

Source: SA5 (Telecom Management)
Title: 4 Rel-4 & Rel-5 CRs 32.200 and 32.215
Document for: Approval
Agenda Item: 7.5.3

Doc-1 st -Level	Spec	CR	R	Phase	Subject	Cat	Ver Cur	Ver New	Doc-2 nd -Level	Workite m
SP-020286	32.200	011	-	Rel-4	Align with 23.060 by adding 'intra-SGSN intersystem change' as record closure criterion for S-CDR - Parent CR	F	4.1.0	4.2.0	S5-024158	OAM-CH
SP-020286	32.200	012	-	Rel-5	Align with 23.060 by adding 'intra-SGSN intersystem change' as record closure criterion for S-CDR - Parent CR	A	5.0.0	5.1.0	S5-024159	OAM-CH
SP-020286	32.215	009	-	Rel-4	Correction of S-CDR triggers - Child CR	F	4.2.1	4.3.0	S5-024160	OAM-CH
SP-020286	32.215	010	-	Rel-5	Correction of S-CDR triggers - Child CR	A	5.0.0	5.1.0	S5-024161	OAM-CH

CHANGE REQUEST

⌘ **32.200 CR 011** ⌘ rev **-** ⌘ Current version: **4.1.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘	Align with 23.060 by adding 'intra-SGSN intersystem change' as record closure criterion for S-CDR	
Source:	⌘	SA5	
Work item code:	⌘	OAM-CH	Date: ⌘ 24/05/2002
Category:	⌘	F	Release: ⌘ REL-4
		Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	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)

Reason for change:	⌘	The current S-CDR does not take into account intra-SGSN intersystem change. In order to be able to charge the subscriber correctly, in case the charge for payload depends on the used air interface, this must be reflected in the S-CDR. The procedure is described in TS 23.060 (ch. 6.13.1) but not considered in the charging specifications.
Summary of change:	⌘	Intra-SGSN intersystem change is added as reason for record closure for S-CDR. The terminology for the M-CDR trigger table is aligned accordingly.
Consequences if not approved:	⌘	Subscribers can not be charged correctly in case of intra-SGSN intersystem change. Misalignment with TS 23.060.

Clauses affected:	⌘	6.2.1.1.2, 6.2.1.2.2									
Other specs affected:	⌘	<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"><input type="checkbox"/></td> <td style="width: 40%;">Other core specifications</td> <td style="width: 30%;">⌘</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Test specifications</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>O&M Specifications</td> <td>32.215</td> </tr> </table>	<input type="checkbox"/>	Other core specifications	⌘	<input type="checkbox"/>	Test specifications		<input checked="" type="checkbox"/>	O&M Specifications	32.215
<input type="checkbox"/>	Other core specifications	⌘									
<input type="checkbox"/>	Test specifications										
<input checked="" type="checkbox"/>	O&M Specifications	32.215									
Other comments:	⌘	If this Parent CR is approved then also the Related Child 32.215CR009 for PS Charging can be approved.									

6.2.1.1.2 Triggers for S-CDR Closure

The S-CDR shall be closed on encountering some trigger conditions. Table 12 identifies which conditions are supported to permit closure of the S-CDR.

Table 12: Triggers for S-CDR closure

Closure Conditions	Description/Behaviour
End of PDP Context within the SGSN	Deactivation of the PDP context in the SGSN shall result in the CDR being closed. The trigger condition covers: <ul style="list-style-type: none"> - termination of PDP context, - SGSN change (inter-SGSN routing area update including <u>intersystem handoverchange</u>), - any abnormal release.
Partial Record Reason	O&M reasons permit the closure of the CDR for internal reasons. The trigger condition covers: <ul style="list-style-type: none"> - data volume limit, - time (duration) limit, - maximum number of charging condition changes, - management intervention, - <u>Intra-SGSN intersystem change (change of radio interface from GSM to UMTS or vice versa)</u>.

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6.2.1.2.2 Triggers for M-CDR Closure

The M-CDR shall be closed on encountering some trigger conditions. Table 14 identifies which conditions are supported to permit closures of the M-CDR.

Table 14: Triggers for M-CDR closure

Closure Conditions	Description/Behaviour
End of MM Context within SGSN	Deactivation of the MM context in the SGSN shall result in the CDR being closed. The trigger condition covers: <ul style="list-style-type: none"> - SGSN change (inter-SGSN routing area update including <u>intersystem handoverchange</u>), - GPRS detach, - any abnormal release.
Partial Record Reason	O&M reasons permit the closure of the CDR for internal reasons. The trigger condition covers: <ul style="list-style-type: none"> - time (duration) limit, - maximum number of mobility changes, and - Management intervention, - <u>Intra-SGSN intersystem handover-change (change of radio interface from GSM to 3G UMTS or vice versa)</u>.

In the event that the M-CDR is closed and the mobile is still known to the SGSN, a further logical M-CDR shall be opened with an incremented Sequence Number in the SGSN.

