

**3GPP TSG CN Plenary Meeting #14  
Kyoto, Japan, 12<sup>th</sup> - 14<sup>th</sup> December 2001**

**NP-010578**

**Source: MCC**  
**Title: CAMEL4 AdHoc Meeting Report**  
**Agenda item: 6.2.1**  
**Document for: Information**

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**Meeting Report**  
**TSG CN WG2**  
**CAMEL4 AdHoc Meeting**  
**Sophia Antipolis, France**  
**11 – 13 September, 2001**

Chairman: Keijo Palviainen (Nokia)

MCC support: Andrijana Jurisic (ETSI)

Host: ETSI

List of participants: Annex A  
Approved change requests for Rel-5 Annex B  
Document list Annex C

Documents could be found on the 3GPP-server:

[ftp://ftp.3gpp.org/tsg\\_cn/WG2\\_camel/Ad\\_Hocs/CAMEL4\\_September\\_SophiaAntipolis](ftp://ftp.3gpp.org/tsg_cn/WG2_camel/Ad_Hocs/CAMEL4_September_SophiaAntipolis)

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## 1 Opening of the meeting and approval of the agenda

CAMEL4 AdHoc Meeting is opened on 11<sup>th</sup> of September at 10:00.

**N2-010628** : CN2 chairman, Title: Proposed meeting agenda

**Discussion** : Alcatel proposed that all the further changes to stage 1 should be first discussed in CN2 and later processed in SA1. CN2 welcomes sending of all the CRs to 22.078 first to CN2.

**Conclusion** : *approved*

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## 2 Allocation of documents to agenda items

**N2-010629**: CN2 chairman, Title: Allocation of documents to agenda items

**Discussion** : Document 635 was moved to agenda item 8.6. Document 654 in agenda item 8.12 is withdrawn. The document will be updated during the meeting.

**Conclusion** : *approved*

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## 3 Reports

**N2-010658**: SA1, Title: SA1#13 Meeting Report from Lake Tahoe

**Discussion** : Subsequent to the AdHoc meeting, SA1 discussed the definition of legacy services from a CAMEL point of view. CAMEL applicability for the IMS has now become general consensus in 3GPP and CAMEL will be applied only for the legacy services.

The key points that had to be addressed on this meeting were:

- define the term 'legacy services';
- state explicitly the media stream that CAMEL may apply to (limited to voice, telephony-like applications ...etc);
- state explicitly which of the public user identities apply (i.e. E.164 number only, or extended to SIP URLs or any combination). E.164 apply to IMS in additions to SIP URL. This will impact on CAMEL as well.

This information should be liased to CN2 to guide the work, and the Stage 1 descriptions of IMS (22.218) and CAMEL (22.078) updated to reflect the consensus decision.

CR to 22.078 from Logica Mobile Networks on tones support for CAMEL phase 4 was approved. The idea is to allow tones to be played to the roaming subscriber locally rather than connect back to the home network.

CPH is not applicable to IMS.

**Conclusion**: *noted*

**N2-010659**: SA1/SA2/SA5, Title: SA1/SA2/SA5 IMS charging Draft Meeting Report, Sophia Antipolis

**Discussion** : This session allowed each company to present their point of view on the charging architecture (Ericsson, Lucent, Siemens, KPN, Nokia). However, proposals were too different at this time to even try to merge them. More work is needed, and off-line discussions are encouraged on the issue. A common understanding is that there is a need to link the charging information coming from the different "levels" of the system (bearer, service and application) to provide a consistent charging to the end user.

SA2 will produce the Technical report "Charging implications of IMS architecture" and based on this TR the detailed work will be continued in SA5.

**Conclusion**: *noted*

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## 4 Input Liaison Statements

**N2-010660** : Source: T2-SWG3, Type: LS IN , Title: Liaison Statement in Regards to MMS Charging

**Discussion** : Legacy services apply to IMS. MMS is standalone, not considered as legacy service and there is no interworking with CAMEL.

**Conclusion:** *noted*

**N2-010661** : Source: SA3, Type: LS IN, Title: Reply to "Liaison Statement in Regards to MMS Charging"

**Discussion** :

**Conclusion:** *noted*

**N2-010662**: Source: SA5, Type: LS IN, Title: IP Based Multimedia Services Framework

**Discussion** : SA1 work on the Framework Report is ongoing. The Framework Report is sufficiently progressed for other groups to begin consideration of input to the Report. Therefore the current version of the Framework Report (version 0.4.0 in SA1-010799) is provided for information. CN2 will study the report and begin consideration towards providing input and accordingly include this activity in CN2 work plans.

**Conclusion:** *noted*

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## 5 Work item management & miscellaneous

Target date for building blocks under WI CAMEL4 that are delayed are not be changed.

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## 6 CAMEL3, Resolution of outstanding issues for Release 99

Not subject of this AdHoc.

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## 7 CAMEL for Release 4

Not subject of this AdHoc.

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## 8 CAMEL4, Release 5

### 8.1 CAMEL 4 / Stage 1

### 8.2 Miscellaneous CAMEL 4 issues

**N2-010644**: 23.078, Rel-5, Rapporteur, Type: TS-INFO, Title: Draft 23.078 V5d.9.1

**Discussion** :

**Conclusion** : *noted*

**N2-010646**: 23.078, Rel-5, Siemens, Type: CR, Title: Overall changes in 23.078 for CAMEL Phase 4 (Rel-5)

**Discussion** : This document proposes some descriptions that address changes to CAMEL4 in addition to CAMEL3. Abbreviations will be extended.

**Conclusion :revised to 681**

**N2-010681**: 23.078, Rel-5, Siemens, Type: CR, Title: Overall changes in 23.078 for CAMEL Phase 4 (Rel-5)

**Discussion :**

**Conclusion :approved without presentation**

**N2-010647** : 23.078, Rel-5, Siemens, Type: CR , Title: Specific references to non-specific references

**Discussion:** The document proposes to remove specific part (version and release) from the specific references to change to non-specific references so that the latest documents are referred to in the same release as the present document.

Specific reference is removed. We keep the "Basic service".

**Conclusion: revised to 689**

**N2-010689** : 23.078, Rel-5, Siemens, Type: CR , Title: Specific references to non-specific references

**Discussion:**

**Conclusion:approved without presentation**

**N2-010675** : 23.008, Rel-5, Alcatel, Type: CR, Title: Collective CRs against 23.008 for CAMEL phase4

**Discussion :** This collective CR contains following CAMEL phase 4 changes to TS 23.008 :

1. SMS-CSI becomes MO-SMS-CSI
2. Addition of MT-SMS-CSI + Change of wording "MT-SMS-submission" becomes "MT-SMS-delivery"
3. Addition of the MG-CSI

SMS-CSI SGSN Negotiated CAMEL Capability Handling has to be corrected in next collective CR to include MT and MO CSI SGSN Negotiated Camel Capability Handling.

