3GPP TSG-CN Meeting #24 **NP-040241**
2nd – 4th June 2004. Seoul, Korea.

Source: **TSG CN WG3**

Title: **CRs to Rel-6 on Work Item "IMS-CCR-IWCS"**

Agenda item: **9.12**

Document for: **APPROVAL**

Introduction:

This document contains 4 CRs to Rel-6 on Work Item "IMS-CCR-IWCS" 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
N3-040207	29.163	037	1	F	Message sequence correction	Rel-6	6.2.0
N3-040208	29.163	038	1	F	Originated/terminated correction	Rel-6	6.2.0
N3-040286	29.163	045		F	Notify IMS RTP Tel Event (same as 'Report DTMF') message sequence shows IEs that are not used with this procedure	Rel-6	6.2.0
N3-040308	29.163	046		F	Correction of sub-clause 7.2.3.2.5.1 Backward call indicators	Rel-6	6.2.0

3GPP TSG-CN WG3 Meeting #31bis **N3-040207**
Sophia Antipolis, France, 29th March- 2nd April 2004.

CR-Form-v7

CHANGE REQUEST

⌘ **29.163** **CR** **037** ⌘ **rev** **1** ⌘ Current version: **6.2.0** ⌘

*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 ☒

Title:	⌘	Message sequence implies that CS side 'ACM' message is sent only after 200 OK to PRACK is received
Source:	⌘	TSG_CN WG3
Work item code:	⌘	IMS-CCR-IWCS
Date:	⌘	30/03/2004
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:	⌘	For CS originated sessions the message sequence is misleading and not aligned with Q.1912.5 (Figure III.6/Q.1912.5)
Summary of change:	⌘	The order of messages are changed in Figure 37/1, Figure 38/1 and in Figure 39/1 so that 'ACM' message is sent and ringing tone is connected before 200 OK to PRACK is received
Consequences if not approved:	⌘	Sending of ACM message and connecting the ringing tone is unnecessarily delayed by waiting to 200 OK to PRACK especially if those messages need to be retransmitted

Clauses affected:	⌘	9.2.3.1.5, 9.2.3.1.10, 9.2.3.2.5, 9.2.3.2.10, 9.2.3.3.5 and 9.2.3.3.12

Other specs affected: ⌘	Y	N		⌘
		X	Other core specifications	
		X	Test specifications	
		X	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/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.

First modified Section

9.2.3.1.5 Called party alerting

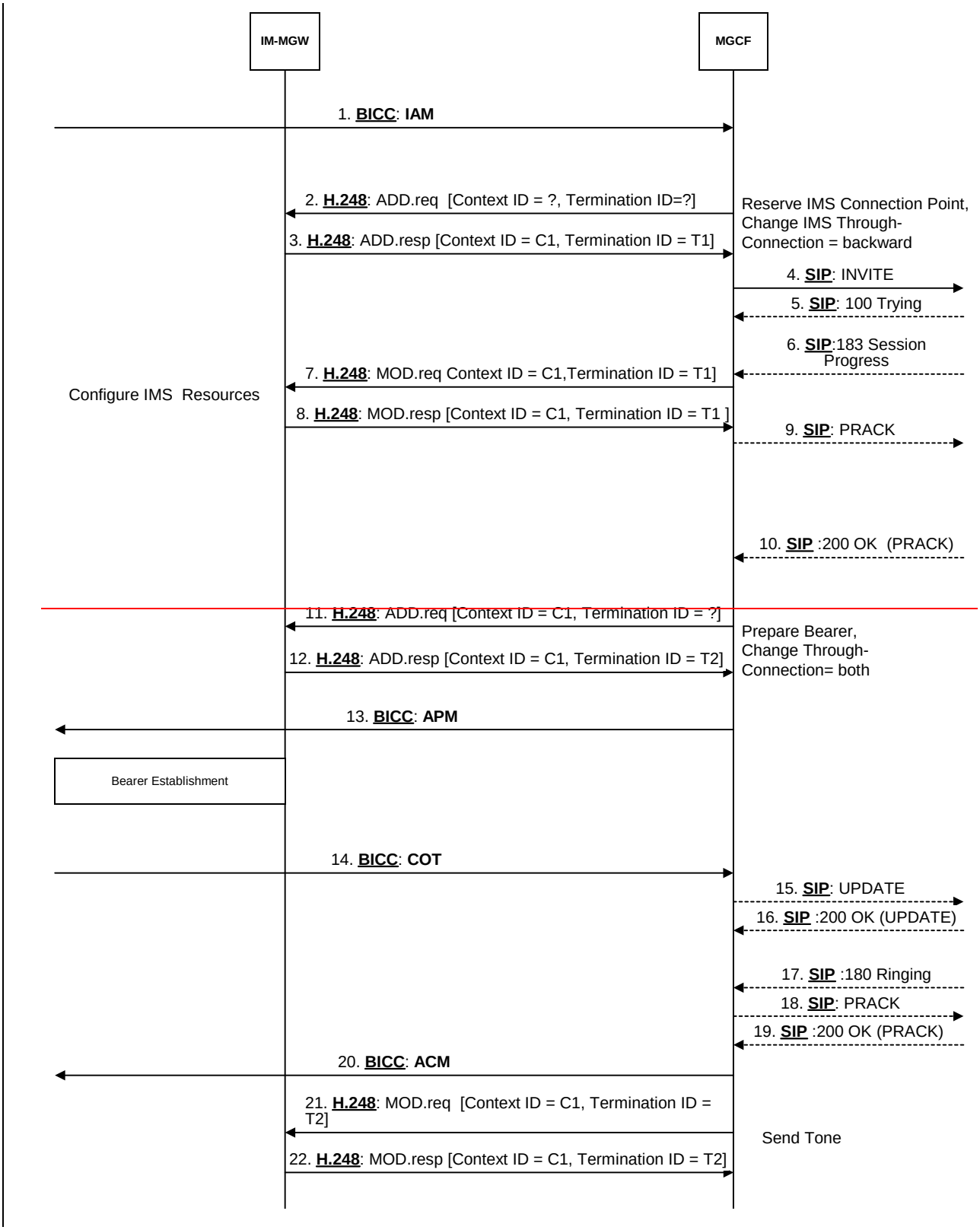
The MGCF shall request the IM-MGW to provide an awaiting answer indication (ringing tone) to the calling party using the Send Tone procedure (signals ~~21~~ 20 and ~~22~~ 21 in figure 37) , when the first of the following conditions is satisfied:

- the MGCF receives a 180 Ringing message
- Timer T i/w_1 expires
- Timer T i/w_2 expires

