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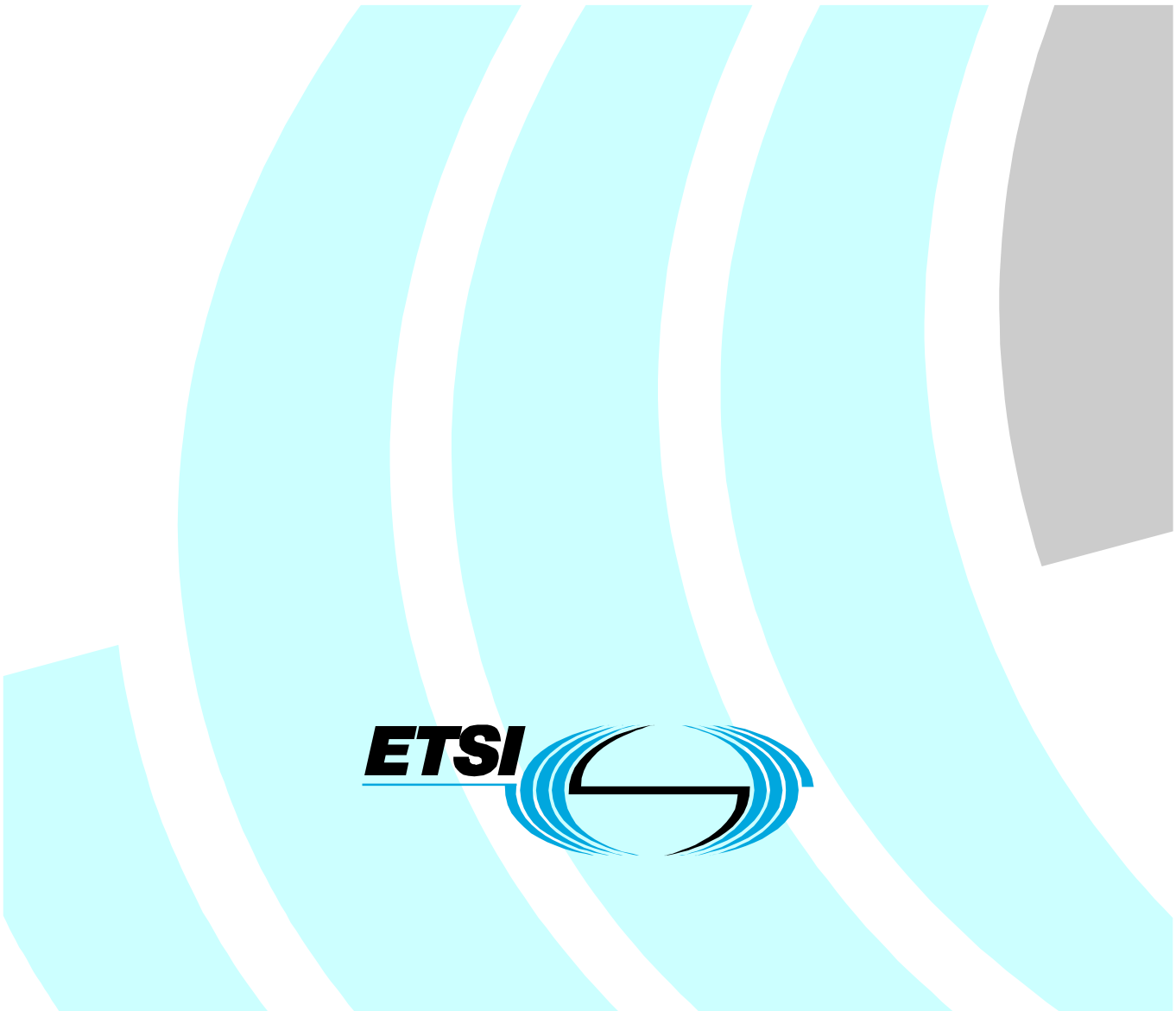
Technical Report

Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); H.248 POTS Message Flows based on the H.248 Profile for controlling Access and Residential Gateways



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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

Introduction

The present document describes H.248 example message flows that are exchanged between a MGC and an AGW/RGW in order to deliver a Plain Old Telephone Service (POTS).

1 Scope

The present document describes example message flows that are exchanged between the AGW/RGW and the MGC for support of POTS lines based on the ETSI H.248 profile [1] and the H.248.34 stimulus analogue line "stimal" package. Other alternative POTS message flows based on the ETSI H.248 profile [1] and for example the H.248.1 analogue line package ("al") are also valid and examples will be described in future versions of this document."

2 References

For the purposes of this Technical Report (TR) the following references apply:

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

[1] ETSI ES 283 002: "Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN); PSTN/ISDN Emulation Subsystem (PES); NGN Release 1 H.248 Profile for controlling Access and Residential Gateways".

[2] ETSI EN 300 659-2: "Access and Terminals (AT); Analogue access to the Public Switched Telephone Network (PSTN); Subscriber line protocol over the local loop for display (and related) services; Part 2: Off-hook data transmission".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Direct Exchange Line (DEL): used to define an analogue port type used for delivering POTS services to a residential user

Direct Dial In (DDI): used to defined an analogue port type which accepts incoming calls which are routed by the hosted PBX using the dialled extension digits

Earth Calling PBX (ECPBX): used to define an analogue port type which uses ground start procedures for initiating a call

Loop Calling PBX (LCPBX): used to define an analogue port type which uses loop start procedures for initiating a call

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AGW	Access Media Gateway
DDI	Direct Dial In
DEL	Direct Exchange Line
DTMF	Dual Tone Multi-Frequency
ECPBX	Earth Calling PBX
LCPBX	Loop Calling PBX
MGC	Media Gateway Controller
NEF	Network Element Function
OSF	Operations Systems Function
PBX	Private Branch eXchange
POTS	Plain Old Telephone Service

QAG Q interface to Access/residential media Gateway (see note)

NOTE: The "Q interface" (e.g. ITU-T Recommendation M.3010, clause 3.26) relates to the "q reference point" (e.g. ITU-T Recommendation M.3010, clause 3.27) and corresponds here to the interface between the H.248 AMG/RMG as Network Element Function (NEF) and the Operations Systems Function (OSF).

RGW Residential media GateWay

4 Message Flows

The message flows contain annotation that depict the key functions that are performed by the AGW/RGW and the MGC.

Although the message flows are not exhaustive they cover the most common scenarios and serve as a framework for constructing flows for other markets and other exceptional conditions not provided herein.

Hence the flows shown in this document are examples only. Many similar or equivalent flows including the alternative use of descriptors and parameters are equally valid, provided they conform to the ETSI H.248 profile [1].

The following salient points should be noted when reading the message flows:

- Message Header is excluded from the H.248 flows.
- A end is used to refer to the AGW/RGW/MGC entities where the originating/outgoing call is initiated.
- B end is used to refer to the AGW/RGW/MGC entities where the terminating/incoming call is initiated.
- DialPlanI is the dial plan that is loaded in the AGW/RGW via the MGC for performing initial digit string matches. It is not overwritten and remains present in the AGW/RGW for it's life time.
- Primitives that are applicable to the 2 wire analogue interface are shown using a dashed arrow.

The following should be noted with respect to SDP:

- The delimiter at the end of SDP lines is "<CRLF>". However this is not illustrated in the message flows for clarity.
- In the Local Descriptor returned from the AGW/RGW to MGC the s, t, and o lines will be present. Similarly these lines will also be present in the Remote Descriptor sent from the MGC to the AGW/RGW. These lines will default to; s=-, t=0 0, o=- 0 0 IN IP4 <IP address>, where the IP address in the o line is the same as that in the c line. But for clarity these lines are not shown in the message flows.
- Audit flows between the MGC and the AGW/RGW may be used to allow the MGC to determine that the capabilities and value are supported by the AGW/RGW. These flows have not been illustrated in this document.

4.1 System Management

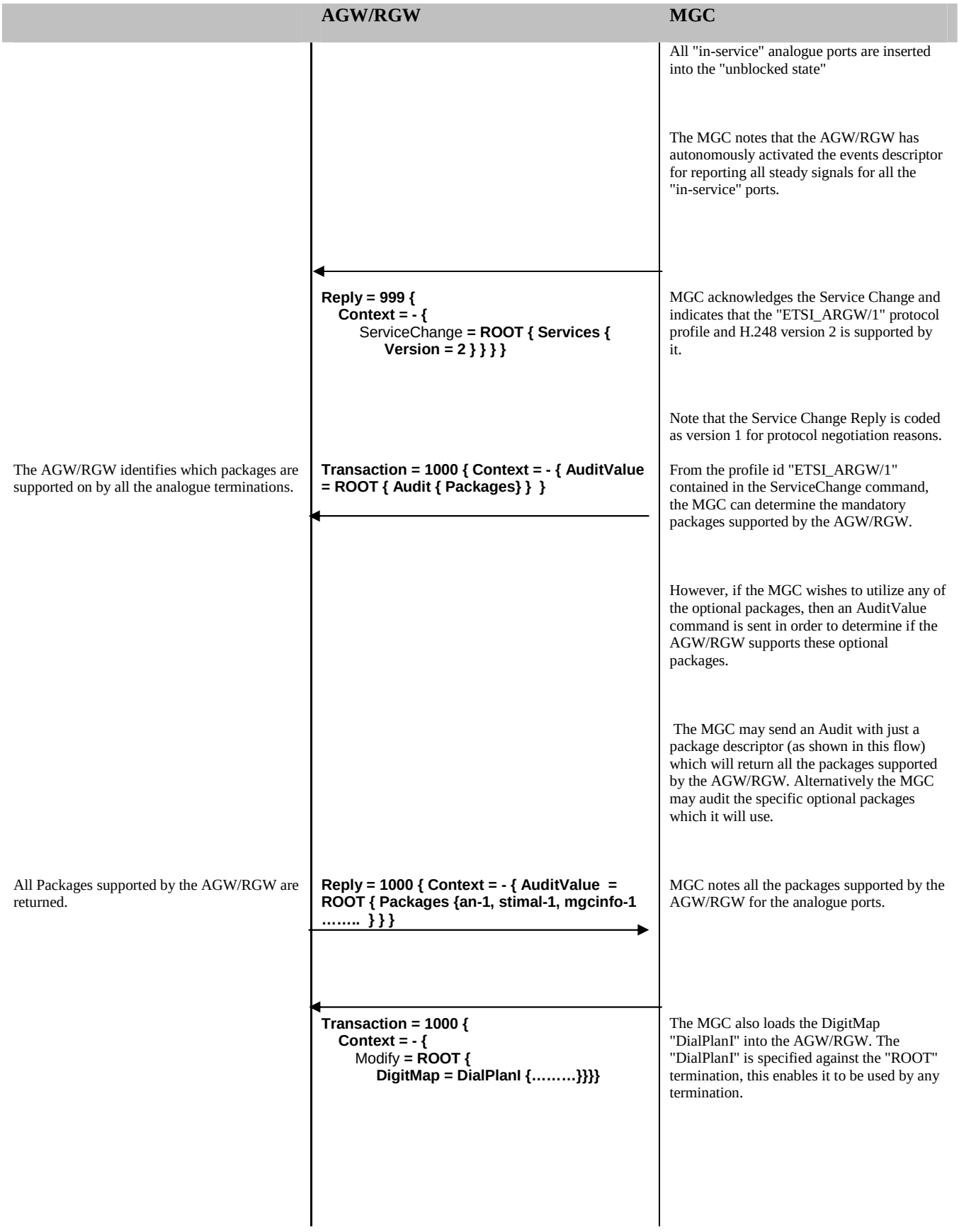
This clause contains system management message flows that are common to all the POTS port types.

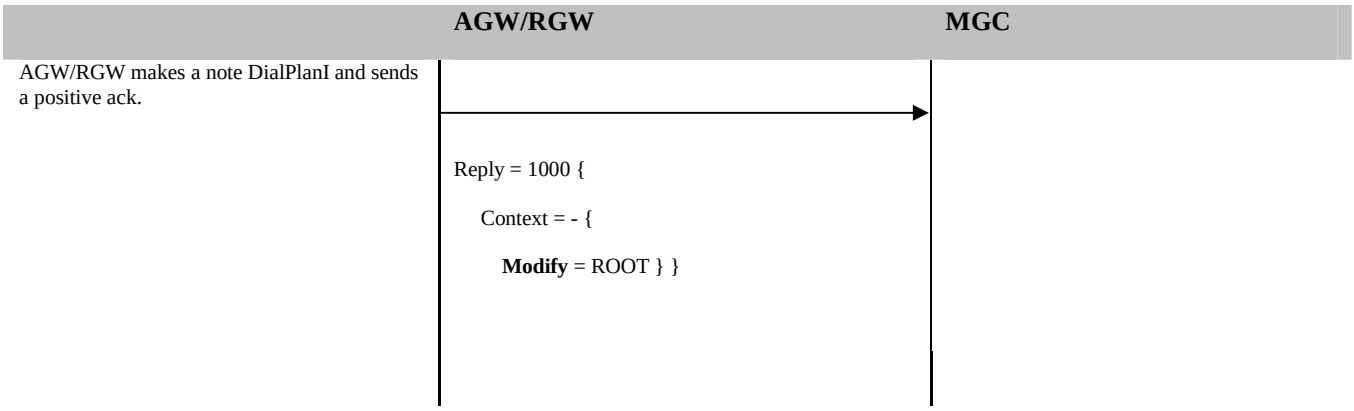
4.1.1 AGW/RGW Registration with MGC

4.1.1.1 AGW/RGW Restart and registration with the MGC

Pre-conditions: In the AGW/RGW and MGC aln/1/1 has been provisioned as a DEL port, aln/49/1 has been provisioned as a LCPBX port, aln/99/1 has been provisioned as an ECPBX port and aln/100/1 has been provisioned as a DDI port.

AGW/RGW	MGC
The AGW/RGW powers up and performs the following actions: • Inserts all "in-service" analogue ports into the unblocked state and into a null context and informs the MGC. • Unblocking of an analogue port results in incoming and outgoing calls being allowed from the analogue port. For DEL/LC-PBX and EC-PBX ports, the port is put into the "Free state", "Idle line" feed is applied and port monitored for events. Whilst for DDI-PBX ports the port is inserted into the "Free state" and the port monitored for events. • The events descriptor of "stimal/stedsig" and "stimal/pulsedsig" are autonomously activated for all the "in-service" DEL/LC-PBX , EC-PBX analogue ports as part of system start-up procedures. • The events descriptor of "stimal/stedsig" is autonomously activated for all the "in-service" DDI-PBX analogue ports as part of system start-up procedures. • A service change is sent to the MGC with the reason indicates "cold boot", the profiles specifies" ETSI_ARGW version 1" and that protocol version is set to H.248 version 2. Note that Service Change command is coded as version 1 for protocol negotiation reasons.	 **Transaction = 999 {** **Context = - {** ServiceChange = **ROOT { Services {** **Method = Restart,** **Reason = 901,** **Profile = ETSI_ARGW/1,** **Version = 2 } } } }


AGW/RGW
MGC
All "in-service" analogue ports are inserted into the "unblocked state"
The MGC notes that the AGW/RGW has autonomously activated the events descriptor for reporting all steady signals for all the "in-service" ports.
Reply = 999 {
Context = - {
ServiceChange = ROOT { Services {
Version = 2 } } } }
MGC acknowledges the Service Change and indicates that the "ETSI_ARGW/1" protocol profile and H.248 version 2 is supported by it.
Note that the Service Change Reply is coded as version 1 for protocol negotiation reasons.
The AGW/RGW identifies which packages are supported on by all the analogue terminations.
Transaction = 1000 { Context = - { AuditValue = ROOT { Audit { Packages} } }
From the profile id "ETSI_ARGW/1" contained in the ServiceChange command, the MGC can determine the mandatory packages supported by the AGW/RGW.
However, if the MGC wishes to utilize any of the optional packages, then an AuditValue command is sent in order to determine if the AGW/RGW supports these optional packages.
The MGC may send an Audit with just a package descriptor (as shown in this flow) which will return all the packages supported by the AGW/RGW. Alternatively the MGC may audit the specific optional packages which it will use.
All Packages supported by the AGW/RGW are returned.
Reply = 1000 { Context = - { AuditValue = ROOT { Packages {an-1, stimal-1, mgcinfo-1 …….. } } }
MGC notes all the packages supported by the AGW/RGW for the analogue ports.
Transaction = 1000 {
Context = - {
Modify = ROOT {
DigitMap = DialPlanI {……}}}}
The MGC also loads the DigitMap "DialPlanI" into the AGW/RGW. The "DialPlanI" is specified against the "ROOT" termination, this enables it to be used by any termination.

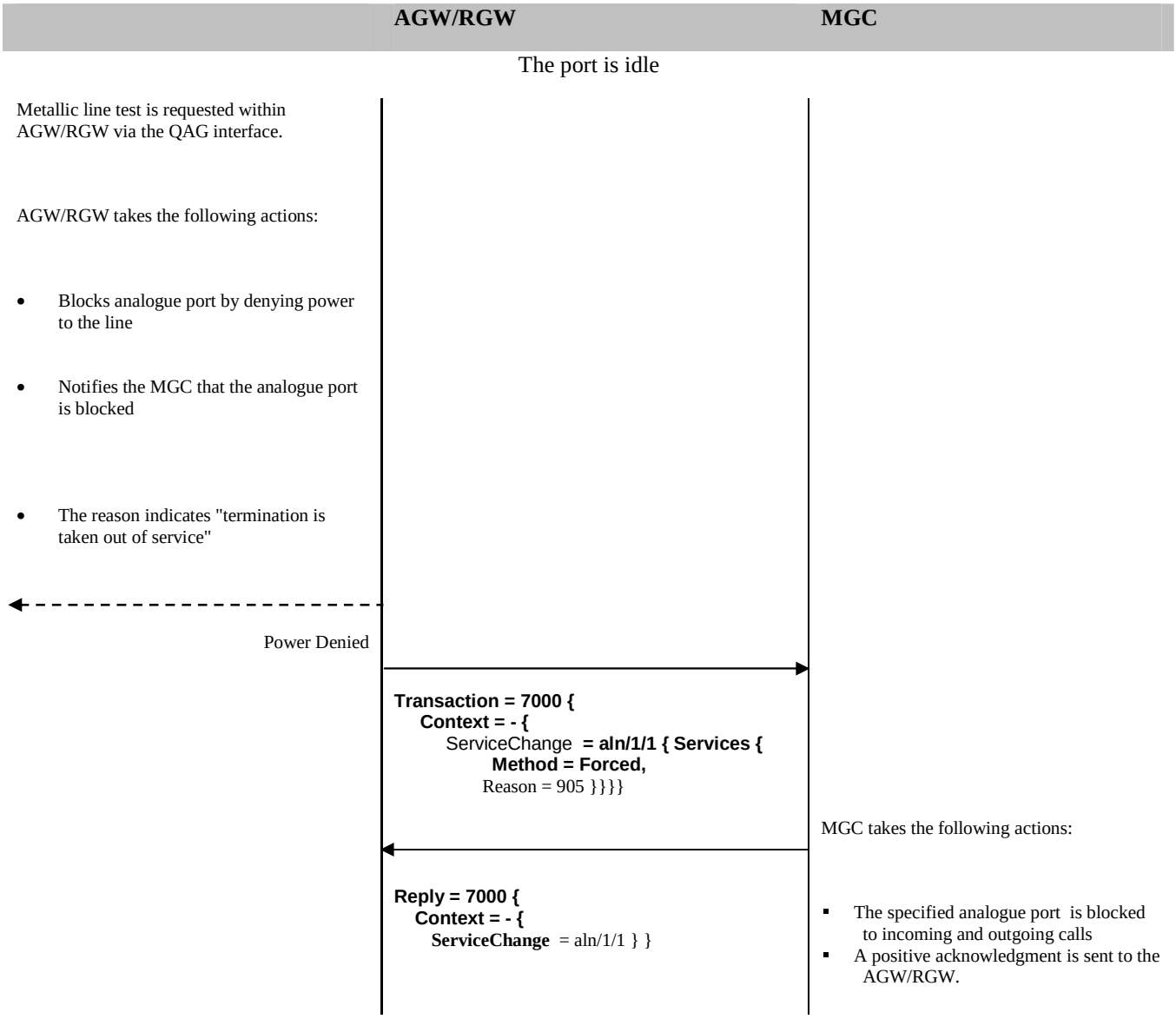


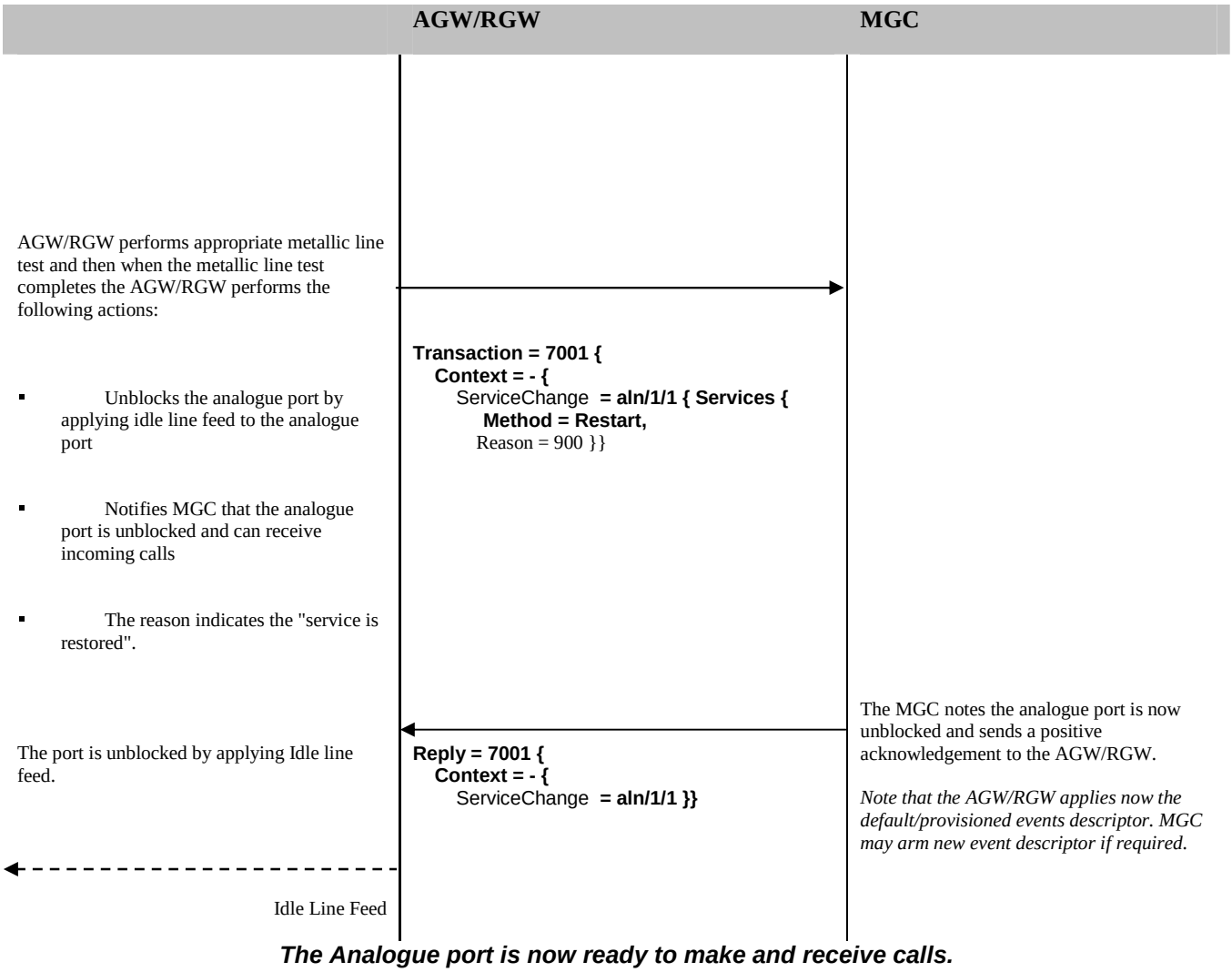
All Analogue Ports are now ready to make and receive calls

4.1.2 Port Maintenance

4.1.2.1 User Port Blocking and Unblocking - No active call

Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.

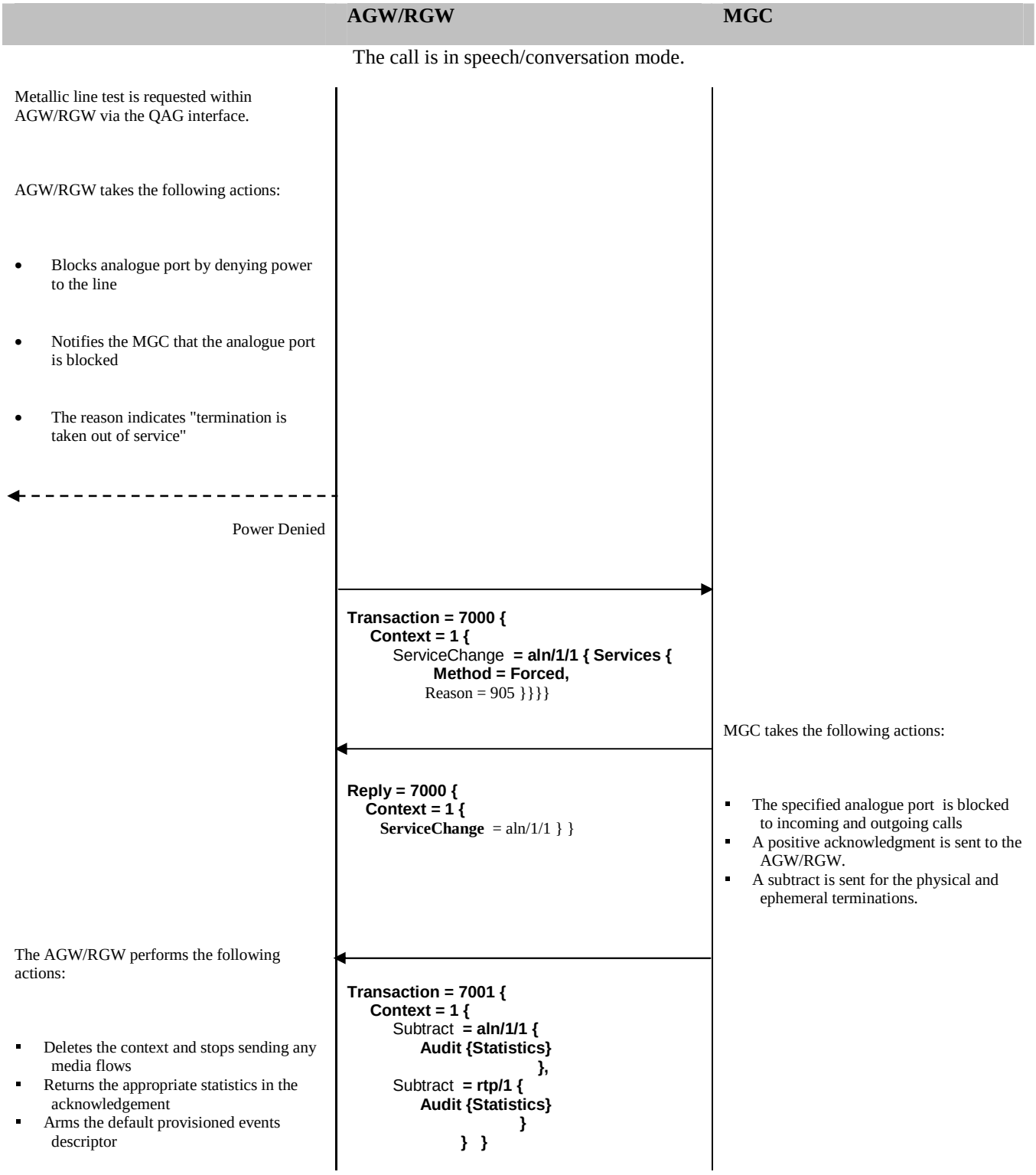


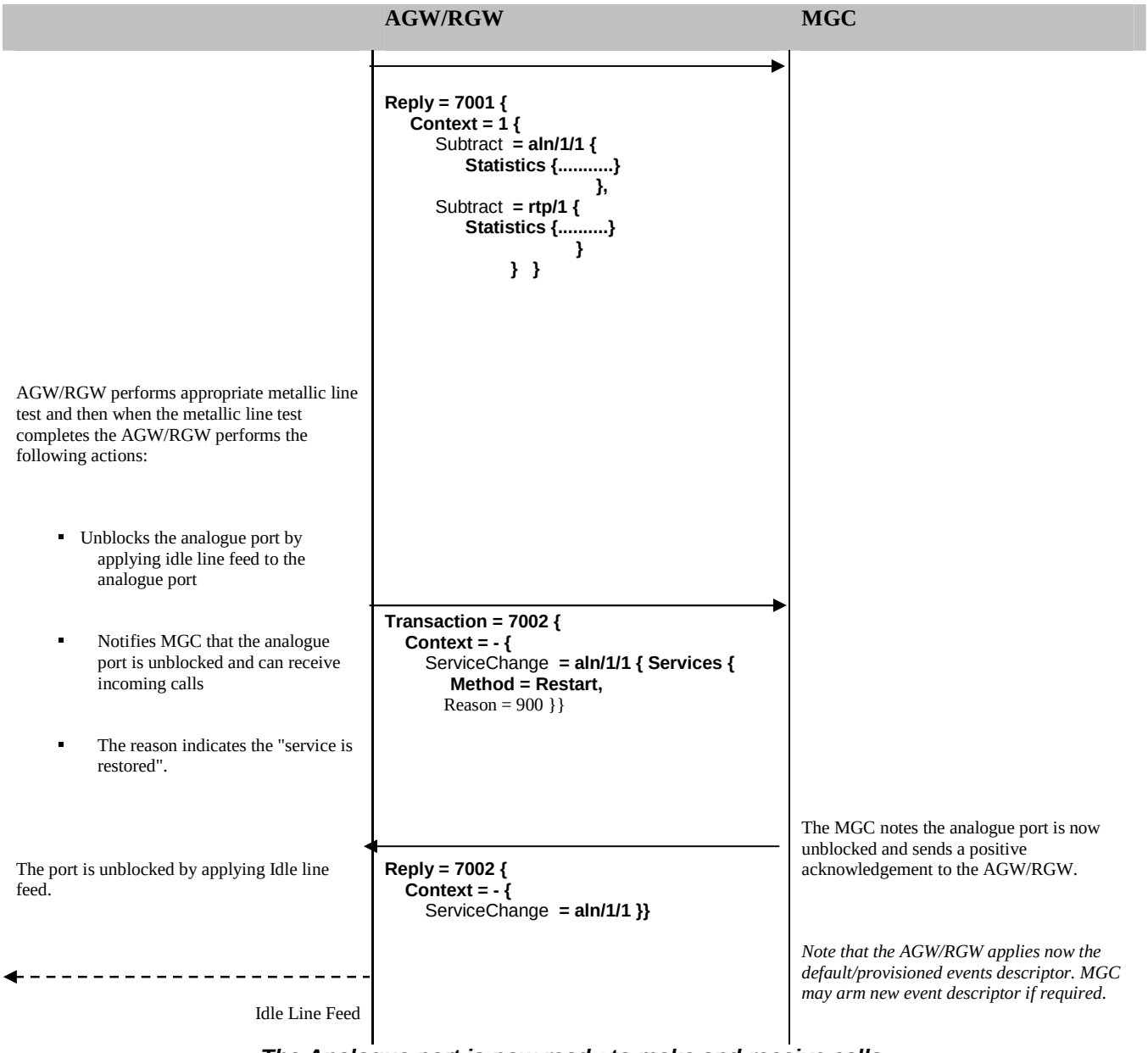


The Analogue port is now ready to make and receive calls.

4.1.2.2 User Port Blocking and Unblocking - Active call

Pre-conditions: Sequence 5.1 has been successfully executed for DEL port aln/1/1.

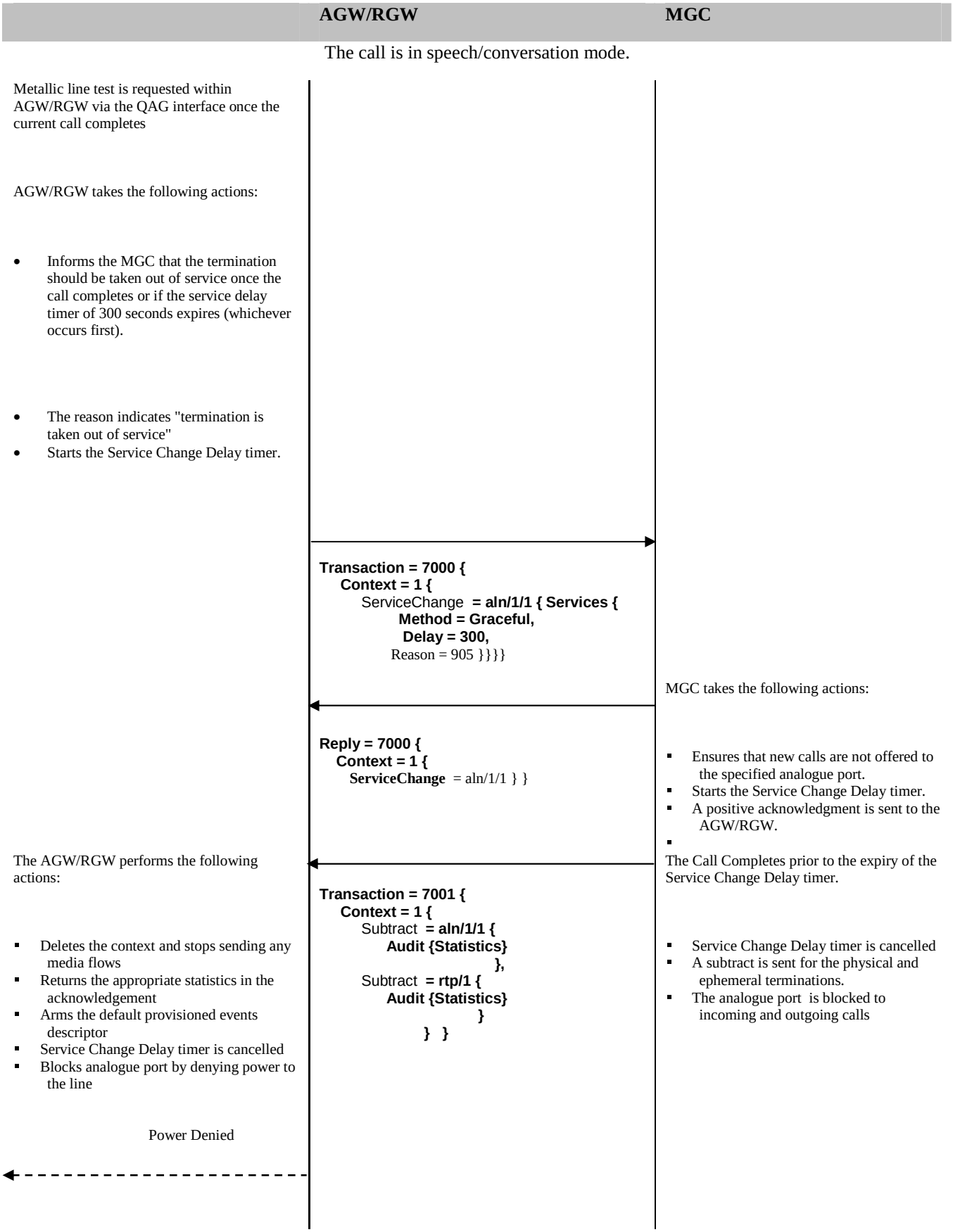


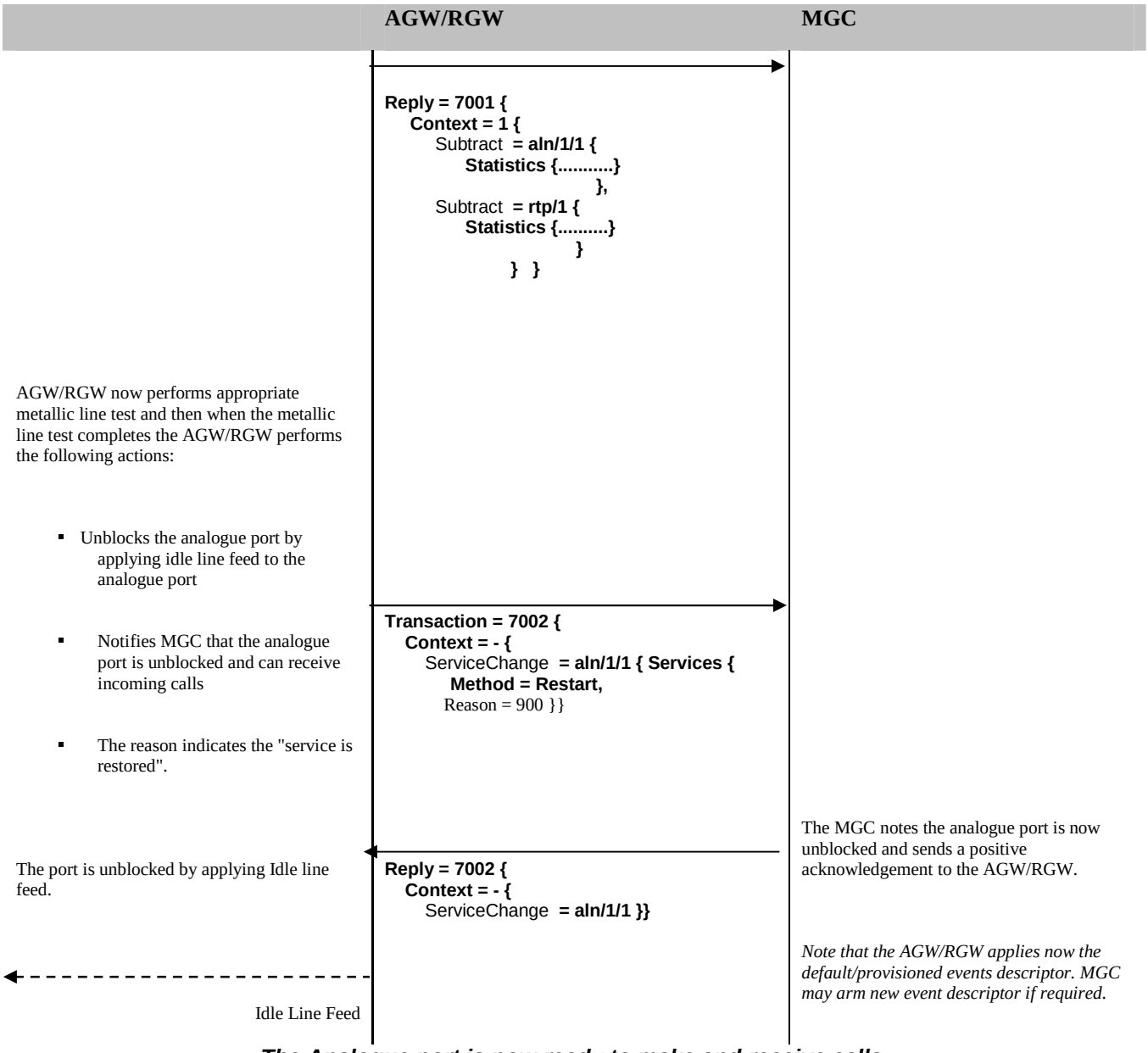


The Analogue port is now ready to make and receive calls.

4.1.2.3 User Port Graceful Blocking and Unblocking - Active call

Pre-conditions: Sequence 5.1 has been successfully executed for DEL port aln/1/1.





The Analogue port is now ready to make and receive calls.

5 DEL Message Flows

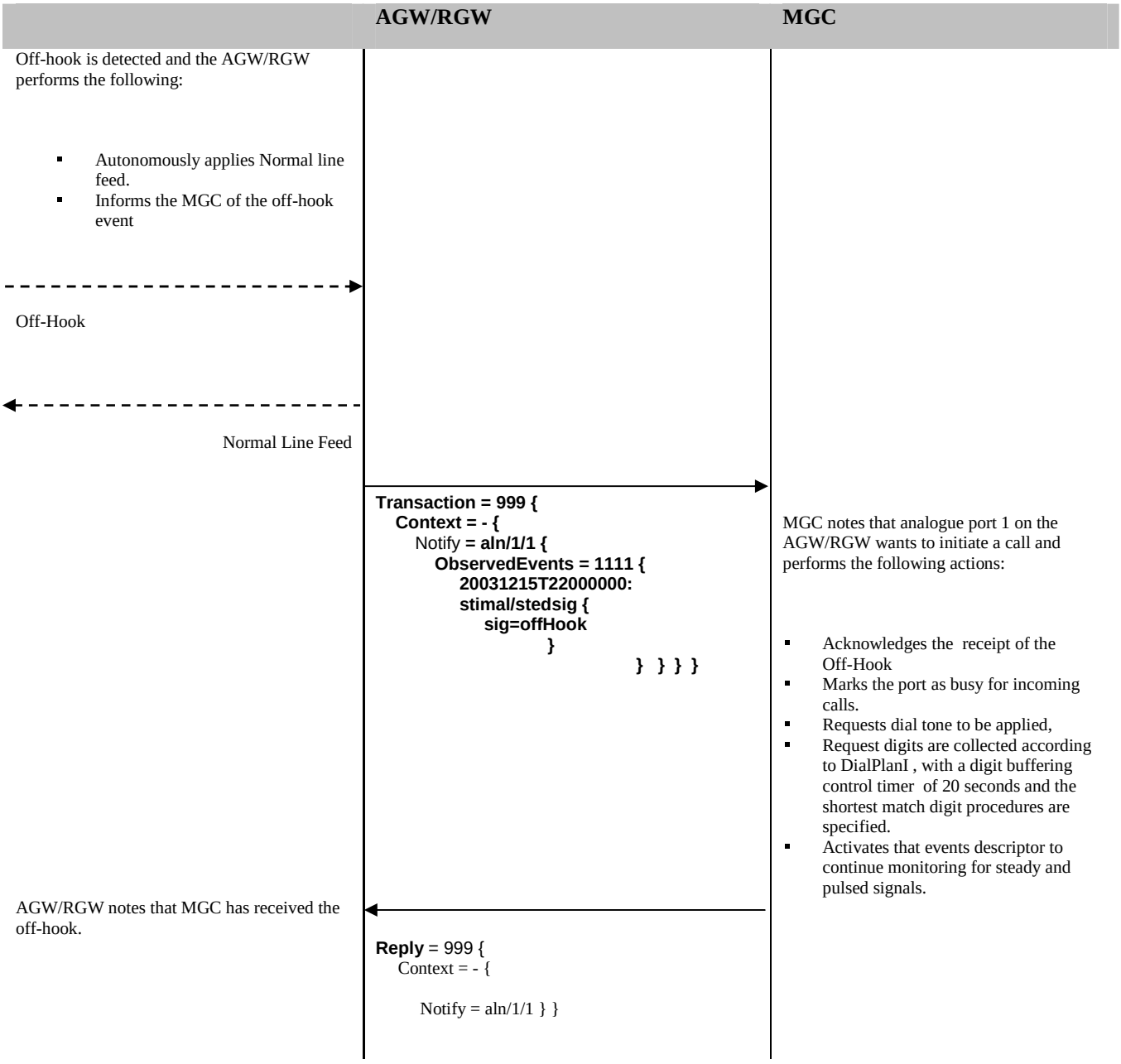
This clause contains message flows that are applicable to Direct Exchange Line (DEL) ports.

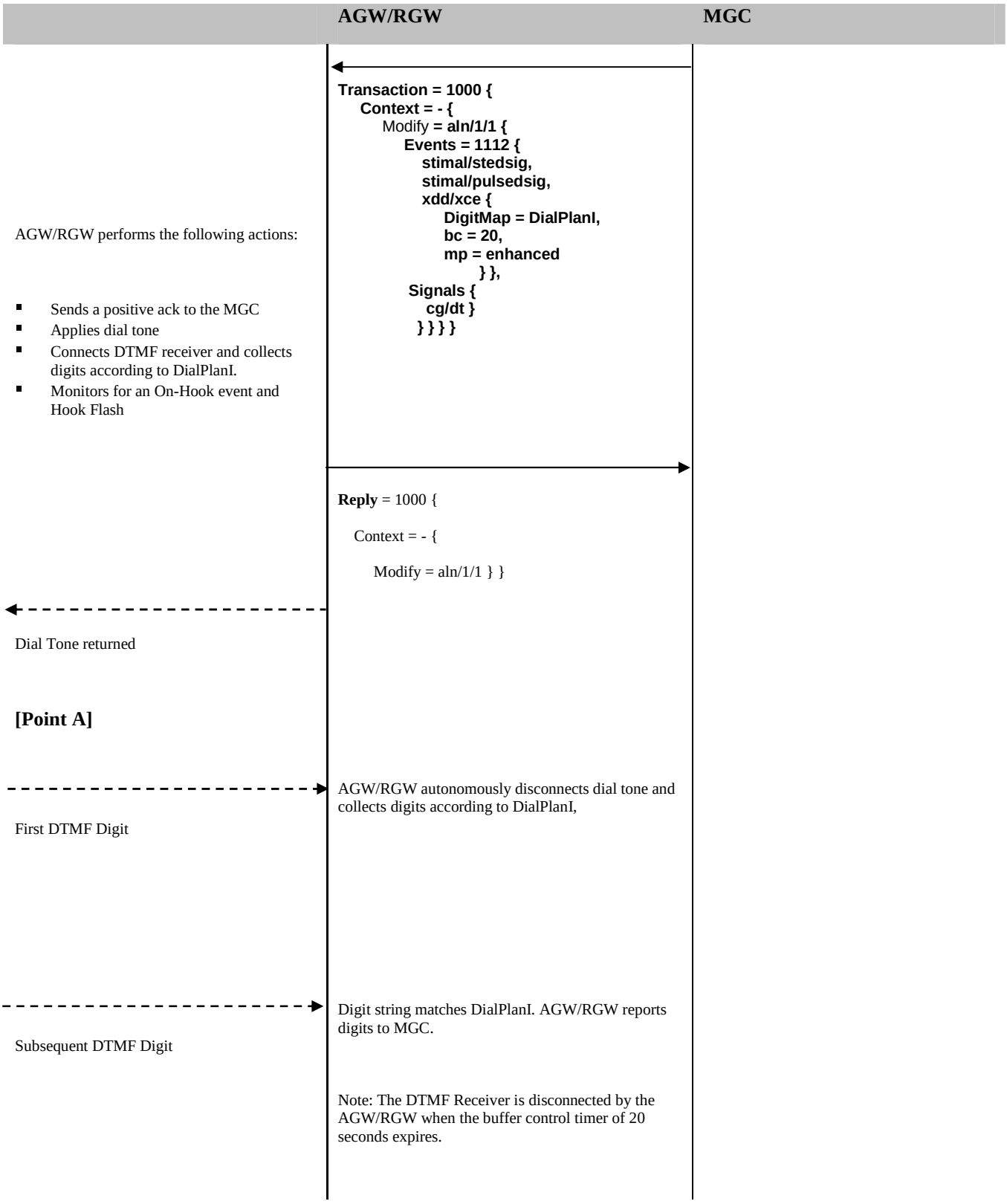
5.1 Successful Call Establishment

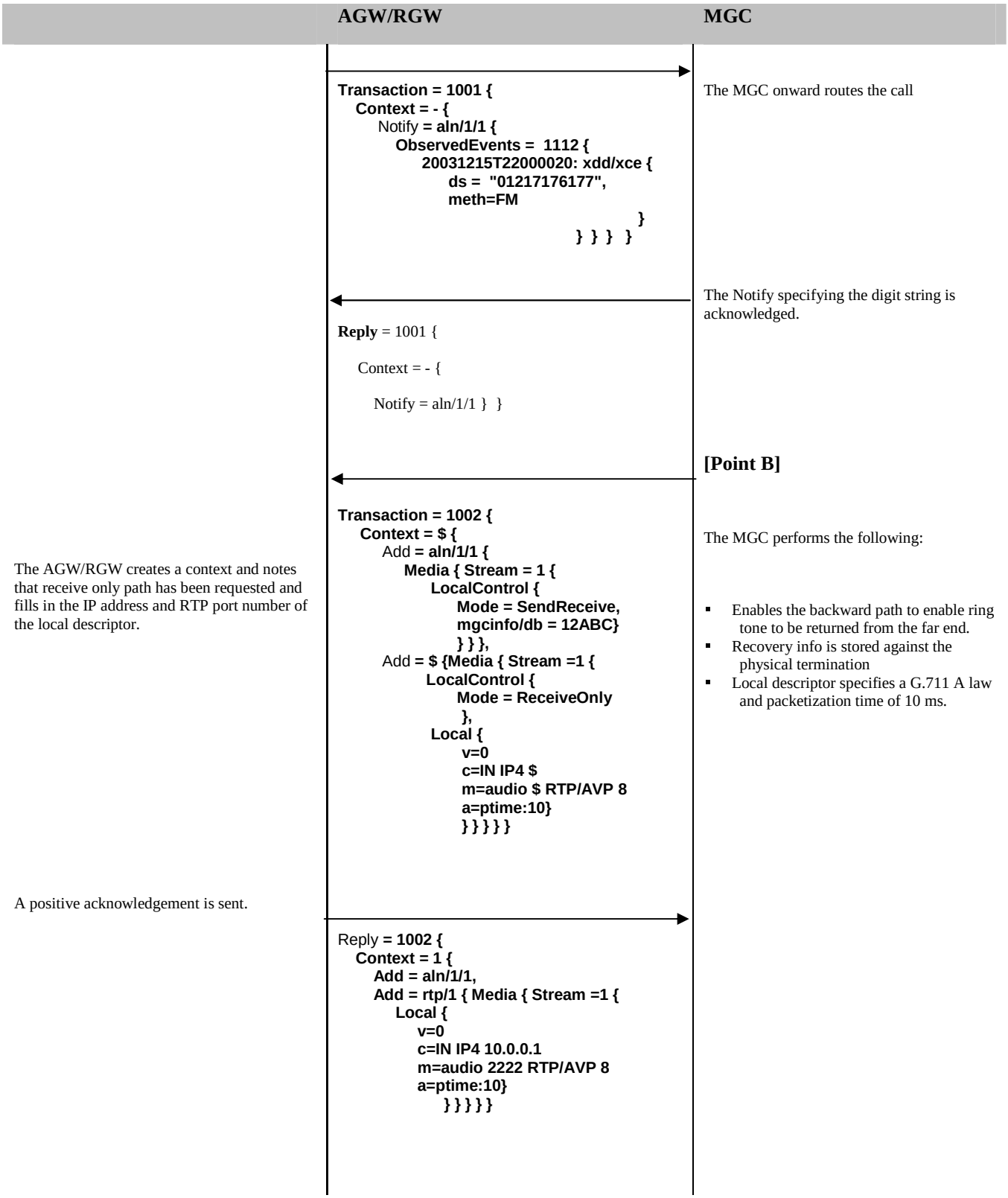
5.1.1 DEL - Successful Outgoing Voice Call initiated using DTMF Digits and en-bloc dialling - A end

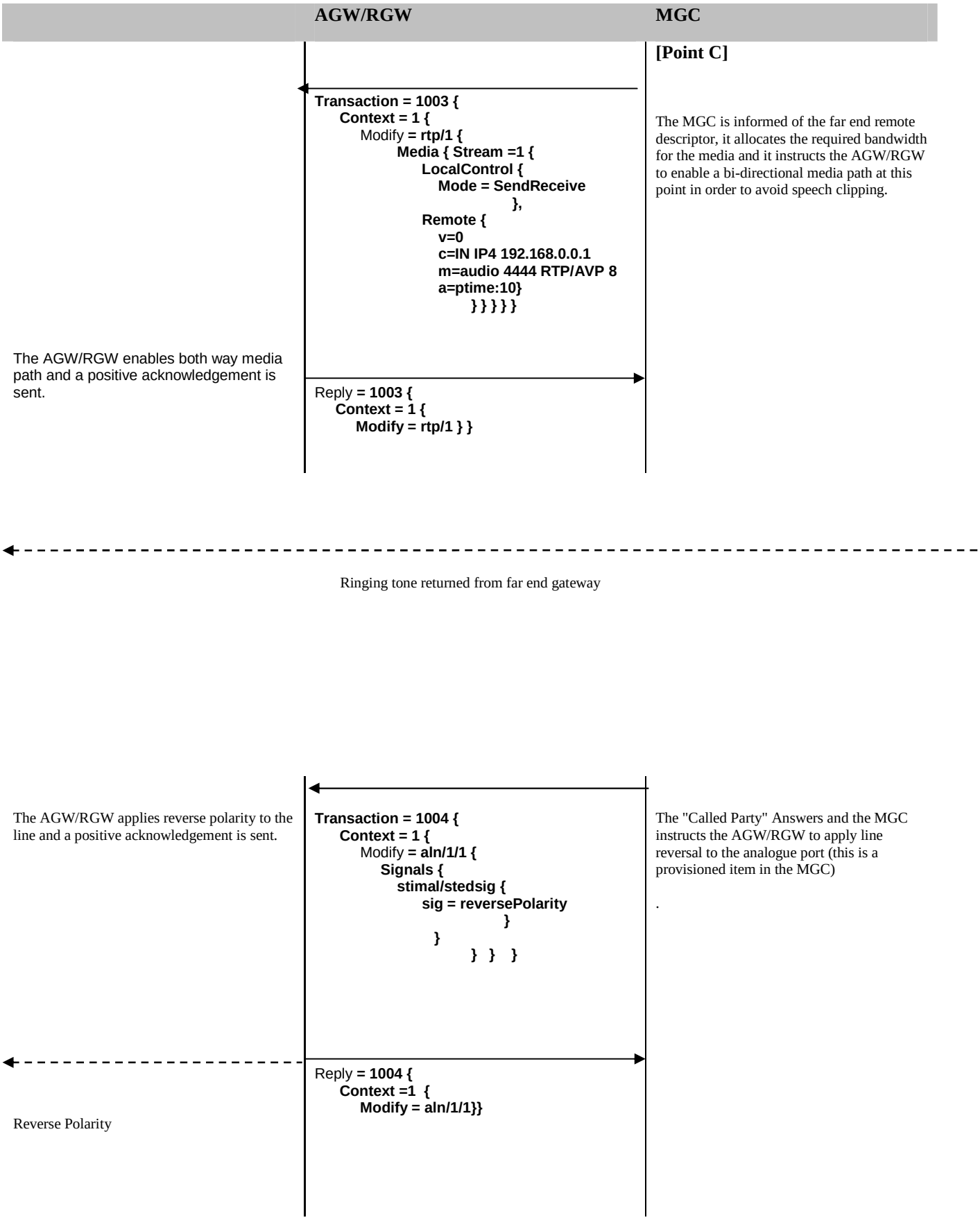
5.1.1.1 Late Addition of Analogue Termination to a Context

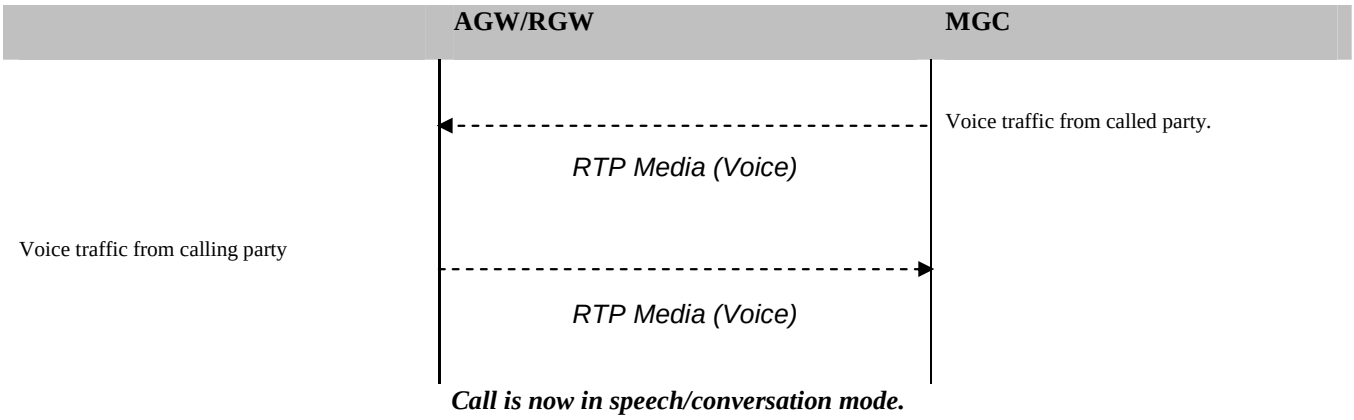
Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
Transaction = 1000 {
Context = - {
Modify = aln/1/1 {
Events = 1112 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = DialPlanI,
bc = 20,
mp = enhanced
} },
Signals {
cg/dt }
} } } }
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects digits according to DialPlanI.
Monitors for an On-Hook event and Hook Flash
Reply = 1000 {
Context = - {
Modify = aln/1/1 } }
Dial Tone returned
[Point A]
AGW/RGW autonomously disconnects dial tone and collects digits according to DialPlanI,
First DTMF Digit
Digit string matches DialPlanI. AGW/RGW reports digits to MGC.
Subsequent DTMF Digit
Note: The DTMF Receiver is disconnected by the AGW/RGW when the buffer control timer of 20 seconds expires.

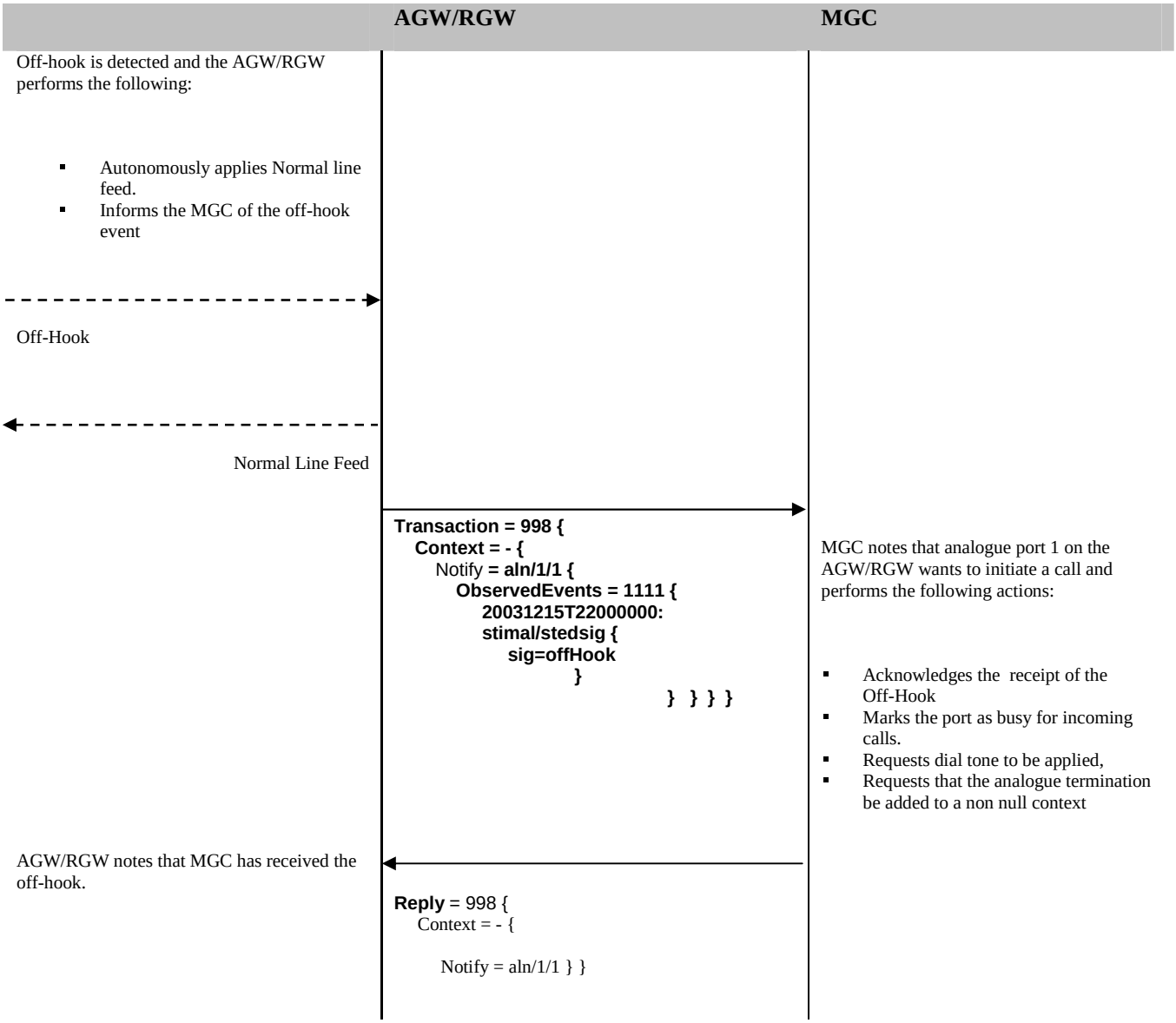

AGW/RGW
MGC
Transaction = 1001 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000020: xdd/xce {
ds = "01217176177",
meth=FM
}
} } } }
The MGC onward routes the call
The Notify specifying the digit string is acknowledged.
Reply = 1001 {
Context = - {
Notify = aln/1/1 } }
[Point B]
Transaction = 1002 {
Context = $ {
Add = aln/1/1 {
Media { Stream = 1 {
LocalControl {
Mode = SendReceive,
mgcinfo/db = 12ABC}
} } },
Add = $ {Media { Stream =1 {
LocalControl {
Mode = ReceiveOnly
},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime:10}
} } } } }
The MGC performs the following:
The AGW/RGW creates a context and notes that receive only path has been requested and fills in the IP address and RTP port number of the local descriptor.
Enables the backward path to enable ring tone to be returned from the far end.
Recovery info is stored against the physical termination
Local descriptor specifies a G.711 A law and packetization time of 10 ms.
A positive acknowledgement is sent.
Reply = 1002 {
Context = 1 {
Add = aln/1/1,
Add = rtp/1 { Media { Stream =1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 2222 RTP/AVP 8
a=ptime:10}
} } } } }

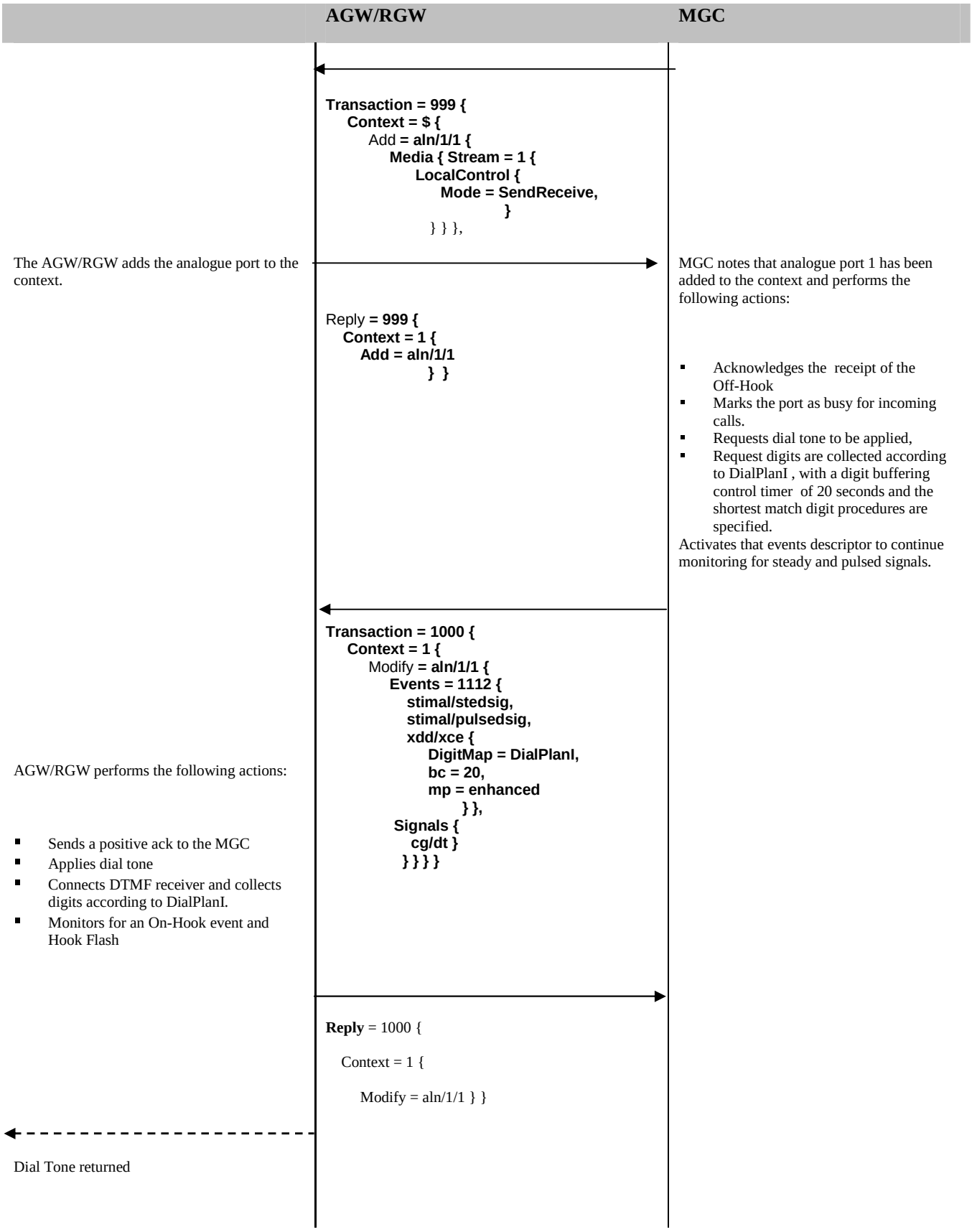

AGW/RGW
MGC
[Point C]
Transaction = 1003 {
Context = 1 {
Modify = rtp/1 {
Media { Stream =1 {
LocalControl {
Mode = SendReceive
},
Remote {
v=0
c=IN IP4 192.168.0.0.1
m=audio 4444 RTP/AVP 8
a=ptime:10}
} } } } }
The MGC is informed of the far end remote descriptor, it allocates the required bandwidth for the media and it instructs the AGW/RGW to enable a bi-directional media path at this point in order to avoid speech clipping.
The AGW/RGW enables both way media path and a positive acknowledgement is sent.
Reply = 1003 {
Context = 1 {
Modify = rtp/1 } }
Ringing tone returned from far end gateway
The AGW/RGW applies reverse polarity to the line and a positive acknowledgement is sent.
Transaction = 1004 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = reversePolarity
}
}
} } }
The "Called Party" Answers and the MGC instructs the AGW/RGW to apply line reversal to the analogue port (this is a provisioned item in the MGC)
.
Reply = 1004 {
Context =1 {
Modify = aln/1/1}}
Reverse Polarity

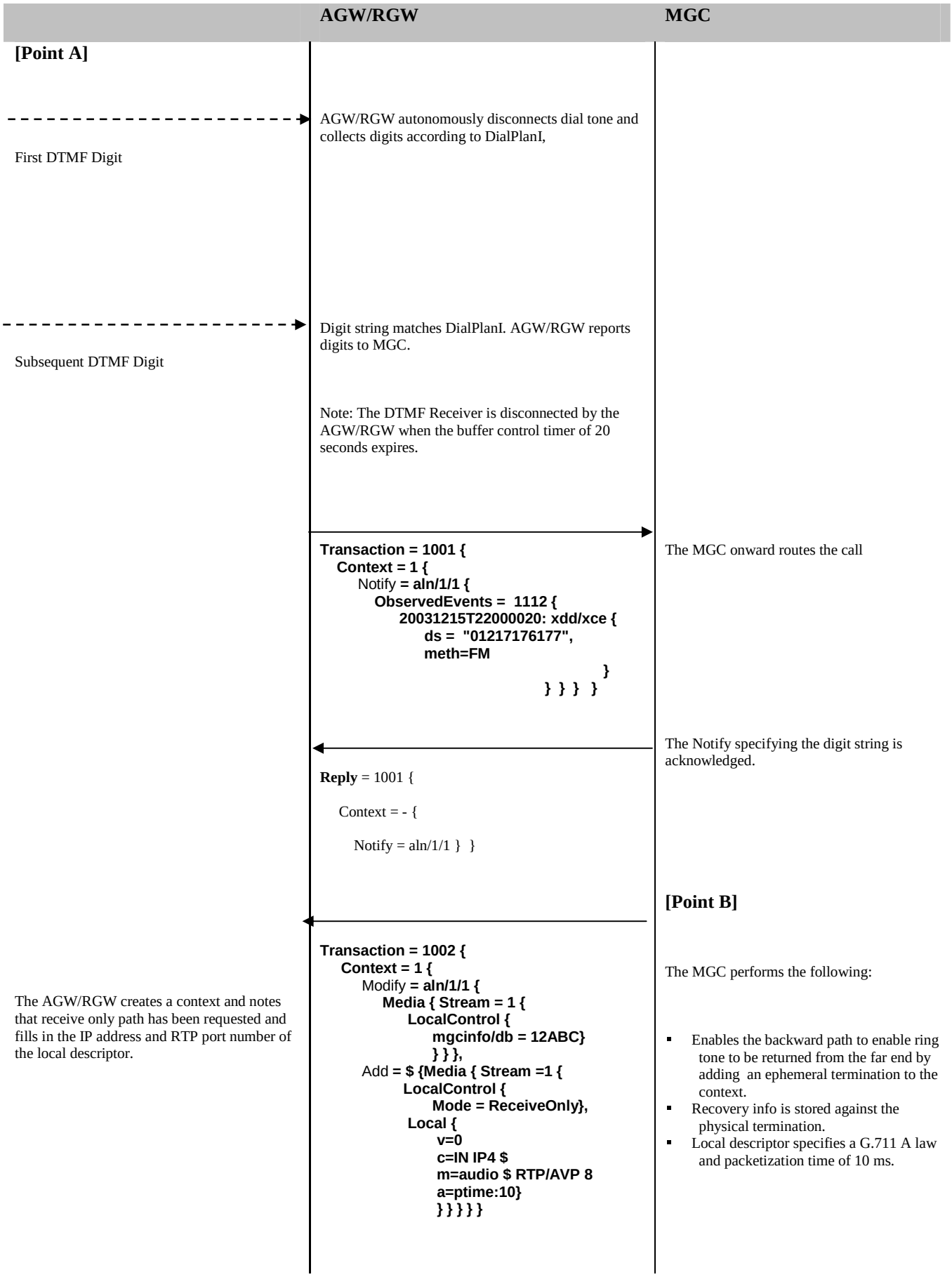


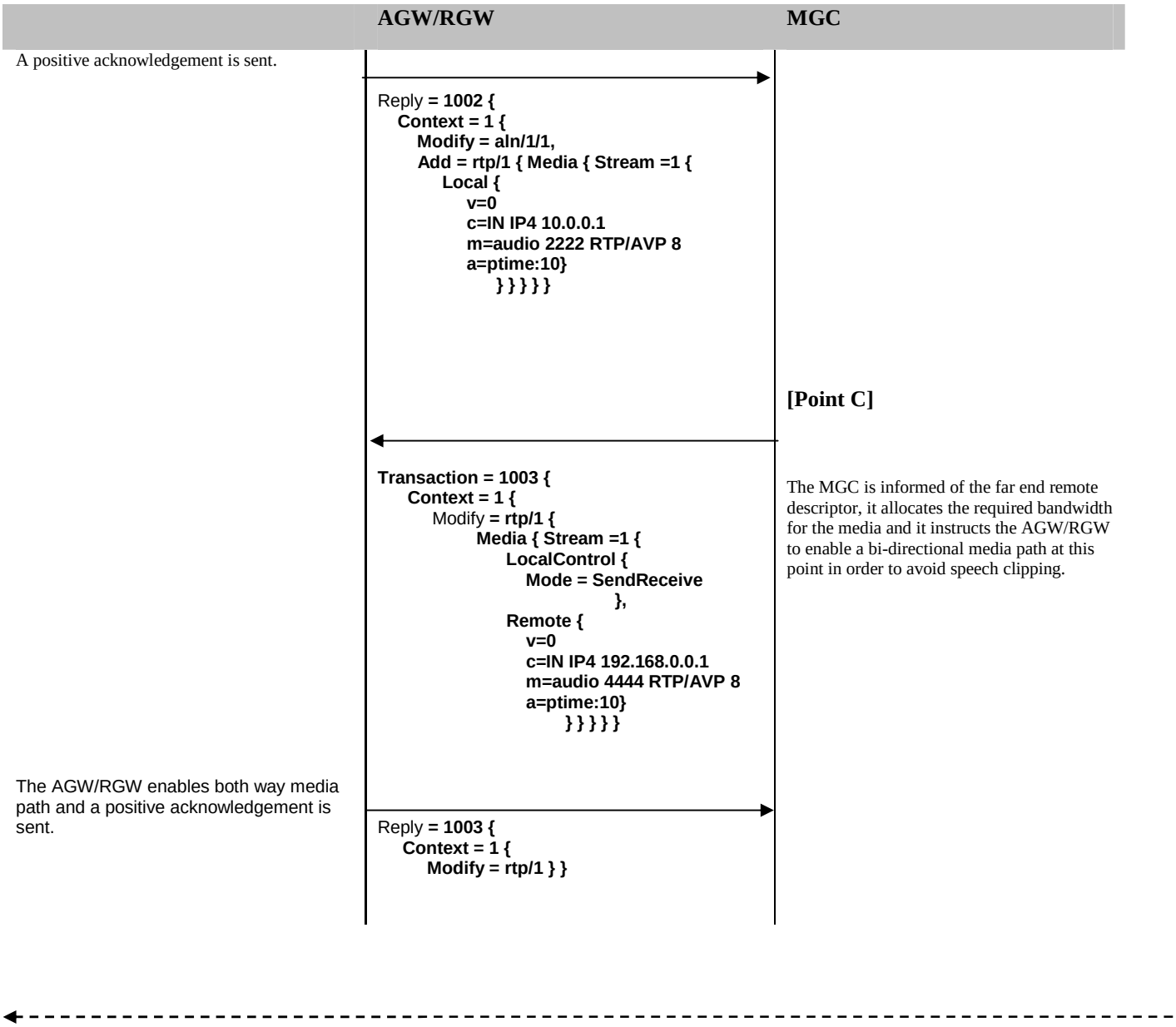
5.1.1.2 Early Addition of Analogue Termination to a Context

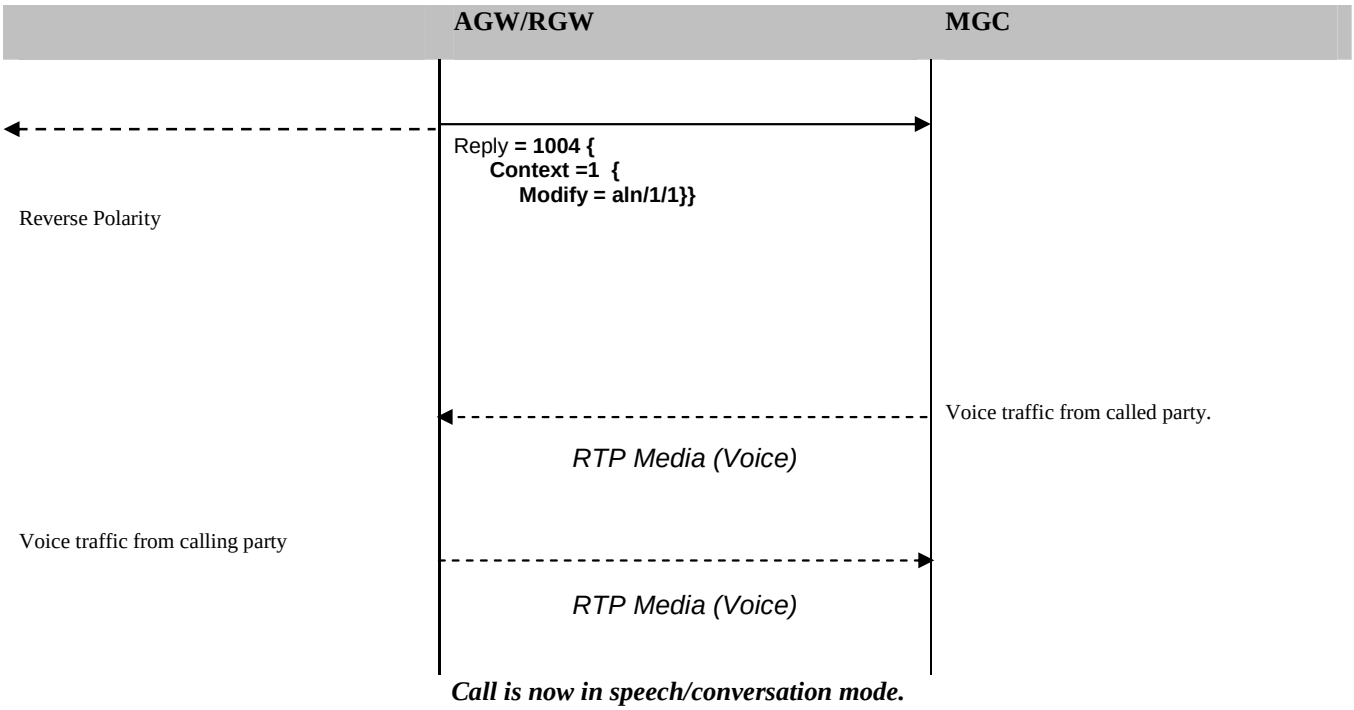
Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
Transaction = 999 {
Context = $ {
Add = aln/1/1 {
Media { Stream = 1 {
LocalControl {
Mode = SendReceive,
}
} } },
The AGW/RGW adds the analogue port to the context.
MGC notes that analogue port 1 has been added to the context and performs the following actions:
Reply = 999 {
Context = 1 {
Add = aln/1/1
} }
Acknowledges the receipt of the Off-Hook
Marks the port as busy for incoming calls.
Requests dial tone to be applied,
Request digits are collected according to DialPlanI , with a digit buffering control timer of 20 seconds and the shortest match digit procedures are specified.
Activates that events descriptor to continue monitoring for steady and pulsed signals.
Transaction = 1000 {
Context = 1 {
Modify = aln/1/1 {
Events = 1112 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = DialPlanI,
bc = 20,
mp = enhanced
} },
Signals {
cg/dt }
} } } }
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects digits according to DialPlanI.
Monitors for an On-Hook event and Hook Flash
Reply = 1000 {
Context = 1 {
Modify = aln/1/1 } }
Dial Tone returned


AGW/RGW
MGC
[Point A]
AGW/RGW autonomously disconnects dial tone and collects digits according to DialPlanI,
First DTMF Digit
Digit string matches DialPlanI. AGW/RGW reports digits to MGC.
Subsequent DTMF Digit
Note: The DTMF Receiver is disconnected by the AGW/RGW when the buffer control timer of 20 seconds expires.
Transaction = 1001 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000020: xdd/xce {
ds = "01217176177",
meth=FM
}
} } } }
The MGC onward routes the call
The Notify specifying the digit string is acknowledged.
Reply = 1001 {
Context = - {
Notify = aln/1/1 } }
[Point B]
Transaction = 1002 {
Context = 1 {
Modify = aln/1/1 {
Media { Stream = 1 {
LocalControl {
mgcinfo/db = 12ABC}
} } },
Add = $ {Media { Stream =1 {
LocalControl {
Mode = ReceiveOnly},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime:10}
} } } } }
The AGW/RGW creates a context and notes that receive only path has been requested and fills in the IP address and RTP port number of the local descriptor.
The MGC performs the following:
Enables the backward path to enable ring tone to be returned from the far end by adding an ephemeral termination to the context.
Recovery info is stored against the physical termination.
Local descriptor specifies a G.711 A law and packetization time of 10 ms.

