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3RD GENERATION
PARTNERSHIP
PROJECT 2
"3GPP2"

Support for the Mobile Equipment Identity (MEID)

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Revision History

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NORMATIVE REFERENCES

- [GSM MAP] 3GPP TS 29.002. 3rd Generation Partnership Project; Technical Specification Group Core Network; Mobile Application Part (MAP) Specification.
- [CDMA] 3GPP2 C.S0001-6-D v1.0. cdma2000 Spread Spectrum Systems. March 2004.
TIA-2000-D. cdma2000 Spread Spectrum Systems. March 2004.
- [MEIDStg1] 3GPP2 S.R0048-A v2.0. 3G Mobile Equipment Identifier (MEID) Stage 1. April 2004.

INFORMATIVE REFERENCES

- [MEIDPROC] 3GPP2 SC.R4001. Global Wireless Equipment Numbering Administration Procedures. February 2004.
- [MEIDGDL] 3GPP2 SC.R4002. Mobile Equipment Identifier (MEID) Assignment Guidelines and Procedures. February 2004.
- [RUIM] 3GPP2 C.S0023-B v1.0. Removable User Identity Module for Spread Spectrum Systems. May 2004.
TIA IS-820-B. Removable User Identity Module for Spread Spectrum Systems. May 2004.

ASSUMPTIONS

1. MEID-equipped mobiles do not have a true ESN. They transmit either UIMID or pseudo-ESN as ESN.

These MSs may also transmit an MEID under some circumstances.
2. In the development of this document it has been assumed that MSCs connected to Base Stations that do not support TIA-2000-D do not need the MEID.
3. The HLR, VLR and AC shall not use MEID for subscription validation or authentication.
4. Work activity for MEID will also be included in TIA/ATIS J-STD-036-B, X.P0004.0 v2/TIA-41-E-1 and X.S0002/TIA-881-1.
5. The CheckMEID operation is optional. If an operator chooses to use this operation, the criteria for use may include whether the MS is equipped with a Removable UIM.

EDITORIAL CONVENTIONS

The following editorial conventions are used for this document:

- underline: addition. Conditional text (FrameMaker source) is “X.S0008-0 v1.0/TIA-928 addition”.
- ~~cross out~~: deletion. Conditional text (FrameMaker source) is “~~X.S0008-0 v1.0/TIA-928 deletion~~”.
- **change bar**: indicates additions or deletions. Conditional text (FrameMaker Source) “X.S0008-0 v1.0/TIA-928 new section”.

1 **TIA-41-000 MODIFICATIONS**

This section provides modifications for the introductory matter for TIA-41 (part 000).

Pseudo-ESN (pESN)

A 32-bit number derived from the MEID and used in place of the electronic serial number. The high order 8 bits are always 0x80 and the remaining 24 bits are derived using the SHA-1 algorithm as defined in *CDMA*.

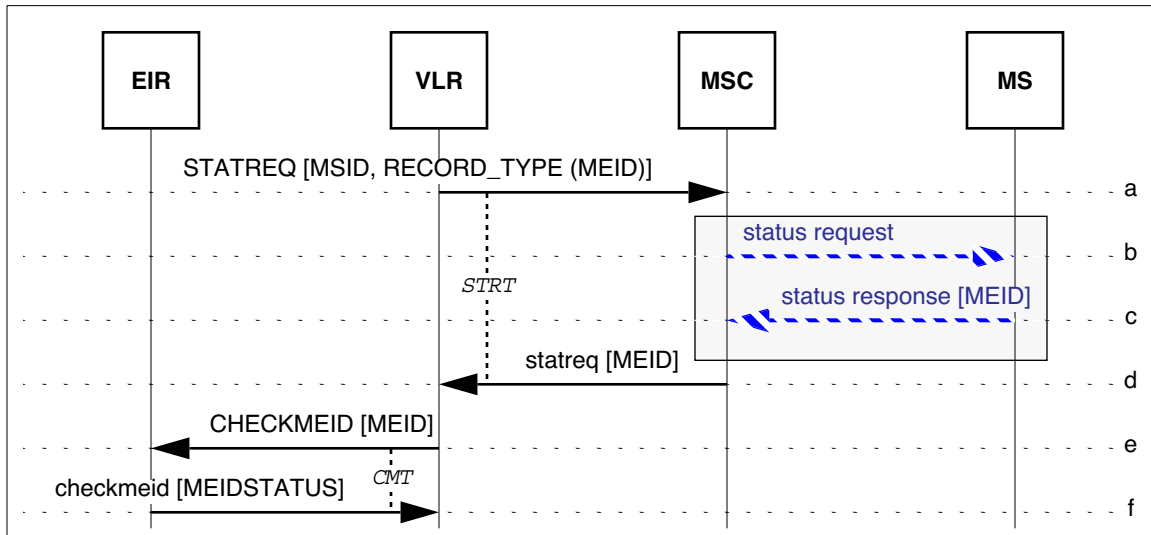
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2 TIA-41-3XX MODIFICATIONS

