

ANSI-41 MAP Extension API

TIA 03/2002

Statement of Compliance

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1. GENERAL

1.1 INTRODUCTION

This document contains a compliance statement of Ericsson ANSI-41 MAP Extension API, TIA 03/2002 versus:

- J-STD-036-AD-2, Enhanced Wireless 9-1-1 Phase 2, see reference [TIA-1].
- TIA/EIA IS-848, Wireless Intelligent Network Capabilities for Enhanced Charging Services, see reference [TIA/EIA-3].

Some parameters and operations within J-STD-036-AD-2 refers to other standard documents which are outside the scope of this Statement of Compliance. J-STD-036-AD-2 only provides values, descriptions and specifiers for parameters and operations introduced after the release of the ANSI-41-D standard and not included in any ANSI-41-D modification appendices prior to J-STD-036. Furthermore, J-STD-036-AD2 includes J-STD-036 and all its updates introduced in J-STD-036 addendums prior to J-STD-036-AD2 version 6.

Only the PositionRequest operation is implemented from IS-848.

1.2 TERMS

ANSI	American National Standards Institute
ANSI-41	ANSI Standard 41
API	Application Program Interface
BCD	Binary Coded Decimal
CAS	Call Associated Signaling
CDMA	Code Division Multiple Access
CRDB	Coordinate Routing Database
EIA	Electronic Industries Association
EIN	Ericsson Infotech AB
ELID	Emergency Location Information Delivery
ESME	Emergency Services Message Entity
ESP	Emergency Services Protocol
ESRD	Emergency Services Routing Digits
IA5	International Alphabet 5
ISUP	Integrated Services digital network User Part
LSP	Location Services Protocol
MAHO	Mobile Assisted Hand-Off

GENERAL

MAP	Mobile Application Part
MPC	Mobile Position Center
MS	Mobile Station
MSC	Mobile Switching Center
MSID	Mobile Station Identifier
NCAS	Non Call Associated Signaling
PCS1900	Personal Communications Services 1900 network
PDE	Position Determining Entity
PSAP	Public Safety Answering Point
SAMPS	System Assisted Mobile Positioning through Satellite
SMS	Short Message Service
SS7	Signaling System no. 7
TCAP	Transaction Capabilities Application Part
TC-User	TCAP User
TDMA	Time Division Multiple Access
TIA	Telecommunications Industry Association
TMSI	Temporary Mobile Subscriber Identity

1.3 CONCEPT

The terms that are used are:

C	Module complies with the specified paragraph in the standard.
N	Module does not comply with the specified paragraph in the standard.
P	Module complies partly with the specified paragraph in the standard. Specify in a note what in the module that does comply and what that does not.
-	There is nothing to implement in the referred paragraph (used in column "C").

1.4 HISTORY

Revision	Date	Author	Comment
A	2001-05-15	EINPaWe	Initial version. Approved according to Master Inspection Plan 6/170 17-CAA 901 904 Ux
B	2001-05-30	EINPaWe	Added IS-J-STD-036-1.

Revision	Date	Author	Comment
C	2001-08-06	EINPelt	Added J-STD-036-AD-2 and IS-848. Approved according to Master Inspection Plan 9/170 17-CAA 901 904 Ux
D	2001-12-10	EINPaWe	Replaced J-STD-036 with J-STD-036-AD-2 v6. Removed IS-J-STD-036-1. Approved according to Master Inspection Plan 14/170 17-CAA 901 904 Ux
E	2003-01-29	Ulf Hellsten	Replaced J-STD-036-AD-2 v6 with J-STD-036-A
F	2006-02-27	Patrik Verme	Editorial changes.
G	2007-10-18	Jens Rydholm	Removed product revision from document title. No real changes.

1.5 REFERENCES

ANSI Standards:

- [ANSI-1] Cellular Radio telecommunications Intersystem Operations: Signaling Protocols, ANSI-41.5-D, December 1997
- [ANSI-2] TR-45, IS-751 (PN-3892), TIA/EIA-41-D Modifications to support IMSI, Publication version (7), February 1998.

