy PSAP Requests Transfer; LPG Establishes Conference with Conferencing AS/MRFC ..... 125

Figure 8.38: Transfer-from Legacy PSAP Disconnects from the Conference – Transfer-to PSAP is an I3 PSAP ..... 128

Figure 8.39: Transfer-from Legacy PSAP Disconnects from the Conference – Transfer-to PSAP is a Legacy PSAP ..... 129

Figure 8.40: Legacy PSAP Establishes Conference with Conferencing AS/MRFC ..... 131

Figure 8.41: Transfer-from Legacy PSAP Drops out of Conference with Transfer-to i3 PSAP ..... 134

Figure 8.42: Transfer-from Legacy PSAP Drops out of Conference with Transfer-to Legacy PSAP ..... 135

Figure 8.43: Blind Transfer: Transfer-from i3 PSAP to Transfer-to i3 PSAP..... 137

Figure 8.44: IMS Based Call to i3 PSAP – PRF Example..... 144

Figure C.1: Call Setup, Call Routing and Dereferencing Transactions ..... 195

**Figure C.2: Other Transactions ..... 196**

## Table of Tables

---

Table 9-1: Mapping at LNG .....	173
Table 9-2: SS7 Wireline to SIP Header Mapping Example.....	173
Table 9-3: CAMA MF Wireline to SIP Header Mapping Example .....	174
Table 9-4: FG D MF Wireline to SIP Header Mapping Example.....	174
Table 9-5: SS7 WCM to SIP Header Mapping Example.....	174
Table 9-6: CAMA MF WCM to SIP Header Mapping Example .....	175
Table 9-7: FG D MF WCM to SIP Header Mapping Example.....	175
Table 9-8: SS7 NCAS to SIP Header Mapping Example.....	176
Table 9-9: CAMA MF NCAS to SIP Header Mapping Example .....	176
Table 9-10: FG D MF NCAS to SIP Header Mapping Example.....	177
Table A-1: SIP INVITE Header Profile Legend .....	189
Table A-2: SIP INVITE Header Profile .....	190

ATIS Standard on –

# Implementation of an IMS-based NG9-1-1 Service Architecture

## Preface

ATIS has developed a Next Generation 9-1-1 network and emergency call processing architecture based on contributions received since 2011 and based on requirements by a number of wireless carriers to have an IP Multimedia Subsystem (IMS)-compatible NG9-1-1 design<sup>1</sup>. Additionally, the NENA i3 Architecture Working Group<sup>2</sup> deferred the IMS-based Emergency Services IP Network (ESInet) development to ATIS. ATIS' goal in developing this standard has been transparent interoperability between the two network designs.

ATIS' intent in this development work was to produce a standard method for IMS-based carriers to offer NG9-1-1 services wholly within their IMS platforms, while maintaining consistency and interoperability with the NENA i3 ESInet/NGCS (Next Generation Core Services) design goals. This kind of standards approach allows IMS-based carriers to take advantage of complete IMS interoperability and features found in their existing IMS ecosystems, while still remaining interoperable with downstream i3 PSAPs that implement NENA i3 standards and interfaces.

It is also ATIS' goal to assure that terminating NG9-1-1 entities, such as i3 PSAPs, find the upstream networks that are built on the ATIS IMS-based NG9-1-1 Service Architecture to be as completely interoperable with their systems and networks as that of a NENA i3 NG9-1-1 standard SIP-based architecture. This goal of transparency, both upstream and downstream between architectures, ensures that an i3 PSAP should find no difference whether the i3 PSAP interconnects to a NENA i3 ESInet with NGCS, or interconnects to an ATIS IMS-based NG9-1-1 Service Architecture. This consistent interoperability principle has guided all of ATIS' development work since the beginning, as documented within the original Issue Statement underlying this work.

The ATIS IMS-based NG9-1-1 Service Architecture provides compatibility for IMS-based carriers acting as an NG9-1-1 System Service Provider (911SSP) to seamlessly interoperate with NENA i3 ESInet architectures.

For entities early in the process of selecting ESInet solutions, the expectation within this ATIS development work was that the ATIS IMS-based NG9-1-1 Service Architecture would offer a choice for carriers that already had an IMS ecosystem, but not be considered a viable architecture choice for 9-1-1 service entities that had no plans for an IMS infrastructure.

Public Safety entities should naturally understand the applicability of an IMS-based NG9-1-1 Service Architecture network approach to processing emergency calls, yet in this case, they can remain confidently focused on NENA i3-based NG9-1-1 architectures, (this is because IMS may be of interest to carriers, not to jurisdictions), which means that Public Safety's progress and momentum to adopt NG9-1-1 will not be impeded by the introduction of this ATIS NG9-1-1 Service Architecture standard.

---

<sup>1</sup> IMS is a set of standards based on the IETF RFC 3261 [Ref 18] family of standards that also introduces additional requirements, specific for carrier operators not differentiated in the more general SIP RFCs.

<sup>2</sup> The NENA i3 Architecture Working Group developed NENA-STA-010.3 [Ref 27].