**Conclusion: noted**

**N2-010645** : 23.016, Rel-5, Siemens AG, Type: CR, Title: Collective CR on 23.016

**Discussion:** The document is Collective CR on 23.016 and presents newly introduced changes in CAMEL4 as follows:

- MT-SMS-CSI, which includes triggering criteria,
- Naming change of SMS-CSI to MO-SMS-CSI,
- MG-CSI

***In the next meeting there will be approved version which will be endorsed and sent to CN4.***

**Conclusion : noted**

**N2-010630** : 23.018, Rel-5, Vodafone Group Plc., Type: CR, Title: Introduction of CAMEL Phase 4

**Discussion :** This CR combines the CRs to 3GPP TS 23.018 that have been approved in TSG-CN2 under the CAMEL Phase 4 work item.

**Conclusion : noted**

**N2-010631** : 23.079, Rel-5, Vodafone Group Plc., Type: CR, Title: Introduction of CAMEL Phase 4

**Discussion :** This CR combines the CRs to 3GPP TS 23.079 that have been approved in TSG-CN2 under the CAMEL Phase 4 work item. The following CRs have been incorporated:

- CAMEL Support for OR
- Handling of reconnect on leg 2 disconnect (MT and VT call cases)
- Change of name: "GMSC address" to "GMSC or gsmSCF address" in SRI

**Conclusion : noted**

**N2-010632** : 23.083, Rel-5, Vodafone Group Plc., Type: CR, Title: Introduction of CAMEL Phase 4

**Discussion** : This CR combines the CRs to 3GPP TS 23.083 that have been approved in TSG-CN2 under the CAMEL Phase 4 work item. This version introduces the changes to the Process\_Call\_Waiting procedure, based on those proposed to the same procedure in N2-010234. In addition, the following CR has been incorporated: N2-010499, "Handling of reconnect on leg 2 disconnect (MT and VT call cases)".

**Conclusion:** *noted*

**N2-010648** : 23.078, Rel-5, Siemens, Type: CR, Title: Inclusion of D-CSI in arming/disarming mechanism

**Discussion** : In 4.2.1.1 "Arming/disarming mechanism", description of D-CSI is missing. This CR adds D-CSI in the appropriate position so that the same arming/disarming mechanism for D-CSI is done as other CSI. The same correction will be submitted by the originator of the CR for CAMEL phase 3 in the future meeting.

**Conclusion:** *approved*

**N2-010663** : 23.078, Rel-5, Siemens, Type: CR, Title: Route not permitted IE in ERB in the case of MF

**Discussion** : This CR proposes to add information element "Route not permitted" in the MF column in the Event Specific Information BCSM if the Event Type BCSM contains O-Abandon. The gsmSCF addressed by the O-CSI is not informed about the event that the further call set up shall not be performed in the GMSC due to the rules of basic optimal routing. What is the benefit of having new information element for O-Abandon since the SCP can not do any re-routing at that DP?

The reporting of Abandon DP is the current standard behaviour. According to Ericsson there should be no DP reporting.

Siemens was requested to clarify the over-all situation of the CR – the meeting had difficulties in understanding the concept.

**Conclusion:** *postponed to next meeting*

**N2-010664** : 29.078, Rel-5, Siemens, Type: CR, Title: Route not permitted IE in ERB in the case of MF

**Discussion :**

**Conclusion:** *postponed to next meeting*

**N2-010676** : 23.078, Rel-5, Ericsson, Type: CR, Title: Phased introduction of SMS Reference Number

**Discussion** : The present CR proposes the phased introduction of a Reference Number for CAMEL control of Mobile Originated SMS (MO-SMS) and CAMEL control of Mobile Terminated SMS (MT-SMS). The parameter should be introduced after ellipsis.

It shall be possible for CDR post processing systems to correlate the SMS CDRs produced by the MSC/SGSN with the SMS CDRs produced by the SCP. This may be achieved by means of a 'SMS Reference Number'. This Reference Number is produced in the MSC/SGSN at the time of SMS processing. The MSC/SGSN reports this Reference Number to the SCP, together with the MSC Address/SGSN Number. The MSC/SGSN shall place this SMS Reference Number and the MSC Address/SGSN Number in the CDR for that SMS.

Vodafone support this contribution as this is strong requirement from operators. Siemens is going to continue to oppose this issue for R99 and Rel-4, but for CAMEL4 (Rel-5) will not oppose introduction of MO SMS reference number together with introduction of reference number for MT SMS.

According to Vodafone MO SMS without reference number causes lot of problems for operators, and if it is introduced for CAMEL4 only, only CAMEL4 will be good enough for operators for all services that include MO SMS and as CAMEL4 is not ready, the time pressure for vendors will be even bigger.

Lucent proposes that the support of the parameter is optional in R99 and mandatory in Rel-5. In order to find such a compromise, meeting proposal is to add new parameter to ASN1 in CAP3 (29.078, R99) with a note that parameter applies to Release 5 onwards, but not to add it in 23.078(R99) what means that it is not requirement in R99. The parameter to Release 5 for MO SMS and MT SMS will be added as mandatory parameter. Ericsson will write CR to 29.078, R99(CR200) and mirror CR to Rel-4 (CR201) and send it directly to plenary as a CR which was not approved by CN2 (due to fact that the adHoc had no mandate to change anything in R99), but source will be Ericsson.

**Conclusion:** *revised to 685*

**N2-010685** : 23.078, Rel-5, Ericsson, Type: CR, Title: Phased introduction of SMS Reference Number

**Discussion** :In textual part of description SCP has to be changed to gsmSCF. Siemens proposes a change in wording, and Tdoc is revised to 694. There is no reason for cut over date in Rel-5 CR.

**Conclusion: revised to 694**

**N2-010694** : 23.078, Rel-5, Ericsson, Type: CR, Title: Phased introduction of SMS Reference Number

**Discussion** :

**Conclusion:approved without presentation**

**N2-010684** : 29.078, **CR#200**, Rel99, Ericsson, Type: CR, Title: Phased introduction of SMS Reference Number

**Discussion** :Following note has to be changed in wording in order to introduce more clarification

**NOTE**

- The parameters “smsReferenceNumber”, “mscAddress” and “sgsnNumber” form part of CAMEL Phase 4, which is part of the 3GPP Rel-5 package. The functional requirement of these requirement is specified in 3GPP TS 23.078 for 3GPP Rel-5.

**Conclusion:revised to 693**

**N2-010693** : 29.078, **CR#200**, Rel99, Ericsson, Type: CR, Title: Phased introduction of SMS Reference Number

**Discussion** :This document is noted by the AdHoc and will be sent to plenary as Ericsson's input document together with a mirror CR for Rel-4 in the CR package NP-010511.

**Conclusion:noted**

**N2-010677** : 29.078, Rel-5, Ericsson, Type: CR, Title: Phased introduction of SMS Reference Number

**Discussion** : According to document, SMS reference number is imported from MAP.

The combination of SMS Reference Number and MSC Address/SGSN Number forms a globally unique pair. Nokia's proposal is to have 1 main level parameter (within main level parameter there is a sequence, where first parameter in sequence is SMS reference number and second parameter is source - MSC or SGSN address). Testing with testing tools would be much easier in case of 1 main level parameter.

