3GPP TSG CN Plenary Meeting #25 **NP-040397**
8th – 10th August 2004 Palm Springs, US.

Source: TSG CN WG4

Title: Corrections on Camel Rel-5

Agenda item: 8.3

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level N4-04	Phase	Subject	Cat	Ver_C
23.278	047		0939	Rel-5	Correction of Check_Criteria Procedure names referenced in Process imcnSSF	F	5.5.0
29.278	006	1	1174	Rel-5	Correction to ERB pre-condition for IM-SSF state	F	5.2.0
29.078	381	2	1184	Rel-5	Clarification on the handling of operation invocation when LinkedID is missing although expected	F	5.8.0
29.078	382	2	1185	Rel-6	Clarification on the handling of operation invocation when LinkedID is missing although expected	A	6.2.0

CR-Form-v7.1

CHANGE REQUEST

⌘ **23.278** **CR** **047** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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:	⌘	Correction of Check_Criteria Procedure names referenced in Process imcnSSF .
Source:	⌘	CN4
Work item code:	⌘	IMS-CAMEL
Date:	⌘	26/07/04
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:
Ph2 *(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)*
Rel-7 *(Release 7)*

Reason for change:	⌘	This is an essential correction. The SDL procedure for checking criteria for the different TDPs are defined in TS 23.078 and referenced in TS 23.278, section 4.6.15 as "Procedure Check_Criteria". However, there are three different check criteria procedures (i.e. Check_Criteria_Collected_Info, Check_Criteria_Analysed_Info, and Check_Criteria_Unsuccessful) and they should all be listed explicitly in this list of procedures. Note that the correct Check_Criteria procedure names are used within the Process imcnSSF SDLs.
Summary of change:	⌘	List all three Check Criteria procedure names in section 4.6.1.5.
Consequences if not approved:	⌘	If not corrected, designers may be confused and not find the correct SDL procedures in TS 23.078.

Clauses affected:	⌘	4.6.1.5

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

⌘

Other comments: ⌘

-- First modified section --

4.6.1.5 Handling of call in the imcnSSF

Handling of mobile calls in the imcnSSF may involve the following process and procedures:

- Process imcnSSF;

Note that the following procedures are specified in 3GPP TS 23.078 Rel-99 [4]. For these procedures, the imcnSSF shall take the role of the gsmSSF.

- ~~Procedure Check_Criteria;~~

- Procedure Check_Criteria_Collected_Info;

- Procedure Check_Criteria_Analysed_Info;

- Procedure Check_Criteria_Unsuccessful;

- Procedure Connect_To_Resource;
- Procedure Handle_AC;
- Procedure Handle_ACR;
- Procedure Handle_CIR;
- Procedure Handle_CIR_leg;
- Procedure Complete_FCI_record;
- Procedure Complete_all_FCI_records;
- Procedure Handle_O_Answer;
- Procedure Handle_T_Answer.

The detailed error handling for the process imcnSSF and the associated procedures is specified in 3GPP TS 29.278 [**Error! Reference source not found.**].

-- End of modified section --

3GPP TSG-CN WG4 Meeting #24 ***N4-041174***
Sophia Antipolis, France. 16th to 20th August 2004.

CHANGE REQUEST

⌘ **29.278** **CR** **006** ⌘ **rev** **1** ⌘ Current version: **5.2.0** ⌘

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

Title:	⌘	Correction to ERB pre-condition for IM-SSF state
Source:	⌘	CN4
Work item code:	⌘	IMS-CAMEL ***Date:*** ⌘ 18/08/04
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.

The pre-conditions for the EventReportBCSM procedure specifies:

> For the O_Disconnect DP, T_Disconnect DP, O_Answer DP and T_Answer DP, the gsmSSF FSM is in the state "Monitoring" or in the state "Waiting_for_Instructions". For the O_Abandon DP and T_Abandon DP, the gsmSSF FSM is in any state, except "Idle".

This text is incomplete, as it lists only a few DPs. In general, the IM-SSF states in which a particular event may be reported to the gsmSCF, is specified in TS 23.278, in process imcnSSF.

