
Source: SA5 (Telecom Management)
Title: 2 Rel-4/5 CRs 32.403 (Performance measurements - UMTS and combined UMTS/GSM) "Correction of the subscriber number measurement definitions"
Document for: Approval
Agenda Item: 7.5.3

Doc-1st-Level	Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Doc-2nd-Level	Workitem
SP-030146	32.403	011	-	Rel-4	Correction of the subscriber number measurement definitions	F	4.2.1	S5-038142	OAM-PM
SP-030146	32.403	012	-	Rel-5	Correction of the subscriber number measurement definitions	A	5.1.0	S5-038141	OAM-PM

CR-Form-v7
CHANGE REQUEST
⌘ 32.403 CR 011 ⌘ rev - ⌘ Current version: 4.2.1 ⌘

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Correction of the subscriber number measurement definitions		
Source:	⌘ S5		
Work item code:	⌘ OAM-PM Date: ⌘ 28/02/2003		
Category:	⌘ F Release: ⌘ Rel-4		
Use <u>one</u> of the following categories: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) </td> <td style="width: 50%; vertical-align: top;"> Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) </td> </tr> </table> Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)	Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)
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Reason for change:	⌘ The trigger points for the "Number of attached subscribers" is incoherent with its behaviour. In fact, for detach caused by power off and detach initiated by the SGSN with expire of the T3322 timer there is no DETACH ACCEPT. For the gauge Number of CAMEL subscribers the problem is similar
Summary of change:	⌘ Change of the trigger points of the Number of attached subscribers and Number of CAMEL subscribers
Consequences if not approved:	⌘ The trigger point will remain inconsistent with the behaviour for those measurements.

Clauses affected:	⌘ 5.1.32, 5.1.33, 5.1.40					
Other specs affected:	<table border="1" style="border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </table>	Y	N	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Other core specifications ⌘
	Y	N				
	<input type="checkbox"/>	<input checked="" type="checkbox"/>				
<input checked="" type="checkbox"/>	Test specifications					
<input checked="" type="checkbox"/>	O&M Specifications	⌘				
Other comments:	⌘					

5.1.32 Number of attached subscribers

- a) This measurement provides the number of attached subscribers within this SGSN area. The three measurement types defined in E are subject to the "2 out of 3 approach".
- b) GAUGE.
- c) Incremented when a subscriber enters the GMM REGISTERED state in the SGSN Location Register, and decremented when a subscriber leaves the GMM REGISTERED state.
Note: the GMM state machine in the SGSN Location Register we refer to is described in detail in the TS 24.008 [15], chapter 4.1.3.3 (Figure 4.1c/3GPP TS 24.008: GMM main states on the network side). ~~The gauge will be incremented at transmission of a "ATTACH ACCEPT" message to the MS and will be decremented at transmission of a "DETACH ACCEPT" message to the MS (TS 24.008).~~
- d) A single integer value per measurement type defined in E.
- e) MM.NbrActAttachedSub:
 - MM.NbrActAttachedSub Combined (don't care);
 - MM.NbrActAttachedSub.G GSM;
 - MM.NbrActAttachedSub.U UMTS
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.33 Number of home subscribers

- a) This measurement provides the number of GPRS home subscribers located in the SGSN location register. The GPRS MM state of this subscriber is GMM_REGISTERED or GMM_DEREGISTERED. Only GPRS subscribers that are homed in the same GPRS network are considered. The three measurement types defined in E are subject to the "2 out of 3 approach".
- b) GAUGE.
- c) ~~Incremented by one when GPRS subscriber is successfully registered in the SGSN location register and decremented by one when GPRS subscriber is successfully deregistered out of the SGSN location register (TS 24.008).~~
Incremented by one when GPRS home subscriber is successfully registered in the SGSN location register and decremented by one when GPRS home subscriber is successfully deregistered out of the SGSN location register (TS 24.008).
- d) A single integer value per measurement type defined in e).
- e) MM.NbrHomeSub:
 - MM.NbrHomeSub Combined (don't care);
 - MM.NbrHomeSub.G GSM;
 - MM.NbrHomeSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.34 Number of visiting national subscribers