Creation of dependency with location information would make the case more complicated. For CDRs correlation we need only SMS reference number and source (MSC or SGSN number). Ericsson suggest to supply these parameters that we need for CDR s correlation independent of location information (separate single level parameters).

Siemens requests to define SGSN number identical as SGSN number in location information.

**Conclusion:revised to 686**

**N2-010686** : 29.078, Rel-5, Ericsson, Type: CR, Title: Phased introduction of SMS Reference Number

**Discussion** :

**Conclusion: approved**

## 8.3 CAMEL4/Optimal Routing

**N2-010640** : 23.079, Rel-5, Vodafone Group Plc, Type: CR, Title: Possibility of BOR of a CF leg from the GMSC

**Discussion** : To reflect the changes in the stage 1 agreed by SA1 this document clarifies that the treatment of a forwarding leg is the same in both the GMSC and the serving MSC of the forwarding subscriber.

**Conclusion: revised to 682**

**N2-010682** : 23.079, Rel-5, Vodafone Group Plc, Type: CR, Title: Possibility of BOR of a CF leg from the GMSC

**Discussion** :

**Conclusion: approved**

## 8.4 Call Party Handling

**N2-010633** : Vodafone Group Plc., Type: DISC, Title: CPH Open Issues and decisions

**Discussion** : This document is a living document which presents all CPH Open Issues and decisions made in CN2. Only second part of the bullet 6 remains the open issue.

**Conclusion** : *noted*

**N2-010641** : 23.078, Vodafone Group Plc., Type: CR, Title: Change of state name in CAMEL\_EXPORT\_LEG\_MSC

**Discussion** : After the Split Leg or Move Leg operation has been performed, the MSC waits in the Mid Call DP for a Continue message from the gsmSSF. This CR proposes change of state name "Wait\_For\_Continue" to "DP\_Mid\_Call" in Procedure CAMEL\_EXPORT\_LEG\_MSC, to align naming between SDLs and BCSM.

**Conclusion** : *approved*

**N2-010670** : 29.078, Rel-5, Alcatel, Type: CR, Title: Clarification of CPH operation on Mid Call DP

**Discussion** : The MidCall issue for the Disconnect Leg, Move Leg and Split Leg is deleted in this CR.

As the gsmSSF goes into the Waiting for Instructions state call processing is suspended as usual already from CAMEL Phase 1 onward. This normal behaviour should apply also for the remaining concerned BCSMs.

If the call processing is suspended, how it will reflect to SDLs? If the call processing is suspended, call legs remain in the current 23.018 state, according to Alcatel .

Vodafone would like to see the discussion document on the next meeting which clarifies suspension of other legs in a call segment. Christian Homman from Alcatel will provide the discussion paper for the next meeting.

**Conclusion** : *noted*

**N2-010671** : 23.078, Rel-5, Alcatel, Type: CR, Title: Clarification of Disconnect Leg operation

**Discussion** : This change request is proposal to include a check in the CSA\_gsmSSF process that Disconnect Leg is not allowed for a Leg during setup of the leg or after a DP O/T\_Disconnect (or disconnect at all) occurred for this leg.

Stage 1 says that VPLMN can instruct at any point in the call to disconnect call legs. Siemens and Vodafone don't support this proposal and would not like to have this restriction. Nokia supports the Alcatel proposal. Vodafone is in favour to align stage 2 with the stage 1, rather than to change stage 1.

**Conclusion** : *postponed for the next meeting*

**N2-010672** : 23.078, Rel-5, Alcatel, Type: CR, Title: Remaining legs for Disconnect Leg operation

**Discussion**:

**Conclusion**: *postponed for the next meeting*

**N2-010673**: 23.078, Rel-5, Alcatel, Type: CR, Title: Clarification of Connect operation

**Discussion**: According to this document, connect is only allowed during the establishment or re-connect of a two party call leg configuration as in CAMEL phase 3. This includes also the forwarding case of a terminating call. It does not matter whether an outgoing leg has been created by the original call setup or was replaced by an outgoing leg created by ICA. A corresponding check on usage of Connect operation is included in the CS\_gsmSSF process by this CR.

This CR introduces more complexity in SDLs and clarification is needed in order to explain what are the benefits of this CR. Vodafone is in favour not to change current situation.

**Conclusion**: *not approved*

**N2-010674** : 23.078, Rel-5, Alcatel, Type: CR, Title: Clarification of Move Leg operation

**Discussion** : The Move Leg operation may occur on various purposes. According to this CR in some situations a Move Leg operation is not possible or leads to complex call situations and configurations. One of those situations is the case where a leg should be moved into a Call Segment where a call leg in this Call Segment is just in the setup phase, i.e.

before alerting. The CR includes a check in the CSA\_gsmSSF process that Move Leg does not occur if there are legs in the setup or disconnect phase for the target Call Segment.

Vodafone and Deutsche Telecom oppose this CR because it introduces additional complexity instead of clarification. The main reason for submitting this CR was Alcatel's aim to find a straight forward solutions of CPH.

**Conclusion :not approved**

**N2-010642** : 23.018, Rel-5, Vodafone, Type: CR, Title: Handling of SRI from gsmSCF to HLR

**Discussion :** When a gsmSCF initiates an (MAP) (SendRouteingInformation) SRI to an HLR, the gsmSCF does not know the CAMEL phases (if any) supported by the HLR. Hence, the SRI operation from a gsmSCF should be handled in the same way as an SRI from a GMSC, this allows the gsmSCF to initiate a call to a subscriber even if the HLR does not support CAMEL Phase 4. If the HLR does not support CAMEL Phase 4, suppression of VT-CSI and Incoming Call Barrings will not work. If the HLR does not support CAMEL Phase 3, suppression of call forwardings (using the Call Diversion Treatment Indicator) will not work. However, it is still possible for the HLR to return an MSRN. CR proposes:

- Removal of "gsmSCF Initiated Call?" decision box and "Yes" branch from SRI\_HLR (sheet 1). (This decision box is present in Subscription\_Check\_HLR to check suppression of incoming call barrings)
- Change to "Signals to/from ..." boxes on all sheets of SRI\_HLR to state that the signals can be from GMSC or gsmSCF

Use of some parameters needs clarification and certain procedure calls in HLR need clarification in the SCP SRI case. Vodafone will update the list of SRI operation parameters.

**Conclusion :approved**

**N2-010643** : 23.078, Rel-5, Vodafone, Type: CR, Title: Handling of SRI from gsmSCF to HLR

**Discussion :** Only one leg can be informed about the e-parameters at the time.

**Conclusion :approved**

**N2-010667** : 23.078, Rel-5, Alcatel, Type: CR, Title: Enhancement of 'Procedure Handle\_SCI' for Call Party Handling

**Discussion:** Considering a separate tariff switch timer for SendChargingInformation (SCI) Tsw(SCI) change request proposes enhancement of the SCI procedure to cover also the case of multiple call legs. Several call legs may be in the alerting state and may answer at some point in time, i.e. the first answer starts in general the charging.