The present CR proposes, therefore, that TS 29.278 does not (incorrectly) replicate this information, except for the reference to the Abandon DPs.

Summary of change: ⌘ Change the pre-condition for the EventReportBCSM procedure.

Consequences if not approved: ⌘ Confusion for designer; it is not clear in which IM-SSF states particular events may be reported. This will lead to inter-operability problems.

Clauses affected: ⌘ 9.13

Other specs affected: ⌘

Y	N	
	X	Other core specifications
	X	Test specifications
	X	O&M Specifications

⌘

Other comments:	⌘	The change requested in this CR is the same CR of N2-040185 approved at TSG CN June04 plenary for CAMEL4 spec 29.078.

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

9.13 EventReportBCSM procedure

9.13.1 General description

(… no change to this subclause ….)

9.13.2 Invoking entity (IM-SSF)

9.13.2.1 Normal procedure

IM-SSF precondition:

(1)A control or a monitoring relationship exists between the IM-SSF and the gsmSCF.

(2) ~~The IM-SSF is in the state "Monitoring", or in state "Waiting for Instructions" (if the O/TDisconnect DP or O/TAnswer DP is armed and encountered); or the IM-SSF is in any state, except Idle (if the O/TAbandon DP is armed and encountered).~~For the O_Abandon DP and T_Abandon DP, the IM-SSF is in any state, except "Idle". For other DPs, refer to 3GPP TS 23.078 [10].

(3) The BCSM proceeds to an EDP that is armed.

IM-SSF postcondition:

(1) The IM-SSF stays in the state "Monitoring" if the message type was notification and there are still EDPs armed or a "CallInformationReport" or "ApplyChargingReport" requested.

(2) The IM-SSF moves to the state "idle" if the message type was notification and there are no more EDPs armed, no "CallInformationReport" or "ApplyChargingReport" are requested.

(3) The IM-SSF moves to the state "Waiting for Instructions" if the message type was request. Call processing is interrupted.

9.13.2.2 Error handling

In case the message type is request, on expiration of T_{ssf} before receiving any operation, the IM-SSF aborts the interaction with the gsmSCF and the call is given final treatment, e.g. a final announcement.

Operation related error handling is not applicable, due to class 4 operation.

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

3GPP TSG-CN WG4 Meeting #24 N4-041184
Sophia Antipolis, France. 16th to 20th August 2004

CHANGE REQUEST

⌘ **29.078** **CR** **381** ⌘ **rev** **2** ⌘ Current version: **5.8.0** ⌘

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

Title:	⌘	Clarification on the handling of operation invocation when LinkedID is missing although expected
Source:	⌘	CN4
Work item code:	⌘	CAMEL4
Date:	⌘	18/08/2004
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:
Ph2 (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)
Rel-7 (Release 7)

Reason for change:	⌘	This is an essential correction. When a TC-INVOKE component is received for a CAP operation which needs to be correlated with a parent CAP operation, this is achieved by utilizing LinkedID IE, where the InvokeID of the parent operation is included. The handling needs to be specified when a linked operation invocation is expected from the remote handler (LinkedID IE shall exist in the received TC-INVOKE component), but the received TC-INVOKE component does not include a LinkedID parameter. Currently, TS 29.078 does not specify the handling for such situation. A CAMEL Service can not function properly if the LinkedID IE is absent in a case where it is required. Therefore, the gsmSCF shall issue a REJECT in such case.
Summary of change:	⌘	Add an additional bullet to section 14.1.1.4.1 (Procedures for CAP Operations), to describe the handling of a TC-INVOKE indication primitive when a LinkedID is expected but not received.
Consequences if not approved:	⌘	Unspecified handling of an invoke operation when a linked operation is expected but a LinkedID IE does not exist in the received TC-INVOKE component. As a result, gsmSCF implementors may apply inconsistent error handling, such incorrect linking or silent discard resulting in reserved resource without apparent reason while the operation will in any case be terminated after a certain amount

	of time.