TIA Standards:

- [TIA-1] TR-45, J-STD-036-A Enhanced Wireless 9-1-1 Phase 2, March 2002
- [TIA-2] TR-45, J-STD-034.1, Enhanced Emergency Services, October 1997

TIA/EIA Standards:

- [TIA/EIA-1] TR-45, IS-771 (PN-3661), Wireless Intelligent Network, December 1998
- [TIA/EIA-2] TR-45, IS-725-A (PN-4173), TIA/EIA-41-D Enhancements for Over-The-Air Service Provisioning (OTASP) & Parameter Ad-

[TIA/EIA-3] ministration (OTAPA), March 1999
TIA/EIA IS-848, Wireless Intelligent Network Capabilities for
Enhanced Charging Services, October 2000, Chapter 5, Modifica-
tions to TIA/EIA-41.5-D

2. COMPLIANCE LISTS

2.1 ENHANCED WIRELESS 9-1-1 PHASE 2

2.1.1 J-STD-036-A

Reference	C	N	P	Comments
Chapter 1: Overview	-			
Chapter 2: Stage 1 Emergency Services Service Descriptions	-			
1 Introduction	-			
2 Assumptions	-			
2.1 Common Assumptions			X	Note 1
2.2 ANSI-41 Assumptions			X	Note 2
2.3 PCS1900 Assumptions		X		
Chapter 3: Functional Overview, ANSI-41	-			
1 Introduction	-			
2 Methodology	-			
3 Network Reference Model			X	Note 3, Note 4
4 Network Entities	-			
5 Messages Across Network Interfaces			X	Note 3, Note 4
6 Network Entity Relationships	-			
Chapter 4: Stage 2 Emergency Services Network Description, ANSI-41.3	-			
1 Modifications to ANSI-41.3 Table 1	-			
2 Emergency Location Information Delivery (ELID) Scenarios	-			
2.1 ELID Using CAS Push	-			
2.1.1 PDE Queried for position			X	Note 5, Note 8
2.1.2 PDE Autonomous Delivery of Position			X	Note 5, Note 8
2.1.3 Timeout Waiting for Position			X	Note 5, Note 8

Reference	C	N	P	Comments
2.1.4 Three-Way Call to PSAP After Intersystem Handoff	-		X	
2.2 ELID Using NCAS Pull	-			
2.2.1 PDE Queried for position			X	Note 5, Note 6, Note 8
2.2.2 PDE Autonomous Delivery of Position			X	Note 5, Note 6, Note 8
2.2.3 Test Message	X			
2.3 Emergency Services Call Routing and ELID	-			
2.3.1 - 2.3.3			X	Note 5, Note 6, Note 7, Note 8
2.4 Position Update Using NCAS Pull	-			
2.4.1 - 2.4.3			X	Note 5, Note 6, Note 8
2.5 Failure Cases	-			
2.5.1 MPC Failure on Call Origination			X	Note 8
2.5.2 Call Disconnect During Positioning				
2.6 Call Termination	-			
2.6.1 Call Termination Reporting			X	Note 8
2.7 PDE Use of Network Data	-			
2.7.1 PDE Request for CDMA Pilot Strength Measurement			X	Note 2, Note 5
2.7.2 TDMA MAHO Obtained After Call Setup				Note 5, Note 6, Note 8
2.7.3 TDMA MAHO Obtained After Inter-System Handoff				
3 PDE to MS Scenarios for Handset-Based PDE	-			
3.1 CDMA	-			
3.1.1 PDE to MS Communication via E ₁₂			X	Note 2, Note 5
3.1.2 - 3.1.3			X	Note 5, Note 8
3.2 TDMA SAMPS	-			
3.2.1 PDE to MS Communication via E ₁₂ Interface			X	Note 2, Note 5
3.2.2 Communication via E ₅ and E ₃ Interfaces			X	Note 5, Note 8
3.2.3 Position Update after Handoff			X	Note 2, Note 5, Note 6
4 Mobile Initiated Positioning				
4.1 MS Originated Position Determination for Emergency Services Call (Successful CAS Push -E ₃ /E ₅ Interfaces)				