This section provides information flows for MEID support according to the structure of *TIA-41 Parts 3xx*.

2.1 Check MEID procedure

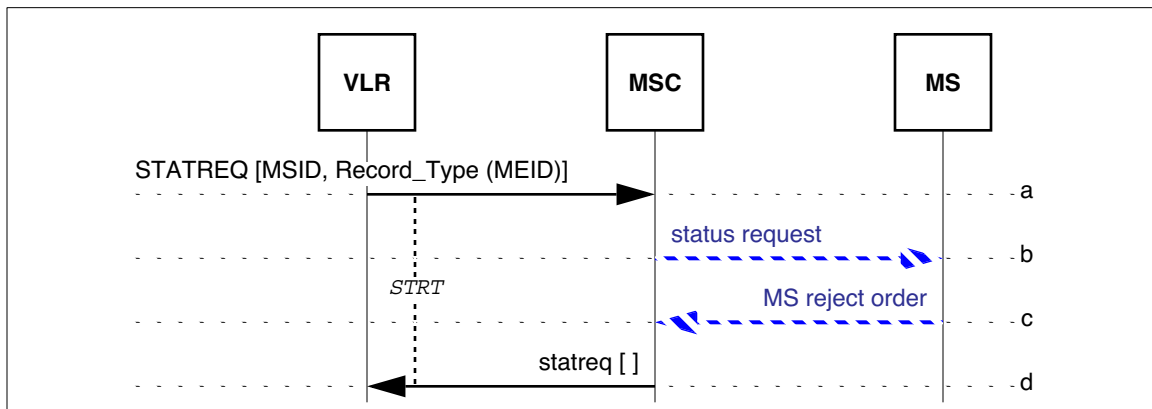
This scenario illustrates the Check MEID procedure. In this case, the VLR does not have the MEID of the MS and initiates the Status Request operation to retrieve it.



- The VLR sends a `STATREQ` to the Serving MSC with the `MSID` parameter set to identify the target MS. The `RECORD_TYPE` parameter is set to request the MEID information record.
- Optionally, the MSC sends a `status request` message to the MS requesting the MEID information record.
- The MS returns its MEID in the `status response` message.
- The MSC sends a `statreq` with the requested MEID to the VLR.
- The VLR can now check the MEID in the EIR database. The VLR sends the MEID to the EIR in `CHECKMEID`.
- The EIR returns the requested equipment status to the VLR in the `checkmeid`. The status may be *Normal*, *Block*, *Track*, or *No Entry*.

2.2 Unsuccessful Status Request

This scenario illustrates an unsuccessful StatusRequest operation.



- a. The VLR sends a `STATREQ` to the Serving MSC with the `MSID` parameter set to identify the target MS. The `Record_Type` parameter is set to request the MEID information record.
- b. The MSC sends a `status request` message to the MS requesting the MEID information record.
- c. The MS cannot provide the requested information (e.g. because it does not support the correct revision of CDMA) and sends the MS Reject Order.
- d. The MSC sends an empty `statreq` to the VLR to indicate that the `status response` message was not received from the MS.

3 TIA-41 PART 5XX MODIFICATIONS

This section provides the additions and modifications to *TIA/EIA-41-D* Chapter 5 signaling protocol for MEID support.

