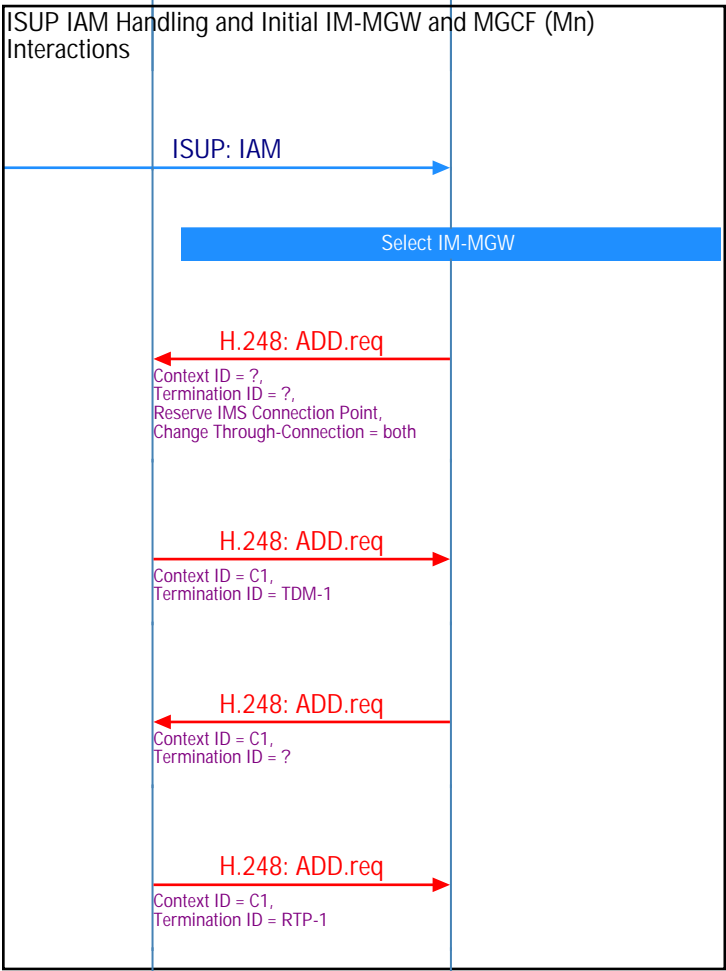


MGCF Interfaces (PSTN-ISUP Originated Call; IM-MGW Megaco/H.248 Signaling; PSTN Initiated Release)				
PSTN	IMS Core Network			Copyright © 2013 EventHelix.com
PSTN Equipment	PSTN Interface	CSCF Servers		
IM-MGW	MGCF	I-CSCF	Term S-CSCF	10-Jan-13 16:23 (Page 1)

This call flow covers the handling of a CS network originated call with ISUP. In the diagram 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.

This sequence diagram was generated with EventStudio System Designer (<http://www.EventHelix.com/EventStudio>).



The CS Network establishes a bearer path to the IM-MGW, and signals to the MGCF with a IAM message, giving the trunk identity, destination information and optionally the continuity indication. The message is routed to MGCF via the Signaling Gateway (SGW).

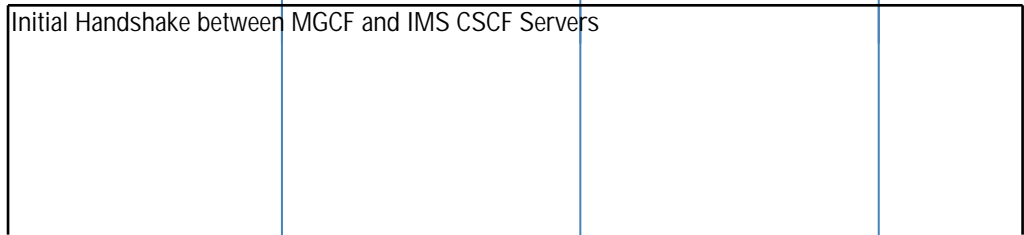
The MGCF selects the IM-MGW based on the received circuit identity in the IAM.

Request addition of a new context and termination. The MGCF uses the Reserve IMS Connection Point procedure. Within this procedure, the MGCF indicates the local codecs and requests a local IP address and UDP port from the IM-MGW. The local IP address and UDP port are used by the IM-MGW to receive user plane data from the IM CN subsystem.

