3GPP TSG CN Plenary Meeting #16 **NP-020246**
5th – 7th June 2002 Marco Island, USA.

Source: TSG CN WG4

Title: LSs after CN#15

Agenda item: 6.4.1

Document for: Information

Introduction:

This document contains 16 LSs that have been agreed by TSG CN WG4 after CN#15, and are forwarded to TSG CN Plenary meeting #16 for information.

TDOC N4-00xxxx	Subject	To	Cc
N4-020372	Proposed liaison statement to SA & SA3 on Immediate Service Termination	SA, SA3	CN2
N4-020463	Proposed Liaison statement to T2 (cc SA2) on GUP	T2	SA2
N4-020466	Proposed Liaison Statement to SA2 on handling of user profile data	SA2	
N4-020486	Proposed LS to CN2 on definition of GPRSMSClass	CN2	
N4-020512	Complement to the Liaison Statement response on MSISDN Address resolution for MMS using MAP operations	T2	SA2
N4-020517	Draft reply to LS on mandatory use of transport address for RAB modification	RAN, RAN3, SA	
N4-020526	Proposed LS to SA2 & SA5 on Distribution of IMS charging ID (ICID) from GGSN to SGSN	SA2, SA5	
N4-020524	Proposed LS to SA2 on the use of IPv6 in a pre-Rel-5 node	SA2	RAN3, CN3
N4-020532	Proposed LS to SA5 on TS 23.008: organisation of subscriber data	SA5	CN1
N4-020690	Response on Liaison Statement on exchange of addresses on Iu-CS using IP Transport Option in Release 5	RAN3	CN3
N4-020699	LS on Shared Network	RAN3	SA1, SA2
N4-020708	Response to Liaison Statement on Support of IPv6 on Iu	RAN3	SA2
N4-020732	LS on 3GPP specific Diameter applications	SA, CN, SA5	
N4-020765	LS on dimensioning for IMS services	SA1, SA2	
N4-020767	LS on Sh interface signalling	CN1	
N4-020769	LS on Status of protocol work on Ze interface	CN, SA, SA3	

3GPP TSG CN WG4 Meeting #13 ***N4-020372***
Fort Lauderdale, US, 8th April – 12th April 2002

Title: Liaison Statement on Immediate Service Termination
Source: **TSG-CN WG4**
To: **TSG-SA; TSG-SA WG3**
Cc: **TSG-CN WG2**

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1. Overall Description:

TSG-CN WG4 have considered the requests from TSG-SA #15, as described in the extract from the meeting report of SA #15 and relayed to TSG-CN WG4 by email.

On the question of whether there would be any problems with introducing the non-CAMEL IST functionality into Rel-4: we have reviewed the MAP specification for Rel-4, and it includes the protocol support for non-CAMEL IST functionality; by inheritance, this support is also provided in Rel-5. Our conclusion is that there would be no problems with **introducing** the non-CAMEL IST functionality into Rel-4. However if it were decided **not to introduce** the non-CAMEL IST functionality into Rel-4, it would require work in CN4 to remove the definition of the protocol support from the MAP specifications for Rel-4 and Rel-5.

For these reasons, TSG-CN WG4 recommend that the non-CAMEL IST functionality be introduced into the stage 1 & stage 2 specifications for Rel-4. If TSG-SA WG3 and TSG-SA decide not to carry this functionality forward into Rel-5, TSG-SA are requested to inform TSG-CN WG4 as soon as possible, so that the MAP specification for Rel-5 can be revised accordingly.

On the question of the implications if the requirement for IST support is introduced for UTRAN access, our analysis is that no work is needed in CN4 specifications. By contrast, if the requirement for IST support applies only for GSM access, substantial work would be required in both CN2 and CN4. Both the CAMEL-based and HLR/switch-based IST functionality take no account of the access technology used by the subscriber whose service is to be terminated. If the access technology is to be taken into account in deciding whether or not to terminate service:

- For CAMEL-based IST, the access technology in use would have to be signalled to the gsmSCF when the control relationship is established. This would require changes to the CAMEL protocol and the functionality of the serving MSC/VLR.
- For HLR/switch-based IST, the functionality of the MSC would have to be modified to accept an IST command if the subscriber is using GSM access, but reject it if the subscriber is using UTRAN access. In addition, the protocol would need to be modified to allow the reason for rejection to be reported to the HLR.

For these reasons, TSG-CN WG4 recommend that the IST functionality should be specified to apply equally to GSM access and UTRAN access.

2. Actions:

To TSG-SA and TSG-SA WG3 group.

ACTION: TSG-CN WG4 ask TSG-SA and TSG-SA WG3 to take note of TSG-CN WG4's recommendations set out above in deciding whether to:

- Specify non-CAMEL IST functionality for UMTS Rel-4;
- Specify non-CAMEL IST functionality for UMTS Rel-5;
- Specify the applicability of IST to both GSM and UTRAN access.

ACTION: TSG-CN WG4 ask TSG-SA and TSG-SA WG3 to notify TSG-CN WG4 of their decision, so that any changes needed in TSG-CN WG4 specifications can be drafted.

3. Date of Next CN4 Meetings:

CN4 #14	13th – 17th May 2002	Budapest, HUNGARY
CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND

3GPP TSG CN WG4 Meeting #13 ***N4-020463***
Fort Lauderdale, US, 8th April – 12th April 2002

Title:	Response to Liaison Statement on coordination of data definitions, identified in GUP development
Source:	CN4
To:	T2
Cc:	SA2
Response to:	T2-020254, T2-020256

Contact Person:
Name: Miguel-Angel Pallares
E-mail Address: miguel-angel.pallares-lopez@ece.ericsson.se

CN4 would like to confirm to T2 that CN4 have already de-facto agreed to use the GUP DDF for the definition of the format of the user profile downloaded over the Cx interface, as already known by T2.

Considering the fact that the work being carried out by the T2 GUP ad-hoc is targeted for Release 6, CN4 cannot afford the overload that the co-ordination between T2 GUP and CN4 would impose, so close to the closure of Release 5 as we are.