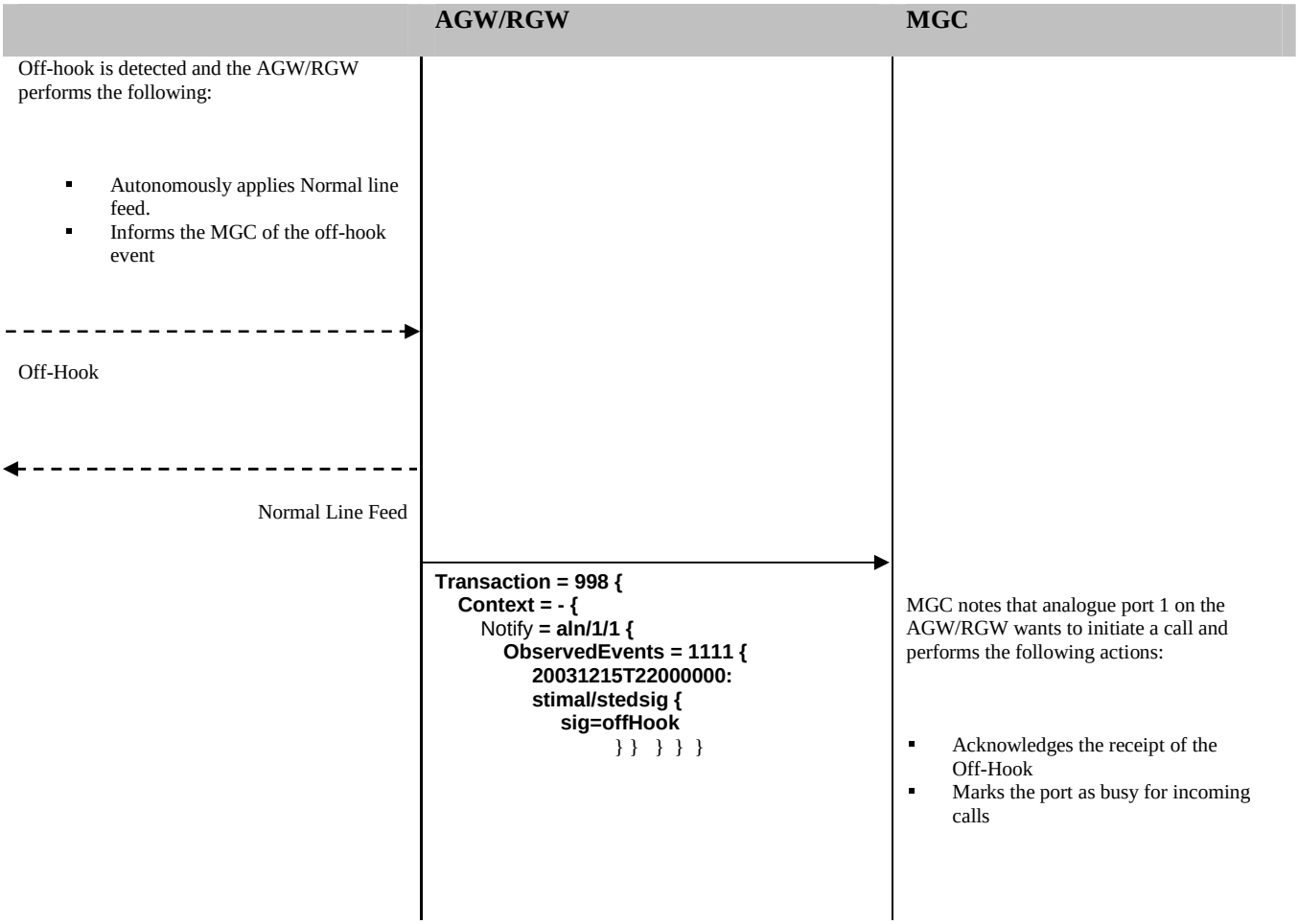

AGW/RGW
MGC
A positive acknowledgement is sent.
Reply = 1002 {
Context = 1 {
Modify = aln/1/1,
Add = rtp/1 { Media { Stream =1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 2222 RTP/AVP 8
a=ptime:10}
} } } } }
[Point C]
Transaction = 1003 {
Context = 1 {
Modify = rtp/1 {
Media { Stream =1 {
LocalControl {
Mode = SendReceive
},
Remote {
v=0
c=IN IP4 192.168.0.0.1
m=audio 4444 RTP/AVP 8
a=ptime:10}
} } } } }
The MGC is informed of the far end remote descriptor, it allocates the required bandwidth for the media and it instructs the AGW/RGW to enable a bi-directional media path at this point in order to avoid speech clipping.
The AGW/RGW enables both way media path and a positive acknowledgement is sent.
Reply = 1003 {
Context = 1 {
Modify = rtp/1 } }
Ringing tone returned from far end gateway
The AGW/RGW applies reverse polarity to the line and a positive acknowledgement is sent.
Transaction = 1004 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = reversePolarity
}
}
} } }
The "Called Party" Answers and the MGC instructs the AGW/RGW to apply line reversal to the analogue port (this is a provisioned item in the MGC)

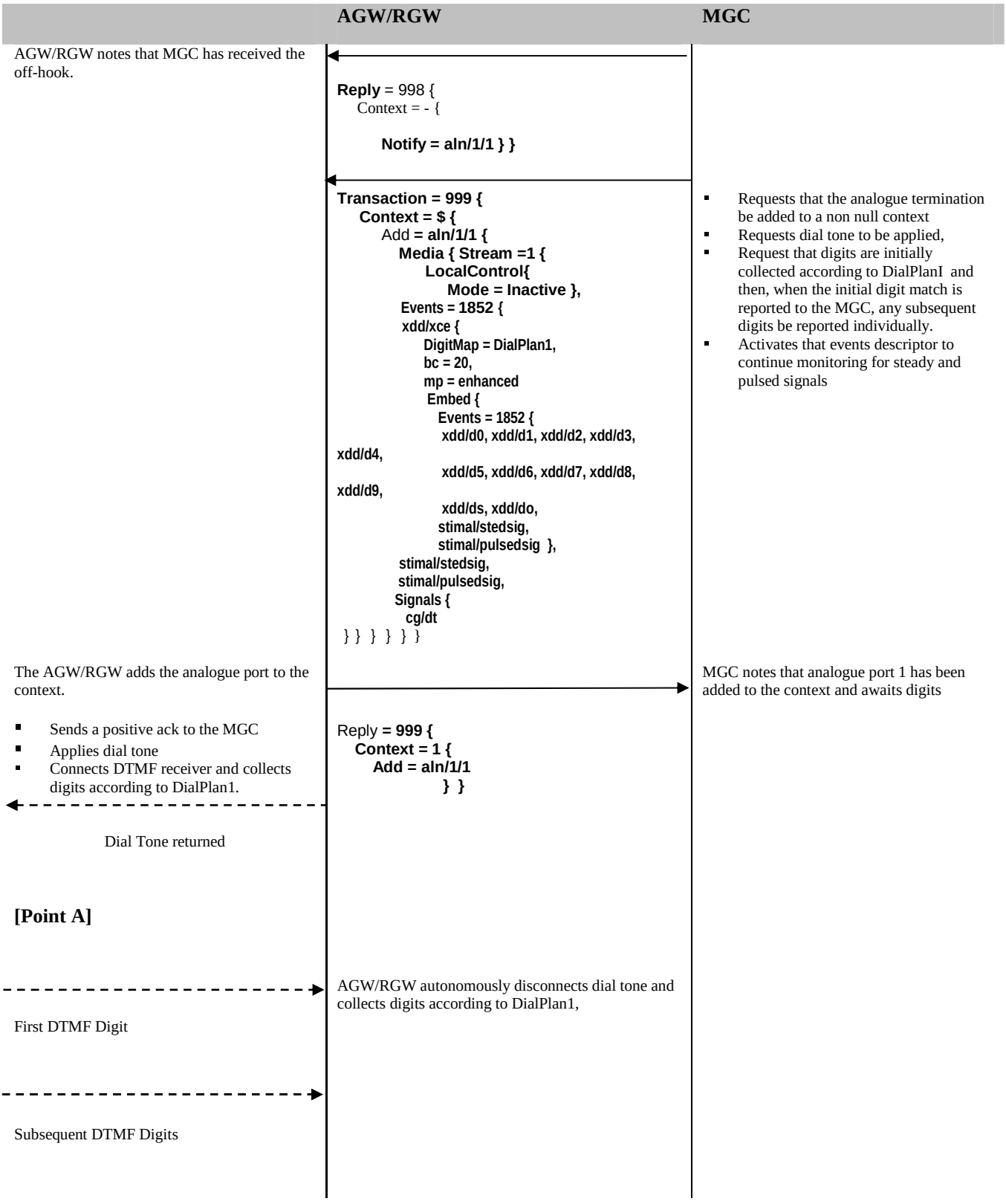


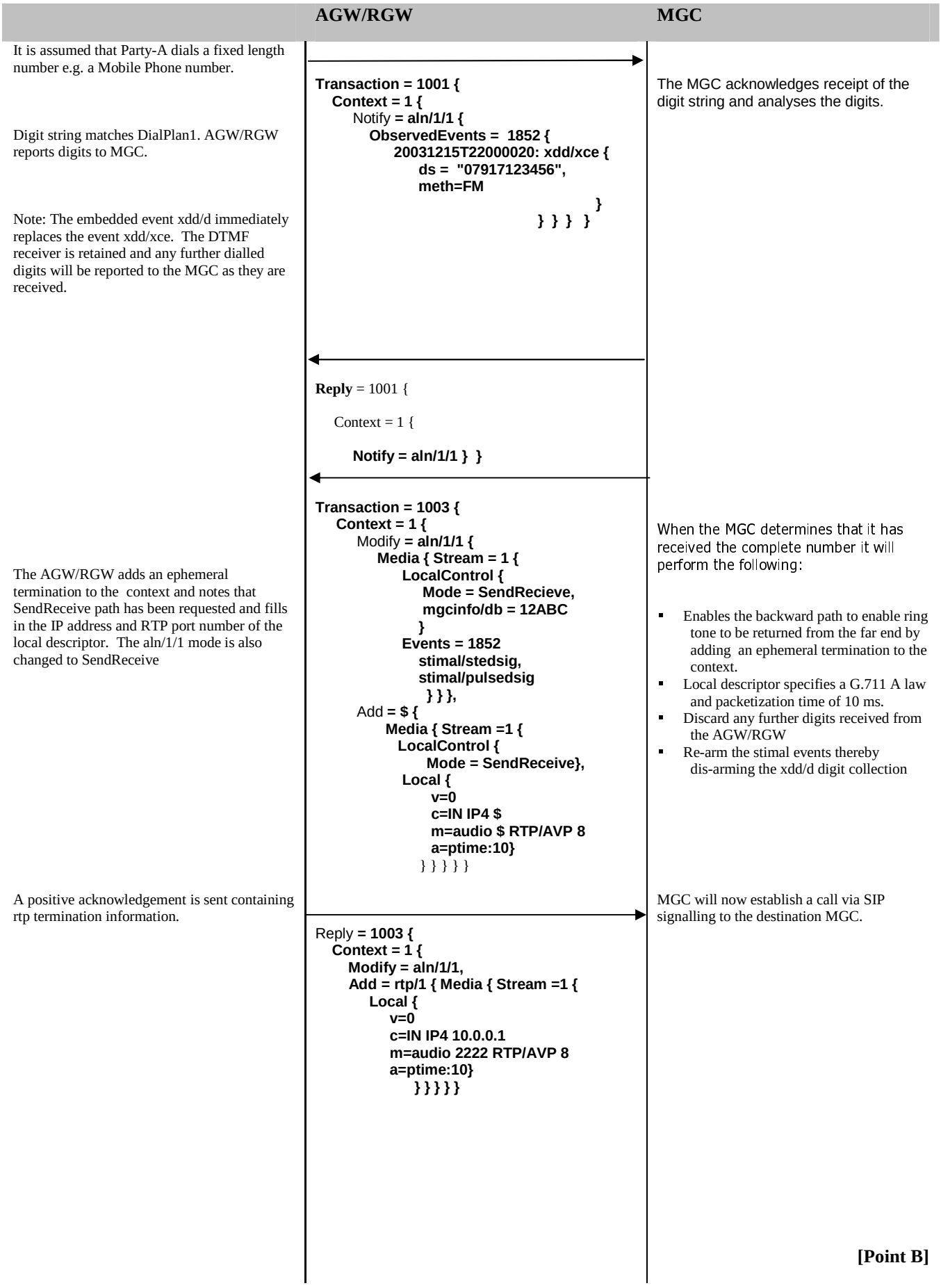
Call is now in speech/conversation mode.

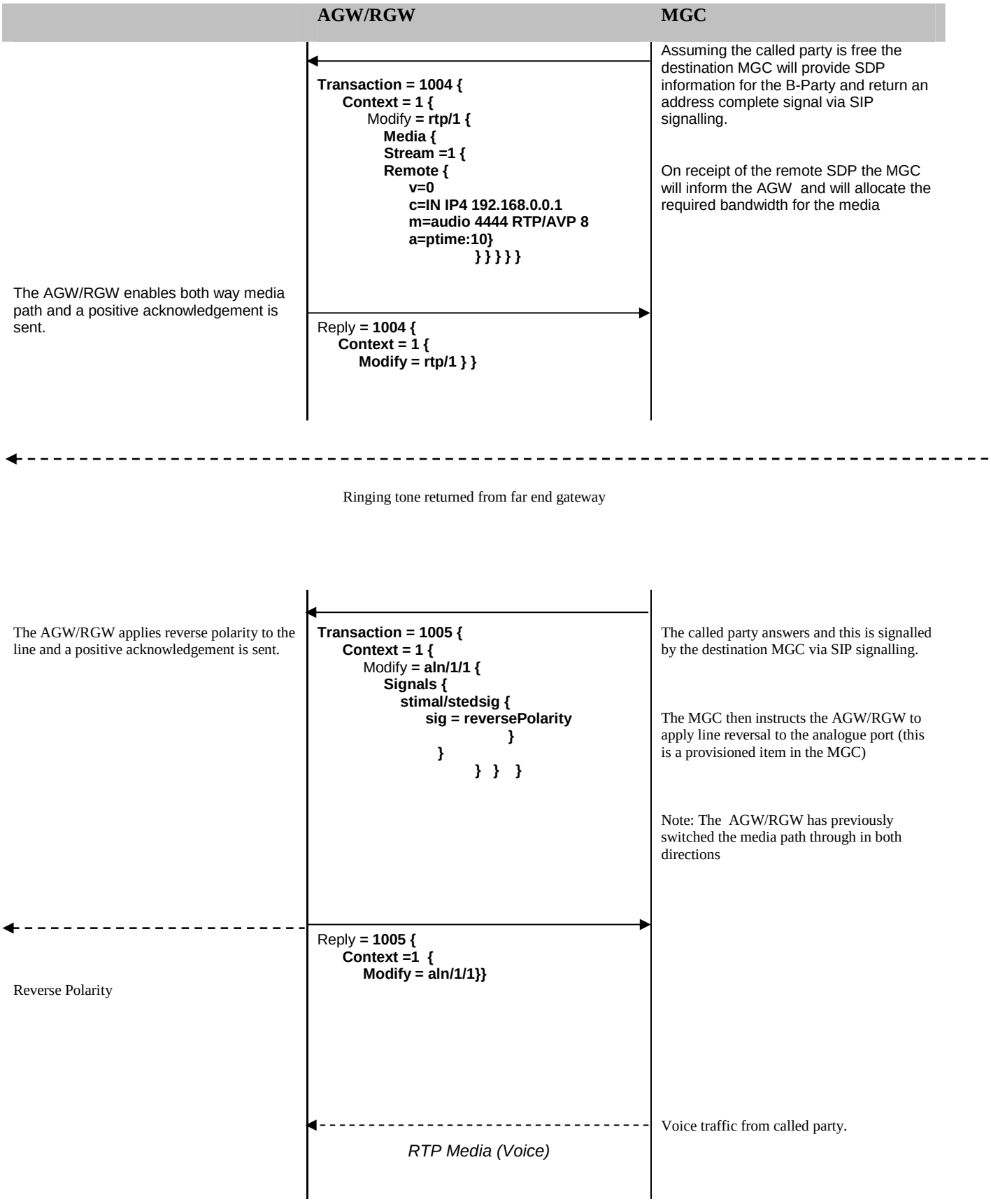
5.1.1.3 Early Addition of Analogue Termination to a Context Alternative Flow

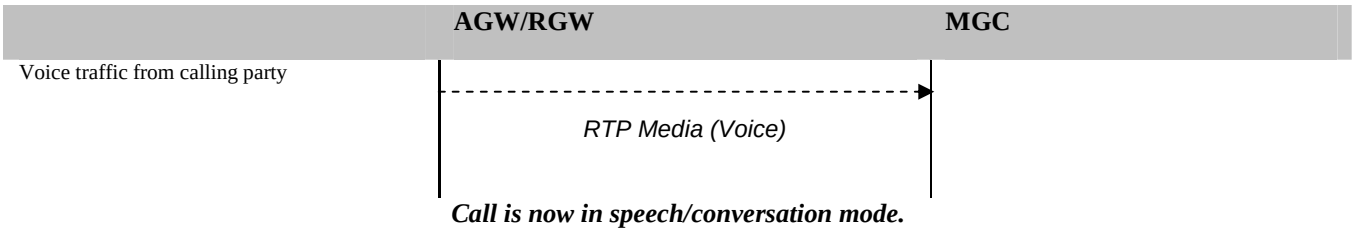
Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
AGW/RGW notes that MGC has received the off-hook.
Reply = 998 {
Context = - {
Notify = aln/1/1 } }
Transaction = 999 {
Context = $ {
Add = aln/1/1 {
Media { Stream =1 {
LocalControl{
Mode = Inactive },
Events = 1852 {
xdd/xce {
DigitMap = DialPlan1,
bc = 20,
mp = enhanced
Embed {
Events = 1852 {
xdd/d0, xdd/d1, xdd/d2, xdd/d3, xdd/d4,
xdd/d5, xdd/d6, xdd/d7, xdd/d8, xdd/d9,
xdd/ds, xdd/do,
stimal/stedsig,
stimal/pulsedsig },
stimal/stedsig,
stimal/pulsedsig,
Signals {
cg/dt
} } } } } }
Requests that the analogue termination be added to a non null context
Requests dial tone to be applied,
Request that digits are initially collected according to DialPlanI and then, when the initial digit match is reported to the MGC, any subsequent digits be reported individually.
Activates that events descriptor to continue monitoring for steady and pulsed signals
The AGW/RGW adds the analogue port to the context.
MGC notes that analogue port 1 has been added to the context and awaits digits
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects digits according to DialPlan1.
Reply = 999 {
Context = 1 {
Add = aln/1/1
} }
Dial Tone returned
[Point A]
AGW/RGW autonomously disconnects dial tone and collects digits according to DialPlan1,
First DTMF Digit
Subsequent DTMF Digits


AGW/RGW
MGC
It is assumed that Party-A dials a fixed length number e.g. a Mobile Phone number.
Transaction = 1001 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000020: xdd/xce {
ds = "07917123456",
meth=FM
}
} } } }
The MGC acknowledges receipt of the digit string and analyses the digits.
Digit string matches DialPlan1. AGW/RGW reports digits to MGC.
Note: The embedded event xdd/d immediately replaces the event xdd/xce. The DTMF receiver is retained and any further dialled digits will be reported to the MGC as they are received.
Reply = 1001 {
Context = 1 {
Notify = aln/1/1 } }
Transaction = 1003 {
Context = 1 {
Modify = aln/1/1 {
Media { Stream = 1 {
LocalControl {
Mode = SendRecieve,
mgcinfo/db = 12ABC
}
Events = 1852
stimal/stedsig,
stimal/pulsedsig
} } },
Add = $ {
Media { Stream =1 {
LocalControl {
Mode = SendReceive},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime:10}
} } } } }
When the MGC determines that it has received the complete number it will perform the following:
The AGW/RGW adds an ephemeral termination to the context and notes that SendReceive path has been requested and fills in the IP address and RTP port number of the local descriptor. The aln/1/1 mode is also changed to SendReceive
Enables the backward path to enable ring tone to be returned from the far end by adding an ephemeral termination to the context.
Local descriptor specifies a G.711 A law and packetization time of 10 ms.
Discard any further digits received from the AGW/RGW
Re-arm the stimal events thereby dis-arming the xdd/d digit collection
A positive acknowledgement is sent containing rtp termination information.
MGC will now establish a call via SIP signalling to the destination MGC.
Reply = 1003 {
Context = 1 {
Modify = aln/1/1,
Add = rtp/1 { Media { Stream =1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 2222 RTP/AVP 8
a=ptime:10}
} } } } }
[Point B]

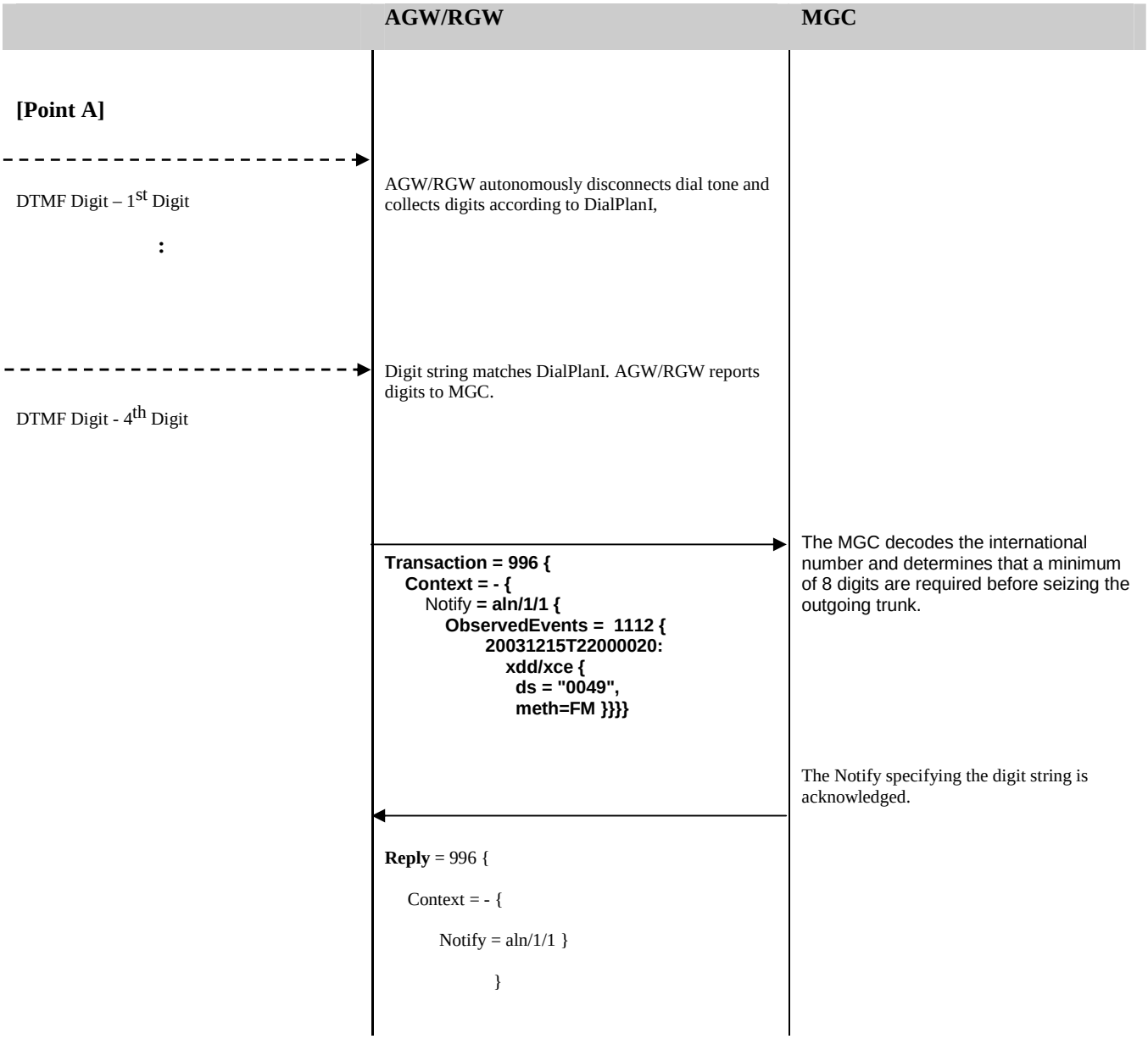

AGW/RGW
MGC
Assuming the called party is free the destination MGC will provide SDP information for the B-Party and return an address complete signal via SIP signalling.
Transaction = 1004 {
Context = 1 {
Modify = rtp/1 {
Media {
Stream =1 {
Remote {
v=0
c=IN IP4 192.168.0.0.1
m=audio 4444 RTP/AVP 8
a=ptime:10}
} } } } }
On receipt of the remote SDP the MGC will inform the AGW and will allocate the required bandwidth for the media
The AGW/RGW enables both way media path and a positive acknowledgement is sent.
Reply = 1004 {
Context = 1 {
Modify = rtp/1 } }
Ringing tone returned from far end gateway
The AGW/RGW applies reverse polarity to the line and a positive acknowledgement is sent.
Transaction = 1005 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = reversePolarity
}
}
} } }
The called party answers and this is signalled by the destination MGC via SIP signalling.
The MGC then instructs the AGW/RGW to apply line reversal to the analogue port (this is a provisioned item in the MGC)
Note: The AGW/RGW has previously switched the media path through in both directions
Reply = 1005 {
Context =1 {
Modify = aln/1/1}}
Reverse Polarity
Voice traffic from called party.
RTP Media (Voice)

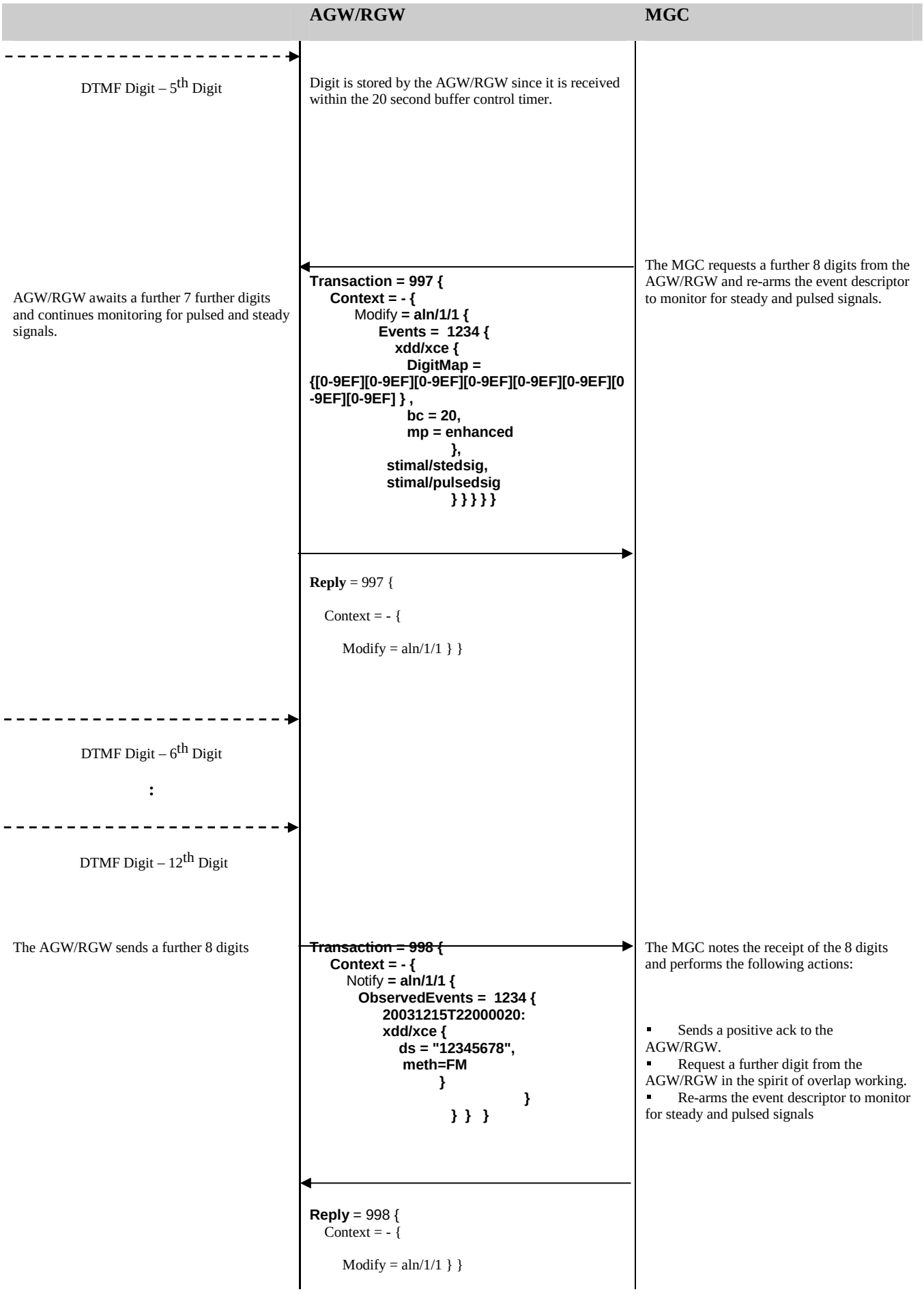


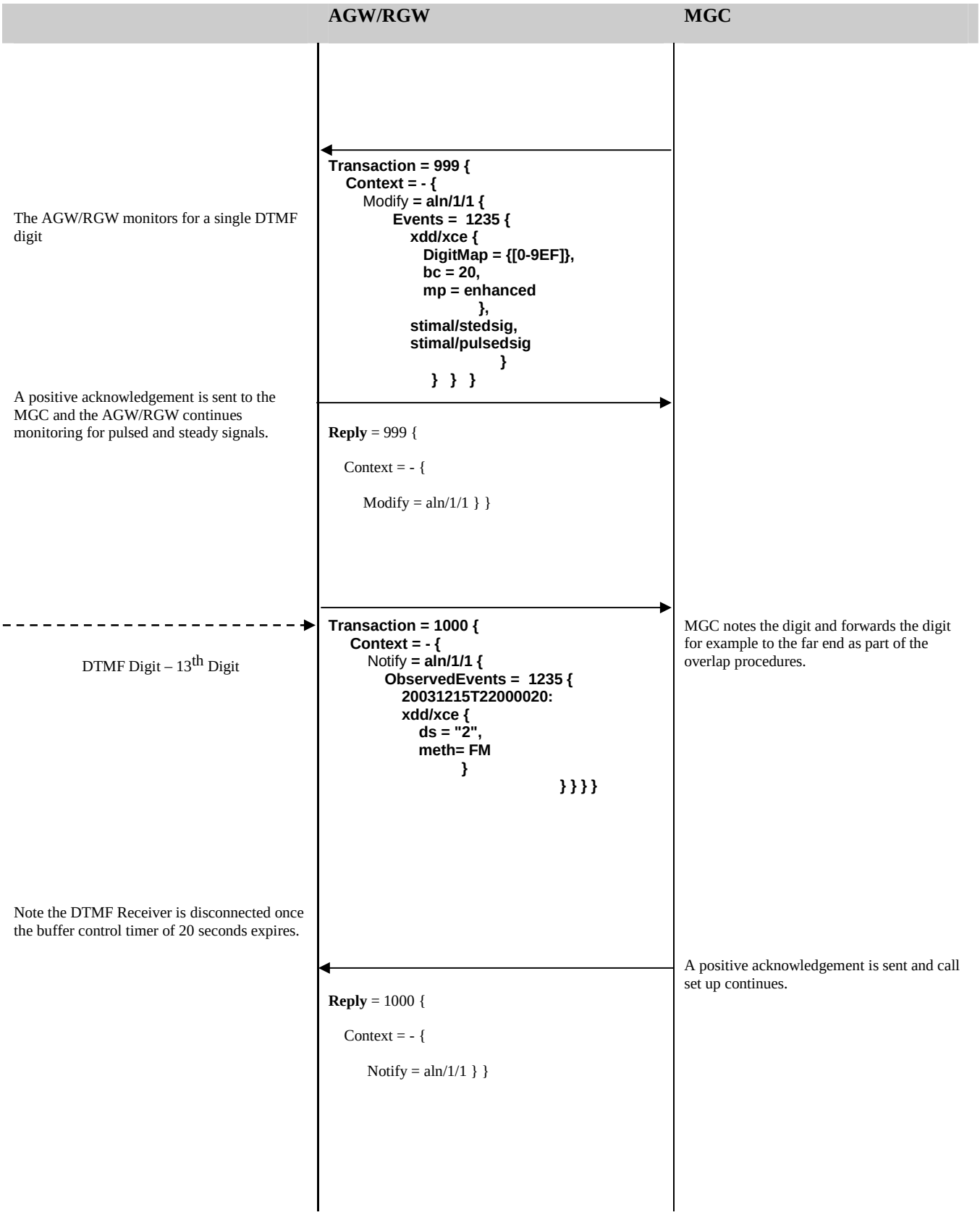
5.1.2 DEL - Successful Outgoing Voice Call initiated using DTMF Digits and overlap dialling - A end

5.1.2.1 Late Addition of Analogue Termination to a Context

Pre-conditions: Sequence 5.1.1.1 has been successfully executed for DEL port aln/1/1 up to [Point A].



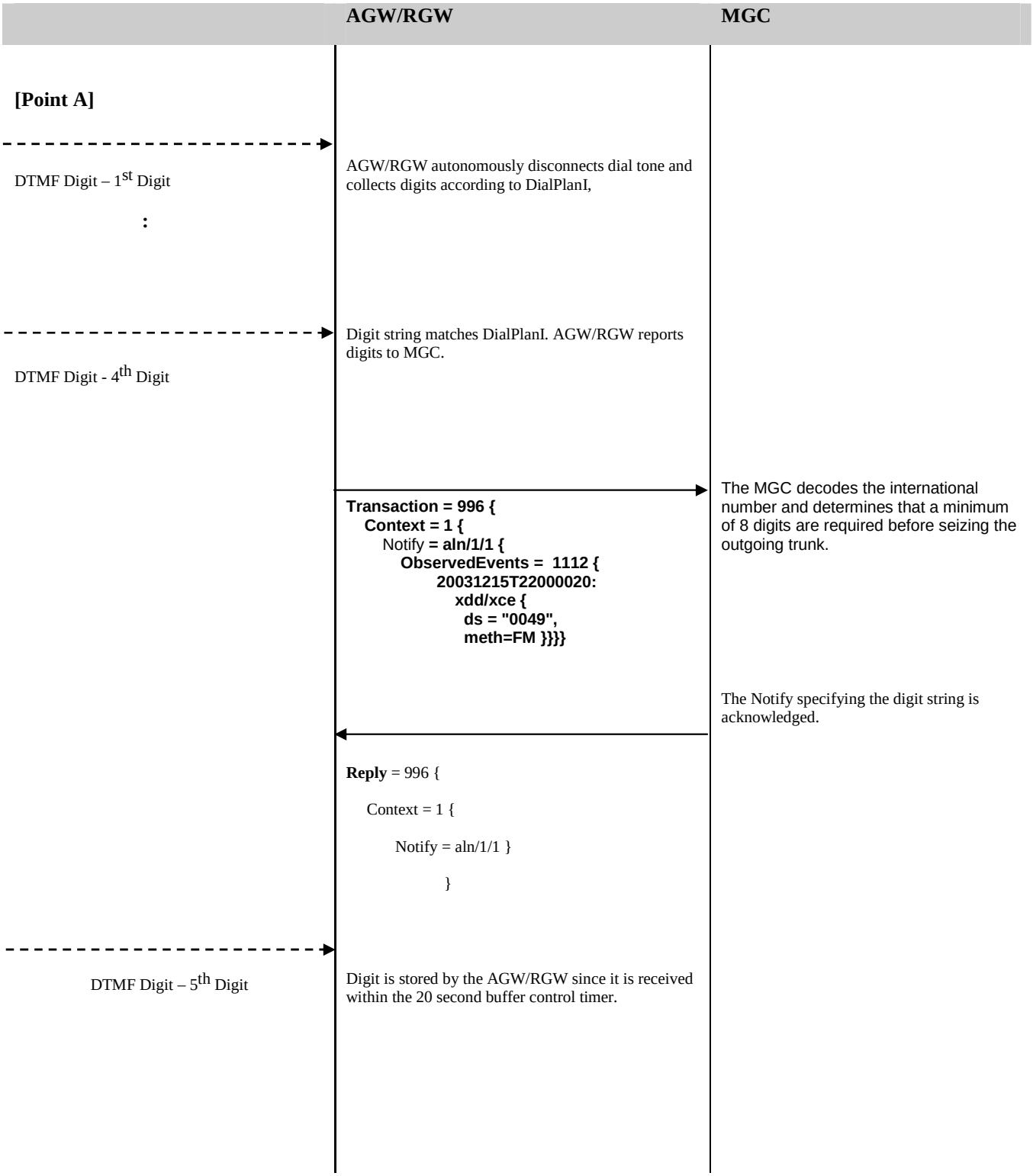

AGW/RGW
MGC
DTMF Digit – 5th Digit
Digit is stored by the AGW/RGW since it is received within the 20 second buffer control timer.
The MGC requests a further 8 digits from the AGW/RGW and re-arms the event descriptor to monitor for steady and pulsed signals.
AGW/RGW awaits a further 7 further digits and continues monitoring for pulsed and steady signals.
Transaction = 997 {
Context = - {
Modify = aln/1/1 {
Events = 1234 {
xdd/xce {
DigitMap = {[0-9EF][0-9EF][0-9EF][0-9EF][0-9EF][0-9EF][0-9EF][0-9EF] } ,
bc = 20,
mp = enhanced
},
stimal/stedsig,
stimal/pulsedsig
} } } } }
Reply = 997 {
Context = - {
Modify = aln/1/1 } }
DTMF Digit – 6th Digit
:
DTMF Digit – 12th Digit
The AGW/RGW sends a further 8 digits
Transaction = 998 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1234 {
20031215T22000020:
xdd/xce {
ds = "12345678",
meth=FM
}
}
} } }
The MGC notes the receipt of the 8 digits and performs the following actions:
Sends a positive ack to the AGW/RGW.
Request a further digit from the AGW/RGW in the spirit of overlap working.
Re-arms the event descriptor to monitor for steady and pulsed signals
Reply = 998 {
Context = - {
Modify = aln/1/1 } }

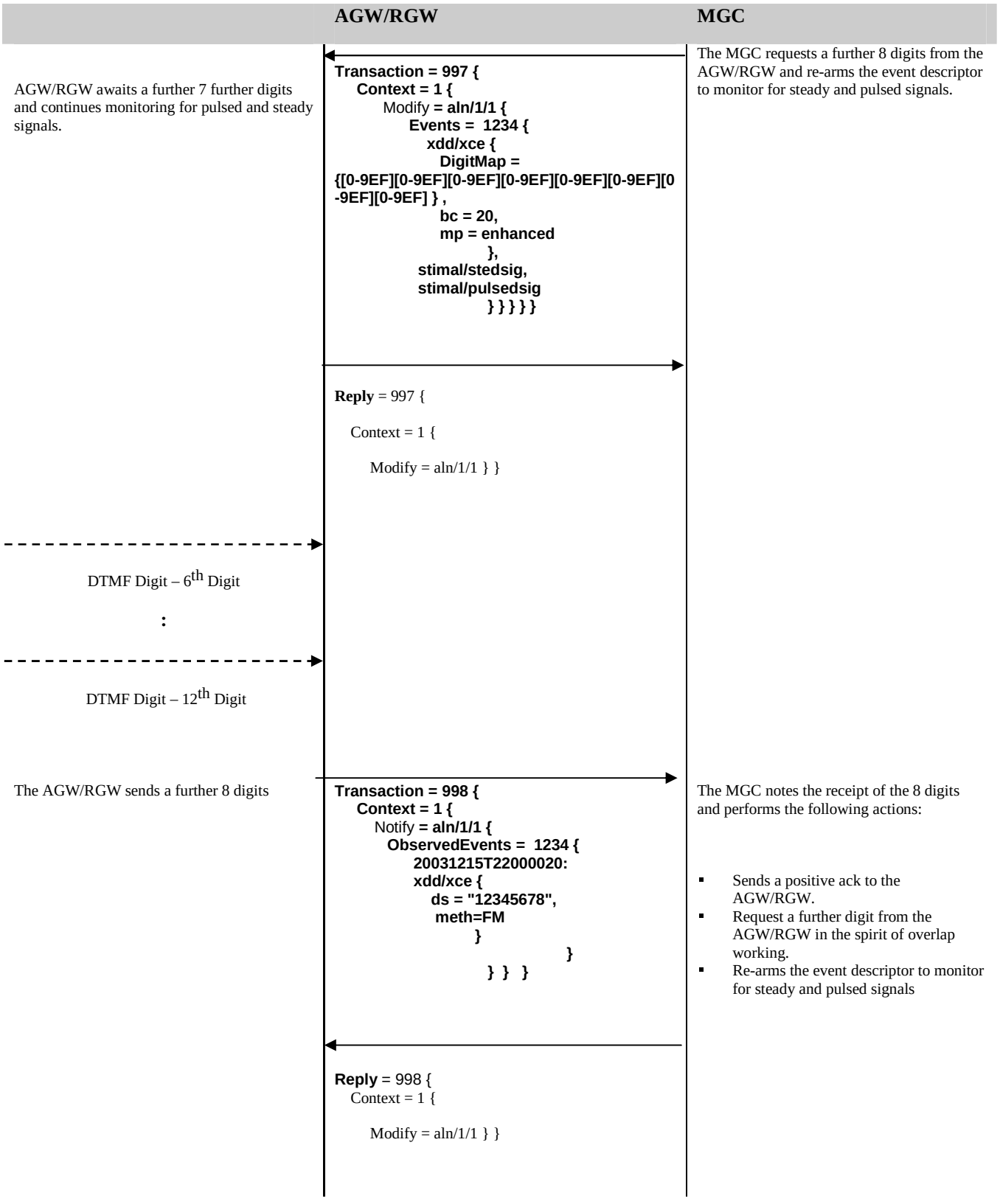


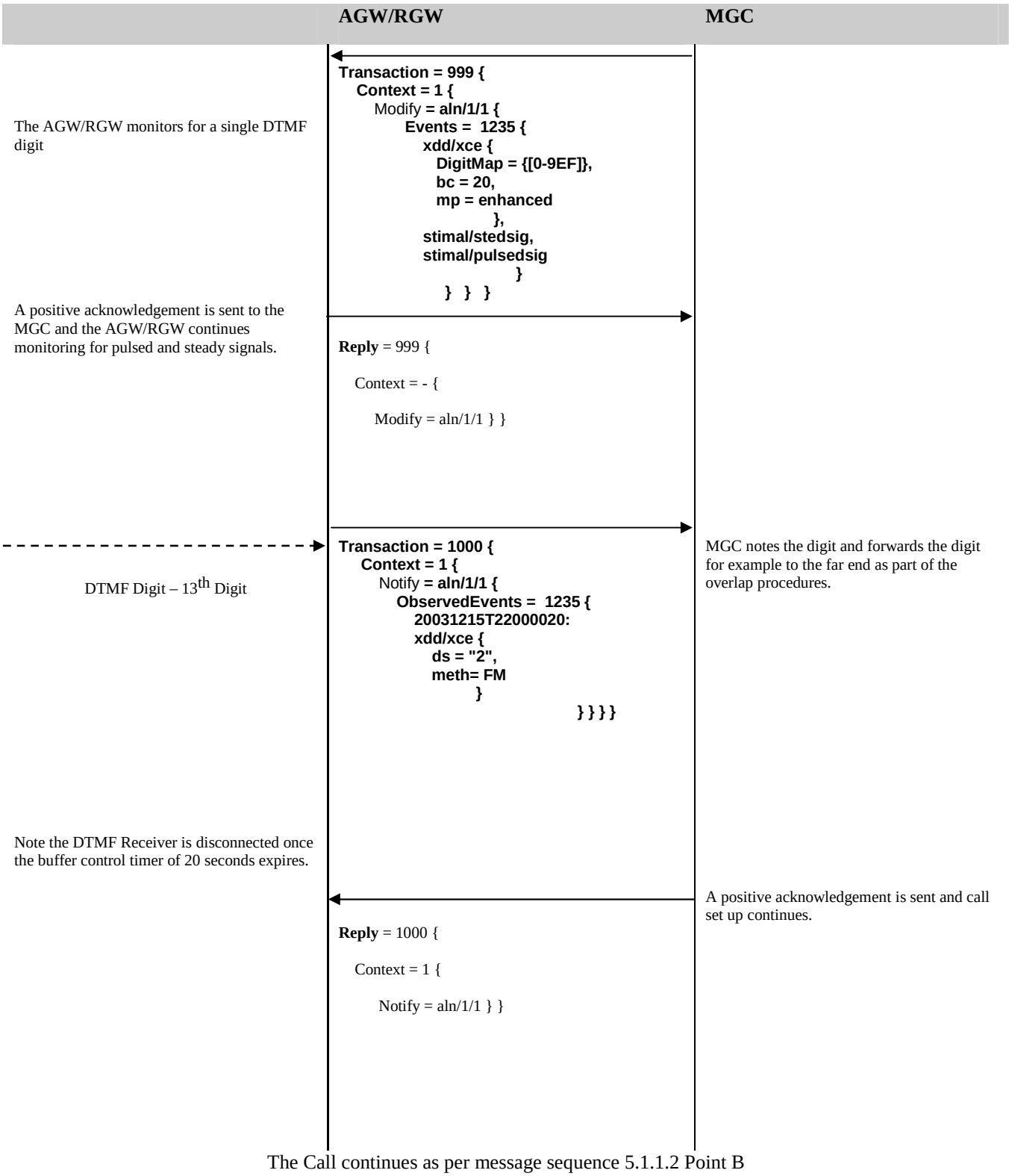
The Call continues as per message sequence 5.1.1.1 Point B

5.1.2.2 Early Addition of Analogue Termination to a Context

Pre-conditions: Sequence 5.1.1.1 has been successfully executed for DEL port aln/1/1 up to [Point A].



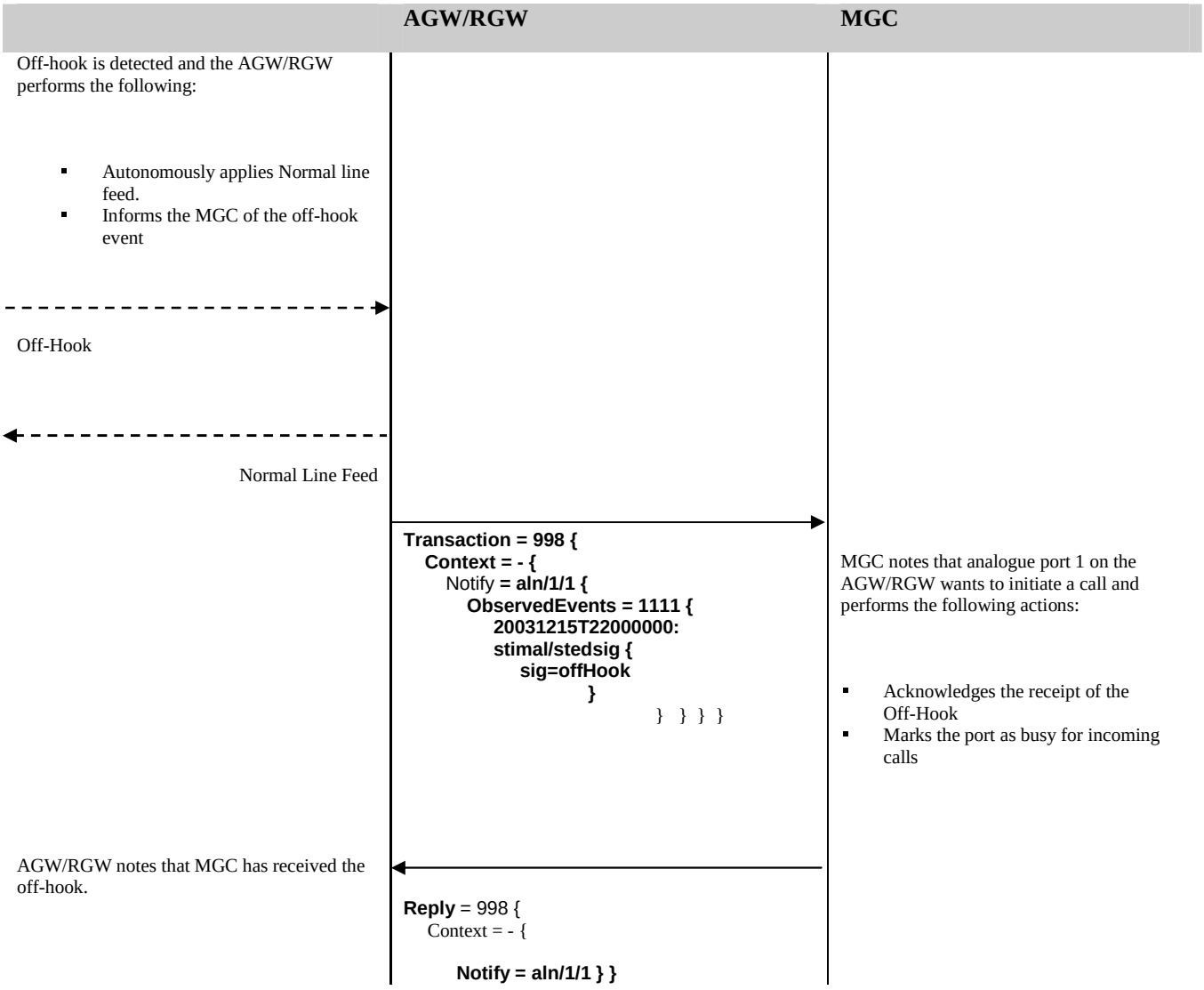

AGW/RGW
MGC
The MGC requests a further 8 digits from the AGW/RGW and re-arms the event descriptor to monitor for steady and pulsed signals.
AGW/RGW awaits a further 7 further digits and continues monitoring for pulsed and steady signals.
Transaction = 997 {
Context = 1 {
Modify = aln/1/1 {
Events = 1234 {
xdd/xce {
DigitMap = {[0-9EF][0-9EF][0-9EF][0-9EF][0-9EF][0-9EF][0-9EF][0-9EF] } ,
bc = 20,
mp = enhanced
},
stimal/stedsig,
stimal/pulsedsig
} } } } }
Reply = 997 {
Context = 1 {
Modify = aln/1/1 } }
DTMF Digit – 6th Digit
:
DTMF Digit – 12th Digit
The AGW/RGW sends a further 8 digits
Transaction = 998 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1234 {
20031215T22000020:
xdd/xce {
ds = "12345678",
meth=FM
}
}
} } }
The MGC notes the receipt of the 8 digits and performs the following actions:
Sends a positive ack to the AGW/RGW.
Request a further digit from the AGW/RGW in the spirit of overlap working.
Re-arms the event descriptor to monitor for steady and pulsed signals
Reply = 998 {
Context = 1 {
Modify = aln/1/1 } }

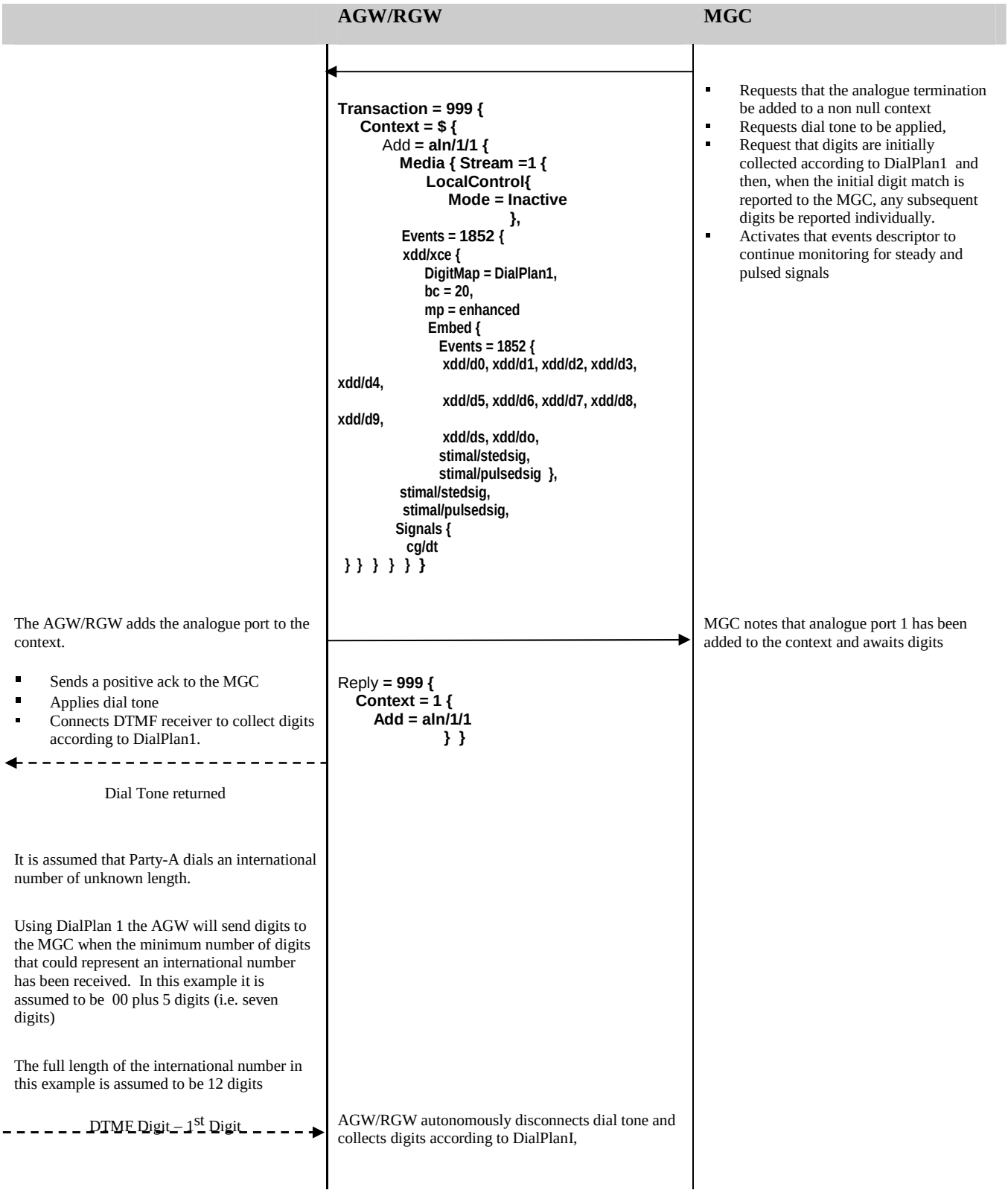


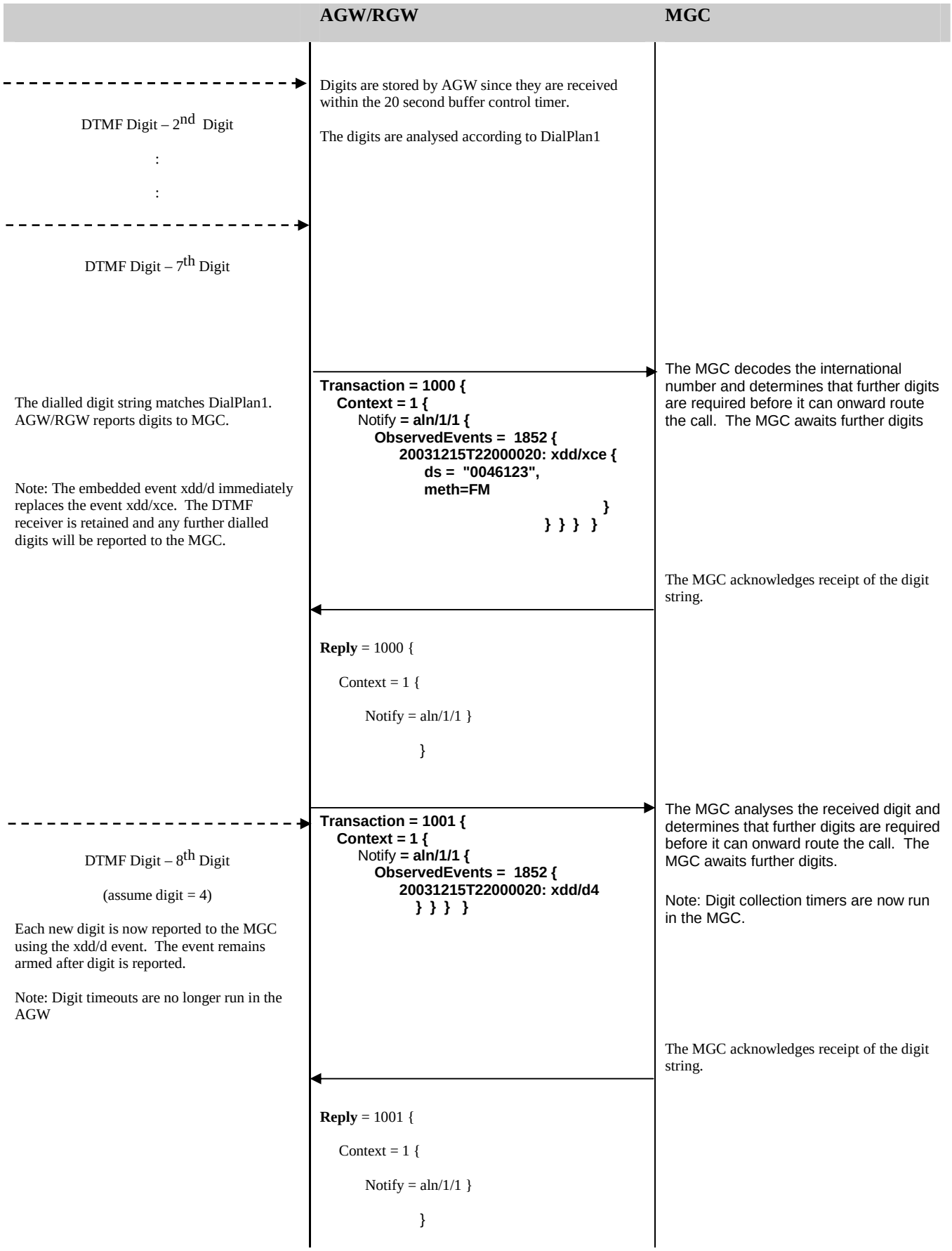
The Call continues as per message sequence 5.1.1.2 Point B

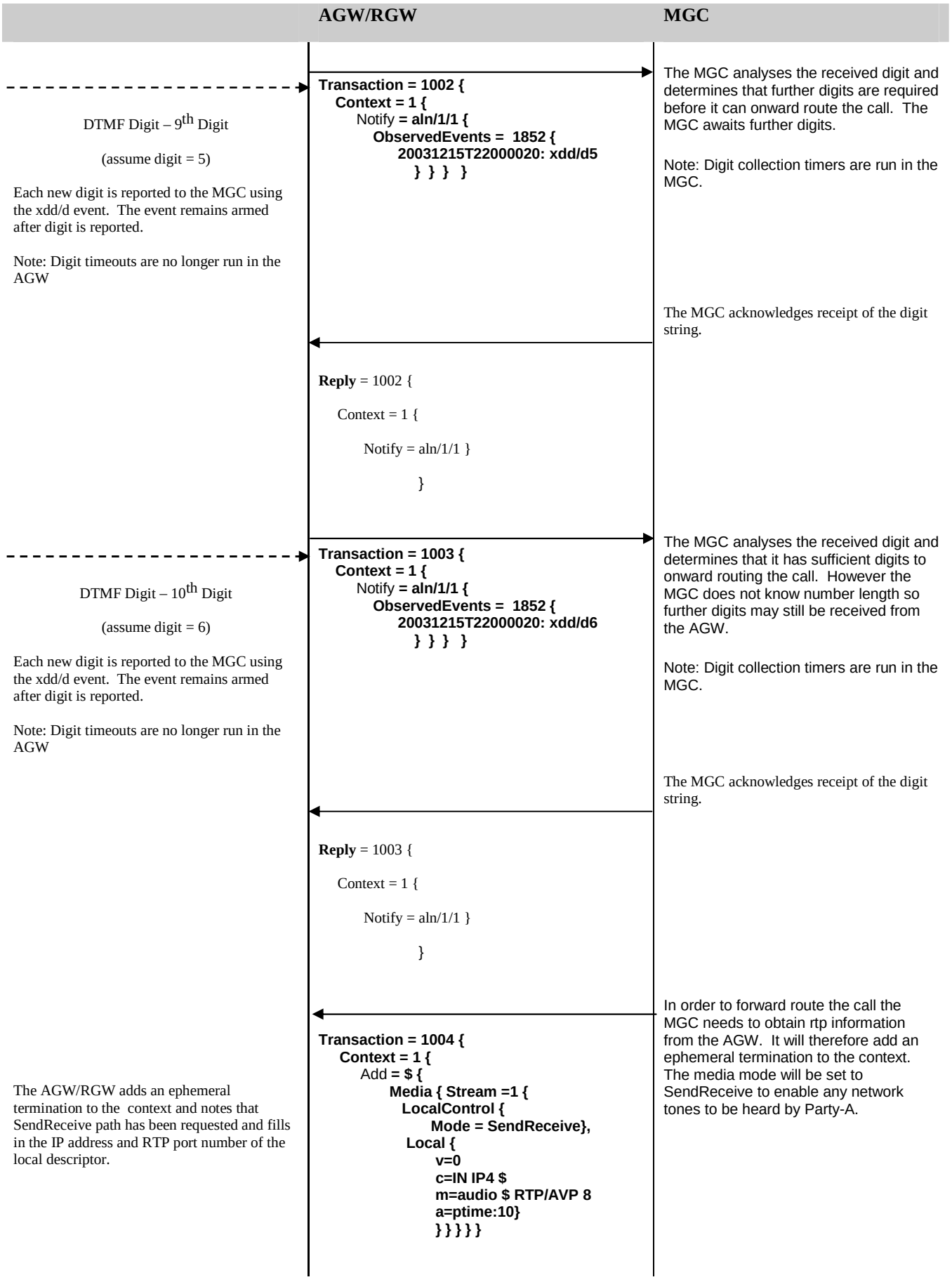
5.1.2.3 Early Addition of Analogue Termination to a Context Alternative Flow

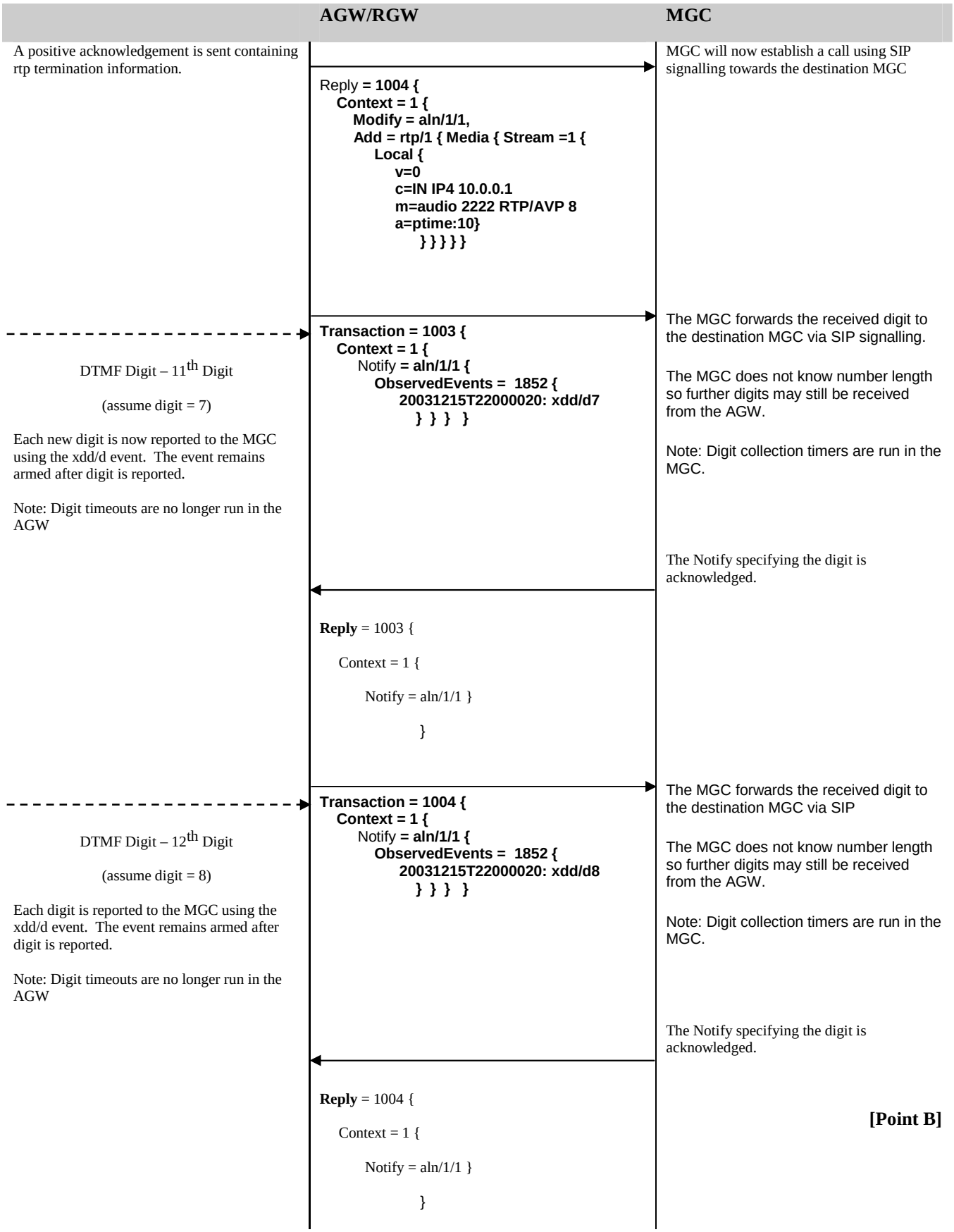
Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.

