# V5.2 Originated and V5.2 Terminated Call (V5.2 to V5.2 Call -- Pulse Dialing, Calling Subscriber Clears)

subscriber 1	access network 1	switching system												access network 2	subscriber 2	EventHelix.com/EventStudio 1.5
		call handler 1						central processor		call handler 2				access network 2	subscriber 2	
sub 1	v52 AN 1	dsp 1	tone manager 1	call manager 1	v52 call 1	E1 allocator 1	time slot allocator 1	routing manager	space slot allocator	tone manager 2	time slot allocator 2	E1 allocator 2	v52 call 2	call manager 2	v52 AN 2	sub 2	30-May-02 23:11 (Page 1)

V5.2 calling subscriber goes offhook
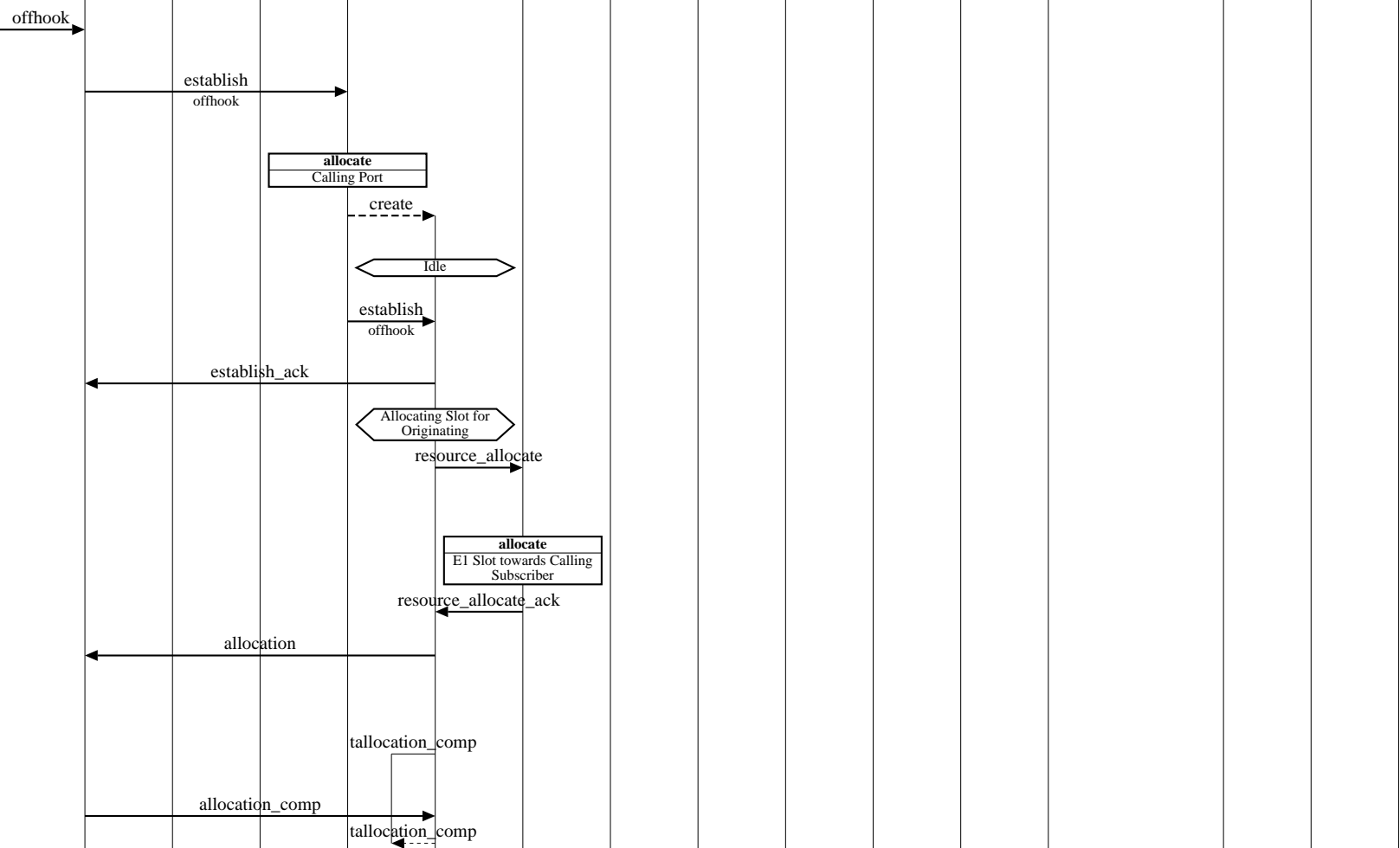
offhook →
V5.2 calling subscriber offhook indication received in the access network

