3GPP TSG CN Plenary Meeting #22 **NP-030503**
10th – 12th December 2003 Maui, USA.

Source: TSG CN WG4

Title: Corrections on Camel Phase 4

Agenda item: 8.3

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.002	685		N4-031131	Rel-5	More spare bits for CAMEL4 enhancements	F	5.7.0
29.002	686		N4-031132	Rel-6	More spare bits for CAMEL4 enhancements	A	6.3.0
29.002	691		N4-031162	Rel-5	Clarification on D-CSI segmentation	F	5.7.0
29.002	692		N4-031163	Rel-6	Clarification on D-CSI segmentation	A	6.3.0
23.079	027		N4-031306	Rel-5	Correction to MAP RCH – GMSC shall check Offered CAMEL4 CSIs	F	5.3.0

3GPP TSG CN WG2 Meeting #31 **N2-030552**
Bangkok, Thailand, 27th – 31st October 2003 (revision of N2-030489)

3GPP TSG CN WG4 Meeting #21 **N4-031306**
Bangkok, Thailand, 27th – 31st October 2003 (revision of N4-031137)

CHANGE REQUEST

⌘ **23.079** **CR** **027** ⌘**rev** **1** ⌘ Current version: **5.3.0** ⌘

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Correction to MAP RCH – GMSC shall check Offered CAMEL4 CSIs
Source:	⌘	CN4
Work item code:	⌘	CAMEL4
Date:	⌘	27 October 2003
Category:	⌘	F
Release:	⌘	Rel-5

Use one 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)*

Use one 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: ⌘ **This is an essential correction.**
When the GMSC receives MAP Resume Call Handling (RCH), it checks whether it supports the requested CAMEL Phases. MAP RCH may include O-CSI and D-CSI. O-CSI and D-CSI may contain an indication of the requested CAMEL Phase; the requested CAMEL Phase is indicated with "camelCapabilityHandling".

When GMSC performs the check regarding the support of the requested CAMEL Phases, the GMSC should also check whether the requested CAMEL Phase 4 CSIs are supported. As an example, a GMSC may support CAMEL Phase 4, but only for T-CSI, not for O-CSI. In that case, the GMSC would not be able to process MAP RCH with O-CSI[CAMEL4].

Currently, this check for CAMEL Phase 4 CSIs is not performed in the GMSC.

Summary of change: ⌘ In Procedure OR_Handle_RCH, the handling of MAP RCH is specified. This procedure shall include a check for the support of the requested CAMEL Phase 4 CSIs.

Currently, this procedure contains already a check for the requested CAMEL Phases. This check shall be augmented with a check for the requested CAMEL Phase 4 CSIs.

To aid the reader of TS 23.079, a reference to 3GPP TS 23.078 shall be included in Procedure OR_Handle_RCH, so the reader knows where to obtain further information about the CAMEL Phase 4 CSIs. The reference is included in

		the text associated with the Procedure OR_Handle_RCH.
Consequences if not approved:	⌘	Optimal Routeing with CAMEL Phase 4 may fail; the GMSC accepts MAP RCH, based on the fact that the GMSC supports the CAMEL Phases requested in MAP RCH. However, the GMSC may not invoked the requested CAMEL Phase 4 O-CSI service or the requested CAMEL Phase 4 D-CSI service, since the CAMEL Phase O-CSI or the CAMEL Phase 4 D-CSI is not supported in that GMSC.

Clauses affected:	⌘	9.4			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

****** First Modified Section ******

9.4 Functional behaviour of GMSC

<…>

9.4.2 Procedure OR_Handle_RCH

Sheet 1: if the GMSC receives O-CSI or D-CSI in Resume Call Handling, then the GMSC shall verify whether it supports the CAMEL Phases indicated in O-CSI and D-CSI. If either or both of O-CSI and D-CSI indicates CAMEL Phase 4, then the GMSC shall also verify whether the Offered CAMEL4 CSIs of the GMSC includes support for O-CSI and D-CSI. If the required CAMEL Phases or the required CAMEL4 CSIs are not supported in the GMSC, then the GMSC disallows the Optimal Routeing request. Refer to 3GPP TS 23.078 [7] for a description of the Offered CAMEL4 CSIs.

