ATIS-0500034.v002

Comparison of Enhanced 9-1-1 (E9-1-1) and Next Generation 9-1-1 (NG9-1-1) Focused on Reportable Outage Data Points

TECHNICAL REPORT

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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ATIS Technical Report on

Comparison of Enhanced 9-1-1 (E9-1-1) and Next Generation 9-1-1 (NG9-1-1) Focused on Reportable Outage Data Points

Alliance for Telecommunications Industry Solutions

Approved August 1, 2019

Abstract

This Technical Report compares the ability to detect failures/outages associated with emergency calls in an Enhanced 9-1-1 (E9-1-1) environment versus a transitional and end-state NG9-1-1 environment.

Foreword

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

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 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, 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:

R. Marshall, ESIF Chair (Comtech)

J. Green, ESIF 1st Vice-Chair (Sprint)

R. Muscat, ESIF 2nd Vice-Chair (Bexar Metro 911)

C. Militeau, ESIF NGES Co-Chair (Intrado)

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

The Next Generation Emergency Services (NGES) Subcommittee was responsible for the development of this document.

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1 Scope, Purpose, & Application

1.1 Scope

This Technical Report describes the architectures to support emergency call handling in legacy Enhanced 9-1-1 (E9-1-1), as well as in transitional and end-state Next Generation 9-1-1 (NG9-1-1) environments and compares the ability to detect failures/outages associated with emergency call and data delivery in the context of the legacy E9-1-1 and NG9-1-1 architectures.

1.2 Purpose

As telecommunications networks continue to evolve to all-IP, the FCC has begun investigating the possible expansion of its Part 4 Outage Reporting rules to include broadband and performance metrics (e.g., throughput, latency, and packet loss) in the FNPRM PS Docket No. 11-82 (FCC 16-63) [Ref 4].

As a result, there is a need for service providers across all industry segments (cable, wireline, and wireless), in all stages of the PSTN transition, to be able to identify when their networks may be experiencing service-impacting events that impair or cause the total loss of 9-1-1 services. As service architectures to support 9-1-1 calling and data delivery evolve to NG9-1-1, there is a need to better understand the complexities of how NG9-1-1 service architectures are designed and where there are divergences from the pre-existing legacy E9-1-1 network infrastructures. This information will be critical for service providers to know so as to a) collect network information that may be reportable under the Part 4 Rules and b) to evaluate if standardization efforts are needed to develop metrics for data collection.

The purpose of this Technical Report is to compare the services architectures used today to provide E9-1-1 with NG9-1-1 service architectures and to identify where in the architectures service-impacting events can be detected. However, it should be noted that the technical limitations outlined in this document limit any given stakeholder's monitoring and reporting capabilities.

1.3 Application

This Technical Report applies to emergency call handling and data delivery via legacy and Next Generation (NG) emergency services architectures defined in North American standards in support of regulatory activities associated with 9-1-1-related outage reporting applicable to the U.S. This Technical Report is applicable to wireline, wireless, and IP-based originating network providers as well as E9-1-1/NG9-1-1 System Service Providers.

2 Informative References

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

[Ref 1] NENA-INF-003.1-2013, *NENA Potential Points of Demarcation in NG9-1-1*, March 1, 2013.[1]

[1] This document is available from the National Emergency Number Association (NENA). < http://www.nena.org >