3GPP TSG CN Plenary **Tdoc NP-010071**
Meeting #11, Palm Springs, U.S.A
14th - 16th March 2001

Source: **TSG CN WG4**

Title: **CRs to R97 on Work Item GTP Enhancement**

Agenda item: **7.14**

Document for: **APPROVAL**

Introduction:

This document contains **3** CRs on **R97** Work Item **"GTP Enhancement"**, that have been agreed by **TSG CN WG4**, and are forwarded to TSG CN Plenary meeting #11 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
09.60	A101	1	N4-010447	R97	IMSI Encoding Clarification	F	6.9.0
09.60	A100	1	N4-010448	R98	IMSI Encoding Clarification	A	7.6.0
29.060	A180	1	N4-010449	R99	IMSI Encoding Clarification	A	3.7.0

3GPP TSG-CN4 Meeting #7 ***Tdoc N4-010448***
Sophia Antipolis, France. 26 February – 2 March 2001 **(Revision of Tdoc N4-010353)**

CR-Form-v3

CHANGE REQUEST

⌘ **09.60** **CR** **A100** ⌘ rev **1** ⌘ Current version: **7.6.0** ⌘

*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:	⌘	IMSI Encoding Clarification.
Source:	⌘	CN4
Work item code:	⌘	GTP enhancements
Date:	⌘	27 February 2001
Category:	⌘	**A**
Release:	⌘	R98

Use one of the following categories:
F *(essential 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:	⌘	The IMSI encoding definition in GTP spec. 09.60 is ambiguous whether to pad the 3rd MNC digits with Hex F or just discard the 3rd MNC digits with shifting the remaining IMSI digits leftward, in case of 2 digit MNC, especially when comparing the encoding format of RAI IE which shares the common source of MCC and MNC digits. It is also very confusing how to counter the order and number of the IMSI digits in various situations: 2 digits MNC and 3 digits MNC. Hence, there is a strong requirement to clearly specify the encoding format of IMSI IE in GTP spec.
Summary of change:	⌘	Explicitly specify that no padding nibble would be used between MCC and MNC if MNC is 2 digits long.
Consequences if not approved:	⌘	GTP won't work correctly.

Clauses affected:	⌘	7.9.2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

7.9.2 International Mobile Subscriber Identity (IMSI)

The IMSI shall be the subscriber identity of the MS. The IMSI is defined in GSM 03.03.

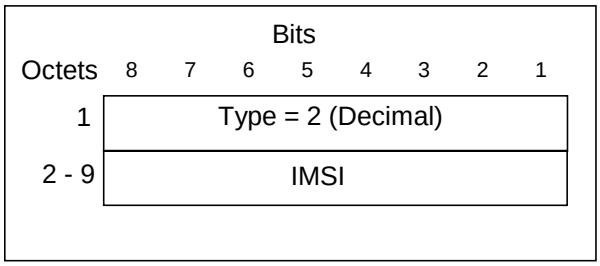

Figure 9: IMSI information element

The IMSI is TBCD-coded with a fixed length of 8 octets. Bits 8765 of octet n+1 encodes digit 2n, bits 4321 of octet n+1 encodes digit 2n-1.Unused half octets shall be coded as '1 1 1 1' or F(HEX). Digits are packed contiguously with no internal padding.

*** *End* ***

3GPP TSG-CN4 Meeting #7 ***Tdoc N4-010447***
Sophia Antipolis, France. 26 February – 2 March 2001 **(Revision of Tdoc N4-010354)**

CR-Form-v3

CHANGE REQUEST

⌘ **09.60** **CR** **A101** ⌘ rev **1** ⌘ Current version: **6.9.0** ⌘

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

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

Title:	⌘	IMSI Encoding Clarification.
Source:	⌘	CN4
Work item code:	⌘	GTP enhancements
Date:	⌘	27 February 2001
Category:	⌘	**F** (Essential correction)
Release:	⌘	R97

Use one of the following categories:
F *(essential 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:	⌘	The IMSI encoding definition in GTP spec. 09.60 is ambiguous whether to pad the 3rd MNC digits with Hex F or just discard the 3rd MNC digits with shifting the remaining IMSI digits leftward, in case of 2 digit MNC, especially when comparing the encoding format of RAI IE which shares the common source of MCC and MNC digits. It is also very confusing how to counter the order and number of the IMSI digits in various situations: 2 digits MNC and 3 digits MNC. Hence, there is a strong requirement to clearly specify the encoding format of IMSI IE in GTP spec.
Summary of change:	⌘	Explicitly specify that no padding nibble would be used between MCC and MNC if MNC is 2 digits long.
Consequences if not approved:	⌘	GTP won't work correctly.

