3GPP TSG-CN Meeting #22   **NP-030564**
10th - 12th December. Maui, Hawaii.

Source: TSG CN WG3

Title: CRs on Rel-5 Work Item SCUDIF.

Agenda item: 8.7

Document for: APPROVAL

Introduction:

This document contains **2** CRs on **Rel-5 Work Item SCUDIF,** including the corresponding mirror CRs (as required).

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

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel
N3-030771	Corrections on HLR interrogation	23.172	019	1	F	Rel-5
N3-030766	CAMEL interactions with SCUDIF calls	23.172	021	1	F	Rel-5

3GPP TSG-CN WG3 Meeting #30
Bangkok, Thailand. 27th - 31st October 2003.

N3-030766

CR-Form-v7

CHANGE REQUEST

| ⌘ | **23.172** CR **021** | ⌘ **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 [X]

Title:	⌘	CAMEL interactions with SCUDIF calls		
Source:	⌘	TSG_CN WG3		
Work item code:	⌘	SCUDIF	***Date:*** ⌘	22/10/2003
Category:	⌘ F		***Release:*** ⌘	Rel-5

Use one of the following categories:	*Use one 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	*Rel-4 (Release 4)*
be found in 3GPP TR 21.900.	*Rel-5 (Release 5)*
	Rel-6 (Release 6)

Reason for change:	⌘	The interactions with CAMEL are not described in relation to the call control procedures (*i.e.* the negotiation of the services with the OoBTC procedures), and the mapping between the codec lists on the BICC protocols and the CAP information elements is missing.
Summary of change:	⌘	A description of the interactions between CAMEL and the OoBTC procedure is added, with rules for mapping the codec list to the CAP IEs.
Consequences if not approved:	⌘	A description of the mapping and the interaction is missing, which may lead to incorrect implementations resulting in incompliant behaviour for SCUDIF calls made by CAMEL subscribers.

Clauses affected:	⌘	2, 3.2, 4.3

		Y	**N**		
Other specs affected:	⌘	X		Other core specifications ⌘	23.078-633, 29.078-336
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

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First modified section

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2   References

The following documents contain provisions, which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1]   3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2]   3GPP TS 23.153: "Out of Band Transcoder Control; Stage 2".

[3]   3GPP TS 24.008: "Mobile Radio Interface Layer 3 specification; Core network protocols; Stage 3".

[4]   3GPP TS 26.103: "Speech Codec List for GSM and UMTS".

[5]   3GPP TS 27.001: "General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS)".

[6]   3GPP TS 29.007: "General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)".

[7]   3GPP TS 29.205: "Application of Q.1900 series to bearer-independent circuit-switched core network architecture; Stage 3".

[8]   3GPP TS 22.101: "Service aspects; Service principles".

[9]   3GPP TS 33.106: "3GPP Security; Lawful Interception Requirements".

[10]   3GPP TS 23.018: "Basic Call Handling; Technical realization".

[11]   3GPP TS 23.003: "Numbering, adressing and identification".

[12]   3GPP TS 29.232: "Media Gateway Controller (MGC) – Media Gateway (MGW) Interface; Stage 3".

[13]   3GPP TS 26.102: "Mandatory Speech Codec; AMR Speech Codec; Interface to Iu, Uu, Nb".

[xx]   3GPP TS 23.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL) ; Stage 2"

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3.2   Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply:

BC   Bearer Capability

BC1	First Bearer Capability in a message (preferred service)
BC2	Second Bearer Capability in a message (less preferred service)
BCa	Bearer Capability of the currently selected service
BCb	Bearer Capability of the service to switch to
BCmm	Bearer Capability multimedia
BCSM	Basic Call State Model
BCsp	Bearer Capability speech
CAMEL	Customised Applications for Mobile network Enhanced Logic
DP	Detection Point
IE	Information Element
MMI	Man-Machine Interface
O-MSC	Originating MSC
OoBTC	Out-of-Band Transcoder Control
O-UE	Originating UE
RI	Repeat Indicator
SCUDIF	Service Change and UDI/RDI Fallback
T-MSC	Terminating MSC
T-UE	Terminating UE

Next modified section

4.3   Core Network procedures

skipped text and clauses

4.3.7   Interactions with CAMEL

4.3.7.1   Interaction at call setup

When a SCUDIF call activates a CAMEL dialogue for the originating or the terminating subscriber, both basic services shall be indicated to the gsmSCF in the InitialDP message (see 3GPP TS 23.078 [xx]) :

- the bearer capability IE and the ext-basic service code IE shall indicate the preferred service (*i.e.* 3G-324.M if the 3G-324.M codec is the first codec in the list of supported codecs ; speech otherwise),

- the bearer capability 2 IE and the ext-basic service code 2 IE shall indicate the other, less preferred service (*i.e.* resp. speech or 3G-324.M).

4.3.7.2   Interaction at call answer

When the Answer DP is triggered according to the BCSM (see 3GPP TS 23.078 [xx]), the event report sent to the gsmSCF shall indicate the result from the OoBTC codec negotiation procedure according to the following :

- the ext-basic service code IE is included, and represents the selected service (indicated by the selected codec) ;

- the ext-basic service code 2 IE is included if the list of available codecs contains codecs both for speech and 3G-324.M, and represents the other service (*i.e.* speech if the selected service is 3G-324.M, and vice-versa).

4.3.87   Interworking with external networks

If the 3G-324.M codec is included in the list of supported codec types received by a Gateway MSC, and the external network does not support BICC or does not support Codec Negotiation, the Gateway MSC shall terminate the codec negotiation and fallback to a single service.

NOTE 1: If the route is known not to support the SCUDIF functionality, the Gateway MSC may decide by configuration to terminate the codec negotiation and follow the procedure described in this clause.

In the case where the 3G-324.M codec is the first in the list, the network decides by configuration to fallback either to a UDI multimedia-only call or to speech. In the case where the 3G-324.M codec is not the first on the list, the call shall fallback to speech only.

If fallback to multimedia occurs, the call control parameters sent towards the external network shall be set according to the setting for multimedia calls, and TMR is set to "64 kbit/s unrestricted". The 3G-324.M codec shall be returned to the originating MSC server as the selected codec and be the only member of the available codec list.

NOTE 2: For multimedia calls, 3GPP TS 27.001 [5], annex B, and 3GPP TS 29.007 [6], table 7A, describe the setting and validity of the PLMN BC-IE as well as the comparable settings of parameters in the PLMN and ISDN BC-IEs. As the ISDN BC-IE parameter values used for UDI/RDI multimedia calls are identical to the BICC USI IE parameter values (see 3GPP TS 29.205 [7]), the setting of call control parameters sent towards the external network in case of fallback to multimedia can be derived straightforward.

If fallback to speech occurs, the call control parameters shall be set according to the setting for speech calls, and TMR is set to "speech". The 3G-324.M codec shall be removed from the available codec list. Speech codec selection shall be made according to normal OoBTC procedures for interworking to external networks, and the selected codec and available codec list returned to the originating MSC server.

End of modified sections

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CHANGE REQUEST

| ⌘ | **23.172** CR **019** | ⌘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 **X**

Title:	⌘	Corrections on HLR interrogation for SCUDIF calls		
Source:	⌘	TSG_CN WG3		
Work item code:⌘	SCUDIF		***Date:*** ⌘	28/10/2003
Category:	⌘ **F**		***Release:*** ⌘	Rel-5

Use one of the following categories:	*Use one 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)*
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D *(editorial modification)*	*R99 (Release 1999)*
Detailed explanations of the above categories can	*Rel-4 (Release 4)*
be found in 3GPP TR 21.900.	*Rel-5 (Release 5)*
	Rel-6 (Release 6)

Reason for change:	⌘	The procedure SCUDIF_Set_Correct_PLMN_BC does not consider the case where speech as the less preferred service is not allowed. The text of one test box in SCUDIF_Check_Service_Availability is incorrect and misleading. The description of Roaming Number 2 does not include the case where the preferred service is not allowed.
Summary of change:	⌘	The procedure SCUDIF_Set_Correct_PLMN_BC is modified to cover the missing case. The procedure SCUDIF_Check_Service_Availability is updated. The description of Roaming Number 2 is updated to consider the case where the preferred service is not allowed.
Consequences if not approved:	⌘	The speech PLMN_BC could be sent in PRN even if only the multimedia service is allowed. The test checking the allowed services may be misunderstood in implementations. Roaming Number 2 cannot be included even if only the less preferred service is allowed and not forwarded.

