Source:	**TSG CN WG3**
Title:	**CRs to Rel-6 on Work Item Mn i/f**
Agenda item:	**9.17**
Document for:	**APPROVAL**

Introduction:

This document contains **1** CR to **Rel-6 on Work Item Mn i/f**, that have been agreed by **TSG CN WG3**, and are forwarded to TSG CN Plenary for approval.

WG_tdoc	Spec	CR	R	Cat	Title	Rel	C_Ver
N3-040125	29.163	033	2	F	Impact of Forking on Mn procedures	Rel-6	6.1.0

3GPP TSG-CN WG3 Meeting #31
Atlanta, USA. 16th - 20th February 2004.

N3-040125

CR-Form-v7

CHANGE REQUEST

⌘ **29.163** CR **033** ⌘rev **2** ⌘ Current version: **6.1.0** ⌘

*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: ⌘	Impact of Forking on Mn procedures
Source: ⌘	TSG_CN WG3

Work item code:⌘ IMS-CCR-IWCS   ***Date:*** ⌘ 06.02.2004

Category: ⌘ **F**   ***Release:*** ⌘ Rel-6

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:
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: ⌘	Impact of Forking on Mn procedures not described. Forking is allowed in IMS.
Summary of change:⌘	Impact of Forking on Mn procedures added
Consequences if not approved: ⌘	Specification incomplete
Clauses affected: ⌘	9.2.3

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

Other comments: ⌘

9.2.3.1.5   Called party alerting

The MGCF shall request the IM-MGW to provide an awaiting answer indication (ringing tone) to the calling party using the Send Tone procedure (signals 21 and 22 in figure 37) , when the first of the following conditions is satisfied:

- the MGCF receives a the first 180 Ringing message

- Timer T i/w$_1$ expires

- Timer T i/w$_2$ expires

next modified Section

9.2.3.2.5   Called party alerting

The MGCF shall request the IM-MGW to provide an awaiting answer indication (ringing tone) to the calling party using the Send Tone procedure (signals 20 and 21 in figure 38) , when the first of the following conditions is satisfied:

- the MGCF receives a the first 180 Ringing message,

- Timer T i/w$_1$ expires,

- Timer T i/w$_2$ expires.

next modified Section

9.2.3.3.4   IM CN subsystem side session establishment

The MGCF shall use the Configure IMS Resources procedure (signals 9 and 10 in figure 39) to provide configuration data (derived from SDP received in signal 8 in figure 39 and local configuration data) as detailed below:

next modified Section

9.2.3.3.5   Called party alerting

The MGCF shall request the IM-MGW to provide an awaiting answer indication (ringing tone) to the calling party using the Send TDM Tone procedure (signals 20 and 21in figure 39) , when the first of the following conditions is satisfied:

- the MGCF receives a the first 180 Ringing message

- Timer T i/w$_1$ expires

- Timer T i/w$_2$ expires

next modified Section

9.2.3.4   Handling of Forking

The procedures desccribed in clauses 9.2.3.1 to 9.2.3.3 shall be applied with the following additions.

9.2.3.4.1   Detection of Forking

According to SIP procedures, the O-MGCF inspects the tags in the "to" SIP header fields of provisional and final responses to identify the SIP dialogue the response belongs to. If responses belonging to different dialogues are received (signals 8 and 13 in figure 39a) , the INVITE request (signal 6 in figure 39a) has been forked.

9.2.3.4.2 IM CN subsystem side session establishment

If SDP is received in a provisional response and more than one SIP dialogue exists (signal 13 in figure 39a), the MGCF may either refrain from reconfiguring the IM-MGW, or it may use the Configure IMS Resources procedure (signals 14 and 15 in figure 39a) as detailed below:

- The MGCF may compare the selected local codecs of the different dialogues (which the MGCF selects due to the received SDP answer and local configuration data). If different local codecs are selected for the different dialogues, the MGCF may include all these codecs in the "local IMS resources", and set the "reserve value" to indicate that resources for all these codecs shall be reserved. Alternativly, the MGCF may only include the codecs received in the last SDP in the "local IMS resources".

- The MGCF may update the "remote IMS resources" with the information received in the latest SDP. The MGCF should provide the remote IP address and UDP port, and the remote codec selected from the received SDP and local configuration data.

Note: The behaviour in the second bullet is beneficial if forking is applied in a sequential manner.
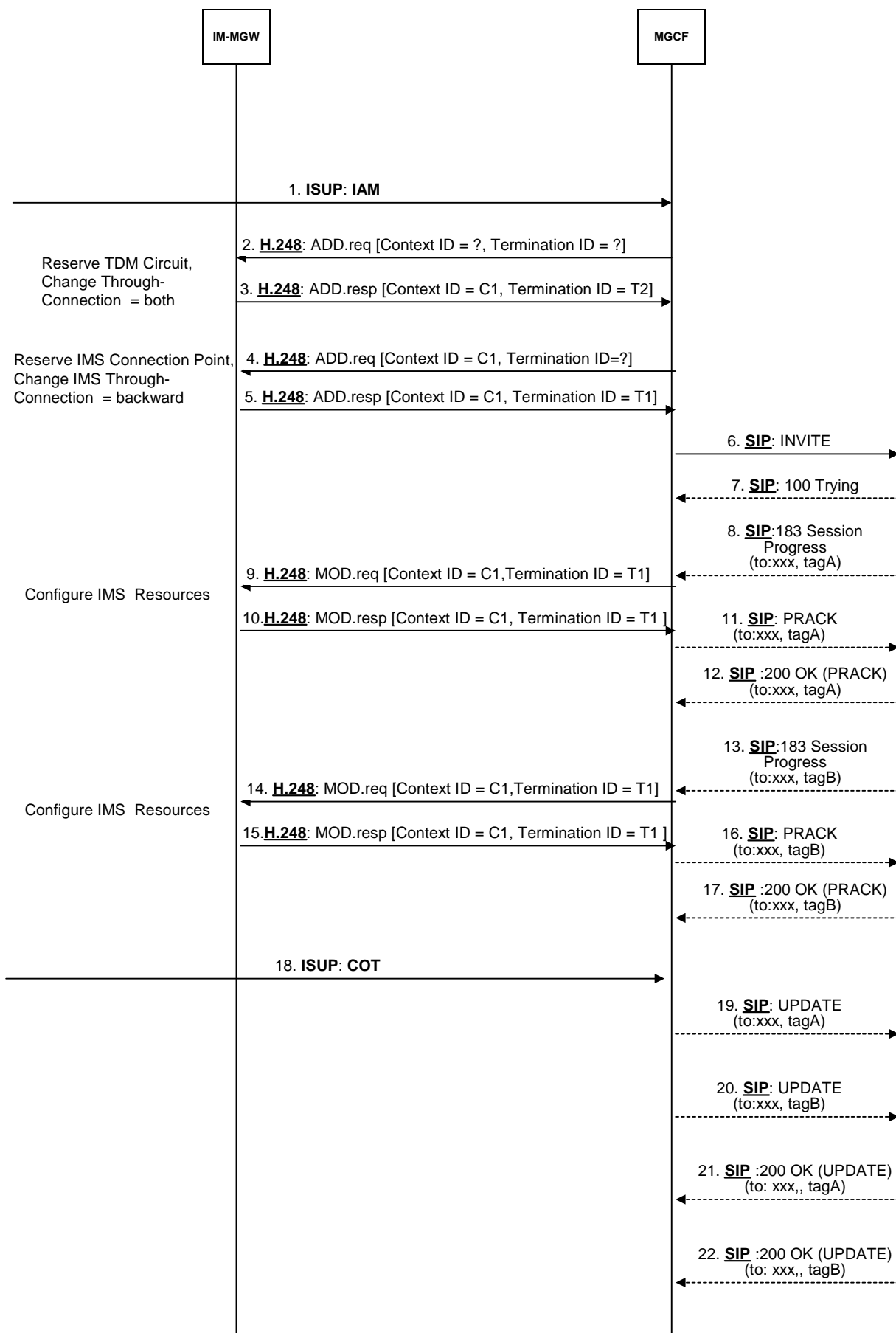
9.2.3.4.3 IM CN subsystem side session establishment completion

Upon reception of the first final 2xx response (signal 32 in figure 39a), the MGCF shall use the Configure IMS Resources procedure (signals 35 and 36 in figure 39a) as detailed below unless the IM-MGW is already configured accordingly:

- If the remote IMS resources configured at the IM-MGW do not match the remote resources selected for the established dialogue of the final response, the MGCF shall provide the remote IP address and UDP port from the latest received SDP of this established dialogue, and the remote codec selected from the latest received SDP of this established dialogue and local configuration data within the "remote IMS resources".

- If the local IMS resources configured at the IM-MGW contain more codecs than selected for the established dialogue of the final response, the MGCF should update the "local IMS resources" with the selected local codec derived from the latest SDP of this established dialogue and local configuration data. The "reserve value" may be cleared unless it is required for DTMF.

9.2.3.4.4 Message sequence chart

Figure 39a shows an example message sequence chart for an CS network originating Session Setup with ISUP, where forking occurs.

IM-MGW   MGCF

1. **ISUP**: **IAM**

2. **H.248**: ADD.req [Context ID = ?, Termination ID = ?]