Clauses affected:	⌘	14.1.1.4.1			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

First modification

14.1.1.4 Component handling

14.1.1.4.1 Procedures for CAP Operations

The present subclause describes the procedures for CAP Operations.

Operation invocation

TC-USER shall build an operation argument from the parameters received and request the invocation of the associated operation using the TC-INVOKE procedure. If a linked ID parameter is inserted in the primitive, then this indicates a child operation and implies that the operation is linked to a parent operation.

Operation invocation receipt

On receipt of a TC-INVOKE indication primitive, TC-USER shall:

- If the operation code does not correspond to an operation supported by the application-context, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (unrecognized operation);
- —If a linked ID is included, then perform the following checks: If the operation referred to by the linked ID does not allow linked operations or if the operation code does not correspond to a permitted linked operation, or if the parent operation invocation is not active, then ~~issue a TC-U-REJECT request primitive~~ request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (linked response unexpected or unexpected linked operation);
- If a linked ID is not included, but a Linked ID is needed to correlate the indication primitive with a parent operation invocation, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter);
- If the type of the argument is not the one defined for the operation, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter);
- ~~i~~If the operation cannot be invoked because the CAP related dialogue is about to be released, then request~~s~~ the transfer of ~~the~~a reject component using the TC-U-REJECT request primitive, with the problem code (Initiating Release);
- ~~i~~If sufficient CAP related resources are not available to perform the requested operation, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the problem code (Resource Limitation);
- Otherwise, accept the TC-INVOKE indication primitive. If the operation is to be user confirmed, then TC-USER waits for the corresponding response.

Operation Response

For user confirmed operations, TC-USER shall:

- If no error indication is included in the response to a class 1 or 3 operation, then construct a result information element from the parameters received and request its transfer using the TC-RESULT-L service.
- If an error indication is included in the response to a class 1 or 2 operation, then construct an error parameter from the parameters received and request its transfer using the TC-U-ERROR request primitive.

Receipt of a response

On receipt of a TC-RESULT-NL indication, TC-USER shall:

- Request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter).

On receipt of a TC-RESULT-L indication, TC-USER shall:

- If the type of the result parameter is not the one defined for the result of this operation, request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter);
- Otherwise, accept the TC-RESULT-L indication primitive.

On receipt of a TC-U-ERROR indication, TC-USER shall:

- If the error code is not defined for the TC-USER or is not one associated with the operation referred to by the invoke ID, request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (unrecognized error or unexpected error);
- If the type of the error parameter is not the one defined for this error, request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter);
- Otherwise, accept the TC-U-ERROR indication primitive.

On receipt of a TC-U-REJECT indication primitive which affects a pending operation, TC-USER shall:

- accept the TC-U-REJECT indication primitive.

On receipt of a TC-L-REJECT indicating "return result problem, return error unexpected", TC-USER shall inform the application process.

On receipt of a TC-L-REJECT indicating "return error problem, return error unexpected", TC-USER shall inform the application process.

This event occurs when the local TC detects a protocol error in an incoming component which affects an operation.

When the problem code indicates a general problem, it is considered that the event cannot be related to an active operation even if the invoke Id is provided by TC. This is because it is unclear whether the invoke Id refers to a local or remote invocation. The behaviour of TC-USER in such a case is described in the subclause headed "other events".

On receipt of a TC-L-CANCEL indication, the TC-USER shall:

- If the associated operation is a class 1 operation, inform the application process;
- If the associated operation is a class 2 operation and no linked operations are defined for this operation, ignore the primitive;
- If the associated operation is a class 2 operation and has linked operations but none of them has been invoked, inform the application process;
- If the associated operation is a class 2 operation and a linked operation invocation has already been received in response to this operation, ignore the primitive;
- If the associated operation is a class 3 operation, inform the application process;
- If the associated operation is a class 4 operation, ignore the primitive;

Other events

This subclause describes the behaviour of TC-USER on receipt of a component handling indication primitive which cannot be related to any operation or which does not affect a pending one.

