//===========================================================================

1, SIPU收到远端发送的invite请求，表示要接通某个用户终端。

SIPU通知IPTK，IPTK解析消息并进行处理之后要求SIPU发送100 trying消息给远端SIP server。

IPTK继续进行媒体协商和回话建立的操作，发送消息给IWU获取codec list：ICF\_GET\_CODEC\_LIST\_REQ

IWU：

iwuCommonEntryPoint(void)

|🡪 if (ISG\_FAILURE == isgProcessMsg(dataBufP))

| |🡪 case ISG\_MODULE\_IPTK: if(ISG\_SUCCESS==isgProcessMsgIPTK(msg\_i))

| | |🡪 if (ISG\_FAILURE == isgCommonDecodeIPTKmsg(msg\_i, &decodedMsgP))

| | |🡪if (ISG\_SUCCESS == isgCcProcessMsg(internalMsg, &error))

| | | |🡪 if(ISG\_FAILURE==(retVal=isgCcConvertApiToEvent

(ccMsgP\_i->isgHeader.orig\_mod\_id,api\_id,&ccCallEvent,eventStr)))

| | | |🡪 isgCcPrintCallContext(ccCallContext);

| | | |🡪retVal=isgCcFsm[ccCallContext->currentCallState] [ccCallEvent](ccMsgP\_i,errorCode\_o);

| | | |🡪 isgCcPrintCallContext(ccCallContext);

isgCcProcessIcfGetCodecListReq\_CcState\_MediaSetup\_in\_progress

|🡪 retVal=mra\_process\_cc\_msg(pRecvdIptkMsg,( IsgVoidP \*) &icfMsgGetCodecRespP, ISG\_NULL);

| |🡪 case ICF\_GET\_CODEC\_LIST\_REQ:if (ISG\_FAILURE == (\*mra\_glb\_mmHandlerArray [dCurrentMMState]) (&mraLineProfile[dLineId], pCallData, Isg\_en\_getCodecList, &dError))

|🡪 retVal=isgCcEncodeXmlFromCodecListResp(icfMsgGetCodecRespP,ccCallContext, ( IsgU8bit\*\*)&ccCallContext->isgCcXmlBufP,errorCode\_o);

|🡪 if(retVal) retVal=isgCcSendIptkMsg(icfMsgGetCodecRespP,ccCallContext,errorCode\_o);

mra\_fn\_mm\_idle(mraProfile, pCallData, dInputEvent, pErr)

|🡪 case Isg\_en\_getCodecList: retVal = mra\_fn\_sendCodecListResp(mraProfile->dLineId,

(IsgU32bit)pCallContext->dCallId, ISG\_SUCCESS, &pAcceptedStream, &rejected\_stream, pErr);

//=====================================================================

2,IPTK收到codec list的回复之后处理，之后发送codec commit请求给IWU：ICF\_CODEC\_COMMIT\_REQ

IWU：

iwuCommonEntryPoint(void)

|🡪 if (ISG\_FAILURE == isgProcessMsg(dataBufP))

| |🡪 case ISG\_MODULE\_IPTK: if(ISG\_SUCCESS==isgProcessMsgIPTK(msg\_i))

| | |🡪 if (ISG\_FAILURE == isgCommonDecodeIPTKmsg(msg\_i, &decodedMsgP))

| | |🡪if (ISG\_SUCCESS == isgCcProcessMsg(internalMsg, &error))

| | | |🡪 if(ISG\_FAILURE==(retVal=isgCcConvertApiToEvent

(ccMsgP\_i->isgHeader.orig\_mod\_id,api\_id,&ccCallEvent,eventStr)))

| | | |🡪 isgCcPrintCallContext(ccCallContext);

| | | |🡪retVal=isgCcFsm[ccCallContext->currentCallState] [ccCallEvent](ccMsgP\_i,errorCode\_o);

| | | |🡪 isgCcPrintCallContext(ccCallContext);