For the SCI Tariff Switch timer Tsw(SCI) there are always e-parameters due to the fact that there are independent Tariff Switch Timers for the control of call duration and for the SCP control of e-values. The SCP is always allowed to overwrite the tariff switch and the e-parameters.

From an editorial point of clarity it is proposed to distinguish more between General Services and the Dialed services which apply in a second (concurrent) dialogue in respect to other services (i.e. triggered at TDP 2 or TDP 4).

Precondition 3 should be specified more clearly in order to know that the leg has been active. AoCBeforeAnswer and AoCAfterAnswer should have equal handling as in CAMEL3.

If the SCP sends e-parameters, they are applicable only if subscriber is in active phase and they are sent to MS.

If we have CPH functionality, the served CAMEL subscriber has to pay everything (Nokia), even if third party is using some subscriber interaction. Meeting is not ready to make a conclusion to this issue, so all the comments will be collected and revised document will be presented on the next meeting.

**Conclusion:revised version will be presented on the next meeting**

**N2-010668** : 29.078, Rel-5, Alcatel, Type: CR, Title: Enhancement of the SendChargingInformation procedure for Call Party Handling

**Discussion :**

**Conclusion :postponed to next meeting**



**N2-010669** : 29.078, Rel-5, CR, Alcatel, Type: CR, Title: SrfCallSegment and tariff switch timers for Apply Charging and Apply Charging Report

**Discussion :**

**Conclusion :** *postponed to next meeting*

## 8.5 CAMEL4/DTMF Mid-call DP

**N2-010637**: 23.078, Rel-5, CR, Vodafone Group Plc, Type:CR, Title: Ability to arm MidCall DP for the duration of a call

**Discussion :** Some services require the MidCall DP to be armed for the duration of the call regardless of how many times the DP is encountered. This CR introduces of a new parameter *Automatic Rearm* in the BCSM Event to indicate that the gsmSSF shall rearm the DP whenever it is encountered.

If the Automatic Rearm IE was present in the Request Report BCSM Event IF for the Mid Call DP, the Mid Call DP shall be automatically rearmed by the gsmSSF. General rule of arming and disarming of DP should not be changed.

Siemens support this proposal to introduce new IE. Alcatel is asking for clarification which services need introduction of this information element. For EDP-N it can have some value to introduce automatic rearming, but not for EDP-R. Vodafone would accept to have it applicable only for EDP-N.

Principle of automatic rearming for EDP-N is accepted. The same principle will be applied to change of position (Siemens CR). Text description will be approved. Vodafone will draft the CR to stage 1, 22.078 specification. "was present" in text means "was present in the last message that arms this DP".

**Conclusion :** *revised to 688*

**N2-010688**: 23.078, Rel-5, CR, Vodafone Group Plc, Type:CR, Title: Ability to arm MidCall DP for the duration of a call

**Discussion :**

**Conclusion :** *approved*

**N2-010638** : 29.078, Rel-5, CR, Vodafone Group Plc, Type: CR, Title: Ability to arm MidCall DP for the duration of a call

**Discussion :**

**Conclusion:** *approved*

**N2-010639**: 29.078, Rel-5, CR, Vodafone Group Plc, Type: CR, Title: Minimum and Maximum number of digits in MidCall DP

**Discussion :** MidCallControlInfo contains minimumNumberOfDigits and maximumNumberOfDigits. These lengths do not include the startDigit or the endOfReplyDigit. Hence, it should be possible for the minimumNumberOfDigits and the maximumNumberOfDigits to be 0 (i.e. there is the possibility for only startDigit, or startDigit + endOfReplyDigit).

This proposal is to change range of integer values for minimumNumberOfDigits and maximumNumberOfDigits to allow the value 0. Nokia proposed the procedure similar to PromptAndCollect. Siemens will support this functionality, but would like to avoid to allow value 0, which also supports Nokia's idea. We should align DTMF midcall digit collection with the PromptandCollect collection regarding to the start digit and end digit.

DTMF Mid-Call functionality should be done as similar as possible as PromptAndCollect functionality when it comes to calculating valid digits. Vodafone will check stage 1 (22.078) impacts.

**Conclusion :** *revised CR will be presented at next meeting*

## 8.6 Support of CAMEL by the IMS

**N2-010634** : Lucent Technologies, Type: DISC, Title: Support of CAMEL in IMS

**Discussion:** Release 5 provides an option whereby CAMEL based service platforms can be used to control IP multimedia calls/sessions. The functional entity that shall support the CAMEL functionality is referred to as the IM-SSF in TS 23.228. The name may be slightly misleading from a more traditional Intelligent Network perspective as the IM-SSF may act as a SIP proxy thereby exhibiting both traditional Call Control Function (CCF) functionality as well as Service Switching Function (SSF) functionality. Current plans are that service control (CAMEL or otherwise) always takes place in the subscriber's home network at the serving CSCF. It is not yet known whether this will change in future. Irrespective of this, it is currently assumed that the functional behaviour of the IM-SSF needs to be standardised. Further, it is assumed that TSG CN2 would adopt the use of SDLs to describe this.

As CAMEL4 SDLs are too unstable to be taken as a base for IMS part and CPH is not applicable, Lucent and Vodafone prefer to take CAMEL3 SDLs as a base for further development of IMS part. According to Siemens, gsmSSF portion of IMS will be simpler to add or modify using CAMEL4 SDLs.

CAP protocol between IM SSF and SCP should be copied from CAPv3 to a new spec or a new part of the existing spec. and a way how to proceed from 23.078 to 29.078 has to be found. If CAP3 will be used as a base, then protocol stack has to be copied to Rel-5 and then modified. SSF portion has to be kept as similar as possible, but not applicable part will be removed. Independent of what is taken as a base for document, IMS is part of CAMEL phase 4.

Alcatel proposes not to take CAP3 protocol as base, but to take CAP 4 as a base for IMS part of stage 3. Vodafone is against this proposal, but suggests that CAP3 version for IMS can be developed in separate document for the certain level of work progress. Lucent support the option to use CAP3 protocol as a base for IMS. Conclusion is to leave this decision open for the time being. Lucent has a proposal to maintain the document IMS open issues. Michel Grech (Lucent) is the editor of the "IMS open issues document". First inputs will be provided in document 678 during this meeting.

