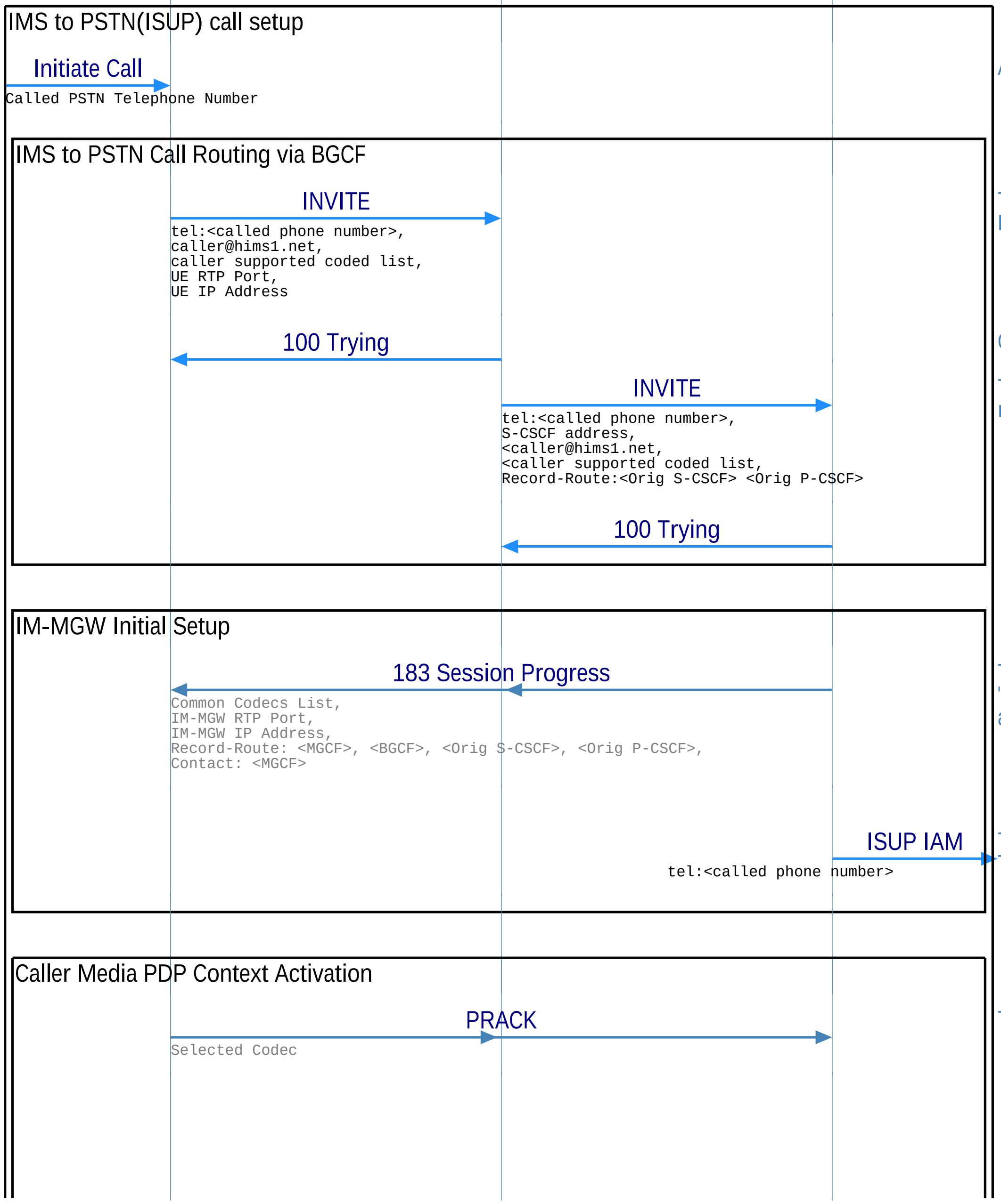
Module Interfaces (IMS-PSTN(ISUP) Call; Megaco/H.248 Signaling; IMS Caller Initiated Call Release)			
Calling UE	IMS Core Network	PSTN Interface	**EventStudio System Designer 6**

This call flow describes the call setup from one IMS subscriber to ISUP PSTN termination. The call is routed via the BGCF (Border Gateway Control Function) to the MGCF (Media Gateway Control Function). The MGCF uses one context with two terminations in IM-MGW (Media Gateway). The termination RTP1 is used towards IMS Core network subsystem entity and the bearer termination TDM1 is used for bearer towards PSTN CS network element.