Sheet 1: if the GMSC interrogates the HLR for a Forwarded-to number, the Routeing address is the Forwarded-to number received in the Send Routeing Info ack; otherwise the Routeing address is the Forwarded-to number received in the Resume Call Handling.

Sheet 1: the task "Destination address := FTN" is executed only if the GMSC supports optimal routeing of basic mobile-to-mobile calls.

Sheet 1: the procedure Route_permitted is called to verify the number received in Resume Call Handling or the number received from HLR. If the result is “False”, then the GMSC disallows the Optimal Routeing. The call forwarding will now be done by the VMSC.

Note When the procedure Route_permitted returns result “False”, then the gsmSCF is not informed about the forwarding and can therefore not provide an alternative destination address. Reason is that once the gsmSCF is informed about forwarding, the call forwarding can not be returned to the VMSC.

Sheet 2: the procedure CAMEL_MT_GMSC_Notify_CF is specific to CAMEL phase 2 or higher; it is specified in 3GPP TS 23.078 [7]. If the GMSC does not support CAMEL phase 2 or higher, processing continues from the "Continue" exit of the test "Result".

If the result of the procedure CAMEL_MT_GMSC_Notify_CF is “Fail” or “Release”, then the call will be released.

If the result of the procedure CAMEL_MT_GMSC_Notify_CF is “Reconnect”, then the GMSC allows the Optimal Routeing. The GMSC will then start a call forwarding process.

Sheet 2: when the procedure Route_permitted on sheet 1 returns result “False”, then the GMSC returns “OR not allowed” to the VMSC. The call forwarding will now be done by the VMSC.

Sheet 3: the procedure Activate_CF_Process is specified in 3GPP TS 23.018 [6]. When procedure Activate_CF_Process returns result “Release” or “Fail”, the call is released.

If the result is “Pass”, then the GMSC allows the Optimal Routeing.

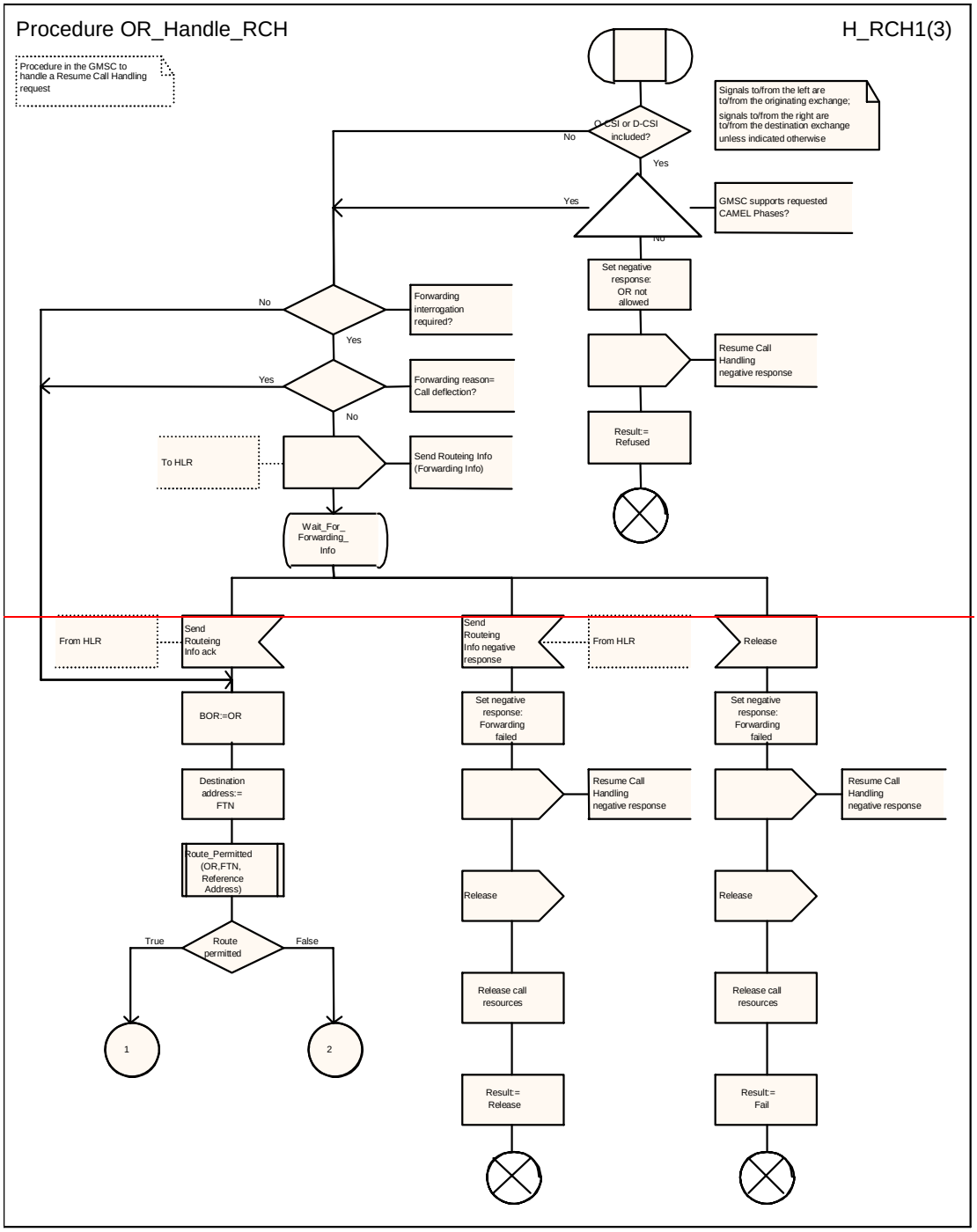
Sheet 3: the procedure UUS_GMSC_Check_Forwarding is specific to UUS; it is specified in 3GPP TS 23.087 [9].