isgCcProcessIcfCodecCommitReq\_CcState\_MediaSetup\_in\_progress

|🡪 retVal=mra\_process\_cc\_msg(pRecvdIptkMsg,( IsgVoidP \*) &icfCodecCommitRespP, ISG\_NULL);

| |🡪 case ICF\_CODEC\_COMMIT\_REQ: if (ISG\_FAILURE == (\*mra\_glb\_mmHandlerArray[dCurrentMMState]) (&mraLineProfile[dLineId], pCallData, Isg\_en\_commitReq, &dError))

|🡪 retVal=isgCcSendIptkMsg(icfCodecCommitRespP,ccCallContext,errorCode\_o);

mra\_fn\_mm\_idle

|🡪 case Isg\_en\_commitReq: mra\_fn\_sendCodecCommitResp(mraProfile->dLineId, (IsgU32bit)pCallContext->dCallId, pCodecCommitReq->p\_stream\_commit\_list, ISG\_SUCCESS,pErr))

//=====================================================================

3,IPTK收到codec commit的回复之后处理，之后发送open media channel请求给IWU：ICF\_OPEN\_MEDIA\_CHANNEL\_REQ

IWU:

iwuCommonEntryPoint(void)

|🡪 if (ISG\_FAILURE == isgProcessMsg(dataBufP))

| |🡪 case ISG\_MODULE\_IPTK: if(ISG\_SUCCESS==isgProcessMsgIPTK(msg\_i))

| | |🡪 if (ISG\_FAILURE == isgCommonDecodeIPTKmsg(msg\_i, &decodedMsgP))

| | |🡪if (ISG\_SUCCESS == isgCcProcessMsg(internalMsg, &error))

| | | |🡪 if(ISG\_FAILURE==(retVal=isgCcConvertApiToEvent

(ccMsgP\_i->isgHeader.orig\_mod\_id,api\_id,&ccCallEvent,eventStr)))

| | | |🡪 isgCcPrintCallContext(ccCallContext);

| | | |🡪retVal=isgCcFsm[ccCallContext->currentCallState] [ccCallEvent](ccMsgP\_i,errorCode\_o);

| | | |🡪 isgCcPrintCallContext(ccCallContext);

isgCcProcessIcfOpenMediaChannelReq\_CcState\_MediaSetup\_in\_progress

|🡪 retVal=mra\_process\_cc\_msg(pRecvdIptkMsg, (IsgVoidP \*)&icfOpenMediaChRespP, ccCallContext->bearerChannelId);

| |🡪 case ICF\_OPEN\_MEDIA\_CHANNEL\_REQ: (\*mra\_glb\_mmHandlerArray[dCurrentMMState])

(&mraLineProfile[dLineId], pCallData, Isg\_en\_openMediaChannelReq, &dError);

mra\_fn\_mm\_idle(mraProfile, pCallData, dInputEvent, pErr)

|🡪 case Isg\_en\_openMediaChannelReq: retVal = mra\_fn\_sendResourceAllocRequest (mra\_getMmPlatformTxnId(mraProfile), mraProfile->pCurrentCallContext->dChannel, pErr);

| |🡪 isgSendToSipWrap(dVoipMsg.msg\_id, pMsgReq\_voip, (IsgU32bit)dMsgLen);

//=========================================================================

4, SIPW接收到分配资源的请求之后进行相应的处理，然后发送回复消息给IWU MM：

MG\_RES\_ALLOC\_RESP\_TO\_PPU

IWU：

iwuCommonEntryPoint(void)

|🡪 if (ISG\_FAILURE == isgProcessMsg(dataBufP))

| |🡪 case ISG\_MODULE\_MGMT: if(ISG\_SUCCESS==isgProcessMsgMgmt(msg\_i))

| | |🡪 if(ISG\_SUCCESS == isgProcessMsgSipWrap(msg\_i))

| | | |🡪 if (ISG\_SUCCESS == mra\_fn\_voipManagerMsgHandler(msg\_i))

| | | | |🡪 case MG\_RES\_ALLOC\_RESP\_TO\_PPU: (\*mra\_glb\_mmHandlerArray [(mraProfile->pCurrentCallContext->dMediaState).dCurrentState]) (mraProfile, pCallData,Isg\_en\_resAllocRespRecv, &dErr);

mra\_fn\_mm\_waitForPlatRespons

|🡪case Isg\_en\_resAllocRespRecv: mra\_fn\_openMediaChannelResp(mraProfile->dLineId,