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



An IMS user initiates a call to a PSTN phone number.

The Calling SIP phone sends INVITE to P-CSCF. The message includes the codecs available, the UE RTP port number and IP address.

Orig P-CSCF acknowledges INVITE to Caller UE.

The S-CSCF forwards the INVITE to the local BGCF (Breakout Gateway Control Function) for further routing of the call.

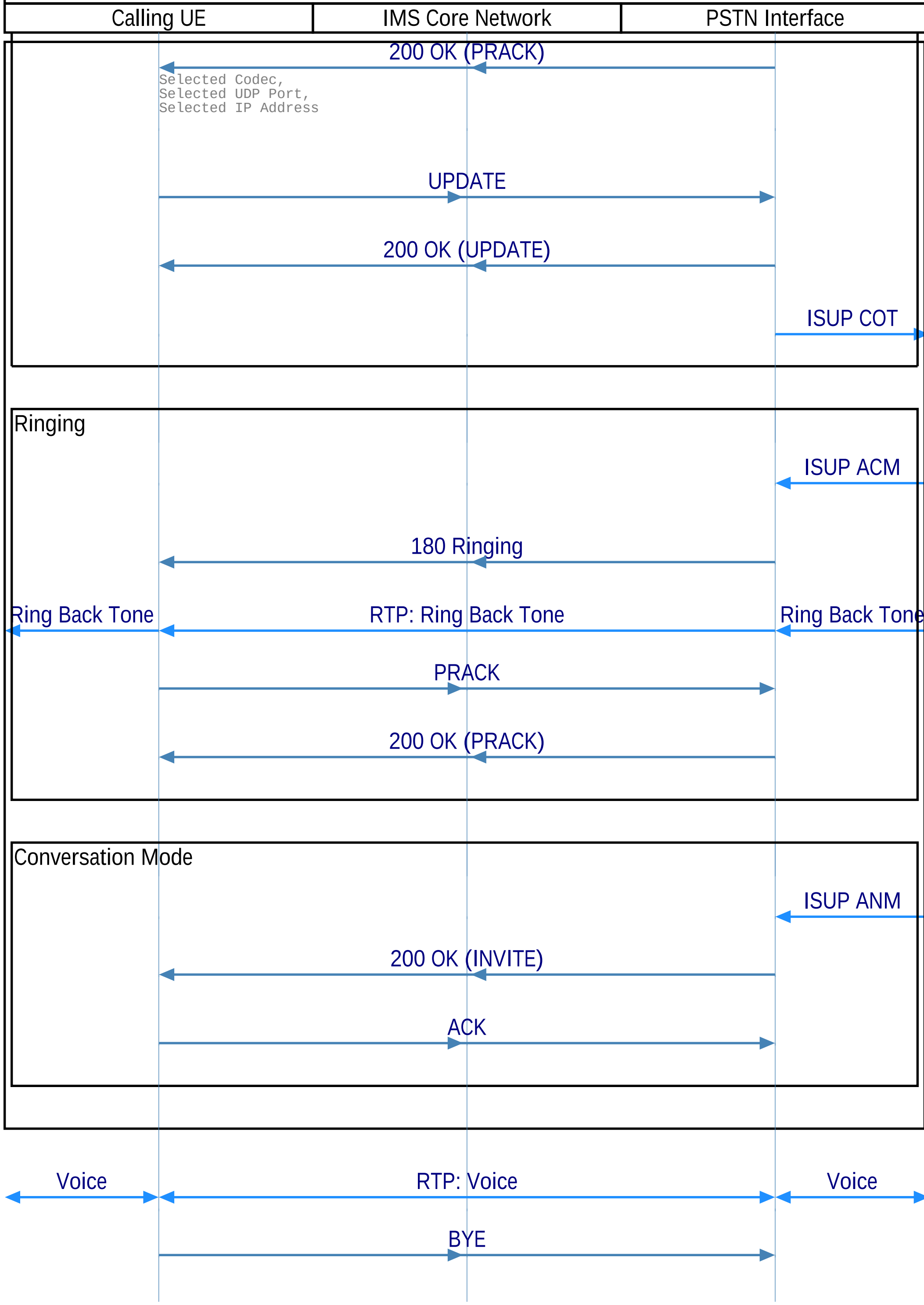
The MGCF returns the media stream capabilities of the destination along the signaling path in a "183 Session Progress". The IM-MGW "Common Codec List", IP address and the RTP port number are included in the message.