Next modified Section

9.2.3.1.10 Message sequence chart

Figure 37 shows the message sequence chart for the CS network originating session with BICC forward bearer establishment. In the chart the MGCF requests the seizure of the IM CN subsystem side termination and CS network side bearer termination. When the MGCF receives an answer indication, it requests the IM-MGW to both-way through-connect the terminations


IM-MGW
MGCF
1. BICC: IAM
2. H.248: ADD.req [Context ID = ?, Termination ID=?]
Reserve IMS Connection Point, Change IMS Through-Connection = backward
3. H.248: ADD.resp [Context ID = C1, Termination ID = T1]
4. SIP: INVITE
5. SIP: 100 Trying
6. SIP:183 Session Progress
7. H.248: MOD.req Context ID = C1,Termination ID = T1]
Configure IMS Resources
8. H.248: MOD.resp [Context ID = C1, Termination ID = T1]
9. SIP: PRACK
10. SIP :200 OK (PRACK)
11. H.248: ADD.req [Context ID = C1, Termination ID = ?]
Prepare Bearer, Change Through-Connection= both
12. H.248: ADD.resp [Context ID = C1, Termination ID = T2]
13. BICC: APM
Bearer Establishment
14. BICC: COT
15. SIP: UPDATE
16. SIP :200 OK (UPDATE)
17. SIP :180 Ringing
18. SIP: PRACK
19. SIP :200 OK (PRACK)
20. BICC: ACM
21. H.248: MOD.req [Context ID = C1, Termination ID = T2]
Send Tone
22. H.248: MOD.resp [Context ID = C1, Termination ID = T2]

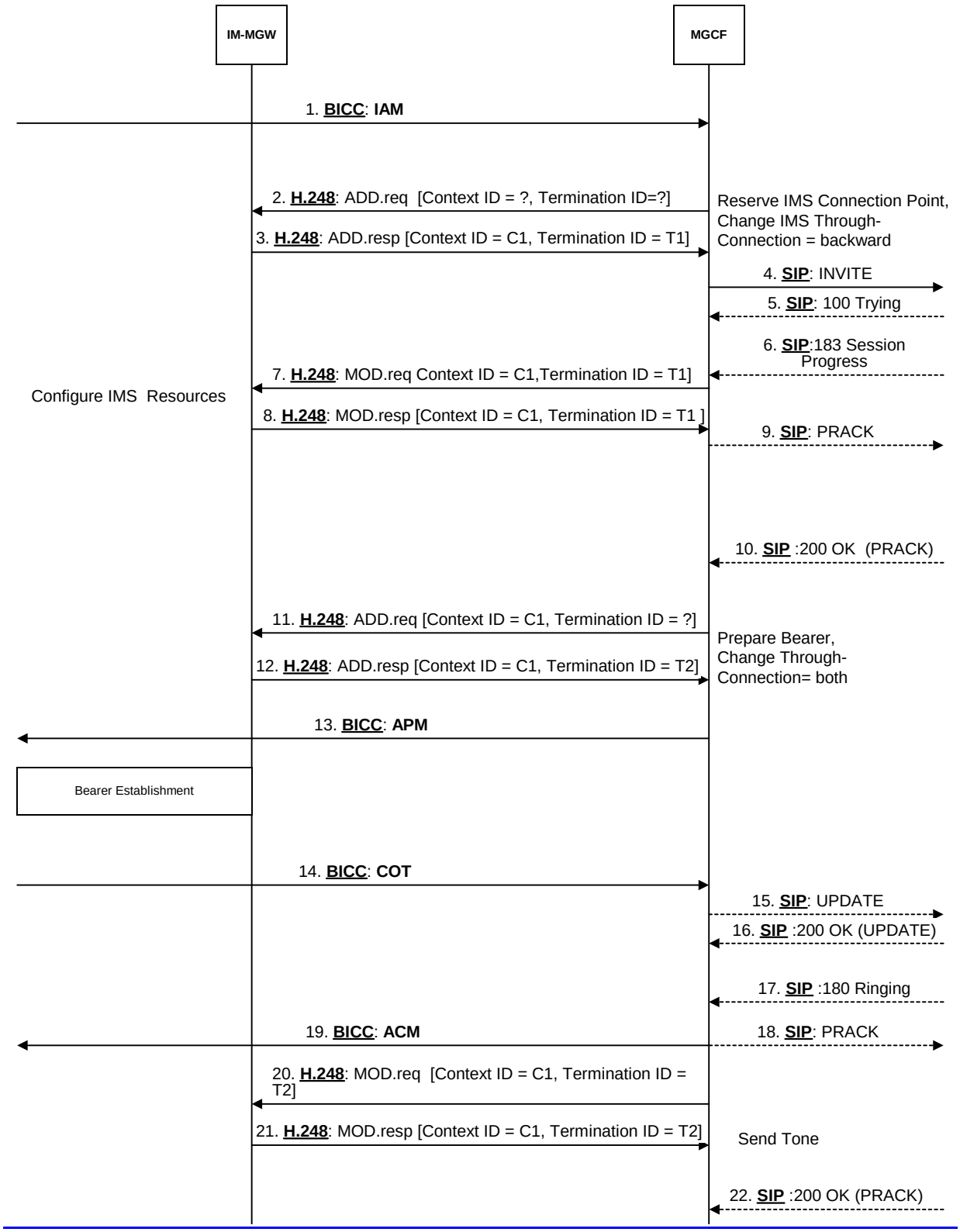


Figure 37/1: Basic CS Network Originating Session, Forward Bearer Establishment (message sequence chart)