Conclusions: 1. CAMEL3 SDLs will be used as basis for IM SSF

2. CAP version to be taken as basis for further development is still open

3. IMS is part of CAMEL4, independent of which version of CAP is taken as a base for development

**Conclusion :noted**

**N2-010678:** Lucent Technologies, Type: Discussion and decision, Title:CAMEL/IMS interworking: Open issues and decisions

**Discussion:** This is a living document that will be maintained until open issues related to CAMEL/IMS interworking exist. Separate section will be added to address open issues that are dependent on the work and decision in other groups. Open issues are:

- 1 Where will the CAMEL specific SDL procedure calls be documented?
- 2 Will the CAP protocol be based on CAP 3 or CAP4? How will this be documented – i.e. will there be two published protocols one for MSC<->CSE and the other for IM-SSF<->CSE; or is will there be a single protocol covering both?
- 3 Where is budget control held? In the IM-SSF or the S-CSCF. This will impact SDLs and behaviour of the IM-SSF. SA2/SA5 to decide. (CN2 can still proceed with work until notified).
- 4 As service platforms may utilise five basic modes (redirect server, back2back User Agent, etc...) of operation for processing SIP Requests, are there any issues with the IM-SSF changing between modes ? CN1/SA2 to decide. (CN2 can still proceed with work until notified)
- 5 For user interaction (announcements, digit collection ..etc) will there be a direct link between the CSE and the MRF ?

Open issues to be added: How is CSI transported to IM SSF, and the CAMEL capability negotiation

If operator has CAMEL2 legacy service and roams to the network where IMS is supported, IMS should support CAP 2,3 and 4. This should be added to open issues as the dependency on other groups.

**Conclusion :** *updated version will be available for this meeting in document N2-010683*

**N2-010683**: Lucent Technologies, Type: Discussion and decision, Title:CAMEL/IMS interworking: Open issues and decisions

**Discussion:**

**Conclusion :** *noted without presentation*

**N2-010635** : Lucent Technologies, Type: DISC, Title: Pre-paid Service Control Information Flows

**Discussion:** This document is informative for CN2. The document provides a description and call flow diagrams for a mobile originated Pre-Paid service example in IMS. The information flows examine messages and information that flow across the IP Multimedia Subsystem Service Control (ISC) interface using SIP as the control protocol.

This document will go back to CN1 to propose the annex in the 23.218 giving examples of signaling flows for the service platform on a number of key services and to propose to include flows in this contribution to the annex.

**Conclusion :noted**

**N2-010636** : Lucent Technologies, Type: DISC, Title: IMS CAMEL based Pre-paid Service Control Information Flows

**Discussion:** The document is informative for CN2 and is not intended to be sent to CN1. There is an open issue where to locate Prepaid Budget control. Siemens proposal is to locate it in S-CSCF. According to Lucent , CSI should be stored in IM SSF. Budget control issue is left to SA2 to decide. The SIP mode issue is left to SA2/CN1 to decide.

**Conclusion :noted**

**N2-010666** : Siemens, Type: DISC, Title: CAMEL in the IM Subsystem

**Discussion:** The point of interest in this presented contribution is to describe the interaction behaviour between a CAMEL based AS and the S-SCSF in the IMS. As a typical application a CAMEL based pre-paid scenario is used to show the interaction of the involved entities. Due to control and monitor end-to-end connections it seems reasonable that an AS can act as a Back-to-Back User Agent (B2BUA). This contribution is an approach to show the impact of IM-SSF if it is acting as a B2BUA.

The document shows flow diagrams as examples to address the CAMEL based pre-paid service (PPS) in case of apply charging/report, resource reservation negotiation for media types and corresponding formats and BC. Whereas the main functionality of BC is to supervise the threshold of the credit in terms of granted time in the circuit switched (CS) or volume counting in the packet switched (PS) domain as defined with the CAP messages ApplyCharging or ApplyChargingGPRS. Based on this typical interactions several BC scenarios can apply:

- Forward and backward release if granted time expires and
- Voucher recharging.

If the IM-SSF is acting as a Back-to-Back user agent (B2BUA),

- the complete route between UEa and UEb (end-to-end call) can be controlled,
- and due to the split of an end-to-end call into two call legs, IM-SSF is able to monitor and modify originating and terminating session/call states independently,
- new charging models can be defined in a simple manner, because the ISC remains untouched,
- however, it should be considered that the traffic intensity from/to IM-SSF will increase.

**Conclusion: noted**

## 8.7 CAMEL control over MT SMS

**N2-010665** : 23.078, Siemens, Type: CR, Title: Paging in MT-SMS Null & Start & Authentication state

**Discussion:** In description of the MT SMS state model in the state of Null & Start & Authentication in MT-SMS, the actions are stated as Authentication, Ciphering. However, these actions need the common key known both to the MS and the network. To realise this, the paging is normally done. With this CR, paging as an action is moved from SMS Delivery state to Null & Start & Authentication state.

The document will be revised in order to remove ciphering and authentication from CAMEL specification as it's not CAMEL specific activity. Paging will be kept after the CAMEL invocation.

**Conclusion:** *revised to 679, title is changed*

**N2-010679** : 23.078, Siemens, Type: CR, Title: Deletion of Authentication and Ciphering in Null & Start & Authorize

**Discussion:** Authentication and ciphering are removed from the text. CAMEL is first invoked and then paging is performed.

**Conclusion:** *approved*

## 8.9 Charging notification to CSE

**N2-010649** : 23.078, Siemens, Type: CR, Title: Inclusion of charging indicator in Event Report BCSM (Answer)

**Discussion:** The document proposes to add the charging indicator to the information to be provided to the CSE. For Prepaid subscribers this charging information is essential for the CSE, hence a notification shall be sent in every case to the CSE . This enables the CSE to perform the proper actions, e.g. in case of Prepaid subscribers.

According to Ericsson, Vodafone and Alcatel SCP should receive the same information that is written in the CDRs. Common opinion is that SCP can decide what action to take upon receiving this information and even to decide to ignore it. Conclusion is that the information sent to SCP must be identical as the one written in MSC CDRs.

**Conclusion:** *revised to 680*

**N2-010680** : 23.078, Siemens, Type: CR, Title: Inclusion of charging indicator in Event Report BCSM (Answer)

**Discussion:** This IE shall be sent if previously received ISUP message contained this information and if MSC has stored a Charge Indicator in the Call Data Record.. This wording has to be changed to " This IE specifies the value which will be stored in the Call Data Record." According to Nokia MSC can create the charging indicator on its own, e.g. in the case of mobile to mobile calls.

**Conclusion:** *revised to 690*

**N2-010690** : 23.078, Siemens, Type: CR, Title: Inclusion of charging indicator in Event Report BCSM (Answer)

**Discussion:**

**Conclusion:** *approved without presentation*

**N2-010650** : 29.078, Siemens, Type: CR, Title: Inclusion of charging indicator in Event Report BCSM (Answer)

**Discussion:** Charge indicator is the value that will be stored in call data record. Ericsson proposed to import data type from TS 32.015 (Charging specification) if exists. Nokia says that the MSC/SSP does not know necessarily know what is stored into final CDRs due to post processing. This document needs off line discussion and is postponed till next meeting. EventReport BCSM parameters are not specified in stage 1. Alcatel requires from Siemens to submit the CR to stage 1, to add requirement of sending charge indicator (SCP request) what we approved now for stage2. CN2 left this to Siemens to consider whether change to stage 1 is needed.

**Conclusion:** *postponed to next meeting*

## 8.12 Notification of GPRS mobility management to CSE

**N2-010653**: 23.060, Rel-5, Siemens, Type: CR, Title: Mobility management for GPRS subscriber

**Discussion** : As the new feature included in the CAMEL Phase 4, this CR proposes the Mobility management for GPRS subscriber in 3GPP TS 23.060. This CR is revised document from Dresden meeting with incorporated comments.

