Technical Specification Group Services and System Aspects   **TSGS#20(03)0315**
Meeting #20, Hämeenlinna, Finland, 09-12 June 2003

Source:	**NEC**
Title:	**Issues on ICID for REGISTER (CR attached)**
Release	**Rel 5**
Agenda item:	**7.5.2**
Document for:	**Discussion and approval**

1. Introduction

At the last SA5#34 meeting, CR: S5-034349(SP-030271) concerning the correction on ICID definition was approved.

This issue was initially raised by NECs CR against 24.229 at the CN1#29 meeting in March 2003. During the discussion, since the 24.229 (CN1 spec) is closely related to 32.225(SA5 spec), the following 2 options for the use of ICID were identified and produced the LS(N1-030560) to SA5 for guidance of resolving this issue.

OPTION A

The ICID is generated as a result of the REGISTER request and response itself, and all subsequent events (e.g. NOTIFY request, MESSAGE request) for that registration use a new ICID.

OPTION B

The ICID generated as a result of the REGISTER request is used for all events used by the user within that registration. Therefore, for example a NOTIFY request, or MESSAGE request would use the same ICID as the original REGISTER request.

Then, at the last CN1#30 meeting, reply LS from SA5(S5-034261) was received, but it is stated that this LS is preliminary one and not latest version so that CN1 could not discuss the corresponding CR against 24.229 and postponed the CR(N1-030691) to the next meeting. However, it is little bit disappointed for CN1 not to receive the latest LS including the final decision on this issue discussed at the SA5#34. Thus CN1 could not approve the CR against 24.229 since this CR is affected by the CR:S5-034349 against 32.225 by SA5.

2. Discussion

After the meeting, NEC checked the approved CR by SA5 (S5-034349: SP-030271), stating that option B is identified as solution and SA5 asks CN1 to change all CN1 specifications to only make reference to 32.225 regarding generation and duration of ICID.
However, the current description on ICID within the CR looks like stage 2 level rather than stage3 level. Thus it may cause more confusion to refer only to 32.225 within 24.229 specification (CN1), etc.

After reviewing this S5-034349 , NEC raises the following issue when option B is introduced.

2.1 When an implicit registration is initiated, how does the ICID generated by this implicit registration make linkage to each public user identity in implicit registration list. After the registration, when a public user identity within implicit registration list initiates session unrelated message, how the corresponding ICID is retrieved at the first received IMS entities. Such kind of procedure is not currently covered in 24.229 or 32.225.

2.2 As indicated in the original LS from CN1, if the public user identities that relate to the same private user identity, but registered in different REGISTER messages will use different ICIDs. Then subsequent session unrelated message is received at the first entity, it has to be checked which ICID should be reused for this session unrelated message from the same private user, but different public user. Such kind of procedure is not currently covered in 24.229 or 32.225.

2.3 When AS initiates session towards unregistered user, does AS generate the ICID ? On the other hands when AS initiates session towards registered user, does AS generate the ICID or reuse the ICID. Such kind of procedure is not currently covered in 24.229 or 32.225.

2.4 When AS initiates session unrelated message like MESSAGE towards the same public user, does AS reuse the ICID ? Such kind of procedure is not currently covered in 24.229 or 32.225.

2.5 When multiple UEs requirement occurs. i.e. the case where the multiple registrations for the same private user identity are initiated simultaneously in the same or different P-CSCF or S-CSCFs. These REGISTER may cause to generate different ICIDs. Then subsequent session unrelated message is received at the first entity, it has to be checked which ICID should be reused for the session from the same private user, but different public user or the same public user. This is little bit complicated procedure to be developed.

2.6 During the joint SA2-SA5 meeting held in May, several concerns were raised for option B in terms of forward compatibility to Rel 6.:

- For example, there will be a need to generate ICIDs more frequently in Release 6 and so the 30 day timer may mean that we run out of ICIDs.

- CR is not forward compatible. SA2 want to consider the new services in Release 6 and are concerned about linking ICID to the private ID as it is possible to link the private ID to multiple public Ids.

Based on the above analysis, option B causes a great impact or confusion on the current stage3 specs such as 24.229, 24.228.
Option A is still valid as a more generic and future proof solution for this issue. Thus NEC proposes option A and prepares counter CR against 32.225 as attached in this t-doc.

3. Proposal
As discussed in section 2, NEC proposes the attached CR:SP-030315 in favour of option A which supersedes the CR:S5-034349 (SP-030271).

Technical Specification Group Services and System Aspects   **SP-030315**
Meeting #20, Hämeenlinna, Finland, 09-12 June 2003

CR-Form-v7

CHANGE REQUEST

⌘	**32.225 CR 019**	⌘**rev** **-1**	⌘	Current version:	**5.2.0**	⌘

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

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

Title: ⌘	Correction on ICID definition	
Source: ⌘	NEC	
Work item code: ⌘	OAM-CH	***Date:*** ⌘ 2/06/2003
Category: ⌘ **F**	*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]().	***Release:*** ⌘ Rel-5 *Use one of the following releases:* 2 *(GSM Phase 2)* R96 *(Release 1996)* R97 *(Release 1997)* R98 *(Release 1998)* R99 *(Release 1999)* Rel-4 *(Release 4)* Rel-5 *(Release 5)* Rel-6 *(Release 6)*

Reason for change: ⌘	S5-034349 has misalignment with the ongoing CN1 discussion concerning forward compatibility issue and complexity for the procedures. The validity of the ICIDs for session related and session unrelated cases are not specified.
Summary of change: ⌘	Specify the validity of the ICID for session related and session unrelated cases.
Consequences if not approved: ⌘	Causing forward compatibility problems and resulting in the complex procedures for IMS entities.

Clauses affected: ⌘	5.2.4.14	

	Y	**N**		
Other specs affected: ⌘	**X**		Other core specifications ⌘	24.229
		X	Test specifications	
		X	O&M Specifications	

Other comments: ⌘	S5-034349 is superseted by this CR.

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at [http://www.3gpp.org/specs/CR.htm](). Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under [ftp://ftp.3gpp.org/specs/]() For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

Change in Clause 5.2.4.14

5.2.4.14   IMS Charging Identifier

This parameter holds the IMS charging identifier (ICID) as generated by the IMS node for the SIP session. The value of the ICID parameter is identical with the 'icid-value' parameter defined in [15]. The 'icid-value' is a mandatory part of the P-Charging-Vector and coded as a text-based UTF-8 charset (as are all SIP messages). For further information regarding the composition and usage of the P-Charging-Vector refer to TS 32.200 [2], TS 24.229 [14] and [15].

The ICID value is globally unique across all 3GPP IMS networks for a time period of at least one month, implying that neither the node that generated this ICID nor any other IMS node reuse this value before the uniqueness period expires. The one month minimum uniqueness period counts from the time of release of the ICID, i.e. the ICID value no longer being used. This can be achieved by using node specific information, e.g. high-granularity time information and / or topology / location information. The exact method how to achieve the uniqueness requirement is an implementation issue.

An ICID is generated by the P-CSCF during the initial IMS registration procedure for a Private User ID.

At each SIP session unrelated methods (e.g., REGISTER, NOTIFY, MESSAGE etc.), a new, session unrelated specific ICID is generated at the first IMS network element that processes the methods.

At each SIP session establishment a new, session specific ICID is generated at the first IMS network element that processes the session-initiating SIP INVITE message. This ICID is then used in all subsequent SIP messages for that session (e.g., 200 OK, (re-)INVITE, BYE etc.) until the session is terminated.

End of Change in Clause 5.2.4.14
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