V5.2 calling subscriber goes offhook

V5.2 calling subscriber offhook indication received in the access network
V5.2 calling subscriber offhook indication received by the switching system in establish message
Resource, calling port is allocated for the call
Call manager creates originating V5.2 call object to handle the call
The initial state of V5.2 call is set to idle
V5.2 calling subscriber offhook indication is passed to V5.2 call in establish message
Establish ack is sent to the V5.2 access network

Request for E1 Slot towards calling subscriber is sent
LEG: E1 slot available for V5.2 Subscriber

Resource E1 Slot is allocated towards V5.2 calling subscriber
E1 and timeslot allocation is passed to the V5.2 access network. The allocation message is used for this purpose
V5.2 call awaits allocation complete message from access network
Allocation complete is received

LEG: DTMF Dialling Subscriber
DTMF receiver needs to be configured to receive DTMF digits dialled by the subscriber.
Send resource request to DTMF receiver for digit collection

Voice path is established between the subscriber and the switch. Now the switch prepares for collecting digits from the subscriber.
**V5.2 Originated and V5.2 Terminated Call (V5.2 to V5.2 Call -- DTMF, Called Subscriber Goes Onhook)**

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**Resource Allocate Ack**

Resource, DTMF receiver is allocated for the originating V5.2 call

**Dial Tone**

Request to switch dial tone towards V5.2 calling subscriber

**Silence Tone**

Dial tone feed is passed directly to the subscriber via the voice path

**Complete Dialling**

Originating V5.2 call awaits digits by starting IDT timer (Inter Digit Timer)

**Collecting Digits**

DTMF digit dialled by V5.2 calling subscriber received

Stop IDT timer upon receipt of dialled digit

Start IDT timer to await receipt of next digit

**V5.2 Calling Subscriber Dials First Digit**

**V5.2 Calling Subscriber Dials Next Digit**

Next digit dialled by V5.2 calling subscriber received

End of dialling detected by originating V5.2 call
V5.2 Originated and V5.2 Terminated Call (V5.2 to V5.2 Call -- DTMF, Called Subscriber Goes Onhook)

subscriber 1  access network 1  call handler 1  switching system  access network 2  subscriber 2
sub 1  v52 AN 1  dsp 1  tone manager 1  v52 call 1  E1 allocator 1  time slot allocator 1  routing manager 1  space slot allocator 1  tone manager 2  time slot allocator 2  E1 allocator 2  v52 call 2  call handler 2  v52 AN 2  sub 2

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Resource is free

Release the DTMF receiver

Switch routing tone towards V5.2 calling subscriber

Routing tone feed is passed directly to the subscriber via the voice path

Routing tone is being fed to V5.2 calling subscriber

Send resource request for space slot
Call routing being performed

LEG: Routing is successful
Call to be terminated in this exchange detected; EntityID for called directory number determined

Resource Response containing t-s-t resources for call received
Switch the path for call
Perform t-s switching for call
Perform s-t switching for call

Send call request to terminating call handler

LEG: Called Subscriber is free
Resource, called port is allocated for the call
Call manager creates terminating V5.2 call object to handle the call

Indicate that called subscriber is free

Stop routing tone towards V5.2 calling subscriber
V5.2 Originated and V5.2 Terminated Call (V5.2 to V5.2 Call -- DTMF, Called Subscriber Goes Onhook)

1. **Feed Routing tone**
   - Awaiting Answer

2. **resource_allocate**
   - allocate
     - E1 Slot towards Called Subscriber
   - resource_allocate_ack
     - allocation

3. **allocation**
   - E1 and specific timeslot on it indicated for V5.2 called subscriber
   - allocation_comp
     - Terminating V5.2 call awaits allocation complete from access network
     - Allocation complete message is received

4. **tallocation_comp**
   - Start answer timer to await answer from V5.2 called subscriber
   - Ringing request is sent to the access network in establish message
   - Ringing response is received from access network in establish ack message

5. **establish**
   - Ringing request is sent to the access network in establish message
   - establish_ack
     - establish_ack

6. **tallocation_comp**
   - Switch ring back tone towards V5.2 calling subscriber
   - Ring back tone feed is passed directly to the subscriber via the voice path