Until a more stable co-operation can be established, CN4 have attached to this LS the last XML document and schema corresponding to the user profile defined by CN4 for the Cx interface, so that T2 knows the use of the DDF that CN4 is making of, and can extract the commonalties with other applications of the DDF.

Addition of the "choice" construction:

During the development of the mentioned XML schema, it has become evident to CN4 the necessity of the support of the XML "choice" construction. The data modelling being carried out by CN4 requires the use of generalisations (or inheritance) which natural mapping into an XML schema is the mentioned "choice" construction. Until that constructor is available, CN4 will be editing by hand the XML schema generated from the XML document based on DDF.

Actions:

To consider the addition of the "choice" construction to the DDF. CN4 would like to be informed of any progress that the T2 GUP ad-hoc may do on this issue.

To analyse and extract potential commonalties with other applications of the DDF from the XML document and schema attached to this LS.

Date of next CN4 meetings:

CN4#14	13th- 17th May, 2002
CN4#15	29th July – 2nd August, 2002

3GPP TSG CN WG4 Meeting #13 ***N4-020466***
Fort Lauderdale, US, 8th April – 12th April 2002

Title: Proposed Liaison Statement to SA2 on handling of user profile data

Source: Nokia (TSG CN4)

To: TSG SA2

Cc:

Contact Person:
Name: Jaakko Rajaniemi
Email Address: jaakko.rajaniemi@nokia.com

Attachments: N4-020364

1. Description:

In the Fort Lauderdale CN4 #13 meeting, the Cx interface user profile downloading issue was discussed. As part of the discussion the optimisation of the Cx profile downloading was discussed based on the contribution N4-020364 "User profile downloading" (see attached).

The contribution presents a possibility to store the user profile in the S-CSCF when the user is deregistered, i.e. in case the user initiated deregistration or the timeout deregistration. In this case the HSS keeps the S-CSCF name stored. When the user registers again or receives mobile terminated session invitation, the profile downloading can be omitted because the user profile is already available in the S-CSCF. This allows reducing the amount of the profile downloading needed in the Cx interface.

The conclusion of the discussion in CN4 meeting was that CN4 sees clear benefits on having the possibility presented in the N4-020364. Therefore, CN4 recommends that SA2 includes it in their TS 23.228 specification.

In addition, CN4 informs that it was agreed in the meeting that S-CSCF may ask the registered part, unregistered part or the whole profile from the HSS.

2. Actions:

SA2 is kindly asked to consider including the above-described conclusion of the CN4 discussions on the user profile downloading in their specifications.

3. Date of Next CN4 Meetings:

CN4 #14	13 – 17 May 2002	Budapest, Hungary
CN4 #15	29 July – 2 August 2002	Helsinki, Finland

3GPP TSG CN WG4 Meeting #13 ***N4-020486***
Fort Lauderdale, US, 8th April – 12th April 2002

Title: LS on availability of MS Radio Access Capability in for MS in Iu-Mode
Source: CN4
To: CN2

Contact Person:
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Tel. Number: +39 081 5147721
E-mail Address: pompeo.santoro@eri.ericsson.se

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1. Overall Description

CN4 would like to bring to the attention of CN2 that it has discovered an error in 29.078 rel99 and rel4 by reviewing CR 408 on 29.002 concerning "Transferring the MS classmark & IMEI to the gsmSCF".

29.078 defines GPRSMSClass as follows

```
GPRSMSClass                          ::= SEQUENCE {
    mSNetworkCapability                  [0] MSNetworkCapability,
    mSRadioAccessCapability              [1] MSRadioAccessCapability
    }
-- GPRS MS class mark describes the terminal capabilites.
-- Refer to 3GPP TS 24.008 [12] for an explanation of these elements.
```

23.060 on the other hand defines the availability in the SGSN of the information elements contained in GPRSMSClass as follows:

13.2 SGSN

SGSN maintains MM context and PDP context information for MSs in the STANDBY, READY, PMM-IDLE, and PMM-CONNECTED states. Table 6 shows the context fields for one MS.
During the Intersystem Change, when new Authentication and Key Agreement is not performed, the KSI in the new 3G-SGSN shall be assigned the value of the CKSN, which has been sent by the MS. Similarly, in the new 2G-SGSN, when AKA des not take place, the CKSN shall be assigned the value of the KSI, which has been sent by the MS.

NOTE: 2G-SGSN and 3G-SGSN refer to R99 SGSNs with either GSM or UMTS access.

Table 6: SGSN MM and PDP Contexts

Field	Description	GSM	UMTS
…….			
…. …			

MS Radio Access Capability
MS radio access capabilities.
X

MS Network Capability
MS network capabilities.
X
X

…….
…. …

From the quoted text in 23.060, CN4 understanding is that MS Radio Access Capability is not available to the SGSN if the MS accesses the network via Iu-mode, and as such cannot be present in GPRSMSClass.

CN4 has addressed this inconsistency by qualifying Ms Radio Access Capability as OPTIONAL in GPRSMSClass for CAMEL4 in a revised version of CR 29.002-408.

2. Actions

CN4 is kindly asking CN2 to tackle the spotted inconsistency in the Rel99 and Rel-4 version of 29.078.

3. Dates of future CN4 meetings

Meeting	Dates	Location	Host
CN4#14	13-17 May 2002	Budapest, HUNGARY	Ericsson
CN4#15	29 Jul – 2 Aug 2002	Helsinki, FINLAND	Sonera, Nokia, Elisa Communication, Ficora

3GPP TSG CN WG4 Meeting #13 ***N4-020512***
Fort Lauderdale, USA, 8th – 12th April 2002

Title:	Complement to the Answer Liaison Statement on MSISDN Address resolution for MMS using MAP operations
Source:	CN4
To:	T2
Cc:	SA2
Response to:	T2-011122

Contact Person:
Name: François Dronne
Tel. Number: +33 1 45 29 62 74
E-mail Address: francois.dronne@rd.francetelecom.com

Attachments: N4-020187 (First response to T2 on this subject)

This Liaison Statement is a complement to the LS already sent at the CN4#12 meeting to T2 (N4-020187 – attached to this LS).