- a) This measurement provides the number of visiting national GPRS subscribers located in the SGSN location register. The GPRS MM state of this subscriber is GMM_REGISTERED or GMM_DEREGISTERED. Only GPRS subscribers that are homed in a partner GPRS network of the same country are considered. The three measurement types defined in E are subject to the "2 out of 3 approach".
- b) GAUGE.
- c) This measurement provides the number of visiting national GPRS subscribers located in the SGSN location register. The GPRS MM state of this subscriber is GMM_REGISTERED or GMM_DEREGISTERED. Only GPRS subscribers that are homed in a partner GPRS network of the same country are considered.
- d) A single integer value per measurement type defined in E.
- e) MM.NbrVisitingNatSub:
 - MM.NbrVisitingNatSub Combined (don't care);
 - MM.NbrVisitingNatSub.G GSM;
 - MM.NbrVisitingNatSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.35 Number of visiting foreign subscribers

- a) This measurement provides the number of visiting foreign GPRS located in the SGSN location register. The GPRS MM state of this subscriber is GMM_REGISTERED or MM_DEREGISTERED. Only GPRS subscribers that are homed in a GPRS network of a foreign country are considered. The three measurement types defined in E are subject to the "2 out of 3 approach"..
- b) GAUGE.
- c) Incremented by one when GPRS subscriber is successfully registered in the SGSN location registered and decremented by one when GPRS subscriber is successfully deregistered out of the SGSN location register (TS 24.008).
- d) A single integer value per measurement type defined in E.
- e) MM.NbrVisitingForeign:
 - MM.NbrVisitingForeign Combined (don't care);
 - MM.NbrVisitingForeign.G GSM;
 - MM.NbrVisitingForeign.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.36 Mean number of attached subscribers

- a) This measurement provides the arithmetic mean number of the number of attached subscribers within this SGSN area. The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) SI.

- c) This measurement is obtained by sampling at a pre-defined interval, the number of subscribers which are attached and then taking the arithmetic mean.
- d) A single integer value per measurement type defined in e).
- e) MM.MeanNbrAttachedSub:
 - MM.MeanNbrAttachedSub Combined (don't care);
 - MM.MeanNbrAttachedSub.G GSM;
 - MM.MeanNbrAttachedSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.37 Mean Number of home subscribers

- a) This measurement provides the arithmetic mean number of GPRS home subscribers located in the SGSN location register.
The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) SI.
- c) This measurement is obtained by sampling at a pre-defined interval, the number of GPRS home subscribers located in the SGSN location register and then taking the arithmetic mean.
- d) A single integer value per measurement type defined in e).
- e) MM.MeanNbrHomeSub:
 - MM.MeanNbrHomeSub Combined (don't care);
 - MM.MeanNbrHomeSub.G GSM;
 - MM.MeanNbrHomeSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.38 Mean Number of visiting national subscribers

- a) This measurement provides the arithmetic mean number of visiting national GPRS subscribers located in the SGSN location register.
The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) SI.
- c) This measurement is obtained by sampling at a pre-defined interval, the number of visiting national GPRS subscribers located in the SGSN location register and then taking the arithmetic mean.
- d) A single integer value per measurement type defined in e).
- e) MM.MeanNbrVisitingNatSub:
 - MM.MeanNbrVisitingNatSub Combined (don't care);
 - MM.MeanNbrVisitingNatSub.G GSM;
 - MM.MeanNbrVisitingNatSub.U UMTS.

- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.39 Mean Number of visiting foreign subscribers

- a) This measurement provides the arithmetic mean number of visiting foreign GPRS located in the SGSN location register.
The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) SI.
- c) This measurement is obtained by sampling at a pre-defined interval, the number of visiting foreign GPRS subscribers located in the SGSN location register and then taking the arithmetic mean.
- d) A single integer value per measurement type defined in e).
- e) MM.MeanNbrVisitingForeign:
 - MM.MeanNbrVisitingForeign Combined (don't care);
 - MM.MeanNbrVisitingForeign.G GSM;
 - MM.MeanNbrVisitingForeign.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.40 Number of CAMEL subscribers