Sheet 3: the procedure CAMEL_Store_Destination_Address is specific to CAMEL phase 3 or higher; it is specified in 3GPP TS 23.078 [7].

Sheet 3: the called party address sent in the IAM to the process MT_CF_MSC is the Forwarded-to number received in the Perform Call Forwarding ack.

Sheet 3: the process MT_CF_MSC is specified in 3GPP TS 23.018 [6].

…



~~Figure 7a: Procedure OR_Handle_RCH (sheet 1)~~

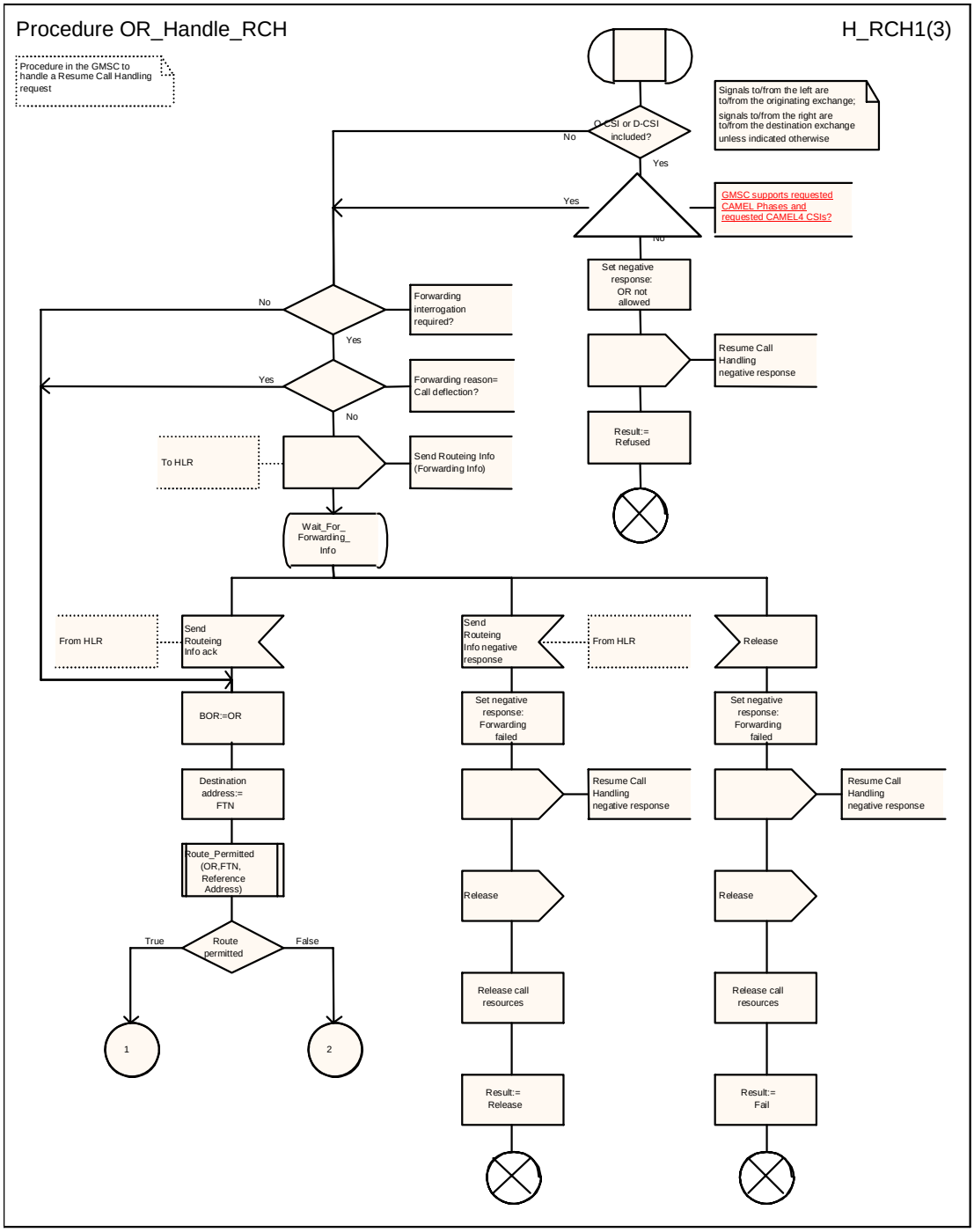


Figure 7a: Procedure OR_Handle_RCH (sheet 1)