The CN4 meeting has identified additional drawbacks if the MAP SEND ROUTING INFO FOR SM solution is used by the MMS relay/server to retrieve the recipient subscriber's IMSI. Therefore CN4 would like to complete the previous response in order to give all relevant information to the T2 group.

In addition to the drawbacks already listed in the previous LS, the CN4 group would like to add that with the MAP SEND ROUTING INFO FOR SM message:

- There are cases where the HLR won't return the IMSI to the MMS relay/server (e.g. if the subscriber is not attached to any network and no VMSC address is stored in his profile in the HLR). This means that the MMS Server will not receive the IMSI in all cases.
- There are cases where the HLR will send additional useless MAP messages (MAP INFORM SERVICE CENTER) to the MMS relay/server, as inheritance of the SMS procedures (e.g. when the subscriber is not reachable).
  From a signalling point of view, this is a minor issue since the additional message is sent within the same TCAP message as a separate Invoke component. The MMS relay/server will nevertheless have to ignore the additional message.

From the CN4 point of view, the SEND ROUTING INFO FOR SM is still the "least undesirable" solution. But from a service point of view, it is up to the T2 group to state whether these two points are acceptable.

If the SEND ROUTING INFO FOR SM solution is chosen, the T2 group may specify the handling of the interrogating MMS relay/server if the IMSI address of the recipient subscriber isn't returned (e.g. several interrogations of the HLR if no successful answer given).

Action Required:
None

3GPP TSG CN WG4 Meeting #13 ***N4-020517***
Fort Lauderdale, US, 8th April – 12th April 2002

Title: Liaison Statement on Mandatory Use Of Transport Addresses sent by the MSC in a RAB Modification Request

Source: CN4

To: RAN WG3, TSG SA, TSG RAN

Cc:

Response to: LS ***TSGR3#27(02) 0610*** (N4-020427) on Mandatory Use Of Transport Addresses sent by the MSC in a RAB Modification Request from RAN3.

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Attachments: N4-020427 (incoming LS from RAN3)

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1. Overall Description:

CN4 thanks RAN3 for their LS and also for agreeing to implement the requested changes to RANAP to always modify the Iu bearer in accordance to the Transport Addresses sent by the MSC, for Rel5. The solution however is still a problem for earlier releases and CN4 considers that the handling of the transport addresses by RAN3 in this way is actually a fault and therefore merits essential correction.

The scenarios are outlined in a table below however the basic problem is that the Iu bearer (between UTRAN & MSC MGW) should be controlled by the MSC. If the MSC wishes to modify the RAB characteristics but maintain the Core Network bandwidth and transport connection this control must be within the MSC as the UTRAN cannot know what services are running and therefore how its decisions will affect these services.

The following table describes the current Release 4 situation – taking into account the CRs made in Rel4 for MSC and MGW H.248 package to indicate support of MSLC or not for the Iu bearer link. It further includes the interworking with a Rel5 UTRAN when the aforemention CR in RANAP is implemented.

	REL 4 MSC **MGW does not support MSLC.**	**REL4 MSC/** **MGW does support MSLC.**
REL99 UTRAN **- this is prior to AAL2 CS2 or IP bearer and thus no modification of transport link within same addresses is possible**	MSC gets informed that MSLC is not supported as MGW does not support MSLC. MSC reserves new terminations and provides them as transport address in RAB Assign Modification. UTRAN is permitted to ignore addresses and not modify bearer. It is assumed that this would only happen when the bandwidth requirement is less than currently established. MSC currently assumes that the bearer is modified to the new terminations and deletes the old terminations. This would infact release the bearer unintentionally if the UTRAN had not modified to the new transport address.	MSC gets informed that MSLC is not supported as MGW does not receive MSLC support in ERQ from UTRAN. MSC reserves new terminations and sends them to UTRAN in RAB Assign Modification. UTRAN is permitted to ignore addresses and not modify bearer. It is assumed that this would only happen when the bandwidth requirement is less than currently established. MSC currently assumes that the bearer is modified to the new terminations and deletes the old terminations. This would infact release the bearer unintentionally if the UTRAN had not modified to the new transport address.
REL 4 UTRAN **MSLC not supported**	Same as above case.	Same as above case as MGW does not receive MSLC support in ERQ from RNC.
REL4 UTRAN	Same as above.	MSC receives an indication that

MSLC is supported.		MSLC is support ed for the link. MSC does not reserve new terminations and sends RAB Assign Modification without transport addresses. UTRAN performs modification of link characteristics as requested. UTRAN may decide not to modify link characteristics ? It is assumed that this would only happen when bandwidth requirement is less than currently established. MSC assumes Iu bearer has been modified to the link characteristics indicated in the RAB Assignment Modification. If this is not the case problems may arise depending on the service using this Iu Bearer.
REL5 UTRAN MSLC not supported (RANAP updated to mandate use of transport address)	MSC gets informed that MSLC is not supported as MGW does not support MSLC. MSC reserves new terminations and sends them to UTRAN in RAB Assign Modification. UTRAN modifies connection to new terminations. MSC deletes the old terminations. No incompatibilities.	Same as previous case as MGW does not receive MSLC support in ERQ from RNC.
REL5 UTRAN MSLC supported (RANAP updated to mandate use of transport address)	Same as above.	MSC receives an indication that MSLC is support ed for the link. MSC does not reserve new terminations and sends RAB Assign Modification without new transport address. UTRAN performs modification of link characteristics as requested. UTRAN may NOTdecide not to modify link characteristics ? This is desired case but it seems not to have been covered in the CR for RANAP Rel5 – would appear to still need to be changed.

As can be seen from the table the CR agreed by RAN3 solves the problem for a Release 4 (and onward) core network when REL5 UTRAN is used. However if REL4 or R99 UTRAN is used there is still a fault that requires an essential correction in either CN or UTRAN. If the problem is resolved in CN then for all UTRAN (even after Rel5) when MSLC is not supported by both transport entities the MSC will have to perform the very inefficient and messy solution to check if the new terminations are not used before deleting the old ones.