The MGCF sends IAM, containing the called party phone number digits, towards PSTN termination. The TDM-1 circuit information obtained from the IM-MGW is included in the message.

The Caller confirms the codec selection in PRACK towards MGCF.

Module Interfaces (IMS-PSTN(ISUP) Call; Megaco/H.248 Signaling; IMS Caller Initiated Call Release)

EventStudio System Designer 6



The codec selected is acknowledged to the UE.

Since caller PDP Context Activation is over, notify the called end in UPDATE message.

The called end replies back with 200 OK.

Based on the continuity support of the outgoing channel selected MGCF sends a COT message to the PSTN network.

The path towards the called party is allocated in the PSTN network and address complete message, ACM containing subscriber free indication is sent to MGCF. The ACM message also indicates that the called party in the PSTN network is being alerted.

The MGCF forwards called party alerting indication in 180 ringing message towards the Caller.

The ring back tone is fed to the calling subscriber. The IM-MGW converts the tone into RTP. The UE converts it back to the ring back tone and feeds it to the calling subscriber.

The Caller acknowledges the 180 ringing with PRACK message towards MGCF.

The MGCF acknowledges the PRACK message with 200 OK message.

When the called party answers, the terminating PSTN network sends answer, ANM message towards MGCF.

The final response, 200 OK, is sent by the MGCF over the signaling path when the subscriber has accepted the incoming session attempt.

The Caller sends the final acknowledgement in ACK message towards MGCF.

Bidirectional voice path is now through. The IM-MGW converts RTP to voice and vice versa. UE also maps audio to RTP and back.

The Caller sends BYE towards MGCF when the calling party hangs up.

Module Interfaces (IMS-PSTN(ISUP) Call; Megaco/H.248 Signaling; IMS Caller Initiated Call Release)

Calling UE	IMS Core Network	PSTN Interface	EventStudio System Designer 6
←	200 OK (BYE)		The MGCF acknowledges with 200 OK message towards Caller.
		ISUP REL →	The MGCF initiates call release in the PSTN network by sending ISUP REL message.
		← ISUP RLC	The PSTN network acknowledges the call release with ISUP RLC, release complete towards MGCF.

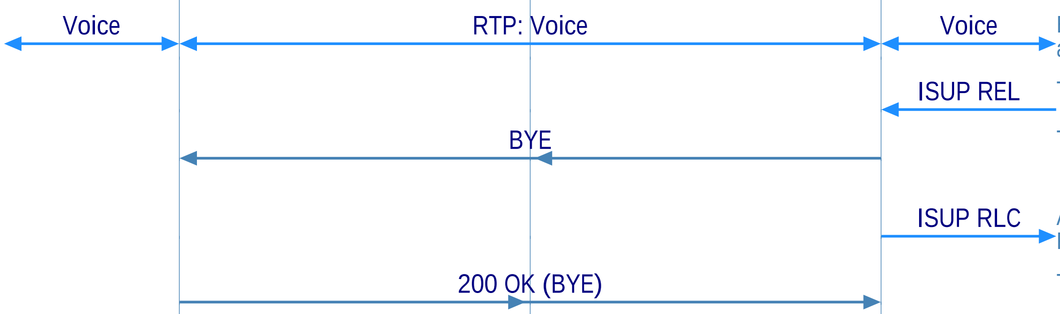
Module Interfaces (Called PSTN Subscriber Initiates Release)

Calling UE	IMS Core Network	PSTN Interface	**EventStudio System Designer 6**

This call flow describes the call setup from one IMS subscriber to ISUP PSTN termination. The call is routed via the BGCF (Border Gateway Control Function) to the MGCF (Media Gateway Control Function). The MGCF uses one context with two terminations in IM-MGW (Media Gateway). The termination RTP1 is used towards IMS Core network subsystem entity and the bearer termination TDM1 is used for bearer towards PSTN CS network element.