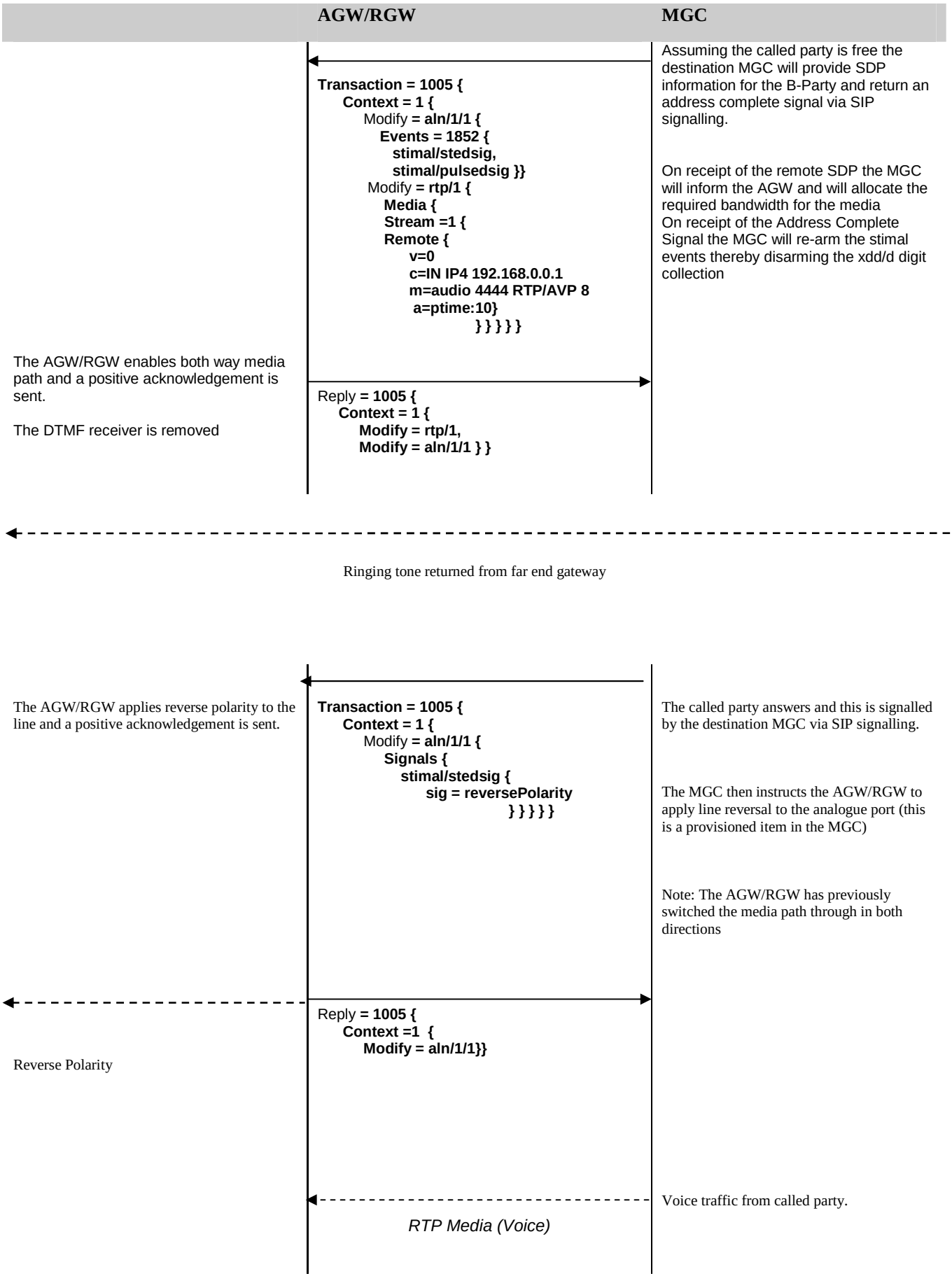


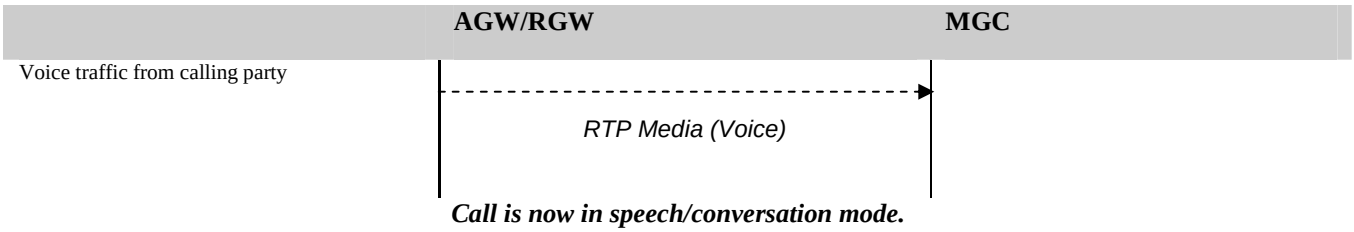

AGW/RGW
MGC
Transaction = 999 {
Context = $ {
Add = aln/1/1 {
Media { Stream =1 {
LocalControl{
Mode = Inactive
},
Events = 1852 {
xdd/xce {
DigitMap = DialPlan1,
bc = 20,
mp = enhanced
Embed {
Events = 1852 {
xdd/d0, xdd/d1, xdd/d2, xdd/d3,
xdd/d4,
xdd/d5, xdd/d6, xdd/d7, xdd/d8,
xdd/d9,
xdd/ds, xdd/do,
stimal/stedsig,
stimal/pulsedsig },
stimal/stedsig,
stimal/pulsedsig,
Signals {
cg/dt
} } } } } }
Requests that the analogue termination be added to a non null context
Requests dial tone to be applied,
Request that digits are initially collected according to DialPlan1 and then, when the initial digit match is reported to the MGC, any subsequent digits be reported individually.
Activates that events descriptor to continue monitoring for steady and pulsed signals
The AGW/RGW adds the analogue port to the context.
MGC notes that analogue port 1 has been added to the context and awaits digits
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver to collect digits according to DialPlan1.
Reply = 999 {
Context = 1 {
Add = aln/1/1
} }
Dial Tone returned
It is assumed that Party-A dials an international number of unknown length.
Using DialPlan 1 the AGW will send digits to the MGC when the minimum number of digits that could represent an international number has been received. In this example it is assumed to be 00 plus 5 digits (i.e. seven digits)
The full length of the international number in this example is assumed to be 12 digits
DTMF Digit – 1st Digit
AGW/RGW autonomously disconnects dial tone and collects digits according to DialPlanI,


AGW/RGW
MGC
Digits are stored by AGW since they are received within the 20 second buffer control timer.
The digits are analysed according to DialPlan1
DTMF Digit – 2nd Digit
:
:
DTMF Digit – 7th Digit
Transaction = 1000 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000020: xdd/xce {
ds = "0046123",
meth=FM
}
} } } }
The MGC decodes the international number and determines that further digits are required before it can onward route the call. The MGC awaits further digits
The dialled digit string matches DialPlan1. AGW/RGW reports digits to MGC.
Note: The embedded event xdd/d immediately replaces the event xdd/xce. The DTMF receiver is retained and any further dialled digits will be reported to the MGC.
The MGC acknowledges receipt of the digit string.
Reply = 1000 {
Context = 1 {
Notify = aln/1/1 }
}
Transaction = 1001 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000020: xdd/d4
} } } }
The MGC analyses the received digit and determines that further digits are required before it can onward route the call. The MGC awaits further digits.
Note: Digit collection timers are now run in the MGC.
DTMF Digit – 8th Digit
(assume digit = 4)
Each new digit is now reported to the MGC using the xdd/d event. The event remains armed after digit is reported.
Note: Digit timeouts are no longer run in the AGW
The MGC acknowledges receipt of the digit string.
Reply = 1001 {
Context = 1 {
Notify = aln/1/1 }
}


AGW/RGW
MGC
DTMF Digit – 9th Digit
(assume digit = 5)
Each new digit is reported to the MGC using the xdd/d event. The event remains armed after digit is reported.
Note: Digit timeouts are no longer run in the AGW
Transaction = 1002 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000020: xdd/d5
} } } }
The MGC analyses the received digit and determines that further digits are required before it can onward route the call. The MGC awaits further digits.
Note: Digit collection timers are run in the MGC.
The MGC acknowledges receipt of the digit string.
Reply = 1002 {
Context = 1 {
Notify = aln/1/1 }
}
DTMF Digit – 10th Digit
(assume digit = 6)
Each new digit is reported to the MGC using the xdd/d event. The event remains armed after digit is reported.
Note: Digit timeouts are no longer run in the AGW
Transaction = 1003 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000020: xdd/d6
} } } }
The MGC analyses the received digit and determines that it has sufficient digits to onward routing the call. However the MGC does not know number length so further digits may still be received from the AGW.
Note: Digit collection timers are run in the MGC.
The MGC acknowledges receipt of the digit string.
Reply = 1003 {
Context = 1 {
Notify = aln/1/1 }
}
The AGW/RGW adds an ephemeral termination to the context and notes that SendReceive path has been requested and fills in the IP address and RTP port number of the local descriptor.
Transaction = 1004 {
Context = 1 {
Add = $ {
Media { Stream =1 {
LocalControl {
Mode = SendReceive},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime:10}
} } } } }
In order to forward route the call the MGC needs to obtain rtp information from the AGW. It will therefore add an ephemeral termination to the context. The media mode will be set to SendReceive to enable any network tones to be heard by Party-A.


AGW/RGW
MGC
A positive acknowledgement is sent containing rtp termination information.
MGC will now establish a call using SIP signalling towards the destination MGC
Reply = 1004 {
Context = 1 {
Modify = aln/1/1,
Add = rtp/1 { Media { Stream =1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 2222 RTP/AVP 8
a=ptime:10}
} } } } }
Transaction = 1003 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000020: xdd/d7
} } } }
DTMF Digit – 11th Digit
(assume digit = 7)
Each new digit is now reported to the MGC using the xdd/d event. The event remains armed after digit is reported.
Note: Digit timeouts are no longer run in the AGW
The MGC forwards the received digit to the destination MGC via SIP signalling.
The MGC does not know number length so further digits may still be received from the AGW.
Note: Digit collection timers are run in the MGC.
The Notify specifying the digit is acknowledged.
Reply = 1003 {
Context = 1 {
Notify = aln/1/1 }
}
Transaction = 1004 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000020: xdd/d8
} } } }
DTMF Digit – 12th Digit
(assume digit = 8)
Each digit is reported to the MGC using the xdd/d event. The event remains armed after digit is reported.
Note: Digit timeouts are no longer run in the AGW
The MGC forwards the received digit to the destination MGC via SIP
The MGC does not know number length so further digits may still be received from the AGW.
Note: Digit collection timers are run in the MGC.
The Notify specifying the digit is acknowledged.
Reply = 1004 {
Context = 1 {
Notify = aln/1/1 }
}
[Point B]

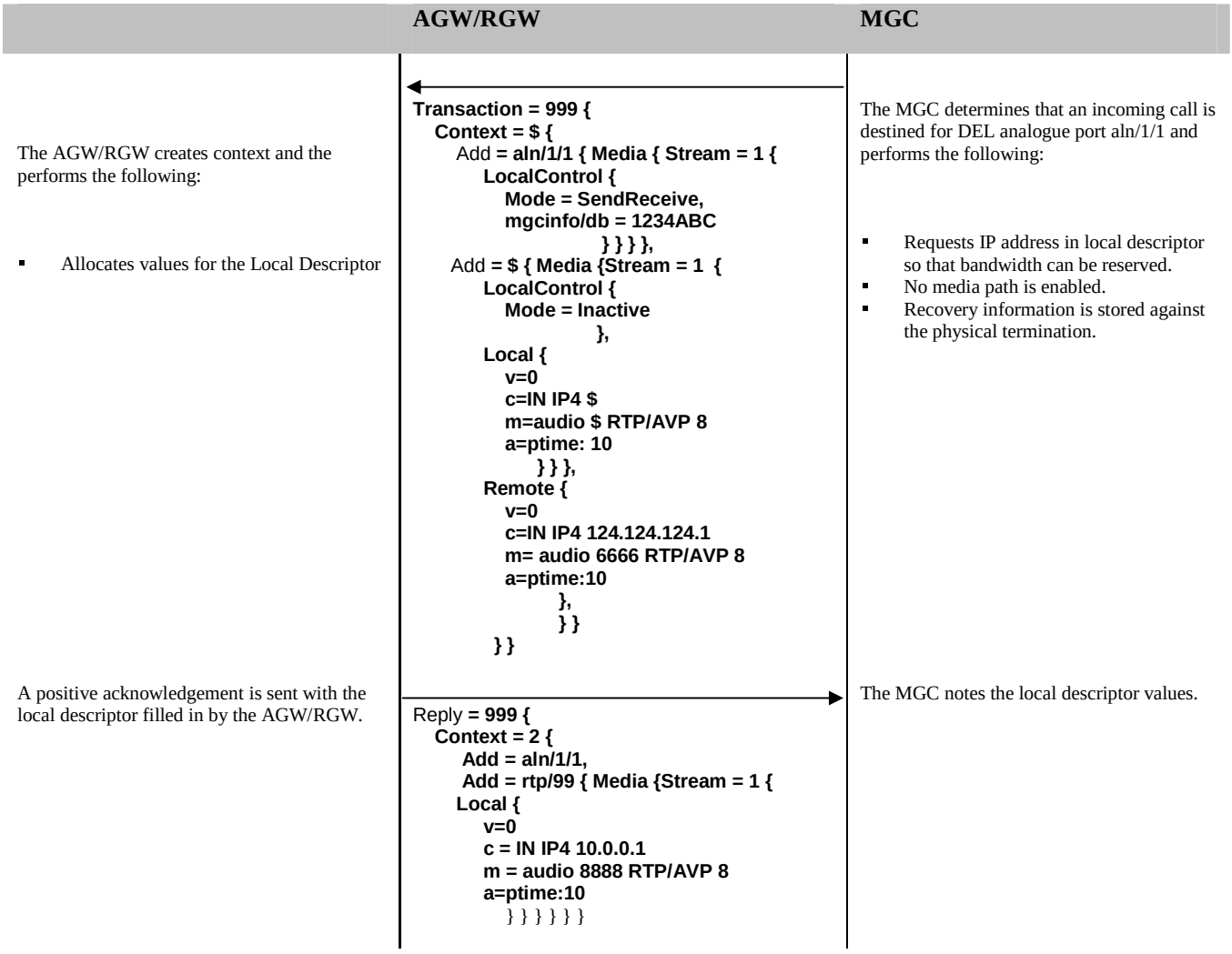

AGW/RGW
MGC
Assuming the called party is free the destination MGC will provide SDP information for the B-Party and return an address complete signal via SIP signalling.
Transaction = 1005 {
Context = 1 {
Modify = aln/1/1 {
Events = 1852 {
stimal/stedsig,
stimal/pulsedsig }}
Modify = rtp/1 {
Media {
Stream =1 {
Remote {
v=0
c=IN IP4 192.168.0.0.1
m=audio 4444 RTP/AVP 8
a=ptime:10}
} } } } }
On receipt of the remote SDP the MGC will inform the AGW and will allocate the required bandwidth for the media
On receipt of the Address Complete Signal the MGC will re-arm the stimal events thereby disarming the xdd/d digit collection
The AGW/RGW enables both way media path and a positive acknowledgement is sent.
The DTMF receiver is removed
Reply = 1005 {
Context = 1 {
Modify = rtp/1,
Modify = aln/1/1 } }
Ringing tone returned from far end gateway
The AGW/RGW applies reverse polarity to the line and a positive acknowledgement is sent.
Transaction = 1005 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = reversePolarity
} } } } }
The called party answers and this is signalled by the destination MGC via SIP signalling.
The MGC then instructs the AGW/RGW to apply line reversal to the analogue port (this is a provisioned item in the MGC)
Note: The AGW/RGW has previously switched the media path through in both directions
Reply = 1005 {
Context =1 {
Modify = aln/1/1}}
Reverse Polarity
Voice traffic from called party.
RTP Media (Voice)

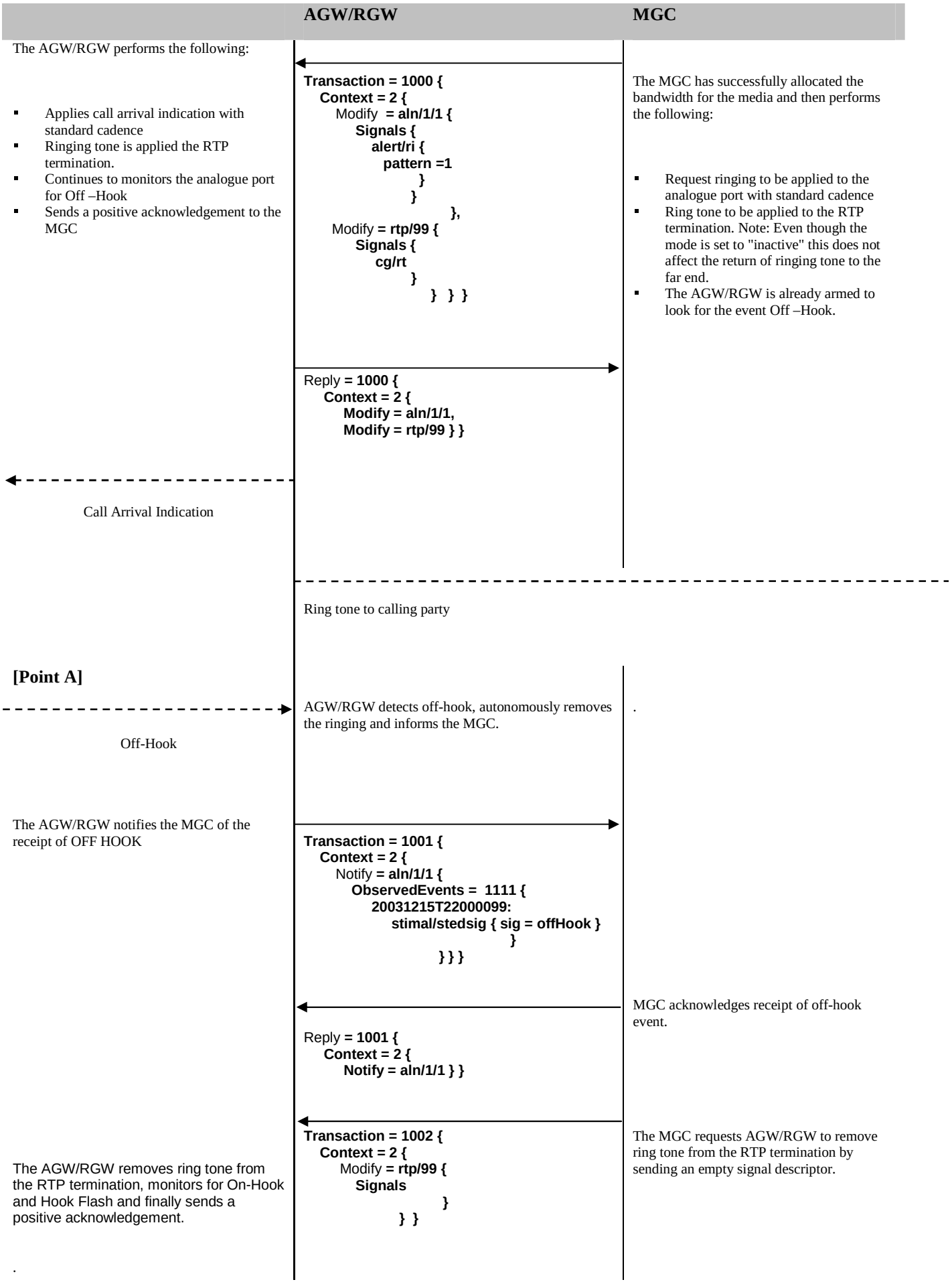


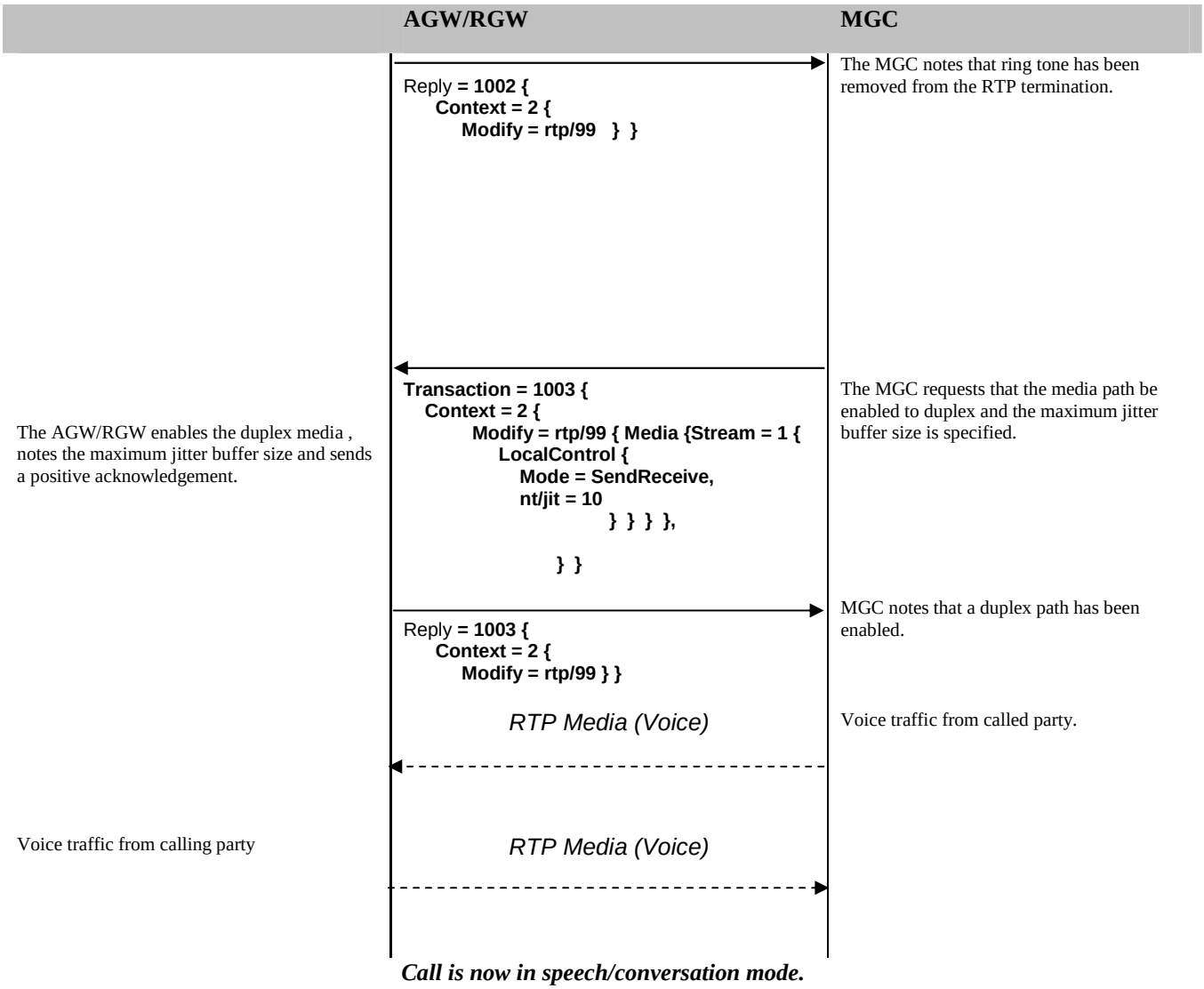
5.1.3 DEL - Successful Incoming Voice Call to AGW/RGW without Caller Line Identity - B end

5.1.3.1 Early Addition of Analogue and Ephemeral Termination to a Context

Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
The AGW/RGW performs the following:
Applies call arrival indication with standard cadence
Ringing tone is applied the RTP termination.
Continues to monitors the analogue port for Off –Hook
Sends a positive acknowledgement to the MGC
Transaction = 1000 { Context = 2 { Modify = aln/1/1 { Signals { alert/ri { pattern =1 } } }, Modify = rtp/99 { Signals { cg/rt } } } }
The MGC has successfully allocated the bandwidth for the media and then performs the following:
Request ringing to be applied to the analogue port with standard cadence
Ring tone to be applied to the RTP termination. Note: Even though the mode is set to "inactive" this does not affect the return of ringing tone to the far end.
The AGW/RGW is already armed to look for the event Off –Hook.
Reply = 1000 { Context = 2 { Modify = aln/1/1, Modify = rtp/99 } }
Call Arrival Indication
Ring tone to calling party
[Point A]
Off-Hook
AGW/RGW detects off-hook, autonomously removes the ringing and informs the MGC.
The AGW/RGW notifies the MGC of the receipt of OFF HOOK
Transaction = 1001 { Context = 2 { Notify = aln/1/1 { ObservedEvents = 1111 { 20031215T22000099: stimal/stedsig { sig = offHook } } } } }
MGC acknowledges receipt of off-hook event.
Reply = 1001 { Context = 2 { Notify = aln/1/1 } }
Transaction = 1002 { Context = 2 { Modify = rtp/99 { Signals } } }
The MGC requests AGW/RGW to remove ring tone from the RTP termination by sending an empty signal descriptor.
The AGW/RGW removes ring tone from the RTP termination, monitors for On-Hook and Hook Flash and finally sends a positive acknowledgement.



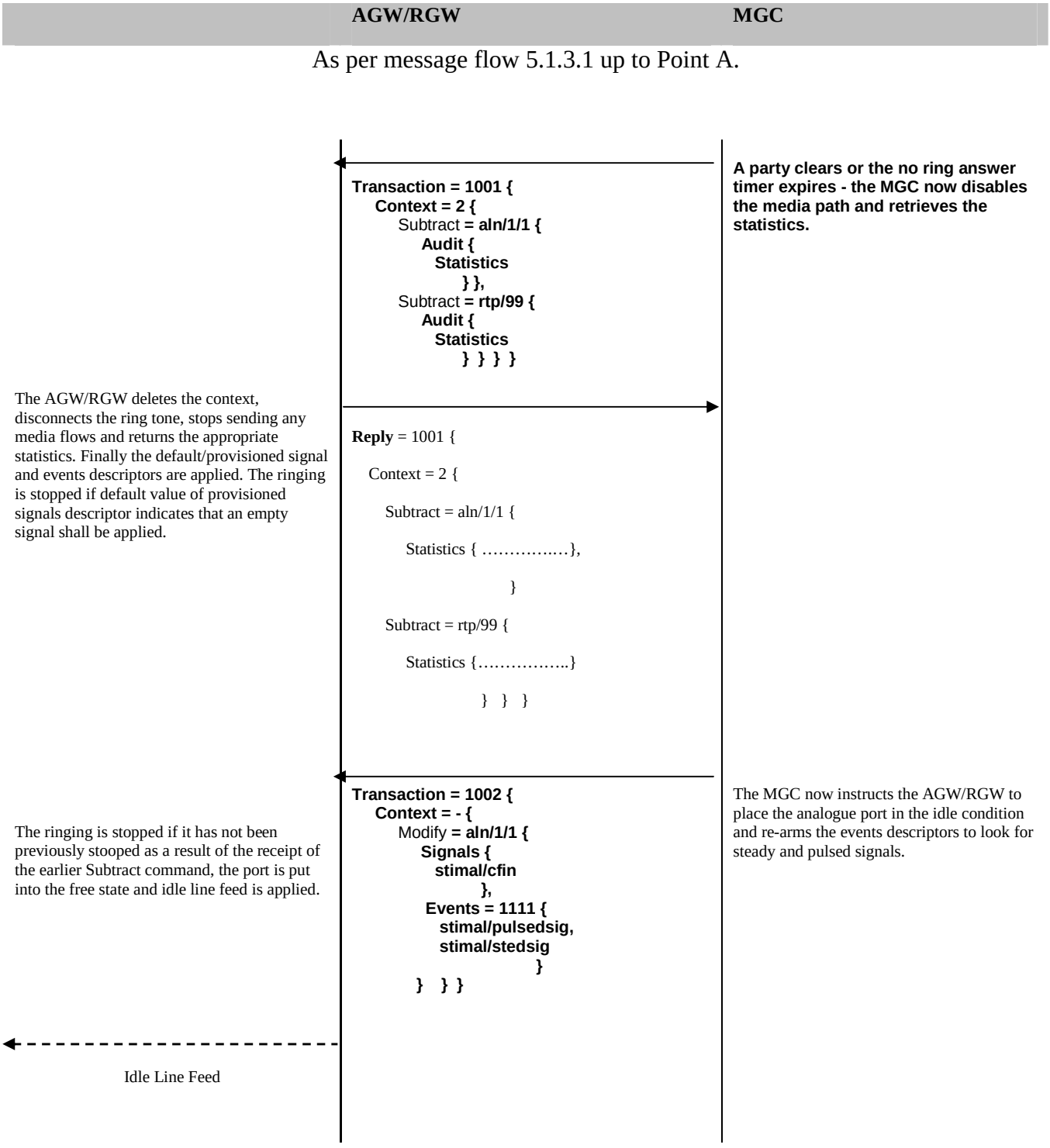
Call is now in speech/conversation mode.

5.2 Unsuccessful Call Establishment

5.2.1 DEL - Unsuccessful call - MGC clears call prior to Answer - B end

5.2.1.1 Early Subtraction of Analogue Termination from a Context

Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.



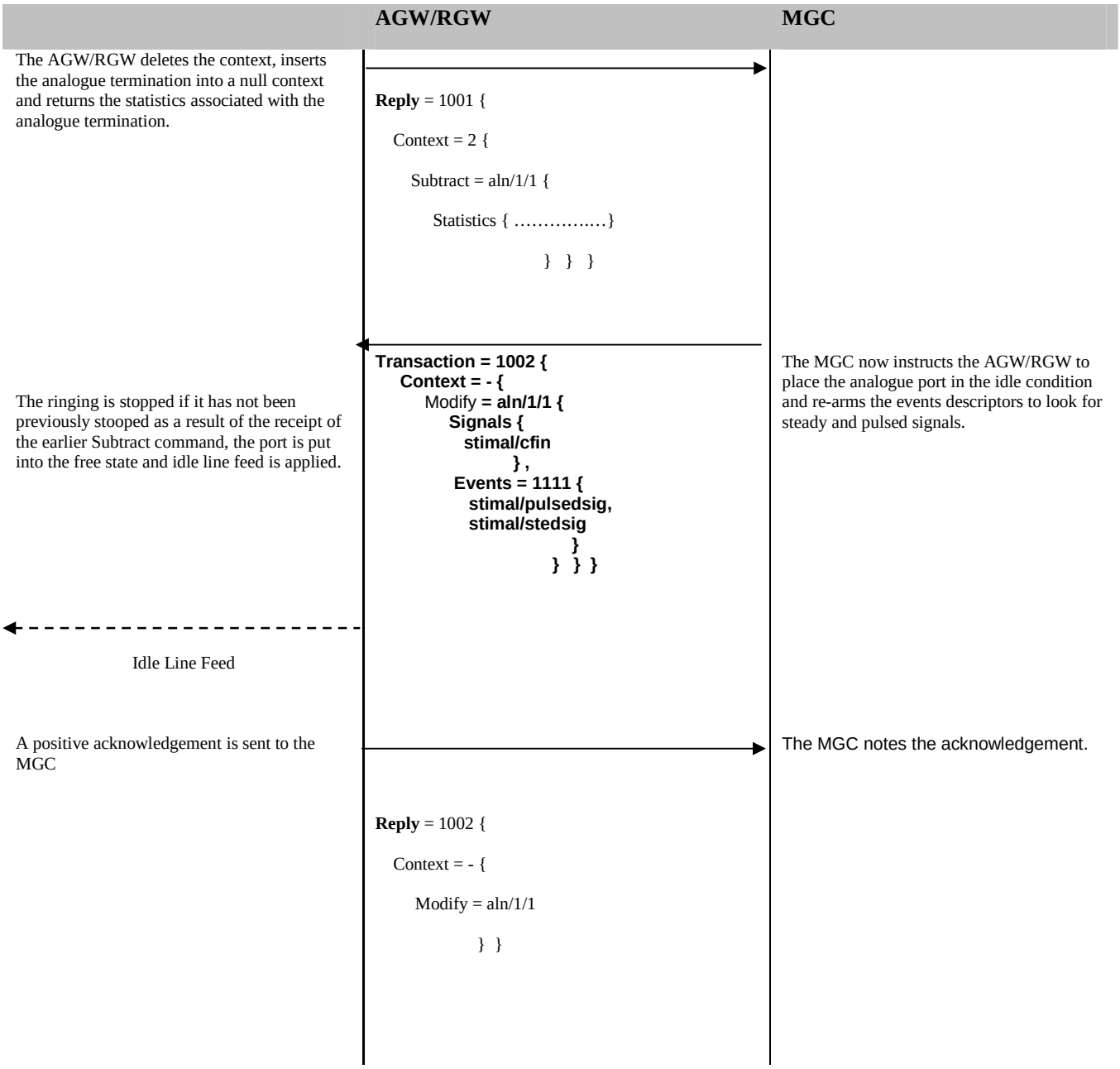
AGW/RGW	MGC
A positive acknowledgement is sent to the MGC	
Reply = 1002 { Context = - { Modify = aln/1/1 } }	The MGC notes the acknowledgement.

Analogue Port is now in the idle condition.

5.2.1.2 Late Subtraction of an Analogue Termination from a Context

Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.

AGW/RGW	MGC
As per message flow 5.1.3.1 up to Point A.	
	A party clears or the no ring answer timer expires - the MGC now disables the media path by subtracting the ephemeral and retrieves the statistics associated with the ephemeral termination. The call recovery information associated with the physical termination is reset.
	Transaction = 1000 { Context = 2 { Modify = aln/1/1 { Media { Stream = 1 { LocalControl { mgcinfo/db = " " } } } }, Subtract = rtp/99 { Audit { Statistics } } } }
The AGW/RGW deletes the ephemeral termination, disconnects the ring tone and stops sending any media flows and returns the statistics associated with the ephemeral termination. The ringing is stopped if default value of provisioned signals descriptor indicates that an empty signal shall be applied. The AGW/RGW also resets the call recovery information string to the specified value.	
Reply = 1000 { Context = 2 { Modify = aln1/1, Subtract = rtp/99 { Statistics {……..} } } }	The analogue termination is now subtracted from the context.
	The analogue ports is now inserted into the null context.
	Transaction = 1001 { Context = 2 { Subtract = aln/1/1 { Audit { Statistics } } } }



Analogue Port is now in the idle condition.

5.2.1.3 Late Subtraction of Analogue Termination from a Context Alternative Flow

Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.

AGW/RGW	MGC

As per message flow up to Point A. on 5.1.3.1

The MGC now disables the media path and retrieves the statistics and puts aln/5/7 into the free state and re-arms for the pulsed and steady signals.

Transaction = 1001 {
Context = 2 {
Subtract **= aln/5/7 {**
Audit {
Statistics
} },
Subtract **= rtp/99 {**
Audit {
Statistics
} } } }
Context = - {
Modify **= aln/5/7 {**
Signals {
Stimal/cfin
},
Events = 1111 {
stimal/pulsedsig,
stimal/stedsig
}

} } },

The AGW/RGW deletes the context, disconnects the ring tone, ringing is stopped, stops sending any media flows and returns the appropriate statistics. Finally the default/provisioned signal and events descriptors are applied.

Reply = 1001 {
Context = 2 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/99 {
Statistics {……..}
} } }

Context = - {
Modify = aln/5/7
} }

Analogue Port is now in the idle condition.

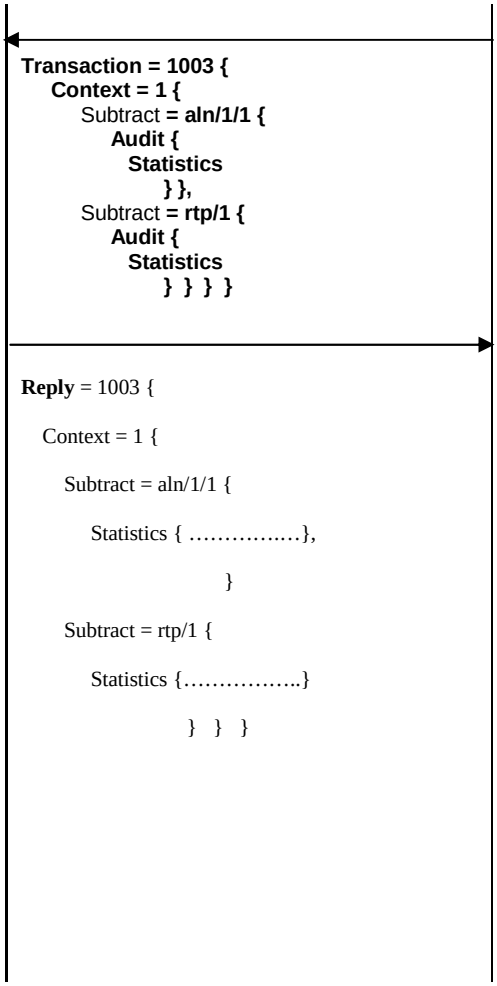
5.2.2 DEL - Unsuccessful Call Set Up; Busy Tone connected by AGW/RGW - A end

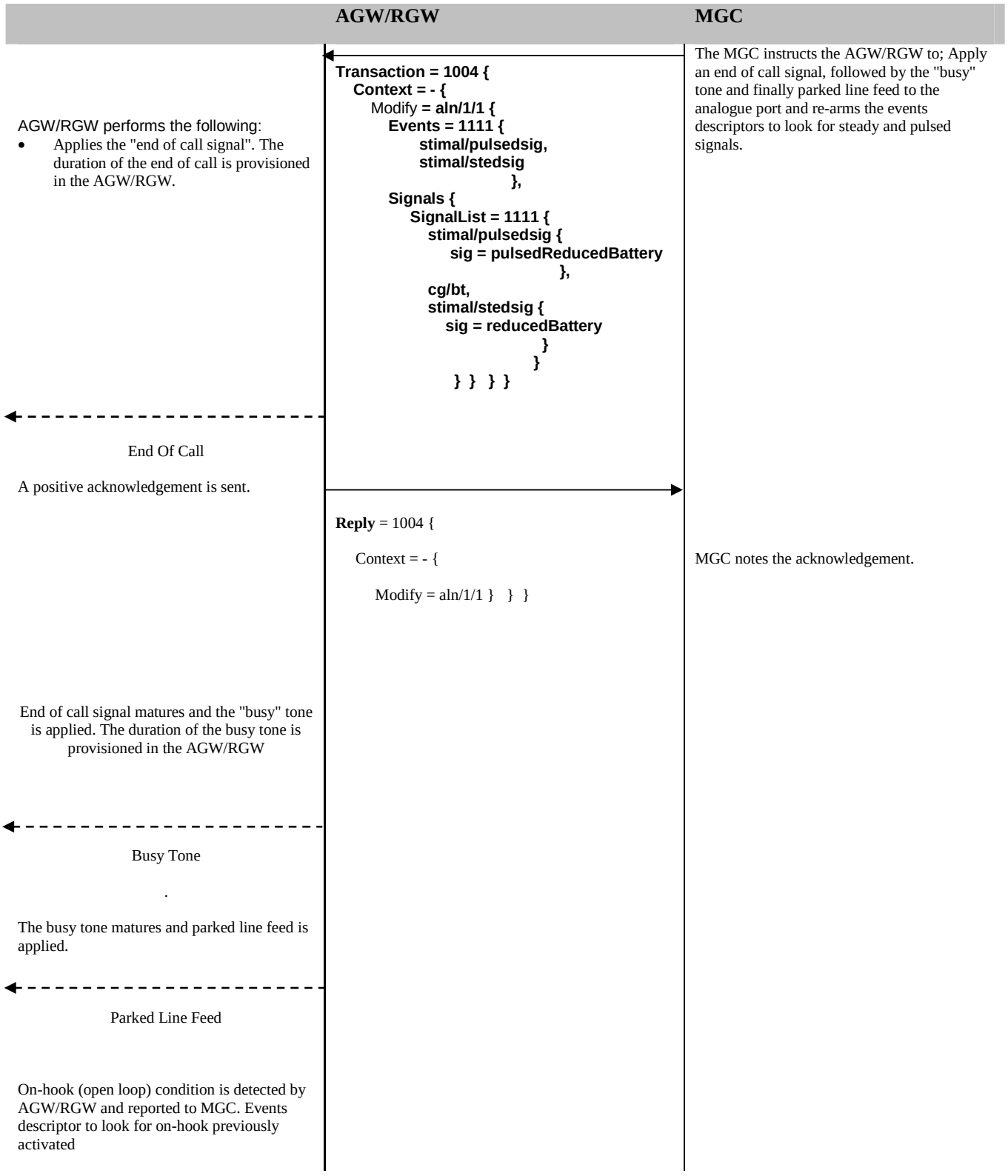
5.2.2.1 Early Subtract of Analogue Termination from a Context

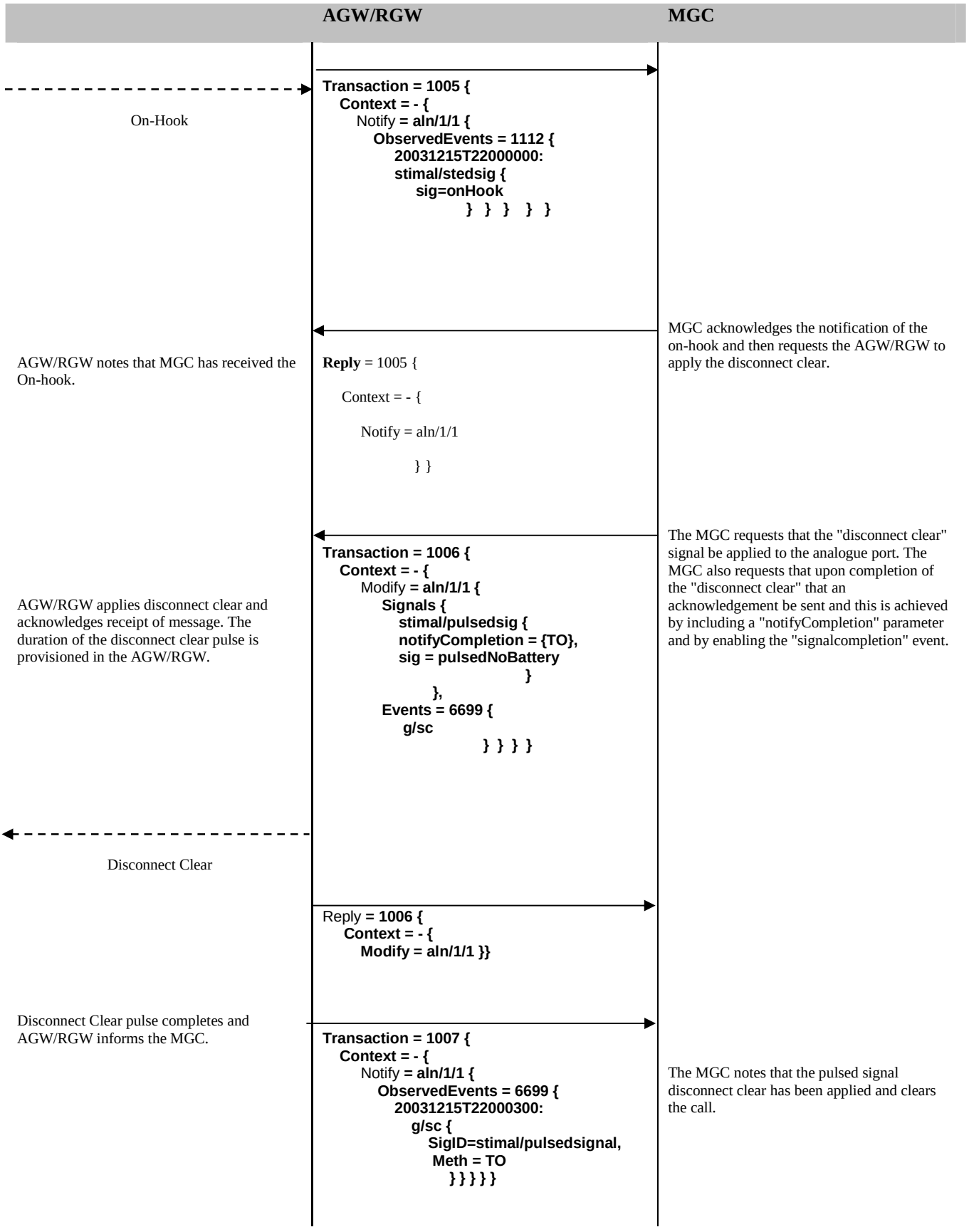
Pre-conditions: Sequence 4.1.1 has been successfully executed.

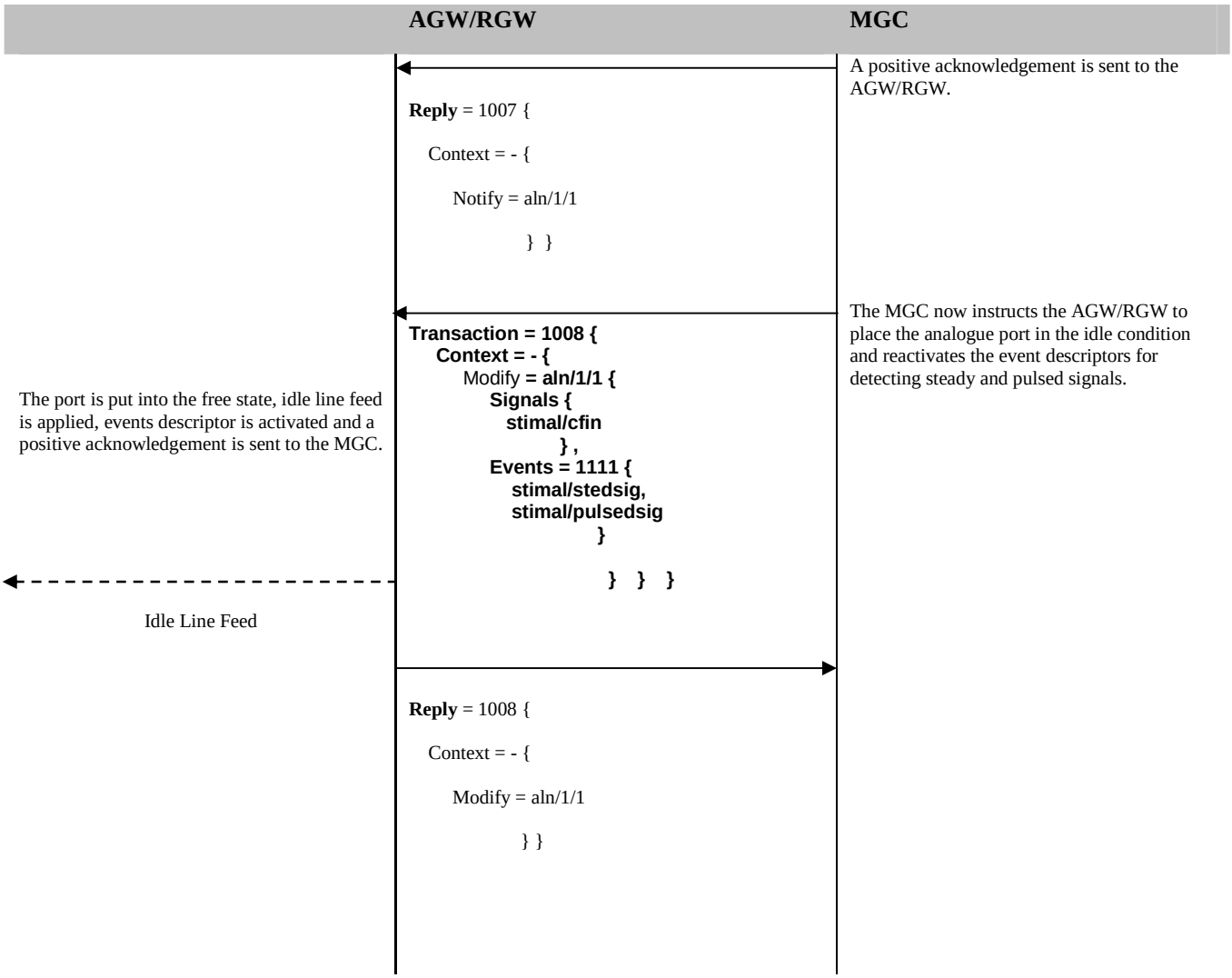
AGW/RGW	MGC

As per message flow 5.1.1.1 up to Point C




AGW/RGW
MGC
The MGC instructs the AGW/RGW to; Apply an end of call signal, followed by the "busy" tone and finally parked line feed to the analogue port and re-arms the events descriptors to look for steady and pulsed signals.
Transaction = 1004 {
Context = - {
Modify = aln/1/1 {
Events = 1111 {
stimal/pulsedsig,
stimal/stedsig
},
Signals {
SignalList = 1111 {
stimal/pulsedsig {
sig = pulsedReducedBattery
},
cg/bt,
stimal/stedsig {
sig = reducedBattery
}
}
} } } }
AGW/RGW performs the following:
Applies the "end of call signal". The duration of the end of call is provisioned in the AGW/RGW.
End Of Call
A positive acknowledgement is sent.
Reply = 1004 {
Context = - {
Modify = aln/1/1 } } }
MGC notes the acknowledgement.
End of call signal matures and the "busy" tone is applied. The duration of the busy tone is provisioned in the AGW/RGW
Busy Tone
.
The busy tone matures and parked line feed is applied.
Parked Line Feed
On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated

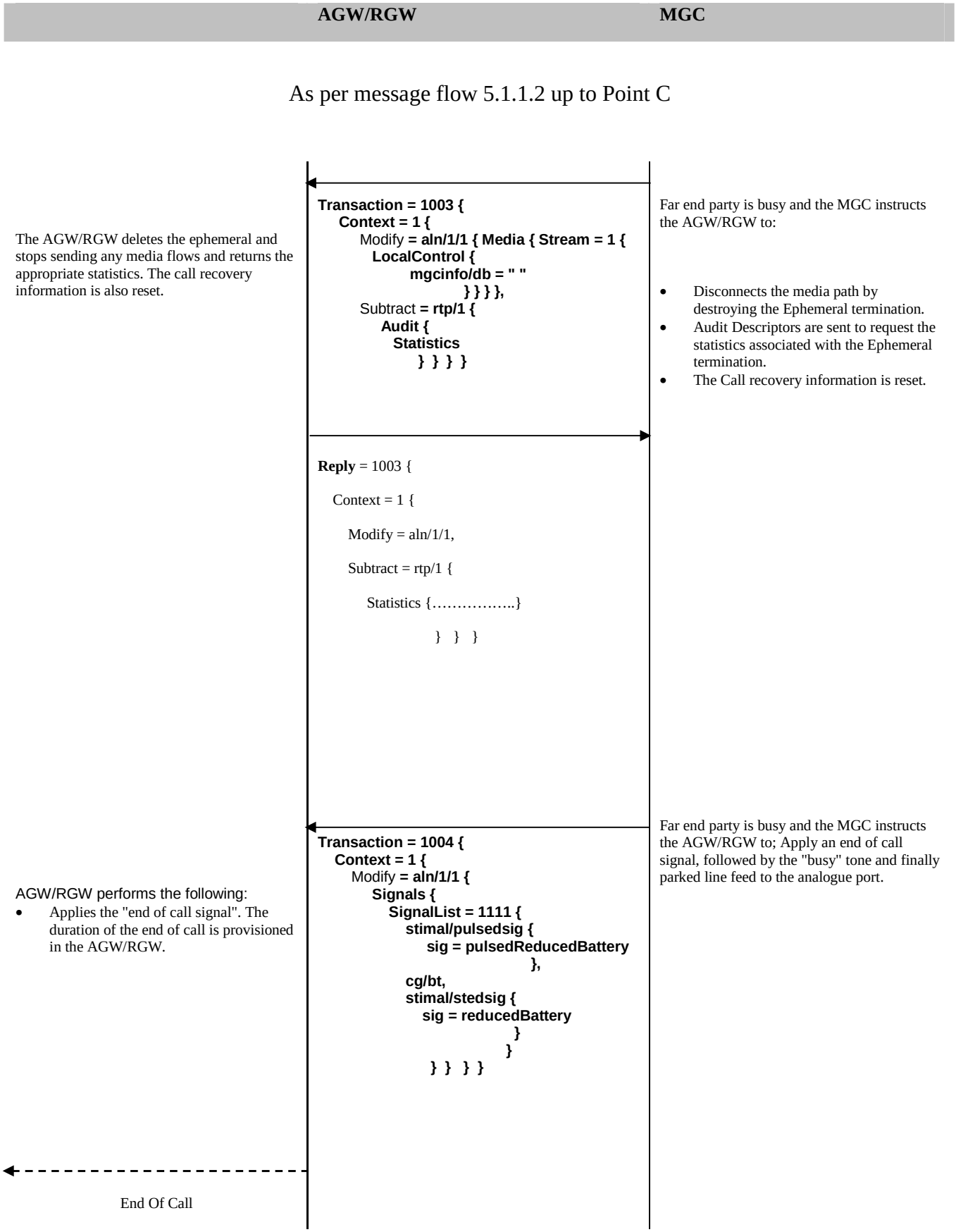

AGW/RGW
MGC
On-Hook
Transaction = 1005 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } } }
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.
AGW/RGW notes that MGC has received the On-hook.
Reply = 1005 {
Context = - {
Notify = aln/1/1
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 1006 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Disconnect Clear
Reply = 1006 {
Context = - {
Modify = aln/1/1 }}
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 1007 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.

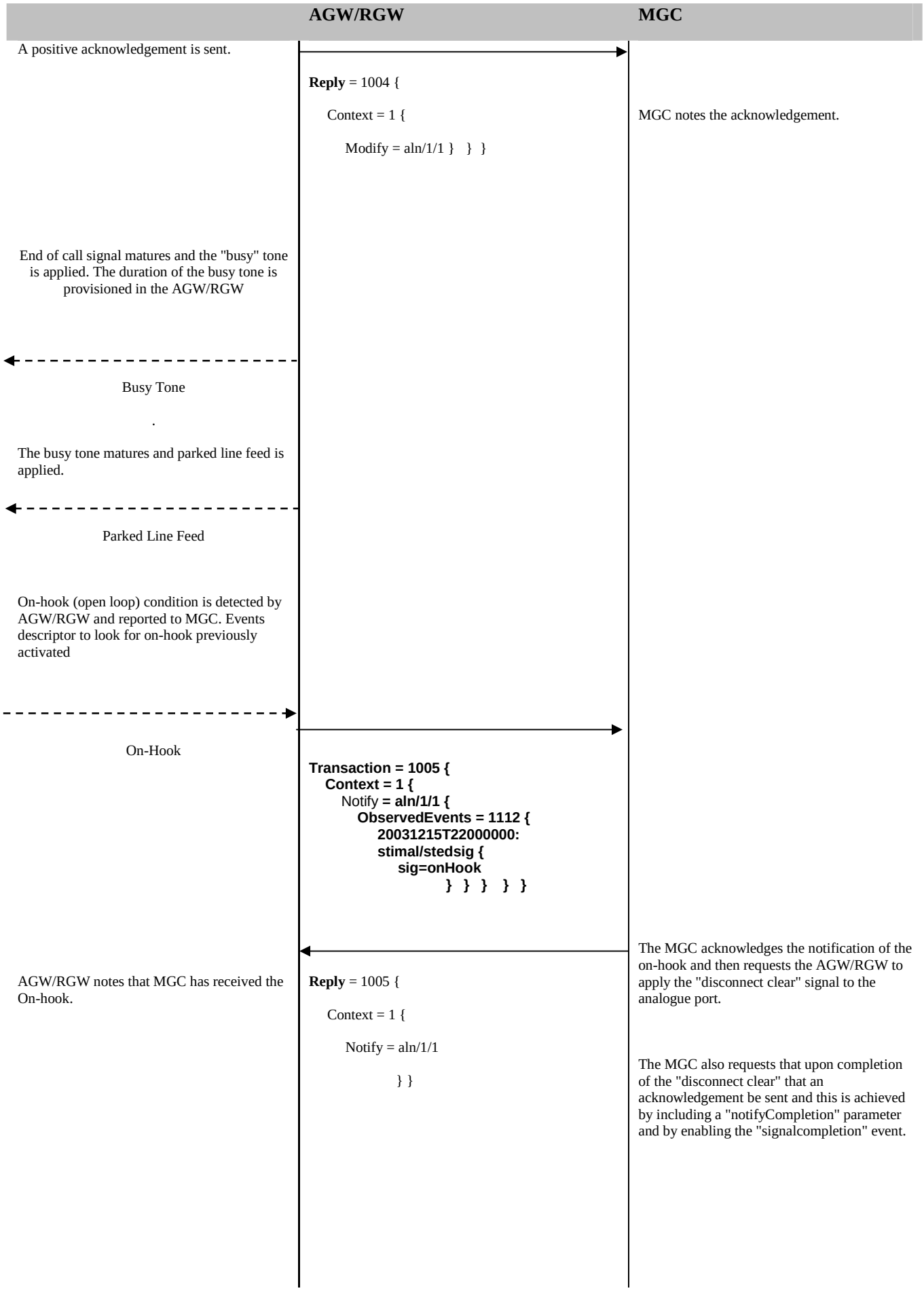


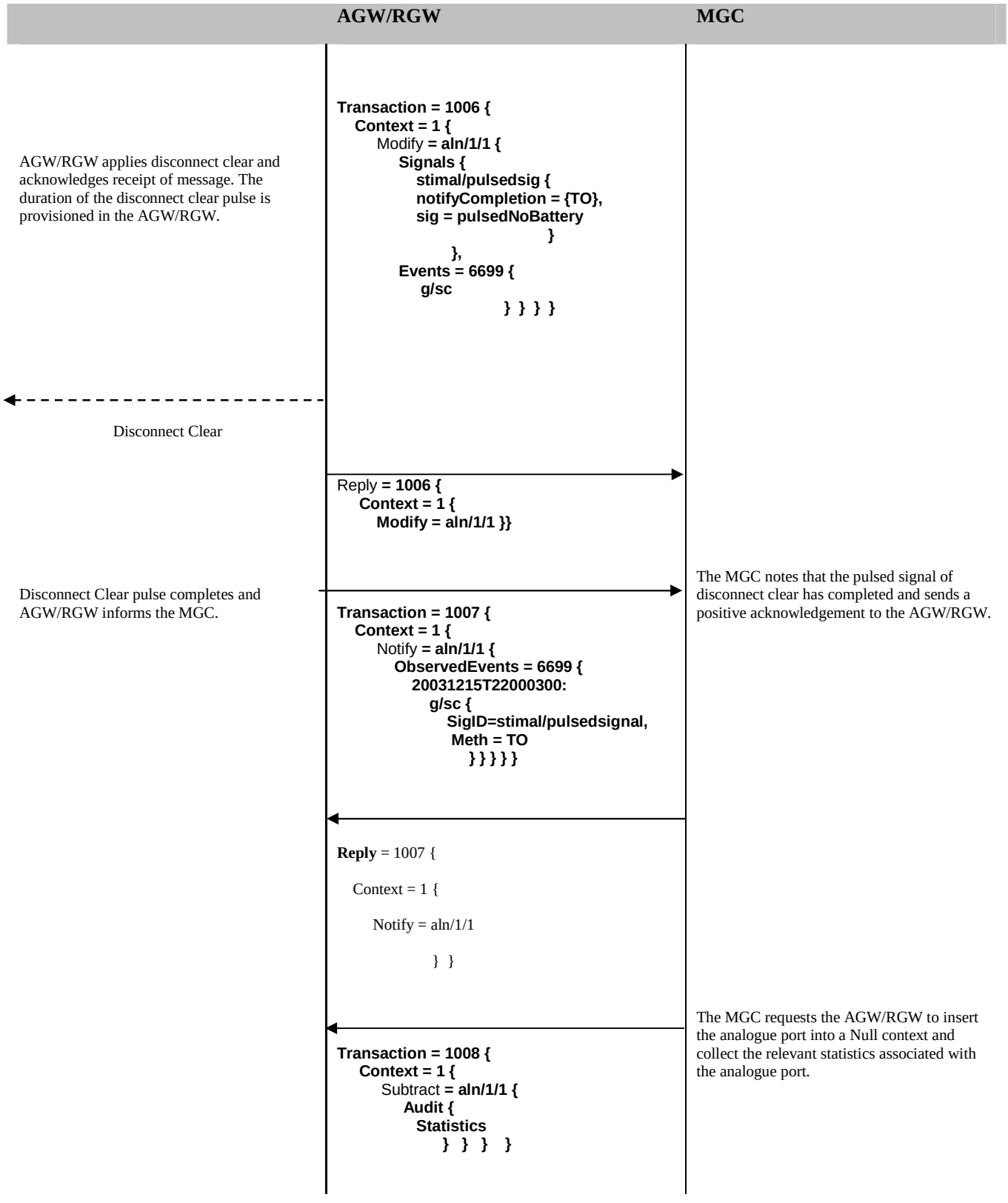
Analogue Port is now in the idle condition.

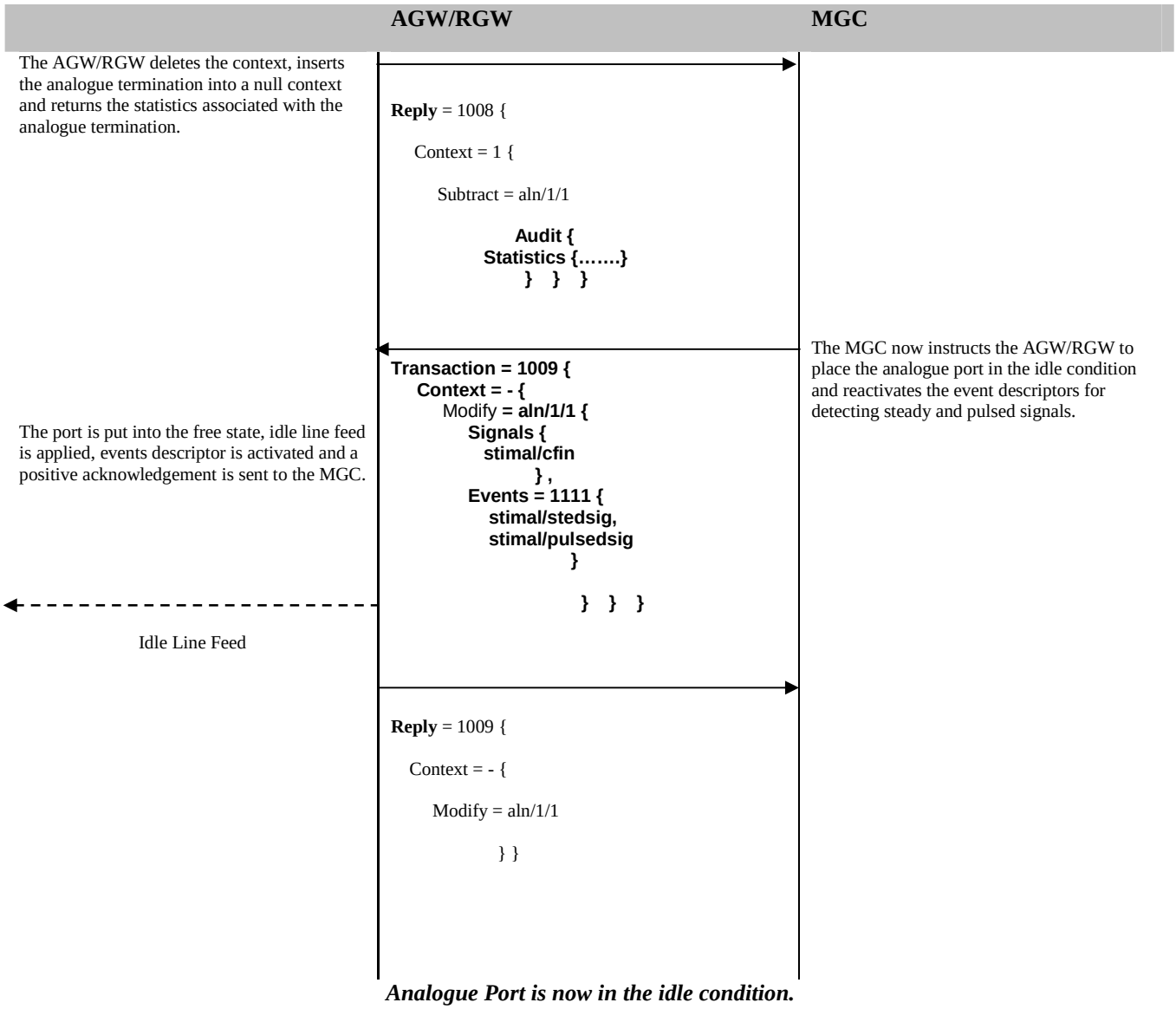
5.2.2.2 Late Subtract of Analogue Termination from a Context

Pre-conditions: Sequence 4.1.1 has been successfully executed.




AGW/RGW
MGC
A positive acknowledgement is sent.
Reply = 1004 {
Context = 1 {
Modify = aln/1/1 } } }
MGC notes the acknowledgement.
End of call signal matures and the "busy" tone is applied. The duration of the busy tone is provisioned in the AGW/RGW
Busy Tone
.
The busy tone matures and parked line feed is applied.
Parked Line Feed
On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated
On-Hook
Transaction = 1005 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } } }
The MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the "disconnect clear" signal to the analogue port.
AGW/RGW notes that MGC has received the On-hook.
Reply = 1005 {
Context = 1 {
Notify = aln/1/1
} }
The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.

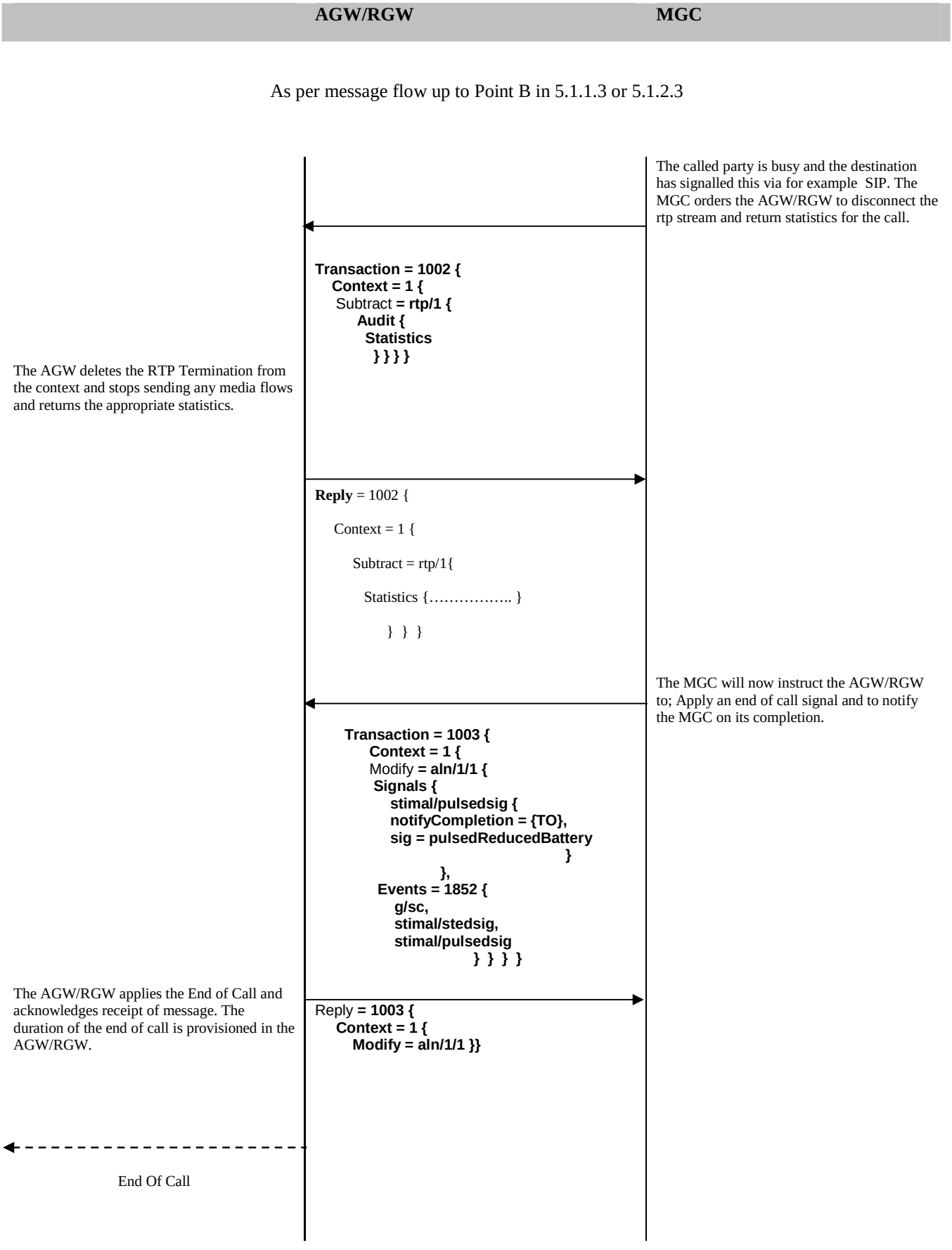

AGW/RGW
MGC
Transaction = 1006 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Disconnect Clear
Reply = 1006 {
Context = 1 {
Modify = aln/1/1 }}
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
The MGC notes that the pulsed signal of disconnect clear has completed and sends a positive acknowledgement to the AGW/RGW.
Transaction = 1007 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
Reply = 1007 {
Context = 1 {
Notify = aln/1/1
} }
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the relevant statistics associated with the analogue port.
Transaction = 1008 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} } } }

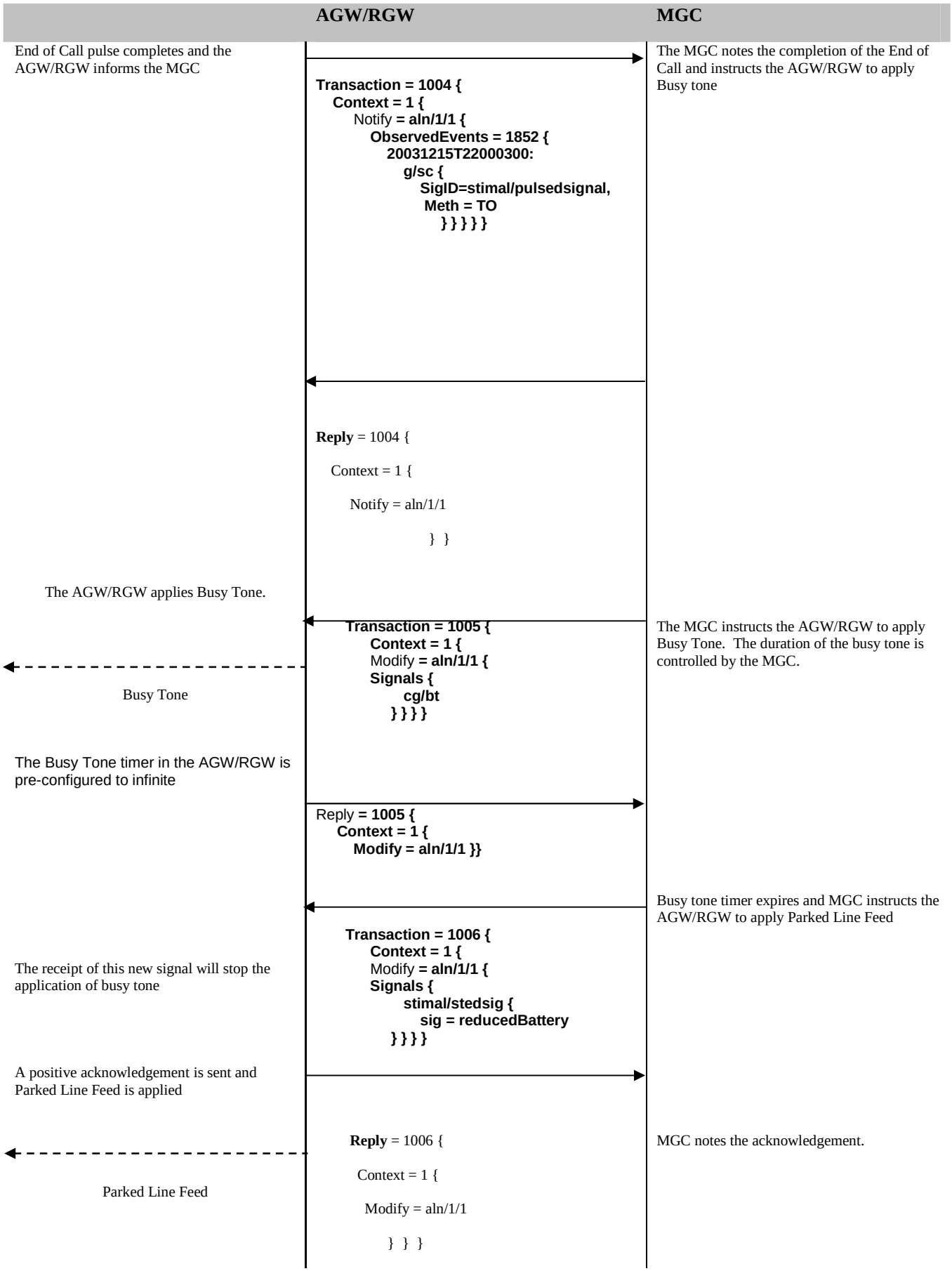


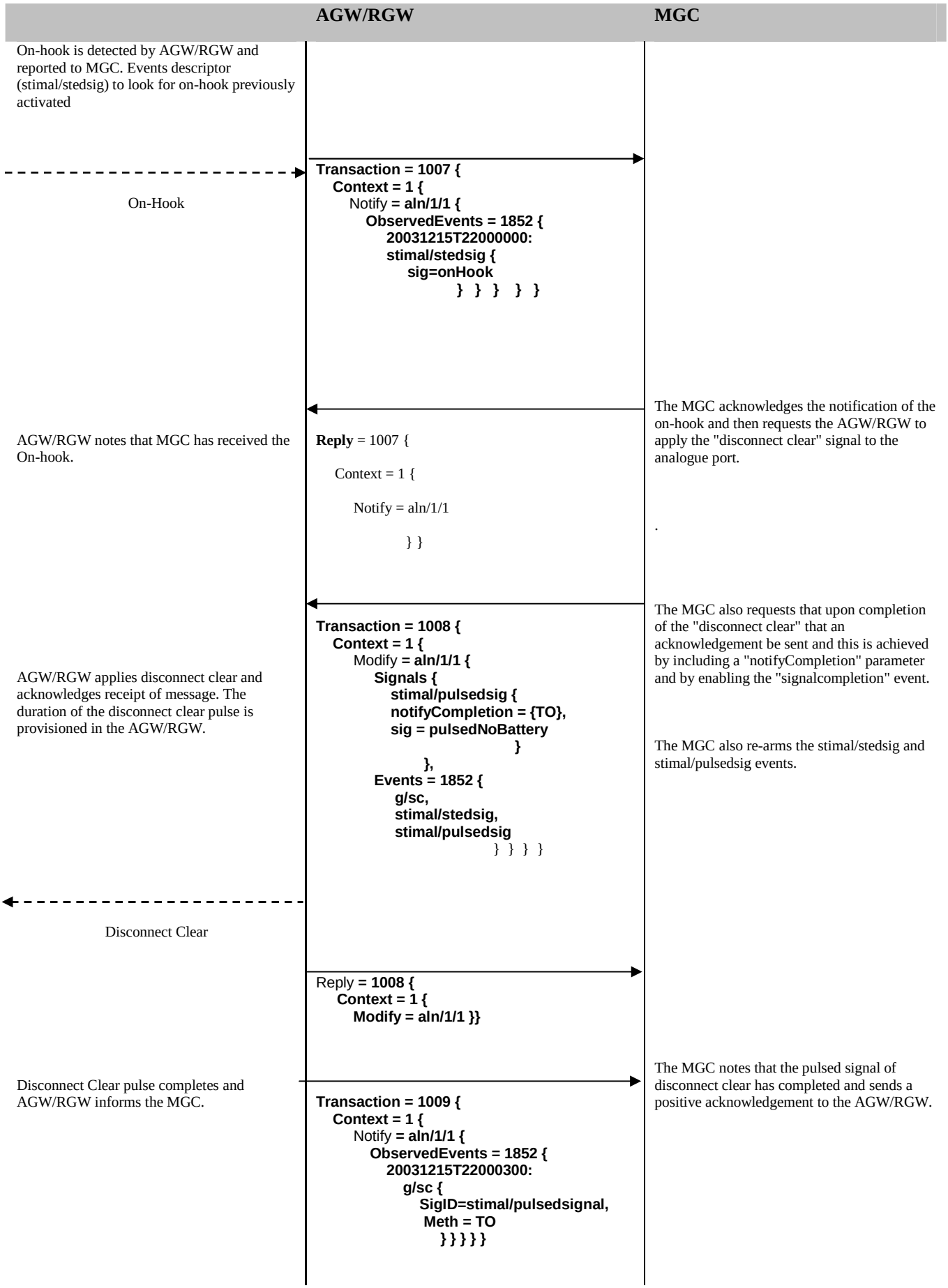
Analogue Port is now in the idle condition.

