



ATIS-0700030

ATIS Standard on -

Real Time Text End-to-End Service Description Specification



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 the International Telecommunication Union (ITU), as well as a member of the Inter-American Telecommunication Commission (CITEL). For more information, visit 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 SETTLEMENT 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 [<http://www.atis.org/legal/patentinfo.asp>] 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 © 2018 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-0700030

ATIS Standard on

Real Time Text End-to-End Service Description Specification

Alliance for Telecommunications Industry Solutions

Approved July 12, 2018

Abstract

This Standard defines the RTT end-to-end service behavior for the handling of Real Time Text (RTT) in support of the IP transition in order to facilitate a consistent use of RTT across multiple Commercial Mobile Service Providers (CMSPs).

Foreword

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between carriers, customers, and manufacturers. 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 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, WTSC 1200 G Street NW, Suite 500, Washington, DC 20005.

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

- D. Zelmer, WTSC Chair (AT&T)
- M. Younge, WTSC Vice Chair (T-Mobile)
- P. Musgrove, WTSC SN Chair (AT&T)
- G. Schumacher, WTSC SN Vice Chair (Sprint)

The Systems & Networks subcommittee (SN) was responsible for the development of this document ...

Table of Contents

1	Scope, Purpose, & Application	5
1.1	Scope	5
1.2	Purpose	5
1.3	Application	5
2	Normative References	5
3	Definitions, Acronyms, & Abbreviations	6
3.1	Definitions	6
3.2	Acronyms & Abbreviations	7
4	Background Information.....	8
5	Assumptions.....	9
6	End-to-End RTT Service Requirements	9
6.1	RTT Service Requirements.....	9
6.1.1	<i>RTT Call Requirements Between RTT Users</i>	9
6.1.2	<i>Emergency Service Call Requirements</i>	9
6.1.3	<i>General</i>	9
6.1.4	<i>Inclusion of the RTT Media</i>	9
6.1.5	<i>Removal of the RTT media</i>	10
6.2	RTT Interworking with TTY	10
6.2.1	<i>Use of Text and Audio Media</i>	10
6.2.2	<i>Buffering RTT Text for TTY Transmission</i>	10
6.2.3	<i>Interworking Character Error Rate</i>	10
6.3	Transmission Rate.....	10
Annex A:	Use Cases	11
A.1	Use Case 1 –RTT Emergency Call & Call Back.....	11
A.2	Use Case 2 – Establish Non-Emergency RTT Call	13
A.3	Use Case 3 – Add RTT Media During Voice Emergency Call	14
A.4	Use Case 4 – Add RTT Media During Voice Call	15
A.5	Use Case 5 – RTT Call to TTY in PSTN.....	16
A.6	Use Case 6 – Receive RTT Call from TTY in PSTN.....	17
A.7	Use Case 7 – RTT Call to 711 for Legacy Text Relay Call to Voice Service User	19
A.8	Use Case 8 – Receive RTT Call from 711 Legacy Text Relay Service for Voice Service User	20
A.9	Use Case 9 – RTT Call to 711 for RTT based Text Relay Call to Voice Service User	22
A.10	Use Case 10 – Initiation of a Three-Party RTT Call	23
A.11	Use Case 11 – RTT Call with Deaf-Blind RTT Service User	23
Annex B:	RTT/TTY Interworking Enhanced Capabilities.....	26
B.1	Summary of TTY Limitations.....	26
B.2	TTY Presentation Level Conventions & Workarounds.....	27
Annex C:	RTT Emergency Services.....	29
C.1	Overview of Emergency Services	29
C.1.1	<i>Enhanced 9-1-1 (E9-1-1)</i>	29
C.1.2	<i>Next Generation 9-1-1 (NG9-1-1)</i>	32
C.1.3	<i>Interaction with Supplemental Services</i>	33
C.2	RTT Emergency Services Overview.....	33

Table of Figures

Figure C.1: RTT Emergency Services Network Diagram	34
----------------------------------------------------------	----

Table of Tables

Table B.1 – Conversion of Non-Supported RTT Characters.....	2
-------------------------------------------------------------	---

Currently in preview, click buy full versi

ATIS Standard on –

Real Time Text End-to-End Service Description Specification

1 Scope, Purpose, & Application

1.1 Scope

The scope of this Standard is limited to Real Time Text (RTT) service, implemented as specified in IETF RFC 4103 [Ref 4] and as described in ATIS-1000068 [Ref 2], for both emergency and non-emergency communications via Commercial Mobile Service Provider (CMSP) networks.

IP Multimedia Subsystem (IMS) service continuity of RTT (3GPP TS 23.237 [Ref 17]) is outside the scope of this Standard.

1.2 Purpose

The purpose of this Standard is to define the RTT end-to-end service behavior for RTT communication in an all Internet Protocol (IP) environment to facilitate a consistent use of RTT across multiple CMSPs.

1.3 Application

This Standard is applicable to CMSPs, CMSP network infrastructure vendors, mobile device manufacturers, emergency services vendors, and Public Safety Answering Point (PSAP) vendors.

2 Normative 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] FCC Doc-319386A, *Federal Communications Commission (FCC) Emergency Access Advisory Committee (EAAC) Report on TTY Transition*; March 2013.¹

[Ref 2] ATIS-1000068, *Technical Report on Support of TTY Service over IP using Global Text Telephony*.²

[Ref 3] TIA-825-A, *A Frequency Shift Keyed Modem for Use on the Public Switched Telephone Network*.³

[Ref 4] IETF RFC 4103. *RTP Payload for Text Conversion*.⁴

[Ref 5] FCC Doc-321705, *Federal Communications Commission (FCC) Emergency Access Advisory Committee (EAAC) Report on Procedures for Calls between TTY Users and NG9-1-1 PSAPs*; June 14, 2013.¹

[Ref 6] FCC Doc-321704, *Federal Communications Commission (FCC) Emergency Access Advisory Committee (EAAC) Report on Proposed Procedures for TTY as Text Terminal in Legacy PSAPs*; June 14, 2013.¹

¹ This document is available from the Federal Communications Commission. < <http://www.fcc.gov/> >

² This document is available from the Alliance for Telecommunications Industry Solutions (ATIS). < <http://www.atis.org> >

³ This document is available from the Telecommunications Industry Association. < <http://www.tiaonline.org> >

⁴ This document is available from the Internet Engineering Task Force (IETF). < <http://www.ietf.org> >