ATIS-0700042

Enhancing Location-Based Routing of Emergency Calls

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

Enhancing Location-Based Routing of Emergency Calls

Alliance for Telecommunications Industry Solutions

Approved July 12, 2019

Abstract

This Technical Report is a feasibility study that analyzes the Location-Based Routing (LBR) methods, identifies gaps and makes recommendations for potential standards activity.

Foreword

As a leading technology and solutions development organization, the Alliance for Telecommunications Industry Solutions (ATIS) brings together the top global information and communications technology (ICT) companies to advance the industry's most-pressing business priorities. ATIS serves the public through improved understanding between carriers, customers, and manufacturers.

This Technical Report was developed jointly between ESIF, PTSC, and WTSC.

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 Packet Technologies and Systems Committee (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 development 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.

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

At the time of initiation or issuance of the letter ballot for this document, the committees responsible for its development had the following leadership:

R. Marshall, ESIF Chair (Comtech)
J. Green, ESIF First Vice Chair (Sprint)
R. Hixson, ESIF Second Vice Chair (NENA)

M. Dolly, PTSC Chair (AT&T)
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D. Zelmer, WTSC Chair (AT&T)
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R. Sherry, Technical Editor (West C)

The WTSC SN, ESIF NGES, and IMSESINET Subcommittees were responsible for the development of this document.

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1 Scope, Purpose, & Application

1.1 Scope

The Scope of this Technical Report is an analysis of improved Location-Based Routing (LBR) methods using the Communications Security, Reliability and Interoperability Council (CSRIC) V Location-Based Routing Report as the basis.

1.2 Purpose

This Technical Report is a feasibility study that analyzes the Location-Based Routing methods for Commercial Mobile Radio Service (CMRS) wireless emergency calls as described in the CSRIC V LBR Report and any other methods to enhance LBR that have been identified since the publication of the CSRIC V report. Criteria for the analysis is developed. The Technical Report includes analysis of whether existing standards support a particular LBR method, and if not, what standards gaps exist to support a particular LBR method.

1.3 Application

This Technical Report applies to the investigation of the improvement of CMRS wireless routing techniques based upon the location of the caller.

2 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]: CSRIC V - Final Report – Task 2: 911 Location-Based Routing, September 2016.
[Ref 2]: Wireless E911 Location Accuracy Requirements, FOURTH REPORT AND ORDER**,** PS Docket No. 07-114, FCC, February 3, 2015.
[Ref 3]: Notice of Inquiry, Location-Based Routing for Wireless 911 Calls, FCC, March 23, 2018.
[Ref 4]: ATIS-0500001[Revised in 2011], *High Level Requirements for Accuracy Testing Methodologies*.
[Ref 5]: ATIS-0700015, *ATIS Standard for Implementation of 3GPP Common IMS Emergency Procedures for IMS Origination and ESInet/Legacy Selective Router Termination*.
[Ref 6]: NENA-STA-010.3, NENA i3 Standard for NG9-1-1 (to be issued).

3 Definitions, Acronyms, & Abbreviations

For a list of common communications terms and definitions, please visit the *ATIS Telecom Glossary*, which is located at < https://glossary.atis.org/ >.

3.1 Definitions

Cold Start – In a cold start, the wireless network or handset shall not make use of any location assistance information and positioning knowledge retained from a previous attempt. Such information would not be available to a handset that was originating a 9-1-1 call and that had been turned off for an extended period. See ATIS-0500001[Revised in 2011], *High Level Requirements for Accuracy Testing Methodologies*, for further details.