

# 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 , versus:

- J-STD-036-AD-2, Enhanced Wireless 9-1-1 Phase 2, see Reference [3].
- TIA/EIA IS-848, Wireless Intelligent Network Capabilities for Enhanced Charging Services, see Reference [7].

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 Concept

The terms that will be used are:

C	EAB module complies with the specified paragraph in the standard.
N	EAB module does not comply with the specified paragraph in the standard.
P	EAB 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.
-	Not applicable for EAB modules in the referred requirement (used in column “C” )





## 2 Compliance Lists

### 2.1 Enhanced Wireless 9-1-1 Phase 2

#### 2.1.1 J-STD-036-A

Table 1

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Chapter 1: Overview	-			
Chapter 2: Stage 1 Emergency Services Service Descriptions	-			
1 Introduction	-			
2 Assumptions	-			
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2.3 PCS1900 Assumptions		X		
Chapter 3: Functional Overview, ANSI-41	-			
1 Introduction	-			
2 Methodology	-			
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4 Network Entities	-			
5 Messages Across Network Interfaces			X	Page 15, Page 15
6 Network Entity Relationships	-			



Table 1

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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	Page 15 , Page 15
2.1.2 PDE Autonomous Delivery of Position			X	Page 15 , Page 15
2.1.3 Timeout Waiting for Position			X	Page 15 , Page 15
2.1.4 Three-Way Call to PSAP After Intersystem Handoff	-		X	
2.2 ELID Using NCAS Pull	-			
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2.2.3 Test Message	X			





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2.5.2 Call Disconnect During Positioning				
2.6 Call Termination	-			
2.6.1 Call Termination Reporting			X	Page 15
2.7 PDE Use of Network Data	-			
2.7.1 PDE Request for CDMA Pilot Strength Measurement			X	Page 15, Page 15
2.7.2 TDMA MAHO Obtained After Call Setup				Page 15, Page 15, Page 15
2.7.3 TDMA MAHO Obtained After Inter-System Handoff				
3 PDE to MS Scenarios for Handset-Based PDE	-			
3.1 CDMA	-			



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3.2 TDMA SAMPS	-			
3.2.1 PDE to MS Communication via E12 Interface			X	Page 15, Page 15
3.2.2 Communication via E5 and E3 Interfaces			X	Page 15, Page 15
3.2.3 Position Update after Handoff			X	Page 15, Page 15, Page 15
4 Mobile Initiated Positioning				
4.1 MS Originated Position Determination for Emergency Services Call (Successful CAS Push -E3/E5 Interfaces)				
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				



Table 1

References	C	N	P	Comments
Chapter 5: Functional Overview, PCS1900	-			
Chapter 6: Stage 2 Emergency Services Network Description, PCS1900	-			
Chapter 7: Stage 3 Implementation Perspective: Emergency Services Protocol (ESP)	-			
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Chapter 8: Stage 3 Implementation Perspective: ANSI-41.5 Enhancements	-			
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2.1.1 SS-7 BASED DATATRANSFER SERVICES				
2.1.1.1 Message Transfer Part				



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2.2.1.10 SMS Delivery Forward		X		
2.2.1.11 SMSDeliveryPointToPoint	X			Page 15,Page 15
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2.3.2 Parameter Definitions	-			
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2.3.2.11 LCS_Client_ID		X		
2.3.2.12 - 2.3.2.13	X			
2.3.2.14 MobInfo_AMPS			X	Page 16
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2.3.2.23 Profile		X		
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3 ANSI-41 Procedures	-			
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1 Introduction	-			
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2 Location Services Protocol Abstract Syntax			X	Page 16



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Annex B: Local Positioning Determining Entity	-			
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 E2 (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

Table 2

References	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	-			
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6.3.2.3 TCAP RETURN ERROR Component	-			
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6.4.2.13 Feature Request		X		
6.4.2.27 Location Request		X		
6.4.2.30 Originator Request			X	Page 16
6.4.2.h Service Request		X		



Table 2

References	C	N	P	Comments
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	-			
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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		





Table 2

References	C	N	P	Comments
6.5.2.eq MSStatu s	X			
6.5.2.er PositionI nformationCode	X			





### 3 Notes and Comments

- Note:** Both Emergency Location Information Delivery using CAS pull and NCAS push is supported except for the MSID translation to TMSI.
- Note:** Reference Point E12 (MSC and PDE) is supported.
- Note:** Supported interfaces are E2 (MPC and ESME), E3 (MPC and MSC), E11 (MPC and CRDB) and E12 (MSC and PDE).
- Note:** The E5 (MPC and PDE) interface is partly supported, i. e. the ANSI-41 version of the operation are implemented.
- Note:** Reference Point E5 (MPC and PDE) is supported.
- Note:** Reference Point E2 (MPC and ESME) is supported.
- Note:** Reference Point E11 (MPC and CRDB) is supported.
- Note:** Reference Point E3 (MPC and MSC) is supported.
- Note:** CallTerminationReport, GeoPositionDirective, GeoPositionRequest and IntersystemPositionRequest are supported.
- Note:** Description of CallTerminationReport parameters and parameter values are stated inReference [1] and Reference [2].
- Note:** Description of GeoPositionDirective parameters and parameter values are stated inReference [1] and Reference [2].
- Note:** Description of GeoPositionRequest parameters and parameter values are stated inReference [1] and Reference [2].
- Note:** Description of InterSystemPositionRequest parameters and parameter values are stated inReference [1], Reference [2] and Reference [4].
- Note:** Description of OriginationRequest parameters and parameter values are stated inReference [1], Reference [2], Reference [4] and Reference [5].
- Note:** Description of SMSDeliveryPointToPoint parameters and parameter values are stated inReference [1], Reference [2] and Reference [6].
- Note:** Problems detected by TCAP are handled by TCAP and problems with Emergency Services protocols should be handled by the TC-user.
- Note:** Operation specifiers are stated in Reference [1].
- Note:** The length of parameters encoded as Octet Strings are allowed to have a length between 4 and 20 octets.



- Note:** Parameters encoded as IA5 may include a maximum of 16 characters.
- Note:** Parameters encoded as BCD may include a maximum of 32 characters.
- Note:** Occurrence of mandatory parameters within the macro are not verified.
- Note:** PositionRequest is supported.
- Note:** MSStatus and PositionInformationCode supported.
- Note:** DisplayText, DMH\_ChargeInformation, DMH\_ServiceID, PreferredLanguageIndicator, ResumePIC and TriggerAddressList are not supported in RETURN RESULT.
- Note:** LCS\_CLIENT\_ID is not supported.
- Note:** CDMAServiceOption is not supported.
- Note:** PositionRouteRequest is supported.
- Note:** This section is removed from the document.
- Note:** Problems detected by TCAP are handled by TCAP and problems with Location Services protocol should be handled by the TC-user.



# Glossary

**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

**MTP**

Message Transfer Part

**LSP**

Location Services Protocol

**MAHO**

Mobile Assisted Hand-Off

**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**

Signalling 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



## Reference List

### **ANSI Standards:**

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

### **TIA Standards:**

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

### **TIA/EIA Standards:**

- [5] TR-45, IS-771 (PN-3661), Wireless Intelligent Network, December 1998
- [6] TR-45, IS-725-A (PN-4173), TIA/EIA-41-D Enhancements for Over-The-Air Service Provisioning (OTASP) & Parameter Administration (OTAPA), March 1999
- [7] TIA/EIA IS-848, Wireless Intelligent Network Capabilities for Enhanced Charging Services, October 2000, Chapter 5, Modifications to TIA/EIA-41.5-D