Originator of the CR will modify the CR that CSI is not checked in the GPRS specification.

**Conclusion** :revised for the next meeting based on the latest spec

**N2-010654** : 23.060, Rel-5, Siemens, Type: CR, Title: Improvement Mobility Management for GPRS subscriber

**Discussion** :

**Conclusion**: withdrawn

**N2-010655** : 23.078, Rel-5, Siemens, Type: CR, Title: Correction and improvement Mobility Management for GPRS subscriber

**Discussion** : If editors note is deleted from 23.078, CR to 22.078 will be written regarding network initiated detach.

If MG-CSI is present, then it depends on appropriate MM event to mark reporting of MG-CSI.

**Conclusion** : revised to 696

**N2-010696** : 23.078, Rel-5, Siemens, Type: CR, Title: Correction and improvement Mobility Management for GPRS subscriber

**Discussion** :

**Conclusion** :approved without presentation

## 8.13 CAMEL4/ ODB in HLR-SCP interface

**N2-010656** : 23.078, Rel-5, Siemens, Type: CR, Title: Inclusion of ODB data in ATM

**Discussion** : As the operator determined barring, if activated, is one of the means to minimise the consumption of the network resource. This can be done by the fine-tuned subscription control. Currently, there is no mechanism to control the operator determined barring data by the service platform. A very time critical network operation may require the mechanism that the CSE (gsmSCF) directly instruct the HLR to bar the call or remove the barring online. To include ODB data in ATM, the following changes are proposed: New procedure ATM\_Modify\_ODB\_Data added, New information element ODB data added.

Information element Remove ODB data should have a different name because it only removes the barring restriction. Conclusion is that names Activate ODB data and Deactivate ODB data will be used. Wording proposed to align the description with the name of IE is: This IE indicates that this set of subscriber features are to be activated. It has to be specified in which order activation and deactivation is done. Vodafone proposes to introduce levels of priorities.

The data types in CAMEL stage2 are following MAP structure (TS 29.002).

**Conclusion** :revised to 695

**N2-010695** : 23.078, Rel-5, Siemens, Type: CR, Title: Inclusion of ODB data in ATM

**Discussion** : ODB can interact to CF. The following question remains open: If CF becomes quiescent due to ODB interworking , does it cause notification to SCP?

**Conclusion** : postponed to next meeting

**N2-010657** : 29.002, Rel-5, Siemens, Type: CR, Title: Inclusion of ODB data in ATM

**Discussion** : This document proposes change to MAP specification. To include ODB data in ATM, the following changes are proposed: new procedure ATM\_Modify\_ODB\_Data added, new information element ODB data added.

It is not considered in this CR which information is sent back if the result of modification request for ODB information is inconsistent.

**Conclusion :revised document will be sent to next meeting**

## 8.14 CAMEL4/ Location Information during ongoing call

**N2-010651** : 23.078, Rel-5, Siemens, Type: CR, Title: Providing the location information during ongoing call

**Discussion :** Decision box subscriber in 3G network, means that request report BCSM is sent. 3GPP TS 08.08: is now 3GPP TS 48.008 what should be corrected in references.

How to report change of position, if position has changed in early phase of call (routing phase of the call, initial DP)? Siemens did not consider this case. According to Nokia one possibility is to report location at O\_Seized and T\_Alerting EDPs.

In Siemens contribution there is IE which automatically rearm the DP. CN2 will discuss automatic rearming during the discussion of Vodafone document. Both contributions should use the same logic.

Instead of separate Monitoring 2G and 3G states, contribution should be revised in order to contain one monitoring state where all the inputs are received (subscribers moves to and from 2G/3G).

If change of position is armed, why ACR should be reported? Siemens would like to include the case when charging might be changed in the new position. Call could be released if it is not allowed. However, ACR is not sent when position is changed during the call and Siemens included ACR according to stage 1.

Location reporting control operation should be sent always when we want report about subscriber's change position in UTRAN (3G radio network). EDP-R will be removed from stage 1.

**Conclusion :revised to 687**

**N2-010687** : 23.078, Rel-5, Siemens, Type: CR, Title: Providing the location information during ongoing call

**Discussion :** In sheet 1(2) signal Location Reporting Control, there is no stop signal. After the check box "Subscriber currently in 3G network", Location reporting control has to be sent. It is only to receive Location report, but Location reporting acknowledge is coming from RNC.

In case of HO from 2G to 3G we receive "Relocation request acknowledge". Editor's notes : signals that are not sent yet from anywhere are to be marked "for further study". "GERAN is for further study" has to be marked in editor's note as well.

SDLs need refinement regarding automatic rearming. Automatic rearming is just kept in SSF. These SDLs will be introduced in the draft, with a note saying that this issue is for further study .

**Conclusion :revised to 691**

**N2-010691** : 23.078, Rel-5, Siemens, Type: CR, Title: Providing the location information during ongoing call

**Discussion :**

**Conclusion :approved without presentation**

**N2-010652** : 29.078, Rel-5, Siemens, Type: CR, Title: Providing the location information during ongoing call

**Discussion :** CR editor's note: duplication of tag 13 has to be corrected

OTermSeizedSpecificInfo needs description, location information has to be added. CPH open issues arise in this contribution and Vodafone suggestion is to mark it in CPH open issues document and to discuss separately contributions on this topic on the next meeting.

**Conclusion :revised to 692**

**N2-010692** : 29.078, Rel-5, Siemens, Type: CR, Title: Providing the location information during ongoing call

*Discussion :*

*Conclusion :approved without presentation*

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## 10 Review of dates and hosts for future meetings

Next regular TSG CN2 meeting is in October (Brighton).

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## 11 Closing of the meeting (15:30 Thursday)

All the approved CRs will be incorporated in next versions of draft specifications. As a result of discussion on Phased introduction of reference number, R99 and Rel-4 CRs to WI "CAMEL4" will be sent directly to plenary with a source "Ericsson". Progress of the CAMEL4 work has been achieved. New document "CAMEL/IMS interworking: Open issues and decisions" will be maintained by Lucent and contributions on the open issues are expected on the next meeting.

Chairman thanked to delegates for their contributions, MCC for the support and ETSI for organisation of the meeting. Meeting is closed on 13<sup>th</sup> of September at 15:30.