3.1 Data Transfer Services

3.1.1 SS7-Based Data Transfer Services

(See TIA/EIA-41.5-D, page 5-6)

Table 1 MTP Message Priority Values for TIA/EIA-41 Operations

<i>TIA/EIA-41</i> Operation	MTP Message Priority
<u>CheckMEID</u>	<u>0</u>
<u>StatusRequest</u>	<u>0</u>

3.2 Application Services

3.2.1 MAP Operations

3.2.1.2 Operation Specifiers

(See TIA/EIA-41.5-D, page 5-24)

Table 8 TIA/EIA-41 MAP Operation Specifiers

Operation Name	Operation Specifier								
	H	G	F	E	D	C	B	A	Decimal
<u>CheckMEID</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>104</u>
<u>StatusRequest</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>107</u>

3.2.2 Operation Definitions

(See TIA/EIA-41.5-D, page 5-27)

Table 9 Summary of MAP Operations

Operation	Reference
<u>CheckMEID</u>	<u>3.2.2.1</u>
<u>StatusRequest</u>	<u>3.2.2.2</u>

3.2.2.1 CheckMEID (new)

(New for TIA/EIA-41-D Chapter 5, Section 6.4.2)

The CheckMEID (CHECKMEID) operation is used to request information from an EIR on the status of a specific MEID.

The following table lists the possible combinations of invoking and responding NEs.

Table 10 FE Combinations for CheckMEID

	INVOKING NE	RESPONDING NE
Case 1	VLR	EIR

The CheckMEID operation is initiated with a TCAP INVOKE (LAST). This is carried by a TCAP QUERY WITH PERMISSION package. The Parameter Set is encoded as follows:

CheckMEID INVOKE Parameters			Timer: CMT	
Field	Value	Type	Reference	Notes
Identifier	SET [NATIONAL 18]	M	6.3.2.1	
Length	variable octets	M	6.3.2.1	
Contents				
MEID		M	3.3.2.3	a

Notes:

- a. Include to identify the MEID to be checked.

The CheckMEID operation success is reported with a TCAP RETURN RESULT (LAST). This is carried by a TCAP RESPONSE package. The Parameter Set is encoded as follows:

CheckMEID RETURN RESULTParameters				
Field	Value	Type	Reference	Notes
Identifier	SET [NATIONAL 18]	M	6.3.2.1	
Length	variable octets	M	6.3.2.1	
Contents				
MEIDStatus		M	3.3.2.97	a

Notes:

- a. Include to specify the status of the ME identified by the given MEID.

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3.2.2.2 StatusRequest (new)

(New for TIA/EIA-41-D Chapter 5, Section 6.4.2)

The StatusRequest (STATREQ) operation is used to request information (such as MEID) about a specific MS.

The following table lists the possible combinations of invoking and responding NEs.

Table 11 FE Combinations for StatusRequest

	INVOKING NE	RESPONDING NE
Case 1	VLR	MSC

The StatusRequest operation is initiated with a TCAP INVOKE (LAST). This is carried by a TCAP QUERY WITH PERMISSION package. The Parameter Set is encoded as follows:

StatusRequest INVOKE Parameters				Timer: STRT
Field	Value	Type	Reference	Notes
Identifier	SET [NATIONAL 18]	M	6.3.2.1	
Length	variable octets	M	6.3.2.1	
Contents				
MSID		M	2.153	a
Record_Type		M	3.3.2.2	b

Notes:

- a. Include to identify the MS.
- b. Include to identify the information record requested (e.g., MEID).

The StatusRequest operation success is reported with a TCAP RETURN RESULT (LAST). This is carried by a TCAP RESPONSE package. The Parameter Set is encoded as follows:

StatusRequest RETURN RESULT Parameters				
Field	Value	Type	Reference	Notes
Identifier	SET [NATIONAL 18]	M	6.3.2.1	
Length	variable octets	M	6.3.2.1	
Contents				
Information_Record		O	3.3.2.2	a

Notes:

- a. Include the requested information record.

3.3 Map Parameters

3.3.1 General

3.3.1.1 Parameter Identifiers

(See TIA/EIA-41.5-D, page 5-119)

Table 12 TIA/EIA-41 MAP Parameter Identifiers

Parameter Identifier Name	Parameter Identifier Code								Reference
	H	G	F	E	D	C	B	A	
<u>Information_Record</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3.3.2.2</u>
	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	
	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>	
<u>MEID</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3.3.2.3</u>
	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	
	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>	
<u>MEIDStatus</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3.3.2.97</u>
	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	
	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	
<u>Record_Type</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>3.3.2.98</u>
	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	
	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	

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3.3.2 Parameter Definitions

3.3.2.1 ElectronicSerialNumber

(see TIA-41-E-550 2.112)

This parameter was named MobileSerialNumber prior to this revision of the Interim Standard.