Reference	C	N	P	Comments
4.2 MS Originated Position Determination for Emergency Services Call (POST Timer Expiry)				
4.3 MS TDMA SAMPS Emergency Position Report				
4.1 MS TDMA Inter-MSC Three Way Call to PSAP using SAMPS				
Chapter 5: Functional Overview, PCS1900	-			
Chapter 6: Stage 2 Emergency Services Network Description, PCS1900	-			
Chapter 7: Stage 3 Implementation Perspective: Emergency Services Protocol (ESP)	-			
1 Introduction	-			
1.1 Transaction Portion	X			
1.2 Component Portion			X	Note 16
2 Emergency Services Protocol Abstract Syntax	X			
Chapter 8: Stage 3 Implementation Perspective: ANSI-41.5 Enhancements	-			
1 Introduction			X	Note 2, Note 5, Note 8
2 Operations and Parameter Definitions	-			
2.1 DATA TRANSFER SERVICES				
2.1.1 SS-7 BASED DATATransfer SERVICES				
2.1.1.1 Message Transfer Part				
2.2 MAP Operations	-			
2.2.1 General	-			
2.2.1.1 Operation Specifiers			X	Note 9
2.2.1.2 Operation Definitions				
2.2.1.3 CallTerminationReport	X			Note 10
2.2.1.4 GeoPositionDirective	X			Note 11
2.2.1.5 GeoPositionRequest	X			Note 12
2.2.1.6 InterSystemPositionRequest	X			Note 13
2.2.1.7 InterSystemPositionRequestForward		X		
2.2.1.8 OriginationRequest	X			Note 14, Note 17

Reference	C	N	P	Comments
2.2.1.9 SMS Delivery Backward		X		
2.2.1.10 SMS Delivery Forward		X		
2.2.1.11 SMSDeliveryPointToPoint	X			Note 15, Note 17
2.3 MAP Parameters	-			
2.3.1 General	-			
2.3.1.1 Parameter Format	X			
2.3.1.2 Parameter Identifiers			X	Note 25
2.3.2 Parameter Definitions	-			
2.3.2.1 - 2.3.2.10	X			
2.3.2.11 LCS_Client_ID		X		
2.3.2.12 - 2.3.2.13	X			
2.3.2.14 MobInfo_AMPS			X	Note 21
2.3.2.15 MobInfo_CDMA			X	Note 21, Note 26
2.3.2.16 - 2.3.2.17			X	Note 21
2.3.2.18 - 2.3.2.22	X			
2.3.2.23 Profile		X		
2.3.2.24 - 2.3.2.30	X			
2.3.2.31 Transaction Capability				
2.3.3 Parameter Type Definitions	-			
2.3.3.1 Digits Type			X	Note 18, Note 19, Note 20
3 ANSI-41 Procedures	-			
4 Operation Timer Values	-			
Chapter 9: Location Services Protocol (LSP)	-			
1 Introduction	-			
1.1 Transaction Portion	X			
1.2 Component Portion			X	Note 16
2 Location Services Protocol Abstract Syntax			X	Note 27
Annex A: Analysis of the Network Reference Model	-			
Annex B: Local Positioning Determining Entity	-			

Reference	C	N	P	Comments
Annex C: Non-dialable Callback Numbers	-			
Annex D: Parameter Mapping for Interconnection	-			
Annex E: Mapping Between TIA/EIA-41 and ISUP Digit Parameters	-			
Annex F: MSC to Selective Router/PSAP Interconnection Scenarios	-			
Annex G: Transport Protocols for Reference Point E ₂ (Informative)	-			
Annex H: Use of ESRD in E911 Call Setup as 3-Way Call Following Inter-MSC Handoff (Informative)	-			

2.2 WIRELESS INTELLIGENT NETWORK CAPABILITIES FOR ENHANCED CHARGING SERVICES

2.2.1 TIA/EIA IS-848 - MODIFICATIONS TO TIA/EIA-41.5-D

Reference	C	N	P	Comments
5 DATA TRANSFER SERVICES	-			
5.1 SS7-BASED DATA TRANSFER SERVICES	-			
5.1.1 Message Transfer Part	-			
6 APPLICATION SERVICES	-			
6.3 TCAP FORMATS AND PROCEDURES	-			
6.3.2 Component Portion	-			
6.3.2.3 TCAP RETURN ERROR Component	-			
6.3.2.3.1 Error Definitions	-			
6.4 MAP OPERATIONS	-			
6.4.1 General	-			