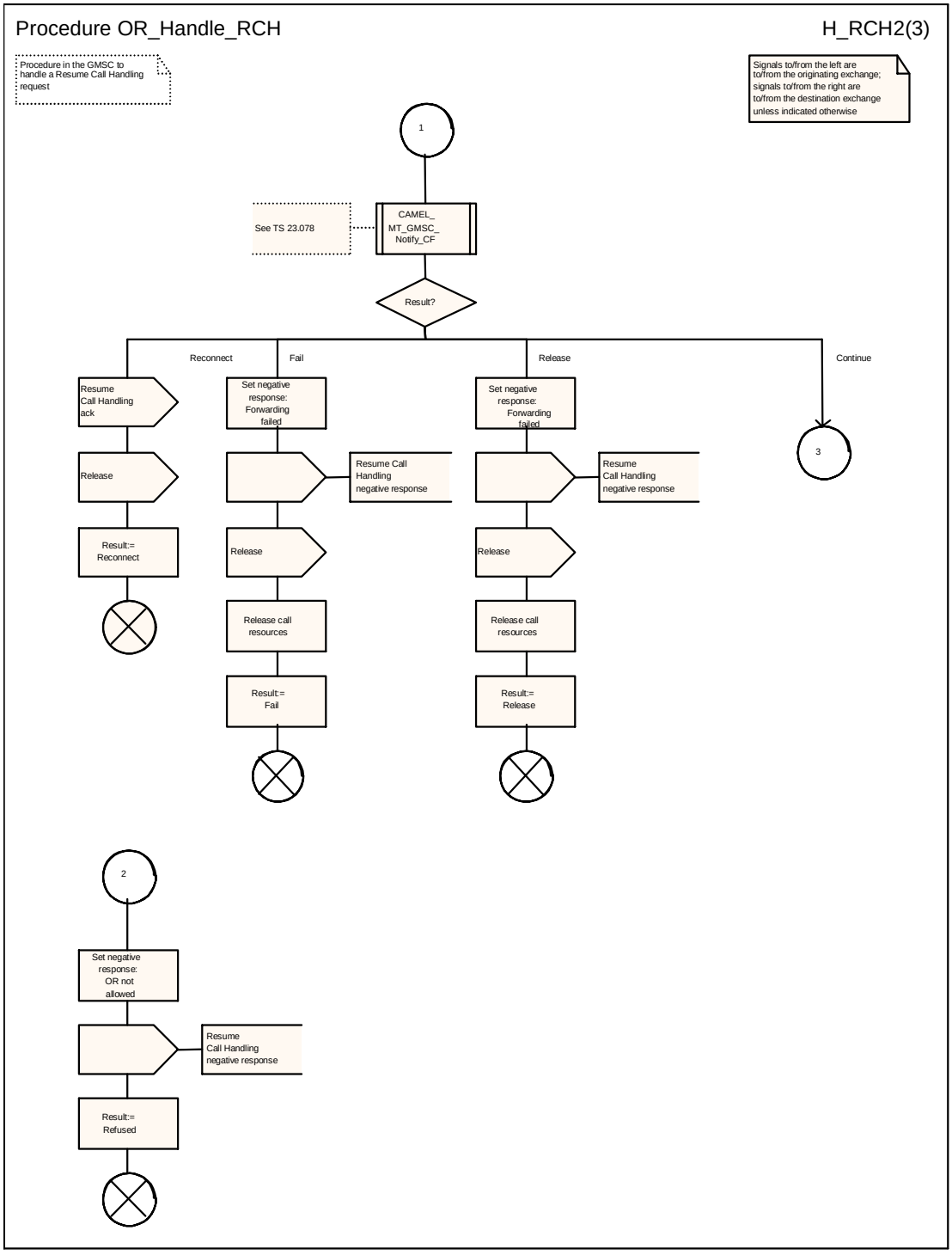


Figure 7b: Procedure OR_Handle_RCH (sheet 2)