The ElectronicSerialNumber (ESN) parameter is used to indicate the unique 32-bit electronic serial number of an MS, a UIMID or the Pseudo-ESN of an MS equipped with an MEID.

Field	Value	Type	Reference	Notes						
Identifier	ElectronicSerialNumber IMPLICIT OCTET STRING	M	Part 550 Section 1.2							
Length	4 octets	M	Part 550 Section 1.1							
Contents										
	H	G	F	E	D	C	B	A	Octet	Notes
	Manufacturer's Code								1	a
MSB	Serial Number								2	a
									3	
									LSB	

Notes:

- a. See *AMPS*, *NAMPS*, *TDMA*, or *CDMA* for encoding of this field.

3.3.2.2 Information_Record (new)

The Information_Record parameter carries specific information requested from an ME.

Field	Value	Type	Reference	Notes					
Identifier	INFORMATION_RECORD IMPLICIT OCTET STRING	M	6.5.1.2						
Length	variable	M	6.5.1.1						
Contents									
H	G	F	E	D	C	B	A	octet	Notes
Status Information Record Type								1	a
Status Information Record Length								2	b
Type-specific fields								3-n	c,d

Notes:

- a. Encoding is the same as the RECORD_TYPE in *CDMA*.
- b. Encoding is the same as the RECORD_LENGTH in *CDMA*.
- c. Encoding is the same as the Status Information Record Type-specific fields in *CDMA*.
- d. Ignore extra octets, if received. Send only defined (or significant) octets.

3.3.2.3 MEID (new)

The MEID parameter specifies the unique 56-bit Mobile Equipment Identifier for an ME. See *MEIDStg1*.

Field	Value	Type	Reference	Notes					
Identifier	MEID IMPLICIT OCTET STRING	M	6.5.1.2						
Length	7 octets	M	6.5.1.1						
Contents									
H	G	F	E	D	C	B	A	octet	Notes
MEID								1	
								2	
								3	
								4	
								5	
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								7	

3.3.2.97 MEIDStatus (new)

The MEIDStatus (MEIDSTATUS) parameter specifies the current status of a given MEID in the EIR.

Field	Value	Type	Reference	Notes					
Identifier	MEIDStatus IMPLICIT OCTET STRING	M	6.5.1.2						
Length	variable	M	6.5.1.1						
Contents									
H	G	F	E	D	C	B	A	octet	Notes
MEID_Status								1	
...								n	a

Notes:

- a. Ignore extra octets, if received. Send only defined (or significant) octets.

<i>MEID_Status (octet 1, bits A-H)</i>	
Decimal Value	Meaning
0	Normal. Same as GSM White Listed - see GSM MAP.
1	Block. Same as GSM Black Listed - see GSM MAP.
2	Track. Same as GSM Grey Listed - see GSM MAP.
3	No Entry. There is no entry covering this MEID.
Other values	Reserved for TIA-41 protocol extension. If received treat as value 3, <i>No Entry</i> .

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3.3.2.98 Record_Type (new)

The Record_Type parameter specifies the information record type.

Field	Value	Type	Reference	Notes					
Identifier	Record_Type IMPLICIT OCTET STRING	M	6.5.1.2						
Length	variable octets	M	6.5.1.1						
Contents									
H	G	F	E	D	C	B	A	octet	Notes
Status Information Record Type								1	a
...								n	b

Notes:

- a. Encoding is the same as the RECORD_TYPE in *CDMA*.
- b. Ignore extra octets, if received. Send only defined (or significant) octets.

4 TIA/EIA-41 SIGNALING PROCEDURES

4.1 (NEW) Check MEID

4.1.1 VLR Initiating a Check MEID

Note that support for these procedures in a given operator's network is optional.