CHANGE REQUEST

⌘ **32.215 CR 010** ⌘ rev **-** ⌘ Current version: **5.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of S-CDR triggers		
Source:	⌘ SA5		
Work item code:	⌘ OAM-CH	Date:	⌘ 24/05/2002
Category:	⌘ A	Release:	⌘ REL-5
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		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)

Reason for change:	⌘ Alignment of 32.215 with 23.060.
	The current S-CDR does not contain information about intra-SGSN intersystem change. In order to be able to charge the subscriber correctly, in case the charge for payload depends on the used air interface, this must be reflected in the S-CDR. The procedure is described in TS 23.060 (ch. 6.13.1) but not considered in the charging specifications. Intra-SGSN intersystem change can not be reflected on the existing M-CDR due to incomplete ASN.1 specification, even if it is specified as a valid reason for record closure in TS 32.200 (Charging principles). The 'SGSN Change' that triggers CDR closure is incorrectly specified as a trigger for partial record generation.
Summary of change:	⌘ <ol style="list-style-type: none"> 1. 'System change' is added as reason for record closure. 2. ASN.1 description for record closure reason is updated to also cover 'Intra SGSN Intersystem change'. 3. 'SGSN Change' is correctly specified as CDR closure trigger.
Consequences if not approved:	⌘ <ol style="list-style-type: none"> 1,2. Subscribers can not be charged correctly in case of intra-SGSN intersystem change. 3. Billing errors.

Clauses affected:	⌘ 5.4, 6.1		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications ⌘ <input checked="" type="checkbox"/> O&M Specifications	⌘	32.200
Other comments:	⌘ This CR can be approved only after the related Parent 32.200CR12 has been approved.		

5.4 Cause for Record Closing

This field contains a reason for the release of the CDR including the following:

- normal release: PDP context release (end of context or SGSN change) or GPRS detach;
- partial record generation: data volume limit, time (duration) limit, ~~SGSN change~~ or maximum number of changes in charging conditions or intra SGSN intersystem change (change of radio interface from GSM to UMTS or vice versa);
- abnormal termination (PDP or MM context);
- management intervention (request due to O&M reasons).

A more detailed reason may be found in the diagnostics field.

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6 Charging Data Record Structure

6.1 ASN.1 definitions for CDR information

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```
CauseForRecClosing ::= INTEGER
{
  --
  -- In GGSN the value sGSNChange should be used for partial record
  -- generation due to SGSN Address List Overflow
  --
  -- cause codes 0 to 15 are defined in TS 32.205 as 'CauseForTerm' (cause for termination)
  --
  normalRelease          (0),
  abnormalRelease        (4),
  cAMELInitCallRelease   (5),
  volumeLimit            (16),
  timeLimit              (17),
  sGSNChange             (18),
  maxChangeCond          (19),
  managementIntervention (20),
  intraSGSNIntersystemChange (21)
}
```

CHANGE REQUEST

⌘ **32.215 CR 009** ⌘ rev **-** ⌘ Current version: **4.2.1** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of S-CDR triggers		
Source:	⌘ SA5		
Work item code:	⌘ OAM-CH	Date:	⌘ 24/05/2002
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		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)

Reason for change:	⌘ Alignment of 32.215 with 23.060.
	The current S-CDR does not contain information about intra-SGSN intersystem change. In order to be able to charge the subscriber correctly, in case the charge for payload depends on the used air interface, this must be reflected in the S-CDR. The procedure is described in TS 23.060 (ch. 6.13.1) but not considered in the charging specifications. Intra-SGSN intersystem change can not be reflected on the existing M-CDR due to incomplete ASN.1 specification, even if it is specified as a valid reason for record closure in TS 32.200 (Charging principles). The 'SGSN Change' that triggers CDR closure is incorrectly specified as a trigger for partial record generation.
Summary of change:	⌘ <ol style="list-style-type: none"> 1. 'System change' is added as reason for record closure. 2. ASN.1 description for record closure reason is updated to also cover 'Intra SGSN Intersystem change'. 3. 'SGSN Change' is correctly specified as CDR closure trigger.
Consequences if not approved:	⌘ <ol style="list-style-type: none"> 1,2. Subscribers can not be charged correctly in case of intra-SGSN intersystem change. 3. Billing errors.

Clauses affected:	⌘ 5.4, 6.1		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input checked="" type="checkbox"/> O&M Specifications		32.200
Other comments:	⌘ This CR can be approved only after the related Parent 32.200CR11 has been approved.		

5.4 Cause for Record Closing

This field contains a reason for the release of the CDR including the following:

- normal release: PDP context release (end of context or SGSN change) or GPRS detach;
- partial record generation: data volume limit, time (duration) limit, ~~SGSN change~~ or maximum number of changes in charging conditions or intra SGSN intersystem change (change of radio interface from GSM to UMTS or vice versa);
- abnormal termination (PDP or MM context);
- management intervention (request due to O&M reasons).

A more detailed reason may be found in the diagnostics field.

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6 Charging Data Record Structure

6.1 ASN.1 definitions for CDR information

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...