(IsgU32bit)pCallContext->dCallId, ISG\_SUCCESS, pErr);

| |🡪 isgCcProcessMraMsg(pMsg,dMsgLen,pErr);

| | |🡪 case ICF\_OPEN\_MEDIA\_CHANNEL\_RESP：retVal=isgCcSendIptkMsg(pRecvdIptkMsg, ccCallContext,errorCodeP\_o);

//======================================================================

5,IPTK接收到媒体信道打开的回复之后，进行处理。之后发送创建媒体会话的请求ICF\_CREATE\_MEDIA\_SESSION\_REQ

IWU：

iwuCommonEntryPoint(void)

|🡪 if (ISG\_FAILURE == isgProcessMsg(dataBufP))

| |🡪 case ISG\_MODULE\_IPTK: if(ISG\_SUCCESS==isgProcessMsgIPTK(msg\_i))

| | |🡪 if (ISG\_FAILURE == isgCommonDecodeIPTKmsg(msg\_i, &decodedMsgP))

| | |🡪if (ISG\_SUCCESS == isgCcProcessMsg(internalMsg, &error))

| | | |🡪 if(ISG\_FAILURE==(retVal=isgCcConvertApiToEvent

(ccMsgP\_i->isgHeader.orig\_mod\_id,api\_id,&ccCallEvent,eventStr)))

| | | |🡪 isgCcPrintCallContext(ccCallContext);

| | | |🡪retVal=isgCcFsm[ccCallContext->currentCallState] [ccCallEvent](ccMsgP\_i,errorCode\_o);

| | | |🡪 isgCcPrintCallContext(ccCallContext);

isgCcProcessIcfCreateMediaSessionReq\_CcState\_MediaSetup\_in\_progress

|🡪 retVal=mra\_process\_cc\_msg(pRecvdIptkMsg, ISG\_NULL, ccCallContext->bearerChannelId);

| |🡪 case ICF\_CREATE\_MEDIA\_SESSION\_REQ: (\*mra\_glb\_mmHandlerArray[dCurrentMMState]) (&mraLineProfile[dLineId], pCallData, Isg\_en\_openMediaChannelReq, &dError);

mra\_fn\_mm\_idle(mraProfile, pCallData, dInputEvent, pErr)

|🡪case Isg\_en\_createMediaSessionReq: mra\_fn\_sendStreamCreateOrModifyRequest (mra\_getMmPlatformTxnId(mraProfile), mraProfile->pCurrentCallContext->dChannel, MG\_STREAM\_CREATE\_REQ\_FROM\_PPU, pFirstLocalStream->mode, pFirstLocalStream->stream\_type, &(pFirstLocalStream->local\_sdp), &(pFirstLocalStream->remote\_sdp),pErr);

| |🡪 isgSendToSipWrap(dVoipMsg.msg\_id, pMsgReq\_voip, dMsgLen);

//=======================================================================

6,SIPW接收到MM发送的创建媒体流请求，进行处理。之后发送创建成功的回复：MG\_STREAM\_CREATE\_RESP\_TO\_PPU

IWU：

iwuCommonEntryPoint(void)

|🡪 if (ISG\_FAILURE == isgProcessMsg(dataBufP))

| |🡪 case ISG\_MODULE\_MGMT: if(ISG\_SUCCESS==isgProcessMsgMgmt(msg\_i))

| | |🡪 if(ISG\_SUCCESS == isgProcessMsgSipWrap(msg\_i))

| | | |🡪 if (ISG\_SUCCESS == mra\_fn\_voipManagerMsgHandler(msg\_i))