Reference	C	N	P	Comments
6.4.1.2 Operation Specifiers			X	Note 22
6.4.2 Operation Definitions	-			
6.4.2.13 FeatureRequest		X		
6.4.2.27 LocationRequest		X		
6.4.2.30 OriginationRequest			X	Note 24
6.4.2.h ServiceRequest		X		
6.4.2.i AnalyzedInformation		X		
6.4.2.m FacilitySelectedAndAvailable		X		
6.4.2.z CallControlDirective		X		
6.4.2.ae TDisconnect		X		
6.4.2.ag OCalledPartyBusy		X		
6.4.2.ah ONoAnswer		X		
6.4.2.aj PositionRequestForward		X		
6.4.2.ai PositionRequest	X			
6.5 MAP PARAMETERS	-			
6.5.1.2 Parameter Specifiers			X	Note 23
6.5.2 Parameter Definitions	-			
6.5.2.1 AccessDeniedReason		X		
6.5.2.97 Profile		X		
6.5.2.df TriggerCapability		X		
6.5.2.df TriggerType		X		
6.5.2.dj WINOperationsCapability		X		
6.5.2.eo DMH_ChargeInformation		X		
6.5.2.ep DMH_BillingIndicator		X		
6.5.2.eq MSStatus	X			
6.5.2.er PositionInformationCode	X			

3. NOTES AND COMMENTS

- Note 1 Both Emergency Location Information Delivery using CAS pull and NCAS push is supported except for the MSID translation to TMSI.
- Note 2 Reference Point E₁₂ (MSC and PDE) is supported.
- Note 3 Supported interfaces are E₂ (MPC and ESME), E₃ (MPC and MSC), E₁₁ (MPC and CRDB) and E₁₂ (MSC and PDE).
- Note 4 The E₅ (MPC and PDE) interface is partly supported, i. e. the ANSI-41 version of the operation are implemented.
- Note 5 Reference Point E₅ (MPC and PDE) is supported.
- Note 6 Reference Point E₂ (MPC and ESME) is supported.
- Note 7 Reference Point E₁₁ (MPC and CRDB) is supported.
- Note 8 Reference Point E₃ (MPC and MSC) is supported.
- Note 9 CallTerminationReport, GeoPositionDirective, GeoPositionRequest and IntersystemPositionRequest are supported.
- Note 10 Description of CallTerminationReport parameters and parameter values are stated in [ANSI-1] and [ANSI-2].
- Note 11 Description of GeoPositionDirective parameters and parameter values are stated in [ANSI-1] and [ANSI-2].
- Note 12 Description of GeoPositionRequest parameters and parameter values are stated in [ANSI-1] and [ANSI-2].
- Note 13 Description of InterSystemPositionRequest parameters and parameter values are stated in [ANSI-1], [ANSI-2] and [TIA-2].
- Note 14 Description of OriginationRequest parameters and parameter values are stated in [ANSI-1], [ANSI-2], [TIA-2] and [TIA/EIA-1].
- Note 15 Description of SMSDeliveryPointToPoint parameters and parameter values are stated in [ANSI-1], [ANSI-2] and [TIA/EIA-2].
- Note 16 Problems detected by TCAP are handled by TCAP and problems with Emergency Services protocols should be handled by the TC-user.
- Note 17 Operation specifiers are stated in [ANSI-1].
- Note 18 The length of parameters encoded as Octet Strings are allowed to

- have a length between 4 and 20 octets.
- Note 19 Parameters encoded as IA5 may include a maximum of 16 characters.
- Note 20 Parameters encoded as BCD may include a maximum of 32 characters.
- Note 21 Occurrence of mandatory parameters within the macro are not verified.
- Note 22 PositionRequest is supported.
- Note 23 MSSStatus and PositionInformationCode supported.
- Note 24 DisplayText, DMH_ChargeInformation, DMH_ServiceID, PreferredLanguageIndicator, ResumePIC and TriggerAddressList are not supported in RETURN RESULT.
- Note 25 LCS_CLIENT_ID is not supported.
- Note 26 CDMAServiceOption is not supported.
- Note 27 PositionRouteRequest is supported.
- Note 28 This section is removed from the document.
- Note 29 Problems detected by TCAP are handled by TCAP and problems with Location Services protocol should be handled by the TC-user.