establish / offhook →
V5.2 calling subscriber offhook indication received by the switching system in establish message

allocate — Calling Port
Resource, calling port is allocated for the call

create
Call manager creates originating V5.2 call object to handle the call

Idle
The initial state of V5.2 call is set to idle

establish / offhook
V5.2 calling subscriber offhook indication is passed to V5.2 call in establish message

establish_ack ←
Establish ack is sent to the V5.2 access network

Allocating Slot for Originating

resource_allocate →
Request for E1 Slot towards calling subscriber is sent

LEG: E1 slot available for V5.2 Subscriber

allocate — E1 Slot towards Calling Subscriber
Resource E1 Slot is allocated towards V5.2 calling subscriber

resource_allocate_ack ←

allocation ←
E1 and timeslot allocation is passed to the V5.2 access network. The allocation message is used for this purpose

tallocation_comp
V5.2 call awaits allocation complete message from access network

allocation_comp →
Allocation complete is received

tallocation_comp

Voice path is established between the subscriber and the switch. Now the switch prepares for collecting digits from the subscriber.

LEG: Pulse Dialling Subscriber

Feeding Dial tone
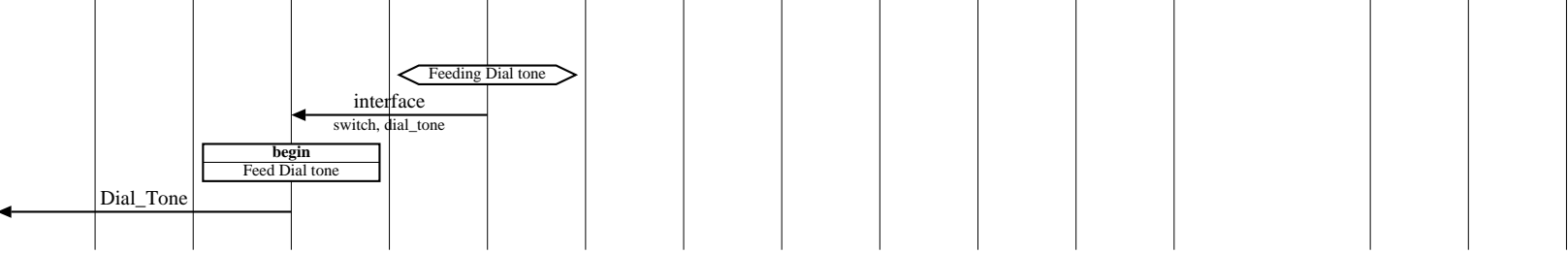
interface / switch, dial_tone ←
Request to switch dial tone towards V5.2 calling subscriber

begin — Feed Dial tone

Dial_Tone ←
Dial tone feed is passed directly to the subscriber via

subscriber 1	access network 1	switching system														access network 2	subscriber 2	EventHelix.com/EventStudio 1.5
		call handler 1						central processor		call handler 2						v52 AN 2	sub 2	
sub 1	v52 AN 1	dsp 1	tone manager 1	call manager 1	v52 call 1	E1 allocator 1	time slot allocator 1	routing manager	space slot allocator	tone manager 2	time slot allocator 2	E1 allocator 2	v52 call 2	call manager 2		v52 AN 2	sub 2	30-May-02 23:11 (Page 2)

the voice path

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

LEG: Complete Dialling

tidt

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

V5.2 calling subscriber dials first digit
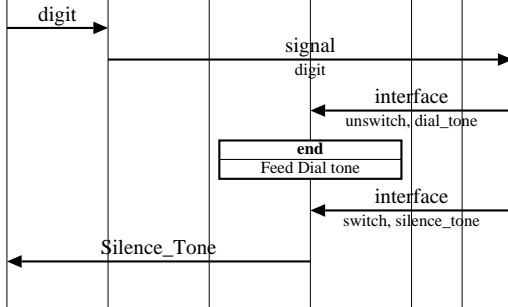
digit