Reserve TDM Circuit,
Change Through-
Connection = both

3. **H.248**: ADD.resp [Context ID = C1, Termination ID = T2]

Reserve IMS Connection Point,   4. **H.248**: ADD.req [Context ID = C1, Termination ID=?]
Change IMS Through-
Connection = backward

5. **H.248**: ADD.resp [Context ID = C1, Termination ID = T1]

6. **SIP**: INVITE

7. **SIP**: 100 Trying

8. **SIP**:183 Session
Progress
(to:xxx, tagA)

9. **H.248**: MOD.req [Context ID = C1,Termination ID = T1]

Configure IMS Resources

10.**H.248**: MOD.resp [Context ID = C1, Termination ID = T1]

11. **SIP**: PRACK
(to:xxx, tagA)

12. **SIP** :200 OK (PRACK)
(to:xxx, tagA)

13. **SIP**:183 Session
Progress
(to:xxx, tagB)

14. **H.248**: MOD.req [Context ID = C1,Termination ID = T1]

Configure IMS Resources

15.**H.248**: MOD.resp [Context ID = C1, Termination ID = T1]

16. **SIP**: PRACK
(to:xxx, tagB)

17. **SIP** :200 OK (PRACK)
(to:xxx, tagB)

18. **ISUP**: **COT**

19. **SIP**: UPDATE
(to:xxx, tagA)

20. **SIP**: UPDATE
(to:xxx, tagB)

21. **SIP** :200 OK (UPDATE)
(to: xxx,, tagA)

22. **SIP** :200 OK (UPDATE)
(to: xxx,, tagB)

Figure 39a/1: CS Network Originating Session with forking, ISUP (message sequence chart)
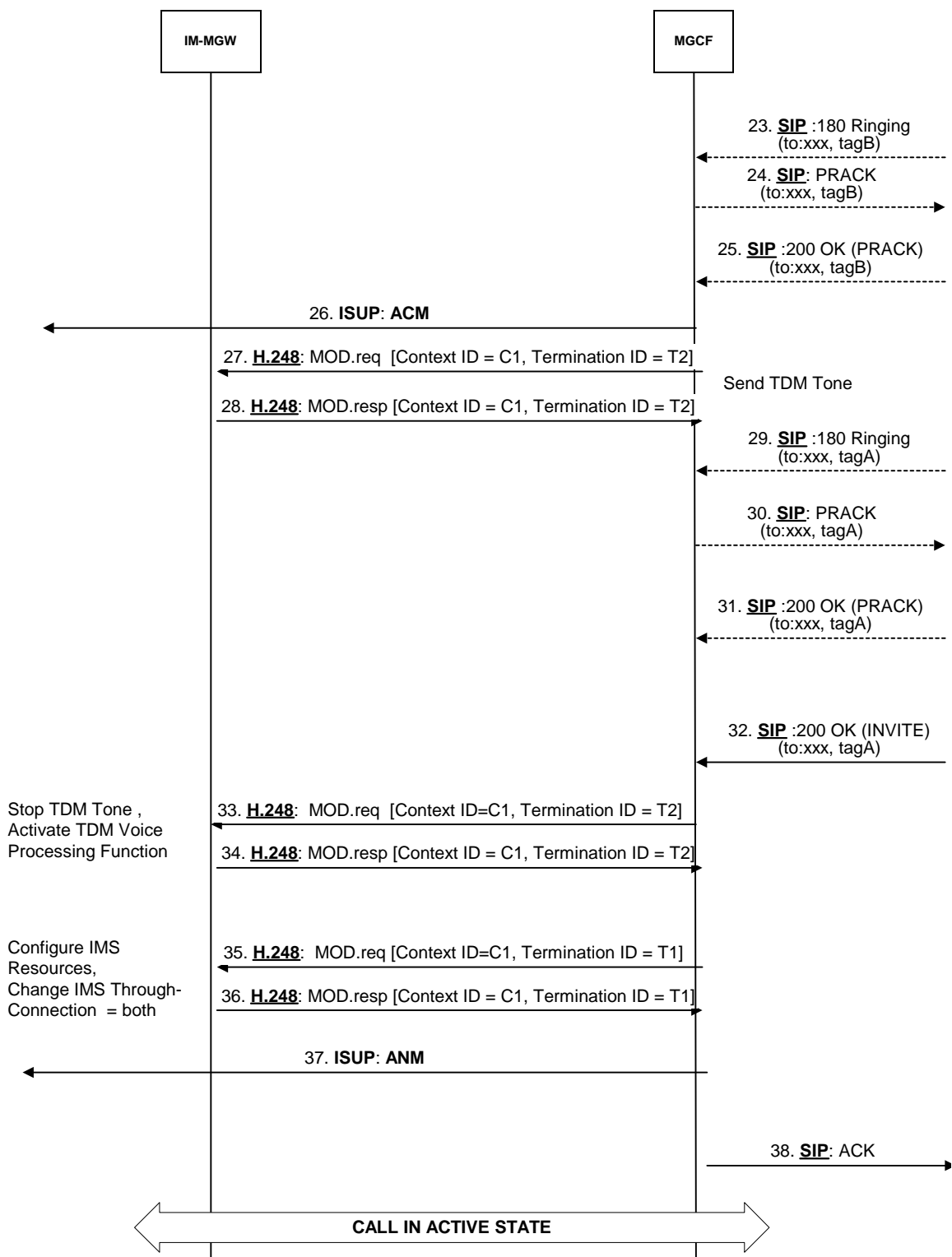
Figure 39a/2: CS Network Originating Session with forking, ISUP (message sequence chart continue)