- a) This measurement provides the number of attached subscriber within this SGSN area with CAMEL service
The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) GAUGE.
- c) Incremented when a CAMEL subscriber enters the GMM_REGISTERED state in the SGSN Location Register, and decremented when a subscriber leaves the GMM_REGISTERED state.
Note: the GMM state machine in the SGSN Location Register we refer to is described in detail in the TS 24.008 [15], chapter 4.1.3.3 (Figure 4.1c/3GPP TS 24.008: GMM main states on the network side).
- ~~e) The gauge will be incremented at transmission of a "ATTACH ACCEPT" (with CAMEL service) message to the MS and will be decremented at transmission of a "DETACH ACCEPT" (with CAMEL service) message to the MS.~~
- d) A single integer value per measurement type defined in e).
- e) MM.NbrCamelSub:
 - MM.NbrCamelSub Combined (don't care);
 - MM.NbrCamelSub.G GSM;
 - MM.NbrCamelSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

CR-Form-v7
CHANGE REQUEST
⌘ 32.403 CR 012 ⌘ rev - ⌘ Current version: 5.1.0 ⌘

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Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Correction of the subscriber number measurement definitions		
Source:	⌘ S5		
Work item code:	⌘ OAM-PM Date: ⌘ 28/02/2003		
Category:	⌘ A Release: ⌘ Rel-5		
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Reason for change:	⌘ The trigger points for the "Number of attached subscribers" is incoherent with its behaviour. In fact, for detach caused by power off and detach initiated by the SGSN with expire of the T3322 timer there is no DETACH ACCEPT. For the gauge Number of CAMEL subscribers the problem is similar
Summary of change:	⌘ Change of the trigger points of the Number of attached subscribers and Number of CAMEL subscribers
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	Y	N								
	X									
X										
X										
Other comments:	⌘									

5.1.32 Number of attached subscribers

- a) This measurement provides the number of attached subscribers within this SGSN area. The three measurement types defined in E are subject to the "2 out of 3 approach".
- b) GAUGE.
- c) Incremented when a subscriber enters the GMM REGISTERED state in the SGSN Location Register, and decremented when a subscriber leaves the GMM REGISTERED state.
Note: the GMM state machine in the SGSN Location Register we refer to is described in detail in the TS 24.008 [15], chapter 4.1.3.3 (Figure 4.1c/3GPP TS 24.008: GMM main states on the network side). ~~The gauge will be incremented at transmission of a "ATTACH ACCEPT" message to the MS and will be decremented at transmission of a "DETACH ACCEPT" message to the MS (TS 24.008).~~
- d) A single integer value per measurement type defined in E.
- e) MM.NbrActAttachedSub:
 - MM.NbrActAttachedSub Combined (don't care);
 - MM.NbrActAttachedSub.G GSM;
 - MM.NbrActAttachedSub.U UMTS
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.33 Number of home subscribers

- a) This measurement provides the number of GPRS home subscribers located in the SGSN location register. The GPRS MM state of this subscriber is GMM_REGISTERED or GMM_DEREGISTERED. Only GPRS subscribers that are homed in the same GPRS network are considered. The three measurement types defined in E are subject to the "2 out of 3 approach".
- b) GAUGE.
- c) ~~Incremented by one when GPRS subscriber is successfully registered in the SGSN location register and decremented by one when GPRS subscriber is successfully deregistered out of the SGSN location register (TS 24.008).~~
Incremented by one when GPRS home subscriber is successfully registered in the SGSN location register and decremented by one when GPRS home subscriber is successfully deregistered out of the SGSN location register (TS 24.008).
- d) A single integer value per measurement type defined in e).
- e) MM.NbrHomeSub:
 - MM.NbrHomeSub Combined (don't care);
 - MM.NbrHomeSub.G GSM;
 - MM.NbrHomeSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.34 Number of visiting national subscribers

- a) This measurement provides the number of visiting national GPRS subscribers located in the SGSN location register. The GPRS MM state of this subscriber is GMM_REGISTERED or GMM_DEREGISTERED. Only GPRS subscribers that are homed in a partner GPRS network of the same country are considered. The three measurement types defined in E are subject to the "2 out of 3 approach".
- b) GAUGE.
- c) This measurement provides the number of visiting national GPRS subscribers located in the SGSN location register. The GPRS MM state of this subscriber is GMM_REGISTERED or GMM_DEREGISTERED. Only GPRS subscribers that are homed in a partner GPRS network of the same country are considered.
- d) A single integer value per measurement type defined in E.
- e) MM.NbrVisitingNatSub:
 - MM.NbrVisitingNatSub Combined (don't care);
 - MM.NbrVisitingNatSub.G GSM;
 - MM.NbrVisitingNatSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.35 Number of visiting foreign subscribers