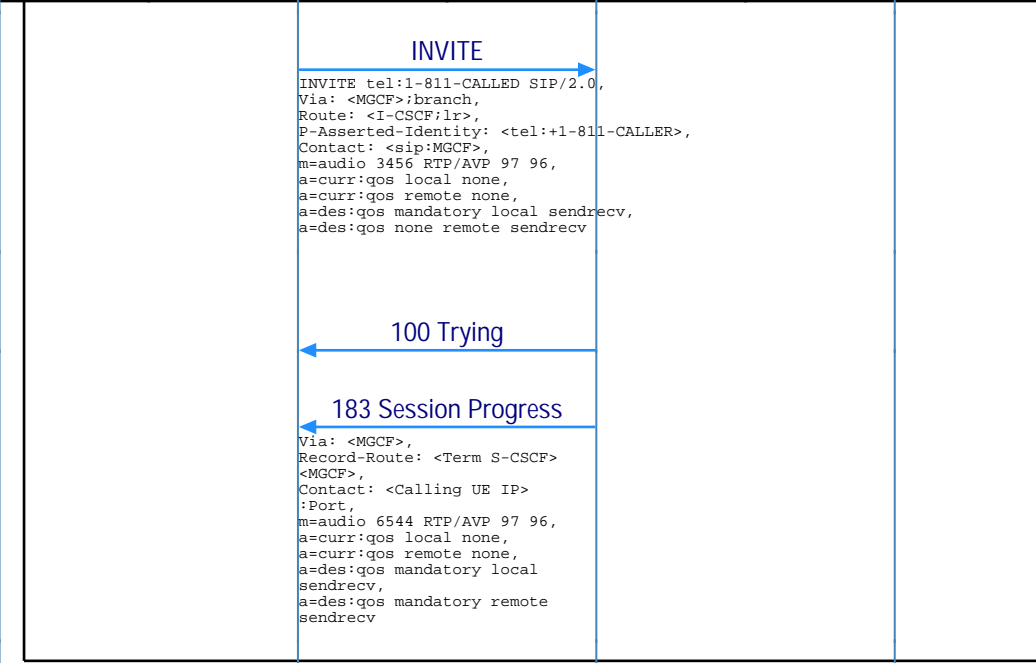
The IM-CN responds back with Context "C1" and a TDM side termination "TDM-1".

Request addition of an RTP termination to the "C1" context. Change IMS Through Connection = backward.

The IM-MGW adds the "RTP-1" termination to the "C1" context. At this point "TDM-1" is a circuit switched termination and "RTP-1" is a RTP based IP termination for communicating with the terminating IMS subscriber.



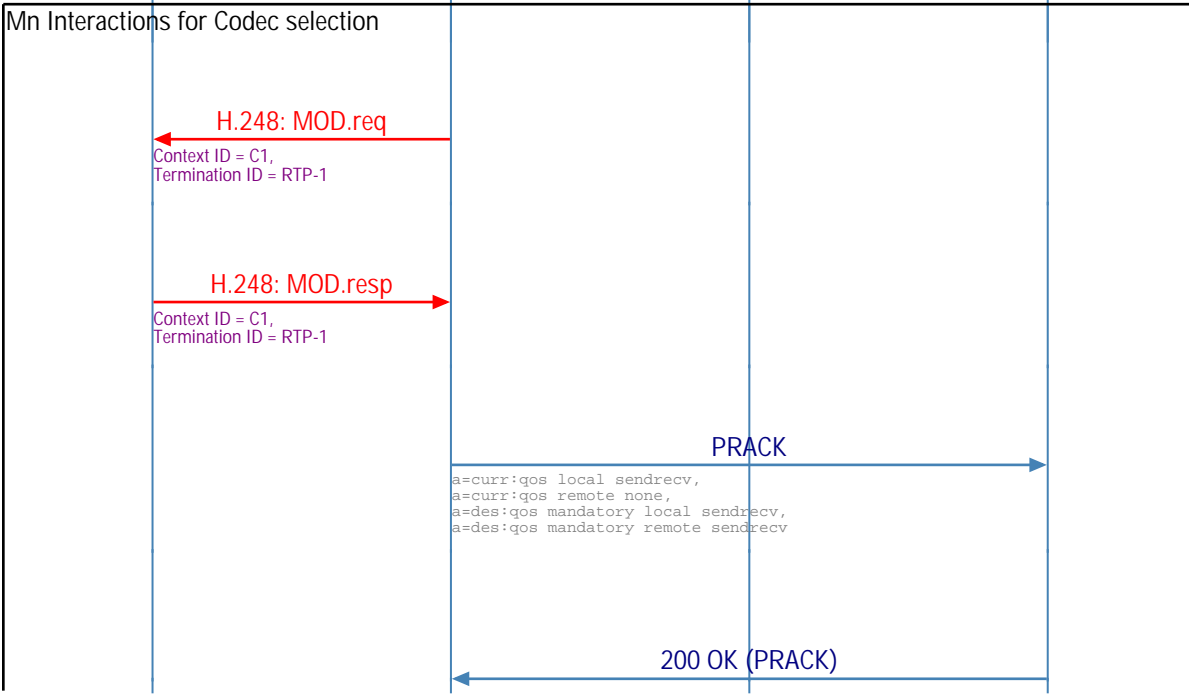
MGCF Interfaces (PSTN-ISUP Originated Call; IM-MGW Megaco/H.248 Signaling; PSTN Initiated Release)				
PSTN	IMS Core Network			Copyright © 2013 EventHelix.com
PSTN Equipment	PSTN Interface	CSCF Servers		
IM-MGW	MGCF	I-CSCF	Term S-CSCF	10-Jan-13 16:23 (Page 2)