signal
digit

Pulse digit dialled by V5.2 calling subscriber received

interface
unswitch, dial_tone

Stop dial tone towards V5.2 calling subscriber

end
Feed Dial tone

interface
switch, silence_tone

Switch silence tone towards V5.2 calling subscriber

Silence_Tone

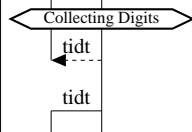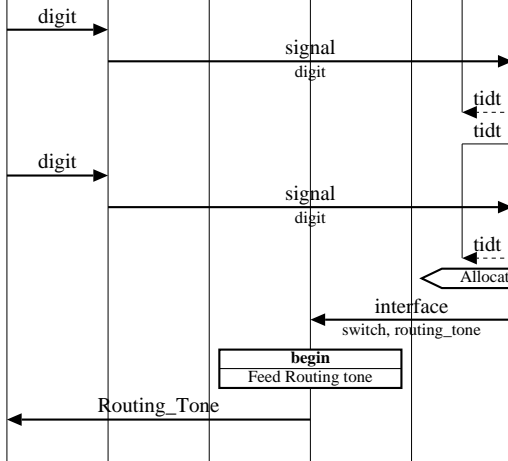Silence tone feed is passed directly to the subscriber via the voice path

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

Collecting Digits

tidt

Stop IDT timer upon receipt of first dialled digit

tidt

Start IDT timer to await next digit

V5.2 calling subscriber dials next digit

digit

signal
digit

Next digit dialled by V5.2 calling subscriber received

tidt

tidt

digit

signal
digit

Next digit dialled by V5.2 calling subscriber received

tidt

End of dialling detected

Allocating Path

interface
switch, routing_tone

Switch routing tone towards V5.2 calling subscriber

begin
Feed Routing tone

Routing_Tone

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

Routing tone is being fed to V5.2 calling subscriber

resource_allocate
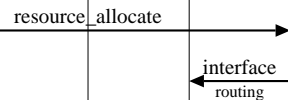
Send resource request for space slot