When a VLR determines that an MEID shall be verified, it shall perform the following:

- 1 IF the MEID is not known:
 - 1-1 Execute the "VLR Initiating a Status Request" task (see 5.2.1).
 - 1-2 IF the MEID is not returned:
 - 1-2-1 Execute "Local Recovery Procedures" task (see ANSI-41.6-D, 3.5.1).
 - 1-2-2 Exit this task.
 - 1-3 ENDIF.
- 2 ENDIF.
- 3 Send a CheckMEID INVOKE to the EIR.
- 4 Start the Check MEID Timer (CMT).
- 5 Wait for a Check MEID response:
- 6 WHEN a RETURN RESULT is received:
 - 6-1 Stop the timer (CMT).
 - 6-2 IF the MEIDStatus is *Normal* (same as GSM white listed):
 - 6-2-1 Store the MEID with *Normal* status in the VLR.
 - 6-3 ELSEIF the MEIDStatus is *Block* (same as GSM black listed):
 - 6-3-1 Store the MEID with *Block* status in the VLR.
 - 6-3-2 Optionally, use local procedures to indicate an illegal equipment status to the user (e.g., announcement or SMS).
 - 6-3-3 IF the serving system will deny service from the MS that reported this MEID¹:
 - 6-3-3-1 Send a QualificationDirective INVOKE to the MSC, including the AuthorizationDenied and DeniedAuthorizationPeriod parameters (local procedures may allow voice originations to be routed to customer service).²
 - 6-3-3-2 Send a MSInactive INVOKE to the HLR with DeregistrationType parameter set to indicate *Deregistration for an administrative reason*.
 - 6-3-4 ENDIF.
 - 6-4 ELSEIF the MEIDStatus is *No Entry*:
 - 6-4-1 Store the MEID with *No Entry* status in the VLR.

¹ Emergency calls will be exempt.

² The VLR will suppress re-registrations for the MS for the DeniedAuthorizationPeriod or until the MS disassociates with this MEID.

- 1 6-4-2 Optionally, use local procedures to indicate an illegal equipment status to the user
 2 (e.g., announcement or SMS).
 3
- 4 6-4-3 IF the serving system will deny service from the MS that reported this MEID¹:
 5 6-4-3-1 Send a QualificationDirective INVOKE to the MSC, including the
 6 AuthorizationDenied and DeniedAuthorizationPeriod parameters (local
 7 procedures may allow voice originations to be routed to customer service). Note
 8 that the VLR will suppress re-registrations for the MS for the
 9 DeniedAuthorizationPeriod or until the MS diassociates with this MEID.
 10
- 11 6-4-3-2 Send a MSInactive INVOKE to the HLR with DeregistrationType parameter set
 12 to indicate *Deregistration for an administrative reason*.
 13
- 14 6-4-4 ENDIF.
 15 6-5 ELSEIF the MEIDStatus is *Track* (same as GSM grey listed):
 16 6-5-1 Store the MEID with *Track* status in the VLR.
 17 6-5-2 Optionally, record system accesses from any ME that reports this MEID.
 18 6-6 ENDIF.
 19 7 WHEN a RETURN ERROR or REJECT is received:
 20 7-1 Stop the timer (CMT).
 21 7-2 Execute “Local Recovery Procedures” task (see ANSI-41.6-D, 3.5.1).
 22 8 WHEN the timer (CMT) expires:
 23 8-1 Execute “Local Recovery Procedures” task (see ANSI-41.6-D, 3.5.1).
 24 9 ENDWAIT.
 25 10 Exit this task.
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33 4.1.2 EIR Receiving a Check MEID Request

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- 35 1 When an EIR receives a CheckMEID INVOKE, it shall perform the following:
 36 2 If the received message can be processed:
 37 2-1 Include the MEIDStatus parameter set appropriately:
 38 2-2 Send a RETURN RESULT to the requesting network entity.
 39 40 3 ELSE:
 41 3-1 Send a RETURN ERROR with the proper error code value (see the following table).
 42 43 4 ENDIF.
 44 45 5 Exit this task.
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58 ¹ Emergency calls will be exempt.
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Table 13 - CheckMEID Response

Problem Detection and Recommended Response from EIR to VLR	
RETURN ERROR Error Code	PROBLEM DEFINITION
<i>ResourceShortage</i>	A required EIR resource (e.g., internal memory record) is temporarily not available (e.g., congestion).
<i>OperationNotSupported</i>	The requested MAP operation is recognized, but not supported, by the receiving EIR, or the requesting VLR is not authorized.
<i>ParameterError</i>	A supplied parameter has an encoding problem. <i>Note: Include the Parameter Identifier in question as the FaultyParameter parameter.</i>
<i>SystemFailure</i>	A required resource (e.g., data base access, functional entity) is not presently accessible due to a failure. Human intervention may be required for resolution.