In CN4's opinion the CR should be in RAN as this problem is seen as a fault in the RANAP protocol as it currently gives the UTRAN a flexibility that it should not have; solving this in CN will still allow the UTRAN to decide not to modify the bearer when the CN expects it to be modified. CN4 asks RAN3 what the reasoning would be for having such flexibility in the UTRAN; is this something that was infact required as part of the system architecture requirements ?

2. Actions:

To RAN3 group.

ACTION: CN4 asks RAN3 group to reconsider the agreed CR for application to R99 and Rel4. Also to consider the case where no transport addresses are sent (i.e. MSLC supported) – the RNC should still modify the link characteristics to match those defined by the RAB parameters included in the RANAP message from the MSC.

To TSG RAN and TSG SA group.

ACTION: CN4 asks RAN and SA group to consider how to procede if RAN WG3 cannot accept CN4's request to agree the CR for application to R99 & REL4.

3. Date of Next CN4 Meetings:

CN4 #14	13th – 17th May 2002	Budapest, HUNGARY
CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND

3GPP TSG CN WG4 Meeting #13 ***N4-020524***
Fort Lauderdale, US, 8th April – 12th April 2002

Title: Liaison Statement on "The use of IPv4 and IPv6 in the transport plane"

Source: TSG CN4

To: TSG SA2

Cc: RAN3, CN3

Contact Person:
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Email Address: einar.oltedal@eto.ericsson.se

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1. Description:

CN4 would like to thank SA2 for their liaison statement S2-020291 on the use of IPv4 and IPv6 in the transport plane. CN4 has worked for some time on required changes to the GTP protocol. In R'99 and Rel-4 of 29.060 it is stated, in section 13.1: The IPv4 (RFC 791) protocol shall be supported, IPv6 (RFC 2460) support is optional. It has caused CN4 considerable difficulties in meeting the requirements from SA2 in the light of this statement in 29.060, and therefore to find a proper solution that allows the use of IPv6 in pre-Rel-5 GSNs. Would it be acceptable for SA2 to remove the possibility of using IPv6 in pre-Rel-5 GSNs?

2. Actions:

CN4 would kindly ask SA2 to clarify the use of IPv6 in pre Rel-5 GSNs.

3. Date of Next CN4 Meetings:

CN4 #14	13th – 17th May 2002	Budapest, Hungary
CN4 #15	29th July – 2nd August 2002	Helsinki, Finland

CR-Form-v4

CHANGE REQUEST

⌘ **23.003** **CR** **xxx** ⌘ ev **-** ⌘ Current version: **5.2.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☒ Radio Access Network ☐ Core Network ☒

Title:	⌘	Allocation of unique prefixes to IPv6 terminals
Source:	⌘	Ericsson
Work item code:	⌘	IMS-CCR
Date:	⌘	????
Category:	⌘	**F**
Release:	⌘	R5

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)*

Reason for change:	⌘	Alignment with 23.060 CR 286 introducing IPv6 prefix allocation to an MS and at the same time some clean-up of an obsolete reference.
Summary of change:	⌘	Added in the section about the IPv6 address the principle of allocation of a unique prefix to every PDP context when IPv6 stateless address autoconfiguration is used. Also the reference to the obsolete RFC 1883 is changed to RFC 2373 and other references are added (TS 23.060, RFC 2462, RFC3041). Note: RFC 1883 has been obsoleted by RFC 2460, however RFC 2373 is the proper reference when it comes to the actual addressing architecture of IPv6.
Consequences if not approved:	⌘	Misalignment of stage 2 and stage 3 specifications.

Clauses affected:	⌘	1.1; 3.8; 5.1		
Other specs affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	23.060
Other comments:	⌘			

1.1 References

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

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 21.905: "3G Vocabulary".

[2] 3GPP TS 23.008: "Organization of subscriber data".

[3] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[4] 3GPP TS 23.070: "Routeing of calls to/from Public Data Networks (PDN)".

[5] 3GPP TS 24.008: "Mobile Radio Interface Layer 3 specification; Core Network Protocols; Stage 3".

[6] 3GPP TS 29.060: "GPRS Tunnelling protocol (GPT) across the Gn and Gp interface".

[7] GSM 03.20: "Digital cellular telecommunications system (Phase 2+); Security related network functions".

[8] GSM 09.03: "Digital cellular telecommunications system (Phase 2+); Signalling requirements on interworking between the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN) and the Public Land Mobile Network (PLMN)".

[9] GSM 11.11: "Digital cellular telecommunications system (Phase 2+); Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".

[10] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[11] ITU-T Recommendation E.212: "The international identification plan for mobile terminals and mobile users".

[12] ITU-T Recommendation E.213: "Telephone and ISDN numbering plan for land Mobile Stations in public land mobile networks (PLMN)".

[13] ITU-T Recommendation X.121: "International numbering plan for public data networks".

[14] RFC 791: "Internet Protocol".

[15] RFC .2373: "IP Version 6 Addressing Architecture".

[16] 3GPP TS 25.401: "UTRAN Overall Description".

[17] 3GPP TS 25.413: "UTRAN Iu Interface RANAP Signalling".

[18] RFC 2181: “Clarifications to the DNS Specification”.

[19] RFC 1035: “Domain Names - Implementation and Specification”.

[20] RFC 1123: “Requirements for Internet Hosts -- Application and Support”.

[21] RFC 2462: “IPv6 Stateless Address Autoconfiguration”.

[22] RFC 3041: “Privacy Extensions for Stateless Address Autoconfiguration in IPv6”.

[23] 3GPP TS 23.236: "Intra Domain Connection of RAN Nodes to Multiple CN Nodes".

Next modified section

3.8 Structure of an IP v6 address

One or more IP address domains could be allocated to each PLMN. The IP v6 address structure is defined in RFC 2373.

An IP v6 address may be allocated to an MS either permanently or on a temporary basis during a connection with the network.

If the dynamic IPv6 stateless address autoconfiguration procedure is used, then each PDP context, or group of PDP contexts sharing the same IP address, is assigned a unique prefix as defined in 3GPP TS 23.060.