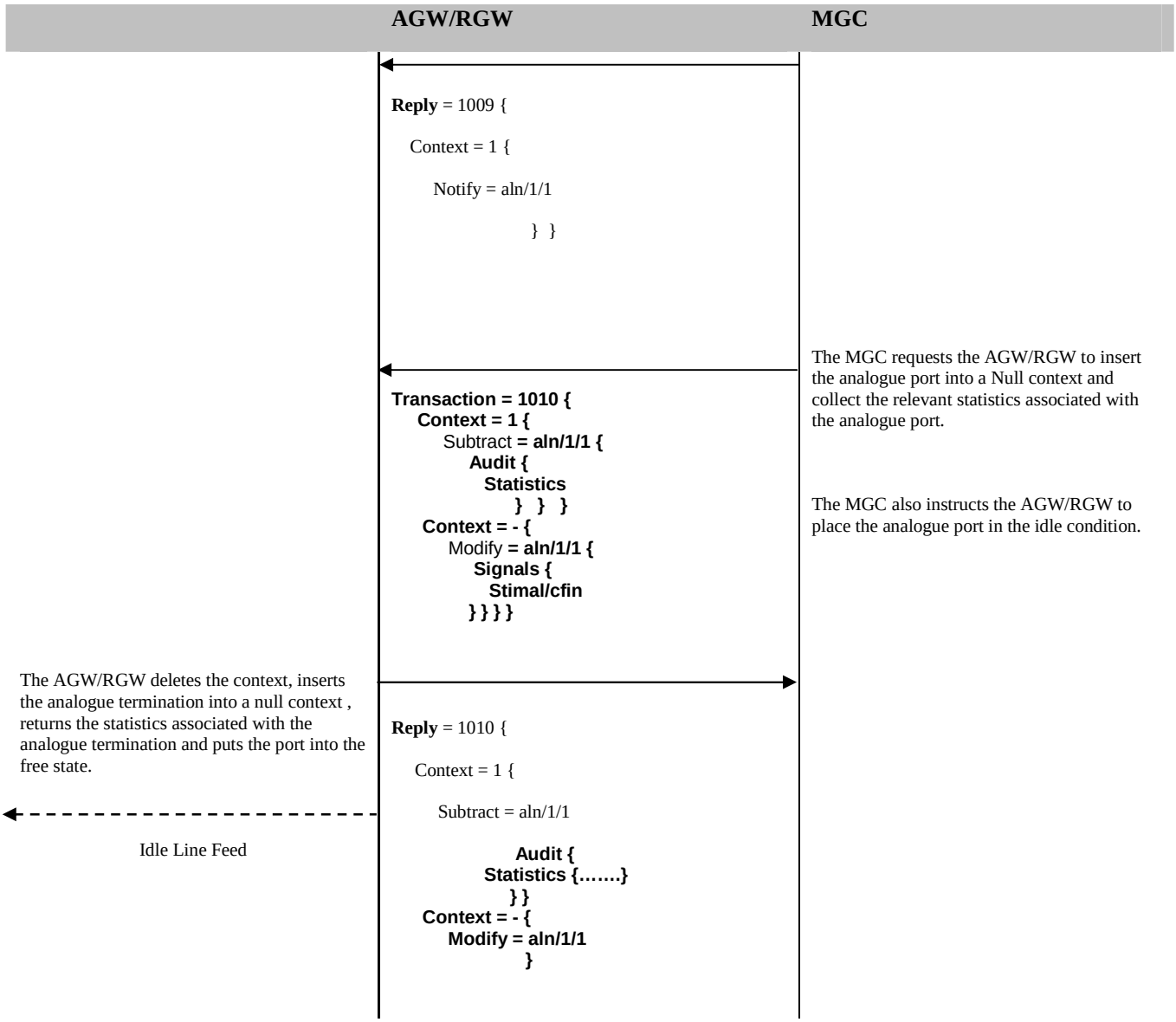
5.2.2.3 Late Subtract of Analogue Termination from a Context - Alternative Flow

Pre-conditions: Sequence 4.1.1 has been successfully executed.




AGW/RGW
MGC
End of Call pulse completes and the AGW/RGW informs the MGC
The MGC notes the completion of the End of Call and instructs the AGW/RGW to apply Busy tone
Transaction = 1004 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
Reply = 1004 {
Context = 1 {
Notify = aln/1/1
} }
The AGW/RGW applies Busy Tone.
Transaction = 1005 {
Context = 1 {
Modify = aln/1/1 {
Signals {
cg/bt
} } } }
The MGC instructs the AGW/RGW to apply Busy Tone. The duration of the busy tone is controlled by the MGC.
Busy Tone
The Busy Tone timer in the AGW/RGW is pre-configured to infinite
Reply = 1005 {
Context = 1 {
Modify = aln/1/1 }}
Busy tone timer expires and MGC instructs the AGW/RGW to apply Parked Line Feed
Transaction = 1006 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = reducedBattery
} } } }
The receipt of this new signal will stop the application of busy tone
A positive acknowledgement is sent and Parked Line Feed is applied
Reply = 1006 {
Context = 1 {
Modify = aln/1/1
} } }
MGC notes the acknowledgement.
Parked Line Feed


AGW/RGW
MGC
On-hook is detected by AGW/RGW and reported to MGC. Events descriptor (stimal/stedsig) to look for on-hook previously activated
On-Hook
Transaction = 1007 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } } }
The MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the "disconnect clear" signal to the analogue port.
AGW/RGW notes that MGC has received the On-hook.
Reply = 1007 {
Context = 1 {
Notify = aln/1/1
} }
.
The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Transaction = 1008 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 1852 {
g/sc,
stimal/stedsig,
stimal/pulsedsig
} } } }
The MGC also re-arms the stimal/stedsig and stimal/pulsedsig events.
Disconnect Clear
Reply = 1008 {
Context = 1 {
Modify = aln/1/1 }}
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 1009 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal of disconnect clear has completed and sends a positive acknowledgement to the AGW/RGW.

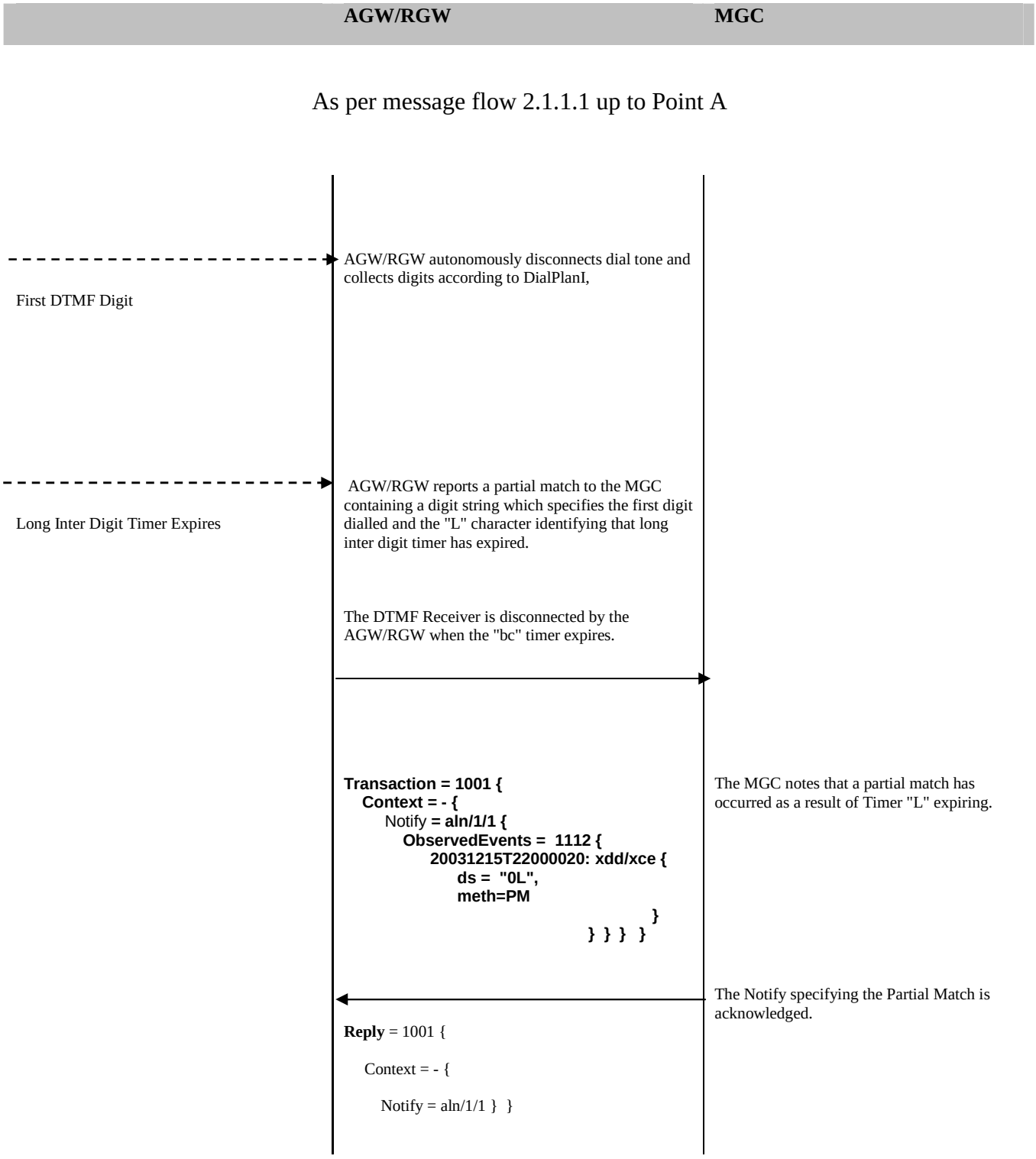


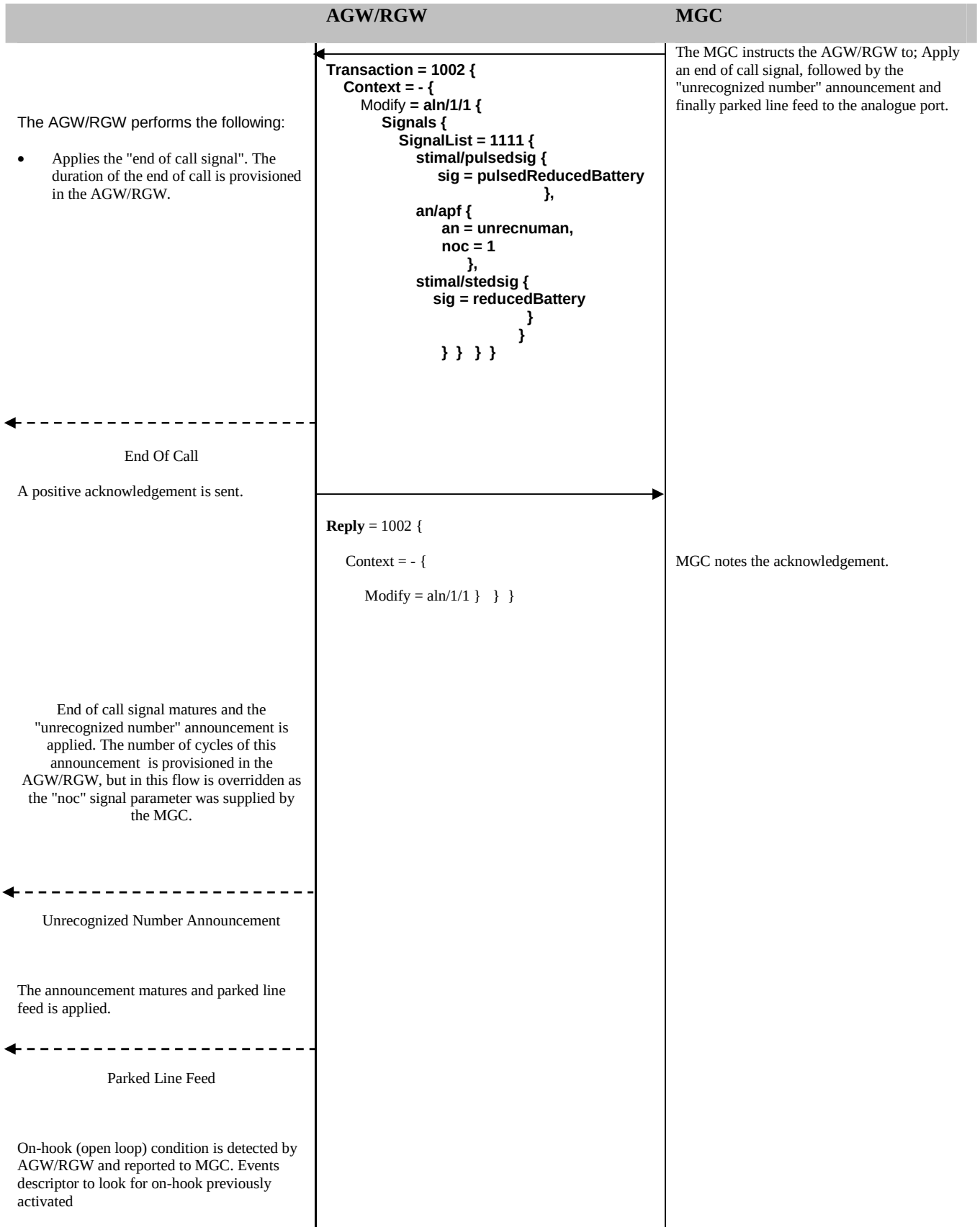
Analogue Port is now in the idle condition.

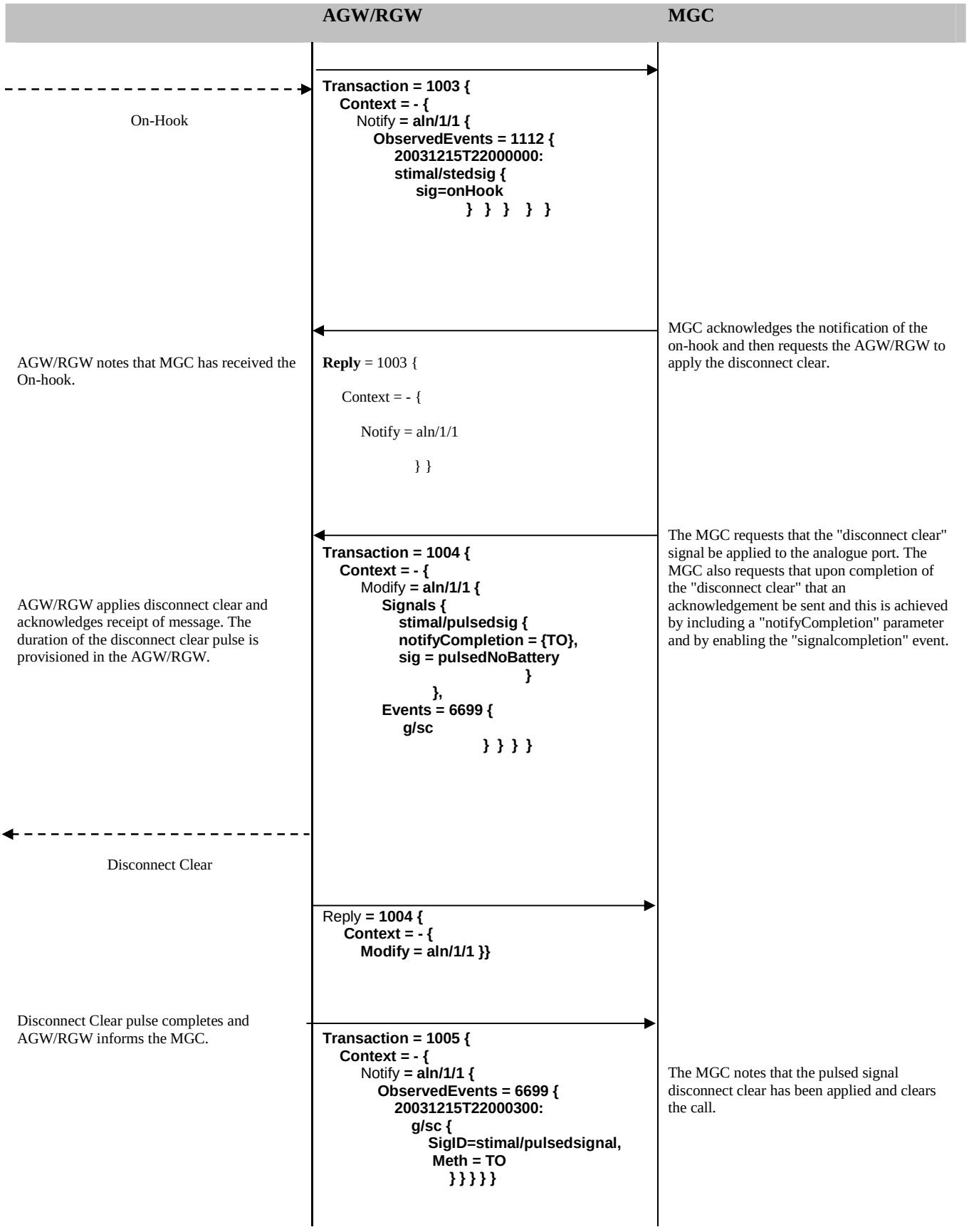
5.2.3 DEL - Unsuccessful Call Set Up; Insufficient Digits Dialled; End of Call Announcement Connected by AGW/RGW- A end

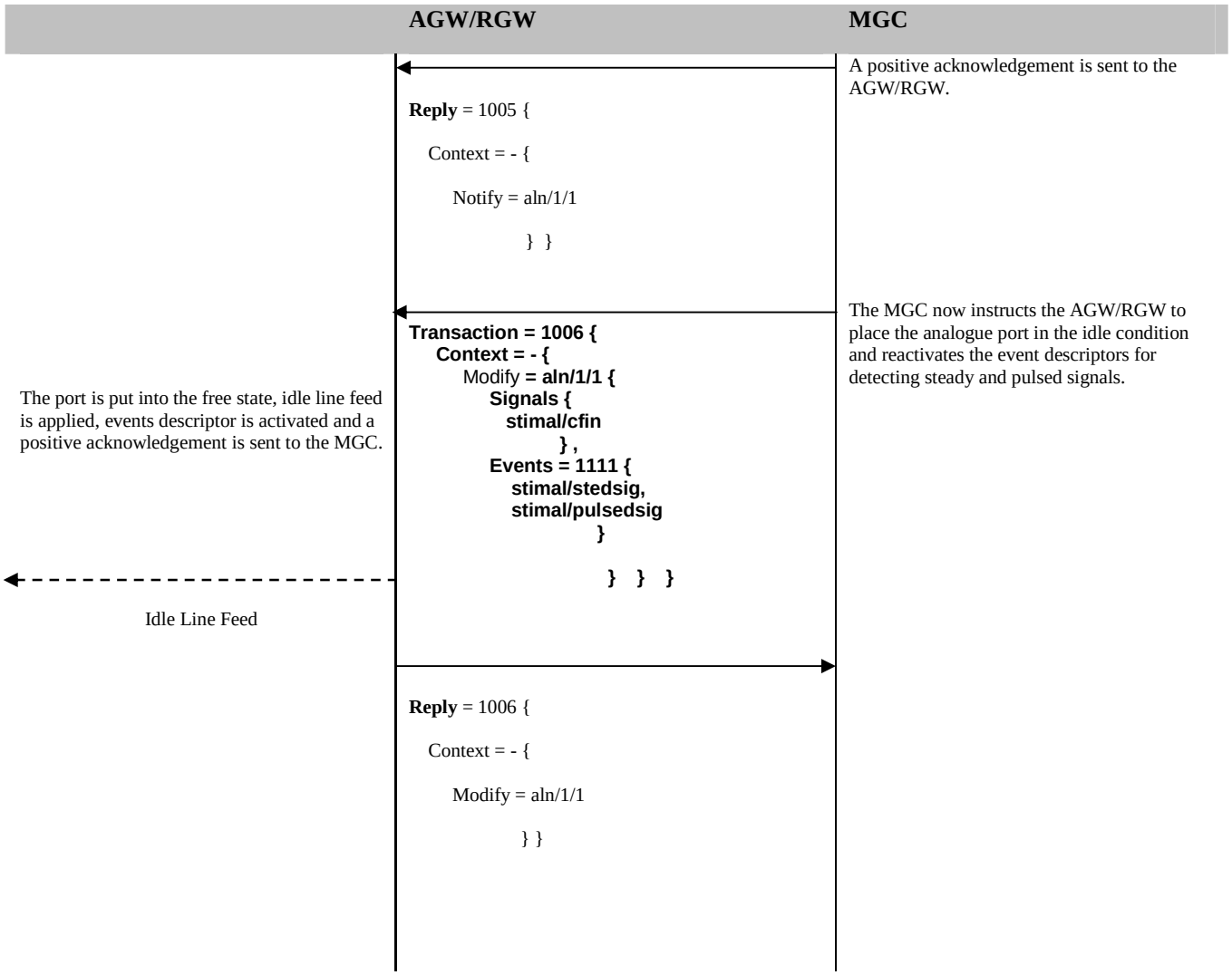
5.2.3.1 Analogue Termination in a Null Context

Pre-conditions: Sequence 4.1.1 has been successfully executed.




AGW/RGW
MGC
The MGC instructs the AGW/RGW to; Apply an end of call signal, followed by the "unrecognized number" announcement and finally parked line feed to the analogue port.
Transaction = 1002 {
Context = - {
Modify = aln/1/1 {
Signals {
SignalList = 1111 {
stimal/pulsedsig {
sig = pulsedReducedBattery
},
an/apf {
an = unrecnuman,
noc = 1
},
stimal/stedsig {
sig = reducedBattery
}
}
} } } }
The AGW/RGW performs the following:
• Applies the "end of call signal". The duration of the end of call is provisioned in the AGW/RGW.
End Of Call
A positive acknowledgement is sent.
Reply = 1002 {
Context = - {
Modify = aln/1/1 } } }
MGC notes the acknowledgement.
End of call signal matures and the "unrecognized number" announcement is applied. The number of cycles of this announcement is provisioned in the AGW/RGW, but in this flow is overridden as the "noc" signal parameter was supplied by the MGC.
Unrecognized Number Announcement
The announcement matures and parked line feed is applied.
Parked Line Feed
On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated

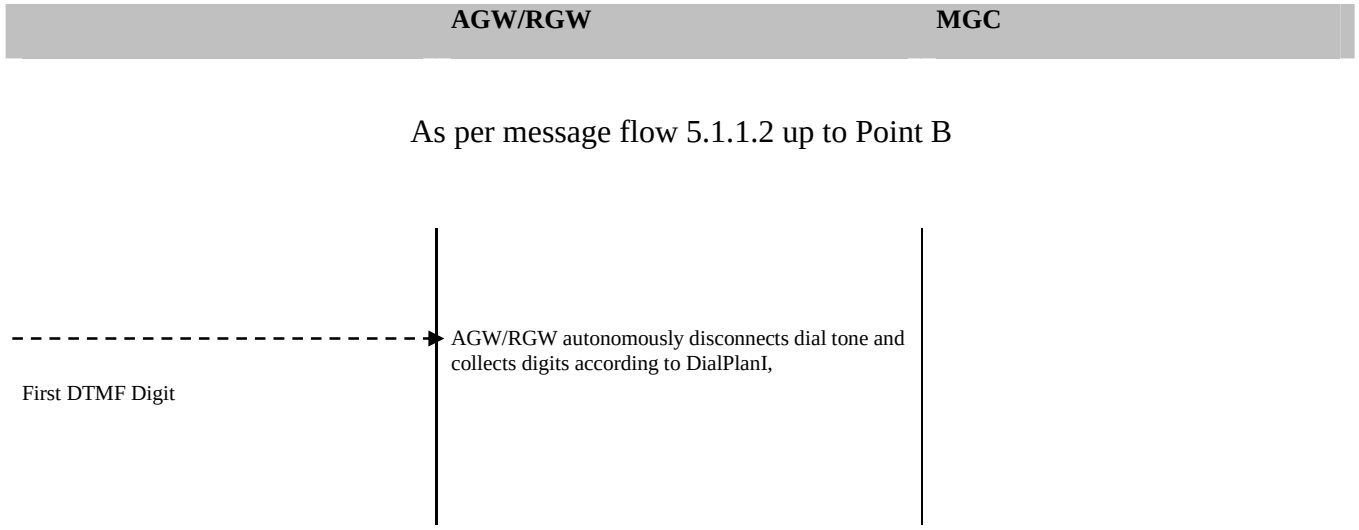

AGW/RGW
MGC
On-Hook
Transaction = 1003 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } } }
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.
AGW/RGW notes that MGC has received the On-hook.
Reply = 1003 {
Context = - {
Notify = aln/1/1
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 1004 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Disconnect Clear
Reply = 1004 {
Context = - {
Modify = aln/1/1 }}
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 1005 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.

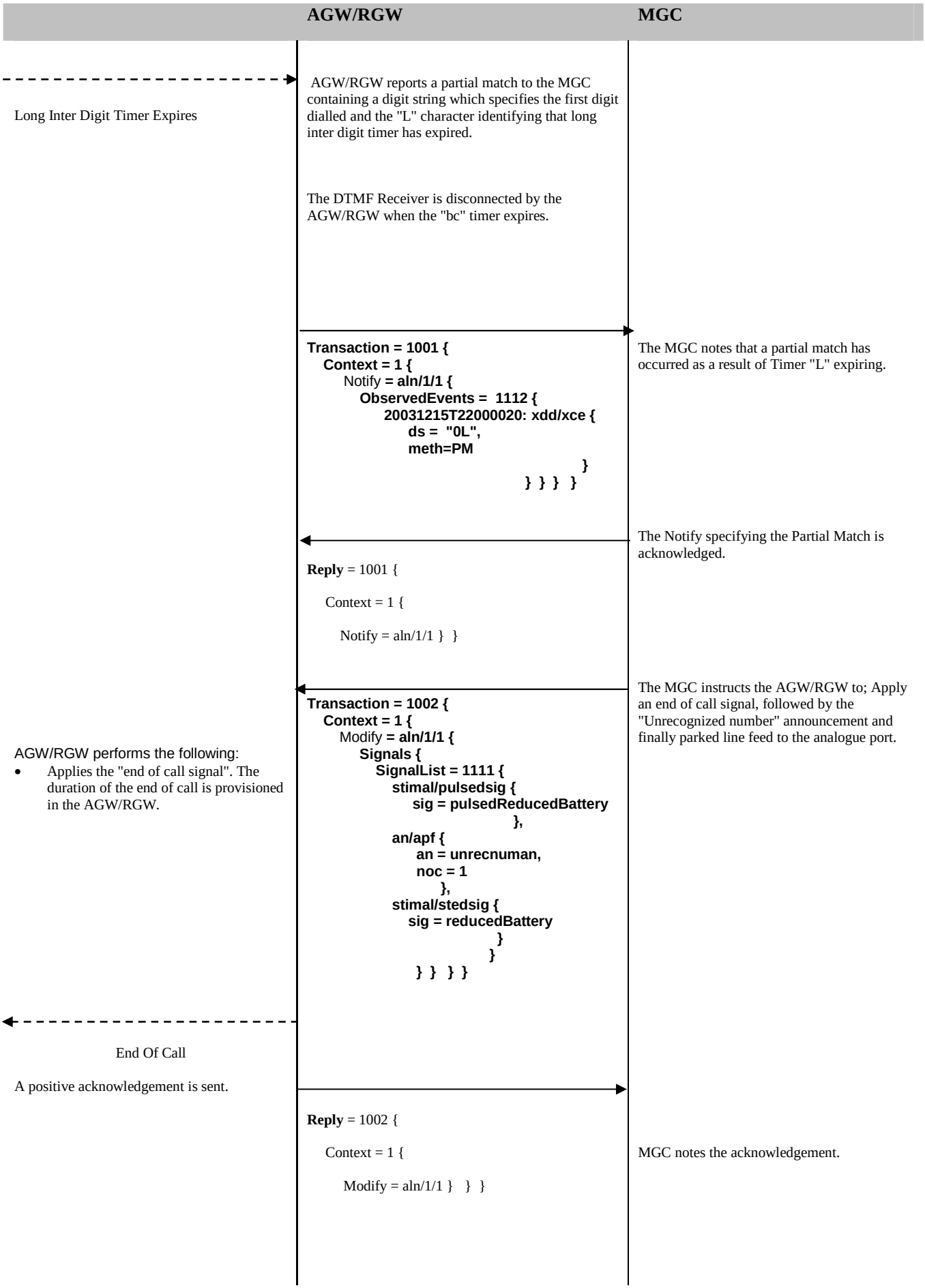


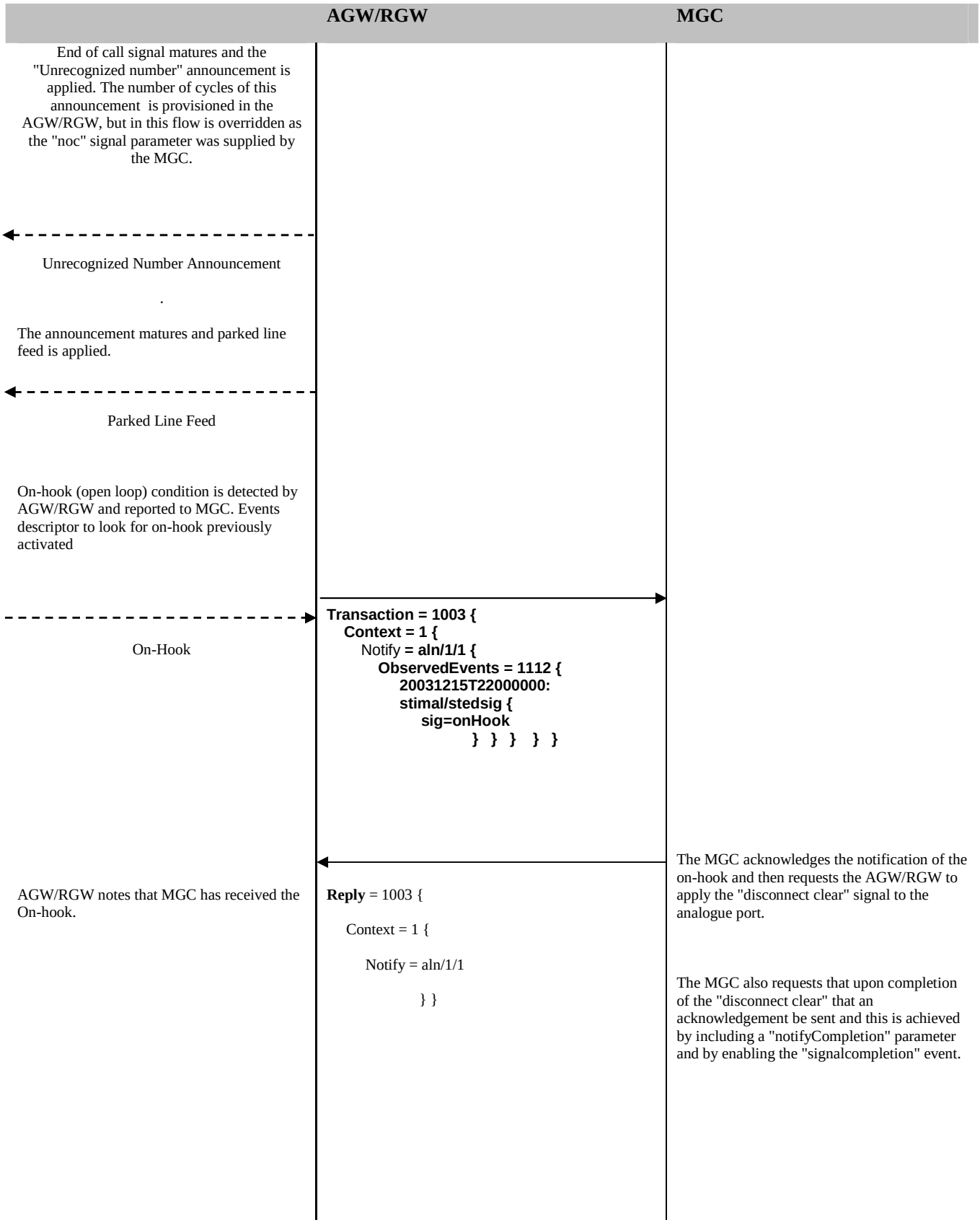
Analogue Port is now in the idle condition.

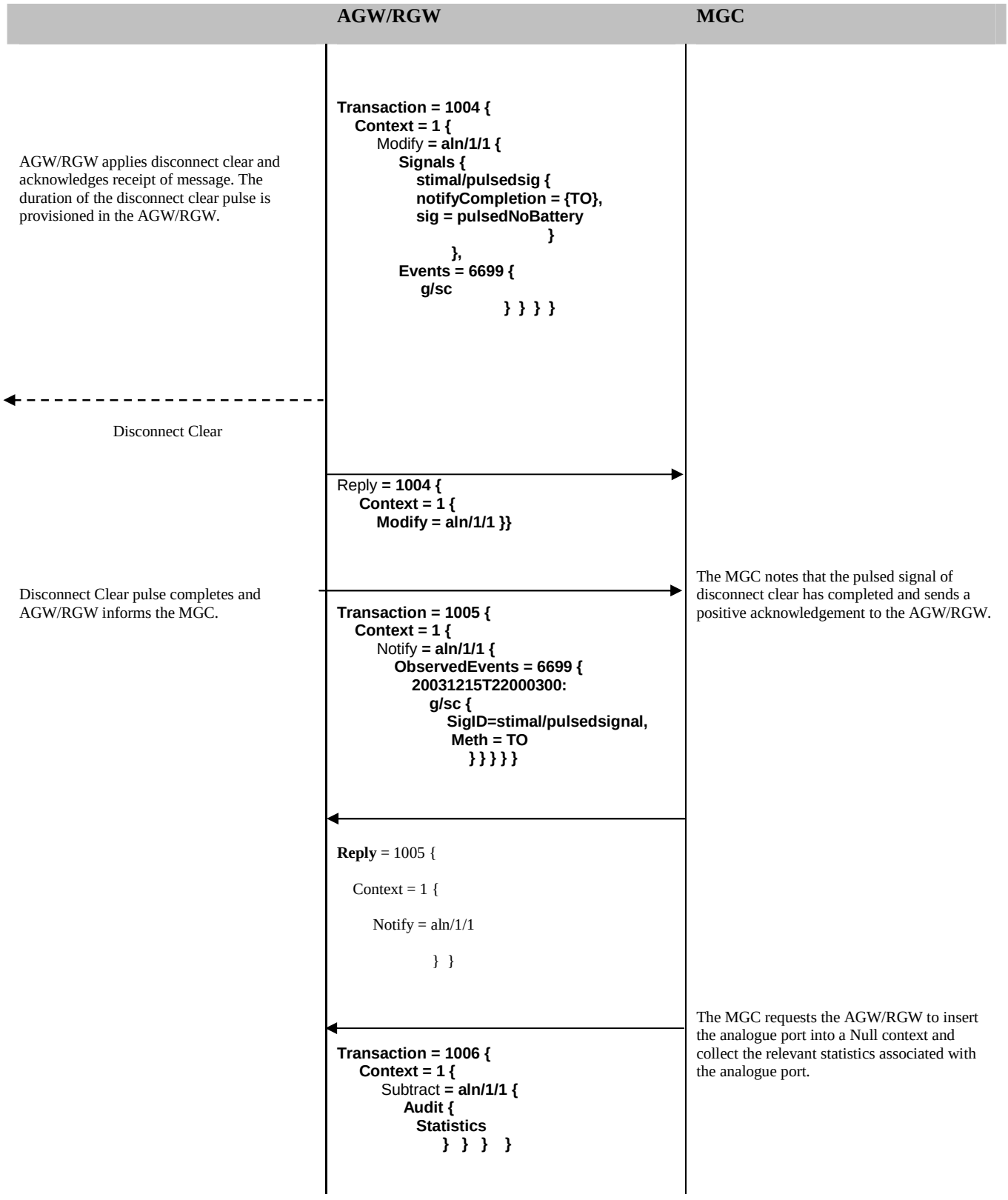
5.2.3.2 Analogue Termination in a non Null Context

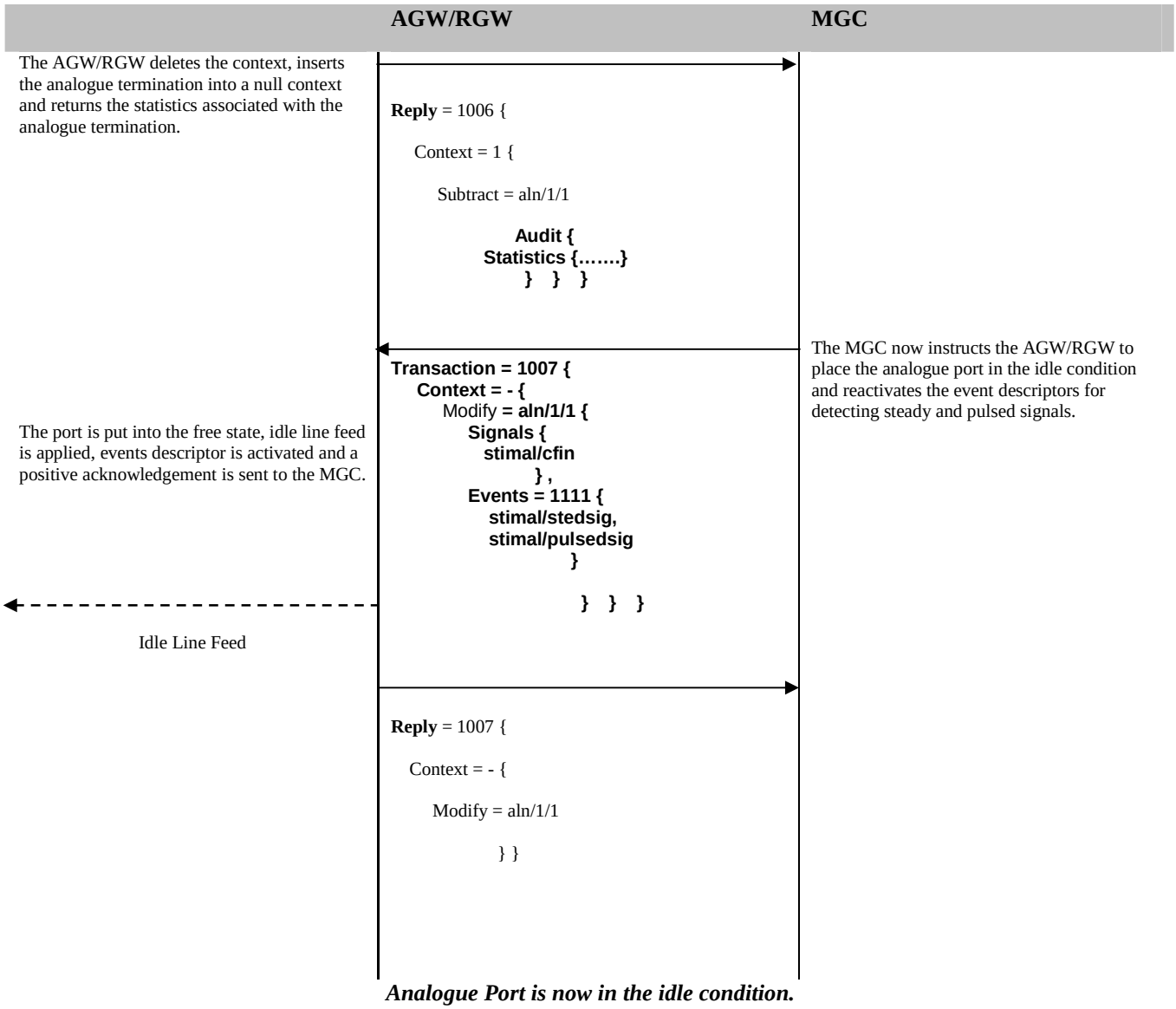
Pre-conditions: Sequence 4.1.1 has been successfully executed.




AGW/RGW
MGC
Long Inter Digit Timer Expires
AGW/RGW reports a partial match to the MGC containing a digit string which specifies the first digit dialled and the "L" character identifying that long inter digit timer has expired.
The DTMF Receiver is disconnected by the AGW/RGW when the "bc" timer expires.
Transaction = 1001 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000020: xdd/xce {
ds = "0L",
meth=PM
}
} } } }
The MGC notes that a partial match has occurred as a result of Timer "L" expiring.
The Notify specifying the Partial Match is acknowledged.
Reply = 1001 {
Context = 1 {
Notify = aln/1/1 } }
The MGC instructs the AGW/RGW to; Apply an end of call signal, followed by the "Unrecognized number" announcement and finally parked line feed to the analogue port.
Transaction = 1002 {
Context = 1 {
Modify = aln/1/1 {
Signals {
SignalList = 1111 {
stimal/pulsedsig {
sig = pulsedReducedBattery
},
an/apf {
an = unrecnuman,
noc = 1
},
stimal/stedsig {
sig = reducedBattery
}
}
} } } }
AGW/RGW performs the following:
• Applies the "end of call signal". The duration of the end of call is provisioned in the AGW/RGW.
End Of Call
A positive acknowledgement is sent.
Reply = 1002 {
Context = 1 {
Modify = aln/1/1 } } }
MGC notes the acknowledgement.


AGW/RGW
MGC
End of call signal matures and the "Unrecognized number" announcement is applied. The number of cycles of this announcement is provisioned in the AGW/RGW, but in this flow is overridden as the "noc" signal parameter was supplied by the MGC.
Unrecognized Number Announcement
.
The announcement matures and parked line feed is applied.
Parked Line Feed
On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated
On-Hook
Transaction = 1003 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } } }
The MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the "disconnect clear" signal to the analogue port.
AGW/RGW notes that MGC has received the On-hook.
Reply = 1003 {
Context = 1 {
Notify = aln/1/1
} }
The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.


AGW/RGW
MGC
Transaction = 1004 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Disconnect Clear
Reply = 1004 {
Context = 1 {
Modify = aln/1/1 }}
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
The MGC notes that the pulsed signal of disconnect clear has completed and sends a positive acknowledgement to the AGW/RGW.
Transaction = 1005 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
Reply = 1005 {
Context = 1 {
Notify = aln/1/1
} }
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the relevant statistics associated with the analogue port.
Transaction = 1006 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} } } }



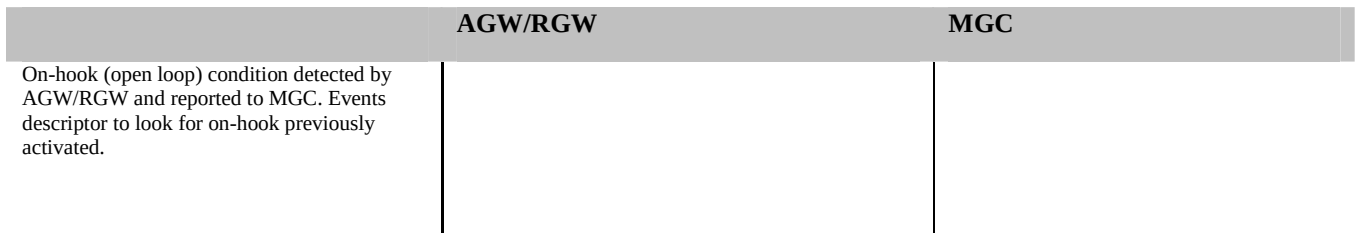
Analogue Port is now in the idle condition.

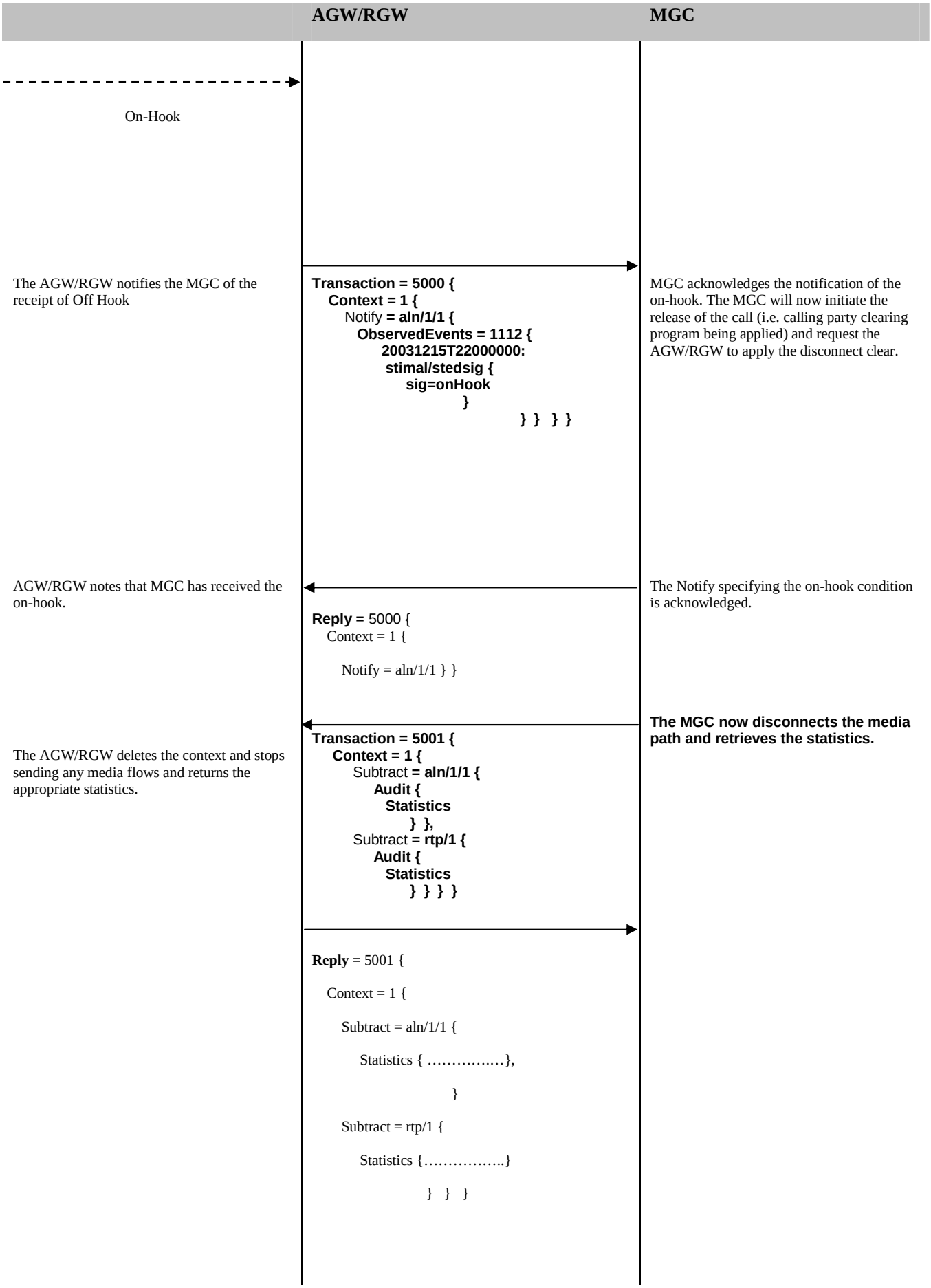
5.3 Call Cleardown

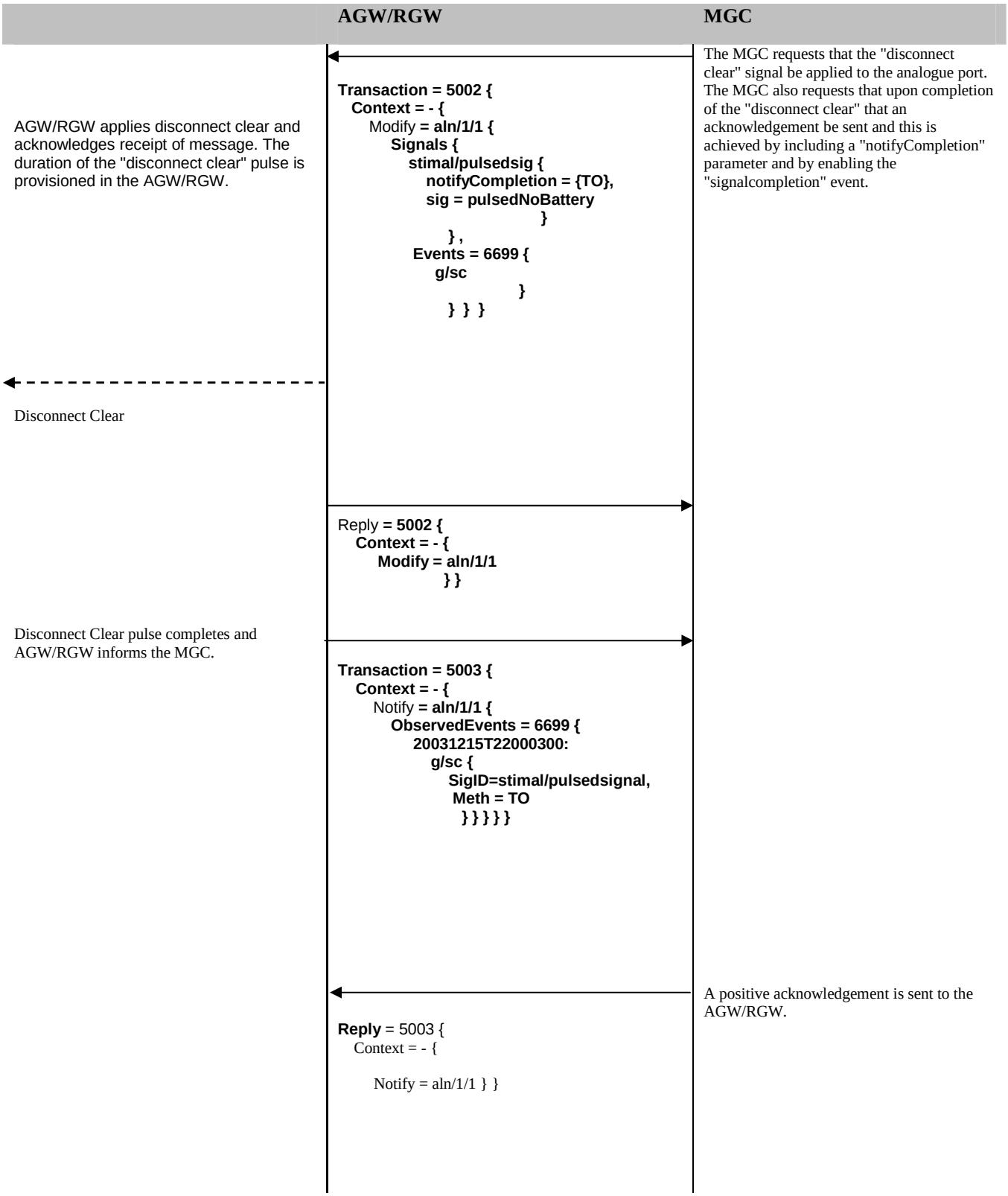
5.3.1 DEL - Calling Party Clears during active call - A end

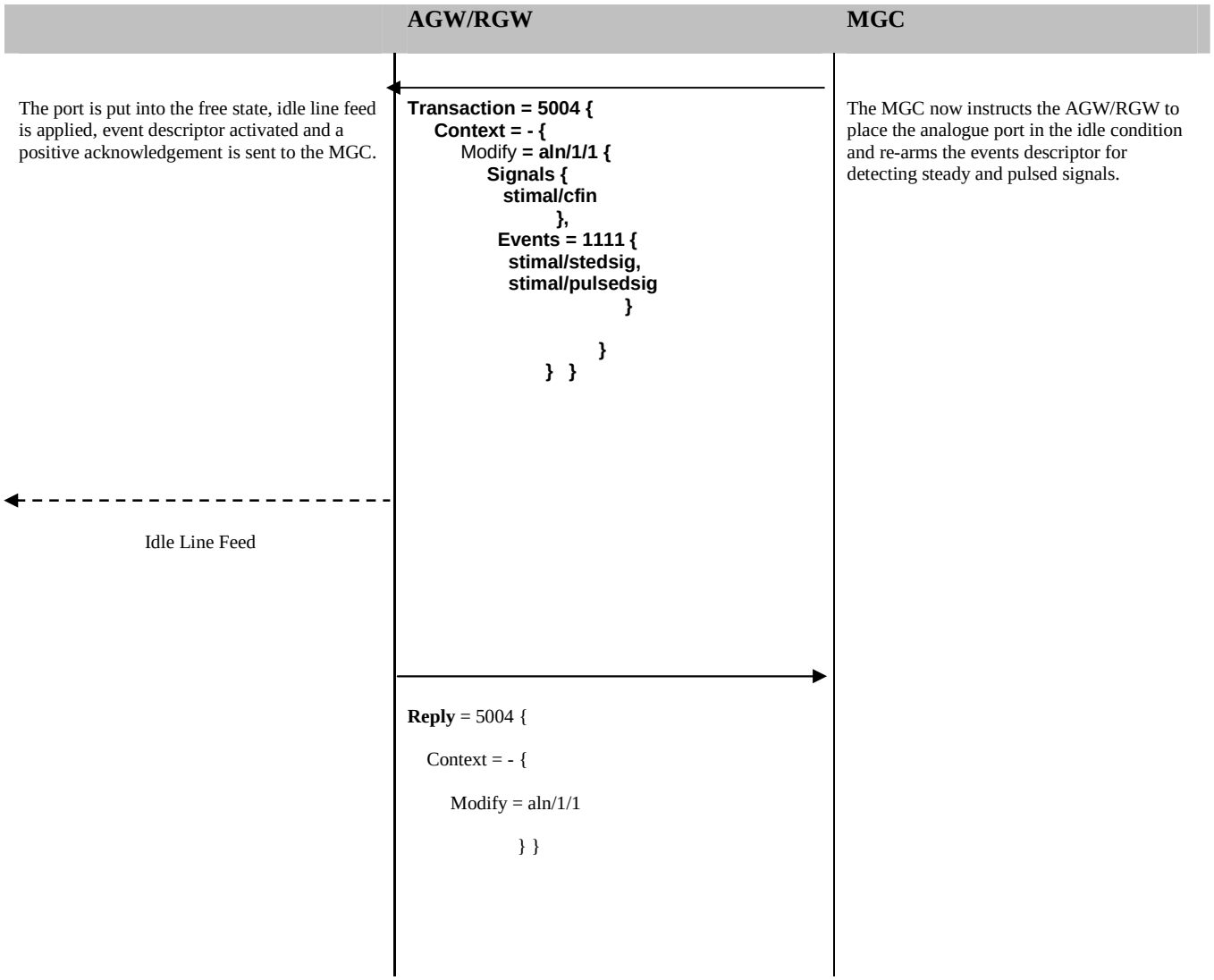
5.3.1.1 Early Subtract of Analogue Termination from a Context

Pre-conditions: Sequence 5.1.1.1 or 5.1.1.2 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
On-Hook
The AGW/RGW notifies the MGC of the receipt of Off Hook
Transaction = 5000 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
}
} } } }
MGC acknowledges the notification of the on-hook. The MGC will now initiate the release of the call (i.e. calling party clearing program being applied) and request the AGW/RGW to apply the disconnect clear.
AGW/RGW notes that MGC has received the on-hook.
Reply = 5000 {
Context = 1 {
Notify = aln/1/1 } }
The Notify specifying the on-hook condition is acknowledged.
The MGC now disconnects the media path and retrieves the statistics.
The AGW/RGW deletes the context and stops sending any media flows and returns the appropriate statistics.
Transaction = 5001 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
Reply = 5001 {
Context = 1 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/1 {
Statistics {……..}
} } }

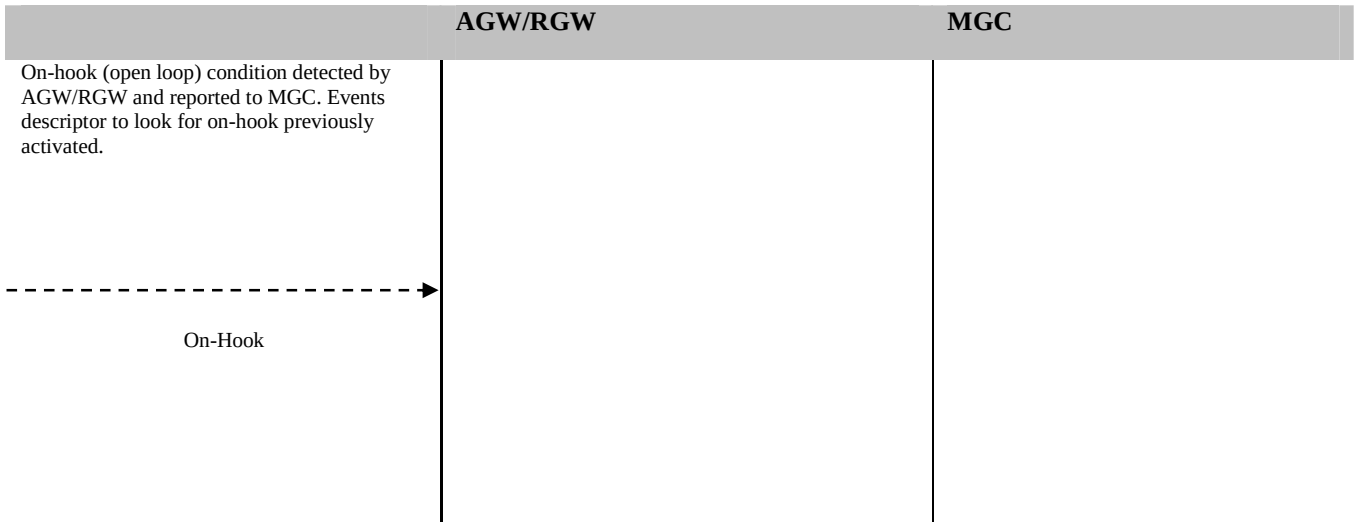

AGW/RGW
MGC
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 5002 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
} ,
Events = 6699 {
g/sc
}
} } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the "disconnect clear" pulse is provisioned in the AGW/RGW.
Disconnect Clear
Reply = 5002 {
Context = - {
Modify = aln/1/1
} }
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 5003 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
A positive acknowledgement is sent to the AGW/RGW.
Reply = 5003 {
Context = - {
Notify = aln/1/1 } }

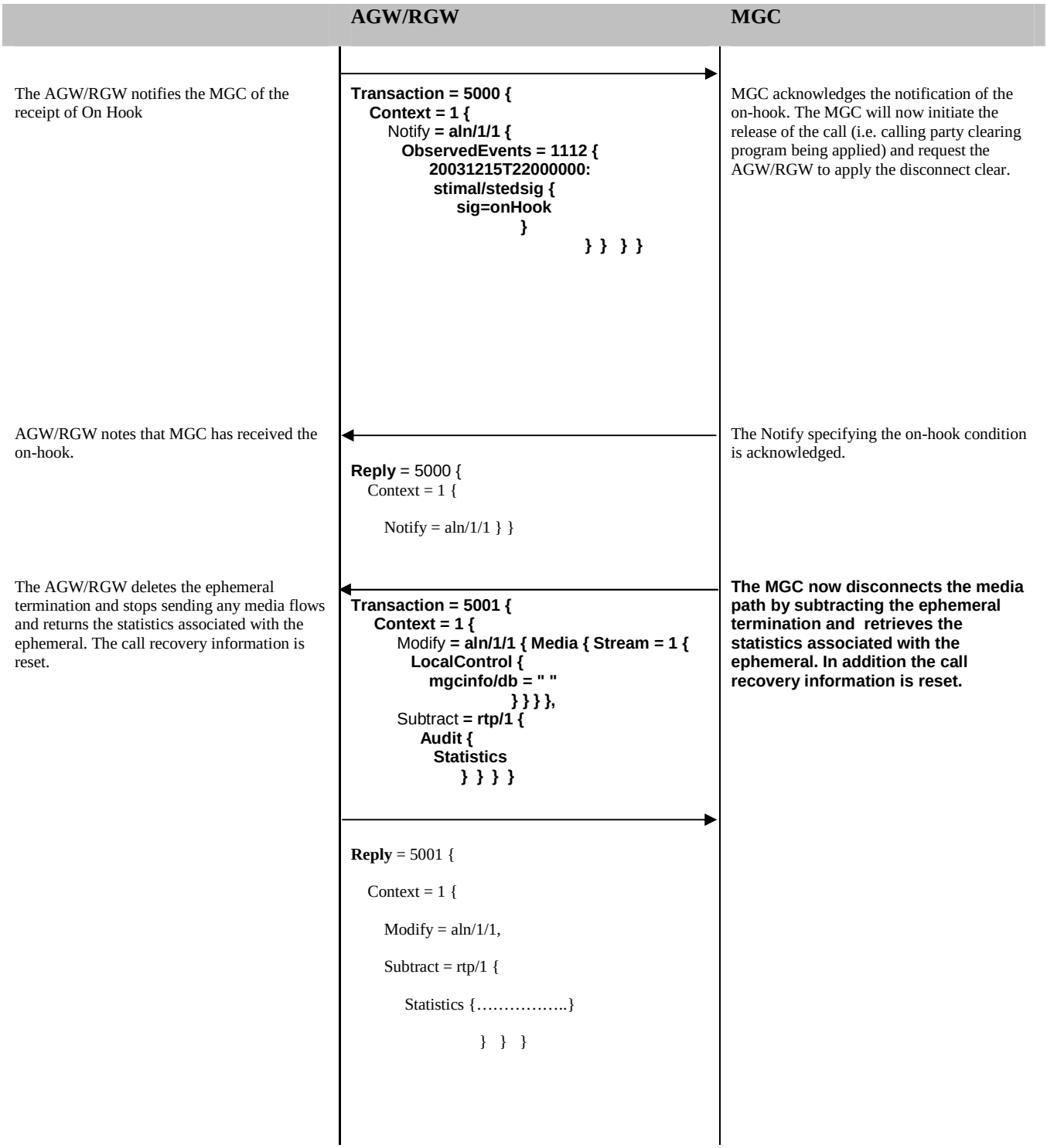


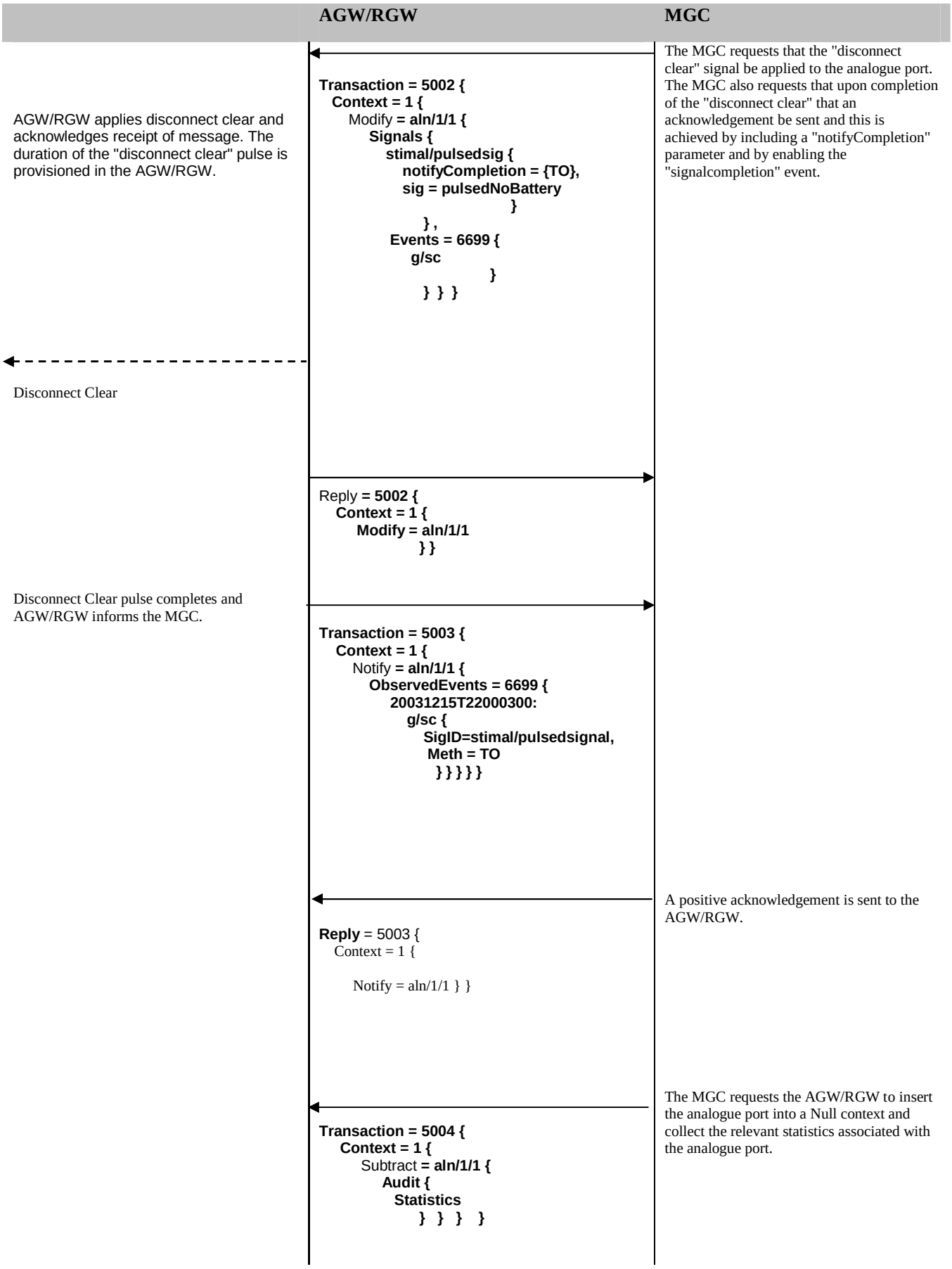
Analogue Port is now in the idle condition.

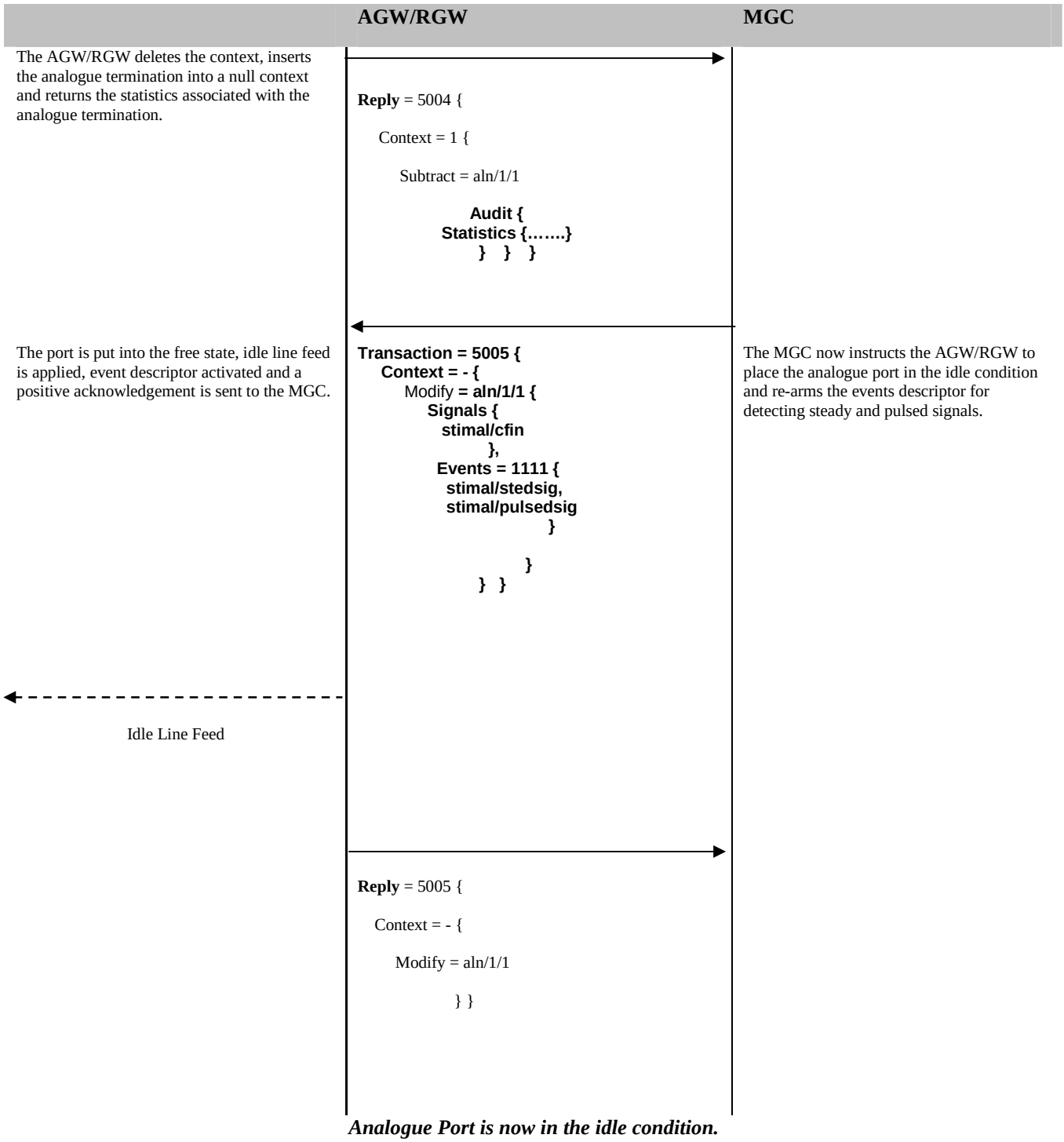
5.3.1.2 Late Subtract of Analogue Termination from a Context

Pre-conditions: Sequence 5.1.1.1 or 5.1.1.2 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
The AGW/RGW notifies the MGC of the receipt of On Hook
Transaction = 5000 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
}
} } } }
MGC acknowledges the notification of the on-hook. The MGC will now initiate the release of the call (i.e. calling party clearing program being applied) and request the AGW/RGW to apply the disconnect clear.
AGW/RGW notes that MGC has received the on-hook.
Reply = 5000 {
Context = 1 {
Notify = aln/1/1 } }
The Notify specifying the on-hook condition is acknowledged.
The AGW/RGW deletes the ephemeral termination and stops sending any media flows and returns the statistics associated with the ephemeral. The call recovery information is reset.
Transaction = 5001 {
Context = 1 {
Modify = aln/1/1 { Media { Stream = 1 {
LocalControl {
mgcinfo/db = " "
} } } },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
The MGC now disconnects the media path by subtracting the ephemeral termination and retrieves the statistics associated with the ephemeral. In addition the call recovery information is reset.
Reply = 5001 {
Context = 1 {
Modify = aln/1/1,
Subtract = rtp/1 {
Statistics {……..}
} } }

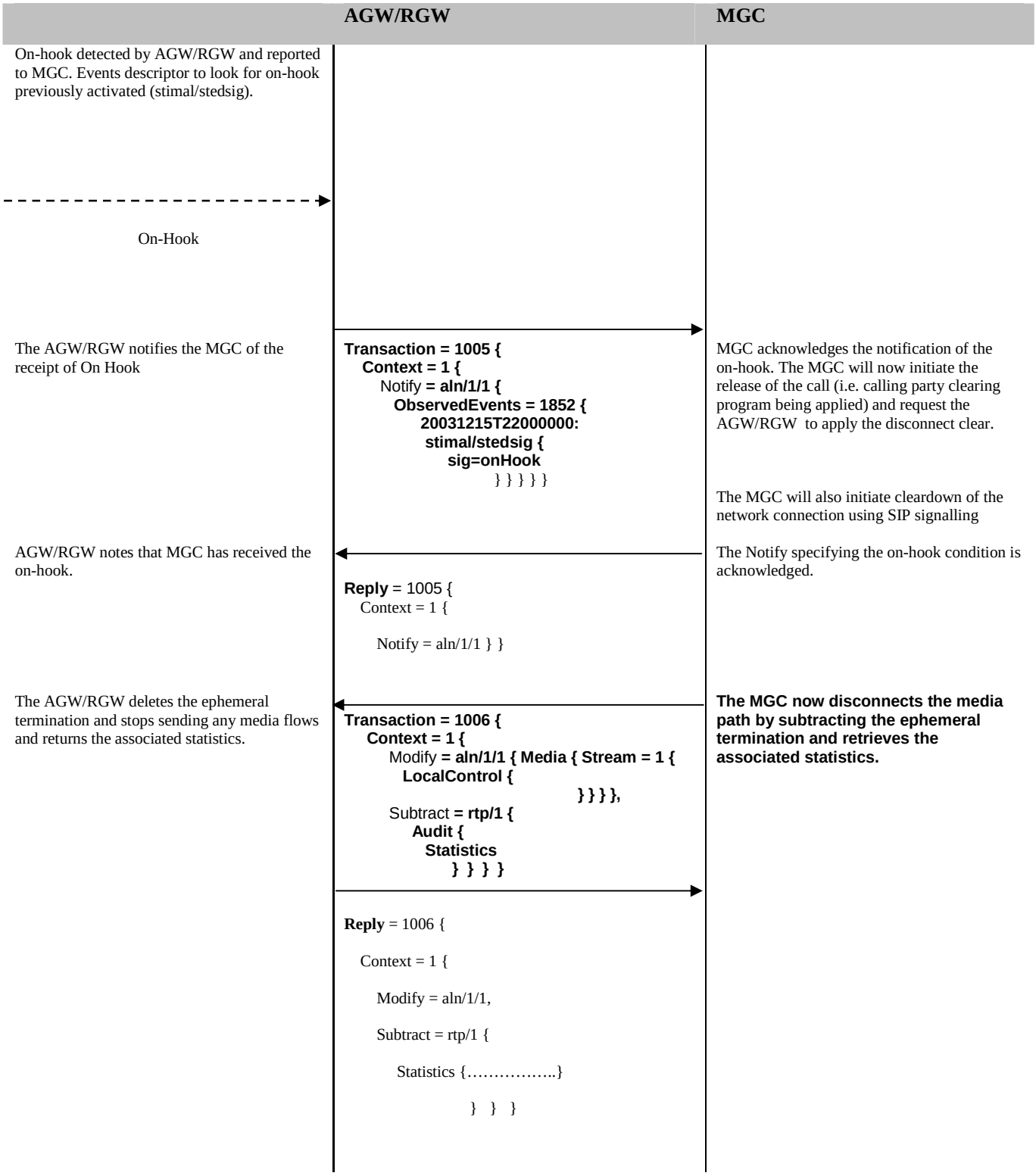

AGW/RGW
MGC
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 5002 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
} ,
Events = 6699 {
g/sc
}
} } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the "disconnect clear" pulse is provisioned in the AGW/RGW.
Disconnect Clear
Reply = 5002 {
Context = 1 {
Modify = aln/1/1
} }
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 5003 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
A positive acknowledgement is sent to the AGW/RGW.
Reply = 5003 {
Context = 1 {
Notify = aln/1/1 } }
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the relevant statistics associated with the analogue port.
Transaction = 5004 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} } } }

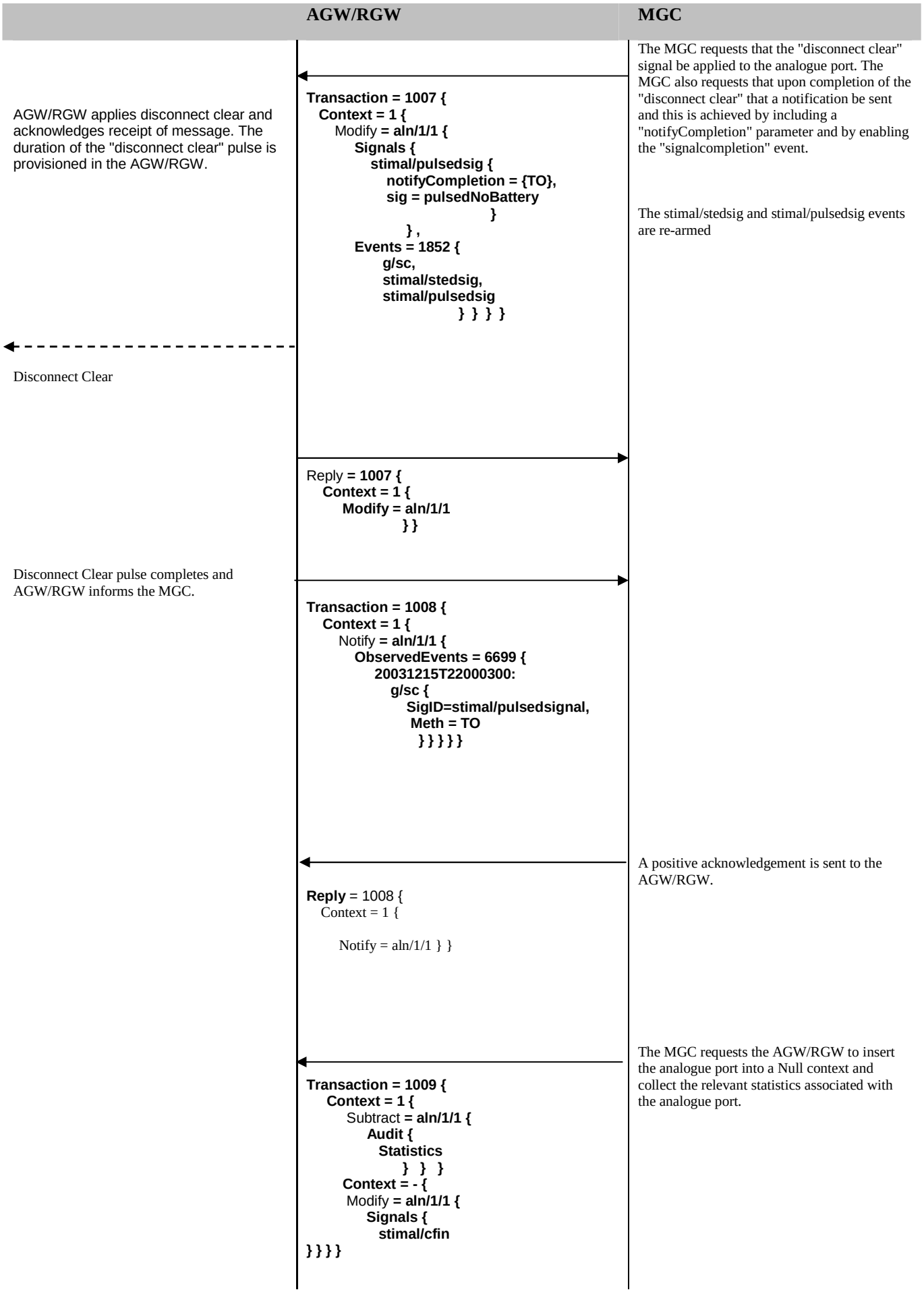


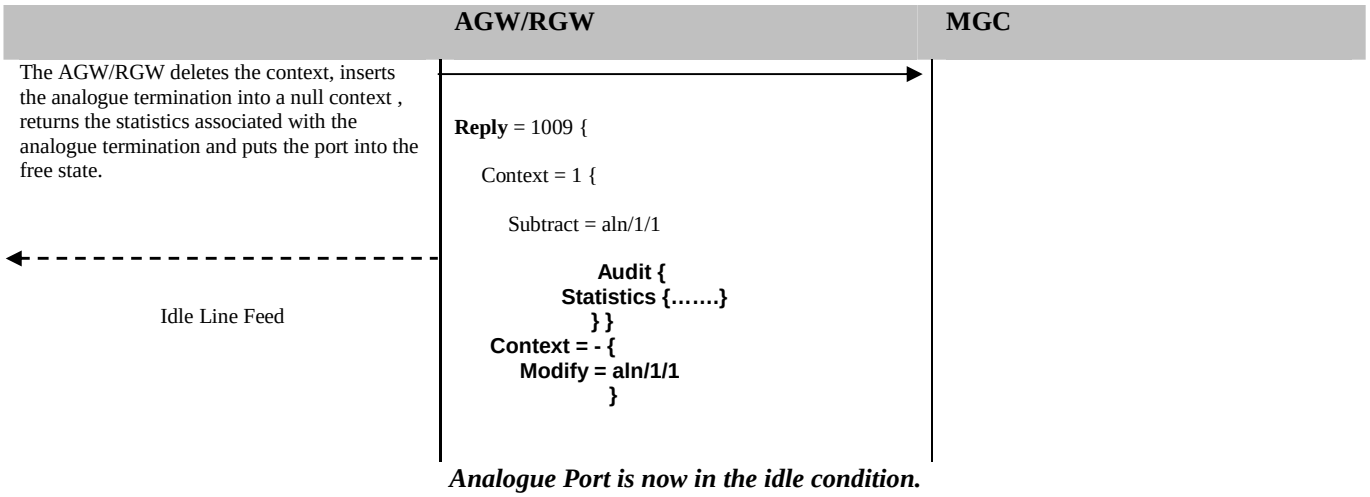
Analogue Port is now in the idle condition.