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4.2 (NEW) Status Request

4.2.1 VLR Initiating a Status Request

This task assumes that it is called by a higher function capable of acting upon returned MS information records appropriately. Upon request, the VLR shall do the following:

- 1 Send a StatusRequest INVOKE to the MSC.
- 2 Start the Status Request Timer (STRT).
- 3 Wait for a Status Request response:
- 4 WHEN a RETURN RESULT is received:
 - 4-1 Stop the timer (STRT).
 - 4-2 IF the requested MS information record is received:
 - 4-2-1 Return to the calling task with the requested MS information record.
 - 4-3 ELSE:
 - 4-3-1 Return to the calling task with a failure indication.
 - 4-4 ENDIF.
 - 5 WHEN a RETURN ERROR or REJECT is received:
 - 5-1 Stop the timer (STRT).
 - 5-2 Return to the calling task with a *failure* indication.
 - 6 WHEN the timer (STRT) expires:
 - 6-1 Return to the calling task with a *failure* indication.
 - 7 ENDWAIT.
 - 8 Exit this task.

4.2.2 MSC Receiving a StatusRequest INVOKE

When an MSC receives a StatusRequest INVOKE, it shall perform the following:

- 1 IF the received message can be processed:
 - 1-1 If the MS has been handed off:
 - 1-1-1 Send an empty RETURN RESULT to the requesting network entity.
 - 1-1-2 Exit this task.
 - 1-2 ENDIF.
 - 1-3 Send a CDMA Status Request message to the MS identified by the MSID, including the record type to be returned.
 - 1-4 WAIT for a response from the MS:
 - 1-5 WHEN a Status Response is received from the MS:
 - 1-5-1 Include the received information record or records.
 - 1-5-2 Send a RETURN RESULT to the requesting network entity.
 - 1-6 WHEN an MS Reject order is received from the MS:
 - 1-6-1 Send an empty RETURN RESULT to the requesting network entity.

- 1-7 WHEN no response is received from the MS:
- 1-7-1 Send an empty RETURN RESULT to the requesting network entity.
- 1-8 ENDWAIT.
- 2 ELSEIF the message cannot be processed:
- 2-1 Send a RETURN ERROR with the proper error code value (see the following table).
- 3 ENDIF.
- 4 Exit this task.

Table 14 - StatusRequest Response

Problem Detection and Recommended Response from MSC to VLR	
RETURN ERROR Error Code	PROBLEM DEFINITION
UnrecognizedMIN	A Serving MSC record does not presently exist for the supplied MobileIdentificationNumber parameter
ResourceShortage	A required MSC resource (e.g., internal memory record, MSC is fully occupied) is temporarily not available (e.g., congestion).
OperationNotSupported	The requested MAP operation is recognized, but not supported, by the receiving MSC, or the requesting functional entity is not authorized.
ParameterError	A supplied parameter has an encoding problem. <i>Note: Include the Parameter Identifier in question as the FaultyParameter parameter.</i>
SystemFailure	A required resource (e.g., data base access, functional entity) is not presently accessible due to a failure. Human intervention may be required for resolution.
UnrecognizedIMSI/TMSI	An MSC record does not presently exist for the supplied IMSI parameter.

5 OPERATION TIMER VALUES

(TIA/EIA-41-D Chapter 6, page 6-402)

Table 15 Operation Timer Values (continued)

Timer	Default (sec.)	Started when	Normally stopped when	Action when timer expires
...
<u>CMT</u> <u>Check MEID</u> <u>Timer</u>	<u>6</u>	<u>Check MEID</u> <u>INVOKE is sent.</u>	<u>Check MEID RETURN</u> <u>RESULT or RETURN</u> <u>ERROR is received.</u>	<u>Execute recovery</u> <u>procedures.</u>
<u>STRT</u> <u>Status</u> <u>Request Timer</u>	<u>10</u>	<u>Status Request-</u> <u>INVOKE is sent.</u>	<u>Status Request</u> <u>RETURN RESULT or</u> <u>RETURN ERROR is</u> <u>received.</u>	<u>Return a failure</u> <u>indication to the</u> <u>invoking task.</u>
...

6 TIA-41 OPERATION CHANGES FOR MEID

Only those operation parameter sets (INVOKE or RETURN RESULT) that contain the ElectronicSerialNumber parameter have been included in this section. The “Note” column specifies the text for the Note accompanying the MEID parameter.