On receipt of a TC-U-REJECT indication primitive which does not affect an active operation (i.e. indicating a return result or return error problem), it is up to the application process to abort, continue or terminate the dialogue, if not already terminated by the sending application process according to the rules as stated in subclause 14.1.2.1.2. This is also applicable for invoke problems related to a class 4 linked operation.

On receipt of a TC-R-REJECT indication (i.e. when a protocol error has been detected by the peer TC entity) which does not affect an active operation, it is up to the application process to abort, continue or terminate the dialogue, if not already terminated by the sending application process according to the rules as stated in subclause 14.1.2.1.2.

On receipt of a TC-L-REJECT indication primitive (i.e. when a protocol error has been detected by the local TC entity) which cannot be related to an active operation, it is up to the application process to continue, or to terminate the dialogue and implicitly trigger the transmission of the reject component or to abort the dialogue.

On receipt of a TC-NOTICE indication primitive, which informs the TC-USER that a message cannot be delivered by the Network Layer, it is for the application process to decide whether to terminate the dialogue or retry.

This primitive can occur only if the Return Option has been set (see subclause 14.1.1.3.6).

Modification end

3GPP TSG-CN WG4 Meeting #24 N4-041185
Sophia Antipolis, France. 16th to 20th August 2004

CHANGE REQUEST

⌘ **29.078** **CR** **382** ⌘ **rev** **2** ⌘ Current version: **6.2.0** ⌘

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

Title:	⌘	Clarification on the handling of operation invocation when LinkedID is missing although expected
Source:	⌘	CN4
Work item code:	⌘	CAMEL4
Date:	⌘	18/08/2004
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)*

Use one of the following releases:
Ph2 (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)
Rel-7 (Release 7)

Reason for change:	⌘	When a TC-INVOKE component is received for a CAP operation which needs to be correlated with a parent CAP operation, this is achieved by utilizing LinkedID IE, where the InvokeID of the parent operation is included. The handling needs to be specified when a linked operation invocation is expected from the remote handler (LinkedID IE shall exist in the received TC-INVOKE component), but the received TC-INVOKE component does not include a LinkedID parameter. Currently, TS 29.078 does not specify the handling for such situation. A CAMEL Service can not function properly if the LinkedID IE is absent in a case where it is required. Therefore, the gsmSCF shall issue a REJECT in such case.
Summary of change:	⌘	Add an additional bullet to section 14.1.1.4.1 (Procedures for CAP Operations), to describe the handling of a TC-INVOKE indication primitive when a LinkedID is expected but not received.
Consequences if not approved:	⌘	Unspecified handling of an invoke operation when a linked operation is expected but a LinkedID IE does not exist in the received TC-INVOKE component. As a result, gsmSCF implementors may apply inconsistent error handling, such incorrect linking or silent discard.

Clauses affected:	⌘	14.1.1.4.1

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

First modification

14.1.1.4 Component handling

14.1.1.4.1 Procedures for CAP Operations

The present subclause describes the procedures for CAP Operations.

Operation invocation

TC-USER shall build an operation argument from the parameters received and request the invocation of the associated operation using the TC-INVOKE procedure. If a linked ID parameter is inserted in the primitive, then this indicates a child operation and implies that the operation is linked to a parent operation.

Operation invocation receipt

On receipt of a TC-INVOKE indication primitive, TC-USER shall:

- If the operation code does not correspond to an operation supported by the application-context, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (unrecognized operation);
- ~~—~~If a linked ID is included, then perform the following checks: If the operation referred to by the linked ID does not allow linked operations or if the operation code does not correspond to a permitted linked operation, or if the parent operation invocation is not active, then ~~issue a TC-U-REJECT request primitive~~ request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (linked response unexpected or unexpected linked operation);
- If a linked ID is not included, but a Linked ID is needed to correlate the indication primitive with a parent operation invocation, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter);
- If the type of the argument is not the one defined for the operation, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter);
- ~~i~~If the operation cannot be invoked because the CAP related dialogue is about to be released, then request~~s~~ the transfer of ~~the~~a reject component using the TC-U-REJECT request primitive, with the problem code (Initiating Release);
- ~~i~~If sufficient CAP related resources are not available to perform the requested operation, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the problem code (Resource Limitation);
- Otherwise, accept the TC-INVOKE indication primitive. If the operation is to be user confirmed, then TC-USER waits for the corresponding response.