```
CauseForRecClosing ::= INTEGER
{
  --
  -- In GGSN the value sGSNChange should be used for partial record
  -- generation due to SGSN Address List Overflow
  --
  -- cause codes 0 to 15 are defined in TS 32.205 as 'CauseForTerm' (cause for termination)
  --
  normalRelease          (0),
  abnormalRelease        (4),
  cAMELInitCallRelease   (5),
  volumeLimit            (16),
  timeLimit              (17),
  sGSNChange             (18),
  maxChangeCond          (19),
  managementIntervention (20),
  intraSGSNIntersystemChange (21)
}
```

CHANGE REQUEST

⌘ **32.200 CR 012** ⌘ rev **-** ⌘ Current version: **5.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘	Align with 23.060 by adding 'intra-SGSN intersystem change' as record closure criterion for S-CDR	
Source:	⌘	SA5	
Work item code:	⌘	OAM-CH	Date: ⌘ 24/05/2002
Category:	⌘	A	Release: ⌘ REL-5
		Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	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)

Reason for change:	⌘	Alignment of 32.200 with 23.060. The current S-CDR does not take into account intra-SGSN intersystem change. In order to be able to charge the subscriber correctly, in case the charge for payload depends on the used air interface, this must be reflected in the S-CDR. The procedure is described in TS 23.060 (ch. 6.13.1) but not considered in the charging specifications.
Summary of change:	⌘	Intra-SGSN intersystem change is added as reason for record closure for S-CDR. The terminology for the M-CDR trigger table is aligned accordingly.
Consequences if not approved:	⌘	Subscribers can not be charged correctly in case of intra-SGSN intersystem change. Misalignment with TS 23.060.

Clauses affected:	⌘	6.2.1.1.2, 6.2.1.2.2												
Other specs affected:	⌘	<table style="width: 100%; border: none;"> <tr> <td style="width: 5%;"><input type="checkbox"/></td> <td style="width: 45%;">Other core specifications</td> <td style="width: 5%;">⌘</td> <td style="width: 45%;"></td> </tr> <tr> <td><input type="checkbox"/></td> <td>Test specifications</td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>O&M Specifications</td> <td></td> <td>32.215</td> </tr> </table>	<input type="checkbox"/>	Other core specifications	⌘		<input type="checkbox"/>	Test specifications			<input checked="" type="checkbox"/>	O&M Specifications		32.215
<input type="checkbox"/>	Other core specifications	⌘												
<input type="checkbox"/>	Test specifications													
<input checked="" type="checkbox"/>	O&M Specifications		32.215											
Other comments:	⌘	If this Parent CR is approved then also the Related Child 32.215CR010 for PS Charging can be approved.												

6.2.1.1.2 Triggers for S-CDR Closure

The S-CDR shall be closed on encountering some trigger conditions. Table 12 identifies which conditions are supported to permit closure of the S-CDR.

Table 12: Triggers for S-CDR closure

Closure Conditions	Description/Behaviour
End of PDP Context within the SGSN	Deactivation of the PDP context in the SGSN shall result in the CDR being closed. The trigger condition covers: <ul style="list-style-type: none"> - termination of PDP context, - SGSN change (inter-SGSN routing area update including <u>intersystem handoverchange</u>), - any abnormal release.
Partial Record Reason	O&M reasons permit the closure of the CDR for internal reasons. The trigger condition covers: <ul style="list-style-type: none"> - data volume limit, - time (duration) limit, - maximum number of charging condition changes, - management intervention, - <u>Intra-SGSN intersystem change (change of radio interface from GSM to UMTS or vice versa)</u>.

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6.2.1.2.2 Triggers for M-CDR Closure

The M-CDR shall be closed on encountering some trigger conditions. Table 14 identifies which conditions are supported to permit closures of the M-CDR.

Table 14: Triggers for M-CDR closure

Closure Conditions	Description/Behaviour
End of MM Context within SGSN	Deactivation of the MM context in the SGSN shall result in the CDR being closed. The trigger condition covers: <ul style="list-style-type: none"> - SGSN change (inter-SGSN routing area update including <u>intersystem handoverchange</u>), - GPRS detach, - any abnormal release.
Partial Record Reason	O&M reasons permit the closure of the CDR for internal reasons. The trigger condition covers: <ul style="list-style-type: none"> - time (duration) limit, - maximum number of mobility changes, and - Management intervention, - <u>Intra-SGSN intersystem handover-change (change of radio interface from GSM to 3G UMTS or vice versa)</u>.

In the event that the M-CDR is closed and the mobile is still known to the SGSN, a further logical M-CDR shall be opened with an incremented Sequence Number in the SGSN.