- a) This measurement provides the number of visiting foreign GPRS located in the SGSN location register. The GPRS MM state of this subscriber is GMM_REGISTERED or MM_DEREGISTERED. Only GPRS subscribers that are homed in a GPRS network of a foreign country are considered. The three measurement types defined in E are subject to the "2 out of 3 approach"..
- b) GAUGE.
- c) Incremented by one when GPRS subscriber is successfully registered in the SGSN location registered and decremented by one when GPRS subscriber is successfully deregistered out of the SGSN location register (TS 24.008).
- d) A single integer value per measurement type defined in E.
- e) MM.NbrVisitingForeign:
 - MM.NbrVisitingForeign Combined (don't care);
 - MM.NbrVisitingForeign.G GSM;
 - MM.NbrVisitingForeign.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.36 Mean number of attached subscribers

- a) This measurement provides the arithmetic mean number of the number of attached subscribers within this SGSN area. The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) SI.

- c) This measurement is obtained by sampling at a pre-defined interval, the number of subscribers which are attached and then taking the arithmetic mean.
- d) A single integer value per measurement type defined in e).
- e) MM.MeanNbrAttachedSub:
 - MM.MeanNbrAttachedSub Combined (don't care);
 - MM.MeanNbrAttachedSub.G GSM;
 - MM.MeanNbrAttachedSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.37 Mean Number of home subscribers

- a) This measurement provides the arithmetic mean number of GPRS home subscribers located in the SGSN location register.
The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) SI.
- c) This measurement is obtained by sampling at a pre-defined interval, the number of GPRS home subscribers located in the SGSN location register and then taking the arithmetic mean.
- d) A single integer value per measurement type defined in e).
- e) MM.MeanNbrHomeSub:
 - MM.MeanNbrHomeSub Combined (don't care);
 - MM.MeanNbrHomeSub.G GSM;
 - MM.MeanNbrHomeSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.38 Mean Number of visiting national subscribers

- a) This measurement provides the arithmetic mean number of visiting national GPRS subscribers located in the SGSN location register.
The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) SI.
- c) This measurement is obtained by sampling at a pre-defined interval, the number of visiting national GPRS subscribers located in the SGSN location register and then taking the arithmetic mean.
- d) A single integer value per measurement type defined in e).
- e) MM.MeanNbrVisitingNatSub:
 - MM.MeanNbrVisitingNatSub Combined (don't care);
 - MM.MeanNbrVisitingNatSub.G GSM;
 - MM.MeanNbrVisitingNatSub.U UMTS.

- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.39 Mean Number of visiting foreign subscribers

- a) This measurement provides the arithmetic mean number of visiting foreign GPRS located in the SGSN location register.
The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) SI.
- c) This measurement is obtained by sampling at a pre-defined interval, the number of visiting foreign GPRS subscribers located in the SGSN location register and then taking the arithmetic mean.
- d) A single integer value per measurement type defined in e).
- e) MM.MeanNbrVisitingForeign:
 - MM.MeanNbrVisitingForeign Combined (don't care);
 - MM.MeanNbrVisitingForeign.G GSM;
 - MM.MeanNbrVisitingForeign.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.

5.1.40 Number of CAMEL subscribers

- a) This measurement provides the number of attached subscriber within this SGSN area with CAMEL service
The three measurement types defined in e) are subject to the "2 out of 3 approach".
- b) GAUGE.
- c) Incremented when a CAMEL subscriber enters the GMM_REGISTERED state in the SGSN Location Register, and decremented when a subscriber leaves the GMM_REGISTERED state.
Note: the GMM state machine in the SGSN Location Register we refer to is described in detail in the TS 24.008 [15], chapter 4.1.3.3 (Figure 4.1c/3GPP TS 24.008: GMM main states on the network side).
- ~~e) The gauge will be incremented at transmission of a "ATTACH ACCEPT" (with CAMEL service) message to the MS and will be decremented at transmission of a "DETACH ACCEPT" (with CAMEL service) message to the MS.~~
- d) A single integer value per measurement type defined in e).
- e) MM.NbrCamelSub:
 - MM.NbrCamelSub Combined (don't care);
 - MM.NbrCamelSub.G GSM;
 - MM.NbrCamelSub.U UMTS.
- f) SgsnFunction.
- g) Valid for packet switching.
- h) GSM/UMTS.