interface
routing

Call routing being performed

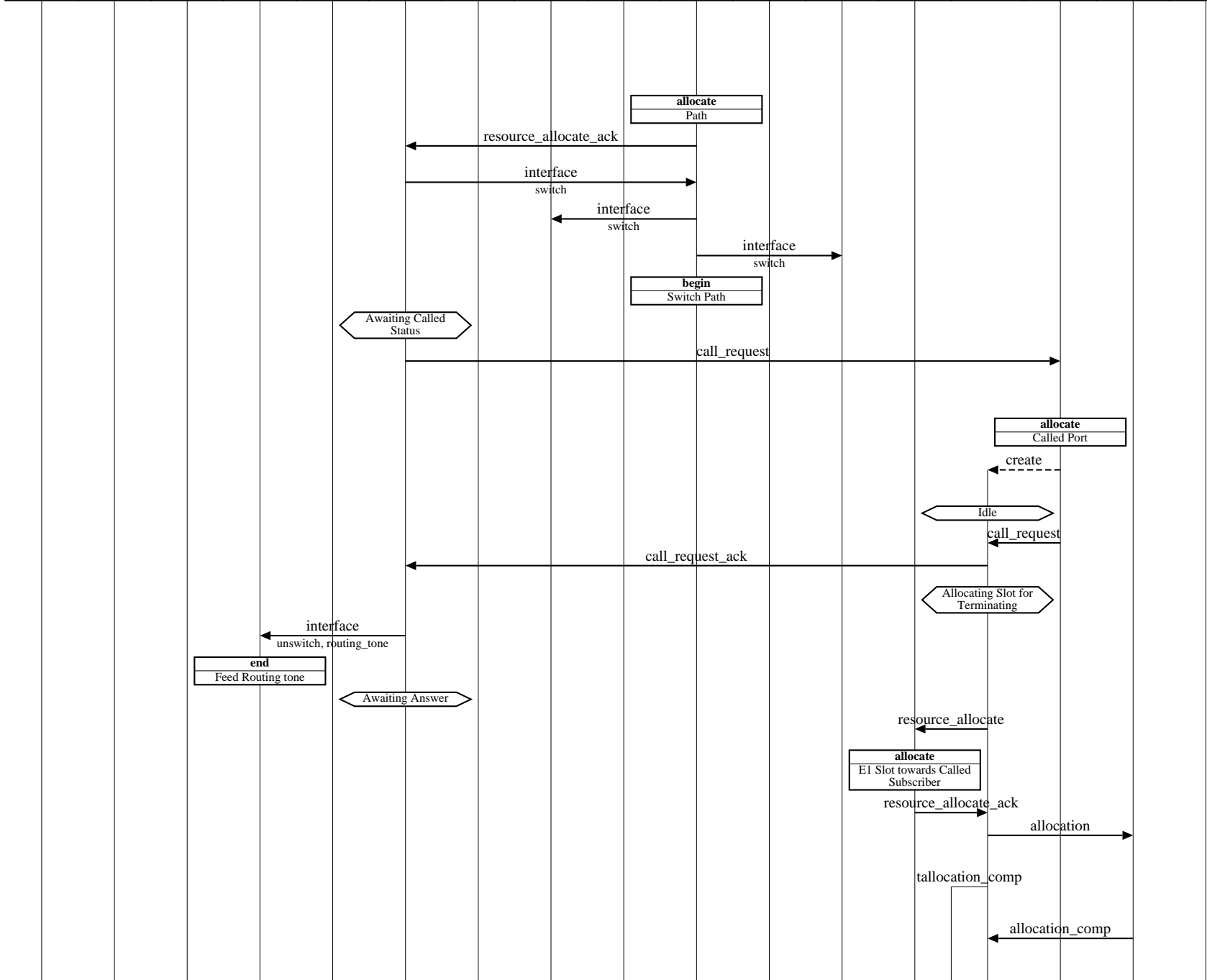| subscriber 1	access network 1	switching system												access network 2	subscriber 2	EventHelix.com/EventStudio 1.5
sub 1	v52 AN 1	call handler 1						central processor		call handler 2				v52 AN 2	sub 2	
sub 1	v52 AN 1	dsp 1	tone manager 1	call manager 1	v52 call 1	E1 allocator 1	time slot allocator 1	routing manager	space slot allocator	tone manager 2	time slot allocator 2	E1 allocator 2	v52 call 2	call manager 2	v52 AN 2	sub 2	30-May-02 23:11 (Page 3)

LEG: Routing is successful

Call to be terminated in this exchange detected; EntityID for called directory number determined

allocate
Path

resource_allocate_ack

Resource Response containing t-s-t resources for call received

interface
switch

Switch the path for call

interface
switch

Perform t-s switching for call

interface
switch

Perform s-t switching for call

begin
Switch Path

Awaiting Called Status

call_request

Send call request to terminating call handler

LEG: Called Subscriber is free

allocate
Called Port

Resource, called port is allocated for the call

create

Call manager creates terminating V5.2 call object to handle the call

Idle

call_request

call_request_ack

Indicate that called subscriber is free

Allocating Slot for Terminating

interface
unswitch, routing_tone

Stop routing tone towards V5.2 calling subscriber

end
Feed Routing tone

Awaiting Answer

resource_allocate

Send E1 slot request towards V5.2 called subscriber

allocate
E1 Slot towards Called Subscriber

resource_allocate_ack

allocation

E1 and specific timeslot on it indicated for V5.2 called subscriber

tallocation_comp

Terminating V5.2 call awaits allocation complete from access network

allocation_comp

Allocation complete message is received

subscriber 1	access network 1	switching system													access network 2	subscriber 2	EventHelix.com/EventStudio 1.5
		call handler 1						central processor		call handler 2					v52 AN 2	sub 2	
sub 1	v52 AN 1	dsp 1	tone manager 1	call manager 1	v52 call 1	E1 allocator 1	time slot allocator 1	routing manager	space slot allocator	tone manager 2	time slot allocator 2	E1 allocator 2	v52 call 2	call manager 2	v52 AN 2	sub 2	30-May-02 23:11 (Page 4)