The MGCF initiates an INVITE request, containing an initial SDP, as per the proper S-CSCF to S-CSCF procedure. The INVITE is first sent to the I-CSCF to identify the S-CSCF serving the called user.

The I-CSCF acknowledges the INVITE that was received from P-CSCF.

The UE replies indicating that the session is in progress. The contact address is set its own IP address. The Via and the Record-Route headers are copied from the received INVITE.

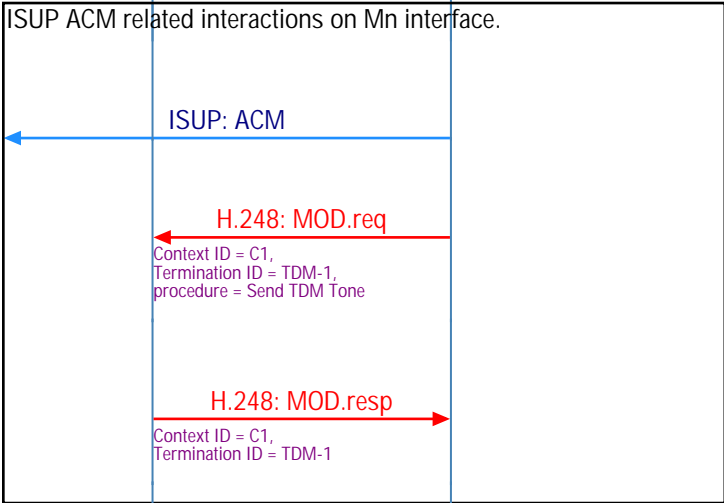
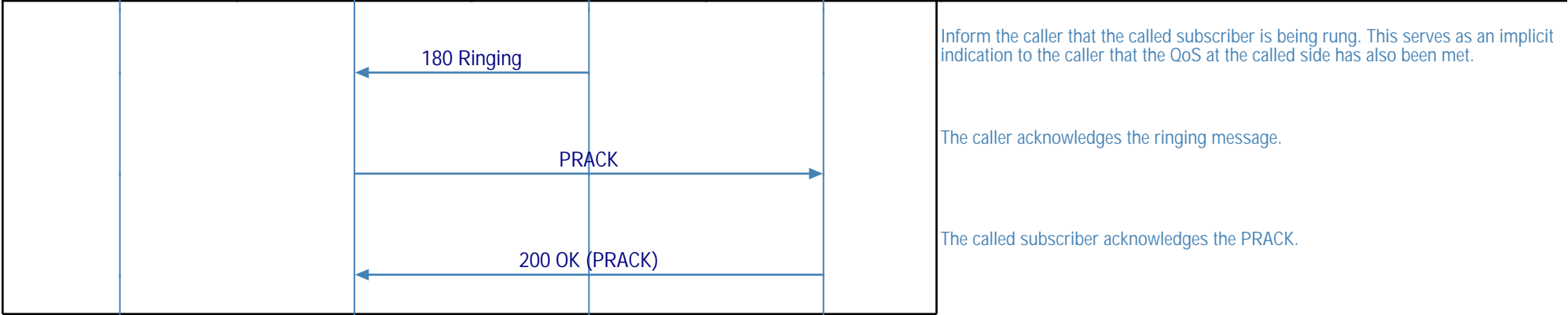


