Technical Specification Group Services and System Aspects
Meeting #17, Biarritz, France, 9-12 September 2002

TSGS#17(02)0550

Source: **SA1**

Title: **Release 5 CRs to 22.078 on CAMEL**

Document for: **Approval**

Agenda Item: **7.1.3**

SA Doc	Spec	CR	Rev	Phase	Cat	Subject	Old Vers	New Vers	SA1 Doc
SP-020550	22.078	148		Rel-5	F	Clarification on re-connecting held parties in a CPH configuration	5.7.0	5.8.0	S1-021675
SP-020550	22.078	149		Rel-5	C	Handling of partial implementations of CAMEL phase 4	5.7.0	5.8.0	S1-021538

TSG-SA WG1 #17 **S1-021675**
Durango, USA, 12-16th August 2002 **Agenda Item: 5.2.2**

CR-Form-v7

CHANGE REQUEST

⌘ **22.078** **CR** **148** ⌘ **rev** **1** ⌘ 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 re-connecting held parties in a CPH configuration
Source:	⌘	SA1 (CN2)
Work item code:	⌘	CAMEL4 ***Date:*** ⌘ 17th July 2002
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:	⌘	The scenarios for the set-up of a CAMEL controlled call are not all outlined clearly in 22.078, CN2 found 3 scenarios, each having different starting conditions. All 3 sceanrios need to be specified clearly in stage one of the specification.
Summary of change:	⌘	Clarification that the "Connecting an individual call party to the group" is only applicable to a "normal A-B" call if the group has reached the active phase. Other options for the set up of a CSE controlled call scenario are also outlined, to align with the stage 2 specification
Consequences if not approved:	⌘	This would lead to an unclear specification. There would be misalignment between stage 1 and 2.

Clauses affected:	⌘	8.1.4

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

Other comments:	⌘	CN2 is working on the assumption that the principal of this CR is approved.

8 Procedures for Call Party Handling - $(CAMEL4$)

CPH procedures only apply to speech telephony (TS11) as defined in TS 22.003 [10].

CPH procedures apply to MO, MF, MT, VT and CSE initiated calls. If the served subscriber is involved in a CPH configuration controlled by her CSE, then any further MO or MT call setup request involving the served subscriber shall be handled by a separate relationship with the served subscriber's CSE. This new relationship may lead to the creation of a further CPH configuration for the served subscriber. The service logic for one CSE relationship is not necessarily aware of what is happening in another CSE relationship involving the same served subscriber.

It is not required to transfer a leg or a group of legs between separate CPH configurations.

Where service logic involves Call Party Handling procedures, the Service Interaction Indicators Two parameter should be used to manage interactions with Supplementary Services (CF, CD and MPTY for each call leg and ECT and HOLD for the served subscriber).

The CSE shall be able to add parties to, or remove parties from, the group. Each party in this group can communicate with all other parties in the group. The IPLMN/VPLMN shall support at least 6 parties (of which one may be a Specialised Resource Function) in a group.

If a control relationship exists, the CSE may order in-band user interaction with any held call party at any point during the active phase of the call leg.

Charging activities shall be possible during a CPH configuration as indicated in clause 15.

8.1 CPH procedures for an existing call

8.1.1 Creating additional parties in the call

The purpose of this procedure is to allow the CSE to create additional parties in a call at any point during that call. The CSE initiated call leg shall be created in the held state in the IPLMN/VPLMN of the served subscriber.

If a control relationship exists, it shall be possible for the CSE to instruct the IPLMN/VPLMN of the served subscriber to initiate a new call leg to an additional party. The new call leg shall form part of the existing CPH configuration.

If a CSE initiated new call leg is created within a CAMEL relationship for a mobile originated call (MO case) or for a mobile terminating call in the VPLMN (VT case), the CSE initiated new leg in the VPLMN shall be subject to the Outgoing Call Barring Supplementary Services and the Outgoing Operator Determined Barring categories. However the CSE shall be able to instruct the VPLMN to suppress the invocation for the new leg of conditional barring of outgoing calls by the call barring supplementary service and operator determined barring as indicated in subclause 18.8.

If the CSE sends a request to initiate a new call leg the events relating to unsuccessful call establishment and answer should be armed by the CSE to maintain a control relationship.

8.1.2 Placing an individual call party on hold

The purpose of this procedure is to allow the CSE to instruct the IPLMN/VPLMN to place an individual call party on hold.

The CSE may instruct the IPLMN/VPLMN to put a call party on hold at any point during the active phase of the call leg if a control relationship exists.

The CSE shall be able to instruct the IPLMN/VPLMN to send a notification towards the held party indicating that she has been placed on hold. The notification shall be a tone or an announcement.