Third modified Section

9.2.3.2.5 Called party alerting

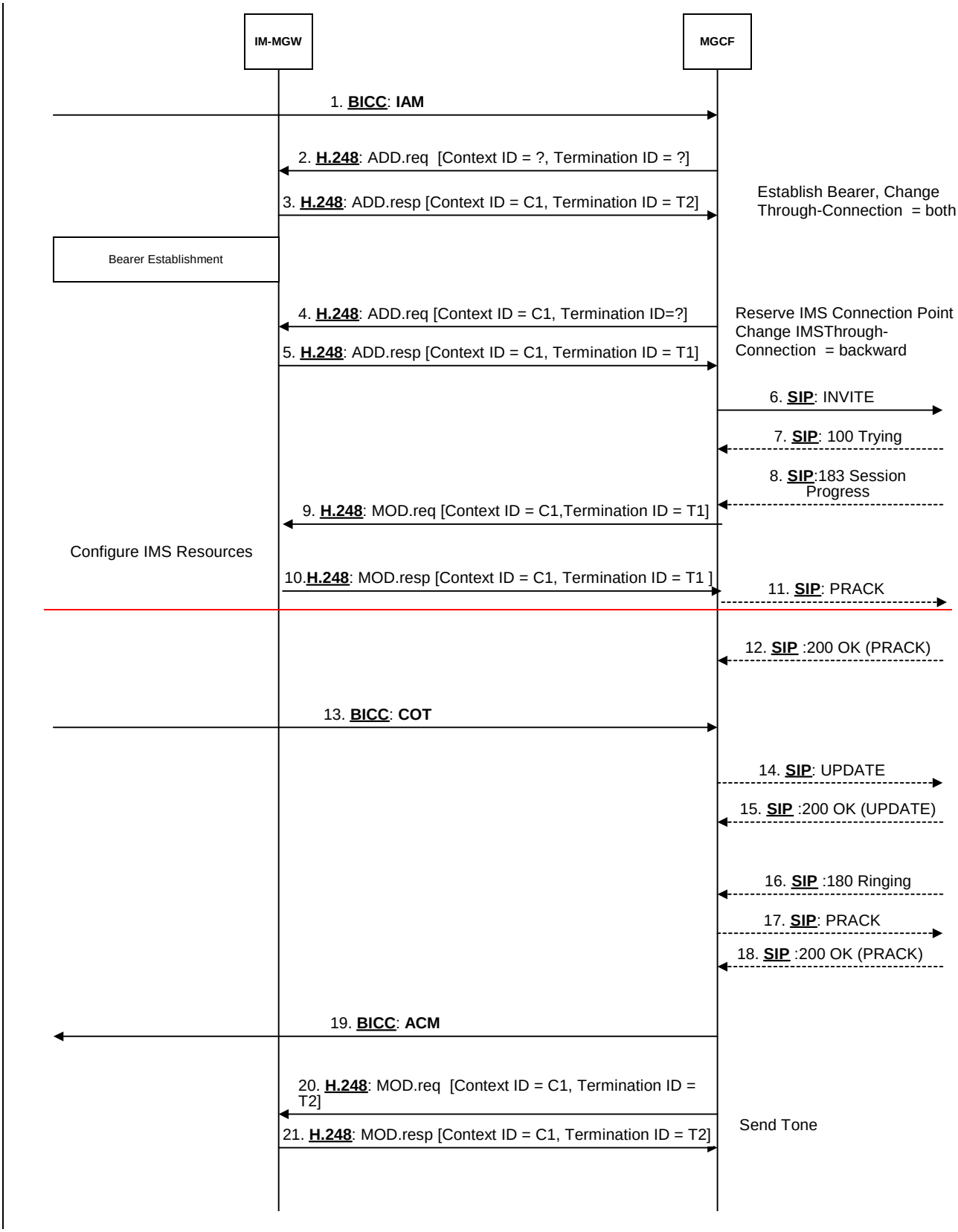
The MGCF shall request the IM-MGW to provide an awaiting answer indication (ringing tone) to the calling party using the Send Tone procedure (signals ~~20~~ 19 and ~~21~~ 20 in figure 38) , when the first of the following conditions is satisfied:

- the MGCF receives a 180 Ringing message,
- Timer T i/w_1 expires,
- Timer T i/w_2 expires.

Next modified Section

9.2.3.2.10 Message sequence chart

Figure 38 shows the message sequence chart for the CS network originating session with BICC backward bearer establishment. In the chart the MGCF requests seizure of the IM CN subsystem side termination and CS network side bearer termination. When the MGCF receives an answer indication, it requests the IM-MGW to both-way through-connect the terminations.


IM-MGW
MGCF
1. BICC: IAM
2. H.248: ADD.req [Context ID = ?, Termination ID = ?]
3. H.248: ADD.resp [Context ID = C1, Termination ID = T2]
Establish Bearer, Change Through-Connection = both
Bearer Establishment
4. H.248: ADD.req [Context ID = C1, Termination ID=?]
Reserve IMS Connection Point
Change IMSThrough-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
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
12. SIP :200 OK (PRACK)
13. BICC: COT
14. SIP: UPDATE
15. SIP :200 OK (UPDATE)
16. SIP :180 Ringing
17. SIP: PRACK
18. SIP :200 OK (PRACK)
19. BICC: ACM
20. H.248: MOD.req [Context ID = C1, Termination ID = T2]
Send Tone
21. H.248: MOD.resp [Context ID = C1, Termination ID = T2]