5.3.1.3 Late Subtract of Analogue Termination from a Context Alternative Flow

Pre-conditions: Sequence 5.1.1.1 or 5.1.1.2 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that a notification be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 1007 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
} ,
Events = 1852 {
g/sc,
stimal/stedsig,
stimal/pulsedsig
} } } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the "disconnect clear" pulse is provisioned in the AGW/RGW.
The stimal/stedsig and stimal/pulsedsig events are re-armed
Disconnect Clear
Reply = 1007 {
Context = 1 {
Modify = aln/1/1
} }
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 1008 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
A positive acknowledgement is sent to the AGW/RGW.
Reply = 1008 {
Context = 1 {
Notify = aln/1/1 } }
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the relevant statistics associated with the analogue port.
Transaction = 1009 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} } }
Context = - {
Modify = aln/1/1 {
Signals {
stimal/cfin
} } } }

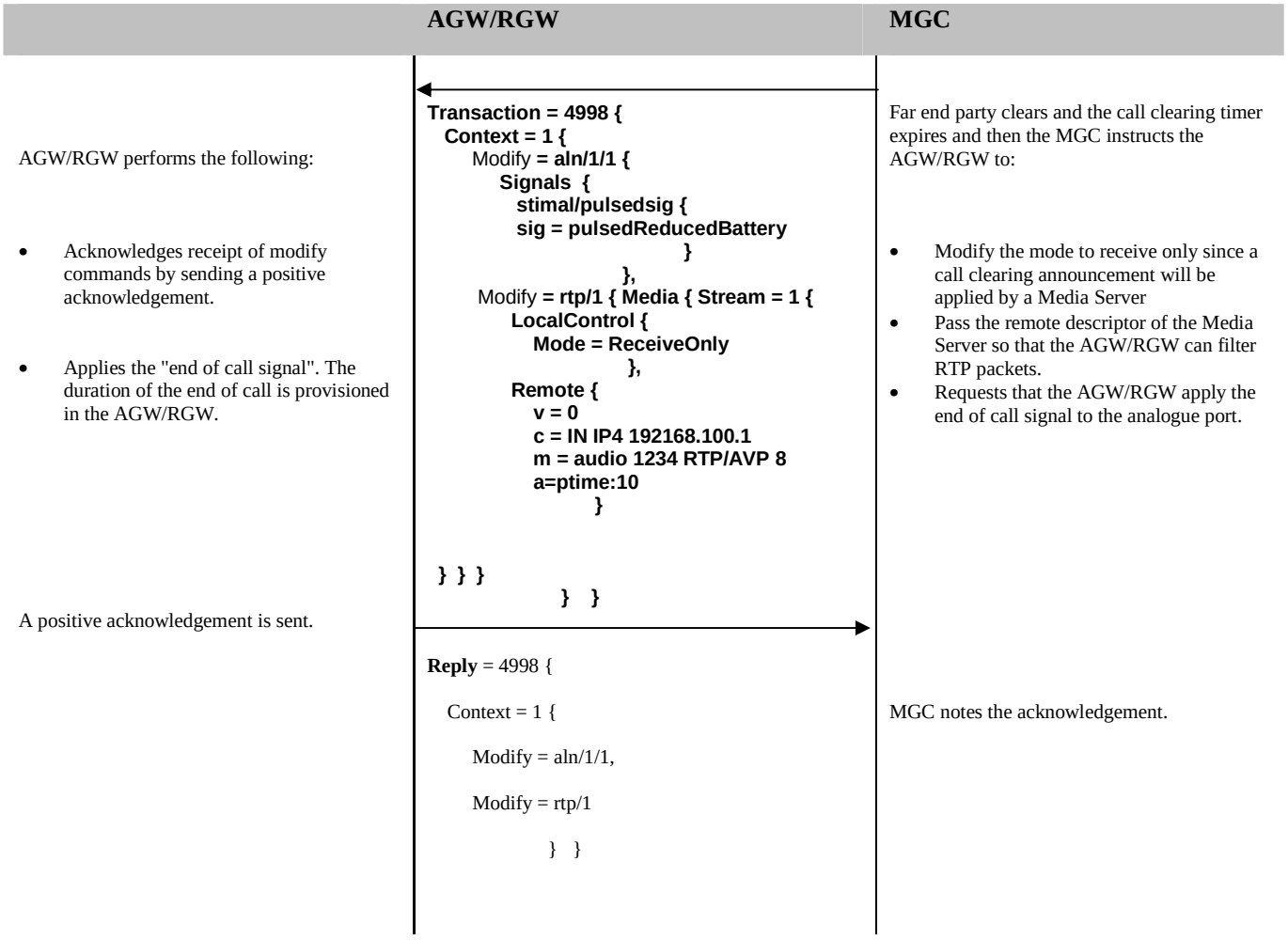


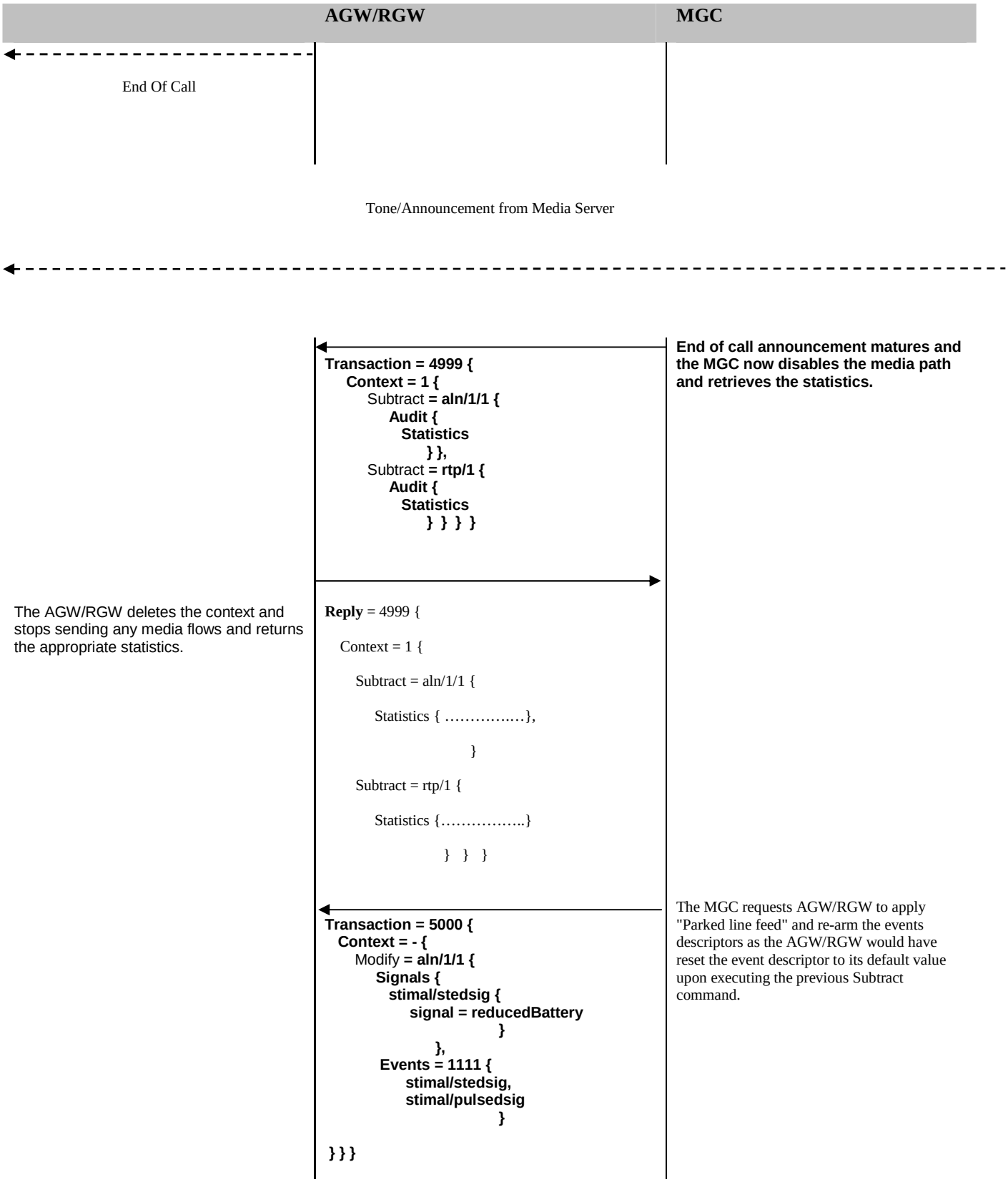
Analogue Port is now in the idle condition.

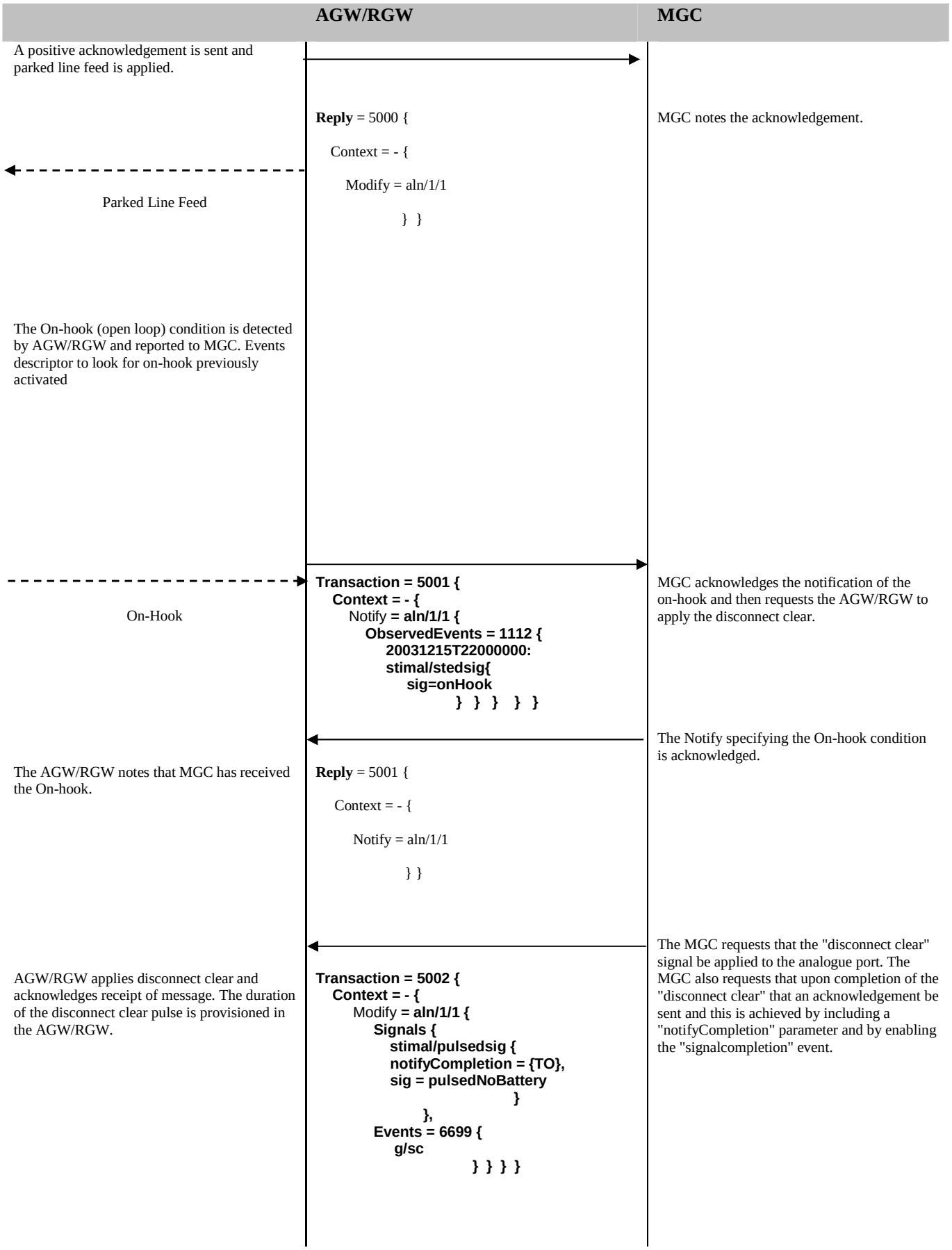
5.3.2 DEL - Called Party Clears during active call; end of call announcement applied by Media Server - A end

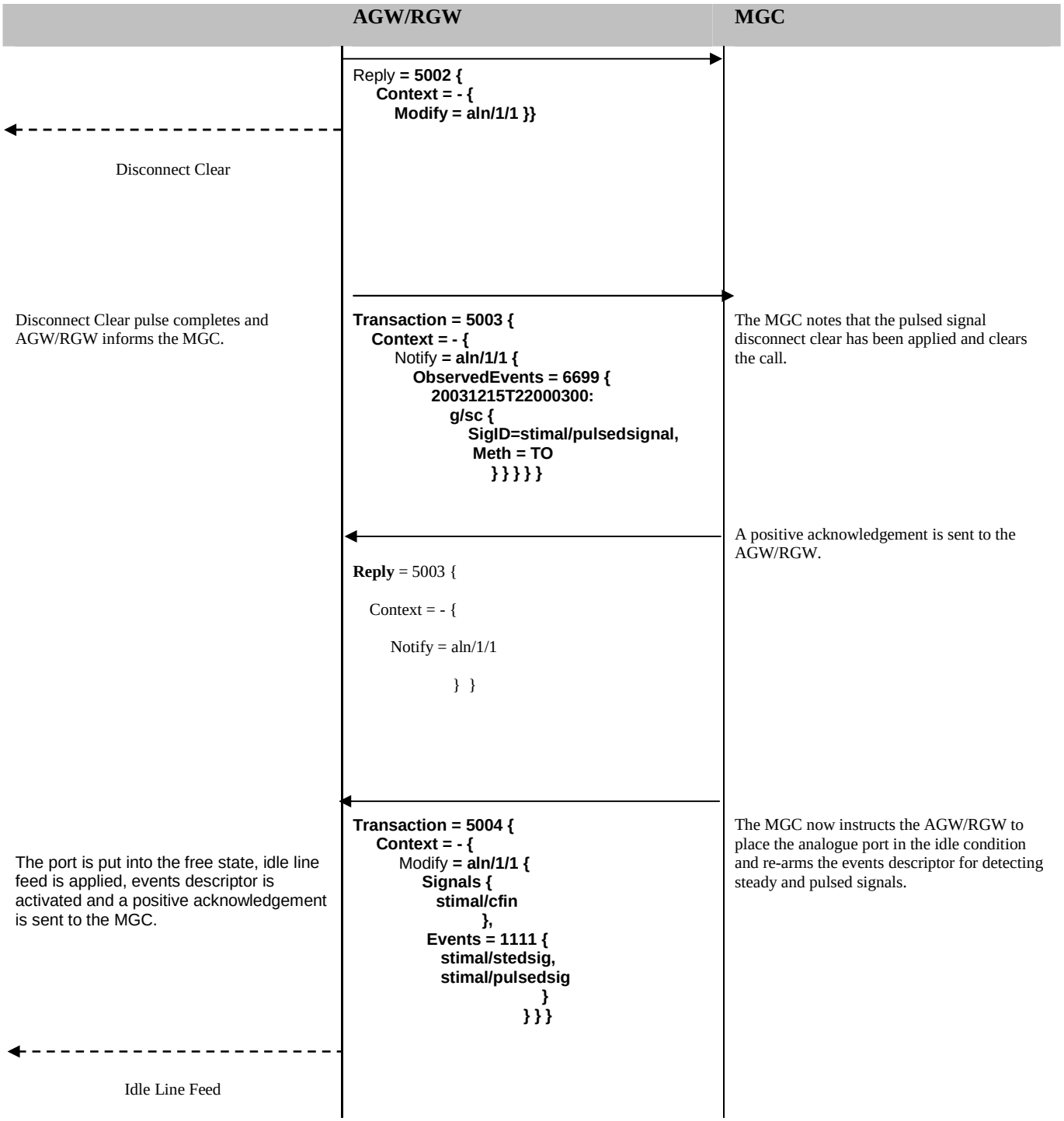
5.3.2.1 Early Subtract of Analogue Termination from a Context

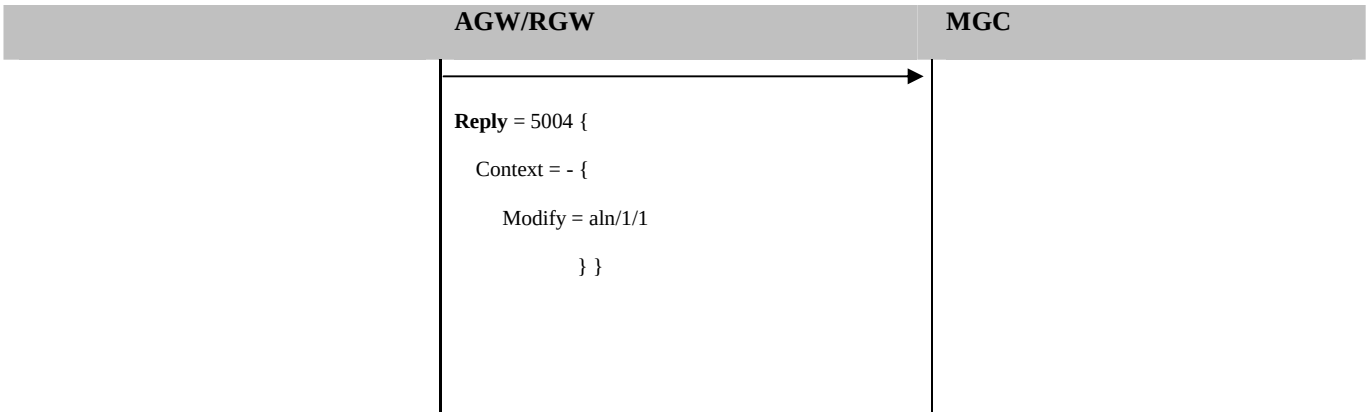
Pre-conditions: Sequence 5.1.1 or 5.1.2.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
End Of Call
Tone/Announcement from Media Server
End of call announcement matures and the MGC now disables the media path and retrieves the statistics.
Transaction = 4999 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
The AGW/RGW deletes the context and stops sending any media flows and returns the appropriate statistics.
Reply = 4999 {
Context = 1 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/1 {
Statistics {……..}
} } }
The MGC requests AGW/RGW to apply "Parked line feed" and re-arm the events descriptors as the AGW/RGW would have reset the event descriptor to its default value upon executing the previous Subtract command.
Transaction = 5000 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
signal = reducedBattery
}
},
Events = 1111 {
stimal/stedsig,
stimal/pulsedsig
}
} } }


AGW/RGW
MGC
A positive acknowledgement is sent and parked line feed is applied.
Reply = 5000 {
Context = - {
Modify = aln/1/1
} }
MGC notes the acknowledgement.
Parked Line Feed
The On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated
On-Hook
Transaction = 5001 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig{
sig=onHook
} } } } }
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.
The Notify specifying the On-hook condition is acknowledged.
The AGW/RGW notes that MGC has received the On-hook.
Reply = 5001 {
Context = - {
Notify = aln/1/1
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Transaction = 5002 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }

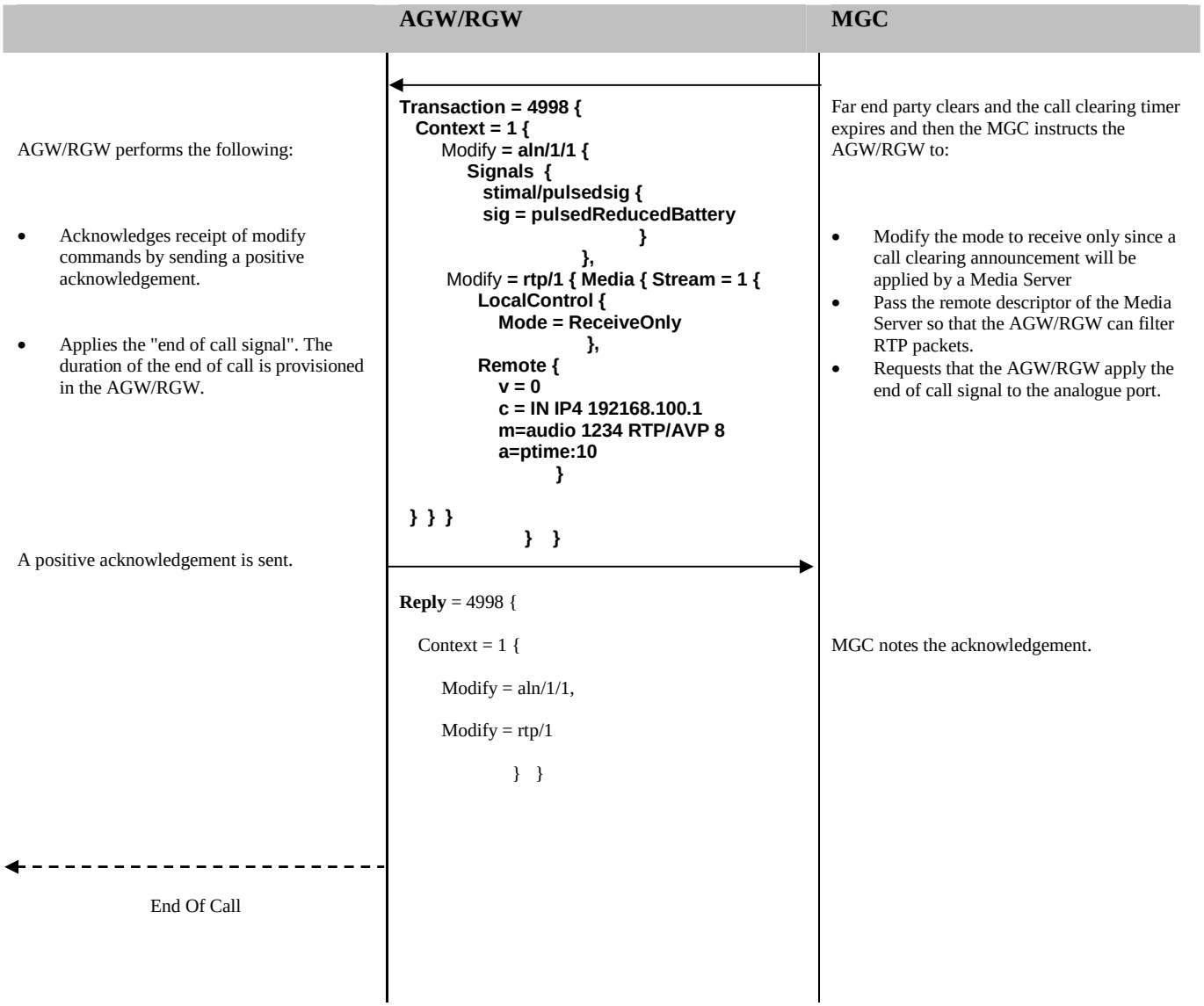

AGW/RGW
MGC
Reply = 5002 {
Context = - {
Modify = aln/1/1 }}
Disconnect Clear
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 5003 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.
Reply = 5003 {
Context = - {
Notify = aln/1/1
} }
A positive acknowledgement is sent to the AGW/RGW.
Transaction = 5004 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/cfin
},
Events = 1111 {
stimal/stedsig,
stimal/pulsedsig
}
} } }
The MGC now instructs the AGW/RGW to place the analogue port in the idle condition and re-arms the events descriptor for detecting steady and pulsed signals.
The port is put into the free state, idle line feed is applied, events descriptor is activated and a positive acknowledgement is sent to the MGC.
Idle Line Feed

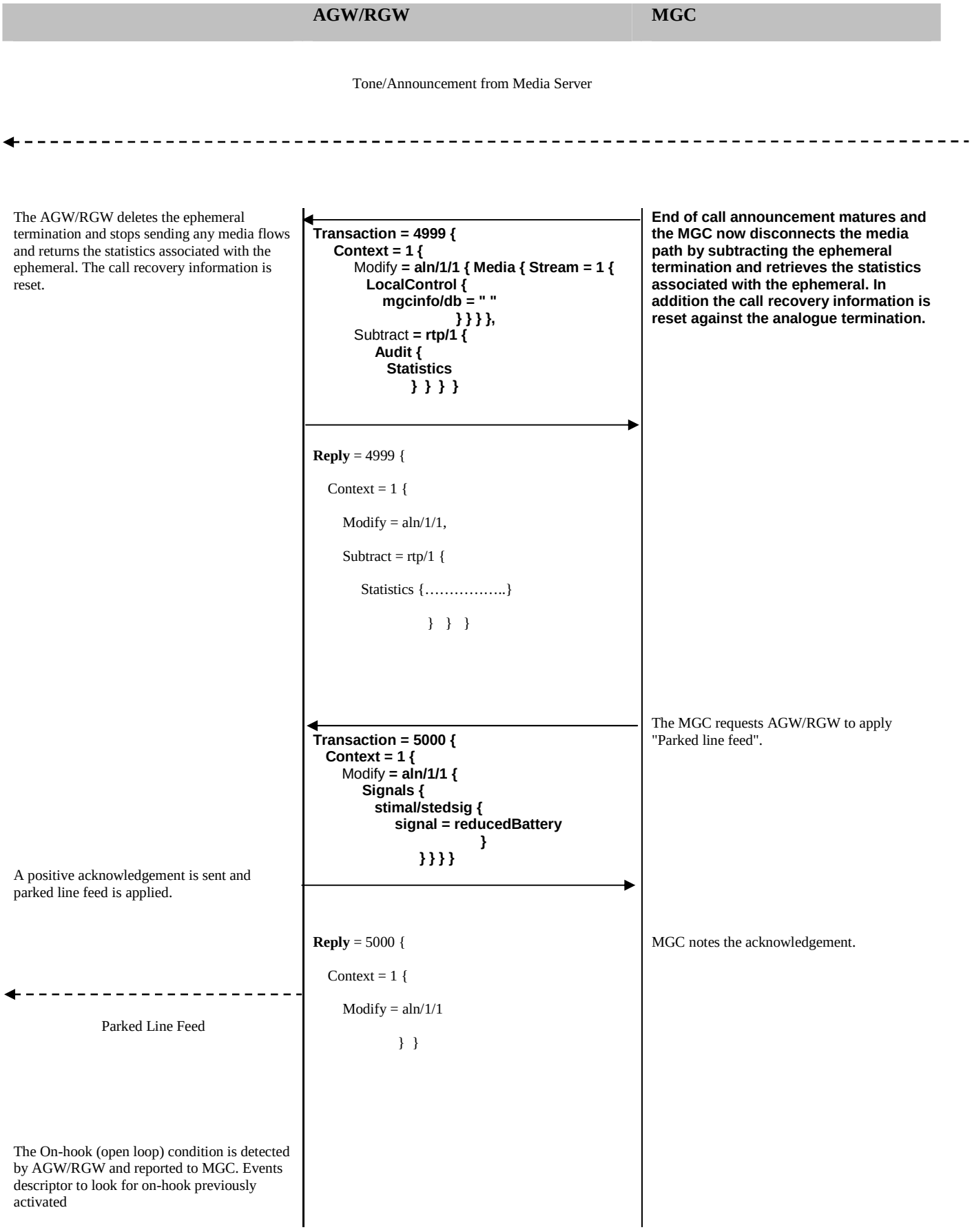


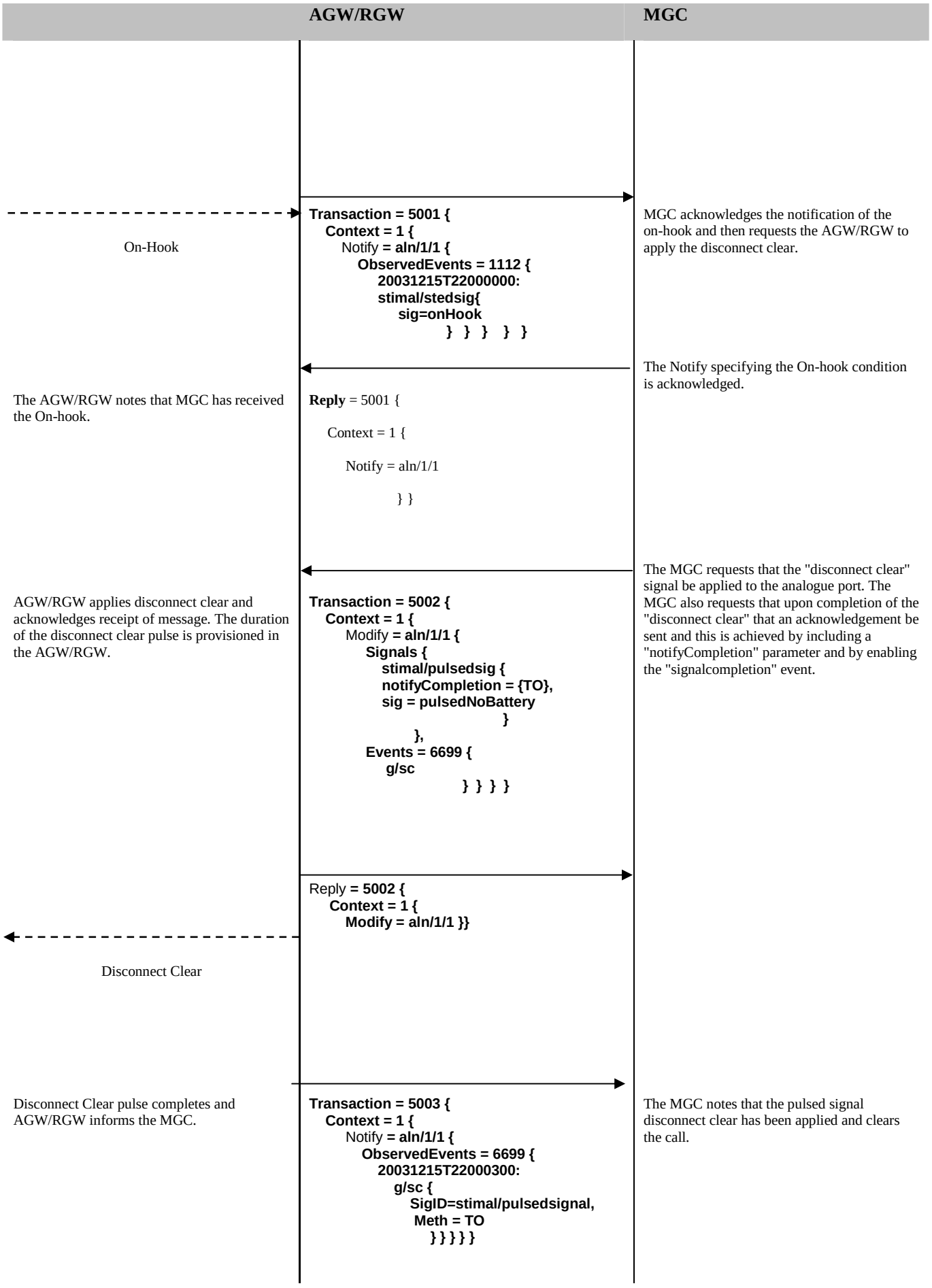
Analogue Port is now in the idle condition.

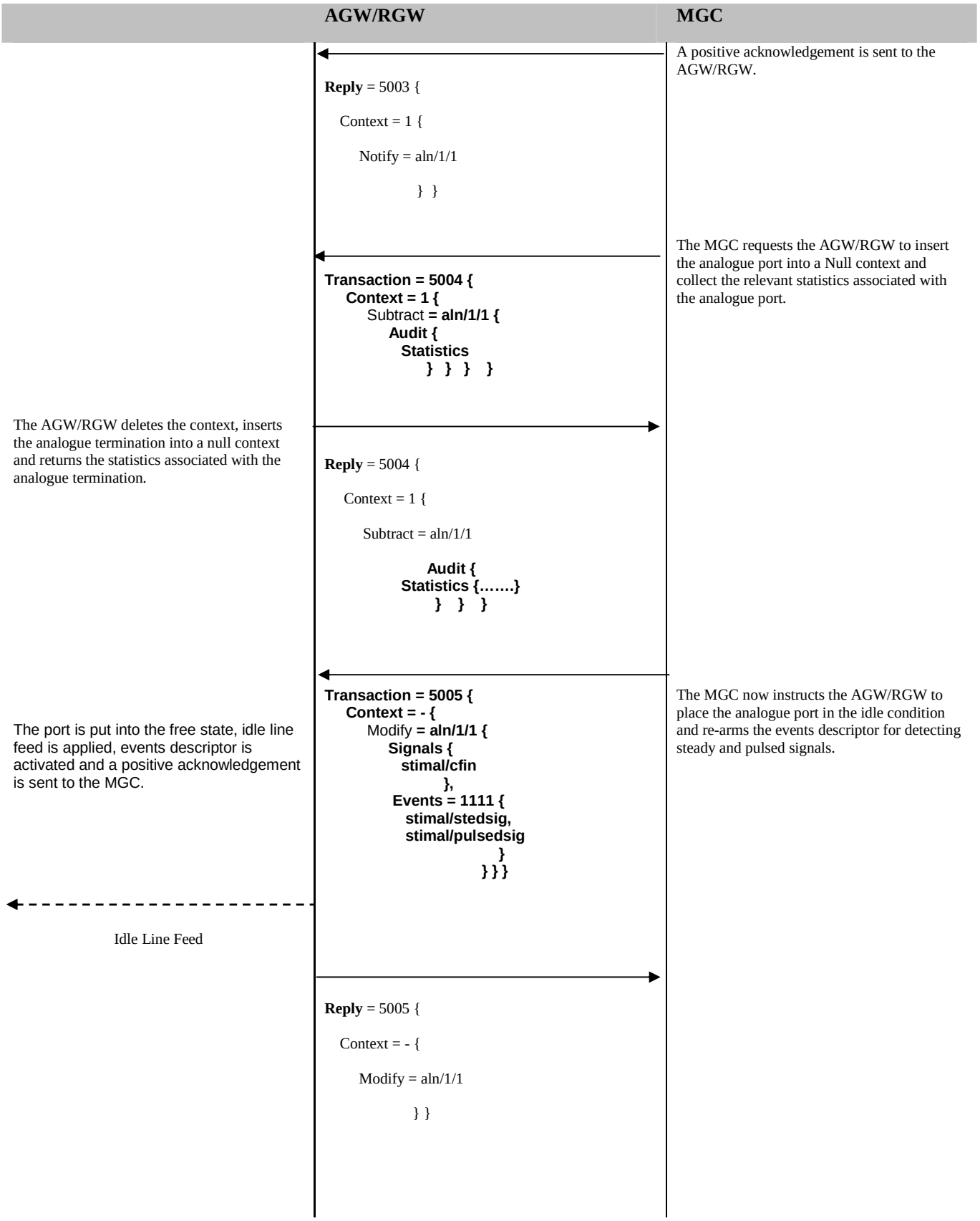
5.3.2.2 Late Subtract of Analogue Termination from a Context

Pre-conditions: Sequence 5.1.1.2 or 5.1.2.2 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
Tone/Announcement from Media Server
The AGW/RGW deletes the ephemeral termination and stops sending any media flows and returns the statistics associated with the ephemeral. The call recovery information is reset.
Transaction = 4999 {
Context = 1 {
Modify = aln/1/1 { Media { Stream = 1 {
LocalControl {
mgcinfo/db = " "
} } } },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
End of call announcement matures and the MGC now disconnects the media path by subtracting the ephemeral termination and retrieves the statistics associated with the ephemeral. In addition the call recovery information is reset against the analogue termination.
Reply = 4999 {
Context = 1 {
Modify = aln/1/1,
Subtract = rtp/1 {
Statistics {……..}
} } }
Transaction = 5000 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
signal = reducedBattery
}
} } } }
The MGC requests AGW/RGW to apply "Parked line feed".
A positive acknowledgement is sent and parked line feed is applied.
Reply = 5000 {
Context = 1 {
Modify = aln/1/1
} }
MGC notes the acknowledgement.
Parked Line Feed
The On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated

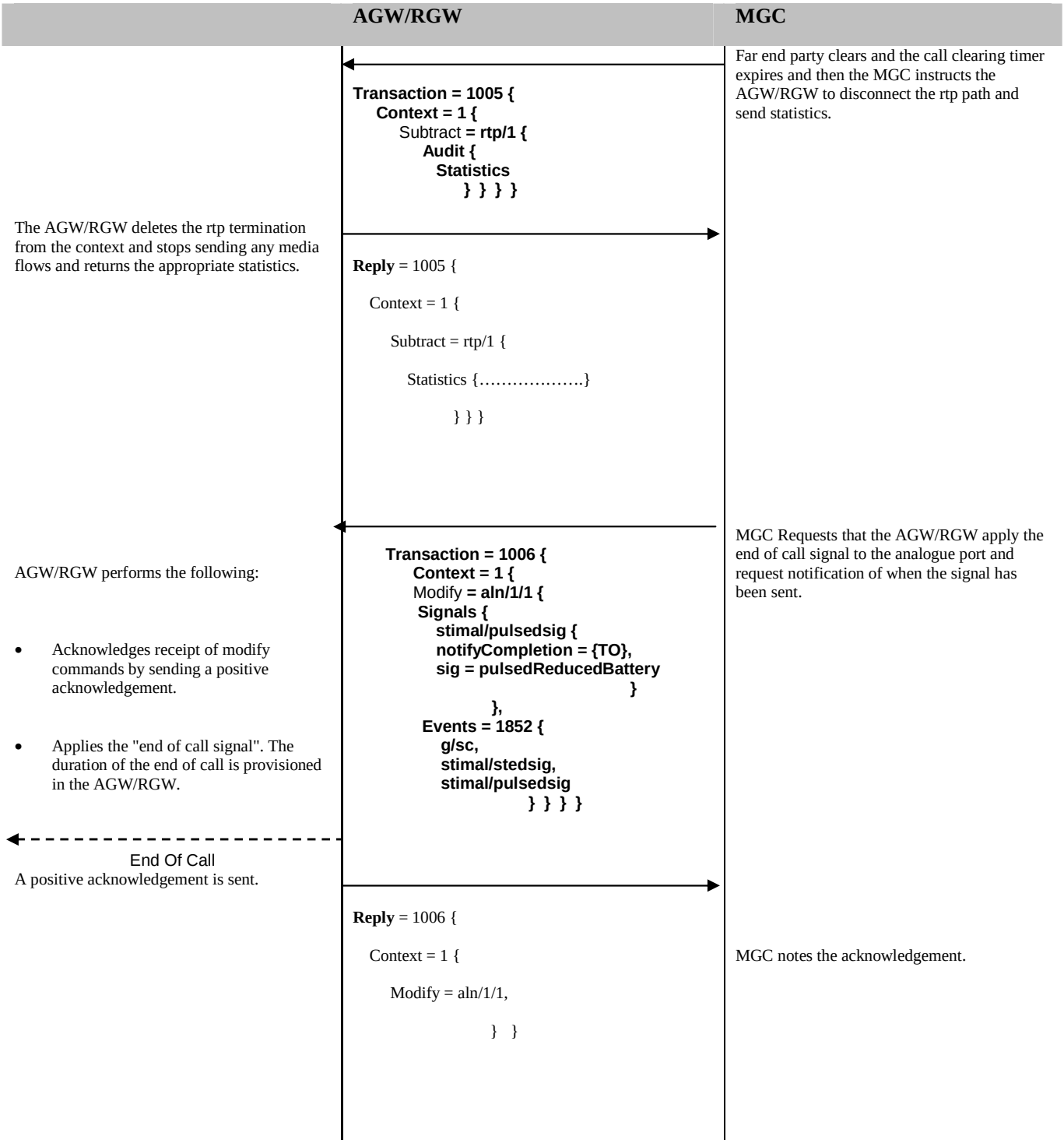

AGW/RGW
MGC
On-Hook
Transaction = 5001 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig{
sig=onHook
} } } } }
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.
The Notify specifying the On-hook condition is acknowledged.
The AGW/RGW notes that MGC has received the On-hook.
Reply = 5001 {
Context = 1 {
Notify = aln/1/1
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Transaction = 5002 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
Reply = 5002 {
Context = 1 {
Modify = aln/1/1 }}
Disconnect Clear
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 5003 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.

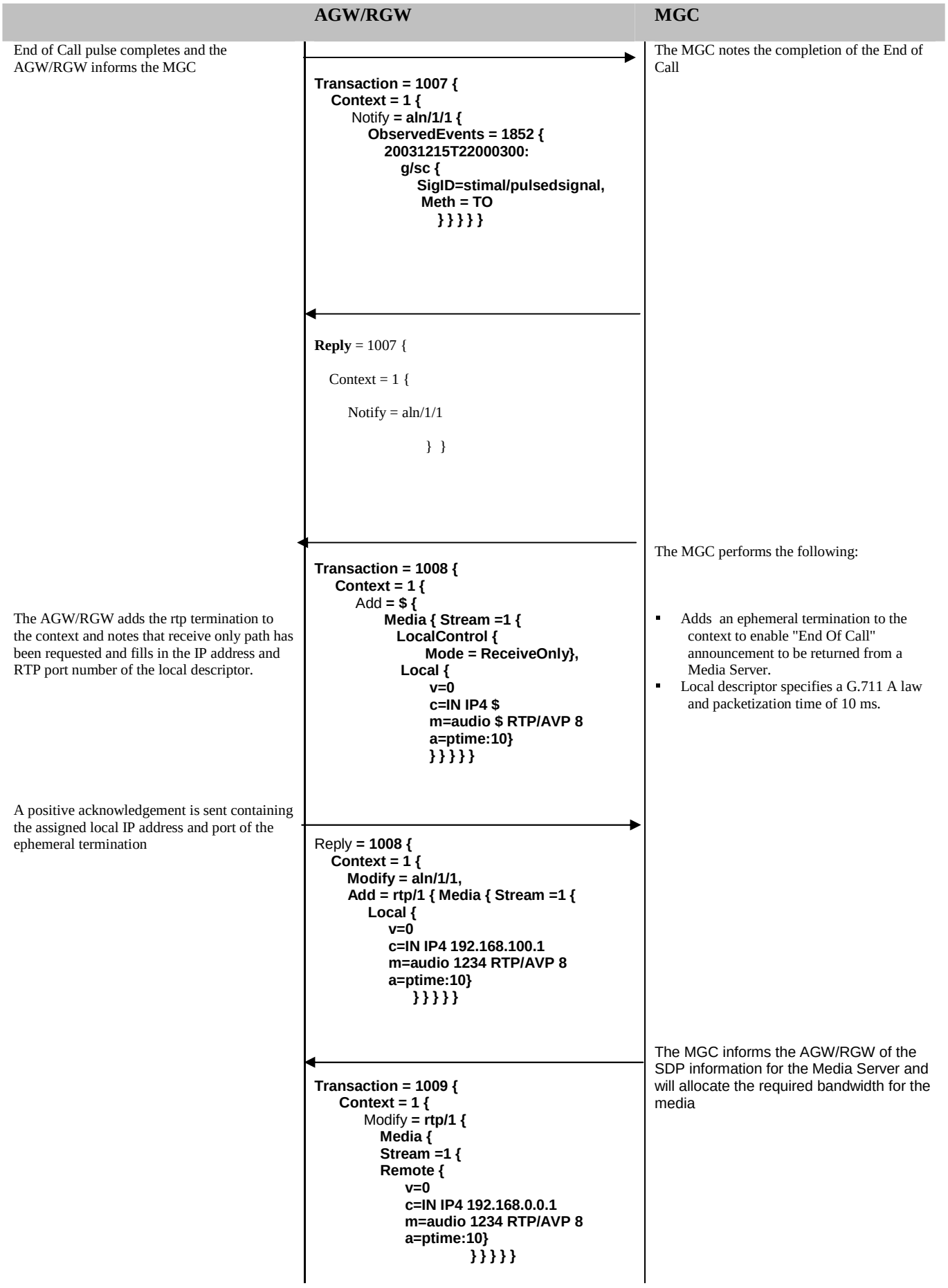


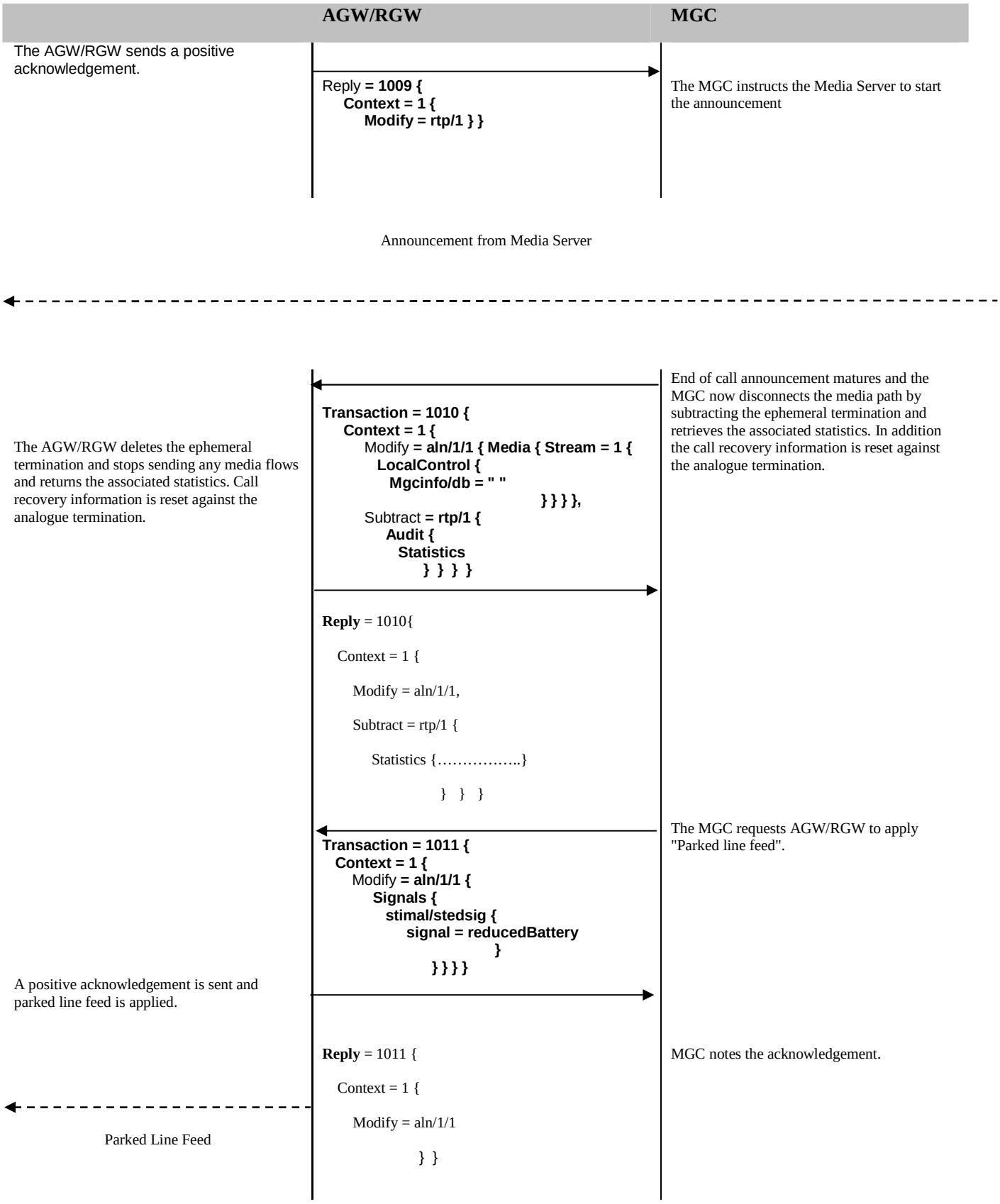
Analogue Port is now in the idle condition.

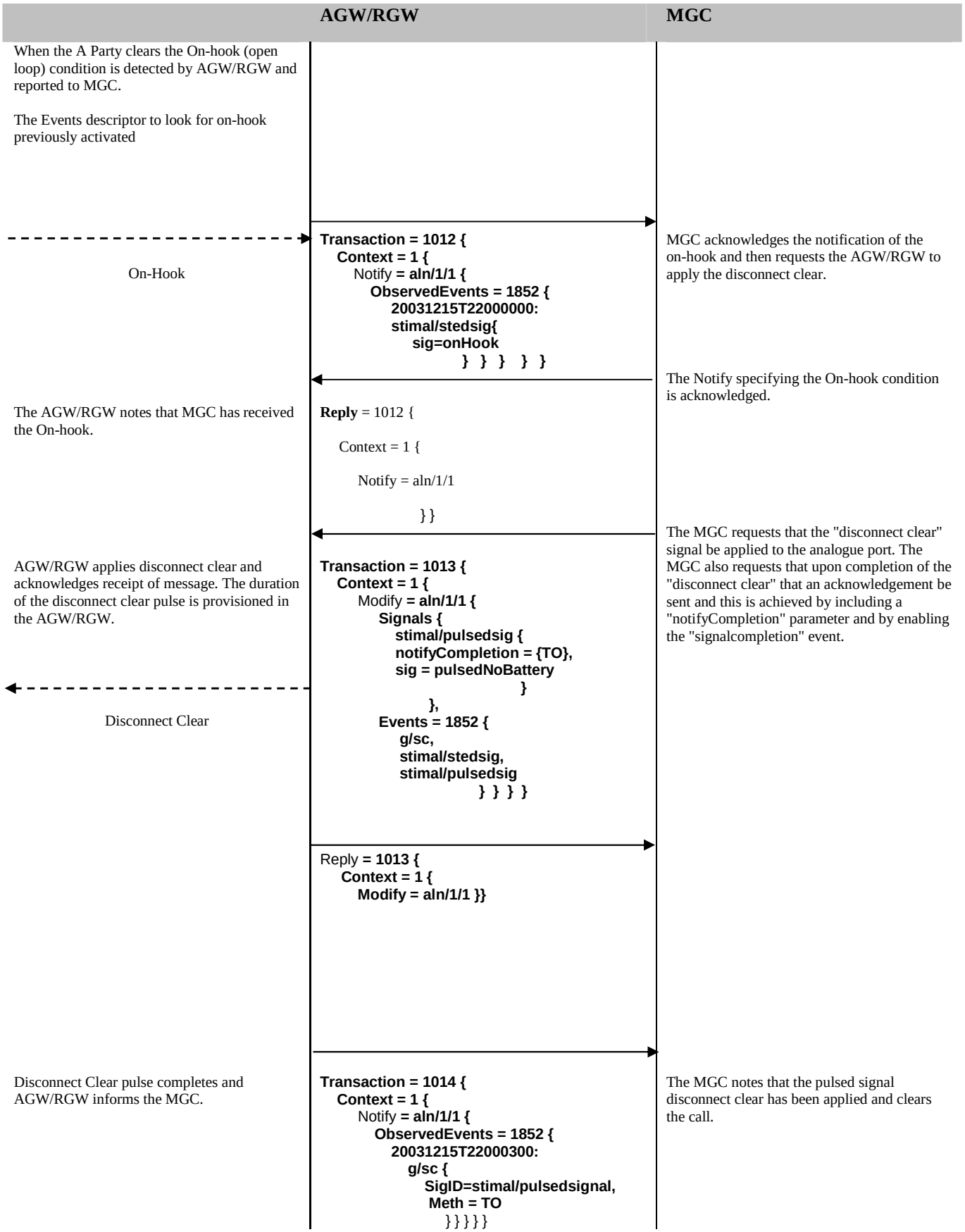
5.3.2.3 Late Subtract of Analogue Termination from a Context Alternative Flow

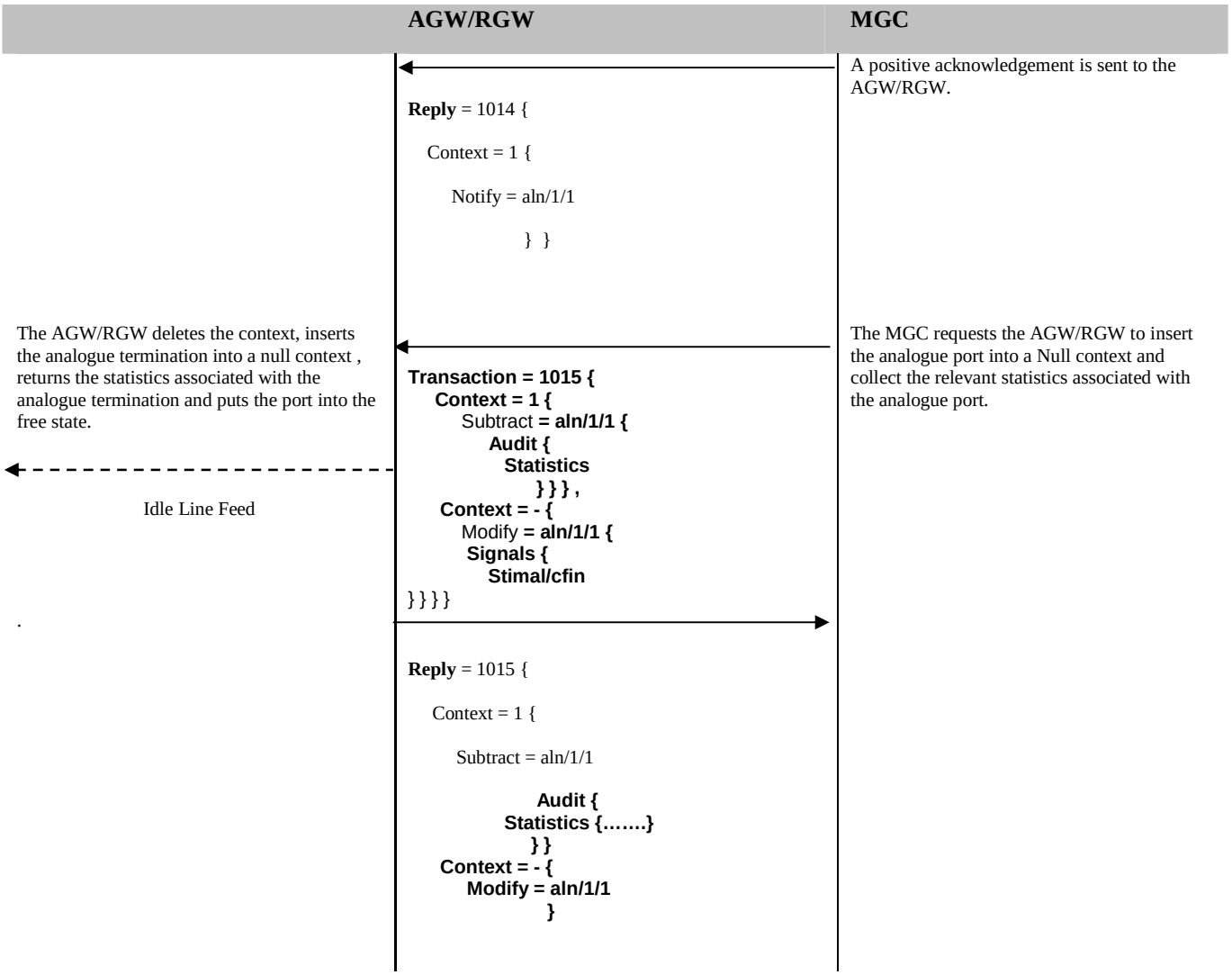
Pre-conditions: Sequence 5.1.1.3 or 5.1.2.3 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
End of Call pulse completes and the AGW/RGW informs the MGC
The MGC notes the completion of the End of Call
Transaction = 1007 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
Reply = 1007 {
Context = 1 {
Notify = aln/1/1
} }
The MGC performs the following:
Transaction = 1008 {
Context = 1 {
Add = $ {
Media { Stream =1 {
LocalControl {
Mode = ReceiveOnly},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime:10}
} } } } }
The AGW/RGW adds the rtp termination to the context and notes that receive only path has been requested and fills in the IP address and RTP port number of the local descriptor.
Adds an ephemeral termination to the context to enable "End Of Call" announcement to be returned from a Media Server.
Local descriptor specifies a G.711 A law and packetization time of 10 ms.
A positive acknowledgement is sent containing the assigned local IP address and port of the ephemeral termination
Reply = 1008 {
Context = 1 {
Modify = aln/1/1,
Add = rtp/1 { Media { Stream =1 {
Local {
v=0
c=IN IP4 192.168.100.1
m=audio 1234 RTP/AVP 8
a=ptime:10}
} } } } }
The MGC informs the AGW/RGW of the SDP information for the Media Server and will allocate the required bandwidth for the media
Transaction = 1009 {
Context = 1 {
Modify = rtp/1 {
Media {
Stream =1 {
Remote {
v=0
c=IN IP4 192.168.0.0.1
m=audio 1234 RTP/AVP 8
a=ptime:10}
} } } } }


AGW/RGW
MGC
The AGW/RGW sends a positive acknowledgement.
Reply = 1009 {
Context = 1 {
Modify = rtp/1 } }
The MGC instructs the Media Server to start the announcement
Announcement from Media Server
End of call announcement matures and the MGC now disconnects the media path by subtracting the ephemeral termination and retrieves the associated statistics. In addition the call recovery information is reset against the analogue termination.
The AGW/RGW deletes the ephemeral termination and stops sending any media flows and returns the associated statistics. Call recovery information is reset against the analogue termination.
Transaction = 1010 {
Context = 1 {
Modify = aln/1/1 { Media { Stream = 1 {
LocalControl {
Mgcinfo/db = " "
} } } },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
Reply = 1010{
Context = 1 {
Modify = aln/1/1,
Subtract = rtp/1 {
Statistics {……..}
} } }
The MGC requests AGW/RGW to apply "Parked line feed".
Transaction = 1011 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
signal = reducedBattery
}
} } } }
A positive acknowledgement is sent and parked line feed is applied.
Reply = 1011 {
Context = 1 {
Modify = aln/1/1
} }
MGC notes the acknowledgement.
Parked Line Feed


AGW/RGW
MGC
When the A Party clears the On-hook (open loop) condition is detected by AGW/RGW and reported to MGC.
The Events descriptor to look for on-hook previously activated
On-Hook
Transaction = 1012 { Context = 1 { Notify = aln/1/1 { ObservedEvents = 1852 { 20031215T22000000: stimal/stedsig{ sig=onHook } } } } }
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.
The Notify specifying the On-hook condition is acknowledged.
The AGW/RGW notes that MGC has received the On-hook.
Reply = 1012 { Context = 1 { Notify = aln/1/1 } }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Disconnect Clear
Transaction = 1013 { Context = 1 { Modify = aln/1/1 { Signals { stimal/pulsedsig { notifyCompletion = {TO}, sig = pulsedNoBattery } }, Events = 1852 { g/sc, stimal/stedsig, stimal/pulsedsig } } } }
Reply = 1013 { Context = 1 { Modify = aln/1/1 }}
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 1014 { Context = 1 { Notify = aln/1/1 { ObservedEvents = 1852 { 20031215T22000300: g/sc { SigID=stimal/pulsedsignal, Meth = TO } } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.

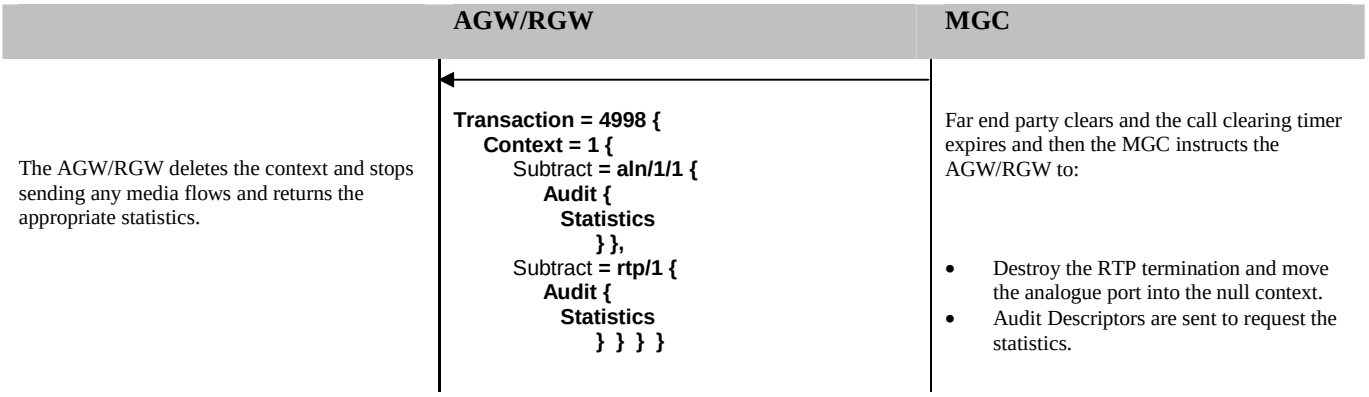


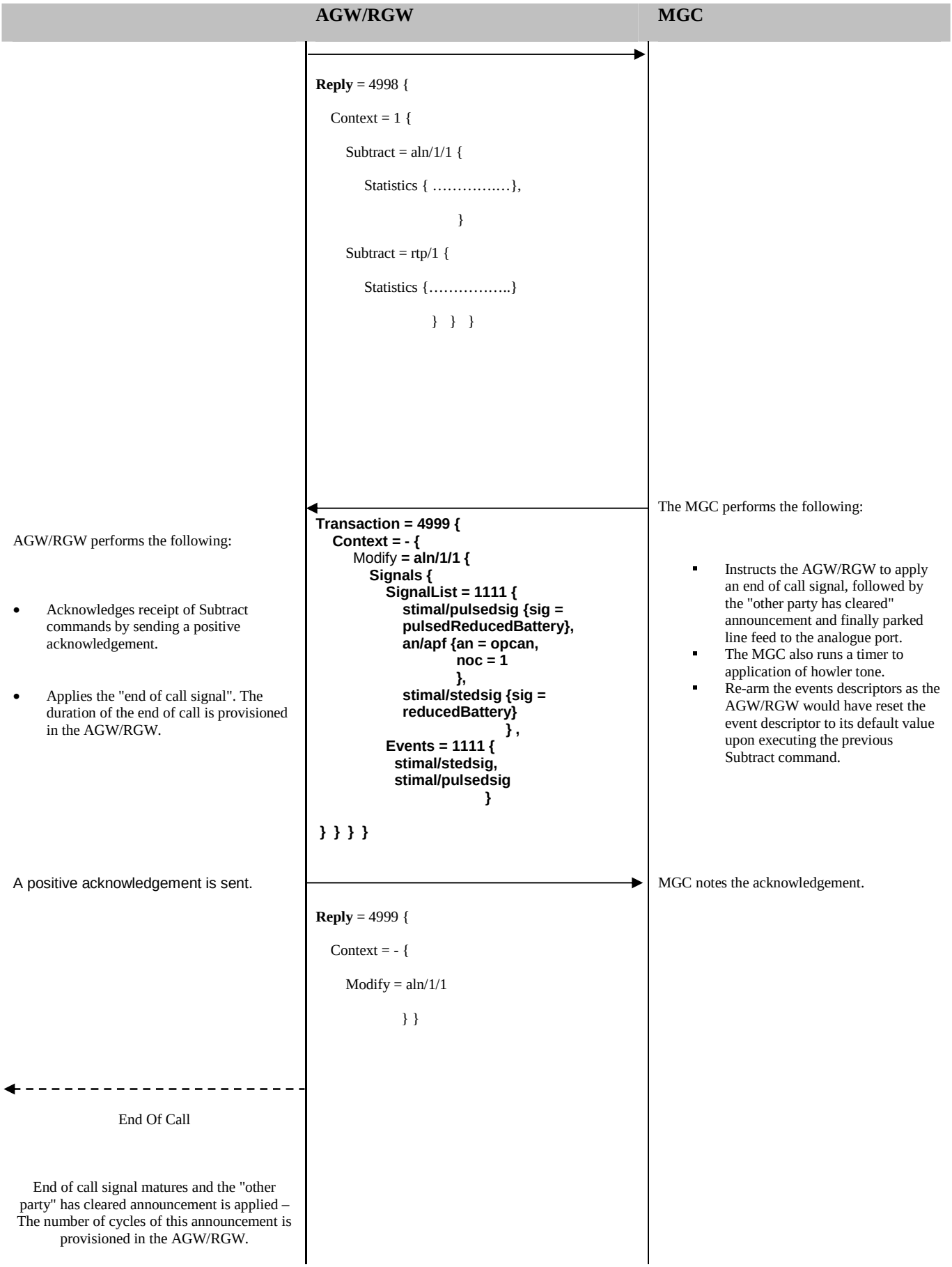
Analogue Port is now in the idle condition.