Clauses affected:	⌘	7.9.2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

7.9.2 International Mobile Subscriber Identity (IMSI)

The IMSI shall be the subscriber identity of the MS. The IMSI is defined in GSM 03.03.

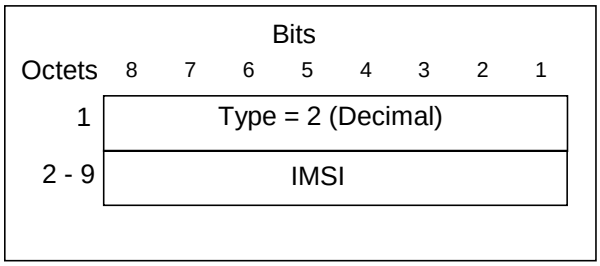

Figure 9: IMSI information element

The IMSI is TBCD-coded with a fixed length of 8 octets. Bits 8765 of octet n+1 encodes digit 2n, bits 4321 of octet n+1 encodes digit 2n-1.Unused half octets shall be coded as '1 1 1 1' or F(HEX). Digits are packed contiguously with no internal padding.

*** *End* ***

3GPP TSG-CN4 Meeting #7 ***Tdoc N4-010449***
Sophia Antipolis, France. 26 February – 2 March 2001 **(Revision of Tdoc N4-010352)**

CR-Form-v3

CHANGE REQUEST

⌘ **29.060** **CR** **180** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

*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:	⌘	IMSI Encoding Clarification.
Source:	⌘	CN4
Work item code:	⌘	GTP enhancements ***Date:*** ⌘ 27 February 2001
Category:	⌘	**A** ***Release:*** ⌘ R99

Use one of the following categories:	*Use one of the following releases:*	
F *(essential correction)*	*2*	*(GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96*	*(Release 1996)*
B *(Addition of feature),*	*R97*	*(Release 1997)*
C *(Functional modification of feature)*	*R98*	*(Release 1998)*
D *(Editorial modification)*	*R99*	*(Release 1999)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*REL-4*	*(Release 4)*
	REL-5	*(Release 5)*

Reason for change:	⌘	The IMSI encoding definition in GTP spec. 09.60 is ambiguous whether to pad the 3rd MNC digits with Hex F or just discard the 3rd MNC digits with shifting the remaining IMSI digits leftward, in case of 2 digit MNC, especially when comparing the encoding format of RAI IE which shares the common source of MCC and MNC digits. It is also very confusing how to counter the order and number of the IMSI digits in various situations: 2 digits MNC and 3 digits MNC. Hence, there is a strong requirement to clearly specify the encoding format of IMSI IE in GTP spec.
Summary of change:	⌘	Explicitly specify that no padding nibble would be used between MCC and MNC if MNC is 2 digits long.
Consequences if not approved:	⌘	GTP won't work correctly.

Clauses affected:	⌘	7.7.2
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

7.7.2 International Mobile Subscriber Identity (IMSI)

The IMSI shall be the subscriber identity of the MS. The IMSI is defined in 3G TS 23.003.

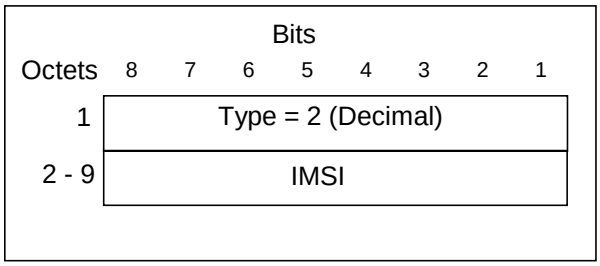

Figure 10: IMSI information element

The IMSI is TBCD-coded with a fixed length of 8 octets. Bits 8765 of octet n+1 encodes digit 2n, bits 4321 of octet n+1 encodes digit 2n-1.Unused half octets shall be coded as '1 1 1 1' or F(HEX). Digits are packed contiguously with no internal padding.

*** *End* ***