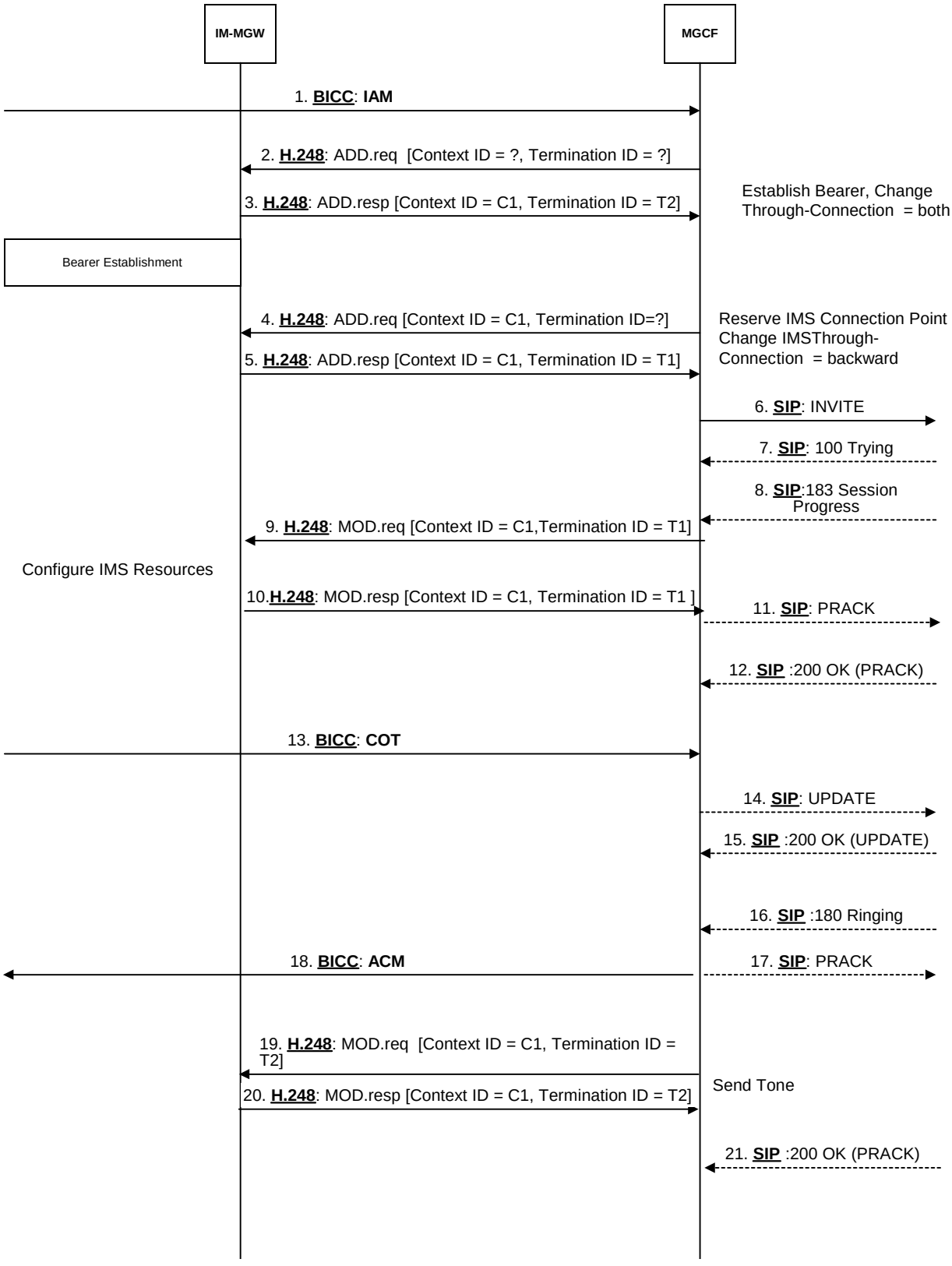


Figure 38/1: Basic CS Network Originating Session, BICC Backward Bearer Establishment (message sequence chart)

Next modified Section

9.2.3.3.5 Called party alerting

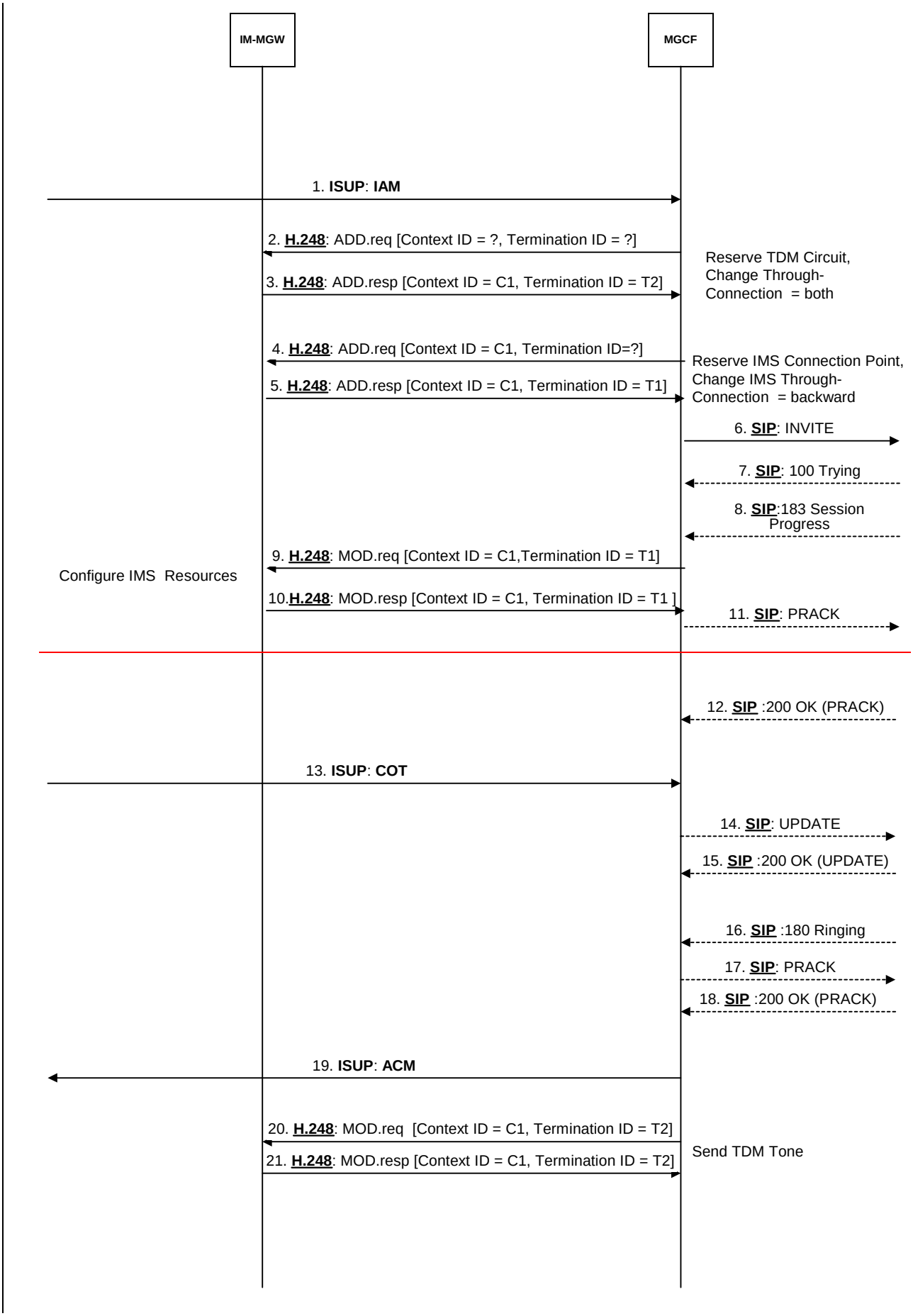
The MGCF shall request the IM-MGW to provide an awaiting answer indication (ringing tone) to the calling party using the Send TDM Tone procedure (signals ~~20~~ 19 and ~~21~~20 in figure 39) , when the first of the following conditions is satisfied:

- the MGCF receives a 180 Ringing message
- Timer T i/w_1 expires
- Timer T i/w_2 expires

Next modified Section

9.2.3.3.12 Message sequence chart

Figure 39 shows the message sequence chart for the CS network originating Session with ISUP. In the chart the MGCF requests seizure of the IM CN subsystem side termination and CS network side bearer termination. When the MGCF receives an answer indication, it requests the IM-MGW to both-way through-connect the terminations. The MGCF may request the possible activation of the voice processing functions for the terminations.