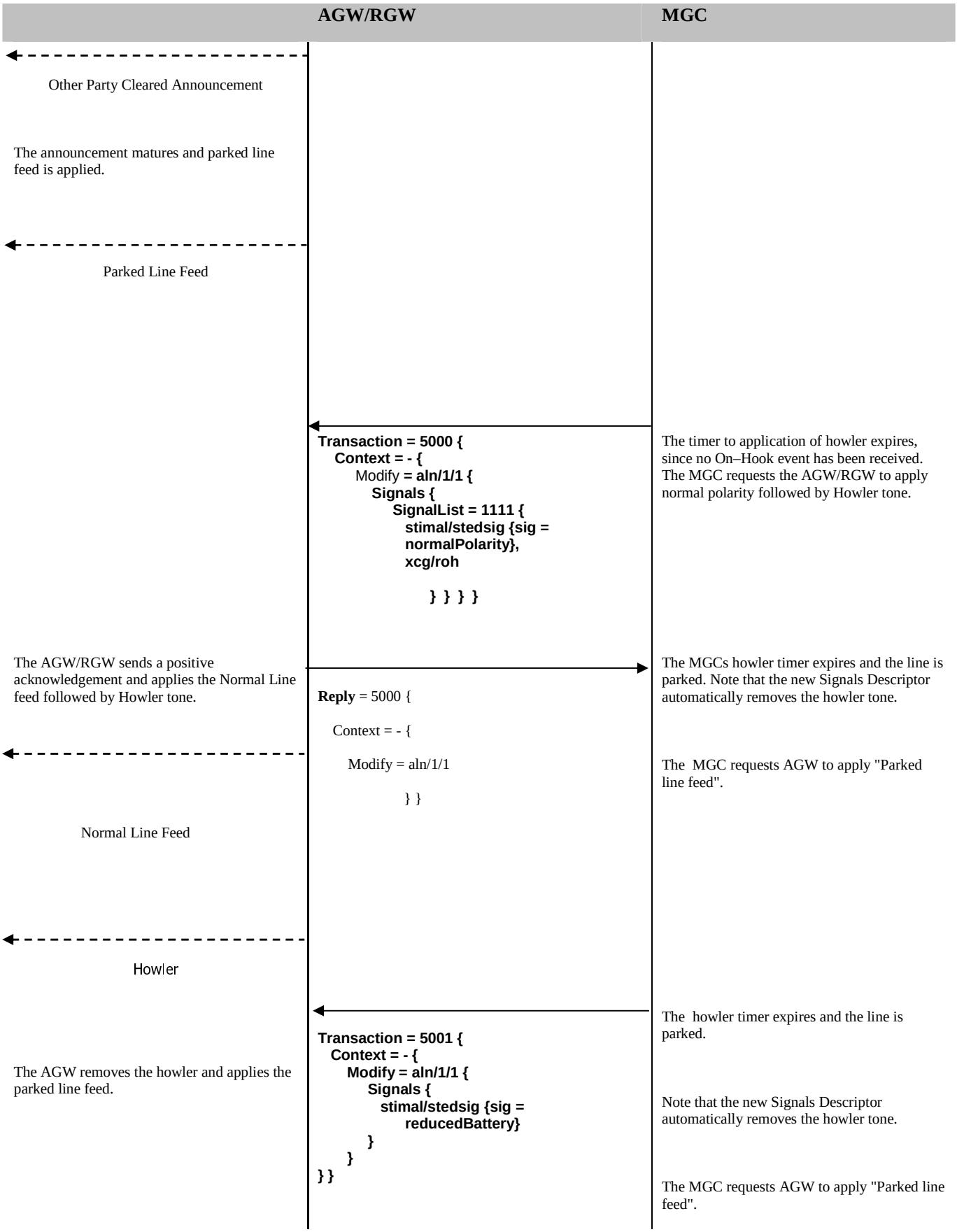
5.3.3 DEL - Called Party Clears during active call; end of call announcement and Howler tone applied by AGW/RGW - A end

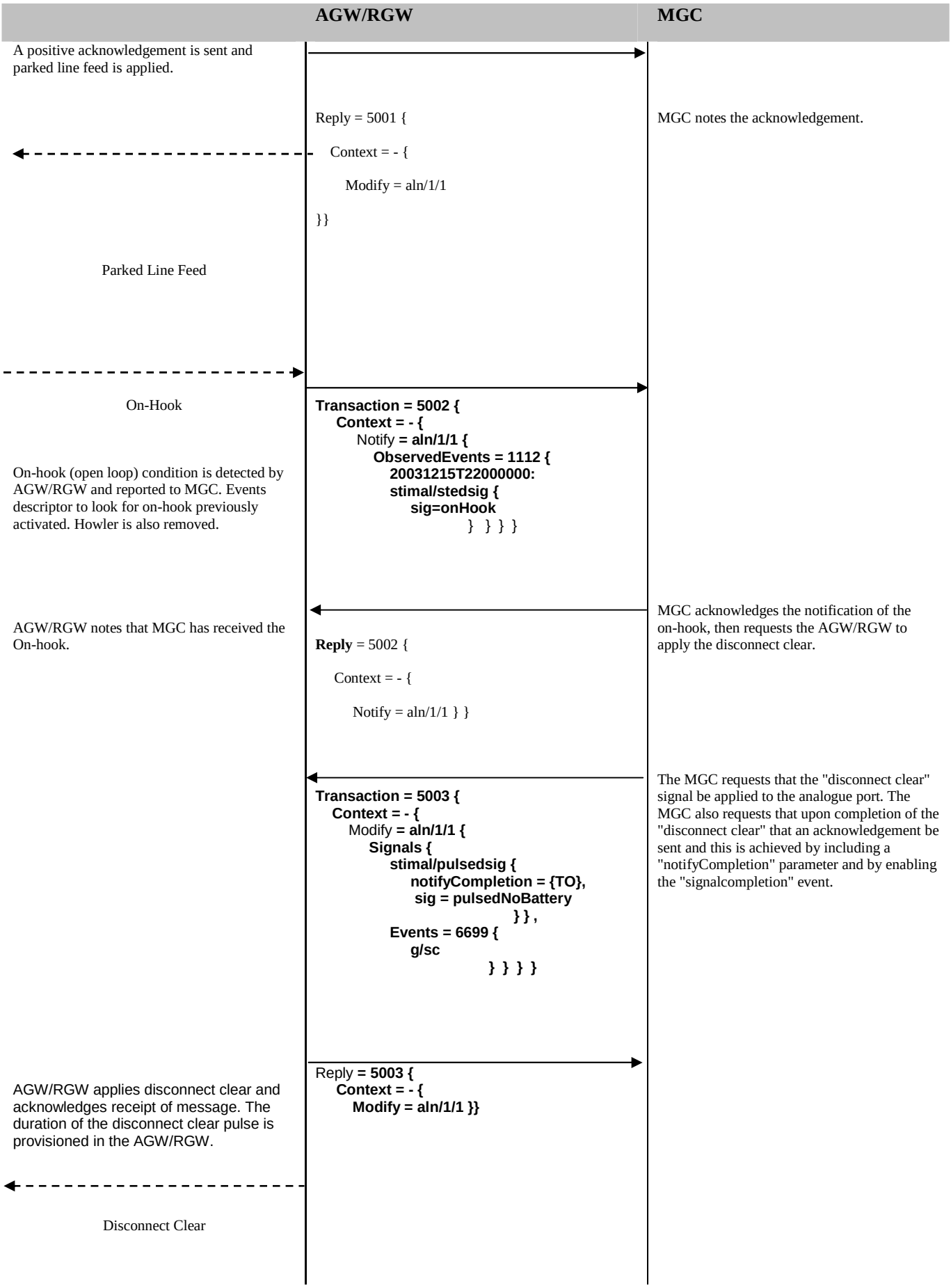
5.3.3.1 Early Subtract of Analogue Termination from a Context

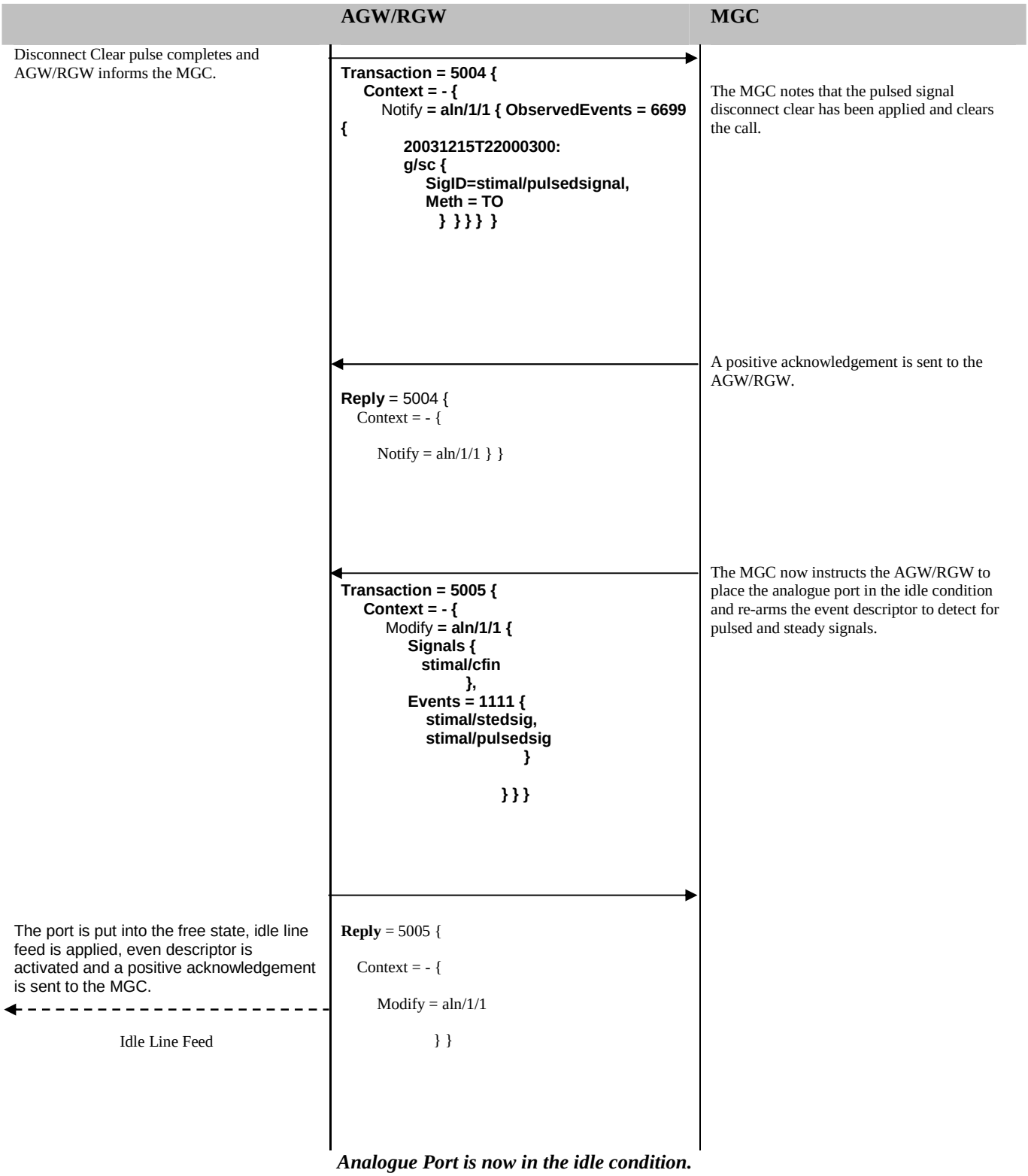
Pre-conditions: Sequence 5.1.1.1 or 5.1.1.2 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
Reply = 4998 {
Context = 1 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/1 {
Statistics {……..}
} } }
The MGC performs the following:
Instructs the AGW/RGW to apply an end of call signal, followed by the "other party has cleared" announcement and finally parked line feed to the analogue port.
The MGC also runs a timer to application of howler tone.
Re-arm the events descriptors as the AGW/RGW would have reset the event descriptor to its default value upon executing the previous Subtract command.
Transaction = 4999 {
Context = - {
Modify = aln/1/1 {
Signals {
SignalList = 1111 {
stimal/pulsedsig {sig = pulsedReducedBattery},
an/apf {an = opcan,
noc = 1
},
stimal/stedsig {sig = reducedBattery}
} ,
Events = 1111 {
stimal/stedsig,
stimal/pulsedsig
}
} } } }
AGW/RGW performs the following:
Acknowledges receipt of Subtract commands by sending a positive acknowledgement.
Applies the "end of call signal". The duration of the end of call is provisioned in the AGW/RGW.
A positive acknowledgement is sent.
MGC notes the acknowledgement.
Reply = 4999 {
Context = - {
Modify = aln/1/1
} }
End Of Call
End of call signal matures and the "other party" has cleared announcement is applied – The number of cycles of this announcement is provisioned in the AGW/RGW.


AGW/RGW
MGC
Other Party Cleared Announcement
The announcement matures and parked line feed is applied.
Parked Line Feed
Transaction = 5000 {
Context = - {
Modify = aln/1/1 {
Signals {
SignalList = 1111 {
stimal/stedsig {sig = normalPolarity},
xcg/roh
} } } }
The timer to application of howler expires, since no On–Hook event has been received. The MGC requests the AGW/RGW to apply normal polarity followed by Howler tone.
The AGW/RGW sends a positive acknowledgement and applies the Normal Line feed followed by Howler tone.
Reply = 5000 {
Context = - {
Modify = aln/1/1
} }
The MGCs howler timer expires and the line is parked. Note that the new Signals Descriptor automatically removes the howler tone.
The MGC requests AGW to apply "Parked line feed".
Normal Line Feed
Howler
Transaction = 5001 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/stedsig {sig = reducedBattery}
}
}
} }
The howler timer expires and the line is parked.
The AGW removes the howler and applies the parked line feed.
Note that the new Signals Descriptor automatically removes the howler tone.
The MGC requests AGW to apply "Parked line feed".


AGW/RGW
MGC
A positive acknowledgement is sent and parked line feed is applied.
Reply = 5001 {
Context = - {
Modify = aln/1/1
}}
MGC notes the acknowledgement.
Parked Line Feed
On-Hook
Transaction = 5002 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } }
On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated. Howler is also removed.
MGC acknowledges the notification of the on-hook, then requests the AGW/RGW to apply the disconnect clear.
AGW/RGW notes that MGC has received the On-hook.
Reply = 5002 {
Context = - {
Notify = aln/1/1 } }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 5003 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
} } ,
Events = 6699 {
g/sc
} } } }
Reply = 5003 {
Context = - {
Modify = aln/1/1 }}
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Disconnect Clear



Analogue Port is now in the idle condition.

5.3.3.2 Late Subtract of Analogue Termination from a Context

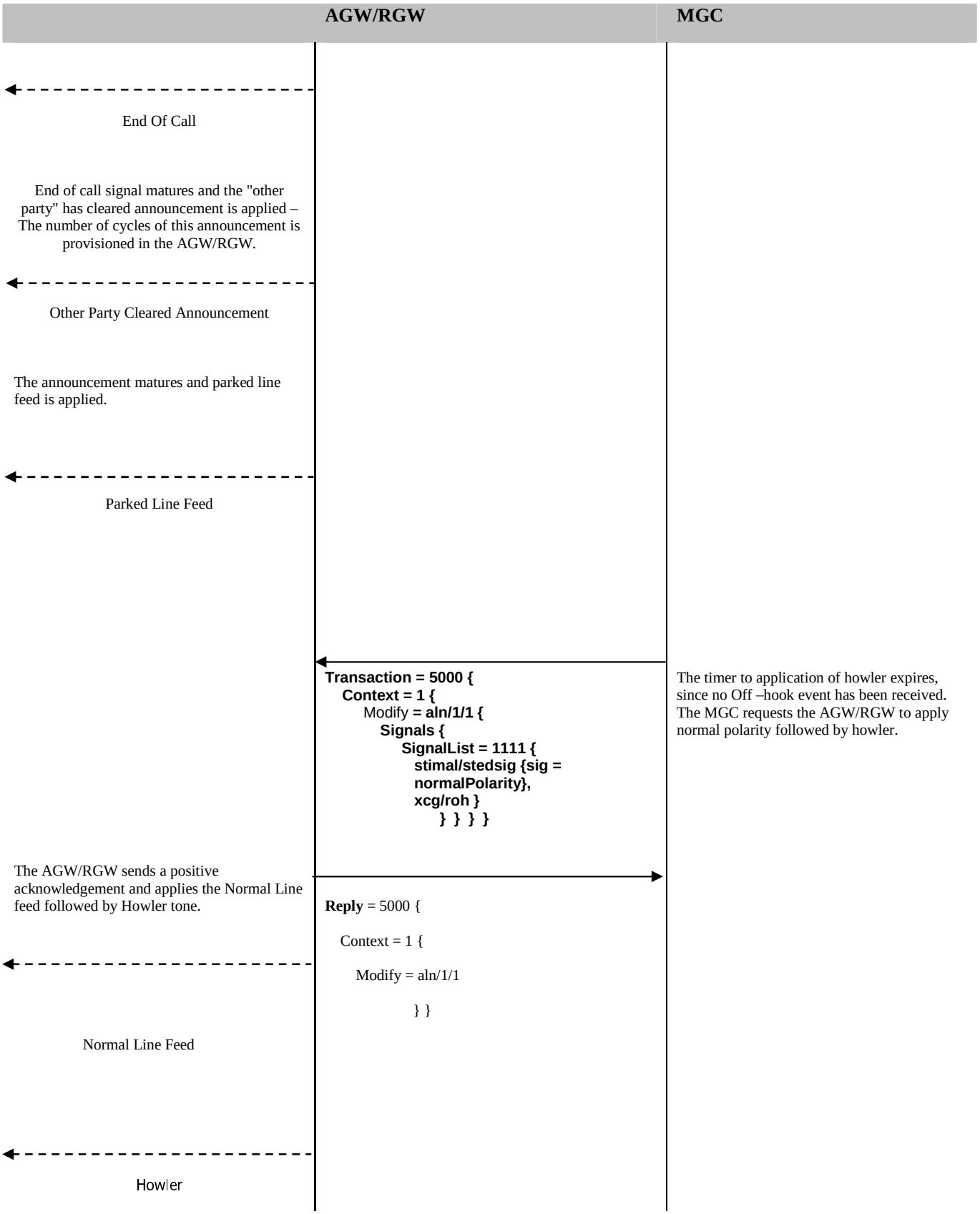
Pre-conditions: Sequence 5.1.1.3 or 5.1.2.3 has been successfully executed for DEL port aln/1/1.

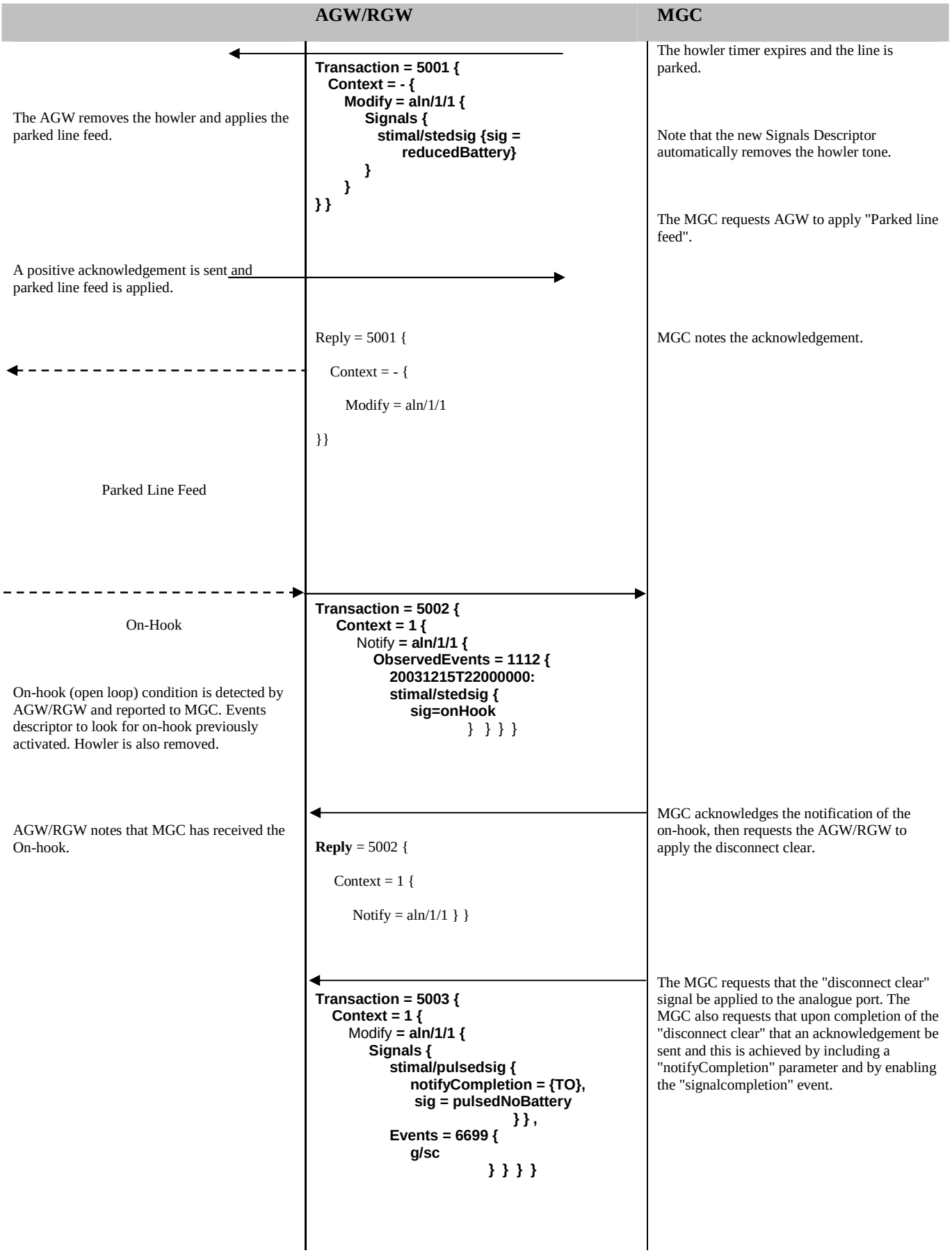
AGW/RGW		MGC
		Far end party clears and the call clearing timer expires and then the MGC instructs the AGW/RGW to:
The AGW/RGW deletes the ephemeral and stops sending any media flows and returns the appropriate statistics. The call recovery information is also reset.	**Transaction = 4998 {** **Context = 1 {** Modify **= aln/1/1 { Media { Stream = 1 {** **LocalControl {** **mgcinfo/db = " "** **} } } },** Subtract **= rtp/1 {** **Audit {** **Statistics** **} } } }**	• Disconnects the media path by destroying the Ephemeral termination. • Audit Descriptors are sent to request the statistics associated with the Ephemeral termination. • The Call recovery information is reset.

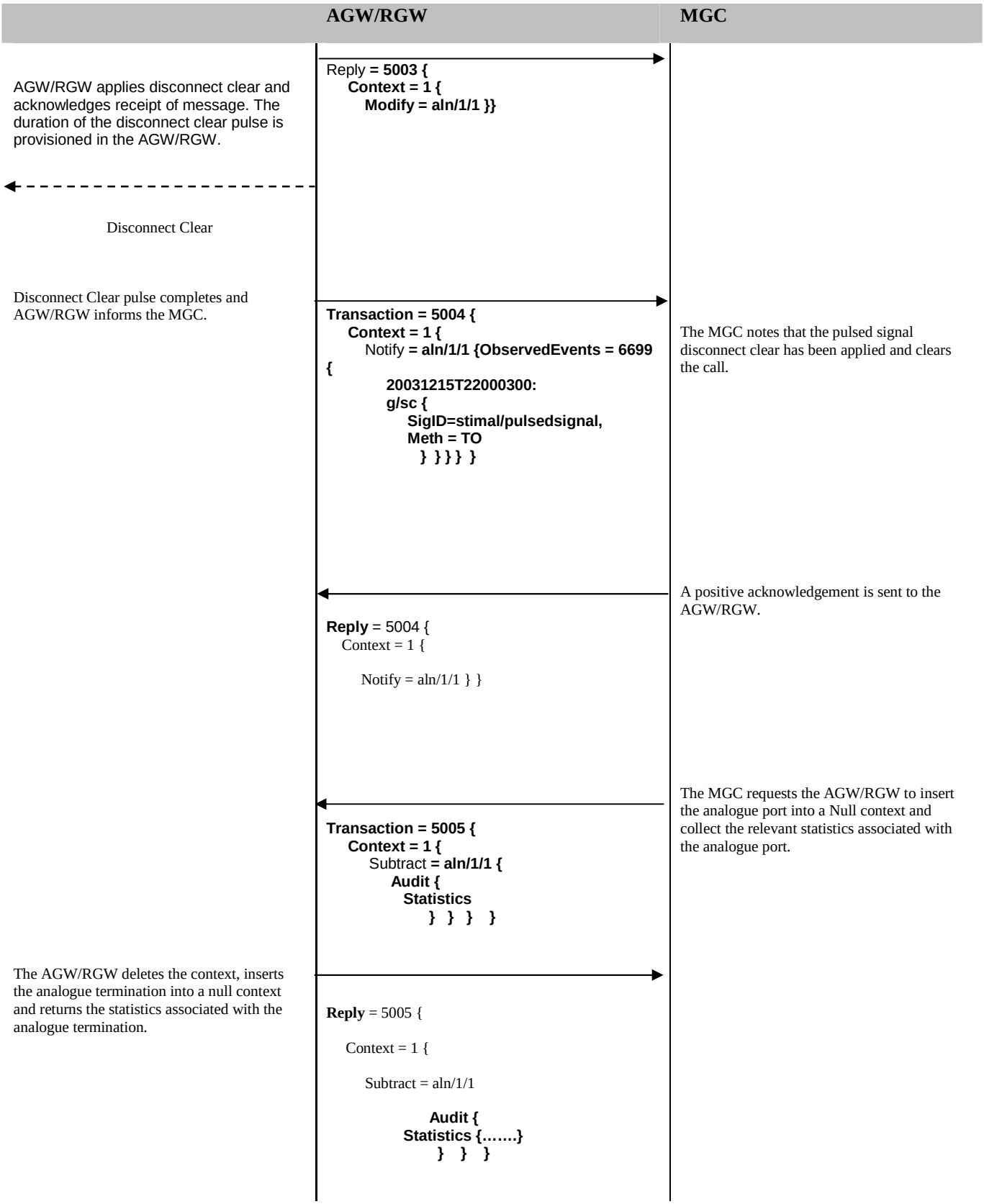
	Reply = 4998 {
	Context = 1 {
	Modify = aln/1/1,
	Subtract = rtp/1 {
	Statistics {……..}
	} } }	

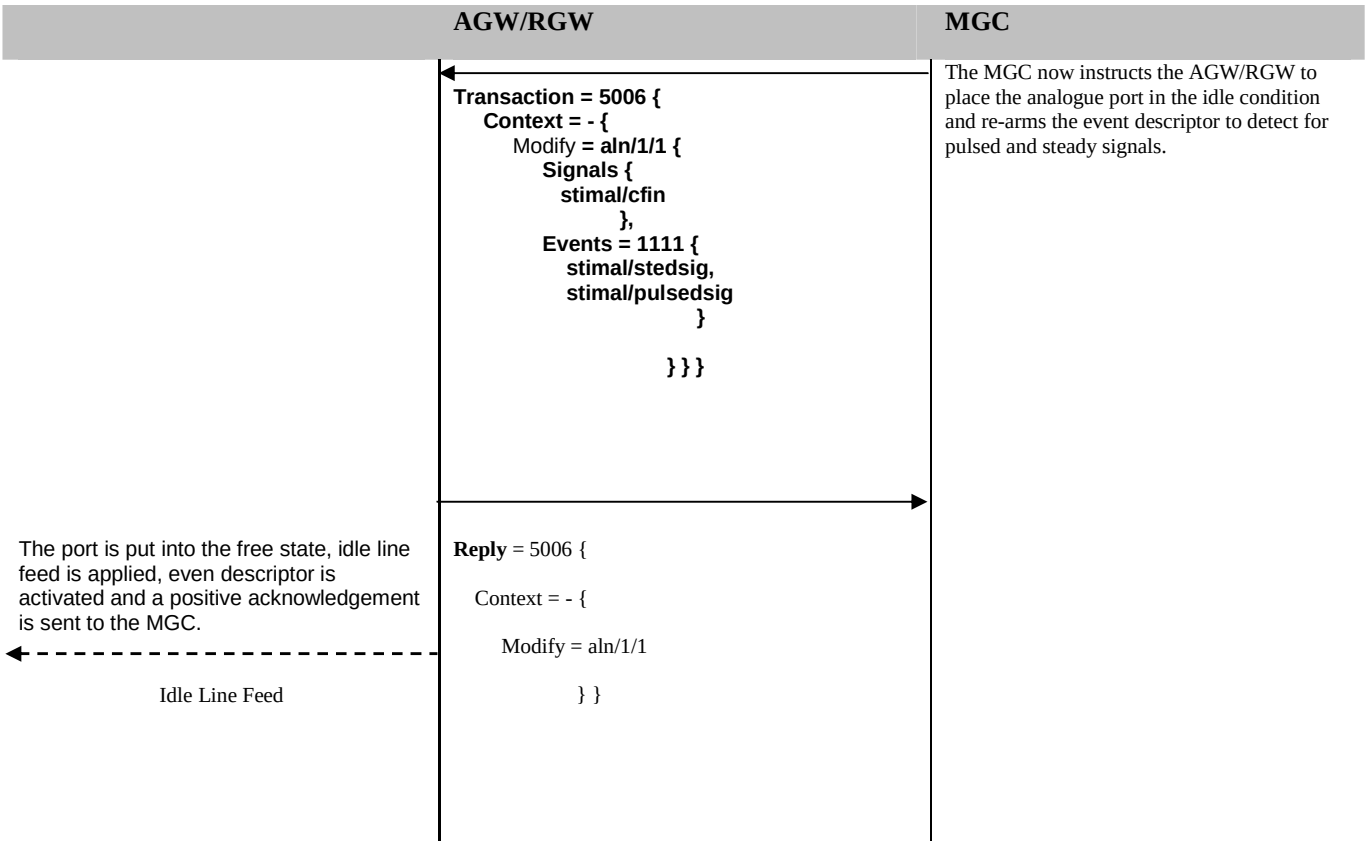
		The MGC performs the following:
AGW/RGW performs the following: • Acknowledges receipt of Subtract commands by sending a positive acknowledgement. • Applies the "end of call signal". The duration of the end of call is provisioned in the AGW/RGW.	**Transaction = 4999 {** **Context = 1 {** Modify **= aln/1/1 {** **Signals {** **SignalList = 1111 {** **stimal/pulsedsig {sig =** **pulsedReducedBattery},** **an/apf {an = opcan,** **noc = 1** **},** **stimal/stedsig {sig =** **reducedBattery}** **} } } } }	▪ Instructs the AGW/RGW to apply an end of call signal, followed by the "other party has cleared" announcement and finally parked line feed to the analogue port. ▪ The MGC also runs a timer to application of howler tine.
A positive acknowledgement is sent.		MGC notes the acknowledgement.

	Reply = 4999 {
	Context = 1 {
	Modify = aln/1/1
	} }	


AGW/RGW
MGC
End Of Call
End of call signal matures and the "other party" has cleared announcement is applied – The number of cycles of this announcement is provisioned in the AGW/RGW.
Other Party Cleared Announcement
The announcement matures and parked line feed is applied.
Parked Line Feed
Transaction = 5000 {
Context = 1 {
Modify = aln/1/1 {
Signals {
SignalList = 1111 {
stimal/stedsig {sig = normalPolarity},
xcg/roh }
} } } }
The timer to application of howler expires, since no Off –hook event has been received. The MGC requests the AGW/RGW to apply normal polarity followed by howler.
The AGW/RGW sends a positive acknowledgement and applies the Normal Line feed followed by Howler tone.
Reply = 5000 {
Context = 1 {
Modify = aln/1/1
} }
Normal Line Feed
Howler


AGW/RGW
MGC
The howler timer expires and the line is parked.
Transaction = 5001 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/stedsig {sig = reducedBattery}
}
}
} }
The AGW removes the howler and applies the parked line feed.
Note that the new Signals Descriptor automatically removes the howler tone.
The MGC requests AGW to apply "Parked line feed".
A positive acknowledgement is sent and parked line feed is applied.
Reply = 5001 {
Context = - {
Modify = aln/1/1
}}
MGC notes the acknowledgement.
Parked Line Feed
On-Hook
Transaction = 5002 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } }
On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated. Howler is also removed.
MGC acknowledges the notification of the on-hook, then requests the AGW/RGW to apply the disconnect clear.
AGW/RGW notes that MGC has received the On-hook.
Reply = 5002 {
Context = 1 {
Notify = aln/1/1 } }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 5003 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
} } ,
Events = 6699 {
g/sc
} } } }

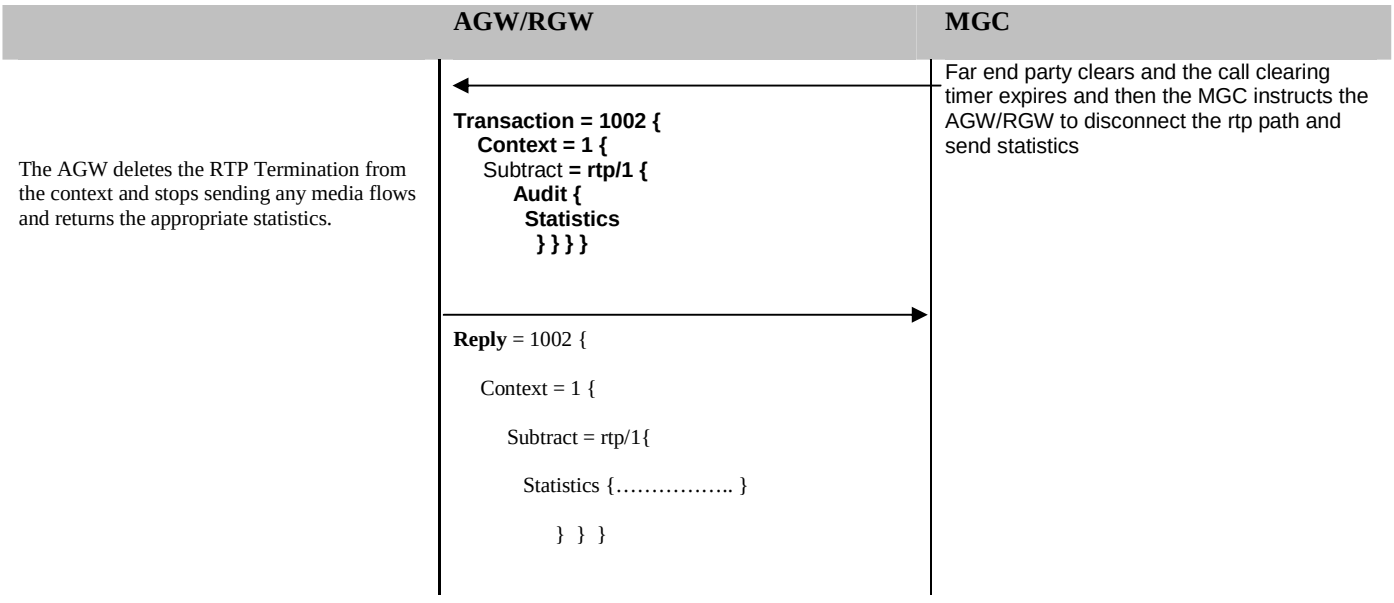

AGW/RGW
MGC
Reply = 5003 {
Context = 1 {
Modify = aln/1/1 }}
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Disconnect Clear
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 5004 {
Context = 1 {
Notify = aln/1/1 {ObservedEvents = 6699
{
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.
A positive acknowledgement is sent to the AGW/RGW.
Reply = 5004 {
Context = 1 {
Notify = aln/1/1 } }
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the relevant statistics associated with the analogue port.
Transaction = 5005 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} } } }
The AGW/RGW deletes the context, inserts the analogue termination into a null context and returns the statistics associated with the analogue termination.
Reply = 5005 {
Context = 1 {
Subtract = aln/1/1
Audit {
Statistics {…….}
} } }

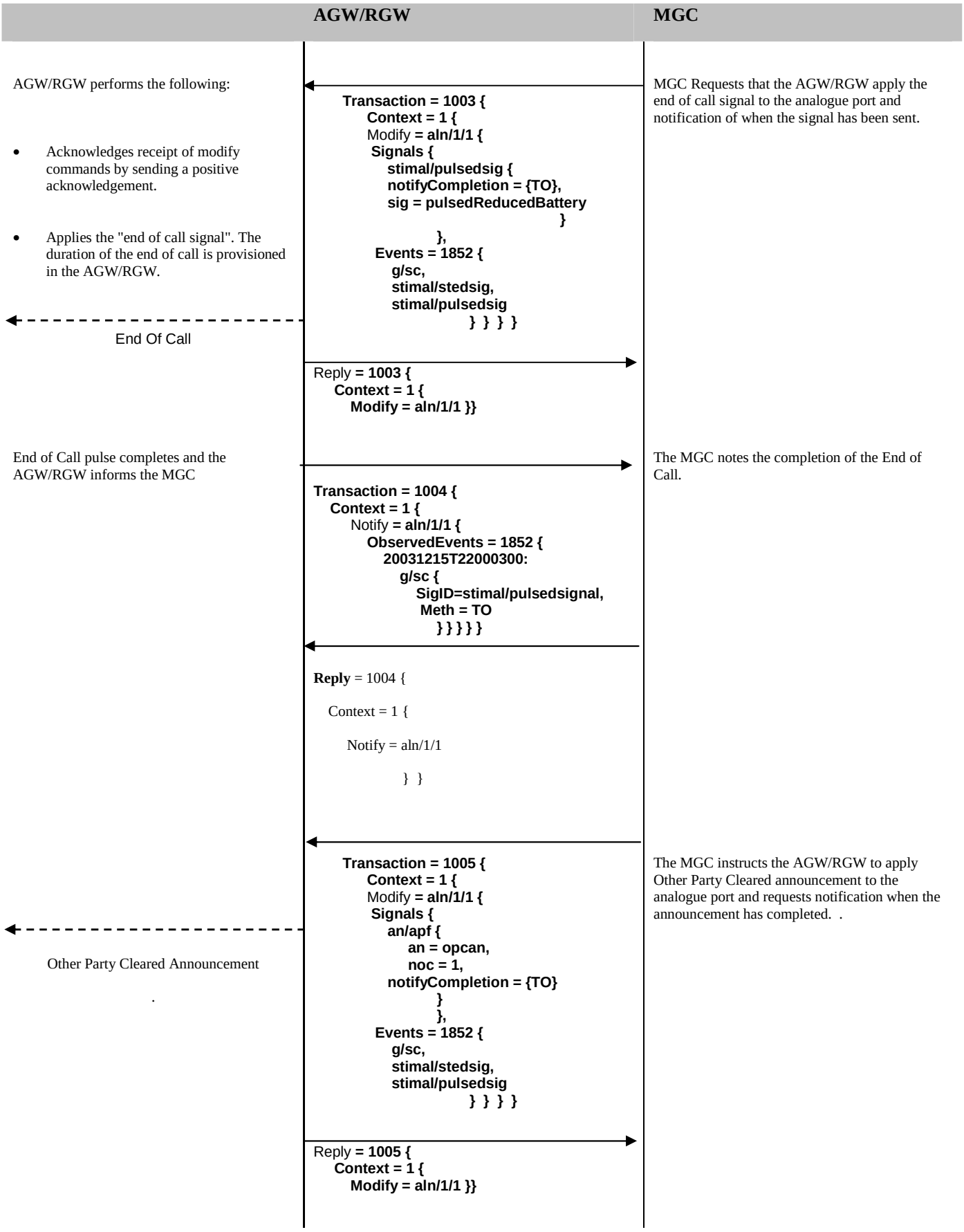


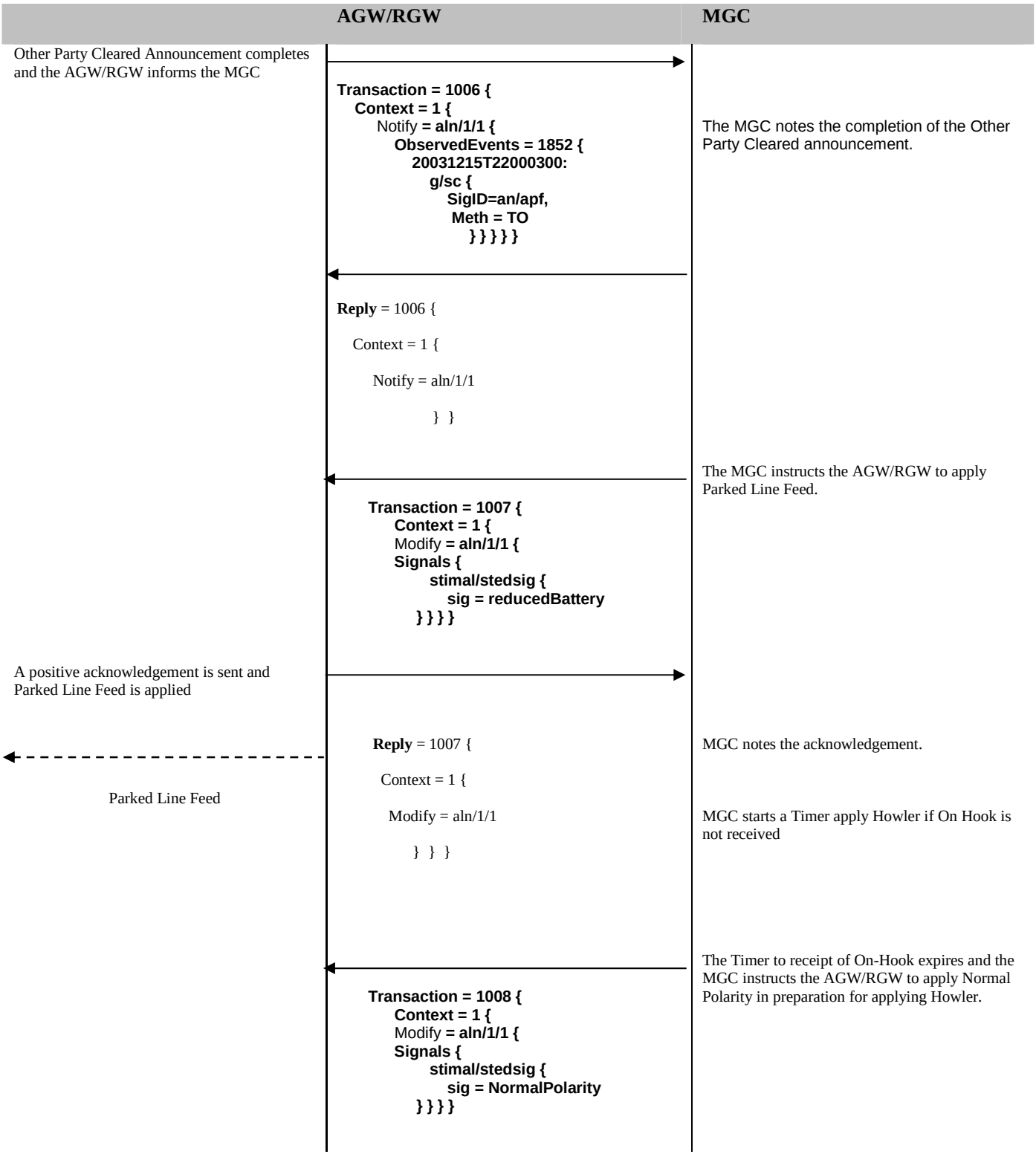
Analogue Port is now in the idle condition.

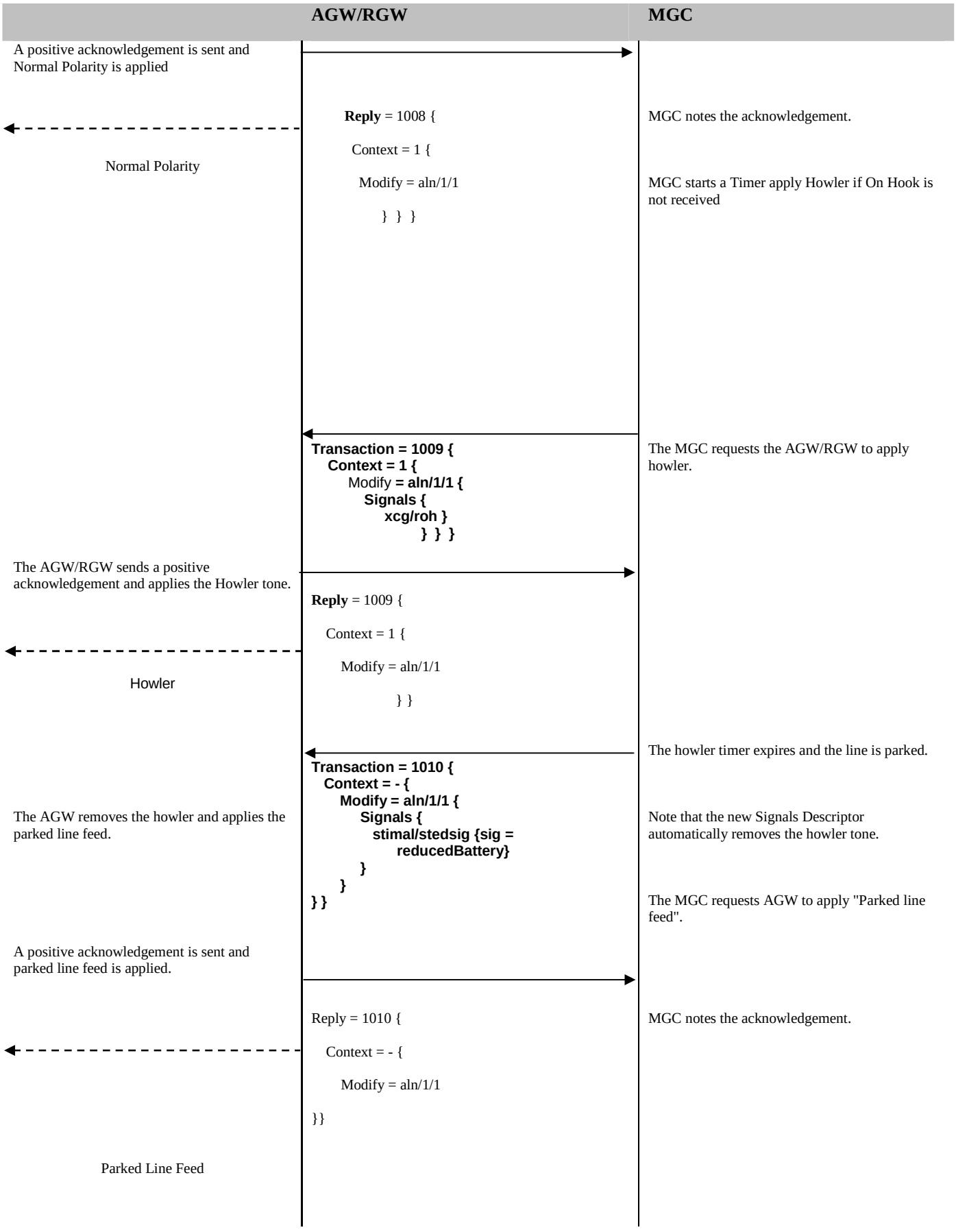
5.3.3.3 Late Subtract of Analogue Termination from a Context Alternative Flow

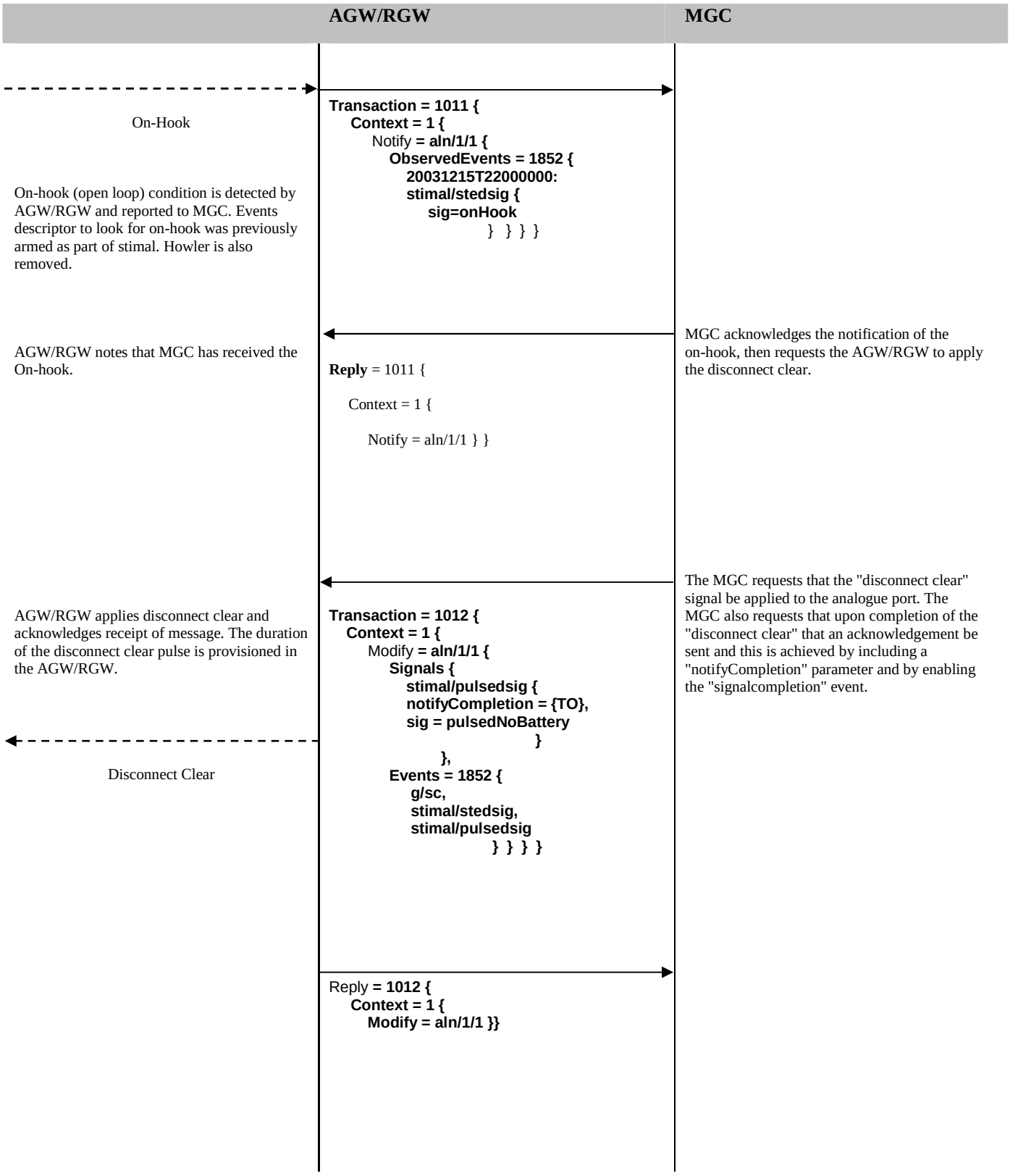
Pre-conditions: Sequence 5.1.1.3 or 5.1.2.3 has been successfully executed for DEL port aln/1/1.

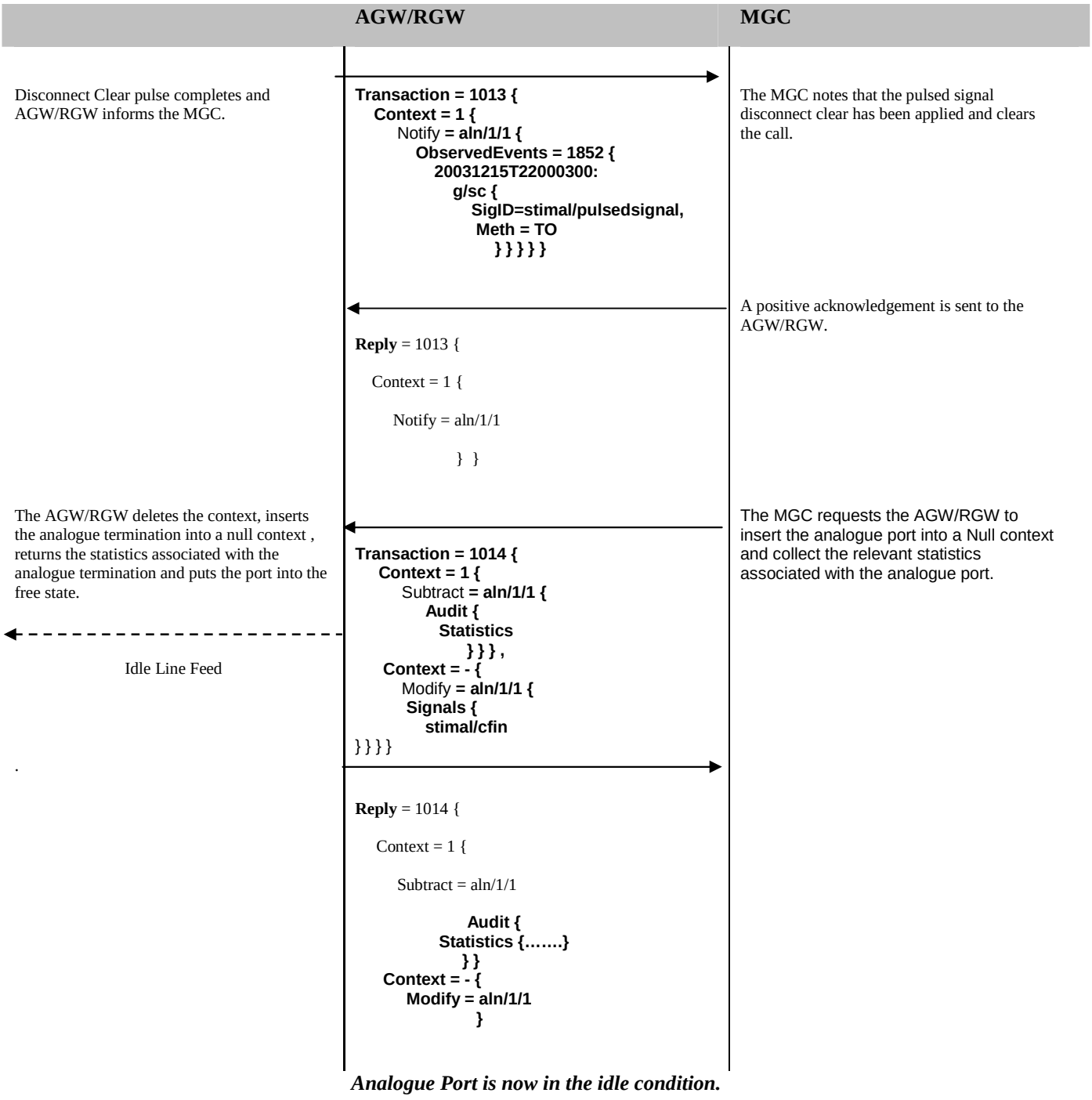



AGW/RGW
MGC
AGW/RGW performs the following:
• Acknowledges receipt of modify commands by sending a positive acknowledgement.
• Applies the "end of call signal". The duration of the end of call is provisioned in the AGW/RGW.
End Of Call
MGC Requests that the AGW/RGW apply the end of call signal to the analogue port and notification of when the signal has been sent.
Transaction = 1003 { Context = 1 { Modify = aln/1/1 { Signals { stimal/pulsedsig { notifyCompletion = {TO}, sig = pulsedReducedBattery } }, Events = 1852 { g/sc, stimal/stedsig, stimal/pulsedsig } } } }
Reply = 1003 { Context = 1 { Modify = aln/1/1 }}
End of Call pulse completes and the AGW/RGW informs the MGC
The MGC notes the completion of the End of Call.
Transaction = 1004 { Context = 1 { Notify = aln/1/1 { ObservedEvents = 1852 { 20031215T22000300: g/sc { SigID=stimal/pulsedsignal, Meth = TO } } } } }
Reply = 1004 { Context = 1 { Notify = aln/1/1 } }
Other Party Cleared Announcement
.
The MGC instructs the AGW/RGW to apply Other Party Cleared announcement to the analogue port and requests notification when the announcement has completed. .
Transaction = 1005 { Context = 1 { Modify = aln/1/1 { Signals { an/apf { an = opcan, noc = 1, notifyCompletion = {TO} }, Events = 1852 { g/sc, stimal/stedsig, stimal/pulsedsig } } } }
Reply = 1005 { Context = 1 { Modify = aln/1/1 }}


AGW/RGW
MGC
Other Party Cleared Announcement completes and the AGW/RGW informs the MGC
Transaction = 1006 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000300:
g/sc {
SigID=an/apf,
Meth = TO
} } } } }
The MGC notes the completion of the Other Party Cleared announcement.
Reply = 1006 {
Context = 1 {
Notify = aln/1/1
} }
The MGC instructs the AGW/RGW to apply Parked Line Feed.
Transaction = 1007 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = reducedBattery
} } } }
A positive acknowledgement is sent and Parked Line Feed is applied
Reply = 1007 {
Context = 1 {
Modify = aln/1/1
} } }
MGC notes the acknowledgement.
Parked Line Feed
MGC starts a Timer apply Howler if On Hook is not received
The Timer to receipt of On-Hook expires and the MGC instructs the AGW/RGW to apply Normal Polarity in preparation for applying Howler.
Transaction = 1008 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = NormalPolarity
} } } }


AGW/RGW
MGC
A positive acknowledgement is sent and Normal Polarity is applied
Reply = 1008 {
Context = 1 {
Modify = aln/1/1
} } }
MGC notes the acknowledgement.
Normal Polarity
MGC starts a Timer apply Howler if On Hook is not received
Transaction = 1009 {
Context = 1 {
Modify = aln/1/1 {
Signals {
xcg/roh }
} } }
The MGC requests the AGW/RGW to apply howler.
The AGW/RGW sends a positive acknowledgement and applies the Howler tone.
Reply = 1009 {
Context = 1 {
Modify = aln/1/1
} }
Howler
The howler timer expires and the line is parked.
Transaction = 1010 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/stedsig {sig = reducedBattery}
}
}
} }
The AGW removes the howler and applies the parked line feed.
Note that the new Signals Descriptor automatically removes the howler tone.
The MGC requests AGW to apply "Parked line feed".
A positive acknowledgement is sent and parked line feed is applied.
Reply = 1010 {
Context = - {
Modify = aln/1/1
}}
MGC notes the acknowledgement.
Parked Line Feed


AGW/RGW
MGC
On-Hook
Transaction = 1011 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } }
On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook was previously armed as part of stimal. Howler is also removed.
MGC acknowledges the notification of the on-hook, then requests the AGW/RGW to apply the disconnect clear.
AGW/RGW notes that MGC has received the On-hook.
Reply = 1011 {
Context = 1 {
Notify = aln/1/1 } }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Transaction = 1012 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 1852 {
g/sc,
stimal/stedsig,
stimal/pulsedsig
} } } }
Disconnect Clear
Reply = 1012 {
Context = 1 {
Modify = aln/1/1 }}

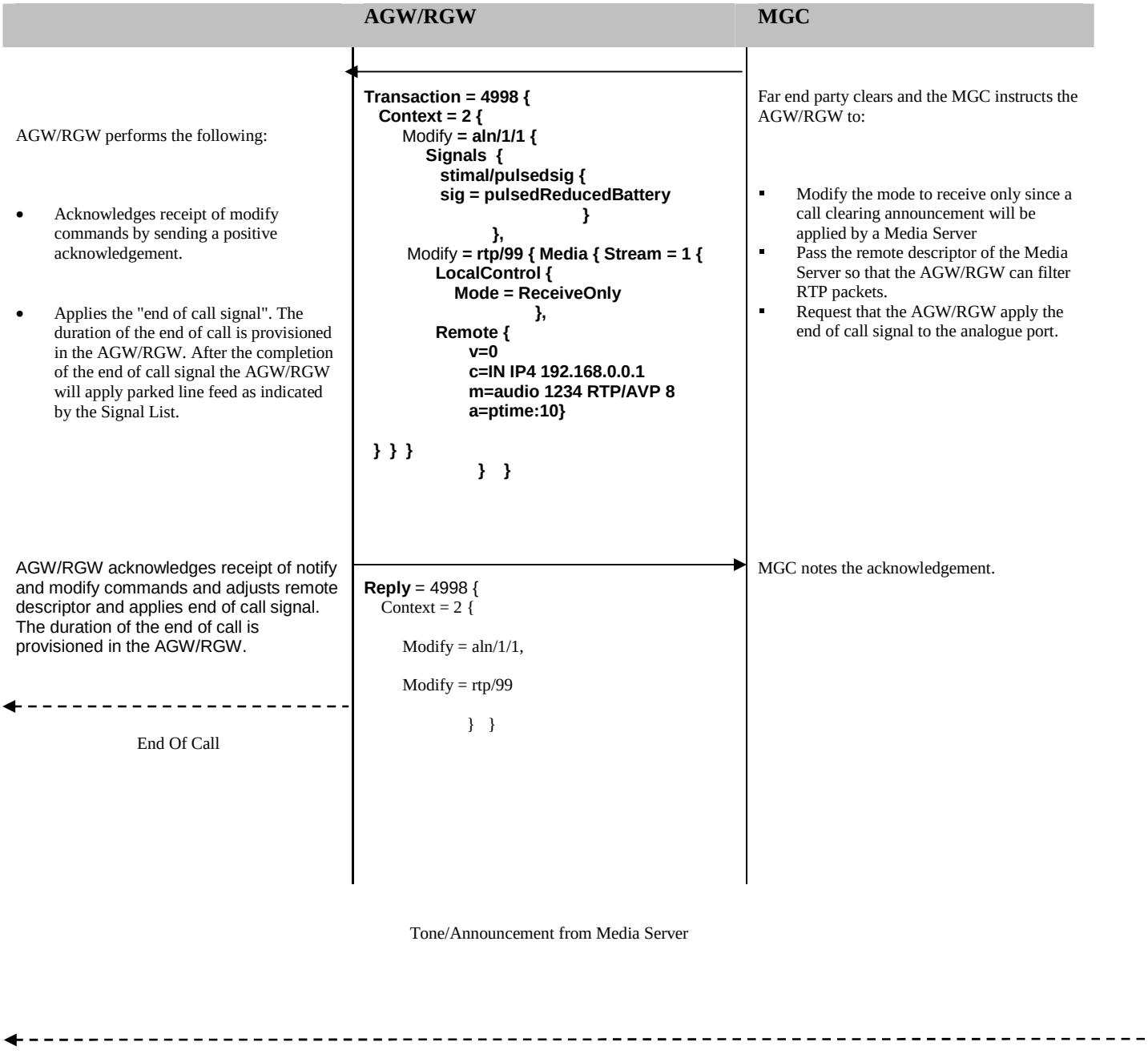


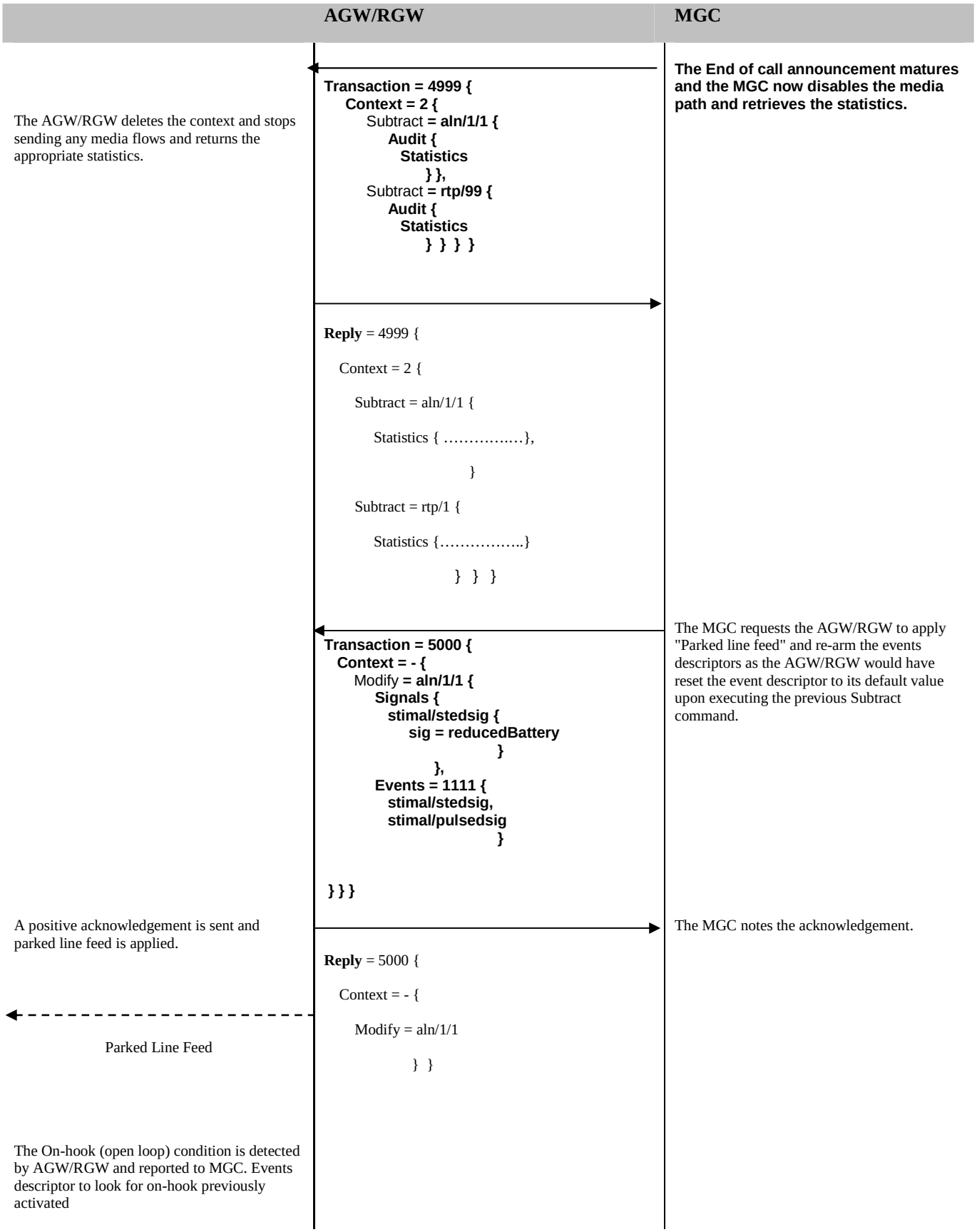
Analogue Port is now in the idle condition.

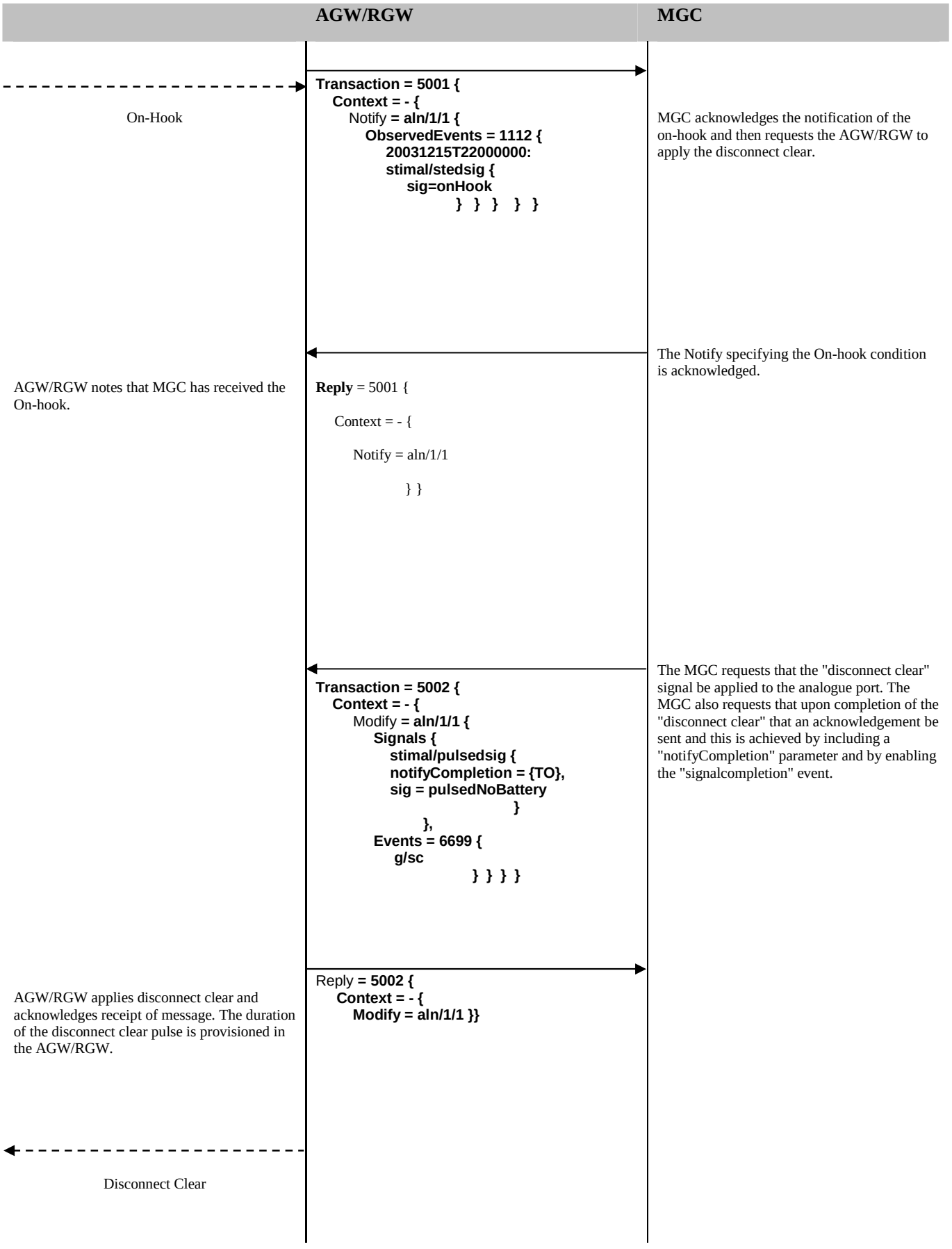
5.3.4 DEL - Calling Party Clears during active call; end of call announcement applied by Media Server - B end

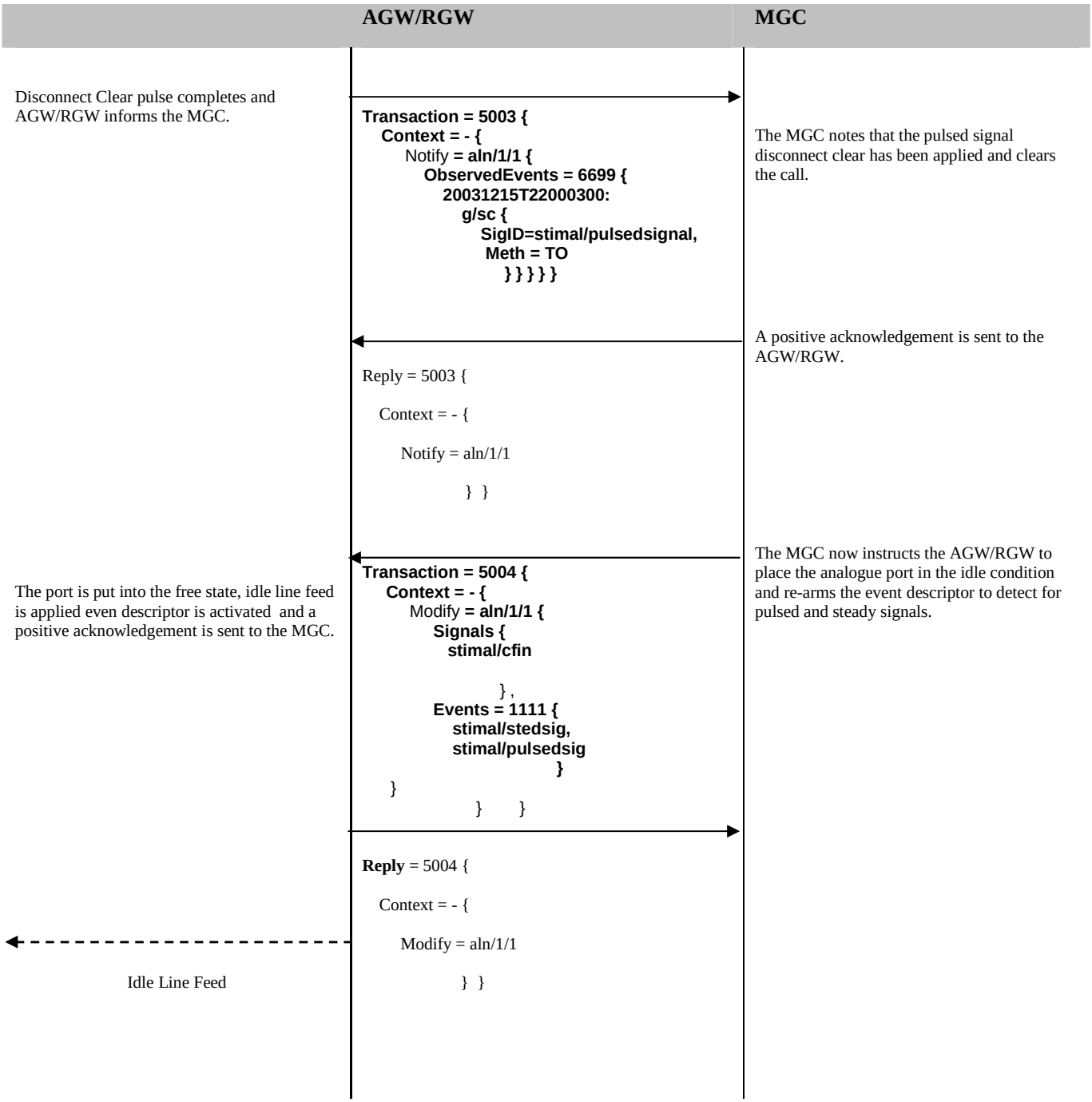
5.3.4.1 Early Subtract of Analogue Termination from a Context

Pre-conditions: Sequence 5.1.3.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
The End of call announcement matures and the MGC now disables the media path and retrieves the statistics.
The AGW/RGW deletes the context and stops sending any media flows and returns the appropriate statistics.
Transaction = 4999 {
Context = 2 {
Subtract = aln/1/1 {
Audit {
Statistics
} },
Subtract = rtp/99 {
Audit {
Statistics
} } } }
Reply = 4999 {
Context = 2 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/1 {
Statistics {……..}
} } }
The MGC requests the AGW/RGW to apply "Parked line feed" and re-arm the events descriptors as the AGW/RGW would have reset the event descriptor to its default value upon executing the previous Subtract command.
Transaction = 5000 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = reducedBattery
}
},
Events = 1111 {
stimal/stedsig,
stimal/pulsedsig
}
} } }
A positive acknowledgement is sent and parked line feed is applied.
The MGC notes the acknowledgement.
Reply = 5000 {
Context = - {
Modify = aln/1/1
} }
Parked Line Feed
The On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated

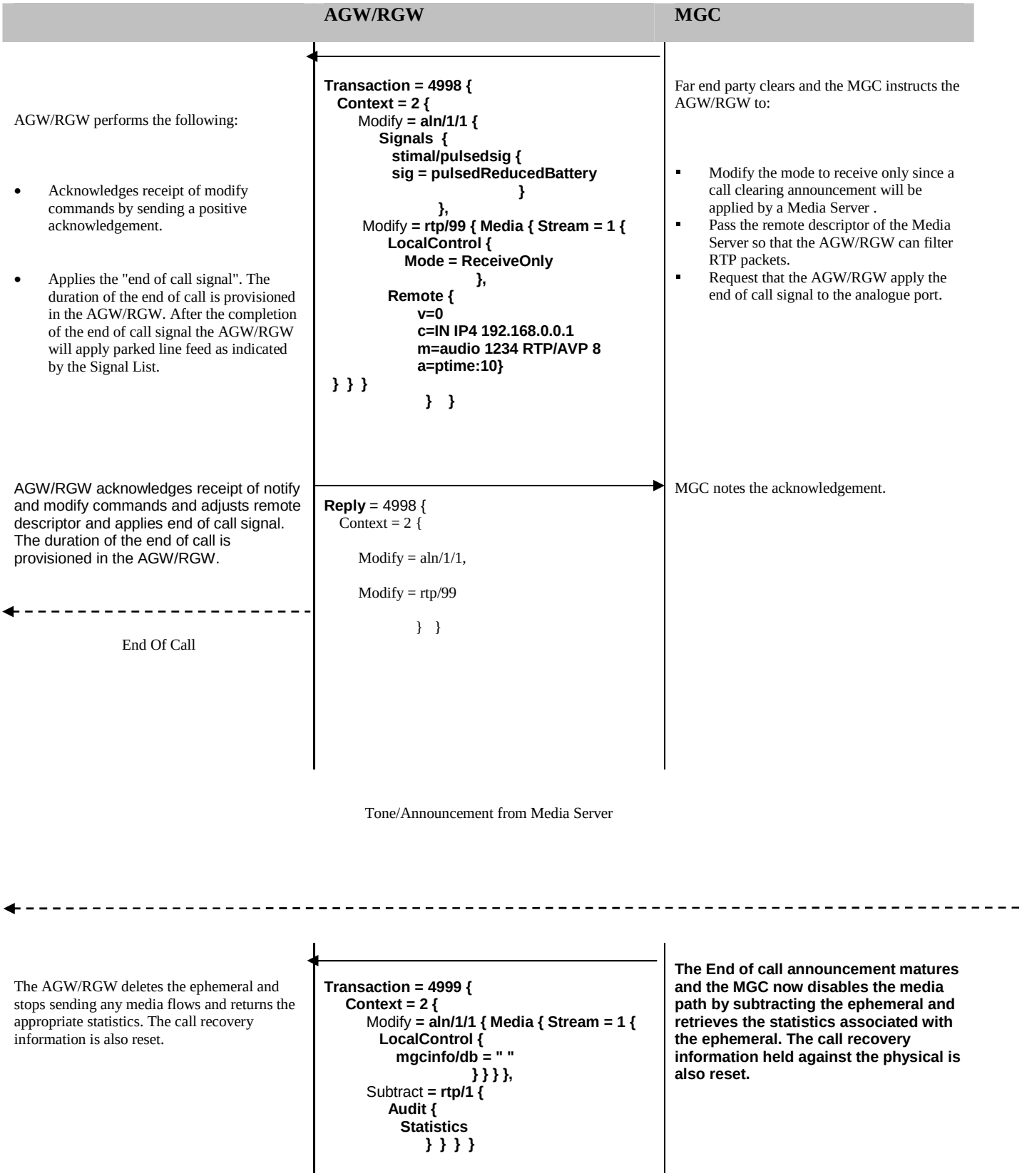

AGW/RGW
MGC
On-Hook
Transaction = 5001 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } } }
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.
The Notify specifying the On-hook condition is acknowledged.
AGW/RGW notes that MGC has received the On-hook.
Reply = 5001 {
Context = - {
Notify = aln/1/1
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 5002 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
Reply = 5002 {
Context = - {
Modify = aln/1/1 }}
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Disconnect Clear

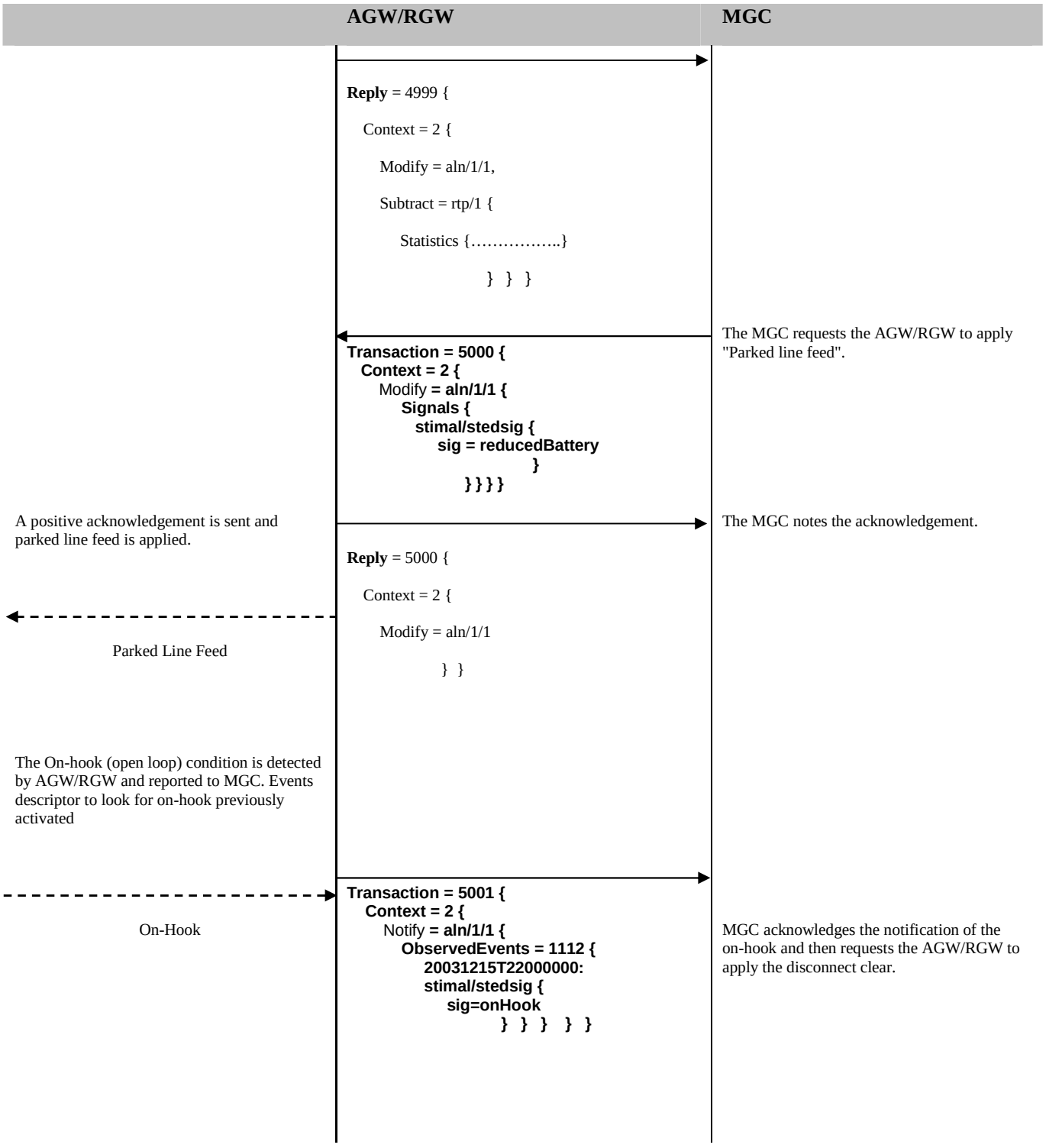


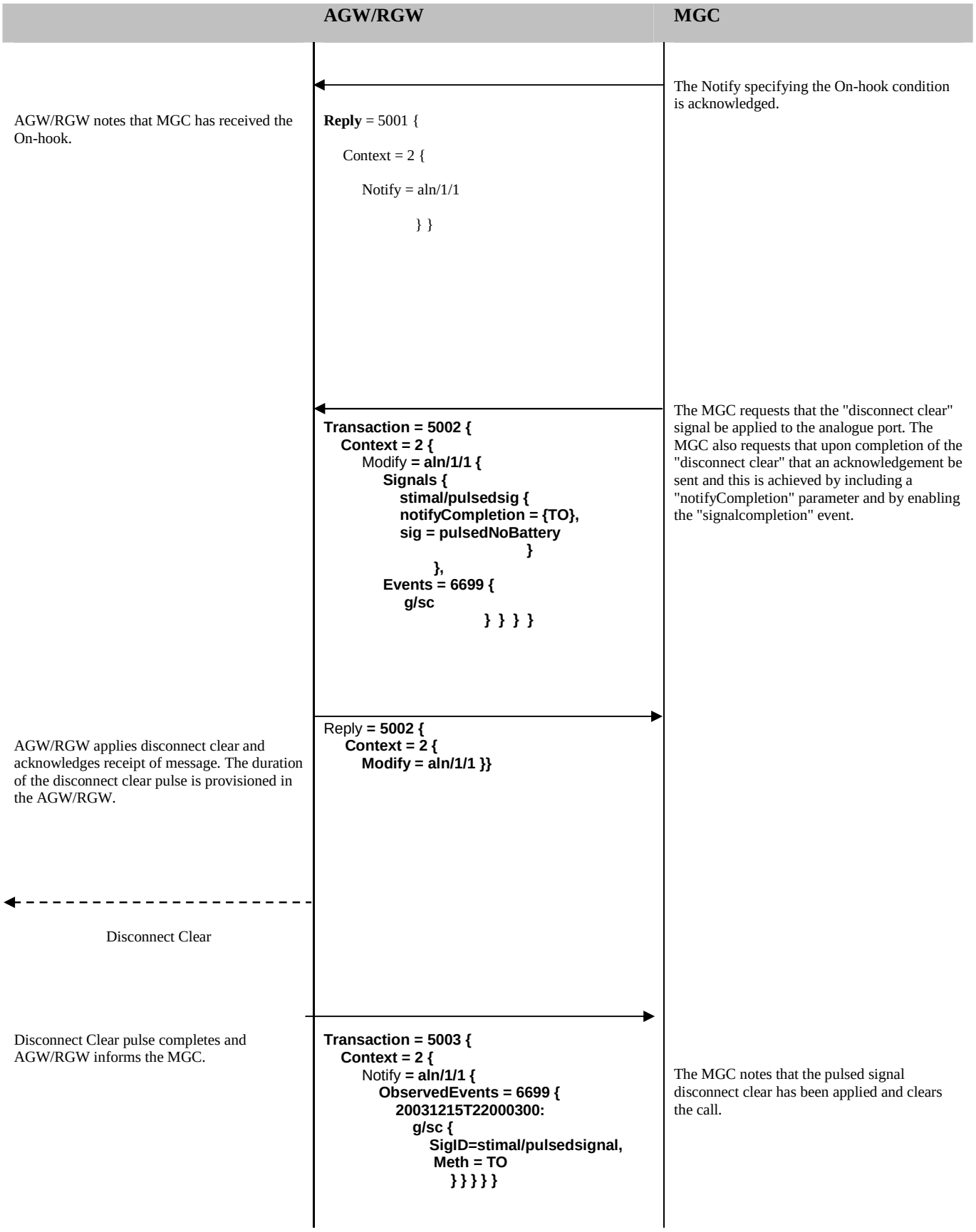
Analogue Port is now in the idle condition.