| | | | |🡪 case MG\_STREAM\_CREATE\_RESP\_TO\_PPU: (\*mra\_glb\_mmHandlerArray [(mraProfile->pCurrentCallContext->dMediaState).dCurrentState]) (mraProfile, pCallData,Isg\_en\_resAllocRespRecv, &dErr);

mra\_fn\_mm\_waitForPlatRespons

|🡪case Isg\_en\_streamCreateRespRecv: if(mra\_fn\_createMediaSessionResp (mraProfile->dLineId, (IsgU32bit)pCallContext->dCallId, ISG\_SUCCESS,pErr)==ISG\_FAILURE)

| |🡪isgCcProcessMraMsg(pMsg, dMsgLen, pErr);

| | |🡪 case ICF\_CREATE\_MEDIA\_SESSION\_RESP: retVal=isgCcSendIptkMsg(pRecvdIptkMsg, ccCallContext, errorCodeP\_o);

//=======================================================================

7,IPTK收到媒体会话创建的回复后，与SIPU进行交互处理，之后发送来电消息给IWU：

ICF\_INCOMING\_CALL\_IND

IWU：

iwuCommonEntryPoint(void)

|🡪 if (ISG\_FAILURE == isgProcessMsg(dataBufP))

| |🡪 case ISG\_MODULE\_IPTK: if(ISG\_SUCCESS==isgProcessMsgIPTK(msg\_i))

| | |🡪 if (ISG\_FAILURE == isgCommonDecodeIPTKmsg(msg\_i, &decodedMsgP))

| | |🡪if (ISG\_SUCCESS == isgCcProcessMsg(internalMsg, &error))

| | | |🡪 if(ISG\_FAILURE==(retVal=isgCcConvertApiToEvent

(ccMsgP\_i->isgHeader.orig\_mod\_id,api\_id,&ccCallEvent,eventStr)))

| | | |🡪 isgCcPrintCallContext(ccCallContext);

| | | |🡪retVal=isgCcFsm[ccCallContext->currentCallState] [ccCallEvent](ccMsgP\_i,errorCode\_o);

| | | |🡪 isgCcPrintCallContext(ccCallContext);

isgCcProcessIcfIncomingCall\_In\_CcState\_PREPROCESSING

|🡪 retVal=pclConvertApiIptkToQ931 (ICF\_INCOMING\_CALL\_IND\_TO\_CC\_SETUP\_REQ, convParam,pRecvdIptkMsg,&isdnMsgList,errorCode\_o);

| |🡪 case ICF\_INCOMING\_CALL\_IND\_TO\_CC\_SETUP\_REQ: retVal = pclConvIPTKIncomingCallIndToSetup(convParam\_i, (IsgIcfIncomingCallIndSt\*) (icfMsgStP\_i->payload), q931MsgListPP\_o, errorP\_o);

|🡪 isgCcSendL3Msg((l3\_msg\_st\*)isdnMsgList->q931BufP, ccCallContext,errorCode\_o);

//=======================================================================

8,Q931收到setup消息，处理后发送回复给IWU：

Q931：

isdnl3\_process\_msg(buf\_t \* pbuffer,isdnl3\_error\_t \*perror)

|🡪 stat=(\*msg\_process\_routines[pbuffer[APID\_MSB]])(pbuffer,perror);

process\_protocol\_primitive(buf\_t \*pbuffer,isdnl3\_error\_t \*perror)

|🡪 stat=isdnl3\_handle\_msg\_cc\_l3 (pbuffer,controller\_no,dlci\_val,trid\_val,&llci\_val,perror);

| |🡪 if ((\*(\*p\_fsm\_table)[state][event\_id])(pbuffer,\*llci\_val, event\_id, p\_cstr\_buf, perror) == FAILURE)

isdnl3\_cmb00\_setup\_req

|🡪 if (send\_mgmt\_mesg\_to\_l3\_l2 (pbuffer, llci\_val, DL\_UNIT\_DATA\_REQ, perror)==FAILURE)