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]
4. H.248: ADD.req [Context ID = C1, Termination ID=?]
Reserve IMS Connection Point, 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
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
12. SIP :200 OK (PRACK)
13. ISUP: COT
14. SIP: UPDATE
15. SIP :200 OK (UPDATE)
16. SIP :180 Ringing
17. SIP: PRACK
18. SIP :200 OK (PRACK)
19. ISUP: ACM
20. H.248: MOD.req [Context ID = C1, Termination ID = T2]
Send TDM Tone
21. H.248: MOD.resp [Context ID = C1, Termination ID = T2]

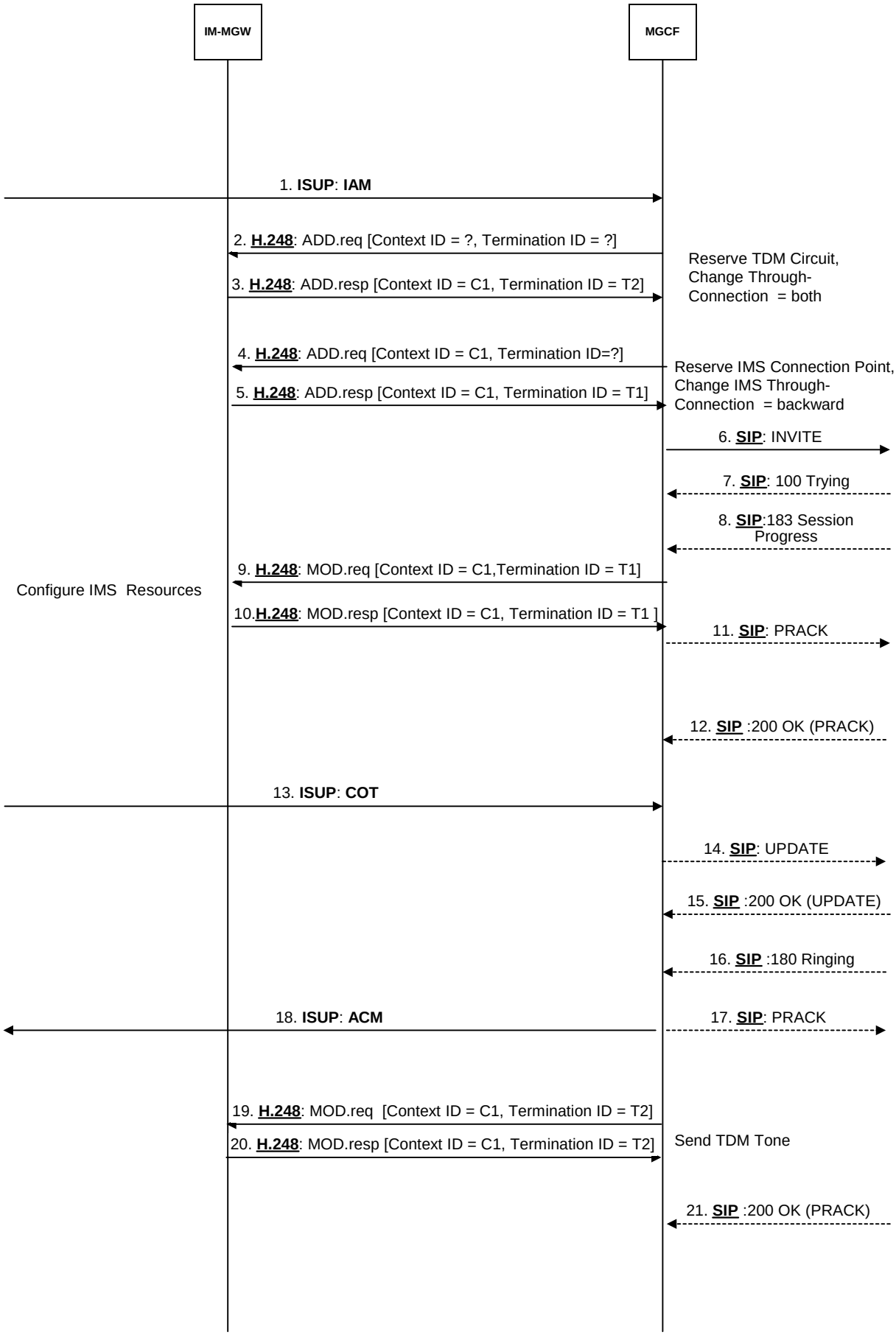


Figure 39/1: Basic CS Network Originating Session, ISUP (message sequence chart)

3GPP TSG-CN WG3 Meeting #31bis **N3-040208**
Sophia Antipolis, France, 29th March- 2nd April 2004.

CR-Form-v7

CHANGE REQUEST

⌘ **29.163** **CR** **038** ⌘ **rev** **1** ⌘ Current version: **6.2.0** ⌘

*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 ☒

Title:	⌘	Originated/terminated correction
Source:	⌘	TSG_CN WG3
Work item code:	⌘	IMS-CCR-IWCS
Date:	⌘	30/03/2004
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:	⌘	The originating/terminated procedures have been mixed in some subclauses.
Summary of change:	⌘	Originating/terminated case has been corrected.
Consequences if not approved:	⌘	Misleading information causing interpretation problems.

Clauses affected:	⌘	9.2.8.1 and 9.2.8.2			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

How to create CRs using this form:
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1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

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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.

First modified Section

9.2.8.1 Sending DTMF digits out-of-band to CS CN (BICC)

For the IM CN subsystem ~~originating~~ terminated session , the MGCF shall use the "Configure IMS Resources" procedure as described in Clause 9.2.3~~2~~. For the IM CN subsystem ~~terminated~~ originating session , the MGCF shall use the "Reserve IMS Connection Point and Configure Remote Resources" procedure as described in Clause 9.2.2~~3~~. If DTMF is supported, the MGCF shall include "telephone event" along with the selected speech codecs within the "local IMS resources" Parameter of these procedures. The same termination shall be used to receive DTMF and speech of the same call.

Furthermore, the MGCF shall use the "Detect IMS RTP Tel Signal" procedure to request the MGW to detect incoming telephone events from the IMS and notify the MGCF about the detected events. The MGW shall use the "Notify IMS RTP Tel Event" procedure for this notification. The termination used to receive DTMF shall be placed in the same context used for the speech of the same call. If the IM-MGW received a "Detect IMS RTP Tel Event" procedure for a termination, the IM-MGW shall not forward inband to the CS network any DTMF received at this termination.

Figure 48 shows the message sequence chart when DTMF digits are received from the IM CN subsystem in the RTP payload. For the first digit, the received RTP message contains all information including the duration and only a single notification is received. For the second digit, the start and the end of the DTMF digit are notified separately.

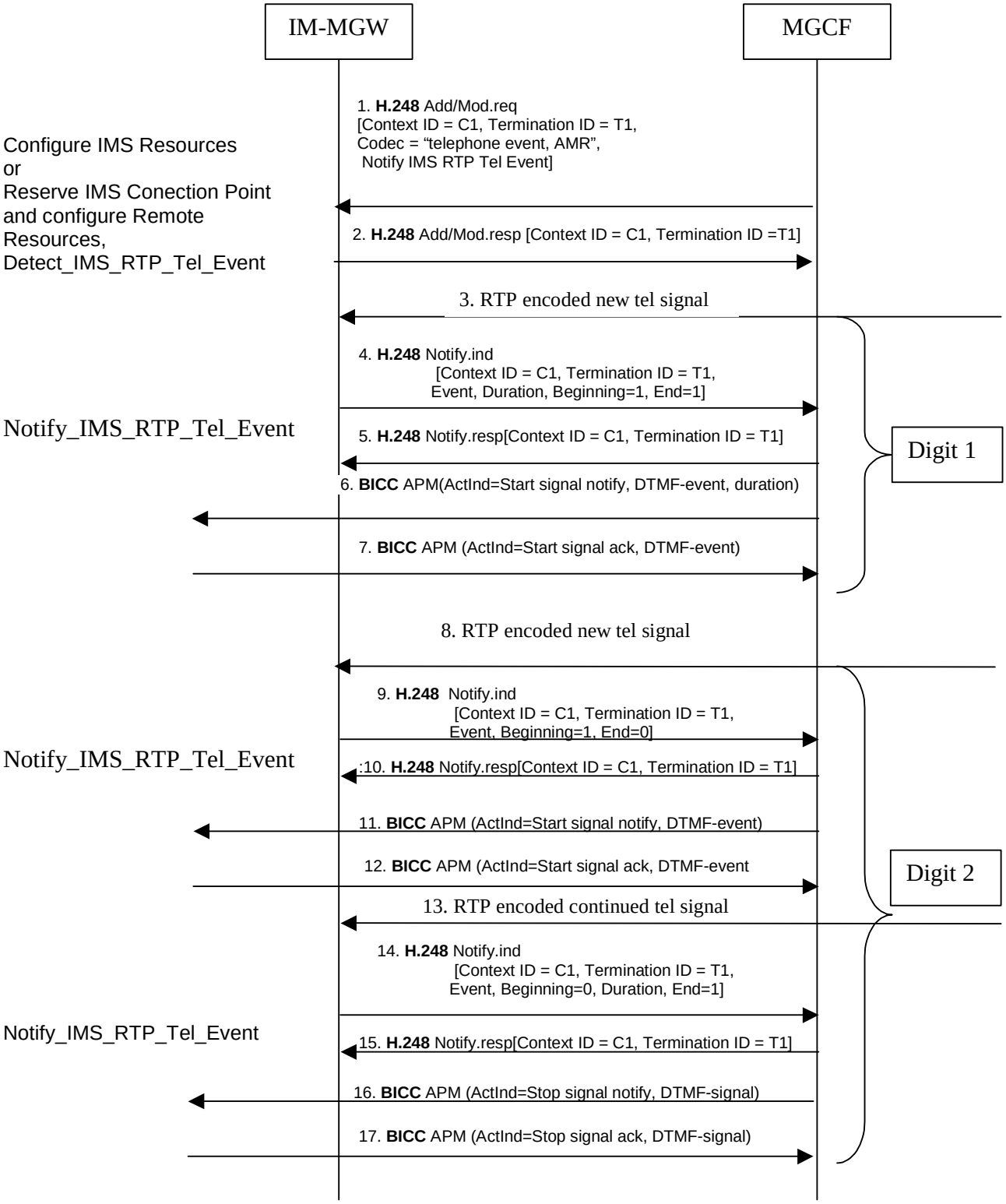


Figure 48: Activation of notification of DTMF digits received in RTP and examples of sending the digits out-of-band to CS CN (message sequence chart)

9.2.8.2 Sending DTMF digits inband to CS CN (ISUP or BICC)

For the IM CN subsystem ~~originating~~ terminated session, the MGCF shall use the "Configure IMS Resources" procedure as described in Clause 9.2.3~~2~~. For the IM CN subsystem ~~terminated~~ originating session , the MGCF shall use the "Reserve IMS Connection Point and Configure Remote Resources" procedure as described in Clause 9.2.2~~3~~. If DTMF is supported, the MGCF shall include "telephone event" along with the selected speech codecs within the "local IMS resources" Parameter of these procedures to request the MGW to detect incoming telephone events and transform

them into speech signals on the CS side. The same termination shall be used to receive DTMF and speech of the same call.

Figure 49 shows the message sequence chart to configure the IM-MGW to receive DTMF detection on the IMS side and transfer the DTMF inband on the CS side.

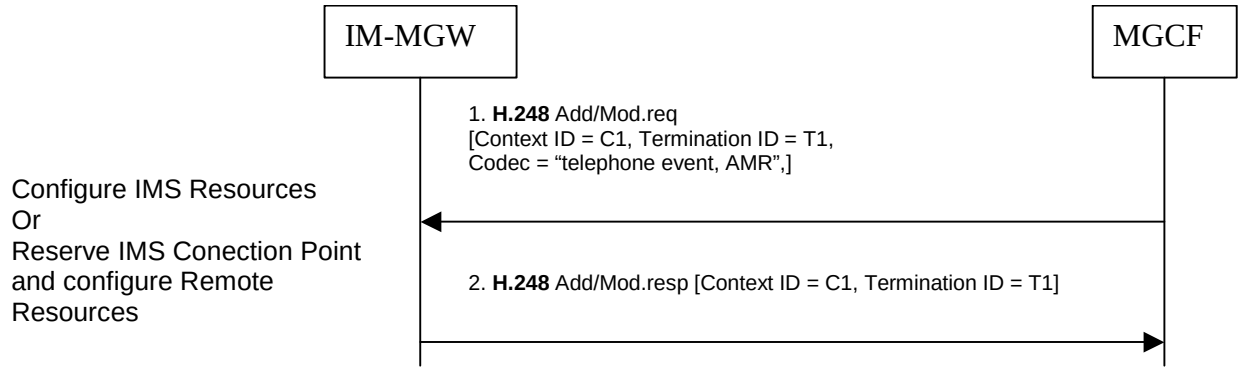


Figure 49: Activation of processing of DTMF digits received in RTP for sending the digits inband to CS CN (message sequence chart)

3GPP TSG-CN WG3 Meeting #32 **N3-040286**
Zagreb, Croatia, 10th May- 14th May 2004.