As described in RFC 2462 and RFC 3041, the MS can change its interface identifier without the GPRS network being aware of the change.

Next modified section

5.1 Identification for routing purpose

MSCs, GSNs and location registers are identified by international PSTN/ISDN numbers and/or Signalling Point Codes ("entity number", i.e., "HLR number", "VLR number", "MSC number", "SGSN number" and "GGSN number") in each GSM PLMN.

Additionally SGSN, GGSN are identified by GSN Addresses. These are the SGSN Address and the GGSN Address.

A GSN Address shall be composed as shown in figure 9.

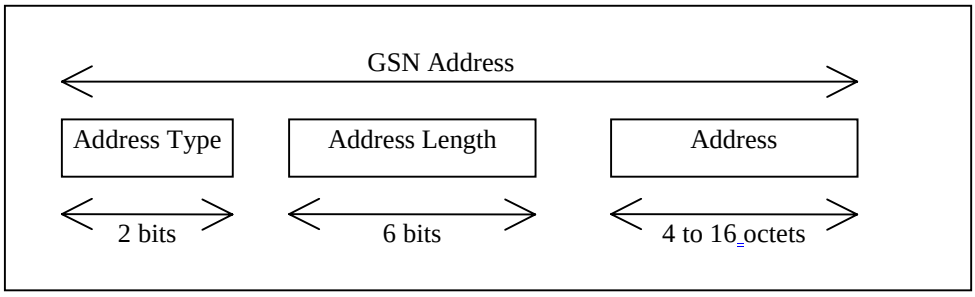

Figure 9: Structure of GSN Address

The GSN Address is composed of the following elements:

1) The Address Type which is a fixed length code (of 2 bits) identifying the type of address that is used in the Address field.

2) Address Length which is a fixed length code (of 6 bits) identifying the length of the Address field.

1. 3) Address is a variable length field with either an IPv4 address or an IPv6 address.

Address Type 0 and Address Length 4 are used when Address is an IPv4 address.

Address Type 1 and Address Length 16 are used when Address is an IPv6 address.

The IP v4 address structure is defined in RFC 791.

The IP v6 address structure is defined in RFC 2373.

3GPP TSG CN WG4 Meeting #13 ***N4-020526***
Fort Lauderdale, USA, 8th – 12th April 2002

Title:	**Liaison Statement Response on "Distribution of IMS charging ID (ICID) from GGSN to SGSN"**
Source:	CN4
To:	SA5 and SA2
Cc:	
Response to:	S5-024037

Contact Person:
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E-mail Address: francois.dronne@rd.francetelecom.com

Attachments: S5-024037

CN4 thanks SA5 for the Liaison Statement on the IMS Charging ID (ICID).

1. Response

CN4 takes note of the Request of SA5 to add the IMS Charging ID into GTP in order to transfer it from GGSN to SGSN.

Although it is out of the scope of CN4 to check the requirement of SA5, a more detail description of the requirement would be needed from SA5 in order for CN4 to implement the changes correctly.

However, CN4 needs further instruction from SA2 before specifying the SA5 requirement.

2. Action

To SA2:
CN4 kindly asks SA2 to give the needed instruction on the subject.

To SA5:
CN4 kindly asks SA5 for further description of the requirement in order to introduce, if agreed by SA2, the transport of the ICID in the relevant GTP message on the GGSN-SGSN interface.

3. Date of Next CN4 Meetings:

CN4#14	13th – 17th May 2002	Budapest, Hungary
CN4#15	29th July – 2nd August 2002	Helsinki, Finland

3GPP TSG CN WG4 Meeting #13 ***N4-020532***
Fort Lauderdale, US, 8th April – 12th April 2002

Title: Liaison Statement on TS 23.008: Organisation of subscriber data
Source: CN4
To: SA5
Cc: CN1
Response to: LS (S5-022016) on TS 23.008: Organisation of subscriber data from SA5.

Contact Person:
Name: Ian Park
Tel. Number: +44 1635 673 527
E-mail Address: ian.park@vodafone.co.uk

Attachments: None

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1. Overall Description:

CN4 thank SA5 for their liaison statement on TS 23.008: Organisation of subscriber data. CN4 can confirm that there will be updates to TS 23.008 for Release 5. Some changes have already been approved (for CAMEL Phase 4) in CN #15. Further enhancements have been approved in CN4 for other Release 5 features, including the IP Multimedia Subsystem; these will be presented for approval at CN #16.

2. Actions:

None

3. Date of Next CN4 Meetings:

CN4 #14	13th – 17th May 2002	Budapest, HUNGARY
CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND

3GPP TSG CN WG4 Meeting #14 ***N4-020690***
Budapest, Hungary, 13th – 17th May 2002

Title: Response on Liaison Statement on exchange of addresses on Iu-CS using IP Transport Option in Release 5

Response to: LS (R3-021133) on Liaison Statement on exchange of addresses on Iu-CS using IP Transport Option in Release 5 from RAN3

Source: CN4

To: RAN3

Cc: CN3 (RAN3 also sent the LS to CN3 as copy)

Contact Person:
Name: Peter Schmitt
Tel. Number: +49 6621 169 152
E-mail Address: peter.schmitt@icn.siemens.de

Attachments: None

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1. Overall Description:

CN 4 has investigated the three suggested solutions to provide the RNC with the IP user plane addresses of the MGW required to set up an IP bearer over the Iu-Cs interface in release 5.

The following impacts to CN4 specification have been identified:

- CN 4 mandates in their specifications that the horizontal signaling shall be bearer independent (23.205 chapter 4.2: The protocol used on the Nc interface shall be a call control protocol supporting IP and ATM transports in a bearer-independent manner….
  Furthermore, the CBC protocol, ITU-T Q.1950, based upon the BICC architecture is used as the basis for the Mc interface specification in TS 29.232.).
- The transport of bearer-level IP addresses from a MGW to a MSC server over the Mc interface is not supported.
- The RAB assignment response is the trigger at the MSC server that the RAB is established.