Messages Containing ESN		
Operation Name	I(nvoke) or R(esult)	Note
AnalyzedInformation	I	[Not Applicable]
AuthenticationDirective	I	Include if available AND if being transmitted for OTASP or OTAPA.
AuthenticationFailureReport	I	Include if available.
AuthenticationRequest	I	Include if available.
AuthenticationStatusReport	I	Include if available.
BaseStationChallenge	I	Include if available.
ChangeFacilities	I	[Not Applicable]
ChangeService	I	[Not Applicable]
CountRequest	I	Include if available.
FacilitiesDirective	I	[Not Applicable]
FacilitiesDirective2	I	Include if available.
FacilitySelectedAndAvailable	I	[Not Applicable]
FeatureRequest	I	Include if available when initiated by an MSC or VLR.
FlashRequest	I	[Not Applicable]
HandoffToThird	I	[Not Applicable]
HandoffToThird2	I	Include if available.
InformationDirective	I	[Not applicable].
InformationForward	I	Include if available.
InterSystemAnswer	I	[Not Applicable]
InterSystemPage	I	[Not Applicable]
InterSystemPage2	I	[Not Applicable]
InterSystemSetup	I	Include if available (existing note a)
LocationRequest	R	Include if available for recording purposes.
MSInactive	I	Include if available
OriginationRequest	I	Include if available when sent to the HLR or OTAF.
OTASPRRequest	I	Include if available.
ParameterRequest	I	[Not Applicable]
	R	[Not Applicable]
QualificationDirective	I	[Not Applicable]
QualificationRequest	I	Include if known to identify the Mobile Equipment.

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Messages Containing ESN		
Operation Name	I(nvoke) or R(esult)	Note
RedirectionDirective	I	[Not Applicable]
RedirectionRequest	I	[Not Applicable]
RegistrationCancellation	I	[Not Applicable]
RegistrationNotification	I	Include if known to identify the Mobile Equipment.
RoutingRequest	I	[Not Applicable]
	R	[Not Applicable]
SMSDeliveryBackward	I	[Not Applicable]
SMSDeliveryForward	I	[Not Applicable]
SMSDeliveryPointToPoint	I	Include if available for OTA or OTAPA.
	R	Include if available for OTA or OTAPA.
SMSNotification	I	Include if available.
SMSRequest	I	[Not Applicable]
	R	[Not Applicable]
TBusy	I	[Not Applicable]
TMSIDirective	I	[Not Applicable]
	R	Include if available.
TNoAnswer	I	[Not Applicable]
TransferToNumberRequest	I	Include if available when initiated by the Serving MSC.
UnsolicitedResponse	I	Include if available.

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7 TIA-41 PARAMETER CHANGES FOR MEID

Only those parameters that contain the ElectronicSerialNumber have been included in this section. The “Note” column specifies the text for the Note accompanying the MEID field.

Parameter Identifier Name	Note
AnnouncementCode	Add new code “Invalid MEID” (7).
AuthorizationDenied	Add new code point values “Blocked MEID” (12) and “Unknown MEID” (13).
CDMA2000HandoffInvokeIOSData	[Not applicable]
DenyAccess	Value 10, “MIN, IMSI or ESN authorization failure” should be changed to “MIN, IMSI, MEID or ESN authorization failure”.
IntersystemTermination	Re-use note e for MEID. (Include for recording purposes).
LocalTermination	Include if available.
PSTNTermination	Re-use note c for MEID (Optional, for recording purposes).
ReportType	[Not Applicable] (This is a CAVE authentication parameter. There is no MEID equivalent to “MSID/ESN mismatch”)
RequiredParametersMask	[Not Applicable]
SMS_CauseCode	<p>“Address translation failure” value should be reworded to include mention of MEID for OTA as:</p> <p>The SMS Destination Address is invalid (e.g., address is not a recognized address type, address is not for a known or possible SMS functional entity, the MSID associated with a destination MS address does not correspond to its HLR, the ESN associated with a destination MS does not match the expected value, the SMS_DestinationAddress, SMS_OriginalDestinationAddress, destination MSID, or original destination subaddress does not match the address of a destination SME). For CDMA OTASP, the TRN, the Activation_MIN, the MEID or the ESN is currently not allocated to an OTASP call.</p>

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