tallocation_comp

Starting Ringing

tans

Start answer timer to await answer from V5.2 called subscriber

establish
ringing

Ringing request is sent to the access network in establish message

testablish_ack

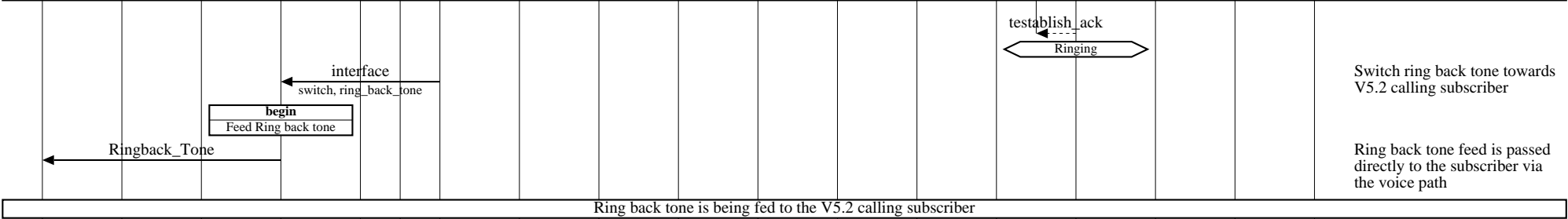establish_ack

Ringing response is received from access network in establish ack message

V5.2 called subscriber is being rung

testablish_ack

Ringing

interface
switch, ring_back_tone

begin
Feed Ring back tone

Switch ring back tone towards V5.2 calling subscriber

Ringback_Tone

Ring back tone feed is passed directly to the subscriber via the voice path

Ring back tone is being fed to the V5.2 calling subscriber

LEG: Called Subscriber answers

offhook
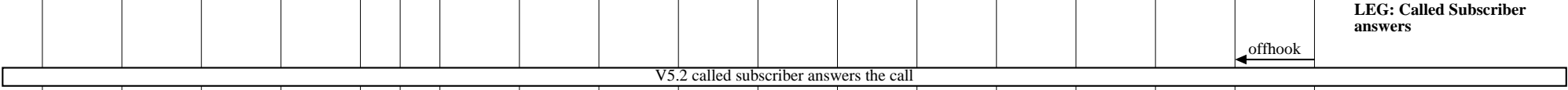
V5.2 called subscriber answers the call

signal
offhook

V5.2 called subscriber answer indication is received from the access network

signal_ack

Signal ack is sent to the V5.2 access network

Indicating Called Response

answer

Answer indication is conveyed to the originating V5.2 call handler

Stop answer timer

tans

answer_ack

Conversation: No CSH case

Stop ring back tone towards V5.2 calling subscriber

interface
unswitch, ring_back_tone

end
Feed Ring back tone

Conversation

Call is in conversation

LEG: Calling Subscriber hangs up

V5.2 Originated and V5.2 Terminated Call (V5.2 to V5.2 Call -- Pulse Dialing, Calling Subscriber Clears)