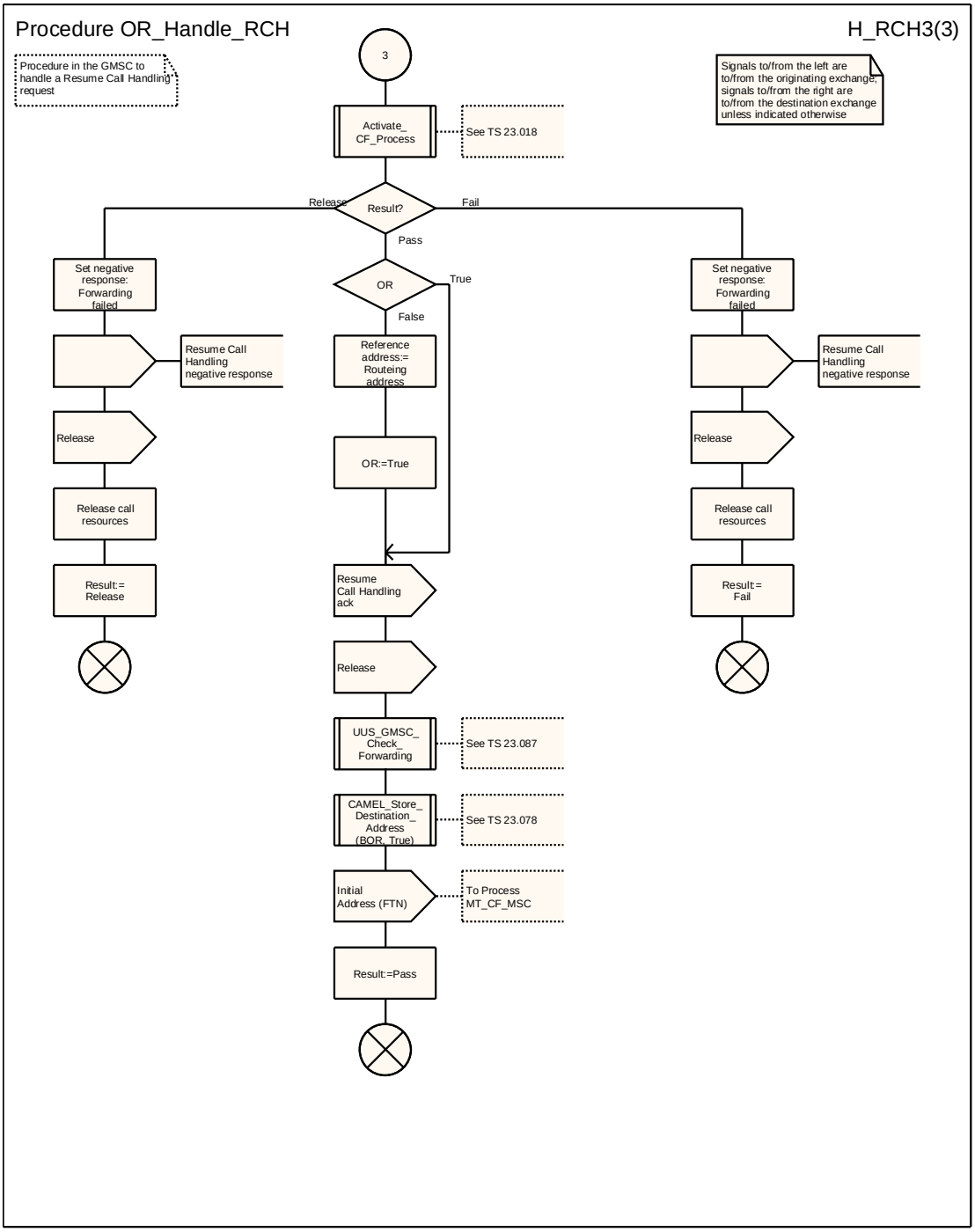


Figure 7c: Procedure OR_Handle_RCH (sheet 3)

***** End of Document *****

3GPP TSG CN WG2 Meeting #31
Bangkok, Thailand, 27th – 31st Oct 2003

N2-030506 / N4-031131

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **685** ⌘ **rev** **-** ⌘ Current version: **5.7.0** ⌘

*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:	⌘	More spare bits for CAMEL4 enhancements
Source:	⌘	CN4
Work item code:	⌘	CAMEL4
Date:	⌘	26.9.2003
Category:	⌘	**F (agreed by consensus)**
Release:	⌘	Rel-5

Use one 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 one 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:	⌘	CAMEL4 is the last CAMEL phase. Very likely, small enhancements to it will be approved in future 3GPP releases. It makes the life a lot easier if the number of bits is adequate. Some subsets may consume multiple bits, as we have multiple bits for call party handling.
Summary of change:	⌘	Maximum size of OfferedCamel4Functionalities is increased from 32 to 64 bits.
Consequences if not approved:	⌘	More work in future if number of CAMEL4 subsets exceed 32 bits.

Clauses affected:	⌘	17.7.1

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	- The change is backward incompatiple but propably not yet an issue in Rel-5. - Change does not impact until there is more than 32 bits to send, but earlier release network element can be prepared for it.

-- First modified section --

17.7 MAP constants and data types

17.7.1 Mobile Service data types

```
OfferedCamel4Functionalities ::= BIT STRING {
     initiateCallAttempt                (0),
     splitLeg                           (1),
     moveLeg                            (2),
     disconnectLeg                      (3),
     entityReleased                     (4),
     dfc-WithArgument                   (5),
     playTone                           (6),
     dtmf-MidCall                       (7),
     chargingIndicator                  (8),
     alertingDP                         (9),
     locationAtAlerting                 (10),
     changeOfPositionDP                 (11),
     or-Interactions                    (12),
     warningToneEnhancements            (13),
     cf-Enhancements                    (14)
} (SIZE (15..32CAMEL4))
-- A node supporting Camel phase 4 shall mark in the BIT STRING all Camel4 CAMEL4
-- functionalities it offers.
-- Other values than listed above shall be discarded.
```

3GPP TSG CN WG2 Meeting #31
Bangkok, Thailand, 27th – 31st Oct 2003

N2-030507 / N4-031132

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **686** ⌘ **rev** **-** ⌘ Current version: **6.3.0** ⌘

*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:	⌘	More spare bits for CAMEL4 enhancements
Source:	⌘	CN4
Work item code:	⌘	CAMEL4
Date:	⌘	29.10.2003
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one 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 one 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:	⌘	CAMEL4 is the last CAMEL phase. Very likely, small enhancements to it will be approved in future 3GPP releases. It makes the life a lot easier if the number of bits is adequate. Some subsets may consume multiple bits, as we have multiple bits for call party handling.
Summary of change:	⌘	Maximum size of OfferedCamel4Functionalities is increased from 32 to 64 bits.
Consequences if not approved:	⌘	More work in future if number of CAMEL4 subsets exceed 32 bits.

