3GPP TSG_CN#7 **NP-000074**

ETSI SMG3 Plenary Meeting #7,
Madrid, Spain
13th – 15th March 2000

Agenda item: **5.2.3**

Source: **TSG_N WG2**

Title: **CRs to 3G Work Item PCS1900 Harmonisation**

Introduction:

This document contains **"2"** CRs on **Work Item PCS1900 Harmonisation,** that have been agreed by **TSG_N WG2,** and are forwarded to **TSG_N Plenary** meeting #7 for approval.

TDoc	SPEC	CR	REV	CAT	Rel	Old vers	New vers	SUBJECT
N2B000343	09.60	A082	2	F	R98	7.3.0		Use of 3 Digit MNCs in GTP for R'98
N2B000342	29.060	058	1	A	R99	3.3.0		Use of 3 Digit MNCs in GTP for R'99

3GPP TSG-CN WG2
Milano, Italy, 14 - 16 February 2000

Document N2B000343
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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09.60	**CR**	**082r2**	Current Version:	7.3.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN#7 *list expected approval meeting # here ↑*

for approval [X] for information [ ]

strategic [ ] non-strategic [X] *(for SMG use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*

(U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N2 **Date:** 15 Feb. 2000

Subject: Use of 3 Digit MNCs in GTP for R'98

Work item: PCS-1900 Harmonisation

Category: *(only one category shall be marked with an X)*

F	Correction	[X]
A	Corresponds to a correction in an earlier release	[ ]
B	Addition of feature	[ ]
C	Functional modification of feature	[ ]
D	Editorial modification	[ ]

Release:

Phase 2	[ ]
Release 96	[ ]
Release 97	[ ]
Release 98	[X]
Release 99	[ ]
Release 00	[ ]

Reason for change:

Category C1:

For harmonisation with PCS 1900, the optional ability to use a 3-digit MNC in the TID, the IMSI and the RAI information elements has been added. If this change isn't introduced interworking problems will occur.

Clauses affected: 6, 7.9.2, 7.9.3

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:	29.060-058r1
Other GSM core specifications	[ ]	→ List of CRs:	
MS test specifications	[ ]	→ List of CRs:	
BSS test specifications	[ ]	→ List of CRs:	
O&M specifications	[ ]	→ List of CRs:	

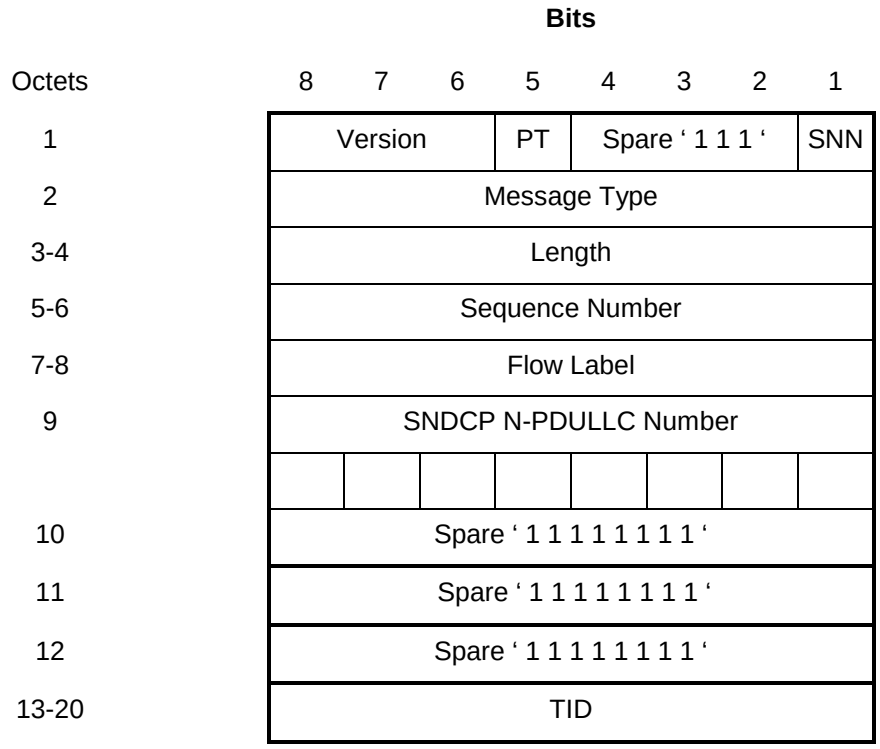
Other comments:

6 GTP header

The GTP header shall be a fixed format 20-octet header used for all GTP messages.