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## Annex A Participants list

<b>Member of 3GPP (ETSI)</b>			<b>Phone</b>	<b>Fax</b>	<b>E-mail</b>
Mr. Michel Grech	Lucent Technologies N. S. UK	3GPPMEMBER (ETSI)	+44 1793 736 110	+44 1793 883 815	grech@lucent.com
Ms. Ruth Hewson	VODAFONE Group Plc	3GPPMEMBER (ETSI)	+44 1635 673 148	+44 1635 233 401	ruth.hewson@vf.vodafone.co.uk
Mr. Christian Homann	ALCATEL S.A.	3GPPMEMBER (ETSI)	+49 711 821 45632	+49 711 821 40017	c.homann@alcatel.de
Mrs. Isabelle Lantelme	ALCATEL S.A.	3GPPMEMBER (ETSI)	+33 (0)1 3077 01 33	+33 (0)1 3077 04 06	isabelle.lantelme@alcatel.fr
Mr. Sumio Miyagawa	SIEMENS AG	3GPPMEMBER (ETSI)	+43 51707 21381	+43 51707 51924	sumio.miyagawa@siemens.at
Mr. Rogier Noldus	ERICSSON L.M.	3GPPMEMBER (ETSI)	+31 161 249 400	+31 161 249 904	rogier.noldus@eln.ericsson.se
Mr. Keijo Palviainen	NOKIA Corporation	3GPPMEMBER (ETSI)	+358 7180 64284	+358 9 5112 9253	keijo.palviainen@nokia.com
Mr. Nick Russell	VODAFONE Group Plc	3GPPMEMBER (ETSI)	+44 1635 682 699	+44 1635 234 465	nick.russell@vf.vodafone.co.uk
Mr. Vesa Tiainen	NOKIA Corporation	3GPPMEMBER (ETSI)	+358 95116 9712	+358 95112 9253	vesa.tiainen@nokia.com
Dr. Georg Wegmann	Deutsche Telekom MobilNet	3GPPMEMBER (ETSI)	+49 228 936 3468	+49 228 936 3339	georg.wegmann@t-mobil.de
<b>Organisation partner representative (ETSI)</b>					
Mrs. Andrijana Jurisic	Mobile Competence Center		+33 4 92 94 43 09	+33 4 92 38 52 52	andrijana.jurisic@etsi.hr



## Annex B Approved change requests for CAMEL4, Rel-5

TDoc #	Type	Title	Source	WI	Rev	Cat	Spec	Version	Conclusion
N2-010638	CR	Ability to arm MidCall DP for the duration of a call	Vodafone Group Plc	CAMEL4		C	29.078	d5.2.0	approved
N2-010641	CR	Change of state name in CAMEL_EXPORT_LEG_MSC	Vodafone Group Plc	CAMEL4		F	23.078	5D.9.1	approved
N2-010642	CR	Handling of SRI from gsmSCF to HLR	Vodafone Group Plc	CAMEL4		C	23.018		approved
N2-010643	CR	Handling of SRI from gsmSCF to HLR	Vodafone Group Plc	CAMEL4		C	23.078	5D.9.1	approved
N2-010648	CR	Inclusion of D-CSI in arming/disarming mechanism	Siemens AG	CAMEL4		F	23.078	5d.9.1	approved
N2-010679	CR	Deletion of Authentication and Ciphering in Null & Start & Authorize	Siemens AG	CAMEL4		F	23.078	5d.9.1	approved
N2-010681	CR	Overall changes in 23.078 for CAMEL Phase 4 (Rel-5)	Siemens AG	CAMEL4		B	23.078	5d.9.1	approved
N2-010682	CR	Possibility of BOR of a CF leg from the GMSC	Vodafone Group Plc	CAMEL4		1C	23.079	4.0.0	approved
N2-010686	CR	Introduction of Reference Number for SMS	Ericsson	CAMEL4		1B	29.078	D5.3.0	approved
N2-010688	CR	Ability to arm MidCall DP for the duration of a call	Vodafone Group Plc	CAMEL4		1C	23.078	5D.9.1	approved
N2-010689	CR	Specific references to non-specific references	Siemens AG	CAMEL4		F	23.078	5d.9.1	approved
N2-010690	CR	Inclusion of Charge Indicator in Event Report BCSM (Answer)		CAMEL4		C	23.078		approved
N2-010691	CR	Providing the location information during ongoing call	Siemens AG	CAMEL4		B	23.078	5d.9.1	approved
N2-010692	CR	Providing the location information during ongoing call	Siemens AG	CAMEL4		B	29.078	d5.3.0	approved
N2-010694	CR	Introduction of Reference Number for SMS	Ericsson	CAMEL4		1B	23.078	D5.9.1	approved
N2-010696	CR	Correction and improvement Mobility Management for GPRS subscriber	Siemens AG	CAMEL4		F	23.078	5d.9.1	approved

## Annex C Document list

TDoc #	Type	Title	Source	WI	Rev	Cat	Spec	Version	Conclusion
N2-010628	AGENDA	Agenda	CN2 chairman						approved
N2-010629	AGENDA	Allocation of documents to agenda items	CN2 chairman						approved
N2-010630	CR	Introduction of CAMEL Phase 4	Vodafone Group Plc.	CAMEL4		6B	23.018	5.0.0	noted
N2-010631	CR	Introduction of CAMEL Phase 4	Vodafone Group Plc.	CAMEL4		B	23.079	4.0.0	noted
N2-010632	CR	Introduction of CAMEL Phase 4	Vodafone Group Plc.	CAMEL4		2B	23.083	4.2.0	noted
N2-010633	DISC	CPH: Open Issues and Decisions	Vodafone Group Plc.	CAMEL4					noted
N2-010634	DISC	Support of CAMEL in IMS	Lucent Technologies	CAMEL 4					noted
N2-010635	INFO	Pre-paid Service Control Information Flows	Lucent Technologies	CAMEL4					noted
N2-010636	INFO/DISC	IMS CAMEL based Pre-paid Service Control Information Flows	Lucent Technologies	CAMEL 4					noted
N2-010637	CR	Ability to arm MidCall DP for the duration of a call	Vodafone Group Plc	CAMEL4		C	23.078	5D.9.1	revised to 688
N2-010638	CR	Ability to arm MidCall DP for the duration of a call	Vodafone Group Plc	CAMEL4		C	29.078	d5.2.0	approved
N2-010639	CR	Minimum and Maximum number of digits in MidCall DP	Vodafone Group Plc	CAMEL4		C	29.078	d5.2.0	revised to the next meeting
N2-010640	CR	Possibility of BOR of a CF leg from the GMSC	Vodafone Group Plc	CAMEL4		C	23.079	4.0.0	revised to 682
N2-010641	CR	Change of state name in CAMEL_EXPORT_LEG_MSC	Vodafone Group Plc	CAMEL4		F	23.078	5D.9.1	approved
N2-010642	CR	Handling of SRI from gsmSCF to HLR	Vodafone Group Plc	CAMEL4		C	23.018	5.0.0	approved
N2-010643	CR	Handling of SRI from gsmSCF to HLR	Vodafone Group Plc	CAMEL4		C	23.078	5D.9.1	approved
N2-010644	TS/INFO	Draft 23.078 Release 5 V5d.9.1	Rapporteur	CAMEL4			23.078	5d.9.1	noted
N2-010645	CR	Introduction of CAMEL Phase 4	Siemens AG	CAMEL4			23.016	4.0.0	noted
N2-010646	CR	Overall changes in 23.078 for CAMEL Phase 4 (Rel-5)	Siemens AG	CAMEL4			23.078	5d.9.1	revised to 681