NOTE: This procedure does not use the HOLD supplementary service, however the notification message sent to the MS may be the same as for the HOLD supplementary service. The CSE may use other procedures instead of, or as well as, instructing the IPLMN/VPLMN to send a tone or announcement to notify the held party that she has been placed on hold.

8.1.3 Releasing call parties

The purpose of this procedure is to allow the CSE to instruct the IPLMN/VPLMN to release an individual call party or all the call parties in a CPH configuration.

The CSE may instruct the IPLMN/VPLMN to release all the call parties in a CPH configuration at any point in a call if a control relationship exists.

The CSE may instruct the IPLMN/VPLMN to release an individual CSE-initiated call party at any point in a call if a control relationship exists.

If, at the initial service event, the CSE instructed the IPLMN/VPLMN not to route the call directly to the destination, then the CSE may instruct the IPLMN/VPLMN to release the calling party at any point in a call if a control relationship exists.

If, at the initial service event, the CSE instructed the IPLMN/VPLMN to proceed with the call as normal then the CSE may instruct the IPLMN/VPLMN to release the calling party or the called party during the active phase of the call only.

The release of the served subscriber shall not necessarily lead to the disconnection of the other parties in the CPH configuration.

8.1.4 Connecting an individual call party to the group

The purpose of this procedure is to allow the CSE to instruct the IPLMN/VPLMN to connect an individual call party to the group.

If, at the initial service event, the CSE instructed the IPLMN/VPLMN not to route the call leg directly to the destination, then ~~T~~the CSE may instruct the IPLMN/VPLMN to connect a separate held call party to the group at any point during the alerting and active phases of the call leg if a control relationship exists.

If, at the initial service event, the CSE instructed the IPLMN/VPLMN to proceed with the call as normal then the CSE may instruct the IPLMN/VPLMN to connect a held call party to the group at any point during the alerting and active phases of the call leg if a control relationship exists and at least one call leg in the group has reached the active phase.

If the CSE has initiated the call, it may instruct the IPLMN/VPLMN to connect another held call party to the group at any point during the alerting and active phases of the call leg.

The CSE shall be able to instruct the IPLMN/VPLMN to send a notification towards the previously held party indicating that she has been connected to the group. The CSE shall be able to instruct the IPLMN/VPLMN to send a notification towards the other party or parties in the group indicating that an additional party has been connected to the group. The notification shall be a tone or an announcement.

NOTE: The CSE may use other procedures instead of, or as well as, instructing the IPLMN/VPLMN to send a tone or announcement to notify the previously held party that she has been connected to the group. The same principle applies to the notification towards the other party or parties in the group.

8.2 Creating a new call

The purpose of this procedure is to allow the CSE to create a new call to the served subscriber.

It shall be possible for the CSE to instruct the IPLMN/VPLMN of the served subscriber to initiate a new call on behalf of the served subscriber. The IPLMN/VPLMN shall have the possibility to reject this request. The CSE shall be able to instruct the HPLMN to suppress the invocation of Incoming call barrings for a CSE initiated call.

The CSE shall be able to instruct the HPLMN to suppress the triggering of terminating CAMEL-based services in the VPLMN for the served subscriber.

The CSE shall be able to instruct the IPLMN to suppress the triggering of terminating CAMEL-based services in the IPLMN for the served subscriber.

If the CSE sends a request to initiate a call the events relating to unsuccessful call establishment and answer should be armed by the CSE to maintain a control relationship.

TSG-SA WG1 #17 **S1-021538**
Durango, USA, 12-16th August 2002 **Agenda Item: 6.1**

CR-Form-v7

CHANGE REQUEST

⌘ **22.078** **CR** **149** ⌘ **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:	⌘	Handling of partial implementations of CAMEL phase 4
Source:	⌘	SA1 (Siemens AG, Lucent Technologies, T-Mobile, Alcatel, Vodafone)
Work item code:	⌘	CAMEL4
Date:	⌘	10/07/2002
Category:	⌘	**C**
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:	⌘	The current description in subclauses 16.6 and 16.7 seems to allow partial implementations of CAMEL4, at least in the roaming case. Although no operator should be able to force the partner to implement certain features, this still remains as an excuse not to implement full features of CAMEL4 forever. Operators shall be able to indicate clearly to the manufacturers which requirement they need for their own network. However, there may be the case where an operator is not willing to offer the capability of the network to a roaming subscriber for various reasons. Additionally, even if the standard does not specify the mechanism, partial implementations of CAMEL4 might exist in the real world. These partial implementations cause problems in the roaming case. We believe there should be a mechanism in the standard that helps to solve these problems. However, the standard shall NOT define subsets which encourage partial implementations.
Summary of change:	⌘	The VPLMN shall inform the HLR which CSIs can be downloaded. The VPLMN shall inform the CSE which features it offers. CN2 will define the granularity of the information provided to the CSE.
Consequences if not approved:	⌘	Roaming agreements become complex if the visited network has partial support of CAMEL Phase 4