Comments on the solutions proposed by RAN3 based on CN4 specification and behaviour:

Solution 1:
Solution 1 would require substantial modifications on the protocol on the Mc interface, and also a deviation from the current architectural model.
TS 29.232 currently does not allow the transport of a bearer level IP address from a MGW to the corresponding MSC server within the "Prepare Bearer" procedure, which is used to prepare the MGW for the set-up of a radio bearer (see TS 23.205). Note that the BIWF Address transported within the H.248 "add.response" has the meaning of a bearer control signalling transport address, i.e. it never denotes a user plane transport address. Introducing a new parameter to transport the bearer level IP Address in TS 29.232 is undesirable, since it would imply the deviation from architectural principles both at the MGW and the MSC-server. The MSC-Server, which should be independent of the underlying bearer technology, would be required to handle bearer specific information and to introduce bearer technology dependent procedures.

Solution2:
An MSC server is not affected by this solution. The handling at a MGW is similar for IP and ATM based UTRAN. Interworking IP based UTRAN and ATM based core network seams to be easy because the protocol stacks on transport level are similar (IP-ALCAP-Q2630.2).

Solution3:
The solution seems not to be complete because MSC server will never get the information when the bearer is established.

If the sequence of message is only changed in case of IP based transport or also for ATM based transport, CN4 has to consider this in their specification. With this solution the MSC server have to be aware of the used transport (bearer specific information (source and destination address) are sent over the signalling path in case of IP transport).

Summary:
Solution 2 was identified as the solution with the minumum undesirable impacts on the CN4 specifications. We did not make any other assessment of the relative technical merits of the three solutions.

2. Actions:

To RAN3 group.

ACTION: CN4 kindly asks the RAN3 group to consider the CN4 analysis and chose a solution compatible with the core network architecture and signalling and where an interworking to ATM based transport is easy to perform.

3. Date of Next CN3 Meetings:

CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND
CN4 #16	23rd Sep. – 27th Sep. 2002	USA

3GPP TSG CN WG4 Meeting #14 ***N4-020699***
Budapest, Hungary, 13th – 17th May 2002

Title: **LS on Shared Network**
Response to: **LS (S2-021502) on Shared Network support from SA2.**

Source: **CN4**
To: **RAN3**
Cc: **SA1, SA2**

Contact Person:
Name: **Pompeo Santoro, Markus Berg**
Tel. Number: **+39 081 5147721, +49 711 82147464**
E-mail Address: **Pompeo.Santoro@eri.ericsson.se**, **Ma.Berg@alcatel.de**

Attachments: **none**

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1. Overall Description:

In response to the actions required by SA2 in LS S2-021502, CN4 has analysed the solutions for Network Sharing in connected mode outlined in the TR R3.012 V0.1.1.

CN4 assessment is that for all three Iu based solutions the same impact on MAP E interface can be foreseen, the impact being the addition of the Access Rights information to the Prepare Handover operation. When enhancing the Rel-5 solution to consider subscription based Access Rights, no further impact on MAP E Interface is foreseen.

The current capabilities of the MAP E interface in terms of size of the information transferred are constrained by the payload size of White Book SCCP, which is mandated on the E interface.

Nevertheless CN4 would like to point out to RAN3 that when considering enhancements for future releases to take into account also GSM to GSM Handover and GSM to UMTS Handover then the size of the Access Rights information will be constrained by the size of the BSSMAP messages, that is 256+2 octets as defined in 48.006 section 9.3.3. Due to the BSSMAP limitation CN4 kindly asks RAN3 to take into account the size of the Access Rights information when selecting the solution.

48.006

9.3.3 Transfer of BSSMAP messages

The transfer of BSSMAP messages over a SCCP connection allows the BSSMAP functions in both the MSC and the BSS to identify to which particular Mobile Station association the exchanged message (e.g. assign, handover request, etc..) applies.

The structure of the user data field is given in figure 3. The user data field contains a distribution data unit, **a length indicator**, and the actual layer 3 message.

The Distribution Data Unit only consists of the Discrimination parameter, which is set to the "Not Transparent" value.

This parameter is coded on one octet, as follows:

8	7	6	5	4	3	2	1
0	0	0	0	0	0	0	D

The discrimination bit D is set to the "Not Transparent" value 0.

The length indicator is coded in one octet, and is the binary representation of the number of octets of the subsequent layer 3 message parameter.

The coding of the BSSMAP layer 3 messages is specified in 3GPP TS 48.008.

With regard to signalling load on the MAP E Interface, CN4 considers the SAG solution as the most compact, the SNA solution as less compact, the LA solution to place the most signalling load.

Concerning impacts on the HLR, CN4 assessment is that there's no impact on HLR given the Rel-5 requirements that the Access Rights be IMSI Series based. Impacts are foreseen on the HLR (and on MAP) when further enhancements towards subscription based Access Rights are specified.

The possible evolution towards subscription based Access Rights information confirms the assessment for impact on the MAP E interface to transfer the Access Rights from Anchor MSC to Non Anchor MSC for handover/relocation.

CN4 has informally got knowledge of the existence of a fourth solution, which is connection independent, tabled at RAN3 for consideration. Notwithstanding the lack of details on this fourth proposal, CN4 has nonetheless tried to assess its possible impacts on MAP E Interface. Given that according to this proposal there's no transfer of Access Rights to the RNC during Handover, CN4 assessment is that for Rel-5 no impacts can be foreseen on the MAP E Interface. What would be the impact when enhancing the Rel-5 solution to consider subscription based Access Rights cannot be fully assessed by CN4 without further information, however CN4 foresees that MAP E Interface impacts cannot be avoided. The same assessment on the impact on the HLR applies for this solution as for the first three solutions.

2. Actions:

To RAN3 group.

ACTION: CN4 asks RAN3 to take the provided information into account.