Operation Response

For user confirmed operations, TC-USER shall:

- If no error indication is included in the response to a class 1 or 3 operation, then construct a result information element from the parameters received and request its transfer using the TC-RESULT-L service.
- If an error indication is included in the response to a class 1 or 2 operation, then construct an error parameter from the parameters received and request its transfer using the TC-U-ERROR request primitive.

Receipt of a response

On receipt of a TC-RESULT-NL indication, TC-USER shall:

- Request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter).

On receipt of a TC-RESULT-L indication, TC-USER shall:

- If the type of the result parameter is not the one defined for the result of this operation, then request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter);

- Otherwise, accept the TC-RESULT-L indication primitive.

On receipt of a TC-U-ERROR indication, TC-USER shall:

- If the error code is not defined for the TC-USER or is not one associated with the operation referred to by the invoke ID, request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (unrecognized error or unexpected error);

- If the type of the error parameter is not the one defined for this error, request the transfer of a reject component using the TC-U-REJECT request primitive, with the appropriate problem code (mistyped parameter);

- Otherwise, accept the TC-U-ERROR indication primitive.

On receipt of a TC-U-REJECT indication primitive which affects a pending operation, TC-USER shall:

- accept the TC-U-REJECT indication primitive.

On receipt of a TC-L-REJECT indicating "return result problem, return error unexpected", TC-USER shall inform the application process.

On receipt of a TC-L-REJECT indicating "return error problem, return error unexpected", TC-USER shall inform the application process.

This event occurs when the local TC detects a protocol error in an incoming component which affects an operation.

When the problem code indicates a general problem, it is considered that the event cannot be related to an active operation even if the invoke Id is provided by TC. This is because it is unclear whether the invoke Id refers to a local or remote invocation. The behaviour of TC-USER in such a case is described in the subclause headed "other events".

On receipt of a TC-L-CANCEL indication, the TC-USER shall:

- If the associated operation is a class 1 operation, inform the application process;

- If the associated operation is a class 2 operation and no linked operations are defined for this operation, ignore the primitive;

- If the associated operation is a class 2 operation and has linked operations but none of them has been invoked, inform the application process;

- If the associated operation is a class 2 operation and a linked operation invocation has already been received in response to this operation, ignore the primitive;

- If the associated operation is a class 3 operation, inform the application process;

- If the associated operation is a class 4 operation, ignore the primitive;

Other events

This subclause describes the behaviour of TC-USER on receipt of a component handling indication primitive which cannot be related to any operation or which does not affect a pending one.

On receipt of a TC-U-REJECT indication primitive which does not affect an active operation (i.e. indicating a return result or return error problem), it is up to the application process to abort, continue or terminate the dialogue, if not already terminated by the sending application process according to the rules as stated in subclause 14.1.2.1.2. This is also applicable for invoke problems related to a class 4 linked operation.

On receipt of a TC-R-REJECT indication (i.e. when a protocol error has been detected by the peer TC entity) which does not affect an active operation, it is up to the application process to abort, continue or terminate the dialogue, if not already terminated by the sending application process according to the rules as stated in subclause 14.1.2.1.2.

On receipt of a TC-L-REJECT indication primitive (i.e. when a protocol error has been detected by the local TC entity) which cannot be related to an active operation, it is up to the application process to continue, or to terminate the dialogue and implicitly trigger the transmission of the reject component or to abort the dialogue.

On receipt of a TC-NOTICE indication primitive, which informs the TC-USER that a message cannot be delivered by the Network Layer, it is for the application process to decide whether to terminate the dialogue or retry.

This primitive can occur only if the Return Option has been set (see subclause 14.1.1.3.6).

Modification end