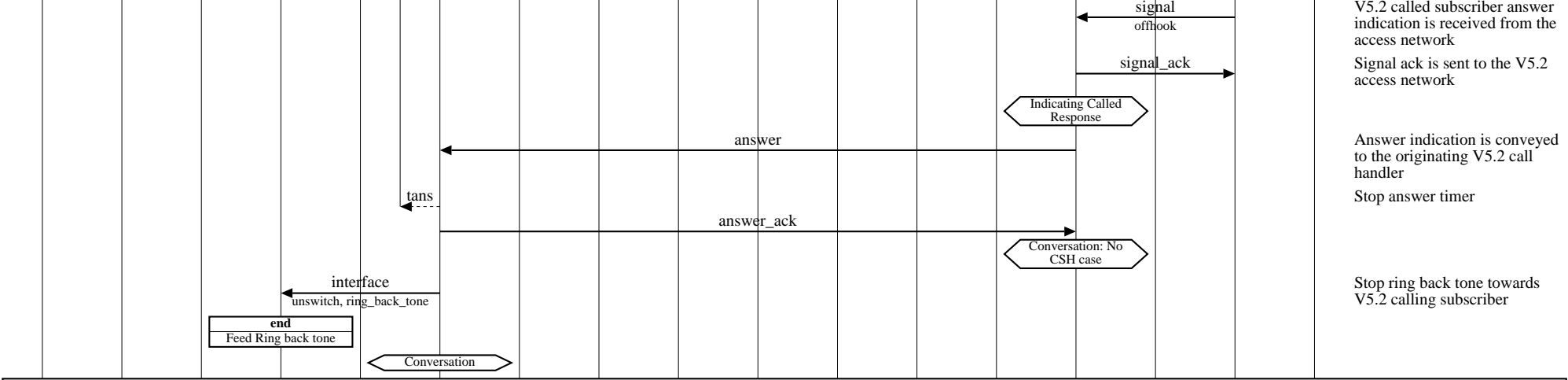| subscriber 1	access network 1	switching system													access network 2	subscriber 2	EventHelix.com/EventStudio 1.5
sub 1	v52 AN 1	call handler 1						central processor		call handler 2					v52 AN 2	sub 2	
sub 1	v52 AN 1	dsp 1	tone manager 1	call manager 1	v52 call 1	E1 allocator 1	time slot allocator 1	routing manager	space slot allocator	tone manager 2	time slot allocator 2	E1 allocator 2	v52 call 2	call manager 2	v52 AN 2	sub 2	30-May-02 23:11 (Page 5)