3. Date of Next CN4 Meetings:

CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND
CN4 #16	23rd Sep. – 27th Sep. 2002	USA

3GPP TSG CN WG4 Meeting #14 ***N4-020708***
Budapest, Hungary, 13th – 17th May 2002

Title: Response to Liaison Statement on Support of IPv6 on Iu
Source: CN4
To: RAN3
Cc: SA2
Response to:

Contact Person:
Name: Michael Young
Tel. Number: +1 604 241 6032
E-mail Address: michael.young@motorola.com

Attachments:

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1. Overall Description:

CN4 would like to thank RAN3 for their liaison statement on supporting of IPv6 on Iu interface. CN4 has studied the requirements from this LS and the understanding is:

- Mandatory IPv6 support and optional IPv4 support shall be specified in GTP Rel-5 specification for Iu interface;
- Two IP addresses and two TEIDs for GTP user plan shall be supported over Gn interface in GTP Rel-5.

CN4 believes more time needed to perform further investigation and see if RAN3's requirements could be fulfilled. Therefore no action could be taken at this CN4 meeting and all the companies have been invited to bring CRs to next CN4 meeting.

2. Actions:

No actions required at this moment.

3. Date of Future CN4 Meetings:

29 July – 2 August 2002	CN4 #15	Helsinki, FINLAND	Sonera, Nokia, Elisa Communication, Ficora
23 – 27 September 2002	CN4 #16	USA west coast, San Diego, USA ?	North American Friends of 3GPP
11 – 15 November 2002	CN4 #17	Bangkok, THAILAND	Japanese Friends of 3GPP

3GPP TSG CN WG4 Meeting #14 ***N4-020732***
Budapest, Hungary, 13th – 17th May 2002

Title: LS on 3GPP specific Diameter applications
Response to:
Release: Release 5
Work Item: Cx interface (HSS to CSCF)

Source: CN4
To: SA, CN, SA5
Cc:

Contact Person:
Name: Miguel-Angel Pallares Lopez
Tel. Number: +34 91 3394222
E-mail Address: miguel-angel.pallares-lopez@ece.ericsson.se

Attachments: None

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1. Overall Description:

CN4 have agreed to develop the protocols for Cx, Dx and Sh interfaces as IETF vendor specific Diameter applications, where the vendor is 3GPP. The vendor identifier assigned by IANA to 3GPP (http://www.iana.org/assignments/enterprise-numbers) is 10415.

Chapter 6.4 in 3GPP TS 29.229 (protocols details for Cx and Dx interfaces) and 3GPP TS 29.329 (protocol details for Sh interface) detail the namespaces that CN4 have made use of so far.

CN4 are developing authentication applications, which are not likely to clash with SA5's work on accounting.

If other TSG WGs make use of Diameter and develop their own applications, we face the risk of problems in the management of the namespaces (application identifiers, command codes, AVP codes, result codes) that would lead to interoperability problems. Currently, CN4 is not aware of any other TSG WG developing such applications.

2. Actions:

To SA

ACTION: CN4 kindly ask SA whether there are any other groups which are using the 3GPP vendor-specific namespace in Diameter.

To SA5

ACTION: CN4 kindly asks SA5 to take note of the need to manage the 3GPP vendor-specific namespace in Diameter.

To CN

ACTION: CN4 kindly requests that CN4 manages the namespace for the IETF vendor specific Diameter application, where the vendor is 3GPP. The concrete mechanism is to be co-ordinated with/established by the MCC.

3. Date of Next CN3 Meetings:

CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND
CN4 #16	23rd Sep. – 27th Sep. 2002	USA

3GPP TSG CN WG4 Meeting #14 ***N4-020765***
Budapest, Hungary, 13th – 17th May 2002

Title: LS on dimensioning for IMS services
Response to:
Release: Release 5
Work Item: Cx interface (HSS to CSCF)

Source: CN4
To: SA1, SA2
Cc:

Contact Person:
Name: Jerome Privat
Tel. Number: +33 6 1381 7671
E-mail Address: jerome.privat@northstream.se

Attachments: None

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1. Overall Description:

When standardising the UML model and XML schema that define the format of the user profile downloaded over the Cx interface, CN4 has considered the possibility of specifying upper bounds for some of the parameters in the user profile. This would avoid that different implementations use different upper bounds and cannot interoperate.

CN4 proposes to specify a requirement for a receiving node to support the following upper bounds:

- Number of service profiles per user: at least 20.
- Number of public identities per user: at least 20.
- Number of initial filter criteria per service profile: at least 10.
- Number of service points of interest per initial filter criterion: at least 25.
- Length of SIP URL: up to 256 octets.

As the proposed numeric values for the upper bounds impact the way services can be deployed, CN4 would like to check if SA1 and SA2 agree with the proposed values.

2. Actions:

To SA1 and SA2 groups.

ACTION: CN4 kindly asks the SA1 and SA2 groups to review the numeric values for the upper bounds of the parameters listed above and to indicate if they find them appropriate.

3. Date of Next CN3 Meetings:

CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND
CN4 #16	23rd Sep. – 27th Sep. 2002	USA

3GPP TSG CN WG4 Meeting #14 ***N4-020767***
Budapest, Hungary, 13th May – 17th May 2002

Title: LS on Sh interface signaling

Source: Nokia (TSG CN4)

To: TSG CN1

Cc:

Contact Person:
Name: Jaakko Rajaniemi
Email Address: jaakko.rajaniemi@nokia.com

Attachments: -

1. Description:

CN4 would like to provide for information and review to CN1 the work done in CN4 on the Sh interface.

CN4 has decided that the operations on the Sh interface are following:

1. Data handling procedures
   - The download of data from the HSS to an AS.
   - The update of data in the HSS.
2. Subscription/notification procedures
   - An AS can subscribe to receive notifications from the HSS of changes in data.
   - The HSS can notify an AS of changes in data to which the AS previously had subscribed.