The MGCF indicates the remote IP address and UDP port, i.e. the destination IP address and UDP port for RTP messages sent towards the terminating IMS UE. It also identifies the codec to be used in the IM-MGW to Terminating UE RTP communication.

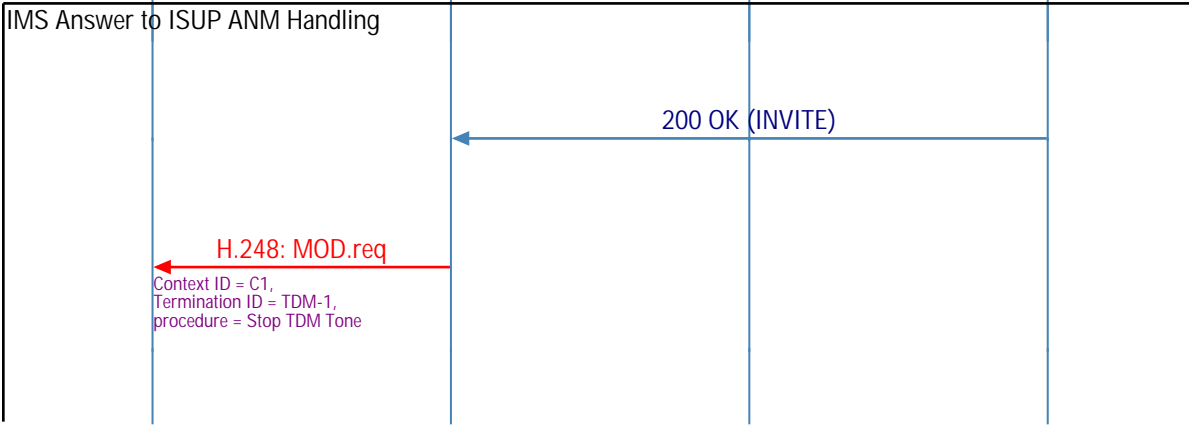
Reply to MGCF. The final codec selection is indicated.

The Caller now sends a PRACK to inform the called subscriber about the selected Codec. The message also indicates that currently the resources needed for meeting the quality of service requirements of the session are already available ("a=curr:gqos local sendrecv").

This "200 OK" just acknowledges PRACK.



The MGCF requests the IM-MGW to provide a ringing tone to the calling party using the Send TDM Tone procedure.

