RP-000286

TSG-RAN Meeting #7 Düsseldorf, Germany, 21 - 23 June 2000

(R3-001649, copy TSG-RAN) Response to LS (S1) on Hexadecimal IMEI format

SOURCE: RAN WG3

TITLE: Response to "Liaison statement on hexadecimal IMEI format"

TO: SA WG1

CC: SA WG5, CN WG1, CN WG4, RAN WG2, RAN WG3, GSM ASSOCIATION, SA WG2, TSG RAN

Contact: jari.isokangas@nokia.com

R3 has approved the change request (attached Tdoc R3-001513) of the RANAP IMEI coding to hexadecimal from present TBCD coding for R99. R3 would like to ask S1 to find out if this change would be appropriate already for R99 with other relevant WG's and co-ordinate the changes between those WG's.

R3 would also like to S1 to inform R3 and TSG RAN if this change is appropriate already for R99 or should this change be scheduled for R00.

3GPP RAN WG3 Meeting #13 Hawaii, USA, 22 – 26 May, 2000

Document Ka-UUIJIJ	Document	R3-00151	3
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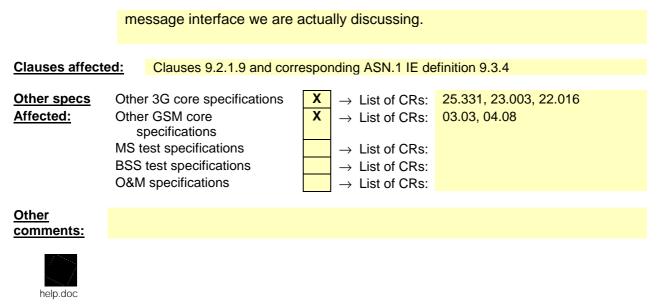
e.g. for 3GPP use the format TP-99xxx

or for SMG, use the format P-99-xxx

			CHANGE	REQI	JEST ;		see embedded help i r instructions on how		
			25.413	CR	112r1		Current Versi	on: 3.1.0	
GSM (AA.BB) or	· 3G (/	AA.BBB) specifica	ation number \uparrow		↑ CR пı	umber a	as allocated by MCC	support team	
For submission list expected approximation of the second s	oval m	neeting # here ↑	For info	approval ormation	X		strate non-strate	gic Use of	nly)
Proposed cha	ange	e affects:	ersion 2 for 3GPP and SMG (U)SIM	ME			able from: ftp://ftp.3gpp.c	Core Network	
Source:		Nokia					Date:	2000-05-23	
Subject:		Change of t	t <mark>he RANAP IMEI</mark>	coding to	<mark>hexadecim</mark>	nal fro	om present TB	CD	
Work item:									
Category: (only one category shall be marked with an X)	F A B C D	Addition of	modification of fe		rlier release		Release:	Phase 2 Release 96 Release 97 Release 98 Release 99 Release 00	X

Reason for change:

The current IMEI message structure is proposed to be changed to allow use of hexadecimal coding in addition of current BCD. The change is proposed in 3GPP TSG-CN, TSG-S, TSG-T and TSG-R to allow 16.7 million mobile terminals to be produced with one Type Approval Code. The current restriction for one million units per TAC is already a problem in the GSM terminal manufacturing and can only be predicted to worsen in the future. Change to use hexadecimal coding is most simple since it does not affect to existing message lengths in GSM air interface and network interfaces. In case of RAN WG3, the change is only required to the CN Invoke Trace message information element 'UE Identity', IMEI is used for those UE's that have active emergency call without or with a defective USIM module. The change does not affect to message/information element length since BCD (actually TBCD in ASN.1 definition) and hexadecimal digit coding consume equal amount of bits. In the TS25.413 lu interface RANAP protocol (and generally in MAP protocol), the only issue is to not use any 'sanity' check for this information element and allow all 4-bit binary values for all 15 digits of IMEI. The old IMEI coding in GSM system is fully backwards compatible with the changed coding for the message interface. (Depending on CN implementation it may be necessary to change the IMEI database control software. Note that in the MAP protocol the TBCD coding has been used for IMEI – in practise currently the coding is BCD, since IMEI is not using any of the special TBCD values ['*'=1010, '#'=1011, 'a'=1100, 'b'=1101, 'c'=1110]) The TBCD coding in MAP/RANAP for IMEI is technically only ruling out the use of code 'F' for the IMEI digits, this highlights further how small change in the



<----- double-click here for help and instructions on how to create a CR.

I

This element identifies the element to be traced i.e. the subscriber or the user equipment.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice UE Identity				
>IMSI			OCTET STRING (SIZE (38))	 digits 0 to 9, two digits per octet, each digit encoded 0000 to 1001, 1111 used as filler bit 4 to 1 of octet n encoding digit 2n-1 bit 8 to 5 of octet n encoding digit 2n Number of decimal digits shabe from 6 to 15 starting with the digits from the PLMN-ID.
>IMEI			OCTET STRING (SIZE (8))	 <u>hexadecimal</u> digits 0 to <u>F9</u>, two <u>hexadecimal</u> digits per octet, each <u>hexadecimal</u> digit encoded 0000 to 1<u>11001</u>, 1111 used as filler for <u>bits 8 to 5 of last octet</u> bit 4 to 1 of octet n encoding digit 2n-1 bit 8 to 5 of octet n encoding digit 2n Number of <u>hexa</u>decimal digit shall be 15.

NEXT MODIFIED SECTION

9.3.4 Information Element Definitions

**** LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED

-- I

IMEI := TBCD-OCTET STRING (SIZE (8)) -- Reference: 23.003

**** LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED