

Source: TSG CN WG3
Title: CRs on Rel-4 Work Item CSSPLIT.
Agenda item: 7.8
Document for: APPROVAL

Introduction:

This document contains **6 CRs on Rel-4 Work Item CSSPLIT**, including the corresponding mirror CRs (as required).

These CRs have been agreed by TSG CN WG3 and are forwarded to TSG CN Plenary meeting #19 for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver	Work Item
N3-030116	Use of Nb UP protocol after inter-MSC handover	23.910	044	1	F	Rel-4	4.6.0	CSSPLIT
N3-030117	Use of Nb UP protocol after inter-MSC handover	23.910	045	1	A	Rel-5	5.2.0	CSSPLIT
N3-030118	Use of Nb UP protocol after inter-MSC handover	29.007	066	1	F	Rel-4	4.6.0	CSSPLIT
N3-030119	Use of Nb UP protocol after inter-MSC handover	29.007	067	1	A	Rel-5	5.4.0	CSSPLIT
N3-030174	No backward compatibility to Nb UP FP support mode version 1	29.415	006	1	F	Rel-4	4.2.0	CSSPLIT
N3-030175	No backward compatibility to Nb UP FP support mode version 1	29.415	007	1	A	Rel-5	5.0.0	CSSPLIT

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CHANGE REQUEST

№ **23.910 CR 044** № rev **1** № Current version: **4.6.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

Proposed change affects: UICC apps № ME Radio Access Network Core Network

Title:	№ Use of Nb UP protocol after inter-MSC handover		
Source:	№ TSG_CN WG3 [Siemens AG]		
Work item code:	№ CSSPLIT	Date:	№ 10/02/2003
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) Rel-6 (Release 6)

Reason for change:	№ The current specification is ambiguous with respect to the ATM connection between two MGW after Inter-MSC Handover. Bullet one in Section 10.2.3 states that the luFP shall be applied without providing further information. Bullet three states that NbFP shall be applied, and provides detailed information how this should be done. As a consequence, this important additional information may be considered optional.		
Summary of change:	№ Remove bullet one in Section 10.2.3, as it is covered in more detail in bullet 3		
Consequences if not approved:	№ Risk of non-interoperating implementations.		

Clauses affected:	№ 10.2.3										
Other specs affected:	<table border="1" style="display: inline-table; 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;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	X			X		X	№ 29.007	
Y	N										
X											
	X										
	X										
Other comments:	№										

10.2.3 Handover within 3G PLMNs

After a handover from a 3G MSC to another 3G MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to

~~the Iu-UP protocol if both MSC are connected via an ATM interface.~~

- the A-TRAU' protocol if both MSC are connected via a TDM interface except for the transparent cases FNUR = 32 kbit/s (ITC = UDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64kbit/s and 32kbit/s is based on ITU-T I.460.
- the Nb UP protocol if the anchor MSC or MGW and the visited MSC or MGW ~~both MGWs~~ are connected via an ATM interface or IP interface. The Nb UP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GUP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbit/s).

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CHANGE REQUEST	
№ 23.910 CR 045 № rev 1	Current version: 5.2.0 №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

Proposed change affects: UICC apps № ME Radio Access Network Core Network

Title:	№ Use of Nb UP protocol after inter-MSC handover	
Source:	№ TSG_CN WG3 [Siemens AG]	
Work item code:	№ CSSPLIT	Date: № 10/02/2002
Category:	№ A 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 .	Release: № Rel-5 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)

Reason for change:	№ The current specification is ambiguous with respect to the ATM connection between two MGW after Inter-MSC Handover. Bullet one in Section 10.2.3 states that the luFP shall be applied without providing further information. Bullet three states that NbFP shall be applied, and provides detailed information how this should be done. As a consequence, this important additional information may be considered optional.
Summary of change:	№ Remove bullet one in Section 10.2.3, as it is covered in more detail in bullet 3
Consequences if not approved:	№ Risk of non-interoperating implementations.

Clauses affected:	№ 10.2.4								
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications № 29.007 Test specifications O&M Specifications	Y	N	X			X		X
Y	N								
X									
	X								
	X								
Other comments:	№								

10.2.4 Handover within Iu mode PLMNs

After a handover from an Iu mode MSC to a UTRAN Iu mode MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to

~~— the Iu-UP protocol if both MSC are connected via an ATM interface.~~

- the A-TRAU' protocol if both MSC are connected via a TDM interface except for the transparent cases FNUR = 32 kbit/s (ITC = UDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64kbit/s and 32kbit/s is based on ITU-T I.460.
- the Nb UP protocol if [the anchor MSC or MGW and the visited MSC or MGW](#) ~~both MGWs~~ are connected via an ATM interface or IP interface. The Nb UP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GPP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbit/s).