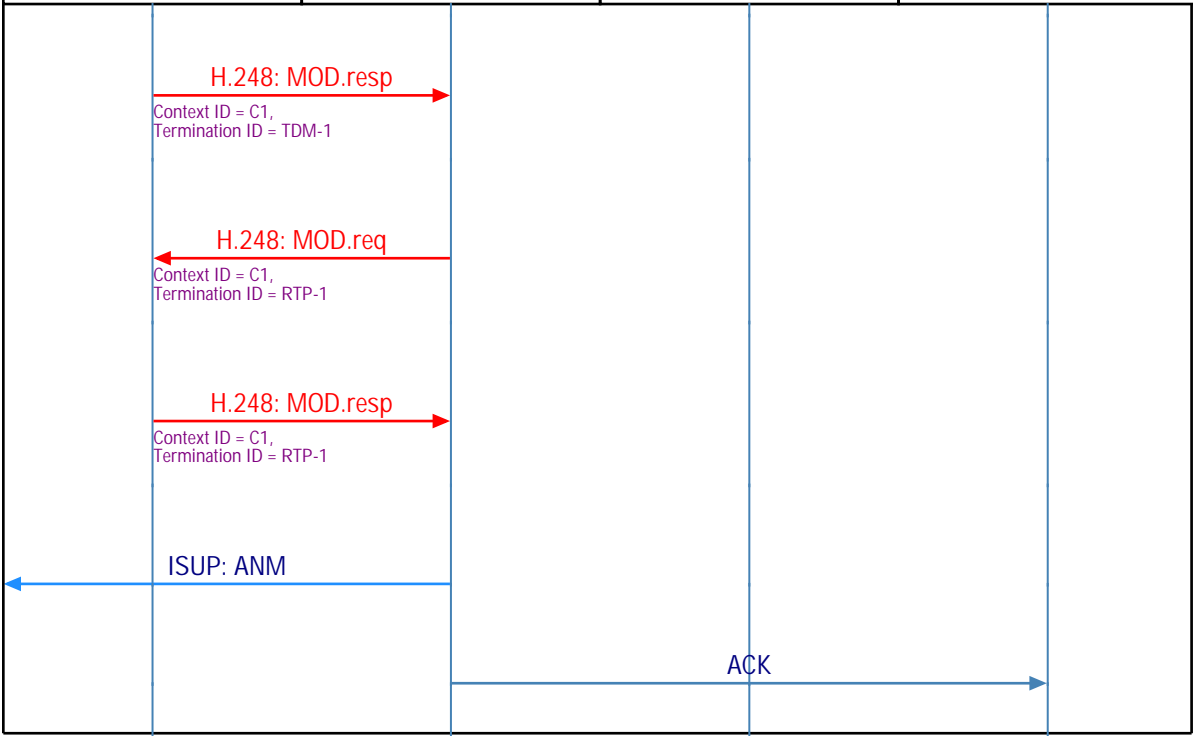


Notify the caller that that the call has been answered.

The call has been answered so the MGCF requests the IM-MGW to stop the ring tone on the TDM side.

MGCF Interfaces (PSTN-ISUP Originated Call; IM-MGW Megaco/H.248 Signaling; PSTN Initiated Release)

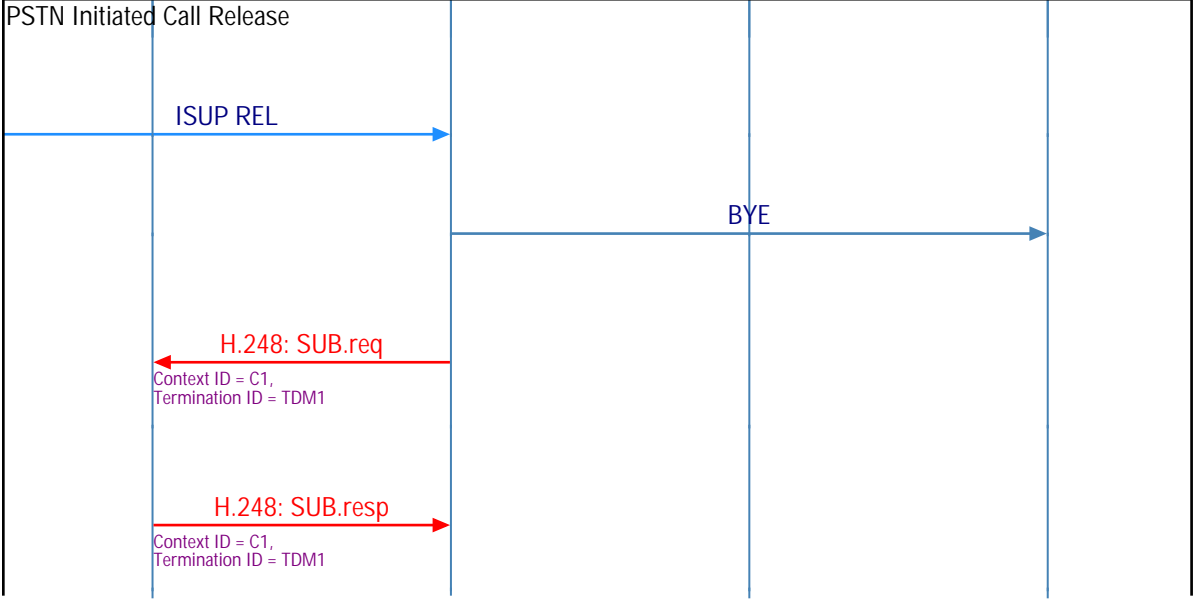
PSTN	IMS Core Network			Copyright © 2013 EventHelix.com
PSTN Equipment	PSTN Interface	CSCF Servers		
IM-MGW	MGCF	I-CSCF	Term S-CSCF	10-Jan-13 16:23 (Page 4)



Request the IM-MGW to both-way through-connect the terminations using the Change IMS Through-Connection or Change TDM Through-Connection procedure.