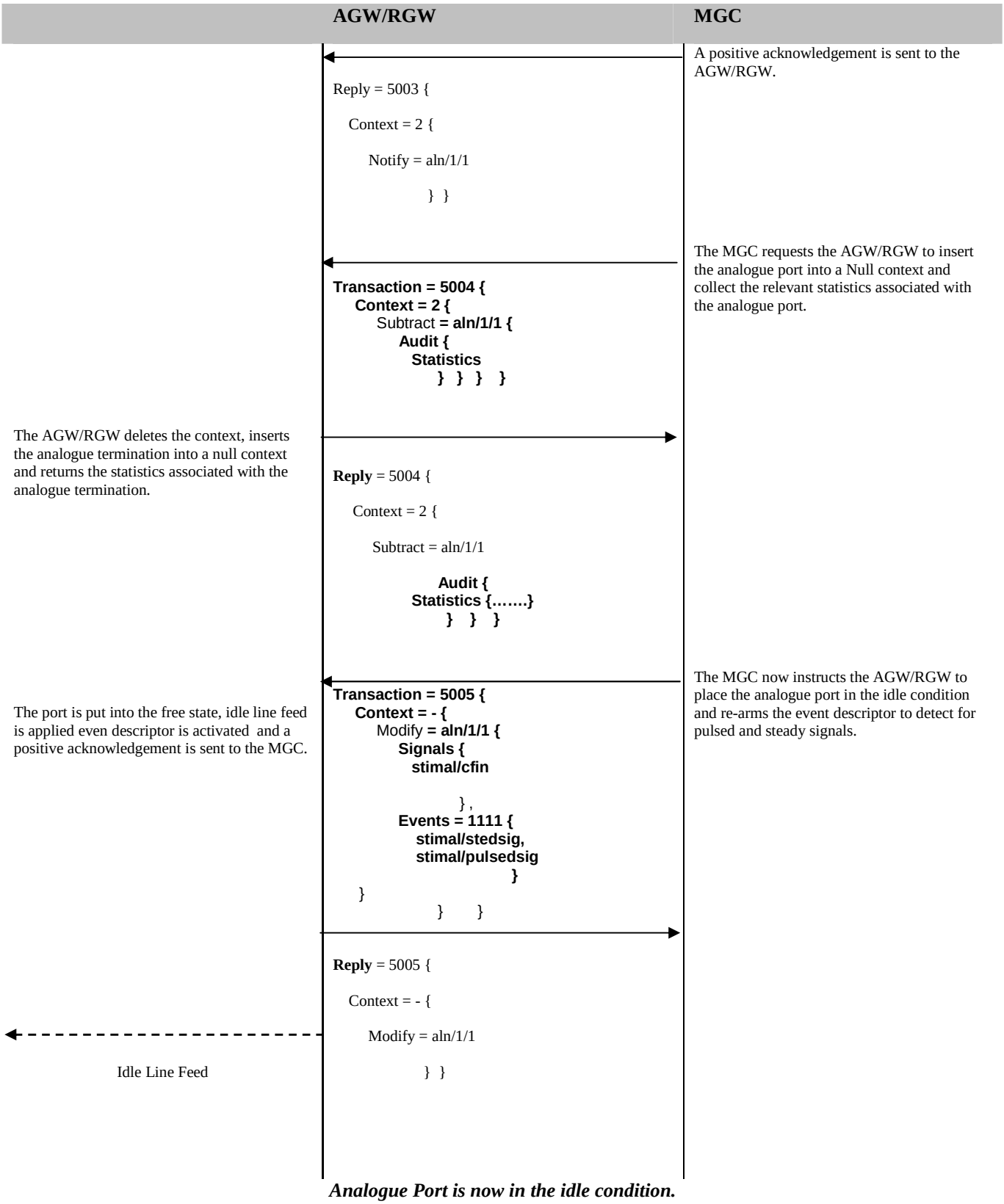
5.3.4.2 Late Subtract of Analogue Termination from a Context

Pre-conditions: Sequence 5.1.3.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
Reply = 4999 {
Context = 2 {
Modify = aln/1/1,
Subtract = rtp/1 {
Statistics {……..}
} } }
The MGC requests the AGW/RGW to apply "Parked line feed".
Transaction = 5000 {
Context = 2 {
Modify = aln/1/1 {
Signals {
stimal/stedsig {
sig = reducedBattery
}
} } } }
A positive acknowledgement is sent and parked line feed is applied.
The MGC notes the acknowledgement.
Reply = 5000 {
Context = 2 {
Modify = aln/1/1
} }
Parked Line Feed
The On-hook (open loop) condition is detected by AGW/RGW and reported to MGC. Events descriptor to look for on-hook previously activated
Transaction = 5001 {
Context = 2 {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } } }
On-Hook
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.

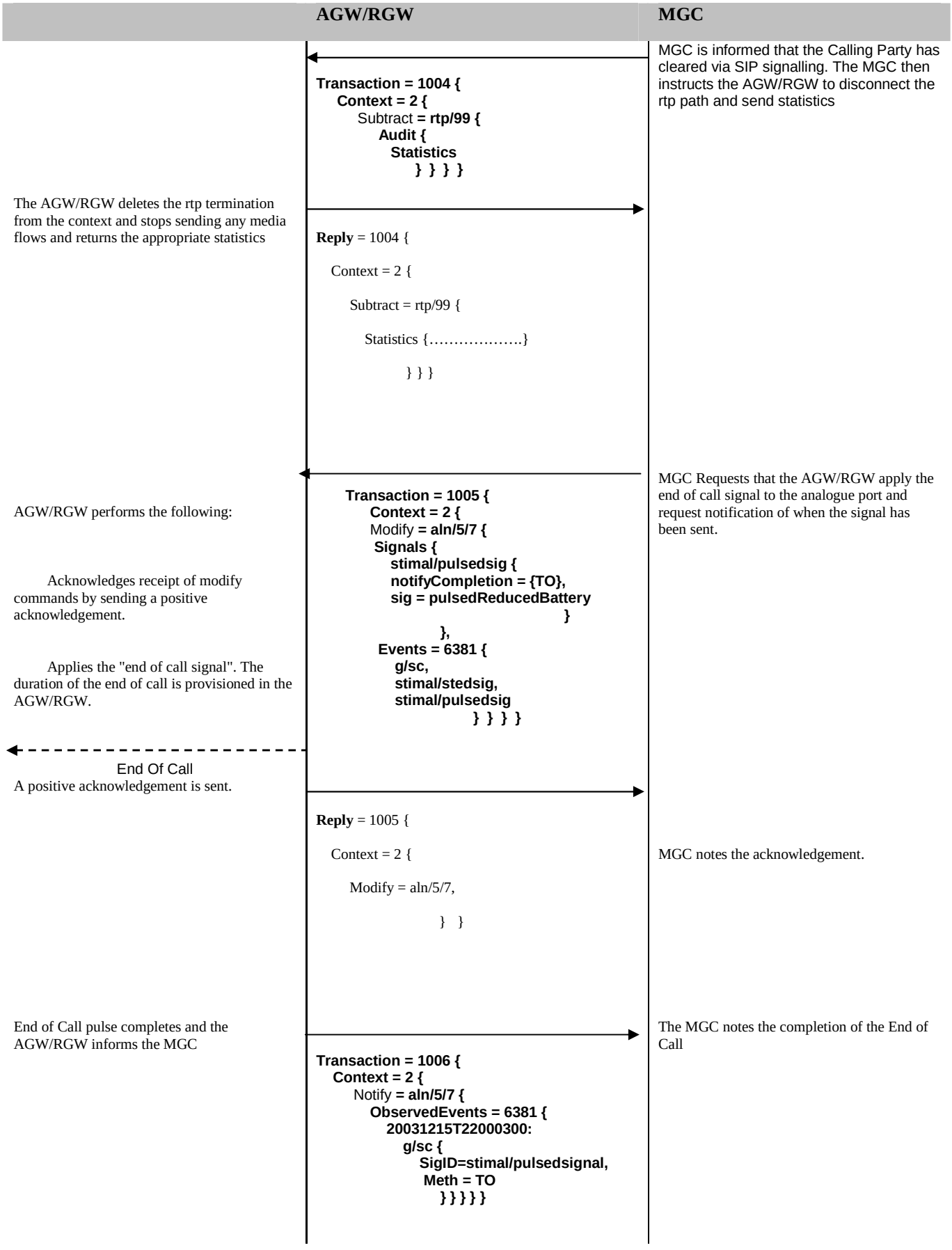

AGW/RGW
MGC
The Notify specifying the On-hook condition is acknowledged.
AGW/RGW notes that MGC has received the On-hook.
Reply = 5001 {
Context = 2 {
Notify = aln/1/1
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 5002 {
Context = 2 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Reply = 5002 {
Context = 2 {
Modify = aln/1/1 }}
Disconnect Clear
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 5003 {
Context = 2 {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.

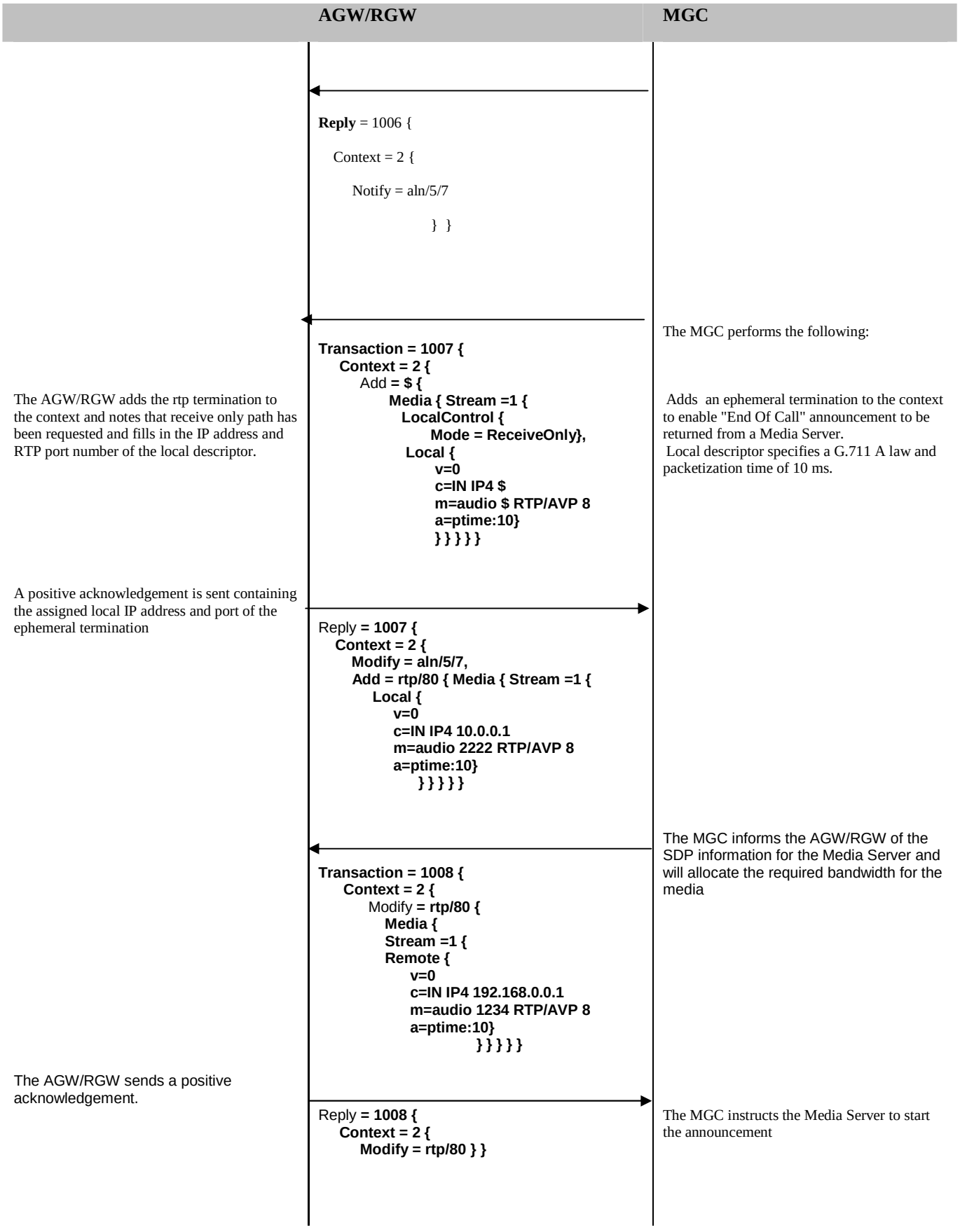


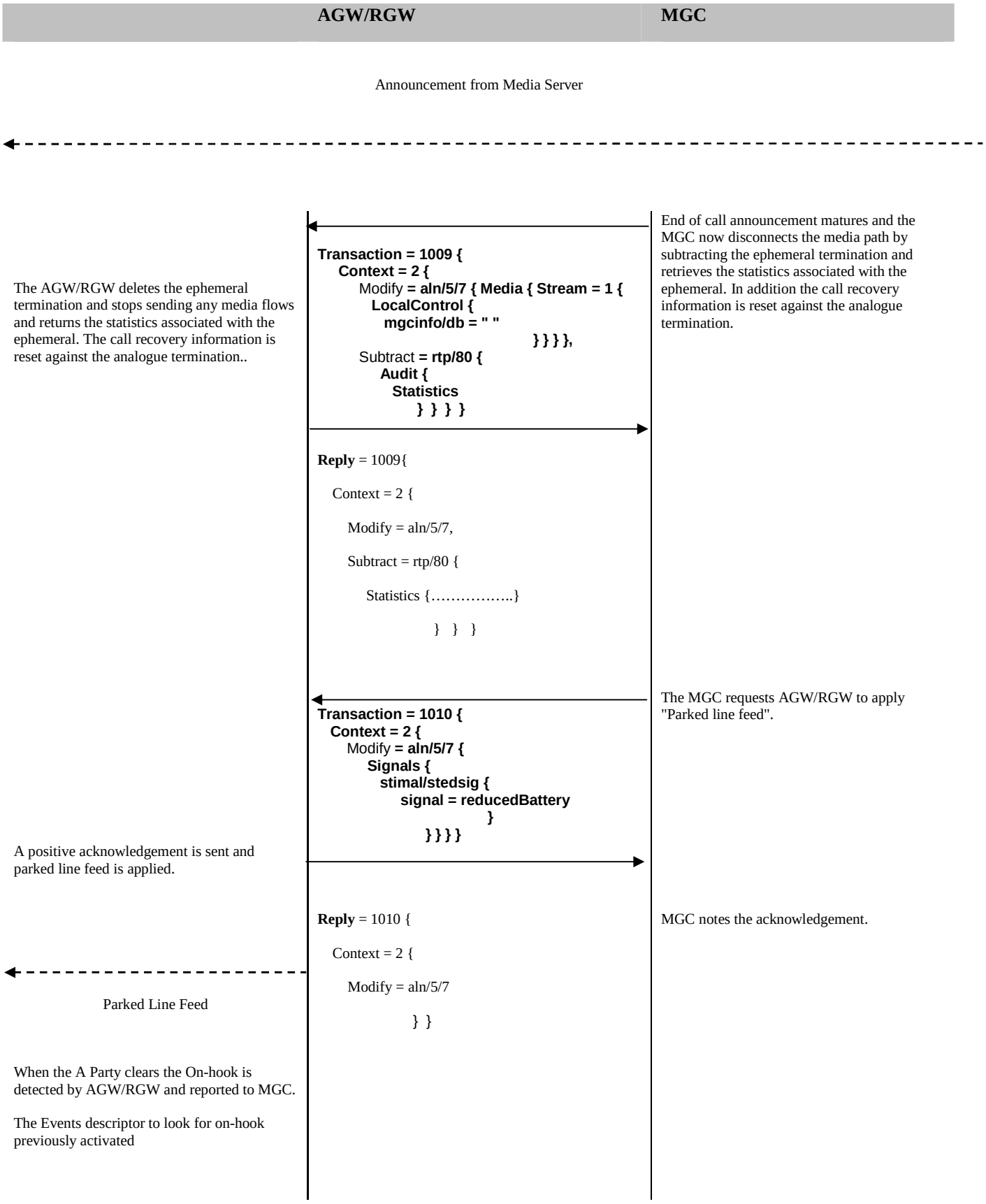
Analogue Port is now in the idle condition.

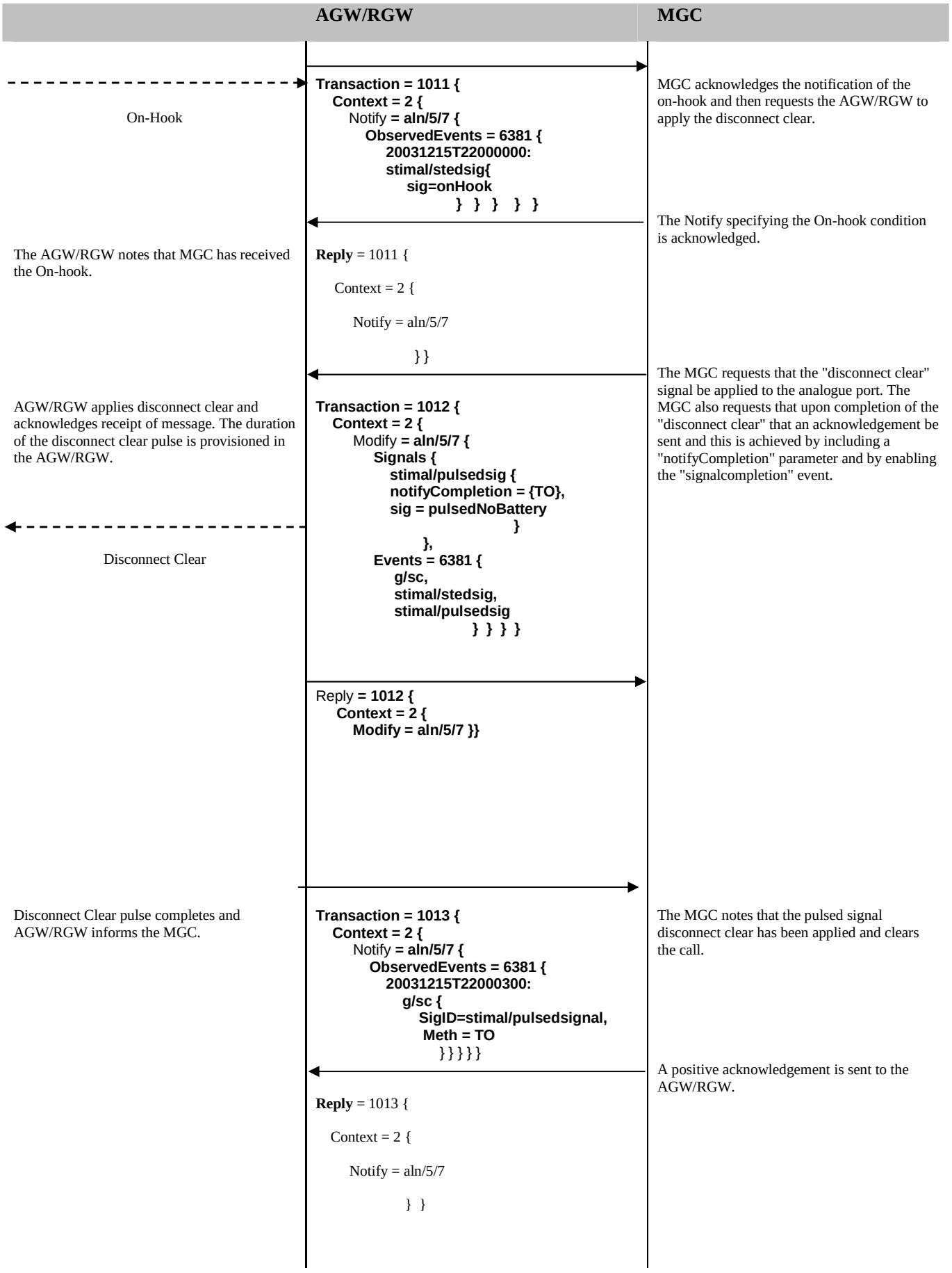
5.3.4.3 Late Subtract of Analogue Termination from a Context Alternative Flow

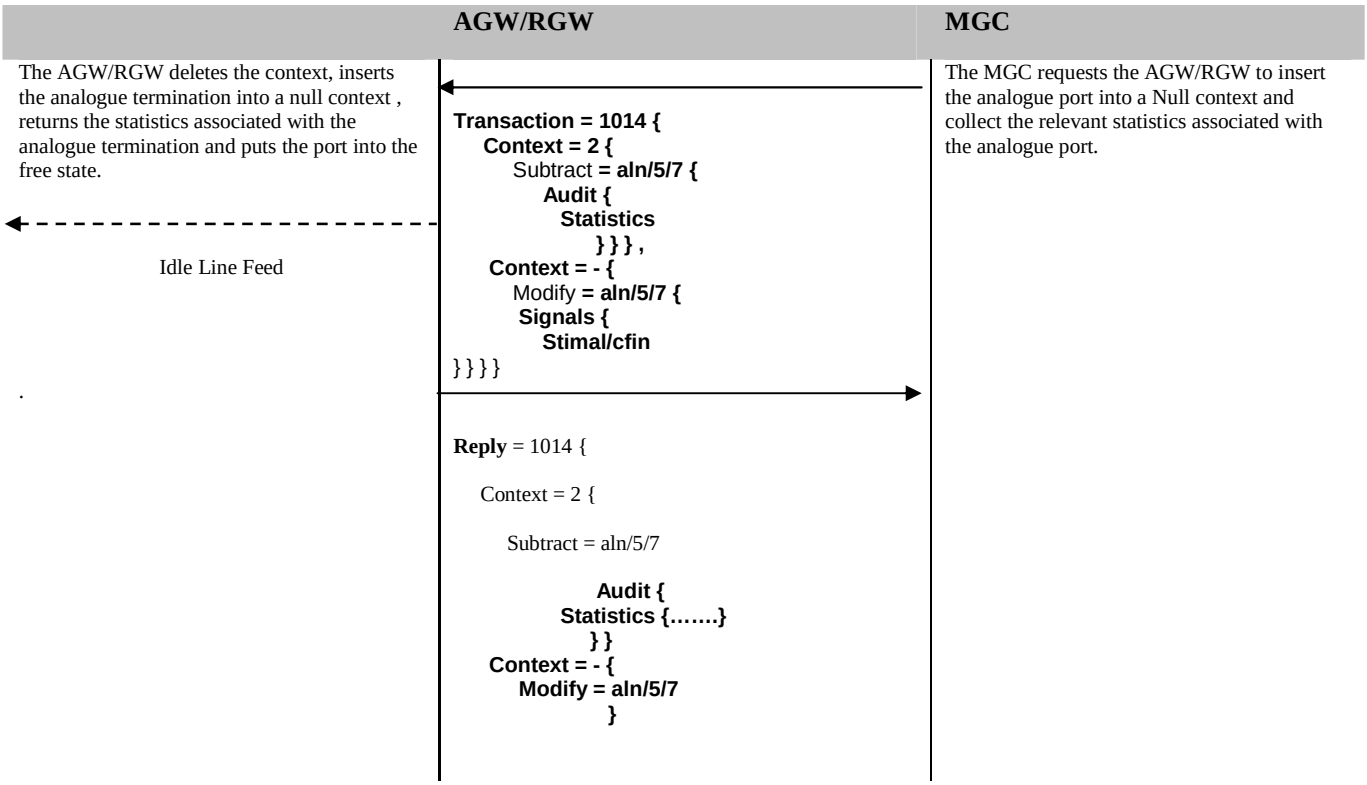
Pre-conditions: Sequence 5.1.3.1 has been successfully executed for DEL port aln/5/7.




AGW/RGW
MGC
Reply = 1006 {
Context = 2 {
Notify = aln/5/7
} }
The MGC performs the following:
Transaction = 1007 {
Context = 2 {
Add = $ {
Media { Stream =1 {
LocalControl {
Mode = ReceiveOnly},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime:10}
} } } } }
The AGW/RGW adds the rtp termination to the context and notes that receive only path has been requested and fills in the IP address and RTP port number of the local descriptor.
Adds an ephemeral termination to the context to enable "End Of Call" announcement to be returned from a Media Server.
Local descriptor specifies a G.711 A law and packetization time of 10 ms.
A positive acknowledgement is sent containing the assigned local IP address and port of the ephemeral termination
Reply = 1007 {
Context = 2 {
Modify = aln/5/7,
Add = rtp/80 { Media { Stream =1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 2222 RTP/AVP 8
a=ptime:10}
} } } } }
The MGC informs the AGW/RGW of the SDP information for the Media Server and will allocate the required bandwidth for the media
Transaction = 1008 {
Context = 2 {
Modify = rtp/80 {
Media {
Stream =1 {
Remote {
v=0
c=IN IP4 192.168.0.0.1
m=audio 1234 RTP/AVP 8
a=ptime:10}
} } } } }
The AGW/RGW sends a positive acknowledgement.
Reply = 1008 {
Context = 2 {
Modify = rtp/80 } }
The MGC instructs the Media Server to start the announcement


AGW/RGW
MGC
Announcement from Media Server
End of call announcement matures and the MGC now disconnects the media path by subtracting the ephemeral termination and retrieves the statistics associated with the ephemeral. In addition the call recovery information is reset against the analogue termination.
The AGW/RGW deletes the ephemeral termination and stops sending any media flows and returns the statistics associated with the ephemeral. The call recovery information is reset against the analogue termination..
Transaction = 1009 {
Context = 2 {
Modify = aln/5/7 { Media { Stream = 1 {
LocalControl {
mgcinfo/db = " "
} } } },
Subtract = rtp/80 {
Audit {
Statistics
} } } }
Reply = 1009{
Context = 2 {
Modify = aln/5/7,
Subtract = rtp/80 {
Statistics {……..}
} } }
The MGC requests AGW/RGW to apply "Parked line feed".
Transaction = 1010 {
Context = 2 {
Modify = aln/5/7 {
Signals {
stimal/stedsig {
signal = reducedBattery
}
} } } }
A positive acknowledgement is sent and parked line feed is applied.
Reply = 1010 {
Context = 2 {
Modify = aln/5/7
} }
MGC notes the acknowledgement.
Parked Line Feed
When the A Party clears the On-hook is detected by AGW/RGW and reported to MGC.
The Events descriptor to look for on-hook previously activated


AGW/RGW
MGC
On-Hook
Transaction = 1011 {
Context = 2 {
Notify = aln/5/7 {
ObservedEvents = 6381 {
20031215T22000000:
stimal/stedsig{
sig=onHook
} } } } }
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.
The Notify specifying the On-hook condition is acknowledged.
The AGW/RGW notes that MGC has received the On-hook.
Reply = 1011 {
Context = 2 {
Notify = aln/5/7
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Transaction = 1012 {
Context = 2 {
Modify = aln/5/7 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6381 {
g/sc,
stimal/stedsig,
stimal/pulsedsig
} } } }
Disconnect Clear
Reply = 1012 {
Context = 2 {
Modify = aln/5/7 }}
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 1013 {
Context = 2 {
Notify = aln/5/7 {
ObservedEvents = 6381 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.
A positive acknowledgement is sent to the AGW/RGW.
Reply = 1013 {
Context = 2 {
Notify = aln/5/7
} }

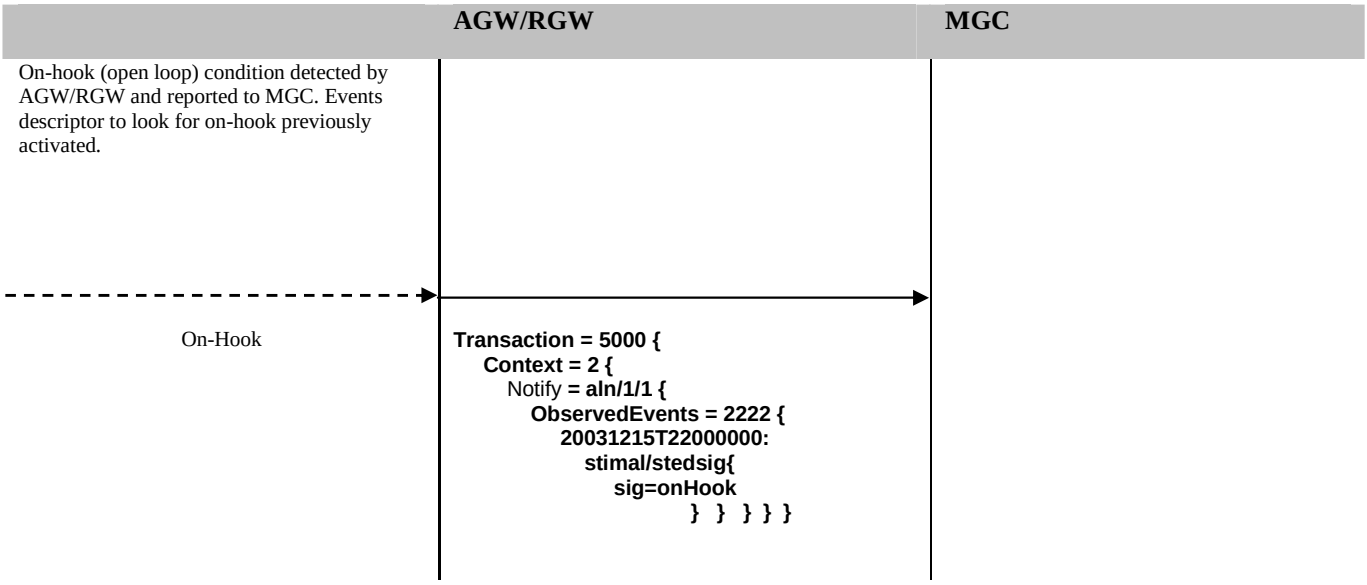


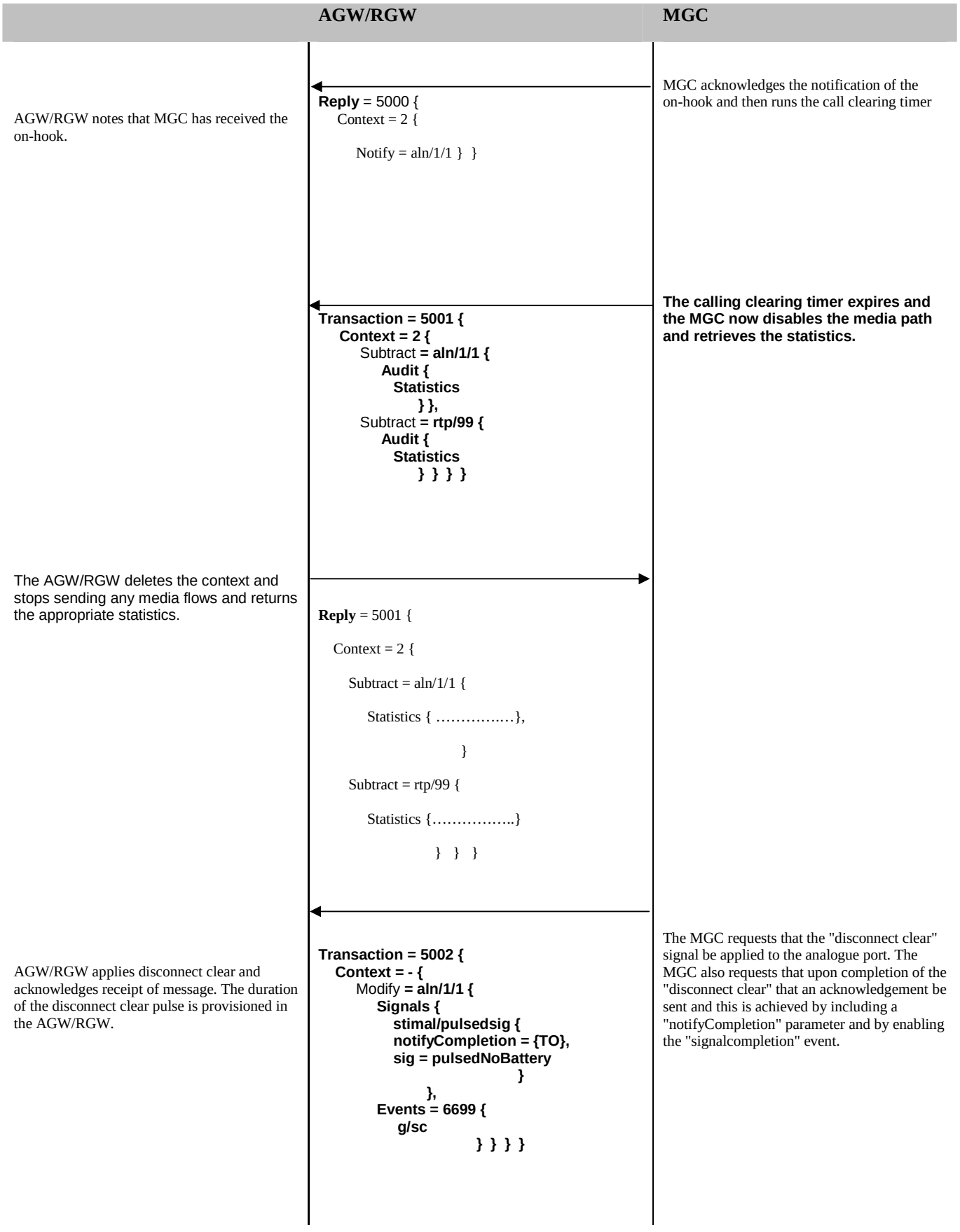
Analogue Port is now in the idle condition.

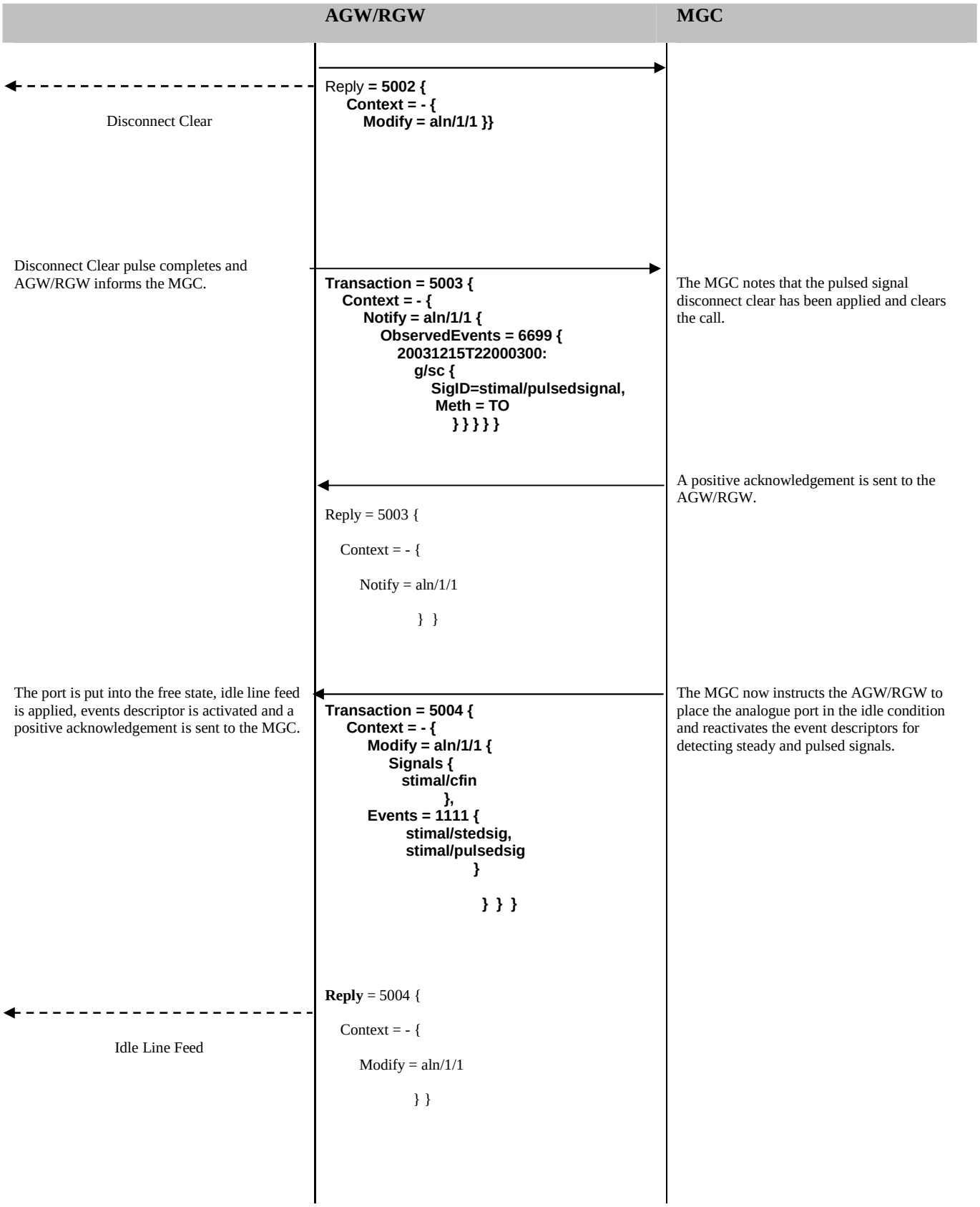
5.3.5 DEL - Called Party Clears during active call - B end

5.3.5.1 Early Subtract of Analogue Termination from a Context

Pre-conditions: Sequence 5.1.3 has been successfully executed for DEL port aln/1/1.



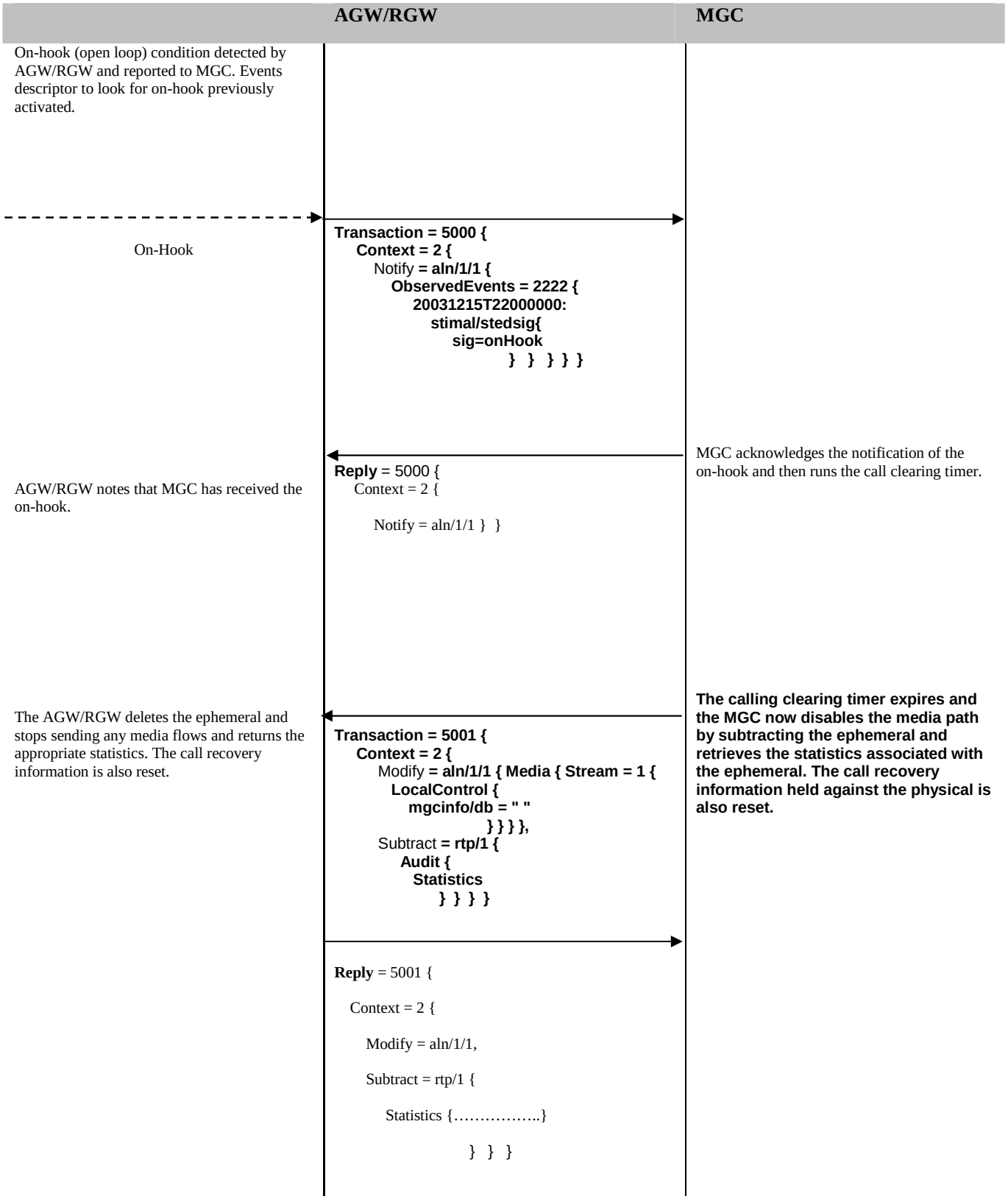

AGW/RGW
MGC
MGC acknowledges the notification of the on-hook and then runs the call clearing timer
AGW/RGW notes that MGC has received the on-hook.
Reply = 5000 {
Context = 2 {
Notify = aln/1/1 } }
The calling clearing timer expires and the MGC now disables the media path and retrieves the statistics.
Transaction = 5001 {
Context = 2 {
Subtract = aln/1/1 {
Audit {
Statistics
} },
Subtract = rtp/99 {
Audit {
Statistics
} } } }
The AGW/RGW deletes the context and stops sending any media flows and returns the appropriate statistics.
Reply = 5001 {
Context = 2 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/99 {
Statistics {……..}
} } }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Transaction = 5002 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }

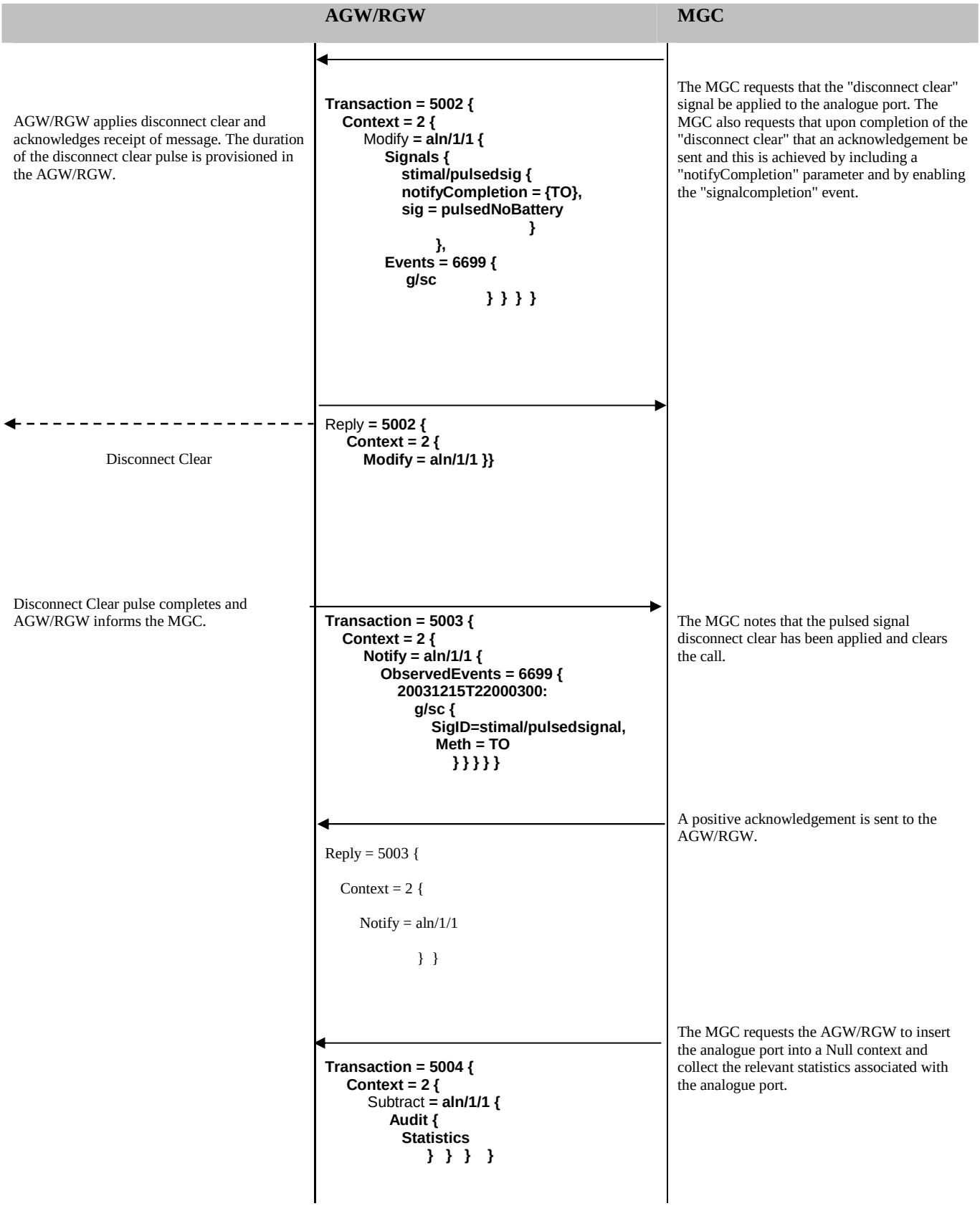


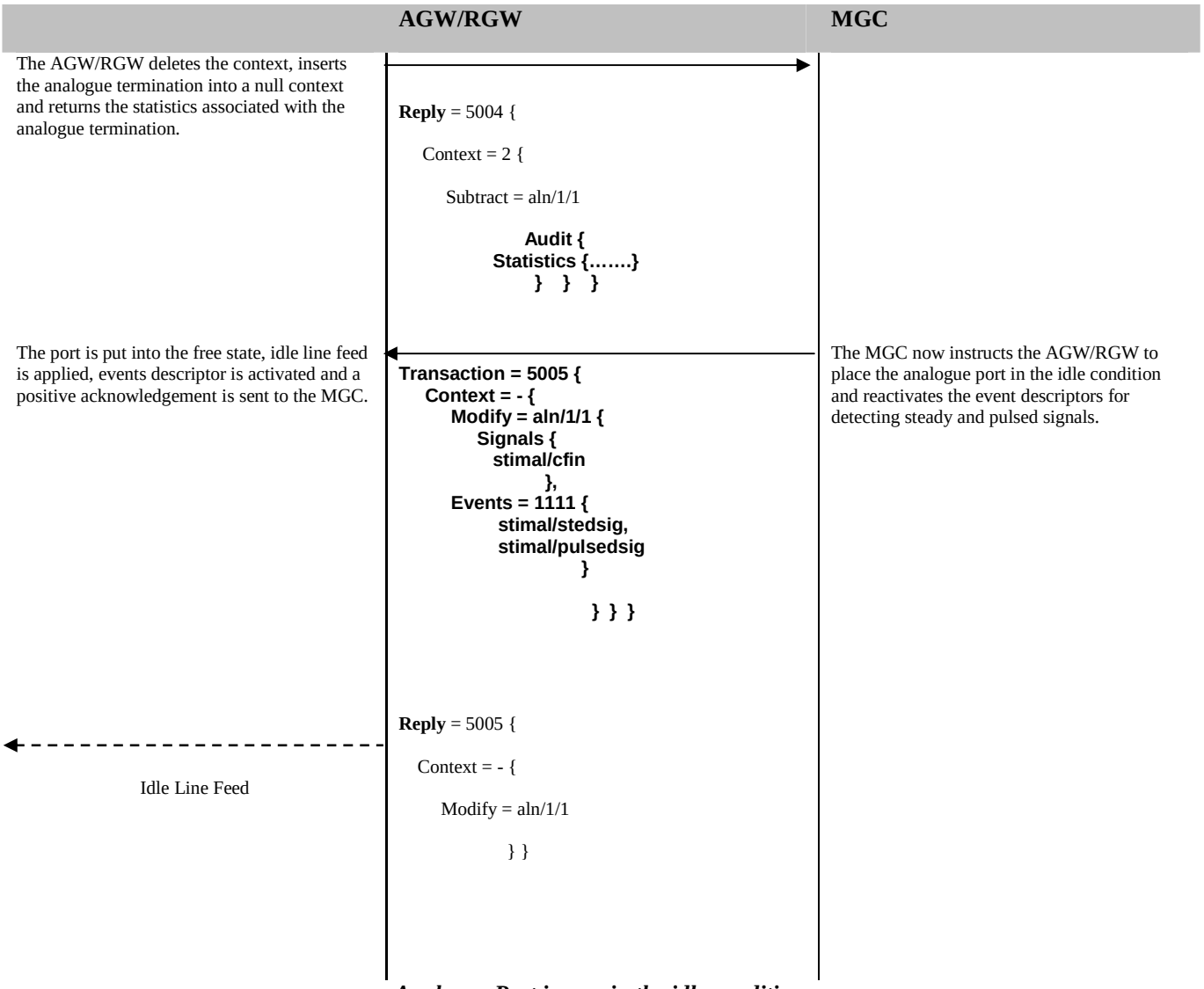
Analogue Port is now in the idle condition.

5.3.5.2 Late Subtract of Analogue Termination from a Context

Pre-conditions: Sequence 5.1.3 has been successfully executed for DEL port aln/1/1.



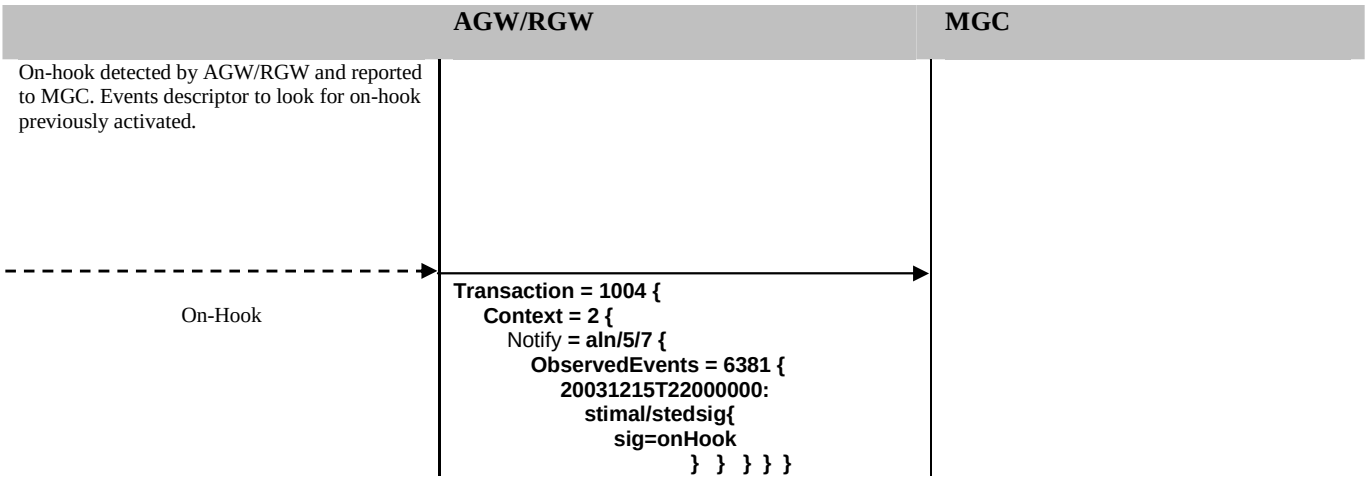

AGW/RGW
MGC
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 5002 {
Context = 2 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Reply = 5002 {
Context = 2 {
Modify = aln/1/1 }}
Disconnect Clear
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 5003 {
Context = 2 {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.
A positive acknowledgement is sent to the AGW/RGW.
Reply = 5003 {
Context = 2 {
Notify = aln/1/1
} }
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the relevant statistics associated with the analogue port.
Transaction = 5004 {
Context = 2 {
Subtract = aln/1/1 {
Audit {
Statistics
} } } }

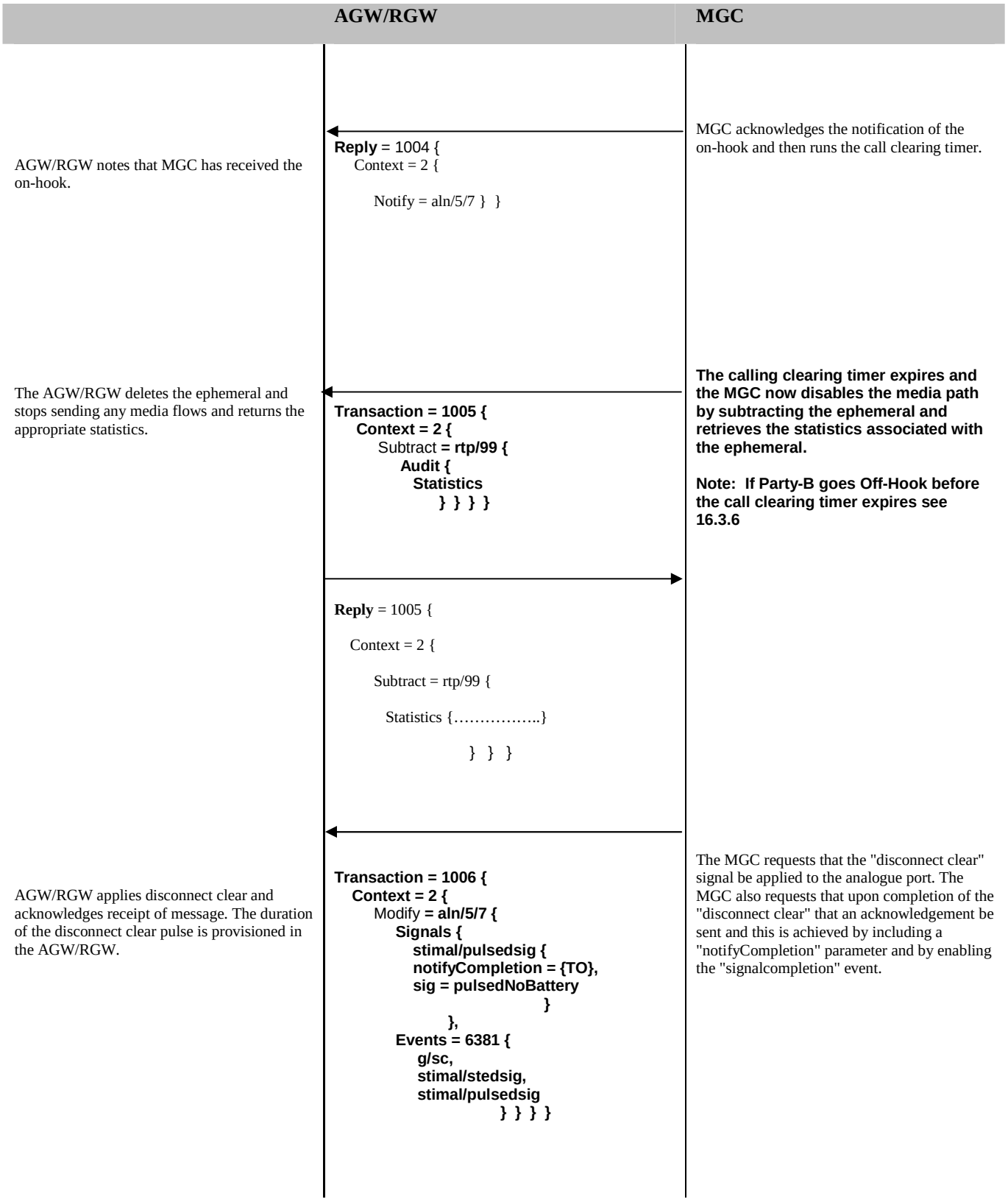


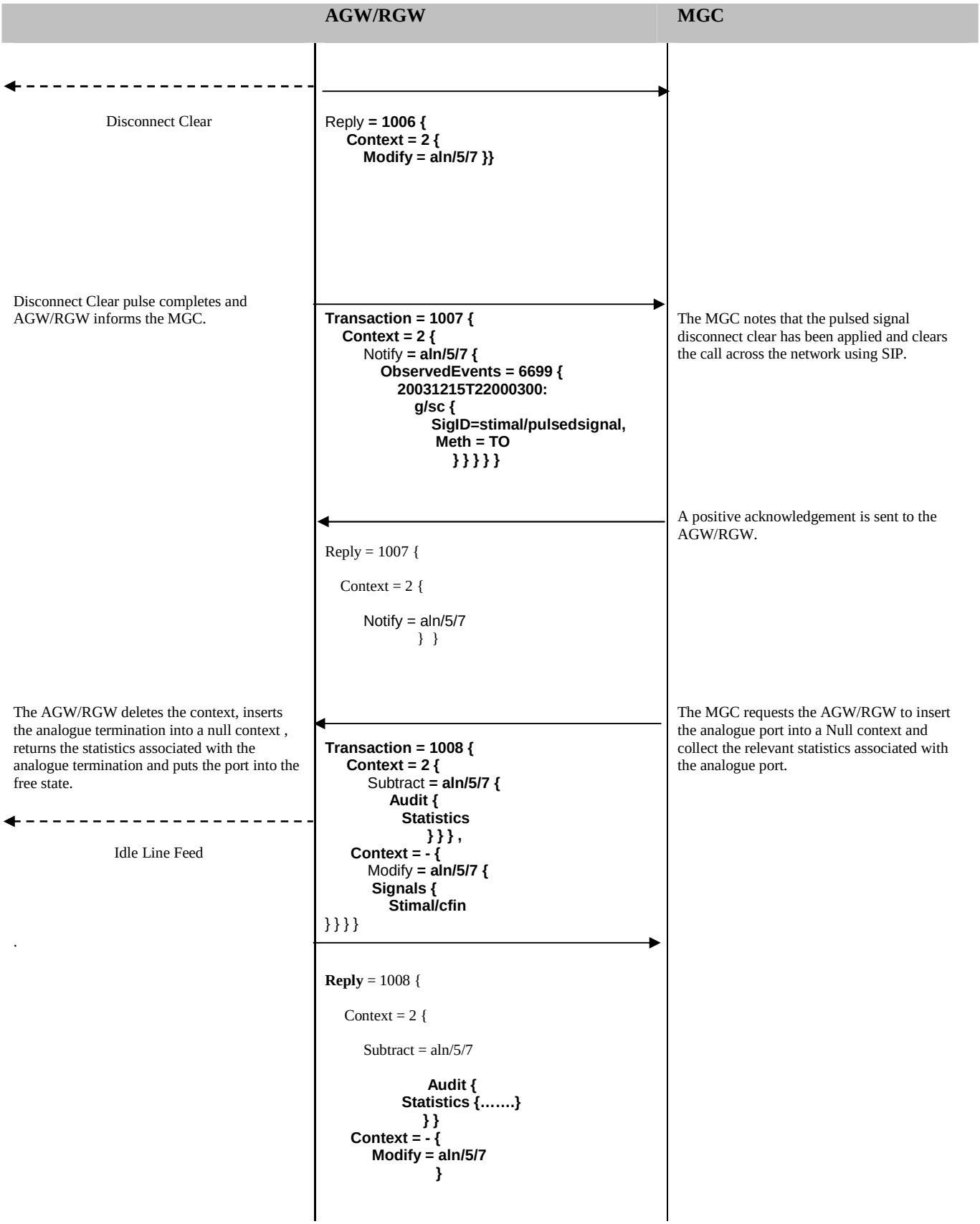
Analogue Port is now in the idle condition.

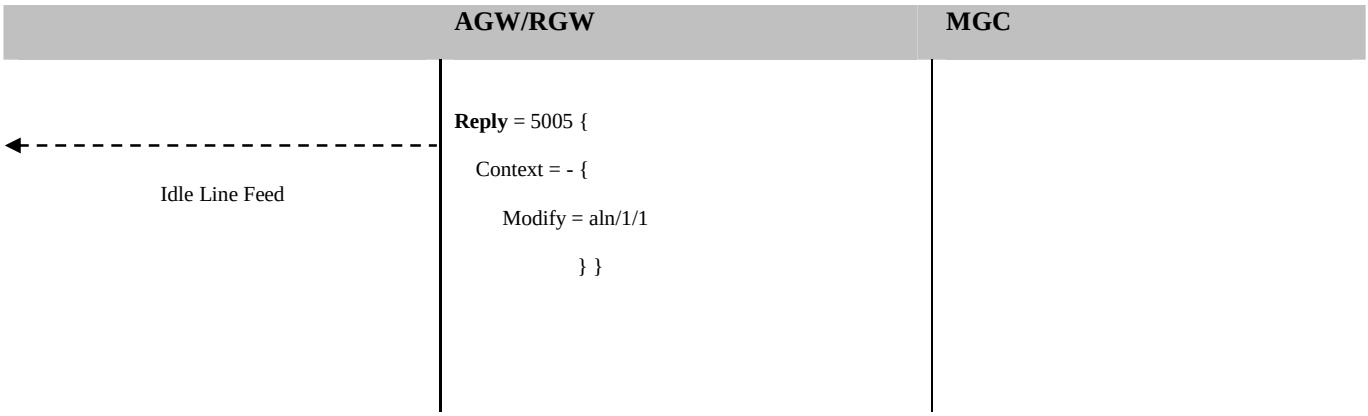
5.3.5.3 Late Subtract of Analogue Termination from a Context Alternative Flow

Pre-conditions: Sequence 5.1.3.1 has been successfully executed for DEL port aln/5/7.




AGW/RGW
MGC
MGC acknowledges the notification of the on-hook and then runs the call clearing timer.
AGW/RGW notes that MGC has received the on-hook.
Reply = 1004 {
Context = 2 {
Notify = aln/5/7 } }
The AGW/RGW deletes the ephemeral and stops sending any media flows and returns the appropriate statistics.
The calling clearing timer expires and the MGC now disables the media path by subtracting the ephemeral and retrieves the statistics associated with the ephemeral.
Note: If Party-B goes Off-Hook before the call clearing timer expires see 16.3.6
Transaction = 1005 {
Context = 2 {
Subtract = rtp/99 {
Audit {
Statistics
} } } }
Reply = 1005 {
Context = 2 {
Subtract = rtp/99 {
Statistics {……..}
} } }
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 1006 {
Context = 2 {
Modify = aln/5/7 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6381 {
g/sc,
stimal/stedsig,
stimal/pulsedsig
} } } }

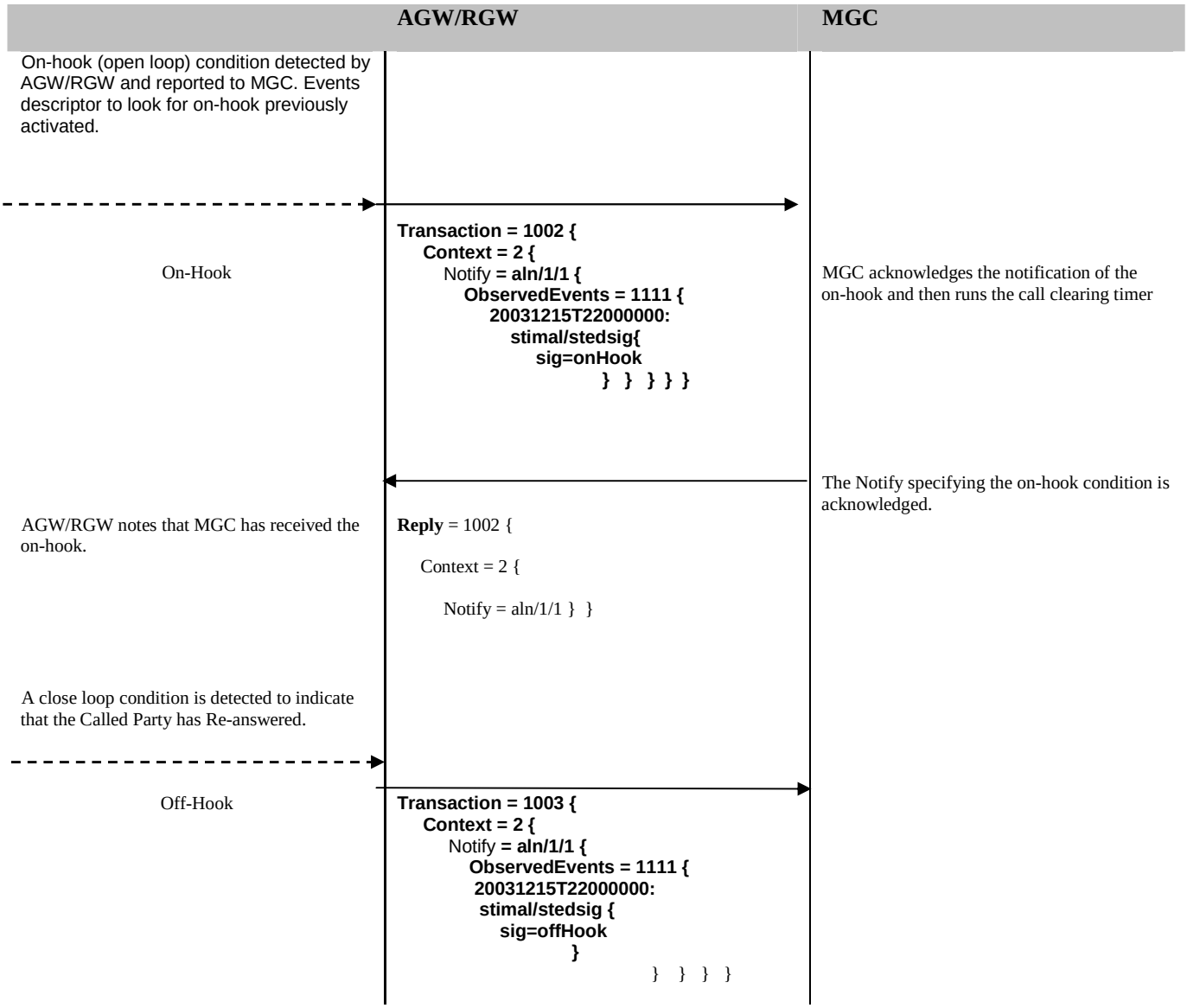

AGW/RGW
MGC
Disconnect Clear
Reply = 1006 {
Context = 2 {
Modify = aln/5/7 }}
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 1007 {
Context = 2 {
Notify = aln/5/7 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call across the network using SIP.
A positive acknowledgement is sent to the AGW/RGW.
Reply = 1007 {
Context = 2 {
Notify = aln/5/7
} }
The AGW/RGW deletes the context, inserts the analogue termination into a null context , returns the statistics associated with the analogue termination and puts the port into the free state.
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the relevant statistics associated with the analogue port.
Transaction = 1008 {
Context = 2 {
Subtract = aln/5/7 {
Audit {
Statistics
} } } ,
Context = - {
Modify = aln/5/7 {
Signals {
Stimal/cfin
} } } }
Idle Line Feed
.
Reply = 1008 {
Context = 2 {
Subtract = aln/5/7
Audit {
Statistics {…….}
} }
Context = - {
Modify = aln/5/7
}

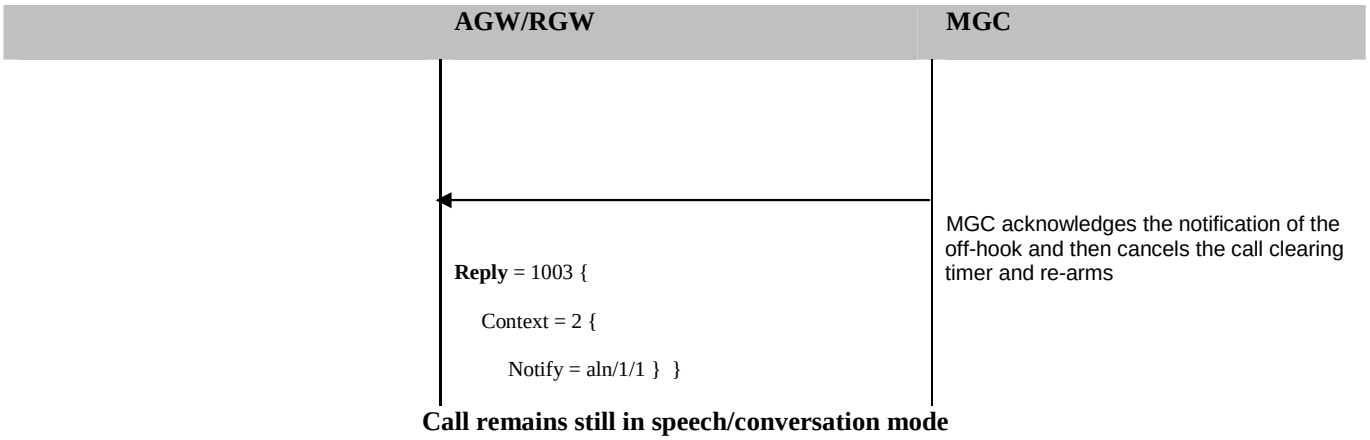


Analogue Port is now in the idle condition.