After a handover from an Iu mode MSC to a GERAN Iu mode MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to

~~— the Iu-UP protocol if both MSC are connected via an ATM interface.~~

- the A-TRAU' and A-TRAU'' protocol if both MSC are connected via a TDM interface except for the transparent cases FNUR = 32 kbit/s (ITC = UDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64kbit/s and 32kbit/s is based on ITU-T I.460.
- the Nb UP protocol if [the anchor MSC or MGW and the visited MSC or MGW](#) ~~both MGWs~~ are connected via an ATM interface or IP interface. The Nb UP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GPP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbit/s).

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CHANGE REQUEST

№ **29.007 CR 066** № rev **1** № Current version: **4.6.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

Proposed change affects: UICC apps № ME Radio Access Network Core Network

Title:	№ Use of Nb UP protocol after inter-MSC handover		
Source:	№ TSG_CN WG3 [Siemens AG]		
Work item code:	№ CSSPLIT	Date:	№ 10/02/2003
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) Rel-6 (Release 6)

Reason for change:	№ The current specification is ambiguous with respect to the ATM connection between two MGW after Inter-MSC Handover. Bullet one in Section 11.3 states that the luFP shall be applied without providing further information. Bullet three states that NbFP shall be applied, and provides detailed information how this should be done. As a consequence, this important additional information may be considered optional.
Summary of change:	№ Remove bullet one in Section 11.3, as it is covered in more detail in bullet 3
Consequences if not approved:	№ Risk of non-interoperating implementations.

Clauses affected:	№ 11.3										
Other specs affected:	<table border="1" style="display: inline-table; 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;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	X			X		X	№ 23.910	
Y	N										
X											
	X										
	X										
Other comments:	№										

11.3 Handover within 3G PLMNs

After a handover from a 3G MSC to another 3G MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to:

~~the Iu-UP protocol if both MSC are connected via an ATM interface;~~

- the A-TRAU' protocol if both MSCs are connected via a TDM interface except for the transparent case FNUR = 32 kbit/s (ITC = UDI or RDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64 kbit/s and 32 kbit/s is based on ITU-T I.460 [2].
- the Nb UP protocol if the anchor MSC or MGW and the visited MSC or MGW ~~both MGWs~~ are connected via an ATM interface or IP interface. The NbUP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GUP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbits/s).

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CHANGE REQUEST

№ **29.007 CR 067** № rev **1** № Current version: **5.4.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

Proposed change affects: UICC apps № ME Radio Access Network Core Network

Title:	№ Use of Nb UP protocol after inter-MSC handover		
Source:	№ TSG_CN WG3 [Siemens AG]		
Work item code:	№ CSSPLIT	Date:	№ 10/02/2003
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) Rel-6 (Release 6)

Reason for change:	№ The current specification is ambiguous with respect to the ATM connection between two MGW after Inter-MSC Handover. Bullet one in Section 11.3 states that the luFP shall be applied without providing further information. Bullet three states that NbFP shall be applied, and provides detailed information how this should be done. As a consequence, this important additional information may be considered optional.		
Summary of change:	№ Remove bullet one in Section 11.3, as it is covered in more detail in bullet 3		
Consequences if not approved:	№ Risk of non-interoperating implementations.		

Clauses affected:	№ 11.4										
Other specs affected:	<table border="1" style="display: inline-table; 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;">X</td> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table> Other core specifications	Y	N	X			X		X	№ 23.910	
Y	N										
X											
	X										
	X										
Other comments:	№										

11.4 Handover within Iu mode PLMNs

After a handover from an Iu mode MSC to a UTRAN Iu mode MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to:

~~the Iu UP protocol if both MSC are connected via an ATM interface;~~

- the A-TRAU' protocol if both MSCs are connected via a TDM interface except for the transparent case FNUR = 32 kbit/s (ITC = UDI or RDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64 kbit/s and 32 kbit/s is based on ITU-T I.460 [2].
- the Nb UP protocol if [the anchor MSC or MGW and the visited MSC or MGW](#) ~~both MGWs~~ are connected via an ATM interface or IP interface. The NbUP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GPP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbits/s).