- Version bits: If the PT bit is ‘1’ (indicating a GTP message), the Version shall be set to 0 to indicate this, the first version of GTP. For the treatment of other versions, see section 10.1.1, "Different GTP versions".
- PT (Protocol Type) bit indicates whether the message is a GTP message (when PT is ‘1’) or a GTP’ message (when PT is ‘0’). GTP is described in this document and the GTP’ protocol in GSM 12.15. Note that the interpretation of the header fields may be different in GTP’ than in GTP.
- Spare ‘1’: These unused bits shall be set to ‘1’ by the sending side and shall not be evaluated by the receiving side.
- SNN is a flag indicating if SNDCP N-PDU Number is included or not.
- Message Type indicates the type of GTP message.
- Length indicates the length in octets of the GTP message (G-PDU), excluding the GTP header. Bit 8 of octet 3 is the most significant bit and bit 1 of octet 4 is the least significant bit of the length field.
- Sequence Number is a transaction identity for signalling messages and an increasing sequence number for tunnelled T-PDUs.
- SNDCP N-PDU Number is used at the Inter SGSN Routeing Area Update procedure to co-ordinate the data transmission between the MS and SGSN.
- TID is the tunnel identifier that points out MM and PDP contexts (see Figure 3: Tunnel ID (TID) format).
- The flow label identifies unambiguously a GTP flow.

All fields in the GTP header shall always be present but the content of the fields differs depending on if the header is used for signalling messages (see the sub-section Usage of the GTP Header in the section Signalling Plane) or T-PDUs (see the sub-section Usage of the GTP Header in the section Transmission Plane).



1) LLC frame number (continued)

Figure 2: Outline of GTP header

Octets	Bits 8	7	6	5	4	3	2	1
1	MCC digit 2				MCC digit 1			
2	MNC digit 1				MCC digit 3			
3	MSIN digit 1				MNC digit 2			
4	MSIN digit 3				MSIN digit 2			
5	MSIN digit 5				MSIN digit 4			
6	MSIN digit 7				MSIN digit 6			
7	MSIN digit 9				MSIN digit 8			
8	NSAPI				MSIN digit 10			

Octets	Bits 8	7	6	5	4	3	2	1
	IMSI digit 2				IMSI digit 1			
	IMSI digit 4				IMSI digit 3			
	IMSI digit 6				IMSI digit 5			
	IMSI digit 8				IMSI digit 7			
	IMSI digit 10				IMSI digit 9			
	IMSI digit 12				IMSI digit 11			
	IMSI digit 14				IMSI digit 13			
	NSAPI				IMSI digit 15			

The IMSI is defined in GSM 03.03 (and includes MCC, MNC and MSIN).

NOTE 1: ~~The MCC, MNC and MSIN are parts of the IMSI defined in GSM 03.03.~~ For Anonymous Access, the MSIN part of the IMSI shall be replaced by a number assigned by the particular PLMN. The assigned number shall not collide with any MSIN used in the PLMN and shall be unique within the PLMN.

~~NOTE 2: MSIN digits not used shall be set to F (HEX).~~

Figure 3: Tunnel ID (TID) format

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.

	8	7	6	5	4	3	2	1
1	Type = 2							
2	MCC digit 2				MCC digit 1			
3	1	1	1	1	MCC digit 3			
4	MNC digit 2				MNC digit 1			
5	MSIN digit 2				MSIN digit 1			
6	~~MSIN digit 4~~				~~MSIN digit 3~~			
7	MSIN digit 6				MSIN digit 5			
8	MSIN digit 8				MSIN digit 7			
9	MSIN digit 10				MSIN digit 9			

~~MSIN digits not used shall be set to F (HEX).~~

~~The MCC, MNC and MSIN are defined in GSM 03.03.~~

Octets	Bits 8	7	6	5	4	3	2	1
1	Type = 2 (Decimal)							
2 - 9	IMSI							

Figure 9: IMSI information element

The encoding of the IMSI information element is defined in GSM 04.08.

7.9.3 Routeing Area Identity (RAI)

The RAI information element is given by:

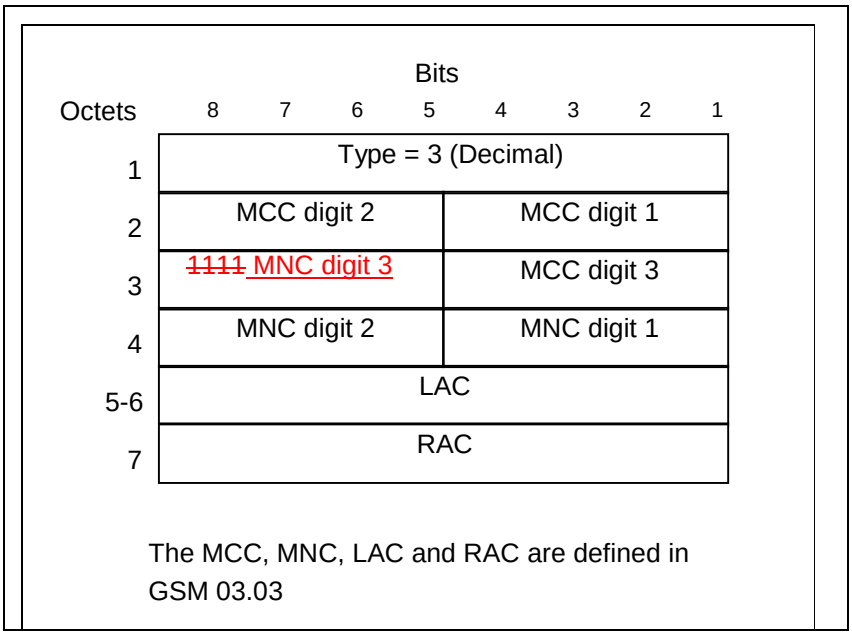


Figure 10: RAI information element

If an administration decides to include only two digits in the MNC, then bits 5 to 8 of octet 3 are coded as "1111".

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e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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29.060	**CR**	**058r1**	Current Version:	3.3.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN#07 *list expected approval meeting # here ↑*

for approval [X]
for information [ ]

strategic [ ]
non-strategic [X]
(for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*

(U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N2 **Date:** 15 Feb. 2000

Subject: Use of 3 Digit MNCs in GTP for R'99

Work item: PCS-1900 Harmonisation

Category: *(only one category shall be marked with an X)*

F	Correction	[ ]
A	Corresponds to a correction in an earlier release	[X]
B	Addition of feature	[ ]
C	Functional modification of feature	[ ]
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Phase 2	[ ]
Release 96	[ ]
Release 97	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

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Clauses affected: 7.7.2, 7.7.3

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Other GSM core specifications	[ ]	→ List of CRs: 09.60-A082r2
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

7.7.2 International Mobile Subscriber Identity (IMSI)

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

	8	7	6	5	4	3	2	1
1	Type = 2							
2	MCC digit 2				MCC digit 1			
3	1	1	1	1	MCC digit 3			
4	MNC digit 2				MNC digit 1			
5	MSIN digit 2				MSIN digit 1			
6	~~MSIN digit 4~~				~~MSIN digit 3~~			
7	MSIN digit 6				MSIN digit 5			
8	MSIN digit 8				MSIN digit 7			
9	MSIN digit 10				MSIN digit 9			

~~MSIN digits not used shall be set to F (HEX).~~

~~The MCC, MNC and MSIN are defined in GSM 03.03.~~

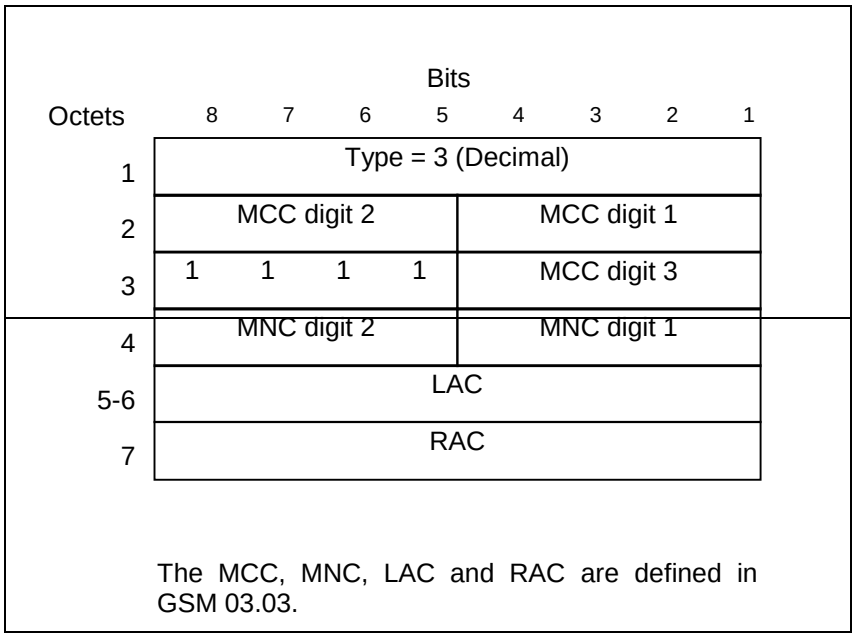
Octets	Bits 8	7	6	5	4	3	2	1
1	Type = 2 (Decimal)							
2 - 9	IMSI							

Figure 10: IMSI information element

The encoding of the IMSI information element is defined in TS 24.008.

7.7.3 Routeing Area Identity (RAI)

The RAI information element is given by:



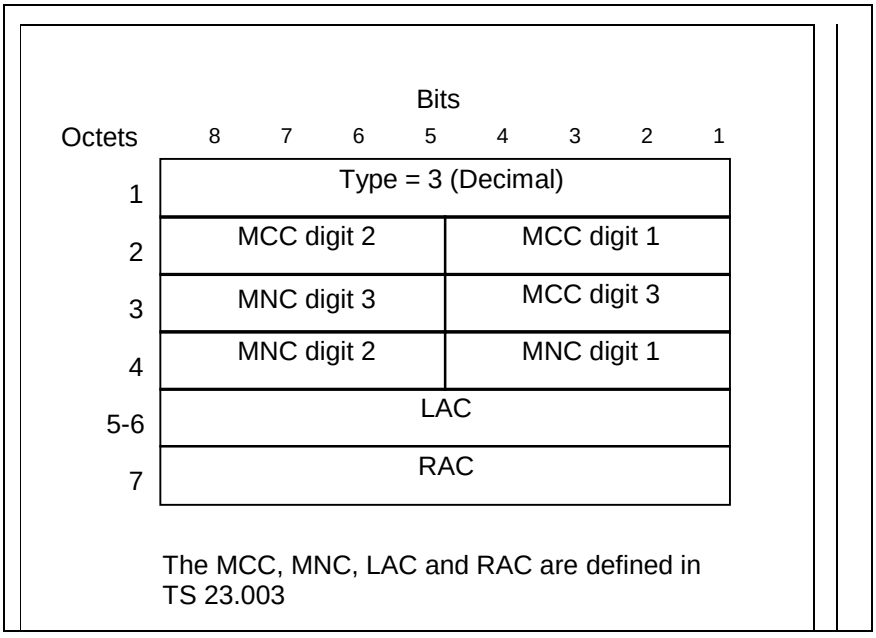


Figure 11: RAI information element

If an administration decides to include only two digits in the MNC, then bits 5 to 8 of octet 3 are coded as "1111".