Clauses affected:	⌘	17.7.1

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	- The change is backward incompatiple but propably not yet an issue in Rel-5. - Change does not impact until there is more than 32 bits to send, but earlier release network element can be prepared for it.

-- First modified section --

17.7 MAP constants and data types

17.7.1 Mobile Service data types

```
OfferedCamel4Functionalities ::= BIT STRING {
     initiateCallAttempt                (0),
     splitLeg                           (1),
     moveLeg                            (2),
     disconnectLeg                      (3),
     entityReleased                     (4),
     dfc-WithArgument                   (5),
     playTone                           (6),
     dtmf-MidCall                       (7),
     chargingIndicator                  (8),
     alertingDP                         (9),
     locationAtAlerting                 (10),
     changeOfPositionDP                 (11),
     or-Interactions                    (12),
     warningToneEnhancements            (13),
     cf-Enhancements                    (14)
} (SIZE (15..~~32~~64))
-- A node supporting Camel phase 4 shall mark in the BIT STRING all ~~Camel4~~ CAMEL4
-- functionalities it offers.
-- Other values than listed above shall be discarded.
```

3GPP TSG CN WG4 Meeting #21 **N4-031162**
Bangkok, THAILAND, 27th – 31st October 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **691** ⌘ **rev** **-** ⌘ Current version: **5.7.0** ⌘

*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:	⌘	Clarification on D-CSI segmentation
Source:	⌘	CN4
Work item code:	⌘	CAMEL4
Date:	⌘	14/10/2003
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one 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 one 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:	⌘	**This is an essential correction.** Currently, the explanatory text concerning D-CSI parameter and its segmantation is confusing. It is not clear whether dp-AnalysedInfoCriteriaList element is possible to be segmented and in what way dp-AnalysedInfoCriteriaList and camelCapabilityHandling elements are included between different segments.
Summary of change:	⌘	Rephraze the text so that D-CSI parameter segmentation is clear.
Consequences if not approved:	⌘	Confusion in implementors. Interroperability problems due to different understanding of D-CSI parameter segmentation.

Clauses affected:	⌘	17.7.1

Other specs affected:	⌘	Y	N		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

17.7 MAP constants and data types

17.7.1 Mobile Service data types

17.7.1 Mobile Service data types

……..

-- subscriber management types

……..

***** First Modification *****

```
MT-SMS-TPDU-Type ::= ENUMERATED {
     sms-DELIVER                          (0),
     sms-SUBMIT-REPORT                    (1),
     sms-STATUS-REPORT                    (2),
     ... }

--   exception handling:
--   For TPDU-TypeCriterion sequences containing this parameter with any
--   other value than the ones listed above the receiver shall ignore
--   the whole TPDU-TypeCriterion sequence.
--   In CAMEL phase 4, sms-SUBMIT-REPORT shall not be used and a received TPDU-TypeCriterion
--   sequence containing sms-SUBMIT-REPORT shall be wholly ignored.
```

```
D-CSI ::= SEQUENCE {
     dp-AnalysedInfoCriteriaList          [0] DP-AnalysedInfoCriteriaList    OPTIONAL,
     camelCapabilityHandling              [1] CamelCapabilityHandling        OPTIONAL,
     extensionContainer                   [2] ExtensionContainer             OPTIONAL,
     notificationToCSE                    [3]  NULL                          OPTIONAL,
     csi-Active                           [4]  NULL                          OPTIONAL,
     ...}
--   notificationToCSE and csi-Active shall not be present when D-CSI is sent to VLR/GMSC.
--   They may only be included in ATSI/ATM ack/NSDC message.
--   DP-AnalysedInfoCriteria and  camelCapabilityHandling shall be present in
--   the D-CSI sequence.
--   If D-CSI is segmented, then the first segment shall contain dp-AnalysedInfoCriteriaList
--    and camelCapabilityHandling. Subsequent segments shall not contain
--    camelCapabilityHandling, but may contain dp-AnalysedInfoCriteriaList.be
--    present in the first segment
```

```
DP-AnalysedInfoCriteriaList  ::= SEQUENCE SIZE (1..maxNumOfDP-AnalysedInfoCriteria) OF
                                     DP-AnalysedInfoCriterium
```

```
maxNumOfDP-AnalysedInfoCriteria INTEGER ::= 10
```

```
DP-AnalysedInfoCriterium ::= SEQUENCE {
     dialledNumber                        ISDN-AddressString,
     serviceKey                           ServiceKey,
     gsmSCF-Address                       ISDN-AddressString,
     defaultCallHandling                  DefaultCallHandling,
     extensionContainer                   ExtensionContainer                 OPTIONAL,
     ...}
```

