3GPP TSG CN Plenary Meeting #26
8th – 10th December 2004 Athens, Greece.

NP-040527

Source:	TSG CN WG4
Title:	Corrections on TEI5
Agenda item:	
Document for:	APPROVAL

Spec	CR	Rev	Doc-2nd-Level N4-040	Phase	Subject	Cat	Ver_C
23.003	094	1	1667	Rel-5	Clarification of NRI position within (P)-TMSI	F	5.9.0
23.003	095	1	1668	Rel-6	Clarification of NRI position within (P)-TMSI	A	6.4.0

CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **23.003** CR **094** | ⌘ **rev** **1** | ⌘ | Current version: | **5.9.0** | ⌘ |

*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 **X** Core Network **X**

Title: ⌘	Clarification of NRI position within (P)-TMSI	
Source: ⌘	CN4	
Work item code: ⌘	TEI5	***Date:*** ⌘ 18/11/2004
Category: ⌘ **F**		***Release:*** ⌘ Rel-5

Use one of the following categories:
  F *(correction)*
  A *(corresponds to a correction in an earlier release)*
  B *(addition of feature),*
  C *(functional modification of feature)*
  D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
  Ph2 *(GSM Phase 2)*
  R96 *(Release 1996)*
  R97 *(Release 1997)*
  R98 *(Release 1998)*
  R99 *(Release 1999)*
  Rel-4 *(Release 4)*
  Rel-5 *(Release 5)*
  Rel-6 *(Release 6)*
  Rel-7 *(Release 7)*

Reason for change: ⌘ **This is an essential correction.**

The Network Resource Identifier (NRI) has been defined for Iu-Flex (see TS 23.236) and it identifies uniquely an individual CN node out of all CN nodes, which serve in parallel a pool-area.

The (P-)TMSI allocation mechanism in the CN node generates (P-)TMSIs which contain a configured NRI in the relevant bit positions. MS provides an Intra Domain NAS Node Selector (IDNNS) that contains a routing parameter. This routing parameter transports the NRI value.The RAN node masks the significant bits out of the routing parameter part of the IDNNS to determine the NRI which is relevant to identify the CN node.

Clause 2.4 "Structure of TMSI" has following definition for NRI
  If intra domain connection of RAN nodes to multiple CN nodes as described in 3GPP TS 23.236 [23] is applied in the MSC/VLR or SGSN, then the NRI shall be part of the TMSI. The NRI has a configurable length of 0 to 10 bits. A configurable length of 0 bits indicates that the NRI is not used and this feature is not applied in the MSC/VLR or SGSN. **The NRI shall be coded in bits 14 to 23. The most significant bit of the NRI field is bit 23.**

The above can be understood in two ways :
  a) bit 14 is the least significant bit and the number of bits used for NRI is extended towards bit 23 or
  b) bit 23 is always the most significant bit and the number of bits in NRI is

		extended towards bit 14.
Summary of change: ⌘		It is clarified that the NRI shall be coded in bits 23 to 14. An NRI shorter that 10 bits is adjusted so that the most significant bit of the NRI field is bit 23.
Consequences if not approved: ⌘		If the position of NRI is not clearly specified it may cause interoperability problems in multivendor networks.

Clauses affected:	⌘	2.4		

		Y	**N**			
Other specs affected:	⌘	**X**		Other core specifications	⌘	TS 23.246 CR 013
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	Similar clarification has been added in TS 23.246 in CR 013

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.

2.4 Structure of TMSI

Since the TMSI has only local significance (i.e. within a VLR and the area controlled by a VLR, or within an SGSN and the area controlled by an SGSN), the structure and coding of it can be chosen by agreement between operator and manufacturer in order to meet local needs.

The TMSI consists of 4 octets. It can be coded using a full hexadecimal representation.

In order to avoid double allocation of TMSIs after a restart of an allocating node, some part of the TMSI may be related to the time when it was allocated or contain a bit field which is changed when the allocating node has recovered from the restart.

In areas where both MSC-based services and SGSN-based services are provided, some discrimination is needed between the allocation of TMSIs for MSC-based services and the allocation of TMSIs for SGSN-based services. The discrimination shall be done on the 2 most significant bits, with values 00, 01, and 10 being used by the VLR, and 11 being used by the SGSN.

If intra domain connection of RAN nodes to multiple CN nodes as described in 3GPP TS 23.236 [23] is applied in the MSC/VLR or SGSN, then the NRI shall be part of the TMSI. The NRI has a configurable length of 0 to 10 bits. A configurable length of 0 bits indicates that the NRI is not used and this feature is not applied in the MSC/VLR or SGSN. The NRI shall be coded in bits 14 23 to 2314. A NRI shorter than 10 bits shall be encoded with tThe most significant bit of the NRI field is in bit 23.

The TMSI shall be allocated only in ciphered form. See also 3GPP TS 43.020 [7] and 3GPP TS 33.102 [42].

The network shall not allocate a TMSI with all 32 bits equal to 1 (this is because the TMSI must be stored in the SIM, and the SIM uses 4 octets with all bits equal to 1 to indicate that no valid TMSI is available).

To allow for eventual modifications of the management of the TMSI code space management, MSs shall not check if an allocated TMSI belongs to the range allocated to the allocating node. MSs shall use an allocated TMSI according to the specifications, whatever its value.

CR-Form-v7.1

CHANGE REQUEST

⌘   **23.003 CR 095**   ⌘**rev 1** ⌘   Current version: **6.4.0** ⌘

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

Title: ⌘	Clarification of NRI position within (P)-TMSI
Source: ⌘	CN4
Work item code:⌘ TEI5	**Date:** ⌘ 18/11/2004

Category: ⌘ **A**   **Release:** ⌘ Rel-5

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Consequences if not approved: ⌘	If the position of NRI is not clearly specified it may cause interoperability problems in multivendor networks.			

Clauses affected: ⌘	2.4				
	Y	**N**			
Other specs affected: ⌘	**X**		Other core specifications ⌘	TS 23.246	
		X	Test specifications		
		X	O&M Specifications		
Other comments: ⌘	Similar clarification has been added in TS 23.246 in CR 013				

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