onhook

V5.2 calling subscriber goes onhook

signal
onhook

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

signal_ack

Signal ack message is sent to V5.2 access network

Releasing Path

resource_free

Release t-s-t resources allocated for call

interface
unswitch

Unswitch the path for call

interface
unswitch

Release t-s switching for call

interface
unswitch

Release s-t switching for call

end
Switch Path

free
Path

resource_free_ack

Indicating Release

call_release

Indicate call release to terminating V5.2 call handler

call_release_ack

Feeding Congestion tone

Clearing

interface
switch, congestion_tone

Switch congestion tone towards V5.2 called subscriber

begin
Feed Congestion tone

Congestion_Tone

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

Congestion tone is being fed to the V5.2 called subscriber

deallocation

Inform E1 slot release indication to access network in deallocation message

tdeallocation_comp

Originating V5.2 call object awaits deallocation complete message

deallocation_comp

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

tdeallocation_comp

resource_free

Send E1 Slot release request

free
E1 Slot towards Calling Subscriber

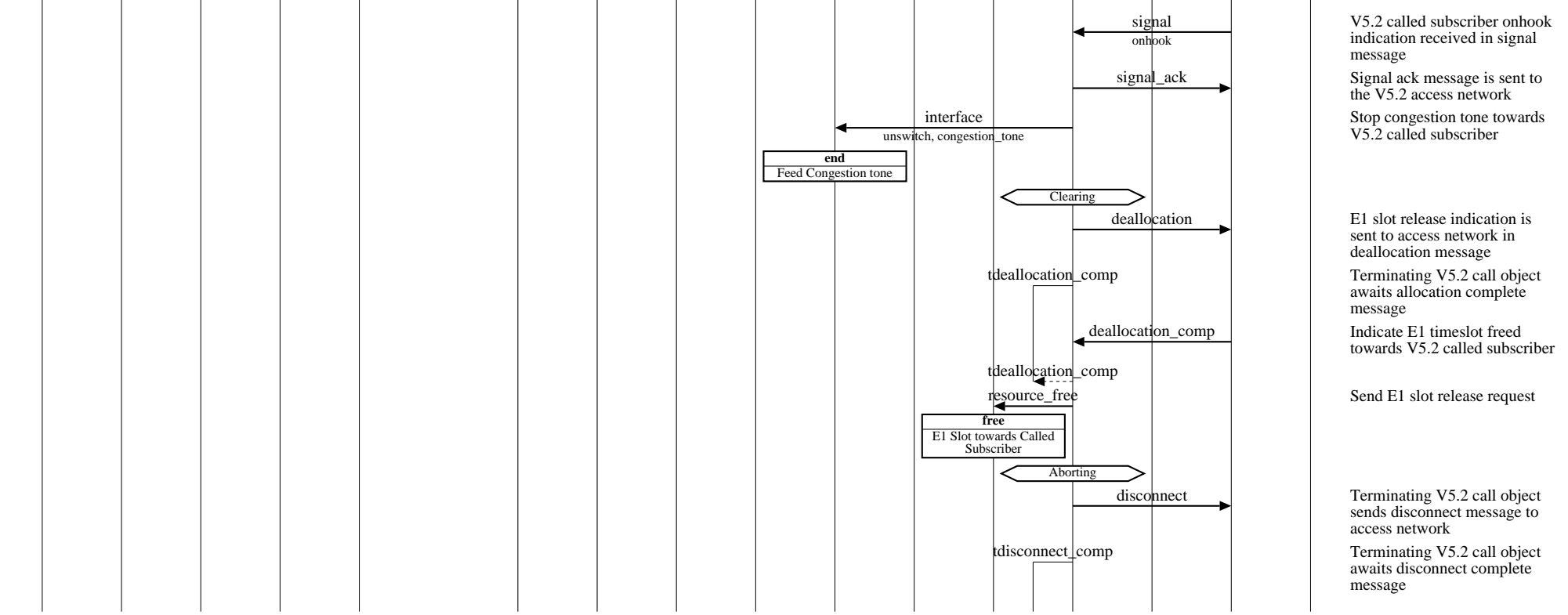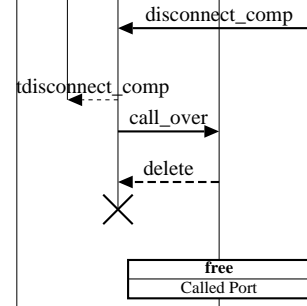| subscriber 1	access network 1	switching system													access network 2	subscriber 2	EventHelix.com/EventStudio 1.5
		call handler 1						central processor		call handler 2					v52 AN 2	sub 2	
sub 1	v52 AN 1	dsp 1	tone manager 1	call manager 1	v52 call 1	E1 allocator 1	time slot allocator 1	routing manager	space slot allocator	tone manager 2	time slot allocator 2	E1 allocator 2	v52 call 2	call manager 2	v52 AN 2	sub 2	30-May-02 23:11 (Page 6)

Aborting

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

tdisconnect_comp — Originating V5.2 call object awaits disconnect complete message

disconnect_comp — Disconnect complete message received from the V5.2 access network

tdisconnect_comp

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

delete — Call manager deletes originating V5.2 call object

free
Calling Port — Call manager marks the originating V5.2 subscriber port free

onhook

Called Subscriber goes onhook on hearing congestion tone

signal / onhook — V5.2 called subscriber onhook indication received in signal message

signal_ack — Signal ack message is sent to the V5.2 access network

interface / unswitch, congestion_tone — Stop congestion tone towards V5.2 called subscriber

end
Feed Congestion tone

Clearing

deallocation — E1 slot release indication is sent to access network in deallocation message

tdeallocation_comp — Terminating V5.2 call object awaits allocation complete message

deallocation_comp — Indicate E1 timeslot freed towards V5.2 called subscriber

tdeallocation_comp

resource_free — Send E1 slot release request

free
E1 Slot towards Called Subscriber

Aborting

disconnect — Terminating V5.2 call object sends disconnect message to access network

tdisconnect_comp — Terminating V5.2 call object awaits disconnect complete message

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subscriber 1	access network 1	switching system													access network 2	subscriber 2	**EventHelix.com/EventStudio 1.5**
sub 1	v52 AN 1	call handler 1						central processor		call handler 2					v52 AN 2	sub 2	
sub 1	v52 AN 1	dsp 1	tone manager 1	call manager 1	v52 call 1	E1 allocator 1	time slot allocator 1	routing manager	space slot allocator	tone manager 2	time slot allocator 2	E1 allocator 2	v52 call 2	call manager 2	v52 AN 2	sub 2	30-May-02 23:11 (Page 7)

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

`disconnect_comp` (v52 AN 2 → v52 call 2)

`tdisconnect_comp` (v52 call 2 → v52 call 2)

`call_over` (v52 call 2 → call manager 2)

Send call over indication for terminating V5.2 call

`delete` (call manager 2 → v52 call 2)

Call manager deletes terminating V5.2 call object

free
Called Port

Call manager marks the terminating V5.2 subscriber port as free