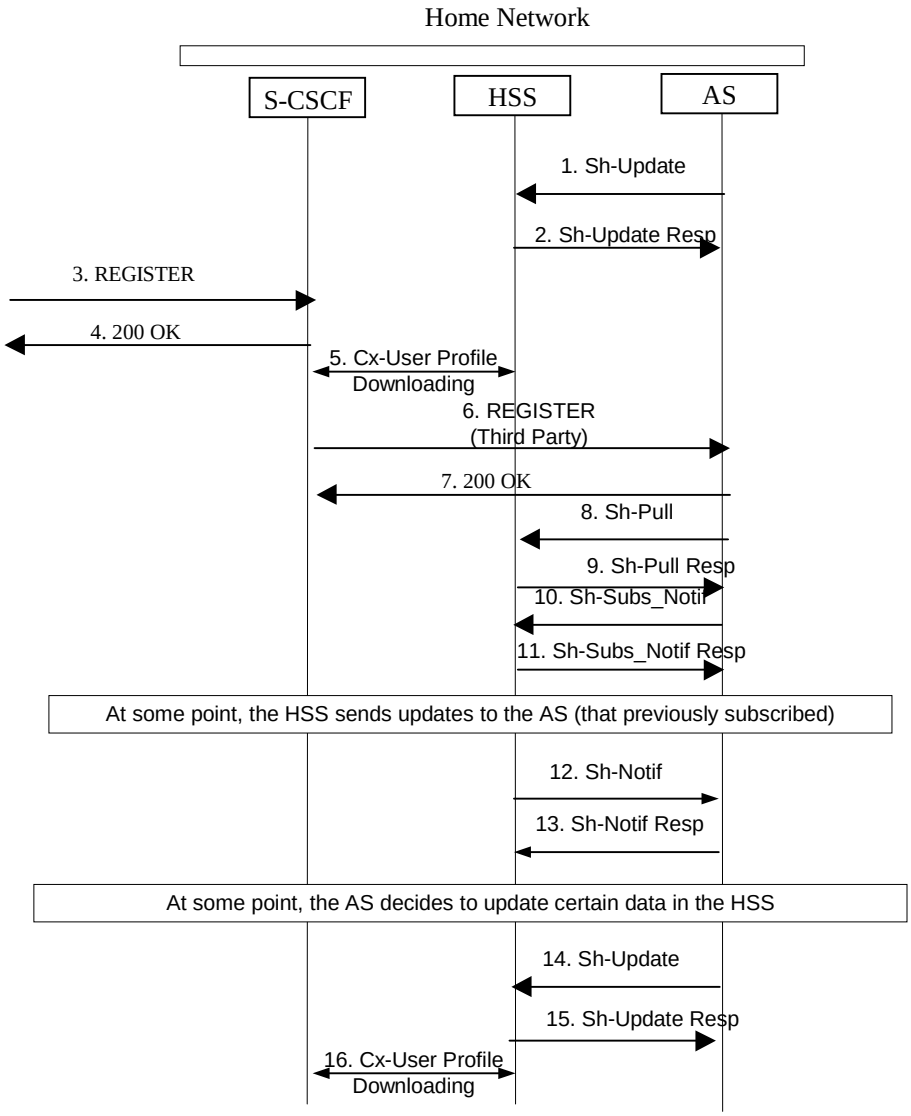
Data, which can be downloaded and modified in HSS by the AS, are:

- Transparent data, i.e. AS specific data, which is understood syntactically but not semantically by the HSS
- Non-transparent data, i.e. data, which is understood syntactically and semantically by HSS, e.g. initial filter criteria.

Data, which can be only downloaded, is the GMS/UMTS network specific data.

2. Data Update, Registration, Notification Subscription operations

The following signalling flow describes more details of the operations.



1. A user subscribes to a new service. The operator provisions the service in an AS. The AS stores some service data for a user in the HSS, Sh-Update (user identity, updated data) e.g. filter criteria, repository data.
2. HSS confirms the data is updated
3. Some time later, user registers with the network
4. 200 OK
5. S-CSCF downloads the data from the HSS. Filter criteria specify that the AS wants to be notified that the end user is registered.
6. S-CSCF sends third party registration message to the application server to notify that user is registered.
7. 200 OK
8. The AS downloads data needed for providing service from HSS, by means of Sh-Pull (user identity, requested data, and service information).
9. HSS sends data to AS
10. The AS subscribes to notifications from the HSS of changes in data, by means of Sh-Subs-Notif (user identity, requested data, and/or service information).

11. The HSS confirms the subscription request.

12. At some moment, user data is updated in the HSS. As the AS subscribed to notifications (step 10), the HSS sends to the AS the requested updates, by means of Sh-Notif (user identity, updated data).

13. The AS acknowledges the notification.

14. At some moment, the AS decides to update user's service data e.g. filter criteria in the HSS, by means of Cx-Update (user identity, updated data).

15. The HSS confirms the service data is updated.

16. If the updated data is needed in the S-CSCF, e.g. filter criteria, the HSS updates the data in the S-CSCF.

3. Actions to CN1:

CN1 is kindly asked to review the assumptions made by the CN4 and respond if they agree that the work is in line with stage 2 requirements of the Sh interface.

4. Date of Next CN4 Meetings:

CN4 #15	29 Jul. - 2 Aug. 2002	Helsinki, Finland
CN4 #16	23 Sep. – 27 Sep. 2002	USA

3GPP TSG CN WG4 Meeting #14 ***N4-020769***
Budapest, Hungary, 13th – 17th May 2002

Title: LS on Status of protocol work on Ze interface
Source: CN4
To: CN, SA, SA3
Cc:

Contact Person:
Name: Jari Jansson
Tel. Number: +358 40 5550719
E-mail Address: jari.jansson@nokia.com

Attachments: None

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1. Overall Description:

CN4 would like to inform SA3 that CN4 has continued the protocol work on the Ze interface. CN4 is not however able to finalize the protocol work in the time frame of June 2002 and we can't give an estimation of the date for completion of the needed work until we have had more time to analyse the requirements from SA3.

2. Actions:

To CN group:

ACTION: To take note that CN4 need more time to analyse the requirements for the protocol on the Ze interface, and therefore cannot give a timescale for the availability of the protocol definition.

To SA group:

ACTION: CN4 would kindly ask SA plenary consider this delay in stage 3 work and inform SA3 about the consequences on the release of this new feature.

To SA3 group.

ACTION: CN4 would like SA3 to consider possible consequences of this delay of stage 3 work on the contents of their stage 2.

3. Date of Next CN4 Meetings:

CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND
CN4 #16	23rd Sep. – 27th Sep. 2002	USA