The caller acknowledges the "200 OK" message. The call is now ready to enter conversation mode.

PSTN Initiated Call Release



A call release has been received from the PSTN side.

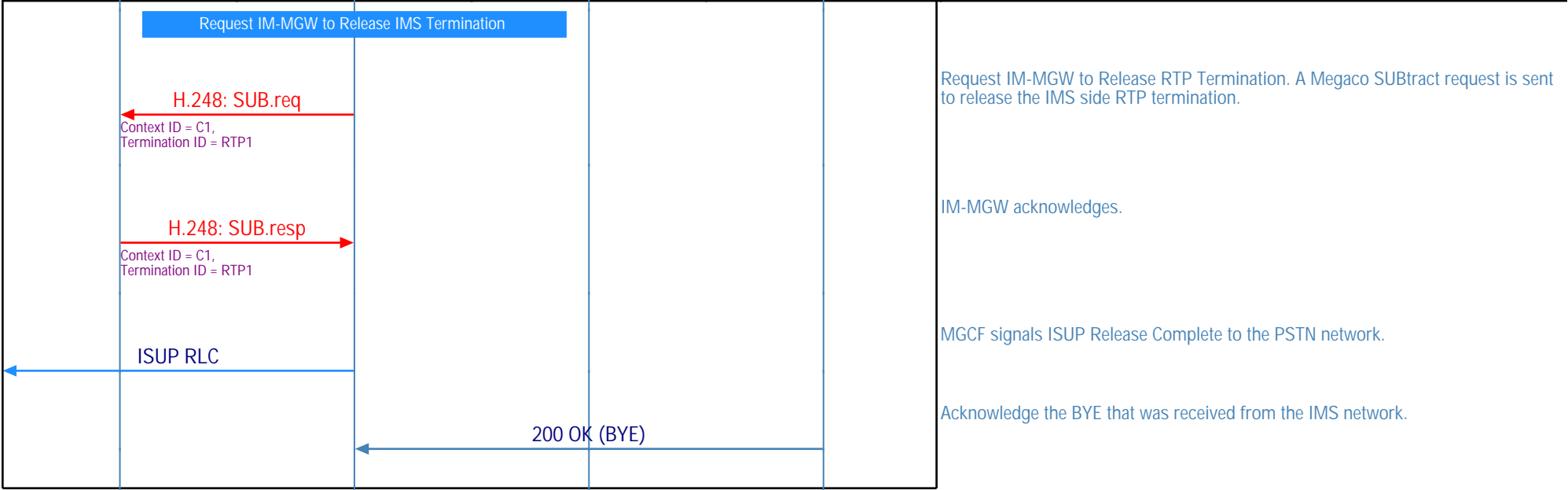
MGCF initiates IMS side call release by sending BYE.

Request IM-MGW to Release TDM Termination. A Megaco SUBtract request is sent to release the PSTN side TDM circuit.

IM-MGW acknowledges.

MGCF Interfaces (PSTN-ISUP Originated Call; IM-MGW Megaco/H.248 Signaling; PSTN Initiated Release)

PSTN	IMS Core Network			Copyright © 2013 EventHelix.com
PSTN Equipment	PSTN Interface	CSCF Servers		
IM-MGW	MGCF	I-CSCF	Term S-CSCF	10-Jan-13 16:23 (Page 5)



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MGCF Interfaces (Alternate Scenario: Called IMS Subscriber Initiated Call Release)				
PSTN	IMS Core Network			Copyright © 2013 EventHelix.com
PSTN Equipment	PSTN Interface	CSCF Servers		10-Jan-13 16:23 (Page 6)
IM-MGW	MGCF	I-CSCF	Term S-CSCF	

This call flow covers the handling of a CS network originated call with ISUP. In the diagram 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.