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

IMS to PSTN(ISUP) call setup



Bidirectional voice path is now through. The IM-MGW converts RTP to voice and vice versa. UE also maps audio to RTP and back.

The call release initiated in the PSTN network is received by MGCF is ISUP REL message.

The MGCF responds with call release by sending BYE message towards the Caller.

After performing RTP1 and TDM1 resource release, MGCF sends release complete message, ISUP RLC towards the PSTN network.

The Caller acknowledges the BYE by sending 200 OK towards MGCF.

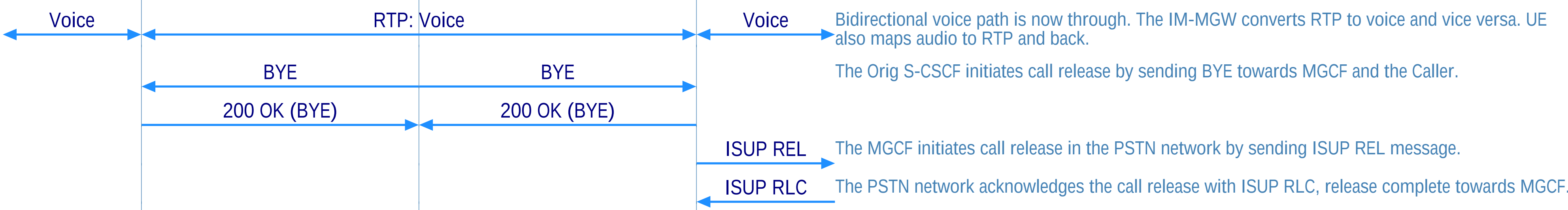
This sequence diagram was generated with EventStudio System Designer (http://www.EventHelix.com/EventStudio).

Module Interfaces (IMS Network Initiates Call Release)

Calling UE	IMS Core Network	PSTN Interface	**EventStudio System Designer 6**

This call flow describes the call setup from one IMS subscriber to ISUP PSTN termination. The call is routed via the BGCF (Border Gateway Control Function) to the MGCF (Media Gateway Control Function). The MGCF uses one context with two terminations in IM-MGW (Media Gateway). The termination RTP1 is used towards IMS Core network subsystem entity and the bearer termination TDM1 is used for bearer towards PSTN CS network element.

IMS to PSTN(ISUP) call setup



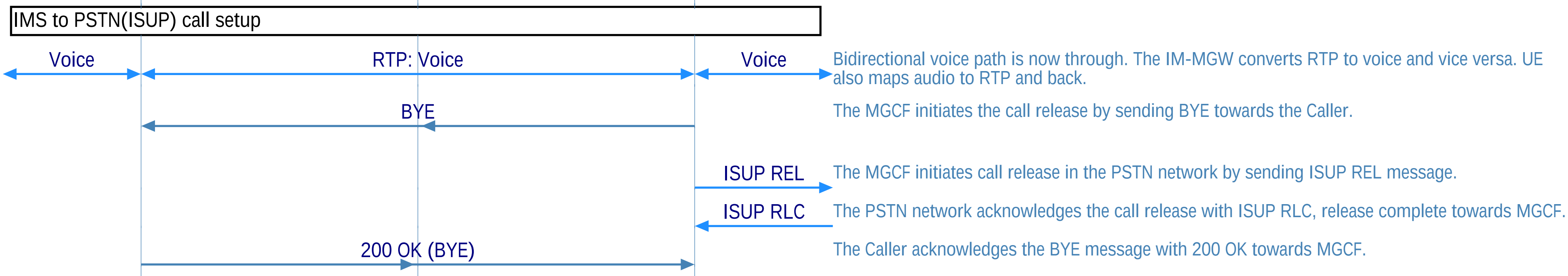
This sequence diagram was generated with EventStudio System Designer (http://www.EventHelix.com/EventStudio).

Module Interfaces (MGCF Initiated Call Release)

Calling UE	IMS Core Network	PSTN Interface	EventStudio System Designer 6

This call flow describes the call setup from one IMS subscriber to ISUP PSTN termination. The call is routed via the BGCF (Border Gateway Control Function) to the MGCF (Media Gateway Control Function). The MGCF uses one context with two terminations in IM-MGW (Media Gateway). The termination RTP1 is used towards IMS Core network subsystem entity and the bearer termination TDM1 is used for bearer towards PSTN CS network element.

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



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