Clauses affected:	⌘	4.3.3.1.2, 4.3.3.1.3, 4.3.3.1.4

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

Other comments:	⌘	Update: text box changed to "value of Allowed services indicator ?" ; SDL sources included

First modified section

4.3.3.1.2   Send Routing Info Ack

The following elements specific to SCUDIF calls are defined for Send Routing Info Ack:

Information element name	Required	Description
Roaming number 2	C	E.164 number required to route the call to VMSCB (see 3GPP TS 23.003 [11]) for the less preferred service of a SCUDIF call. Shall be present for a SCUDIF call if the preferred service is not forwarded (*i.e.* either Roaming Number is present or the preferred service is not allowed) and the less preferred service is allowed available and not forwarded, otherwise shall be absent.
Forwarded-to number 2	C	E.164 number of the C subscriber for the less preferred service of a SCUDIF call. Shall be present if the HLR has determined that the less preferred service of a SCUDIF call is to be forwarded, otherwise shall be absent.
Forwarded-to subaddress 2	C	Subaddress of the C subscriber (see 3GPP TS 23.003 [11]) for the less preferred service of a SCUDIF call. Shall be present if the HLR has determined that the less preferred service of a SCUDIF call is to be forwarded and a forwarded-to subaddress is stored in the HLR in association with the forwarded-to number 2, otherwise shall be absent.
Notification to calling party 2	C	Indication of whether the calling party is to be notified that the call has been forwarded if the less preferred service of a SCUDIF call is kept. Shall be present if the HLR has determined that the less preferred service of a SCUDIF call is to be forwarded, otherwise shall be absent.
Forwarding reason 2	C	Indication of why the call has been forwarded (unconditionally or on mobile subscriber not reachable) for the less preferred service of a SCUDIF call. Shall be present if the HLR has determined that the less preferred service of a SCUDIF call is to be forwarded, otherwise shall be absent.
Basic Service Code 2	C	Indicates the type of the basic service for the less preferred service, *i.e.* teleservice or bearer service.
Allowed Services	C	Shall be present for SCUDIF calls. Indicates which services are available for that call.
Unavailability Cause	C	Indicates the reason for which one of the services of a SCUDIF call is not available. Shall be present for SCUDIF calls if one service is not available.

Next modified section

4.3.3.1.3   Handling of mobile terminating calls in the HLR

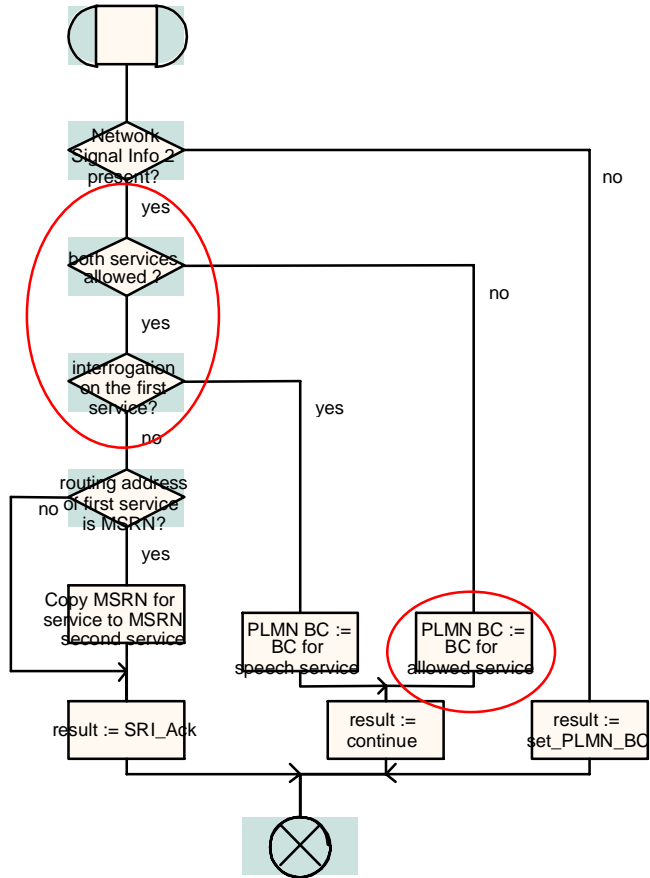The procedures specific to SCUDIF calls in the HLR are specified within this subclause:

-    Procedure SCUDIF_Subscription_Check_HLR

-    Procedure SCUDIF_CAMEL_CSI_Check_HLR

-    Procedure SCUDIF_Set_Second_Service_when_Forwarded

-    Procedure SCUDIF_Set_Correct_PLMN_BC

-    Procedure SCUDIF_Check_Second_Service_before_Negative_Response

-    Procedure SCUDIF_Check_Second_Service_after_PRN

-    Procedure SCUDIF_Check_Second_Service_when_Forwarded

Non-impacted figures skipped

procedure SCUDIF_Set_Correct_PLMN_BC   1(1)