CR-Form-v7

CHANGE REQUEST

⌘ **29.163** **CR** **045** ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

*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 ☒

Title:	⌘	Notify IMS RTP Tel Event (same as 'Report DTMF') message sequence shows IEs that are not used with this procedure
Source:	⌘	TSG_CN WG3
Work item code:	⌘	IMS-CCR-IWCS
Date:	⌘	03/05/2004
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:	⌘	CN3 has agreed that 'Notify IMS RTP Tel Event' is the same as the 'Report DTMF' procedure in 3GPP TS 23.205 (refer to subclause 9.3.1.6) but Figure 48 was not updated to reflect this decision and it still shows information elements that are not used with the 'Report DTMF' procedure.
Summary of change:	⌘	Confusing and misleading details have been removed from Figure 48 and Event values have been added.
Consequences if not approved:	⌘	Nonexistent, misleading information elements are shown in Figure 48, leading to interpretation problems.

Clauses affected:	⌘	9.2.8.1

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

Other comments:	⌘	

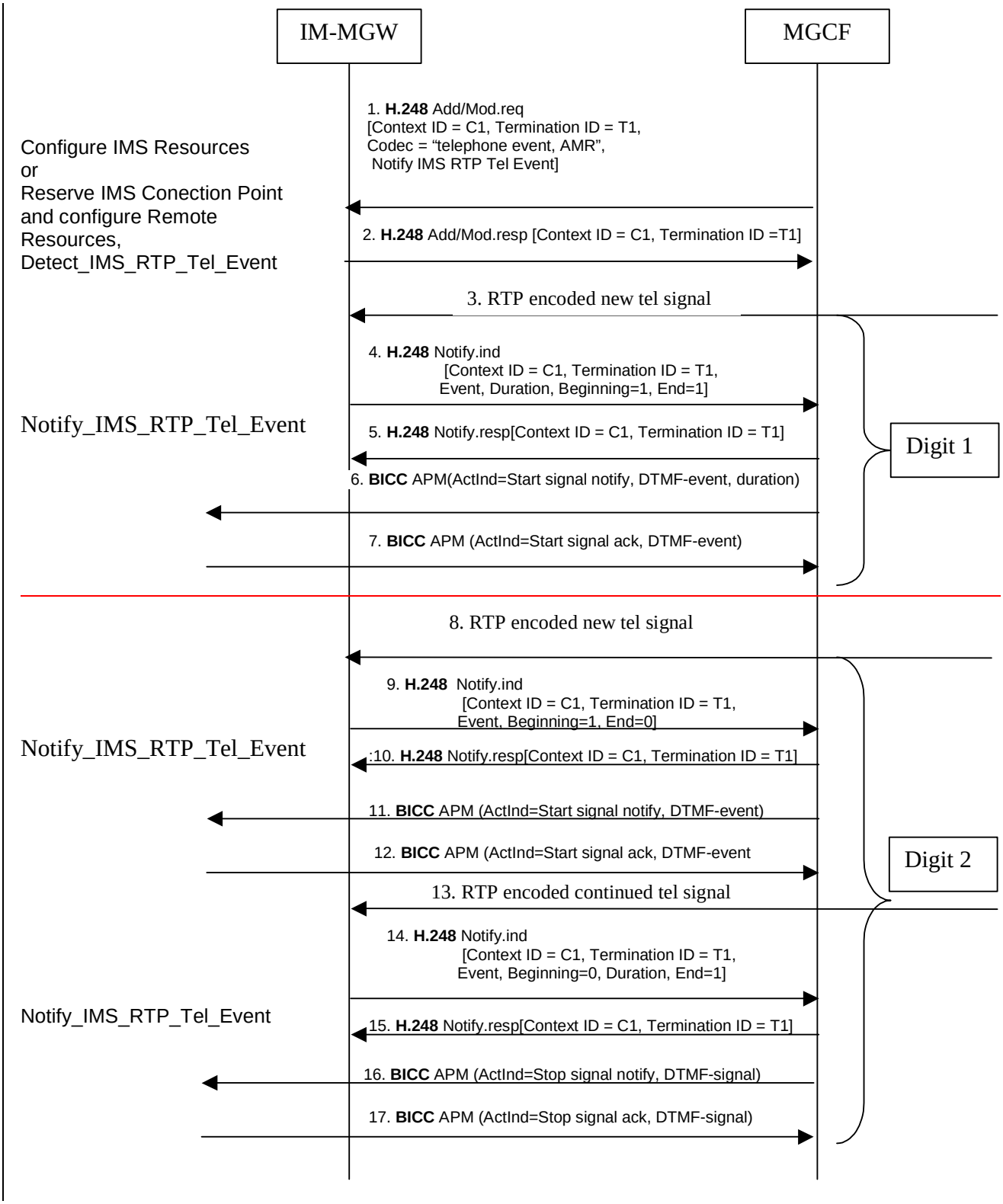
First modified Section

9.2.8.1 Sending DTMF digits out-of-band to CS CN (BICC)

For the IM CN subsystem originating session , the MGCF shall use the "Configure IMS Resources" procedure as described in Clause 9.2.2. For the IM CN subsystem terminated session , the MGCF shall use the "Reserve IMS Connection Point and Configure Remote Resources" procedure as described in Clause 9.2.3. If DTMF is supported, the MGCF shall include "telephone event" along with the selected speech codecs within the "local IMS resources" Parameter of these procedures. The same termination shall be used to receive DTMF and speech of the same call.

Furthermore, the MGCF shall use the "Detect IMS RTP Tel Signal" procedure to request the MGW to detect incoming telephone events from the IMS and notify the MGCF about the detected events. The MGW shall use the "Notify IMS RTP Tel Event" procedure for this notification. The termination used to receive DTMF shall be placed in the same context used for the speech of the same call. If the IM-MGW received a "Detect IMS RTP Tel Event" procedure for a termination, the IM-MGW shall not forward inband to the CS network any DTMF received at this termination.

Figure 48 shows the message sequence chart when DTMF digits are received from the IM CN subsystem in the RTP payload. For the first digit, the received RTP message contains all information including the duration and only a single notification is received. For the second digit, the start and the end of the DTMF digit are notified separately.