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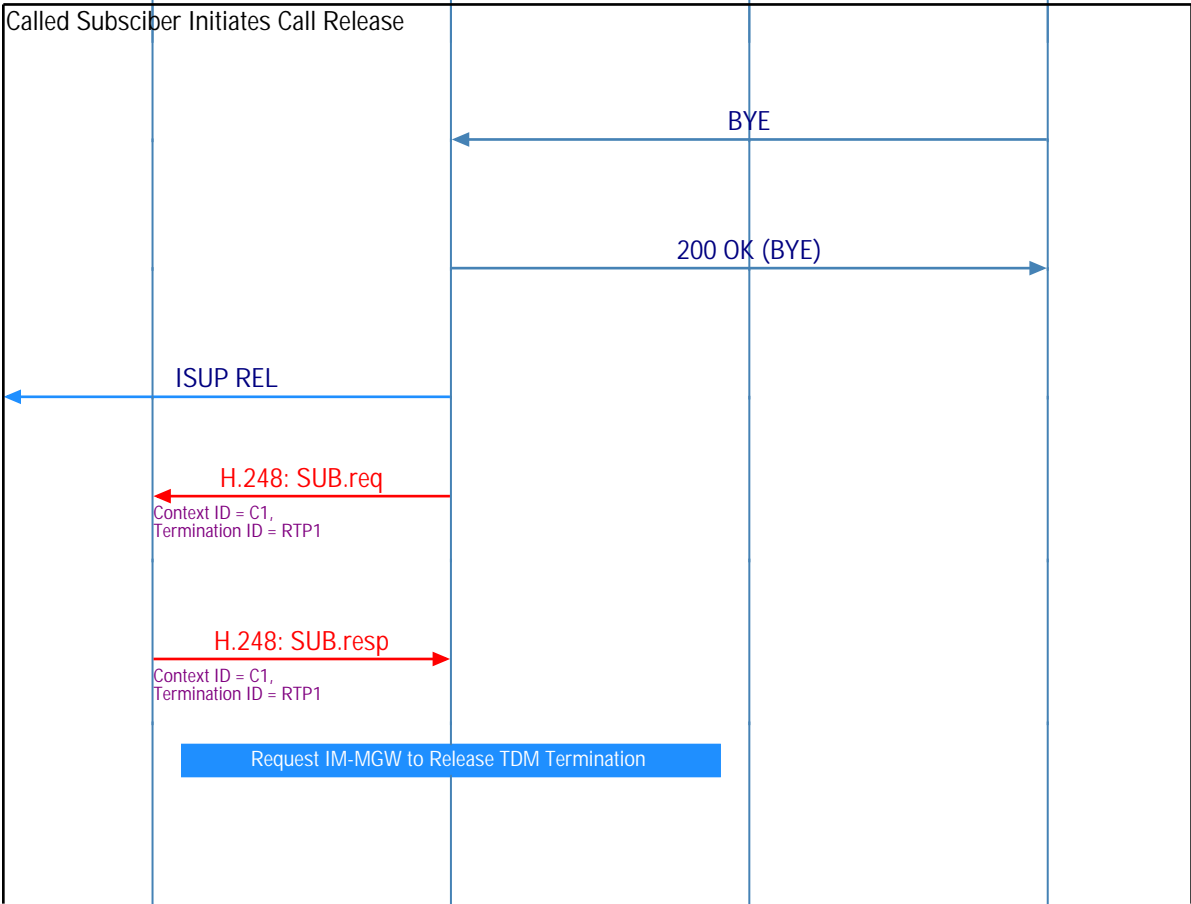
ISUP IAM Handling and Initial IM-MGW and MGCF (Mn) Interactions

Initial Handshake between MGCF and IMS CSCF Servers

Mn Interactions for Codec selection

ISUP ACM related interactions on Mn interface.

IMS Answer to ISUP ANM Handling



BYE is sent to initiate the call.

MGCF acknowledges the receipt of the BYE message.

An ISUP Release message is sent to the PSTN.

Request IM-MGW to Release RTP Termination. A Megaco SUBtract request is sent to release the IMS side RTP termination.

IM-MGW acknowledges.

MGCF Interfaces (Alternate Scenario: Called IMS Subscriber Initiated Call Release)				
PSTN	IMS Core Network			Copyright © 2013 EventHelix.com
PSTN Equipment	PSTN Interface	CSCF Servers		10-Jan-13 16:23 (Page 7)
IM-MGW	MGCF	I-CSCF	Term S-CSCF	



This sequence diagram was generated with EventStudio System Designer (<http://www.EventHelix.com/EventStudio>).