After a handover from an Iu mode MSC to a GERAN Iu mode MSC the user plane between the anchor MSC or MGW and the visited MSC or MGW shall comply to

~~the Iu UP protocol if both MSC are connected via an ATM interface.~~

- the A-TRAU' and A-TRAU'' protocol if both MSC are connected via a TDM interface except for the transparent cases FNUR = 32 kbit/s (ITC = UDI), FNUR = 56 kbit/s (ITC=RDI) and FNUR = 64 kbit/s (ITC=UDI). For these exceptions a plain 64 kbit/s channel is used between the MSCs. The rate adaptation between 64kbit/s and 32kbit/s is based on ITU-T I.460.
- the Nb UP protocol if [the anchor MSC or MGW and the visited MSC or MGW](#) ~~both MGWs~~ are connected via an ATM interface or IP interface. The NbUP shall be configured in support mode, the data is transported in a 64 kbit/s bit stream, formatted in SDUs of 40 octets and transmitted every 5 ms, in accordance with Annex P of ITU-T I.366.2 [81]. PDU type 0 is used, i.e., payload CRC is applied. This is needed for the framing to be handled the same for all transports but the Frame Quality Classification control shall be ignored (3GPP property Delivery Of Erroneous SDUs = yes) and therefore interim nodes shall only pass on the CRC. The data is encoded between MSC-B/MGW-B (non-Anchor) and MSC-A/MGW-A (Anchor) as for the TDM case (A-TRAU' protocol or plain 64kbits/s).

CHANGE REQUEST

№ **29.415 CR 006** № rev **1** № Current version: **4.2.0** №

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the № symbols.

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

Title:	№ No backward compatibility to Nb UP FP support mode version 1 required		
Source:	№ TSG_CN WG3 [Siemens/ LM Ericsson]		
Work item code:	№ CSSPLIT	Date:	№ 16/01/2003
Category:	№ F	Release:	№ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	№ TS 25.415 mandates support of lu UP support mode version 1 in Rel4 for backward compatibility to Rel99. TS 29.415 imports this mandate for the Nb interface by reference to TS 25.415. However, no backward compatibility issue exists at the Nb interface, as Nb UP FP was introduced only in Rel.4 with support mode version 2.		
Summary of change:	№ Support of lu UP support mode version 1 is optional		
Consequences if not approved:	№ Possible interworking problems due to change in release 4 lu specification not correlated to Nb specifications.		

Clauses affected:	№ 4.2										
Other specs affected:	<table border="1" style="display: inline-table; 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;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X	X	X	X	X	X	Other core specifications	№
Y	N										
X	X										
X	X										
X	X										
		Test specifications									
		O&M Specifications									
Other comments:	№ From TS 25.415, Section 5.2.3: “This release of the specification defines the Support mode for predefined SDU sizes version 2. The Support mode for predefined SDU sizes version 1 (see release 99 of this specification) shall also be supported by a 3GPP release 4 implementation in order to be backward compatible with release 99”										

4.2 Operational and Functional Aspects

There are two modes of operation for the Nb UP:

- Transparent mode;
- Support mode for predefined SDU size.

The two modes of operation follow the definition of the corresponding Iu UP modes of operation, as described in 3GPP TS 25.415 [2].

[Support mode version 2 is mandatory on the NbUP interface. Support mode version 1 is not required at the Nb but may be used if both MGWs support it, as a result of the version negotiation during the Initialisation procedure.](#)

CHANGE REQUEST

№ **29.415 CR 007** № rev **1** № 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: UICC apps ME Radio Access Network Core Network

Title:	№ No backward compatibility to Nb UP FP support mode version 1 required		
Source:	№ TSG_CN WG3 [Siemens/Ericsson]		
Work item code:	№ CSSPLIT	Date:	№ 16/01/2003
Category:	№ A	Release:	№ Rel-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	№ TS 25.415 mandates support of lu UP support mode version 1 in Rel4 for backward compatibility to Rel99. TS 29.415 imports this mandate for the Nb interface by reference to TS 25.415. However, no backward compatibility issue exists at the Nb interface, as Nb UP FP was introduced only in Rel.4 with support mode version 2.		
Summary of change:	№ Support of lu UP support mode version 1 is optional.		
Consequences if not approved:	№ Possible interworking problems due to change in release 4 lu specification not correlated to Nb specifications		

Clauses affected:	№ 4.2										
Other specs affected:	<table border="1" style="display: inline-table; 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;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X	X	X	X	X	X	Other core specifications	№
Y	N										
X	X										
X	X										
X	X										
		Test specifications									
		O&M Specifications									
Other comments:	№ From TS 25.415, Section 5.2.3: “This release of the specification defines the Support mode for predefined SDU sizes version 2. The Support mode for predefined SDU sizes version 1 (see release 99 of this specification) shall also be supported by a 3GPP release 4 implementation in order to be backward compatible with release 99”										

4.2 Operational and Functional Aspects

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- Transparent mode;
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[Support mode version 2 is mandatory on the NbUP interface. Support mode version 1 is not required at the Nb but may be used if both MGWs support it, as a result of the version negotiation during the Initialisation procedure.](#)