IM-MGW
MGCF
1. H.248 Add/Mod.req
[Context ID = C1, Termination ID = T1,
Codec = “telephone event, AMR”,
Notify IMS RTP Tel Event]
Configure IMS Resources
or
Reserve IMS Conection Point
and configure Remote
Resources,
Detect_IMS_RTP_Tel_Event
2. H.248 Add/Mod.resp [Context ID = C1, Termination ID =T1]
3. RTP encoded new tel signal
4. H.248 Notify.ind
[Context ID = C1, Termination ID = T1,
Event, Duration, Beginning=1, End=1]
Notify_IMS_RTP_Tel_Event
5. H.248 Notify.resp[Context ID = C1, Termination ID = T1]
Digit 1
6. BICC APM(ActInd=Start signal notify, DTMF-event, duration)
7. BICC APM (ActInd=Start signal ack, DTMF-event)
8. RTP encoded new tel signal
9. H.248 Notify.ind
[Context ID = C1, Termination ID = T1,
Event, Beginning=1, End=0]
Notify_IMS_RTP_Tel_Event
:10. H.248 Notify.resp[Context ID = C1, Termination ID = T1]
11. BICC APM (ActInd=Start signal notify, DTMF-event)
12. BICC APM (ActInd=Start signal ack, DTMF-event
Digit 2
13. RTP encoded continued tel signal
14. H.248 Notify.ind
[Context ID = C1, Termination ID = T1,
Event, Beginning=0, Duration, End=1]
Notify_IMS_RTP_Tel_Event
15. H.248 Notify.resp[Context ID = C1, Termination ID = T1]
16. BICC APM (ActInd=Stop signal notify, DTMF-signal)
17. BICC APM (ActInd=Stop signal ack, DTMF-signal)

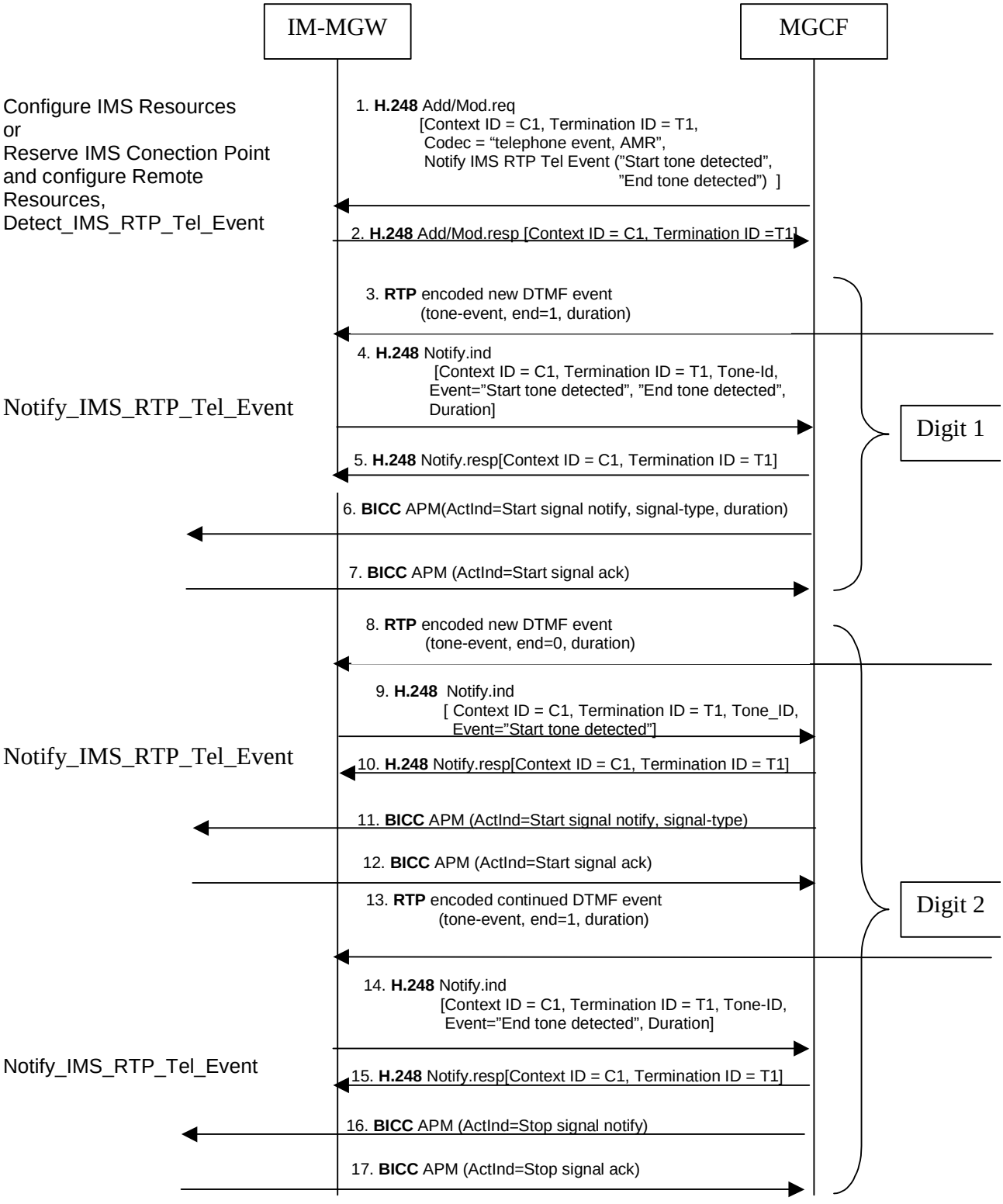


Figure 48: Activation of notification of DTMF digits received in RTP and examples of sending the digits out-of-band to CS CN (message sequence chart)

3GPP TSG-CN WG3 Meeting #32 *Tdoc N3-040308*
Zagreb, Croatia, 10th - 14th May 2004.

CR-Form-v7

CHANGE REQUEST

⌘ **29.163** **CR** **046** ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

*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 ☒

Title:	⌘	Correction of sub-clause 7.2.3.2.5.1 Backward call indicators
Source:	⌘	TSG_CN WG3
Work item code:	⌘	IMS-CCR-IWCS
Date:	⌘	28/04/2004
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:	⌘	Sub-clause 7.2.3.2.5.1 Backward call indicators states that the end-to-end method indicator value shall be set to 01 “no end-to-end method available”. However, in ITU Q.763 “ no end-to-end method available is assigned the code point 00.
Summary of change:	⌘	The code point value is changed to 00.
Consequences if not approved:	⌘	This contradiction may lead to implementations interpeting the value differently.

Clauses affected:	⌘	7.2.3.2.5.1			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	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/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.

7.2.3.2.5.1 Backward call indicators

bits AB Charge indicator Contributors

1 0 *charge*

bits DC Called party's status indicator

0 1 *subscriber free* if the 180 Ringing has been received.

0 0 *no indication* otherwise

bits FE Called party's category indicator

0 0 no indication

bits HG End-to-end method indicator

~~01~~00 no end-to-end method available

bit I Interworking indicator

1 interworking encountered

bit J End-to-end information indicator

0 no end-to-end information available

bit K ISDN user part/BICC indicator

0 ISDN user part not used all the way

bit L Holding indicator (national use)

0 holding not requested

bit M ISDN access indicator

0 terminating access non-ISDN