7. **rings**
   - Ring back tone is being fed to the V5.2 calling subscriber

8. **testablish_ack**
   - V5.2 called subscriber is being rung
   - Switching system

9. **V5.2 called subscriber answers the call**
   - V5.2 called subscriber answer indication is received from the access network
   - Signal ack is sent to the V5.2 access network
   - Indicating Called Response
V5.2 Originated and V5.2 Terminated Call (V5.2 to V5.2 Call -- DTMF, Called Subscriber Goes Onhook)

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**V5.2 called subscriber goes onhook**

- **Answer indication** is conveyed to the originating V5.2 call handler
- **Stop answer timer**

**Stop ring back tone towards V5.2 calling subscriber**

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**V5.2 called subscriber goes offhook**

- **V5.2 called subscriber offhook indication** is received from the access network
- **Signal ack message** is sent to the V5.2 access network
- **Start called subscriber hold, CSH timer**

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**Call is in conversation**

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**V5.2 called subscriber goes onhook**

- **Signal onhook**
- **Signal ack**
- **CSH timer**
- **Start CSH timer**

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**CSH timer timeout occurs**
Call release indicated to the originating V5.2 call handler

Release t-s-s resources allocated for call

Unswitch the path for the call

Release t-s switching done for call

Release s-t switching done for call

Call release handshake takes place between originating and terminating V5.2 call handlers

Indicate call release to the calling port in signal message

Originating V5.2 call handler awaits signal ack message

Signal ack message is received from the V5.2 access network

Switch congestion tone towards V5.2 calling subscriber

Congestion tone feed is passed directly to the subscriber via the voice path

Congestion tone timeout

Stop congestion tone towards V5.2 calling subscriber

Switch Parking tone towards V5.2 calling subscriber
V5.2 Originated and V5.2 Terminated Call (V5.2 to V5.2 Call -- DTMF, Called Subscriber Goes Onhook)

Pricing tone feed is passed directly to the subscriber via the voice path.

Terminating V5.2 call handler sends E1 timeslot release indication to access network in deallocation message.

Terminating V5.2 call handler awaits deallocation complete message.

Indicate E1 timeslot freed towards V5.2 called subscriber in deallocation complete message.

Send E1 slot resource release request.

Terminating V5.2 call handler sends disconnect message to the V5.2 access network.

Terminating V5.2 call handler awaits disconnect complete message from the access network.

Disconnect complete message is received from the access network.

Send call over indication for the terminating V5.2 call handler to terminating call manager.

Call manager deletes terminating V5.2 call object.

The terminating V5.2 subscriber port is free for another originating or terminating call.

V5.2 calling subscriber onhook indication is received from the access network in signal message.

Calling Subscriber goes onhook on hearing Parking tone.

The terminating V5.2 subscriber port is free for another originating or terminating call.

Pricing tone is being fed to the V5.2 calling subscriber.

Parking tone is being fed to the V5.2 calling subscriber.

begin

Parking_Tone

Feed Parking tone

Parking_Tone

Feed Parking tone

The terminating V5.2 subscriber port is free for another originating or terminating call.

V5.2 calling subscriber onhook indication is received from the access network in signal message.

Calling Subscriber goes onhook on hearing Parking tone.

The terminating V5.2 subscriber port is free for another originating or terminating call.

V5.2 calling subscriber onhook indication is received from the access network in signal message.

Calling Subscriber goes onhook on hearing Parking tone.

The terminating V5.2 subscriber port is free for another originating or terminating call.

V5.2 calling subscriber onhook indication is received from the access network in signal message.

Calling Subscriber goes onhook on hearing Parking tone.
Signal acknowledgement message is sent to the V5.2 access network.

Stop Parking tone towards V5.2 calling subscriber.

Originating V5.2 call handler sends deallocation message to indicate E1 slot release indication to access network.

Originating V5.2 call object awaits deallocation complete message.

Indicate E1 timeslot freed towards V5.2 calling subscriber in deallocation complete message.

Send E1 slot release request.

Originating V5.2 call object sends disconnect message to access network.

Originating V5.2 call object awaits disconnect complete message.

Disconnect complete message is received from V5.2 access network.

Send call over indication for originating V5.2 call to originating call manager.

Call manager deletes originating V5.2 call object.

The originating V5.2 subscriber port is free for another originating or terminating call.