Procedure in the HLR to
set the speech PLMN BC
SCUDIF calls

Network
Signal Info 2
present? — no

yes

both services
allowed ? — no

yes

interrogation
on the first
service? — yes

no

routing address
of first service — no
is MSRN?

yes

Copy MSRN for
service to MSRN
second service

PLMN BC :=
BC for
speech service

PLMN BC :=
BC for
allowed service

result := SRI_Ack
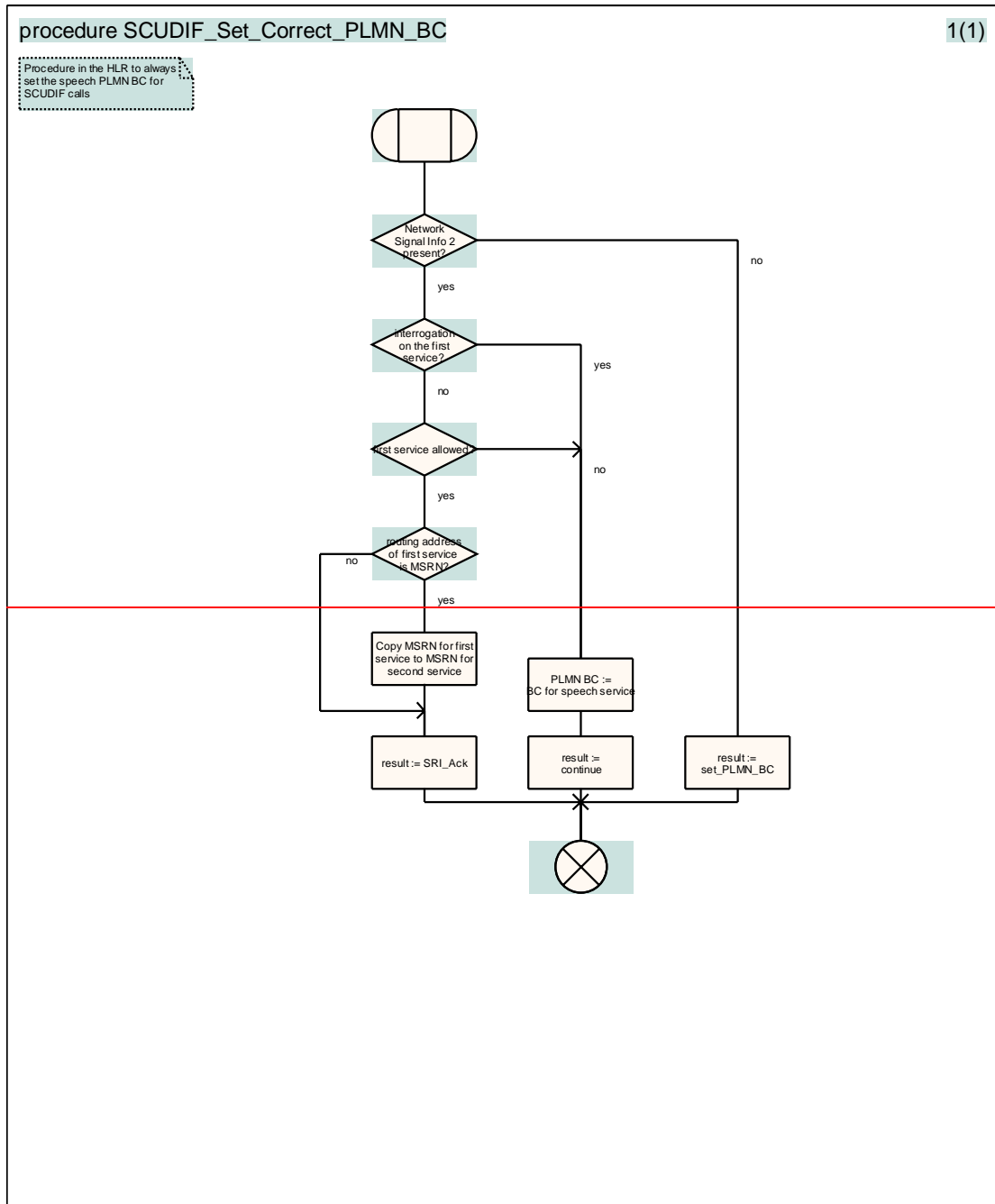
result :=
continue

result :=
set_PLMN_BC

Figure 4.16E: Procedure SCUDIF_Set_Correct_PLMN_BC

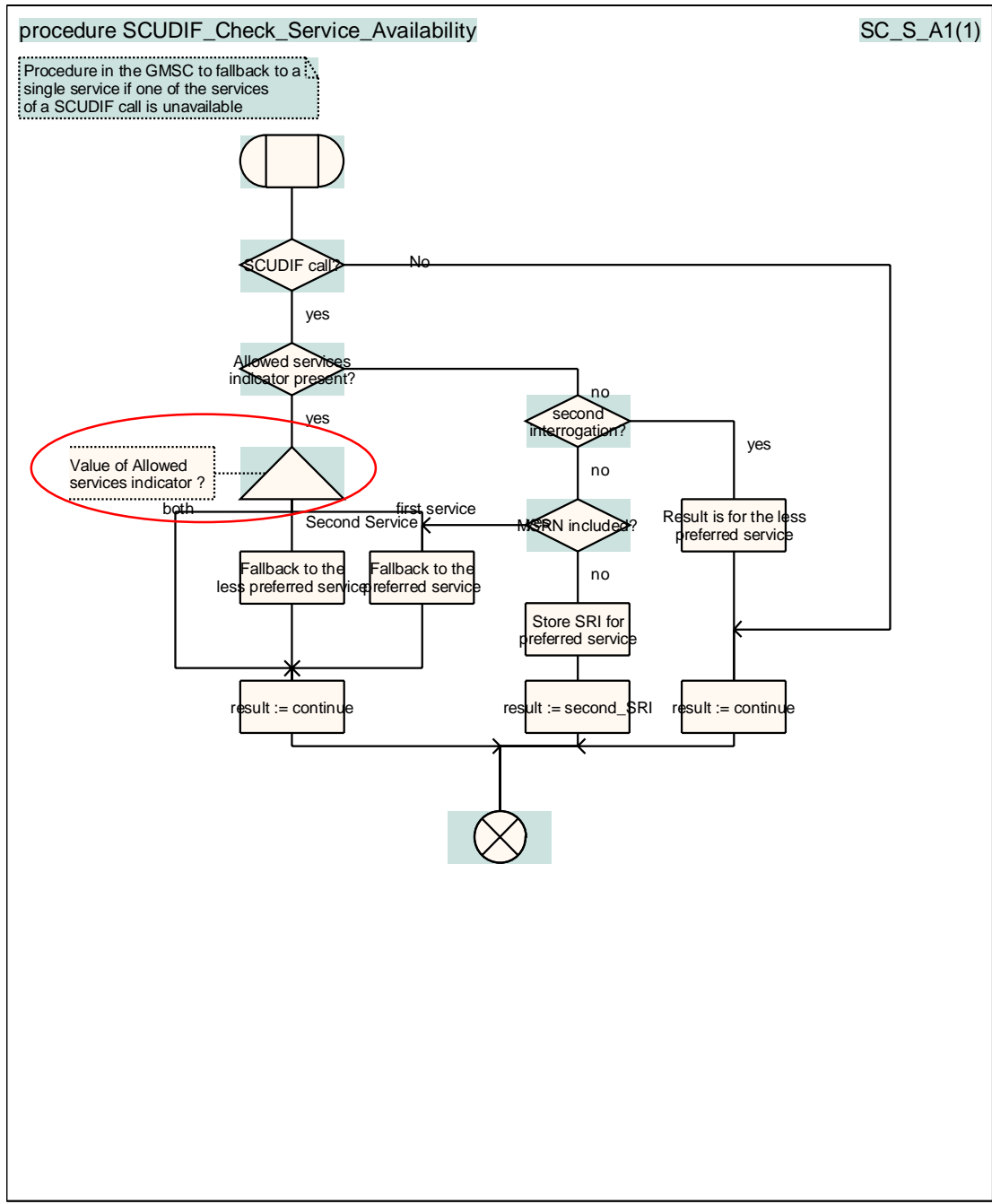*Non-impacted figures skipped*

Next modified section

4.3.3.1.4   Handling of mobile terminating calls in the GMSC

The procedures specific to SCUDIF calls in the GMSC are specified within this subclause:

- Procedure SCUDIF_Negative_SRI_Response_Handling

- Procedure SCUDIF_Check_Service_Availability

- Procedure SCUDIF_Check_Service_Compatibility

procedure SCUDIF_Check_Service_Availability　　　　　　　　　　　　　　SC_S_A1(1)

Procedure in the GMSC to fallback to a
single service if one of the services
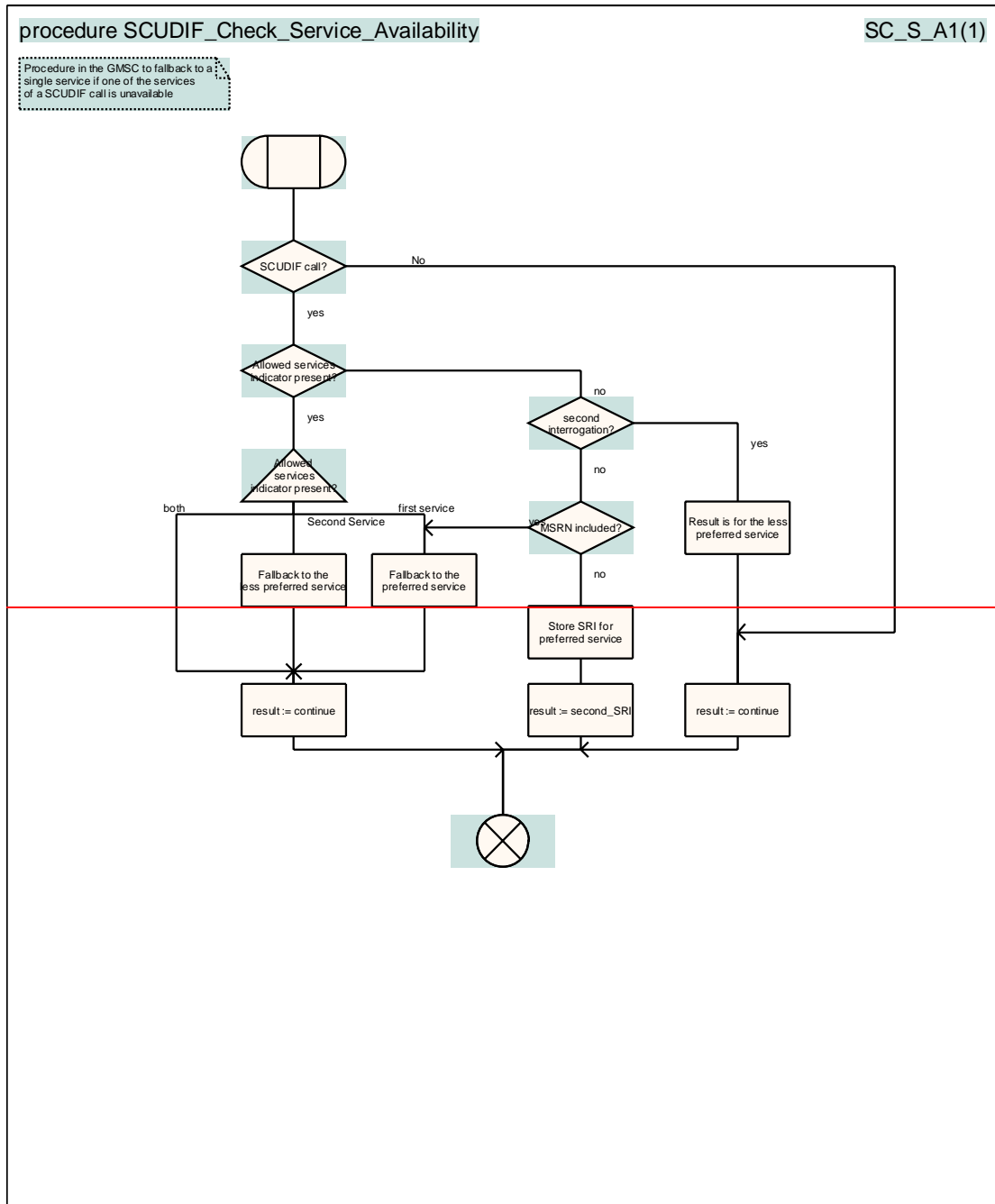of a SCUDIF call is unavailable

Figure 4.16J: Procedure SCUDIF_Check_Service_Availability

Non-impacted figures skipped

End of modified sections