Clauses affected:	⌘	16.6, 16.7			
Other specs	⌘	**Y** ☒	**N** ☐	Other core specifications	⌘ 23.008, 23.078, 29.002, 29.078

affected:		Test specifications O&M Specifications	
Other comments:	⌘	CN2 is aware that there need to be changes to implement this change and by TSGs#17 will have taken the first steps to achieve this. SA1 has been advised that it is not likely that the matter will be complete from the CN2 perspective until TSGs#18	

16.6 ~~Roaming in a VPLMN which supports only a functional subset of CAMEL Phase~~ Roaming in a VPLMN with a partial implementation of CAMEL Phase 4$(CAMEL4)$

In principle, CAMEL based services require support of subscription information in the VPLMN and support for certain information flows between service logic (at the CSE) and the VPLMN. Subscription information are exchanged when a subscriber attempts to register in a VPLMN. Information flows are started when the VPLMN initiates contact to the CSE. Those procedures are de-coupled and happen at different points in time. If both procedures are supported sufficiently, services may be offered to a subscriber. The following chapter identifies requirements for a VPLMN to indicate its support of CAMEL Phase 4 features.

If a CAMEL subscriber attempts to register in a VPLMN which supports at least one ~~a functional subset of~~ CAMEL Phase 4 CSI or the enhanced CSE interrogation and control of subscription data, the VPLMN ~~shall~~ indicates in the registration request to the HPLMN the phase of CAMEL which the VPLMN supports (i.e. at least Phase 4). In addition, the VPLMN ~~shall~~ indicates which ~~functional subsets of~~ CAMEL Phase 4 CSIs or enhanced CSE interrogation and control of subscription it offers~~supports~~.

A VPLMN supports a CAMEL Phase 4 CSI if it is capable of initiating contact with the CSE due to that CSI using CAMEL Phase 4 procedures.

If the VPLMN does not support all ~~functional subsets~~CSIs or the enhanced CSE interrogation and control of subscription data of CAMEL phase 4, the HPLMN shall take such action (including denying the registration request or transferring to the VPLMN subscription information appropriate to the CAMEL Phase 4 ~~subset~~ CSI ~~supported~~ offered by ~~in~~ the VPLMN) as may be decided by the HPLMN operator. If a certain service requires a certain CAMEL Phase 4 ~~subset~~ CSI (e.g. MT SMS handling) and the VPLMN does not support that CAMEL Phase 4 ~~subset~~CSI, the HPLMN may decide to deny roaming or allow roaming without that particular CAMEL OSS.

If the VPLMN initiates contact with the CSE, or acknowledges a CSE initiated contact, the VPLMN indicates the CAMEL Phase 4 functionality offered to the CSE. This functionality should not contradict the capabilities the VPLMN has offered to the HPLMN at the registration time. Examples of functionality which can be offered to the CSE are:

- Creating additional parties in a call;
- Placing an individual call party on hold;
- Mid Call procedure;
- Inclusion of flexible tone injection;~~.~~
- etc.

~~With respect to this mechanism, the following functional subsets of CAMEL Phase 4 shall be supported:~~

- ~~CS Call Handling~~
- ~~SMS-MT handling (MT-SMS-CSI)~~
- ~~GPRS mobility management (MG-CSI)~~
- ~~ATSI enhancements for GPRS~~

16.7 Call setup attempt from an IPLMN which supports only ~~a functional subset~~ a partial implementation of CAMEL Phase 4 $(CAMEL4)$

If the IPLMN supports at least one CAMEL Phase 4 CSI, it ~~shall~~ indicates to the HPLMN (e.g. in the request for routeing information) which ~~functional subsets of~~ CAMEL Phase 4 CSIs ~~that~~ it supports.

If the IPLMN does not support all ~~functional subsets~~CSI´s of CAMEL phase 4, the HPLMN shall take such action (including barring the incoming call request or transferring to the IPLMN subscription information appropriate to the CAMEL Phase 4 ~~subset~~ CSI offered ~~supported~~ in the IPLMN) as may be decided by the HPLMN operator. If a certain service requires a specific CAMEL Phase 4 ~~subset~~ CSI and the IPLMN does not support that specific CAMEL Phase 4 ~~subset~~CSI, the HPLMN may decide to bar the incoming call attempt, or force the routeing interrogation to take place in the HPLMN, or allow the MT call attempt without that particular CAMEL OSS.

~~With respect to this mechanism, the same functional subsets of CAMEL Phase 4 as indicated in chapter 16.6 shall be supported.~~The same principles for the IPLMN shall apply as defined in chapter 16.6 for the VPLMN.