***** End of Document *****

3GPP TSG CN WG4 Meeting #21 **N4-031163**
Bangkok, THAILAND, 27th – 31st October 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **692** ⌘ **rev** **-** ⌘ Current version: **6.3.0** ⌘

*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:	⌘	Clarification on D-CSI segmentation
Source:	⌘	CN4
Work item code:	⌘	CAMEL4
Date:	⌘	14/10/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

Use one 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 one 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:	⌘	Currently, the explanatory text concerning D-CSI parameter and its segmantation is confusing. It is not clear whether dp-AnalysedInfoCriteriaList element is possible to be segmented and in what way dp-AnalysedInfoCriteriaList and camelCapabilityHandling elements are included between different segments.
Summary of change:	⌘	Rephraze the text so that D-CSI parameter segmentation is clear.
Consequences if not approved:	⌘	Confusion in implementors. Interroperability problems due to different understanding of D-CSI parameter segmentation.

Clauses affected:	⌘	17.7.1			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

17.7 MAP constants and data types

17.7.1 Mobile Service data types

……..

-- subscriber management types

……..

***** *First Modification* *****

```
MT-SMS-TPDU-Type ::= ENUMERATED {
     sms-DELIVER                        (0),
     sms-SUBMIT-REPORT                  (1),
     sms-STATUS-REPORT                  (2),
     ... }

--   exception handling:
--   For TPDU-TypeCriterion sequences containing this parameter with any
--   other value than the ones listed above the receiver shall ignore
--   the whole TPDU-TypeCriterion sequence.
--   In CAMEL phase 4, sms-SUBMIT-REPORT shall not be used and a received TPDU-TypeCriterion
--   sequence containing sms-SUBMIT-REPORT shall be wholly ignored.
```

```
D-CSI ::= SEQUENCE {
     dp-AnalysedInfoCriteriaList          [0] DP-AnalysedInfoCriteriaList    OPTIONAL,
     camelCapabilityHandling              [1] CamelCapabilityHandling        OPTIONAL,
     extensionContainer                   [2] ExtensionContainer             OPTIONAL,
     notificationToCSE                    [3]  NULL                          OPTIONAL,
     csi-Active                           [4]  NULL                          OPTIONAL,
     ...}
--   notificationToCSE and csi-Active shall not be present when D-CSI is sent to VLR/GMSC.
--   They may only be included in ATSI/ATM ack/NSDC message.
--   DP-AnalysedInfoCriteria and  camelCapabilityHandling shall be present in
--   the D-CSI sequence.
--   If D-CSI is segmented, then the first segment shall contain dp-AnalysedInfoCriteriaList
--    and camelCapabilityHandling. Subsequent segments shall not contain
--    camelCapabilityHandling, but may contain dp-AnalysedInfoCriteriaList.be
--    present in the first segment
```

```
DP-AnalysedInfoCriteriaList  ::= SEQUENCE SIZE (1..maxNumOfDP-AnalysedInfoCriteria) OF
                                      DP-AnalysedInfoCriterium
```

***** *End of Document* *****