N2-010647	CR	Specific references to non-specific references	Siemens AG	CAMEL4	F	23.078	5d.9.1	revised to 689
N2-010648	CR	Inclusion of D-CSI in arming/disarming mechanism	Siemens AG	CAMEL4	F	23.078	5d.9.1	approved
N2-010649	CR	Inclusion of charging indicator at answer DP	Siemens AG	CAMEL4		23.078	5d.9.1	revised to 680
N2-010650	CR	Inclusion of charging indicator at answer DP	Siemens AG	CAMEL4		29.078		postponed to the next meeting
N2-010651	CR	Providing the location information during ongoing call	Siemens AG	CAMEL4		23.078	5d.9.1	revised to 687
N2-010652	CR	Providing the location information during ongoing call	Siemens AG	CAMEL4		29.078		revised to 692
N2-010653	CR	Correction and improvement Mobility Management for GPRS subscriber	Siemens AG	CAMEL4		23.060	4.0.0	revised for the next meeting
N2-010654	CR	Correction and improvement Mobility Management for GPRS subscriber	Siemens AG	CAMEL4		23.060	4.1.0	withdrawn
N2-010655	CR	Correction and improvement Mobility Management for GPRS subscriber	Siemens AG	CAMEL4		23.078	5d.9.1	revised to 696
N2-010656	CR	Inclusion of ODB data in ATM	Siemens AG	CAMEL4		23.078	5d.9.1	revised to 695
N2-010657	CR	Inclusion of ODB data in ATM	Siemens AG	CAMEL4		29.002	4.4.0	revised to the next meeting
N2-010658	Report	SA1#13 Meeting Report from Lake Tahoe	SA1					noted
N2-010659	Report	SA1-SA2-SA5 IMS adHoc Meeting report from Sophia Antipolis	SA1					noted
N2-010660	LS IN	Liaison Statement in Regards to MMS Charging	T2-SWG3					noted
N2-010661	LS IN	Reply to "Liaison Statement in Regards to MMS Charging"	SA5					noted
N2-010662	LS IN	IP Based Multimedia Services Framework Report	SA1					noted
N2-010663	CR	Route not permitted IE in ERB in the case of MF	Siemens AG	CAMEL4		23.078	5d.9.1	postponed to the next meeting
N2-010664	CR	Route not permitted IE in ERB in the case of MF	Siemens AG	CAMEL4		29.078	d5.3.0	postponed to the next meeting
N2-010665	CR	Paging in MT-SMS Null & Start & Authentication state	Siemens AG	CAMEL4		23.078	5d.9.1	revised to 679
N2-010666	Disc	CAMEL in the IM Subsystem	Siemens AG	CAMEL4				noted

N2-010667	CR	Enhancement of 'Procedure Handle_SCI' for Call Party Handling	Alcatel	CAMEL4	F	23.078	5D.9.1	revised to the next meeting
N2-010668	CR	Enhancement of the SendChargingInformation procedure for Call Party Handling	Alcatel	CAMEL4	F	29.078	d5.3.0	postponed to the next meeting
N2-010669	CR	SrfCallSegment and tariff switch timers for Apply Charging and Apply Charging Report	Alcatel	CAMEL4	F	29.078	d5.3.0	postponed to the next meeting
N2-010670	CR	Clarification of CPH operation on Mid Call DP	Alcatel	CAMEL4	F	29.078	d5.3.0	noted
N2-010671	CR	Clarification of Disconnect Leg operation	Alcatel	CAMEL4	F	23.078	5D.9.1	postponed to the next meeting
N2-010672	CR	Remaining legs for Disconnect Leg operation	Alcatel	CAMEL4	F	23.078	5D.9.1	postponed to the next meeting
N2-010673	CR	Clarification of Connect operation	Alcatel	CAMEL4	F	23.078	5D.9.1	not approved
N2-010674	CR	Clarification of Move Leg operation	Alcatel	CAMEL4	F	23.078	5D.9.1	not approved
N2-010675	CR	Collective CRs against 23.008 for CAMEL phase4	Alcatel	CAMEL4		23.008	4.1.0	noted
N2-010676	CR	Phased introduction of SMS Reference Number	Ericsson	CAMEL4	B	23.078	D5.9.1	revised to 685
N2-010677	CR	Phased introduction of SMS Reference Number	Ericsson	CAMEL4	B	29.078	D5.3.0	revised to 686
N2-010678	DISC	CAMEL/IMS interworking: Open issues and discussions						revised to 683
N2-010679	CR	Deletion of Authentication and Ciphering in Null & Start & Authorize	Siemens AG	CAMEL4	F	23.078	5d.9.1	approved
N2-010680	CR	Inclusion of charging indicator in Event Report BCSM (Answer)	Siemens AG	CAMEL4	C	23.078	5d.9.1	revised to 690
N2-010681	CR	Overall changes in 23.078 for CAMEL Phase 4 (Rel-5)	Siemens AG	CAMEL4	B	23.078	5d.9.1	approved
N2-010682	CR	Possibility of BOR of a CF leg from the GMSC	Vodafone Group Plc	CAMEL4	1C	23.079	4.0.0	approved
N2-010683	DISC	CAMEL/IMS interworking: Open issues and discussions	Lucent					noted
N2-010684	CR	Phased introduction of Reference Number for SMS	Ericsson	CAMEL4	F	29.078	3.8.0	revised to 693

N2-010685	CR	Introduction of Reference Number for SMS	Ericsson	CAMEL4	1B	23.078	D5.9.1	revised to 694
N2-010686	CR	Introduction of Reference Number for SMS	Ericsson	CAMEL4	1B	29.078	D5.3.0	approved
N2-010687	CR	Providing the location information during ongoing call	Siemens AG	CAMEL4	1B	23.078	5d.9.1	revised to 691
N2-010688	CR	Ability to arm MidCall DP for the duration of a call	Vodafone Group Plc	CAMEL4	1C	23.078	5D.9.1	approved
N2-010689	CR	Specific references to non-specific references	Siemens AG	CAMEL4	F	23.078	5d.9.1	approved
N2-010690		Inclusion of Charge Indicator in Event Report BCSM (Answer)		CAMEL4	C	23.078		approved
N2-010691	CR	Providing the location information during ongoing call	Siemens AG	CAMEL4	B	23.078	5d.9.1	approved
N2-010692	CR	Providing the location information during ongoing call	Siemens AG	CAMEL4	B	29.078	d5.3.0	approved
N2-010693	CR, R99	Phased introduction of Reference Number for SMS	Ericsson	CAMEL4	F	29.078	3.8.0	noted
N2-010694	CR	Introduction of Reference Number for SMS	Ericsson	CAMEL4	1B	23.078	D5.9.1	approved
N2-010695	CR	Inclusion of ODB data in ATM	Siemens AG	CAMEL4	B	23.078	4.4.0	postponed to the next meeting
N2-010696	CR	Correction and improvement Mobility Management for GPRS subscriber	Siemens AG	CAMEL4	F	23.078	5d.9.1	approved