5.3.6 DEL - Called Party Re-answers - B end

Pre-conditions: Sequence 5.1.3 has been successfully executed for DEL port aln/1/1.



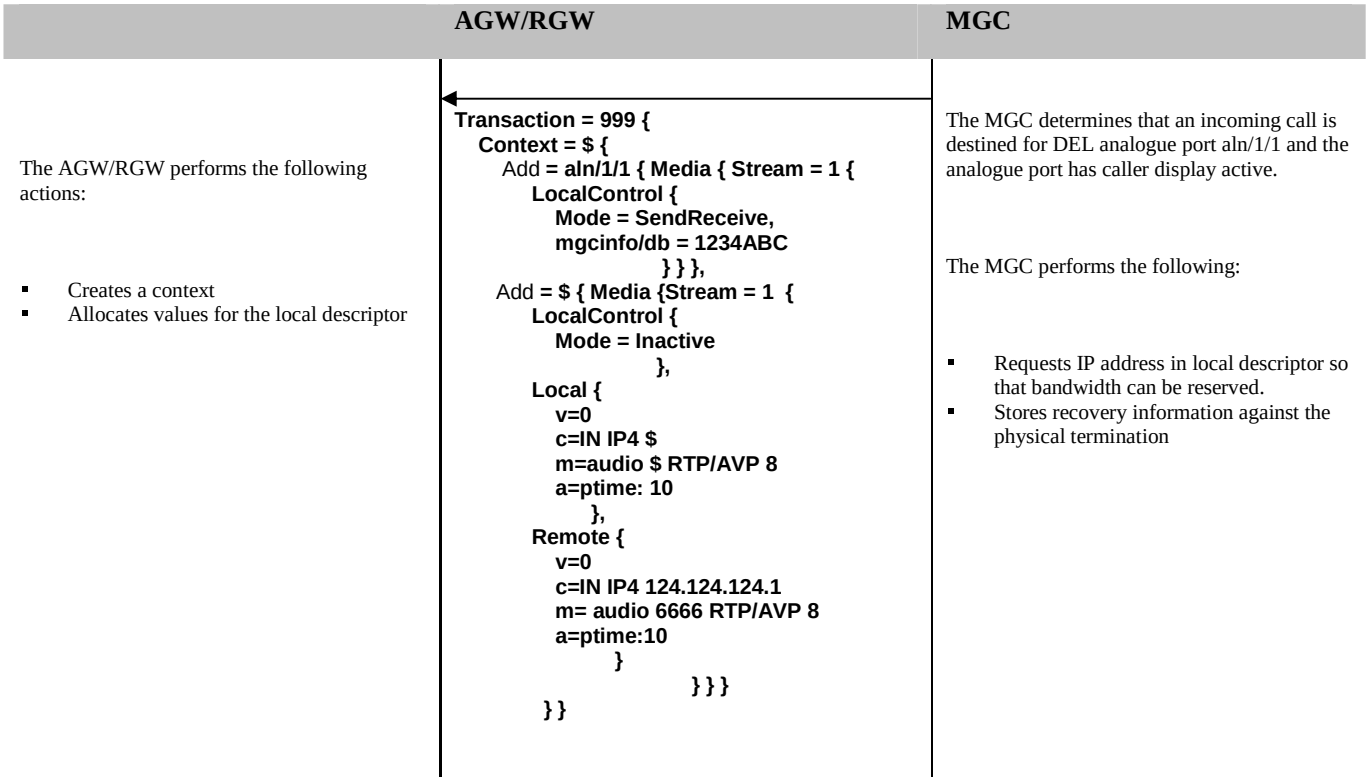


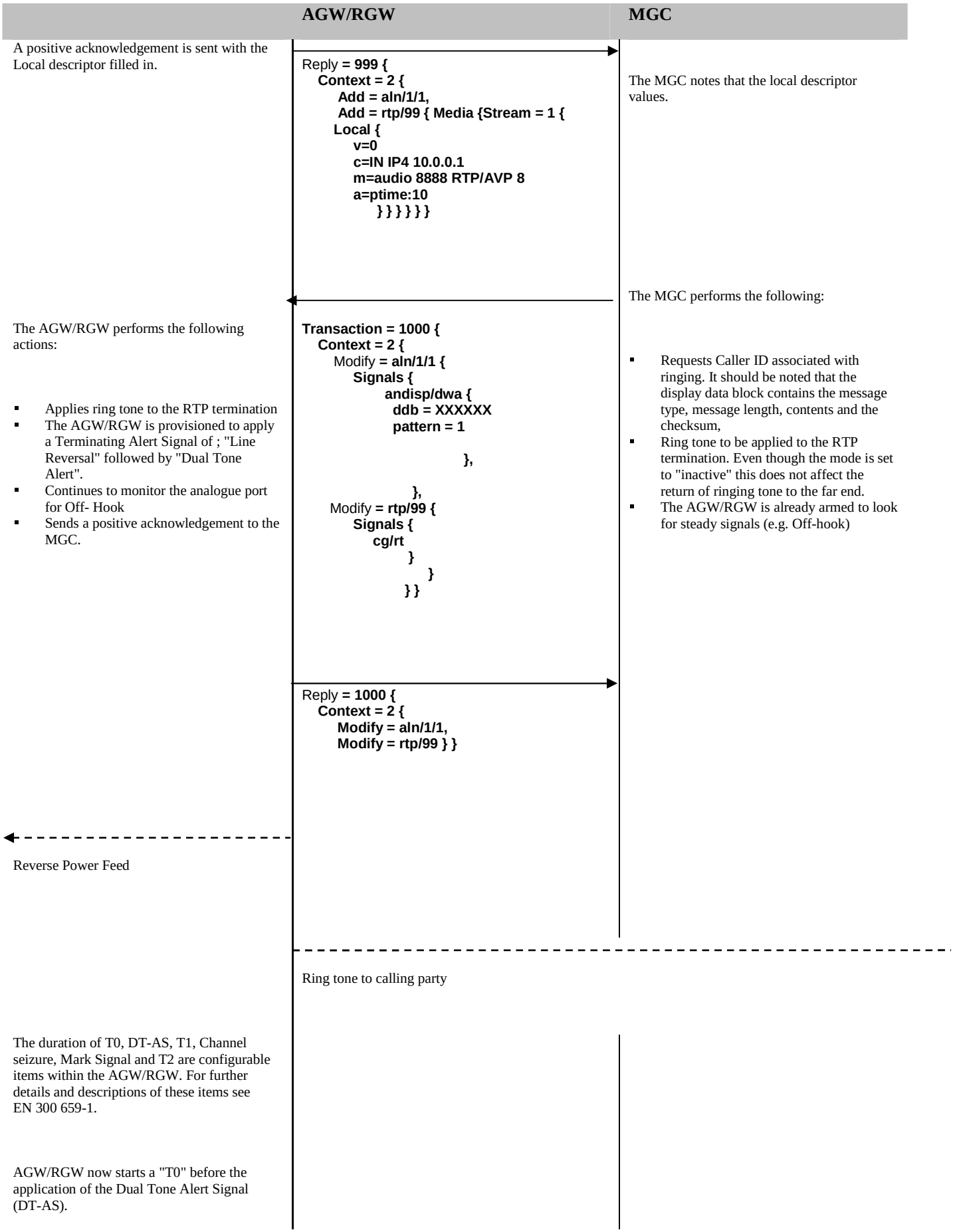
5.4 On-Hook Data Transmission via FSK

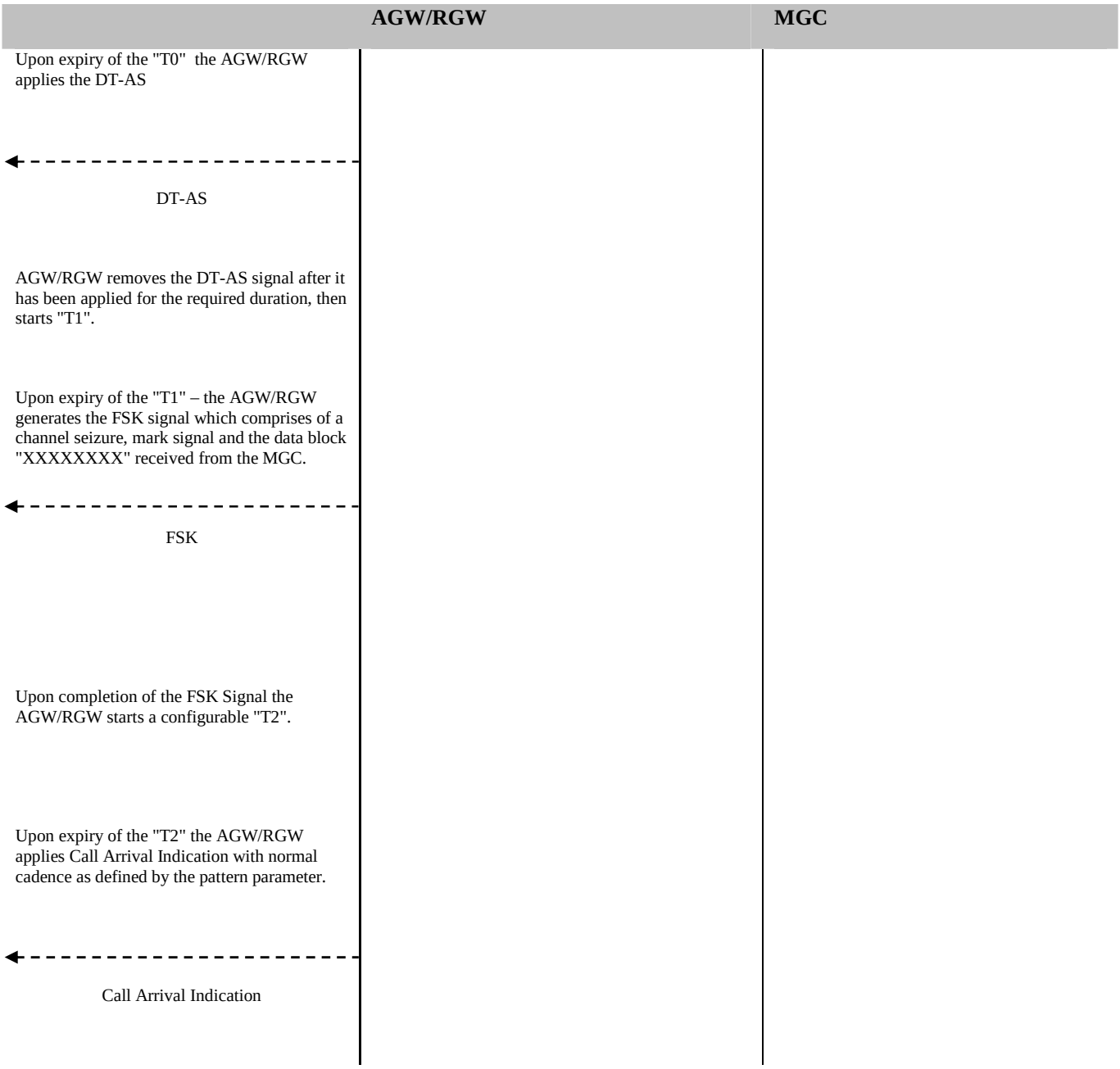
5.4.1 DEL - Successful Incoming Voice Call to AGW/RGW with Caller Line Identity prior to ringing - B end

5.4.1.1 Early Addition of Analogue and Ephemeral Terminations to a Context

Pre-conditions: Sequence 5.1.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
A positive acknowledgement is sent with the Local descriptor filled in.
Reply = 999 {
Context = 2 {
Add = aln/1/1,
Add = rtp/99 { Media {Stream = 1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 8888 RTP/AVP 8
a=ptime:10
} } } } } }
The MGC notes that the local descriptor values.
The MGC performs the following:
The AGW/RGW performs the following actions:
Transaction = 1000 {
Context = 2 {
Modify = aln/1/1 {
Signals {
andisp/dwa {
ddb = XXXXXX
pattern = 1
},
},
Modify = rtp/99 {
Signals {
cg/rt
}
}
} }
Requests Caller ID associated with ringing. It should be noted that the display data block contains the message type, message length, contents and the checksum,
Ring tone to be applied to the RTP termination. Even though the mode is set to "inactive" this does not affect the return of ringing tone to the far end.
The AGW/RGW is already armed to look for steady signals (e.g. Off-hook)
Applies ring tone to the RTP termination
The AGW/RGW is provisioned to apply a Terminating Alert Signal of ; "Line Reversal" followed by "Dual Tone Alert".
Continues to monitor the analogue port for Off- Hook
Sends a positive acknowledgement to the MGC.
Reply = 1000 {
Context = 2 {
Modify = aln/1/1,
Modify = rtp/99 } }
Reverse Power Feed
Ring tone to calling party
The duration of T0, DT-AS, T1, Channel seizure, Mark Signal and T2 are configurable items within the AGW/RGW. For further details and descriptions of these items see EN 300 659-1.
AGW/RGW now starts a "T0" before the application of the Dual Tone Alert Signal (DT-AS).

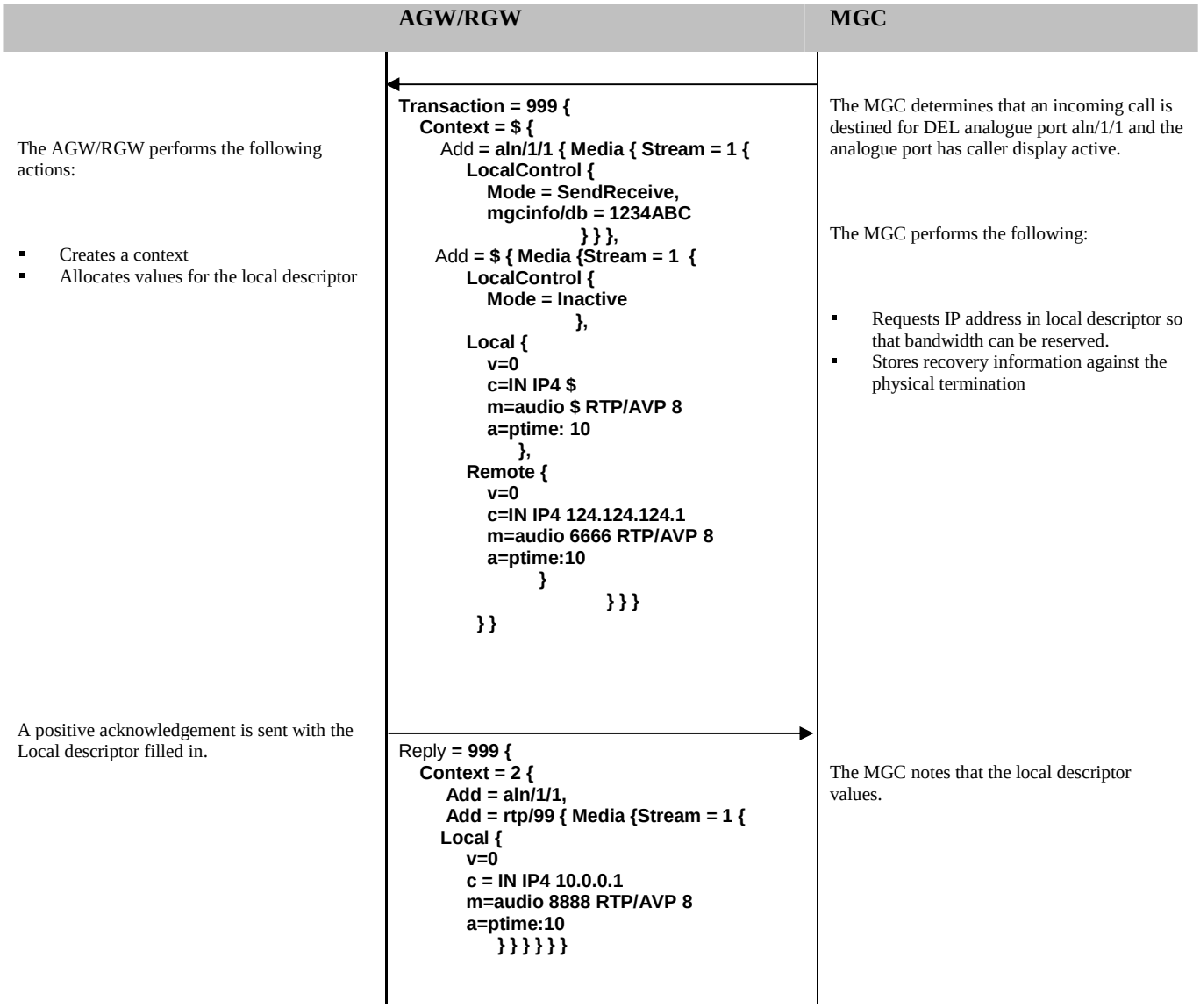


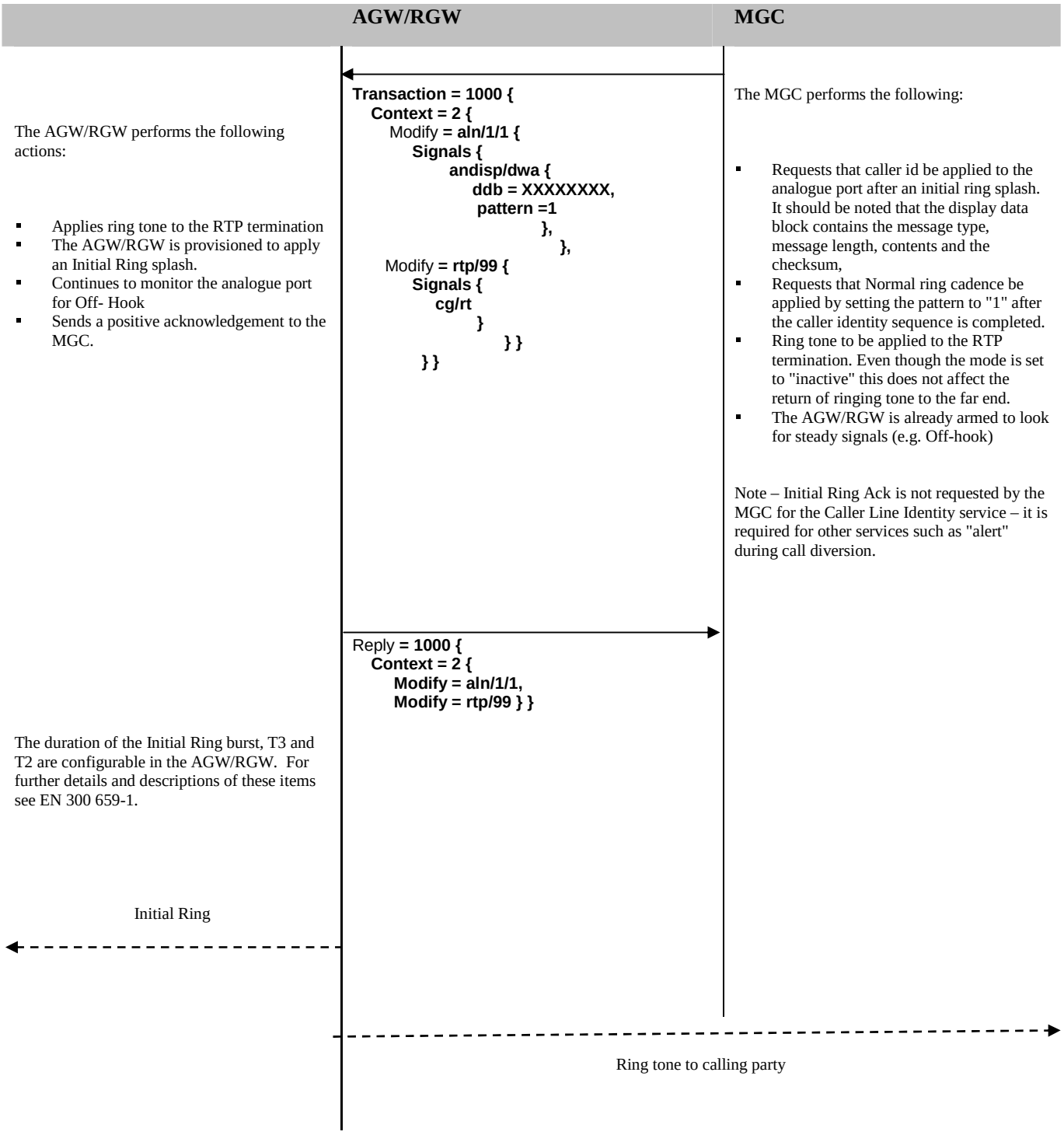
The sequence continues as per message flow 5.1.3.1 from the point Call Arrival and Ring Tone have been applied – Point A

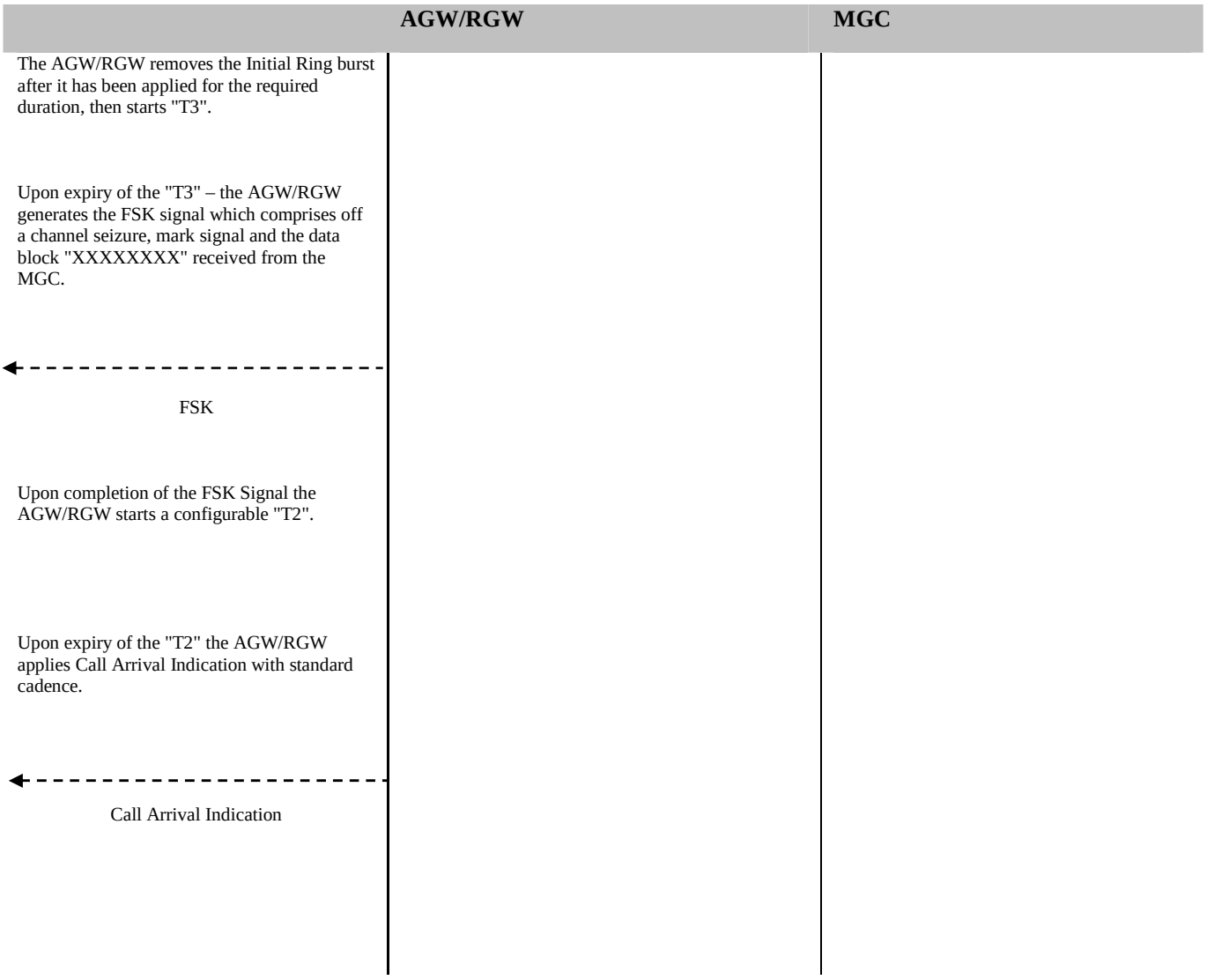
5.4.2 DEL - Successful Incoming Voice Call to AGW/RGW with Caller Line Identity after initial ring splash - B end

5.4.2.1 Early Addition of Analogue and Ephemeral Terminations to a Context

Pre-conditions: Sequence 4.1.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
The AGW/RGW performs the following actions:
Applies ring tone to the RTP termination
The AGW/RGW is provisioned to apply an Initial Ring splash.
Continues to monitor the analogue port for Off- Hook
Sends a positive acknowledgement to the MGC.
Transaction = 1000 {
Context = 2 {
Modify = aln/1/1 {
Signals {
andisp/dwa {
ddb = XXXXXXXX,
pattern =1
},
},
Modify = rtp/99 {
Signals {
cg/rt
}
} }
} }
The MGC performs the following:
Requests that caller id be applied to the analogue port after an initial ring splash. It should be noted that the display data block contains the message type, message length, contents and the checksum,
Requests that Normal ring cadence be applied by setting the pattern to "1" after the caller identity sequence is completed.
Ring tone to be applied to the RTP termination. Even though the mode is set to "inactive" this does not affect the return of ringing tone to the far end.
The AGW/RGW is already armed to look for steady signals (e.g. Off-hook)
Note – Initial Ring Ack is not requested by the MGC for the Caller Line Identity service – it is required for other services such as "alert" during call diversion.
Reply = 1000 {
Context = 2 {
Modify = aln/1/1,
Modify = rtp/99 } }
The duration of the Initial Ring burst, T3 and T2 are configurable in the AGW/RGW. For further details and descriptions of these items see EN 300 659-1.
Initial Ring
Ring tone to calling party



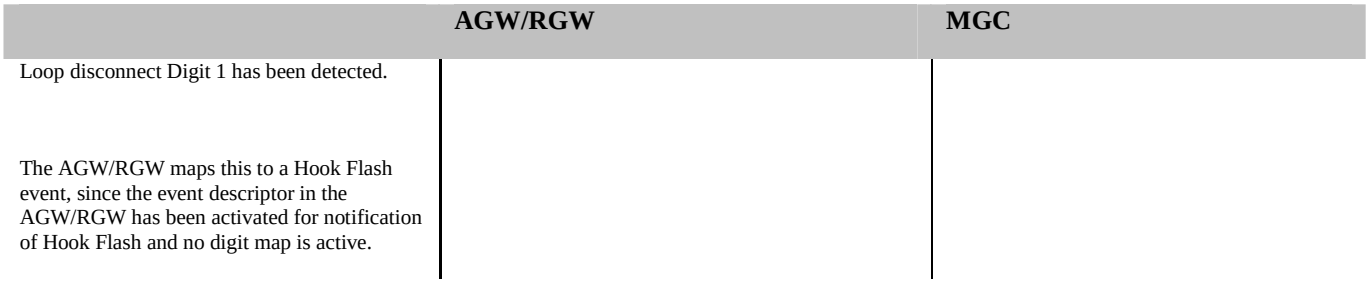
The sequence continues as per message sequence 5.1.3.1 Point A.

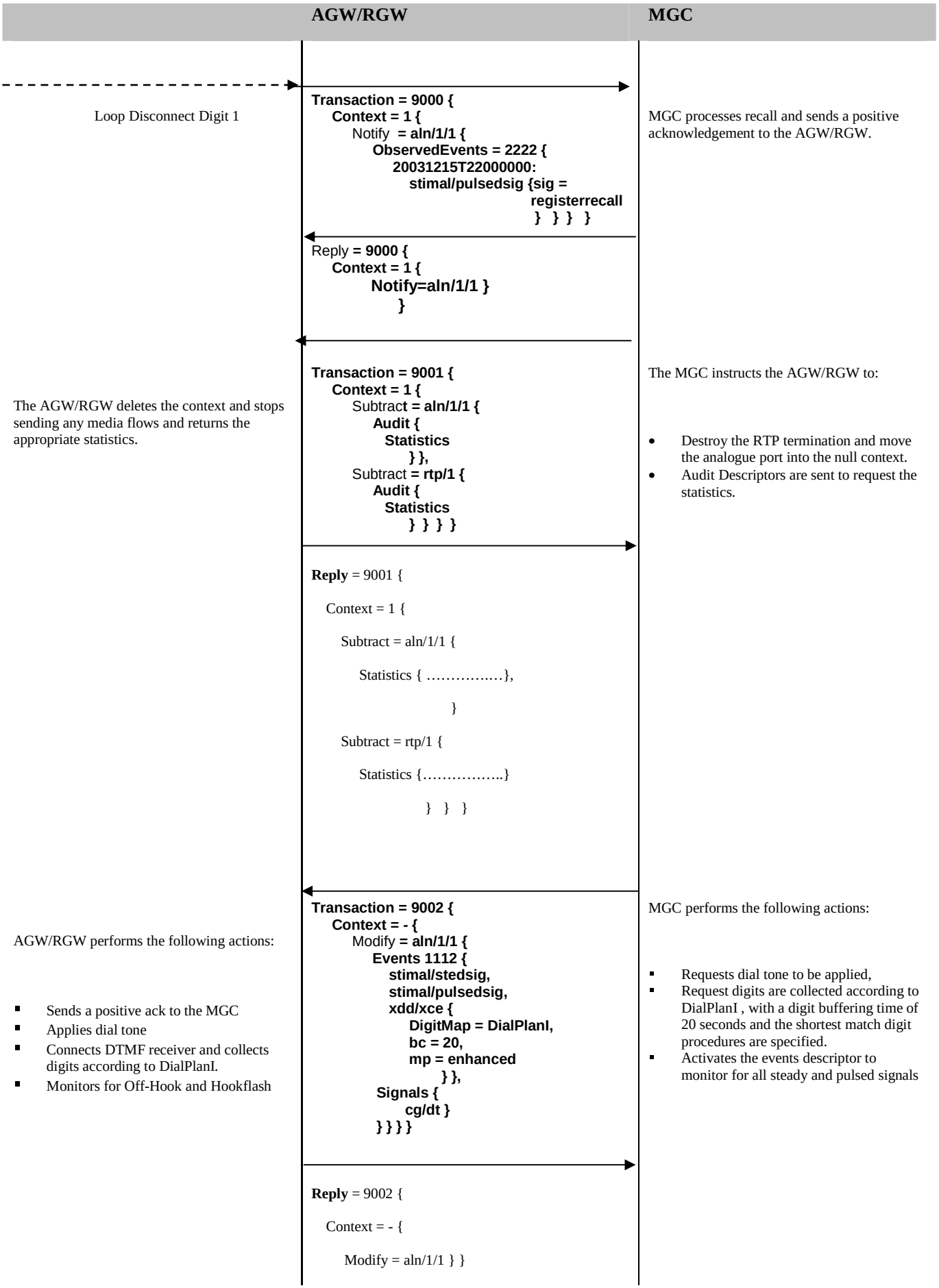
5.5 Three Party Services

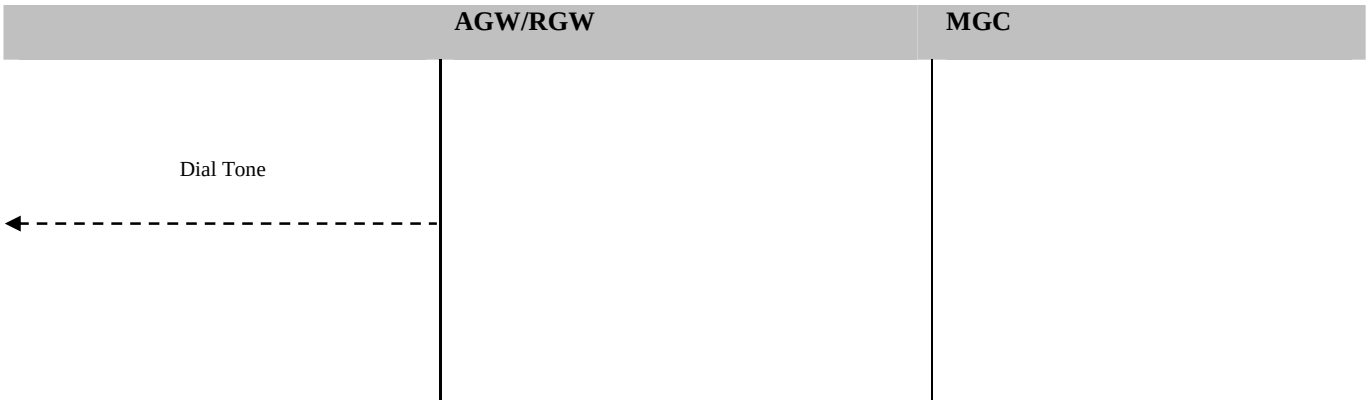
5.5.1 DEL - Register Recall to initiate an enquiry call - A end

5.5.1.1 Subtraction of Analogue Termination upon receipt of Register Recall

Pre-conditions: Sequence 5.1.1.1 has been successfully executed for DEL port aln/1/1.



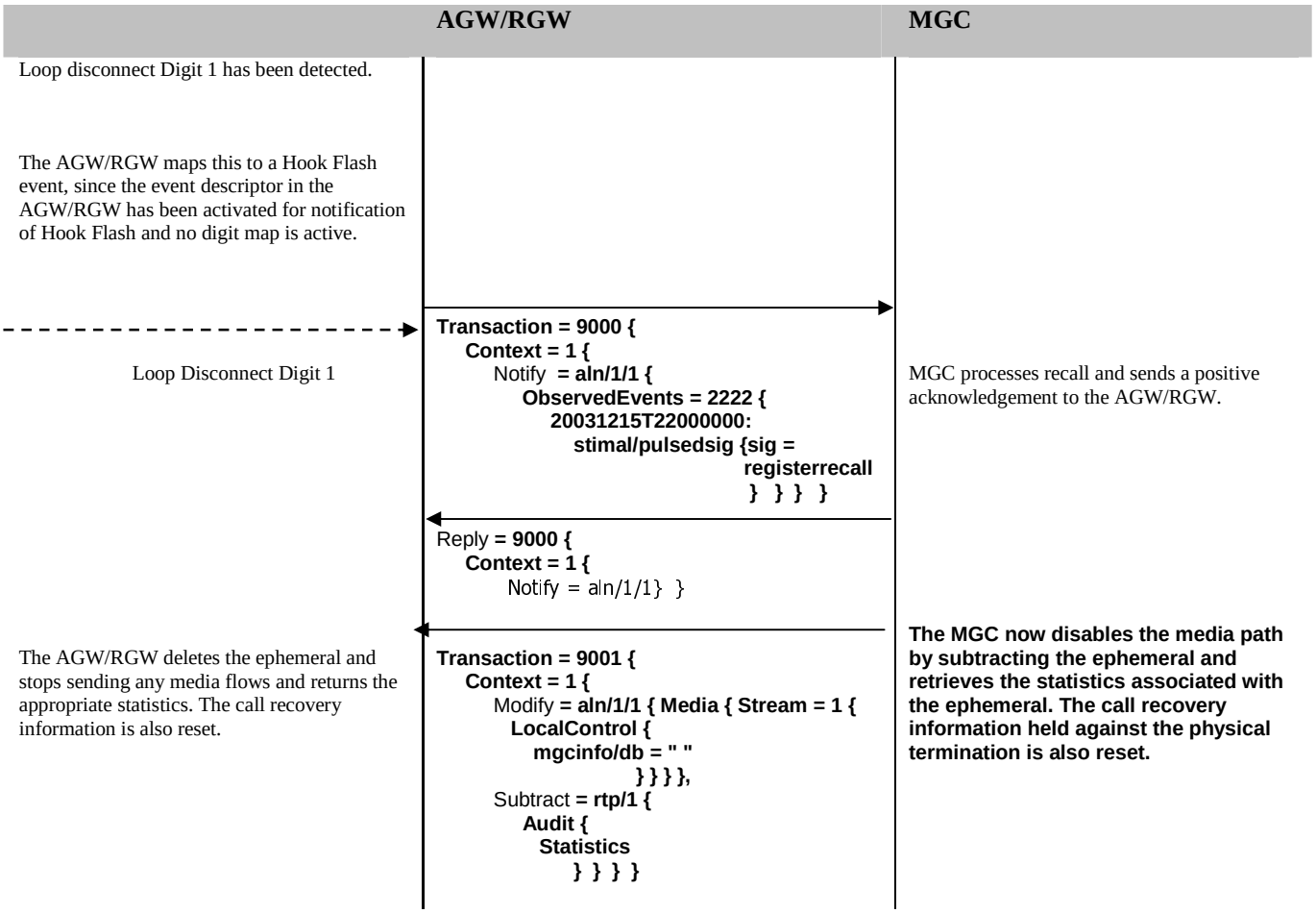

AGW/RGW
MGC
Loop Disconnect Digit 1
Transaction = 9000 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 2222 {
20031215T22000000:
stimal/pulsedsig {sig =
registerrecall
} } } }
MGC processes recall and sends a positive acknowledgement to the AGW/RGW.
Reply = 9000 {
Context = 1 {
Notify=aln/1/1 }
}
Transaction = 9001 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
The MGC instructs the AGW/RGW to:
The AGW/RGW deletes the context and stops sending any media flows and returns the appropriate statistics.
Destroy the RTP termination and move the analogue port into the null context.
Audit Descriptors are sent to request the statistics.
Reply = 9001 {
Context = 1 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/1 {
Statistics {……..}
} } }
Transaction = 9002 {
Context = - {
Modify = aln/1/1 {
Events 1112 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = DialPlanI,
bc = 20,
mp = enhanced
} },
Signals {
cg/dt }
} } } }
MGC performs the following actions:
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects digits according to DialPlanI.
Monitors for Off-Hook and Hookflash
Requests dial tone to be applied,
Request digits are collected according to DialPlanI , with a digit buffering time of 20 seconds and the shortest match digit procedures are specified.
Activates the events descriptor to monitor for all steady and pulsed signals
Reply = 9002 {
Context = - {
Modify = aln/1/1 } }

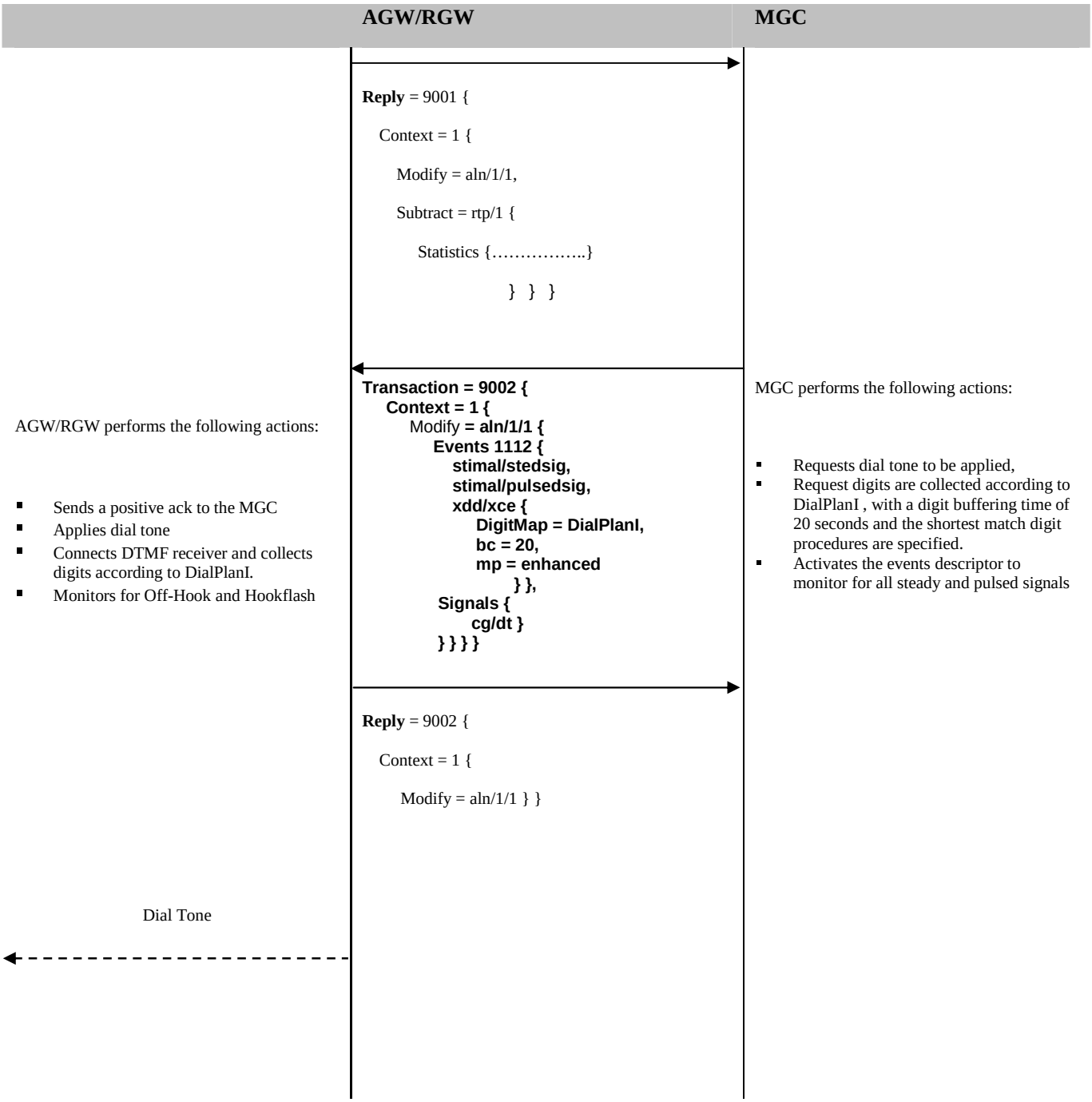


Message sequence continues as per 0 Point A (Note Transaction numbers will continue from this sequence rather than the ones illustrated in 5.1.1.1)

5.5.1.2 Analogue Termination left in Context upon receipt of Register Recall

Pre-conditions: Sequence 5.1.1.2 has been successfully executed for DEL port aln/1/1.

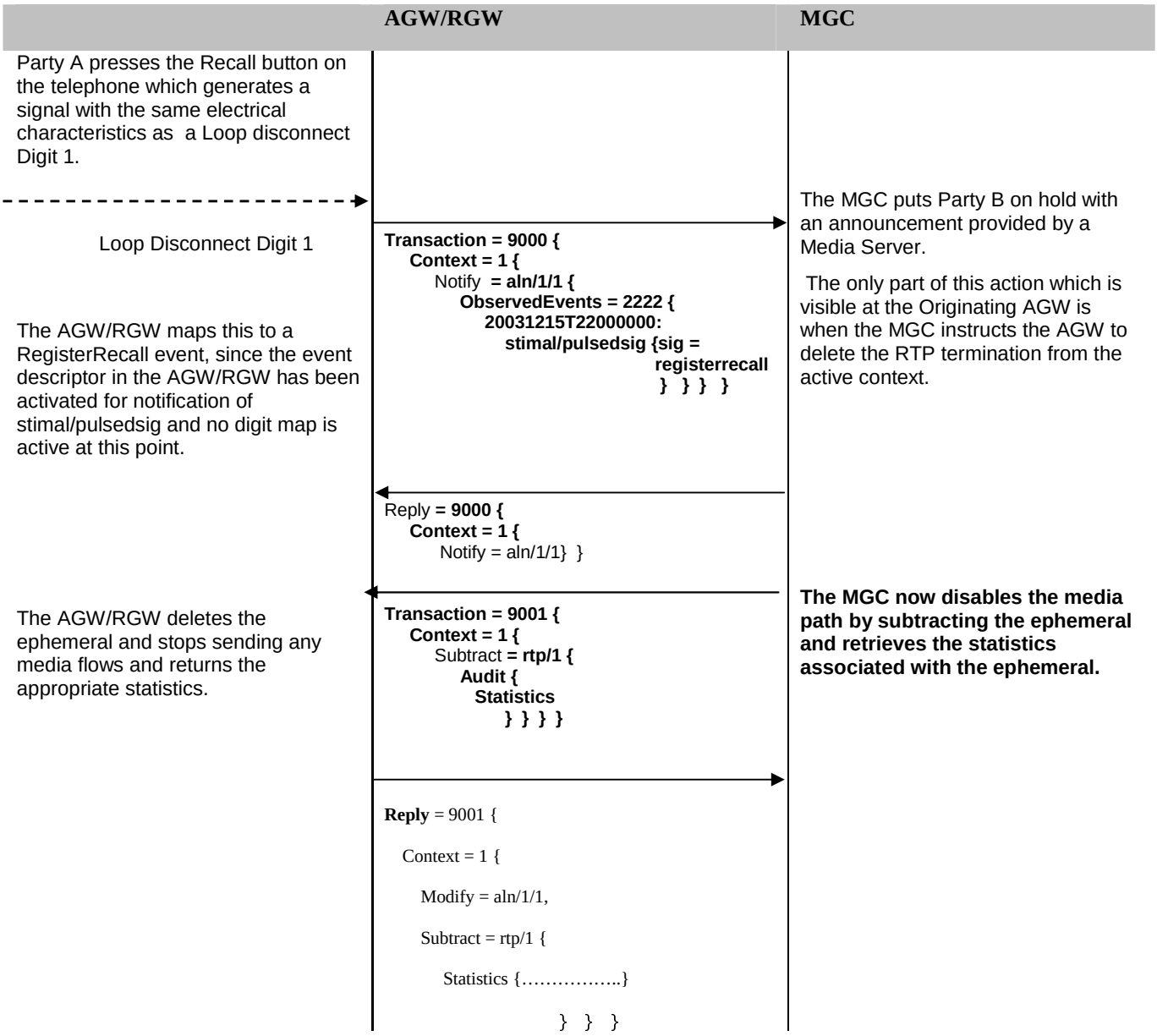


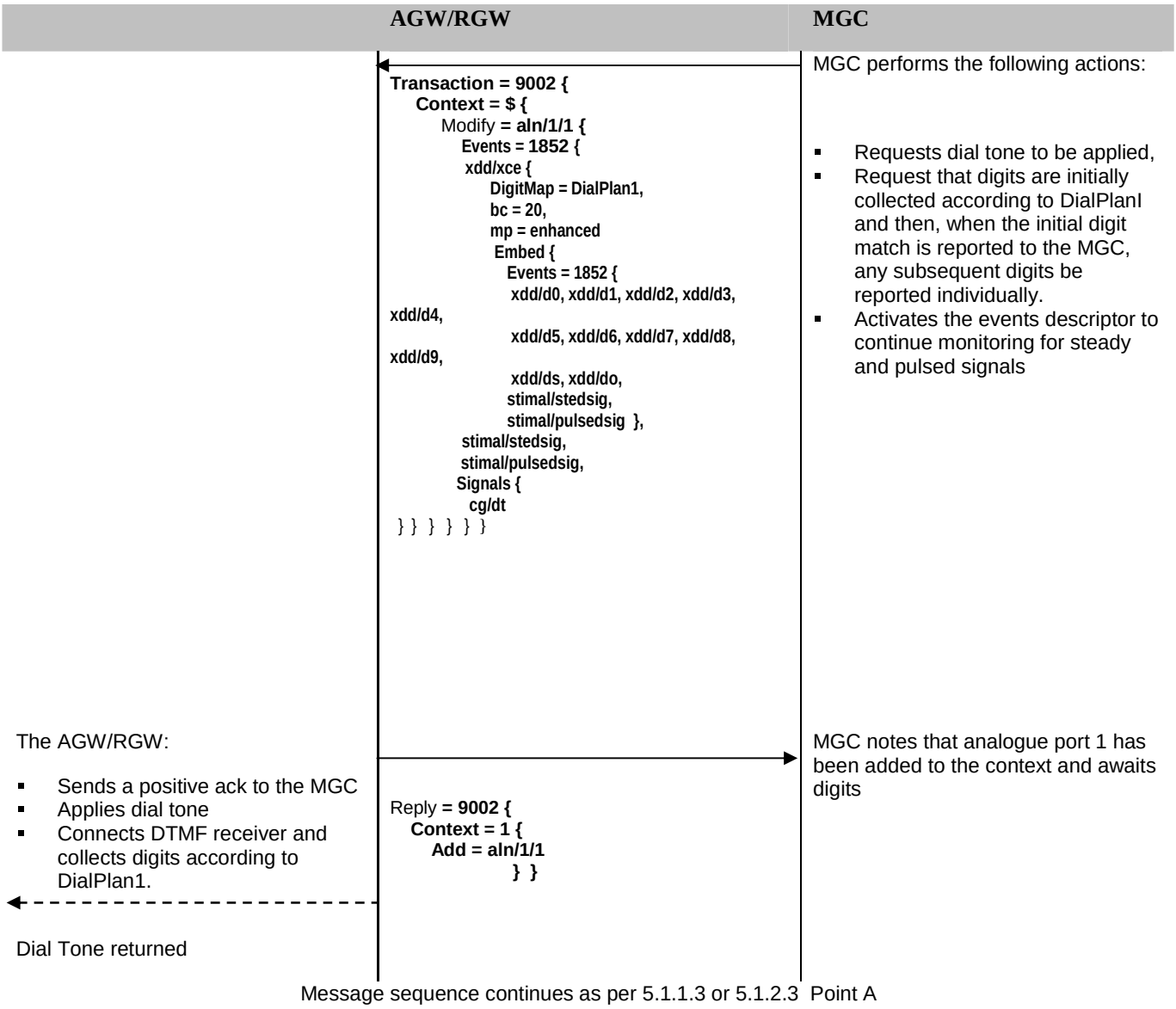


Message sequence continues as per 0 Point A (Note Transaction numbers will continue from this sequence rather than the ones illustrated in 0)

5.5.1.3 Analogue Termination left in Context upon receipt of Register Recall Alternative Flow

Pre-conditions: Sequence 5.1.1.3 or 5.1.2.3 has been successfully executed for DEL port aln/1/1.

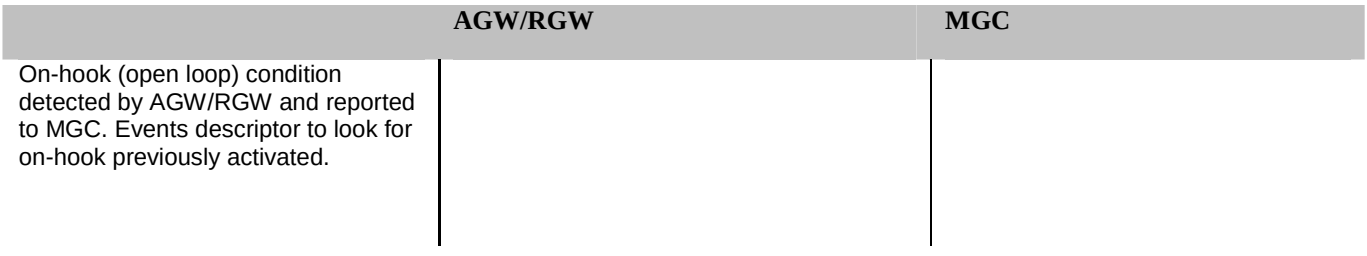


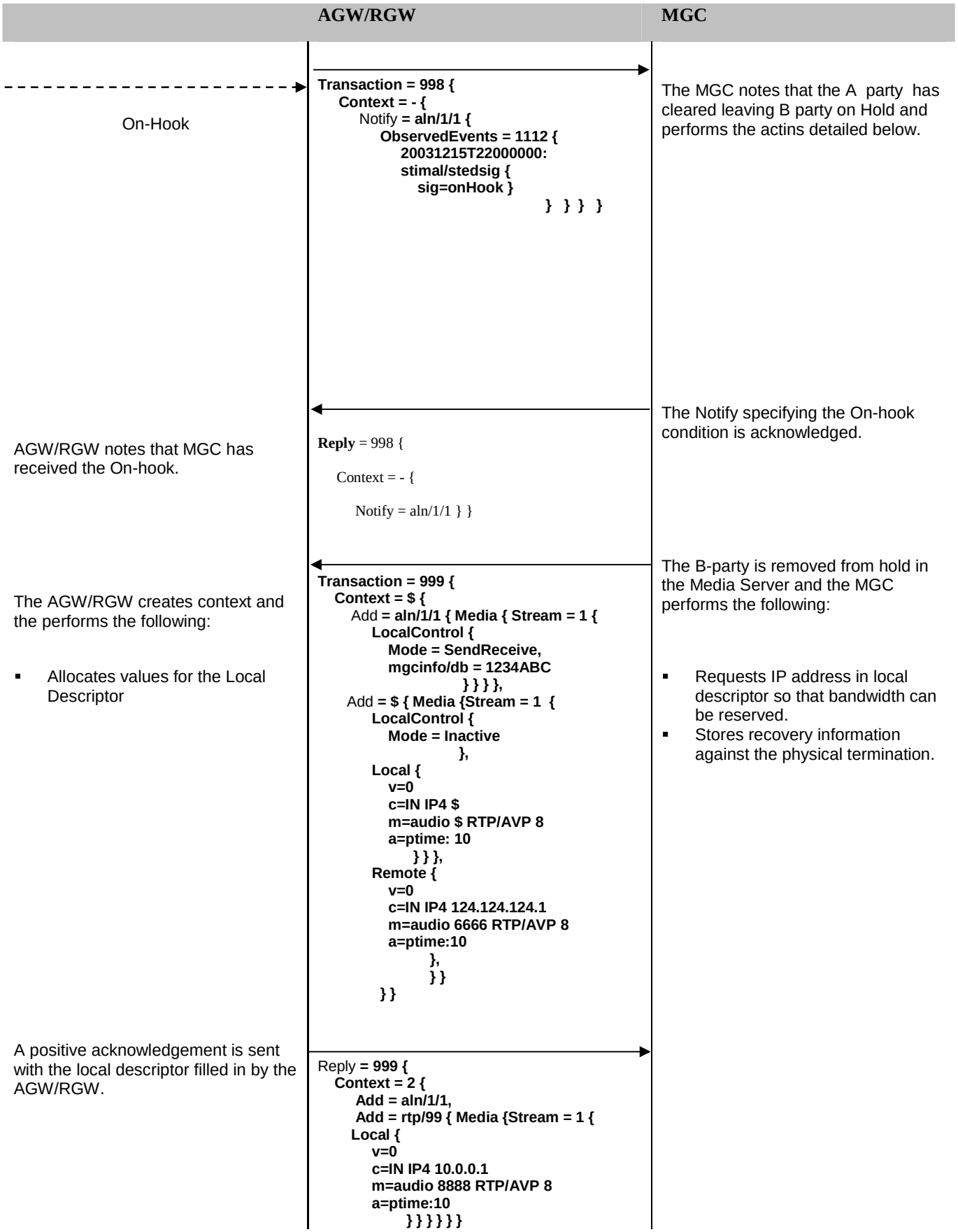


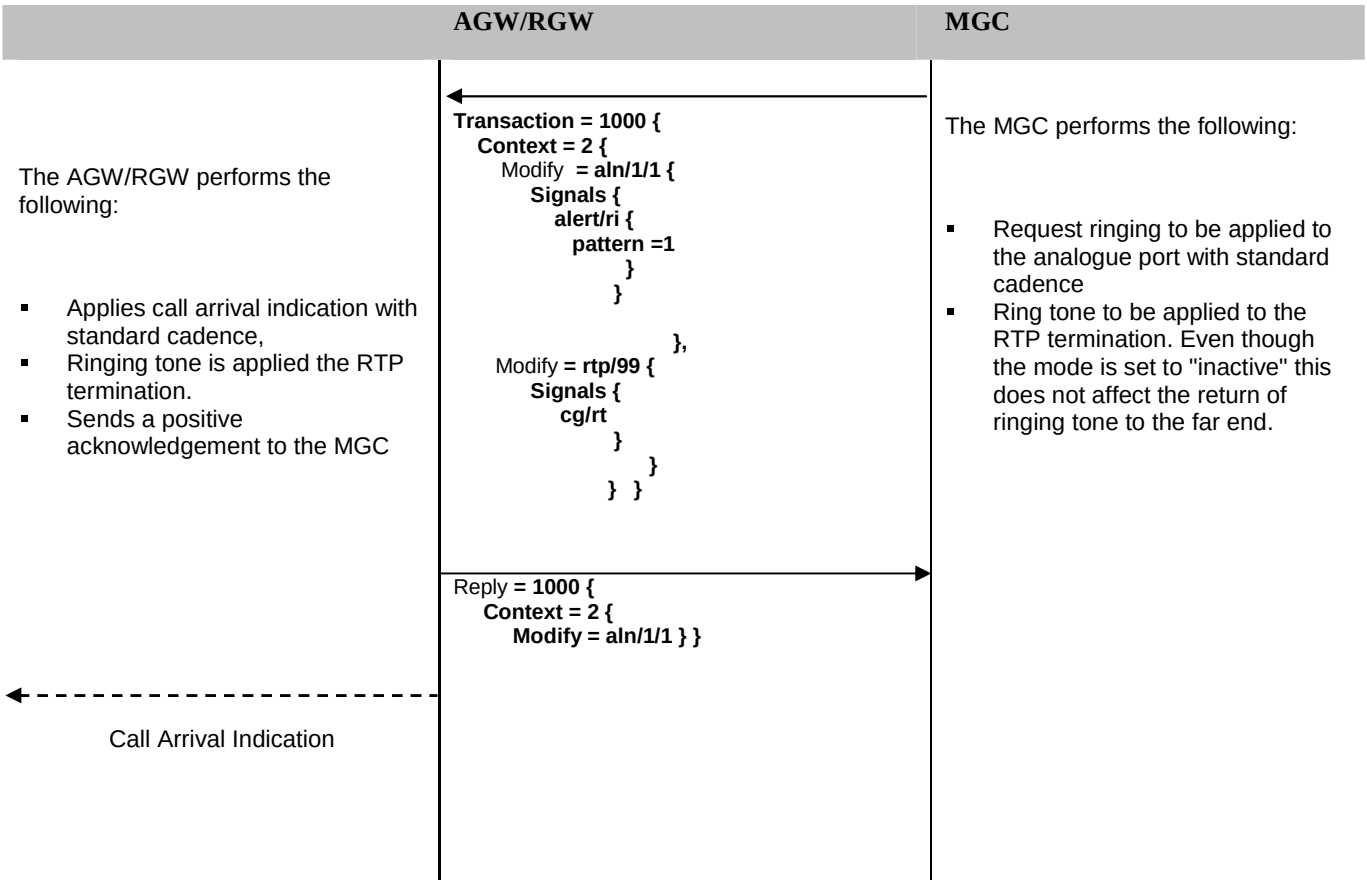
5.5.2 DEL - Re-ringing of subscriber whilst initiating enquiry call - A end

5.5.2.1 On-Hook received whilst the Analogue Termination is in a Null Context

Pre-conditions: Sequence 5.5.1.1 has been successfully executed for DEL port aln/1/1 up to the point Dial Tone is returned.



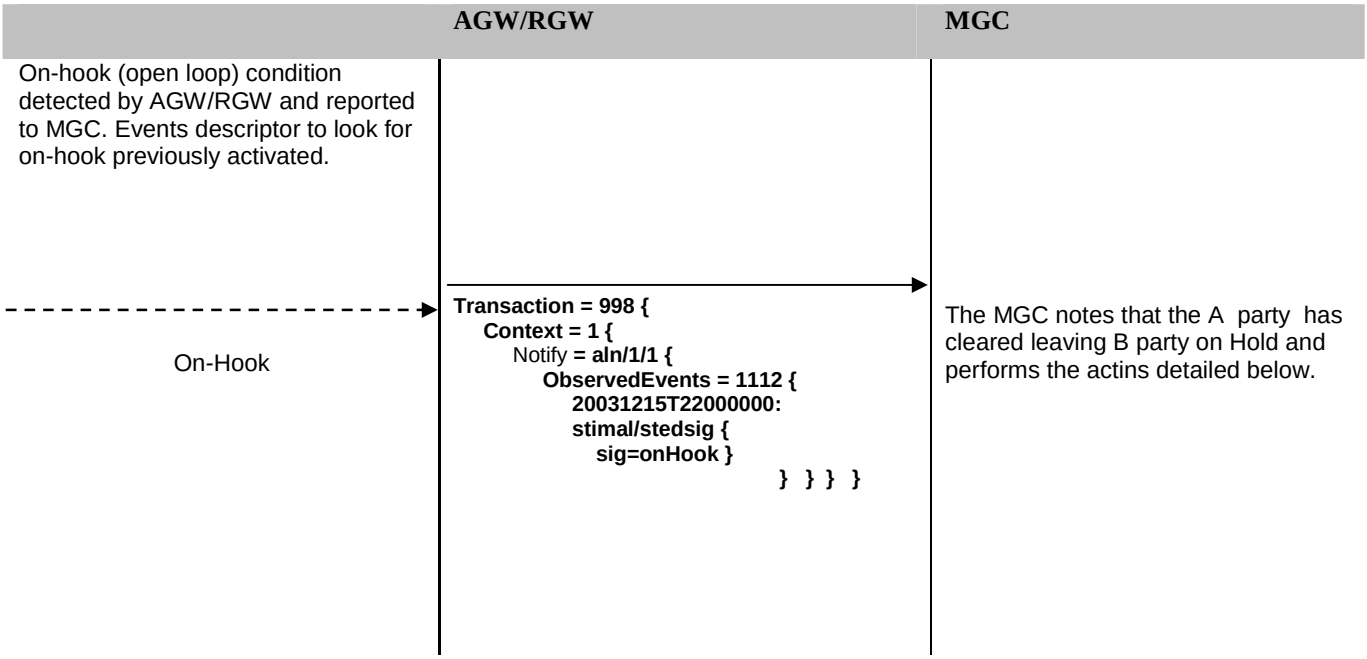

AGW/RGW
MGC
On-Hook
Transaction = 998 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook }
} } } }
The MGC notes that the A party has cleared leaving B party on Hold and performs the actins detailed below.
AGW/RGW notes that MGC has received the On-hook.
Reply = 998 {
Context = - {
Notify = aln/1/1 } }
The Notify specifying the On-hook condition is acknowledged.
The AGW/RGW creates context and the performs the following:
Allocates values for the Local Descriptor
Transaction = 999 {
Context = $ {
Add = aln/1/1 { Media { Stream = 1 {
LocalControl {
Mode = SendReceive,
mgcinfo/db = 1234ABC
} } } },
Add = $ { Media {Stream = 1 {
LocalControl {
Mode = Inactive
},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime: 10
} } },
Remote {
v=0
c=IN IP4 124.124.124.1
m=audio 6666 RTP/AVP 8
a=ptime:10
},
} }
} }
The B-party is removed from hold in the Media Server and the MGC performs the following:
Requests IP address in local descriptor so that bandwidth can be reserved.
Stores recovery information against the physical termination.
A positive acknowledgement is sent with the local descriptor filled in by the AGW/RGW.
Reply = 999 {
Context = 2 {
Add = aln/1/1,
Add = rtp/99 { Media {Stream = 1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 8888 RTP/AVP 8
a=ptime:10
} } } } } }

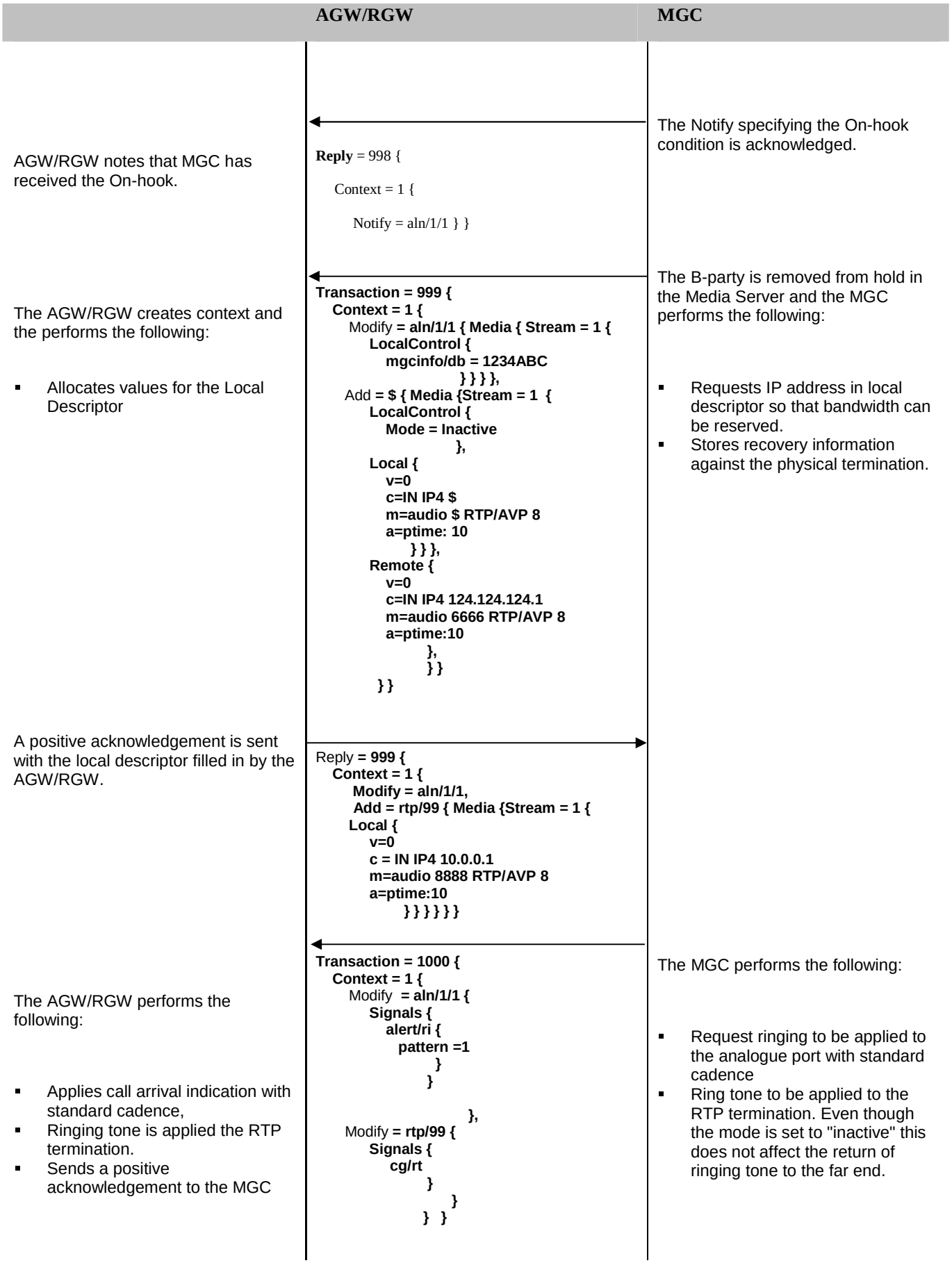


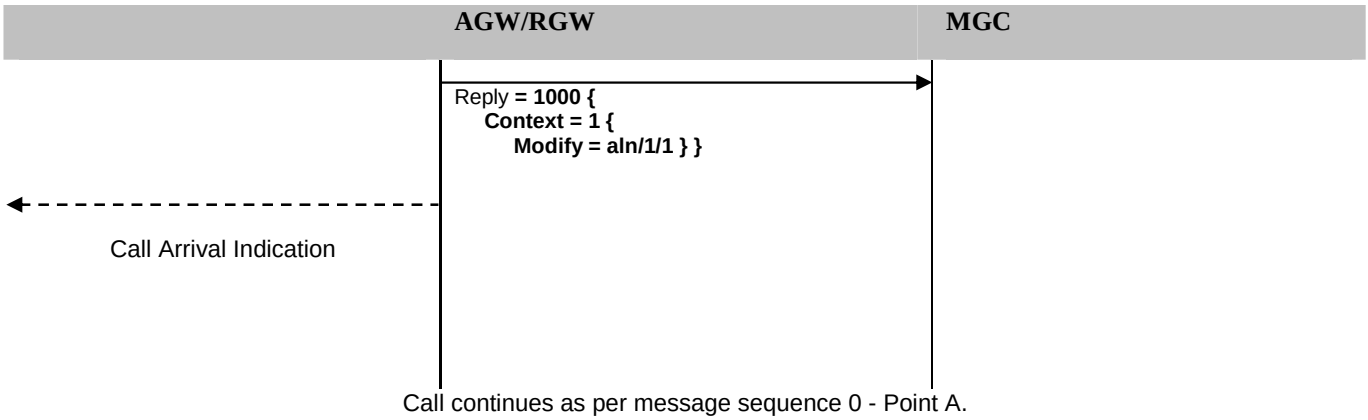
Call continues as per message sequence 5.1.3.1- Point A.

5.5.2.2 On-Hook received whilst the Analogue Termination is in a non Null Context

Pre-conditions: Sequence 5.5.1.2 has been successfully executed for DEL port aln/1/1 up to the point Dial Tone is returned.

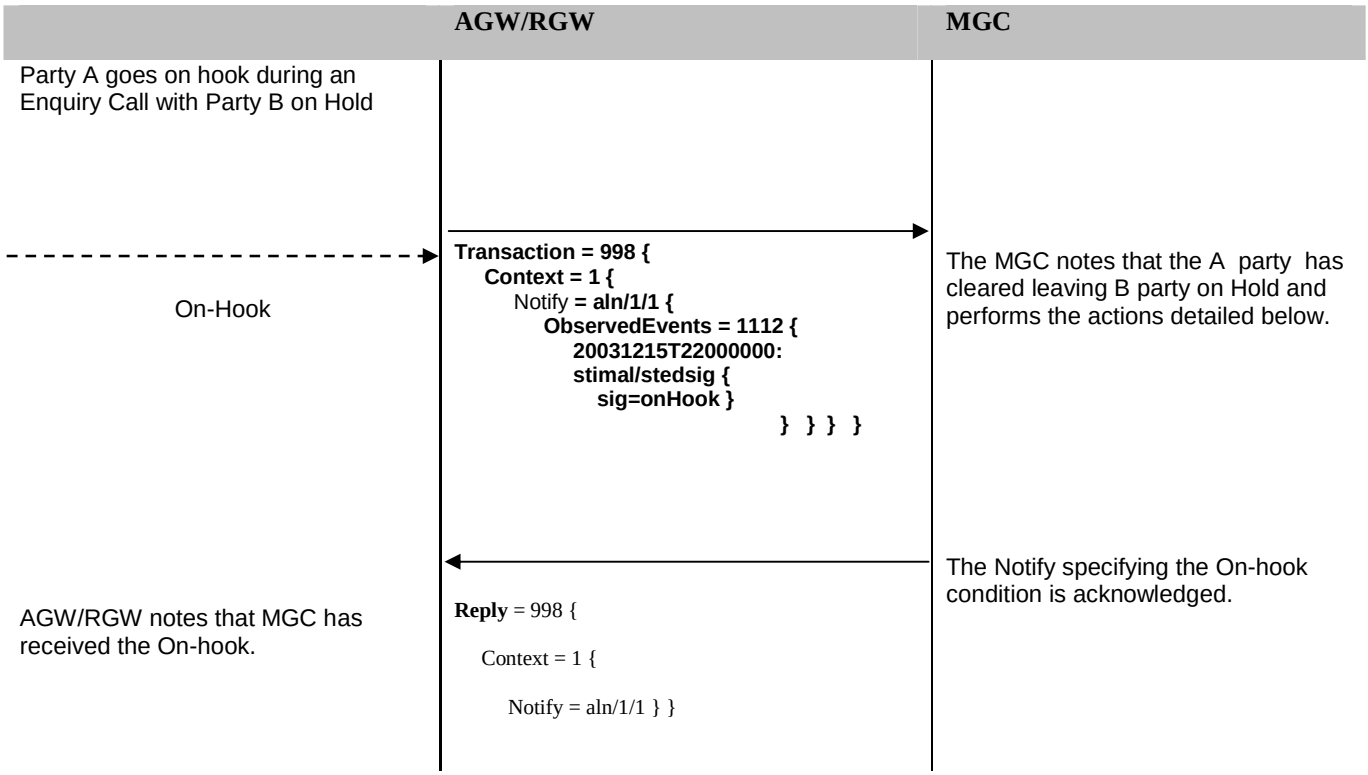


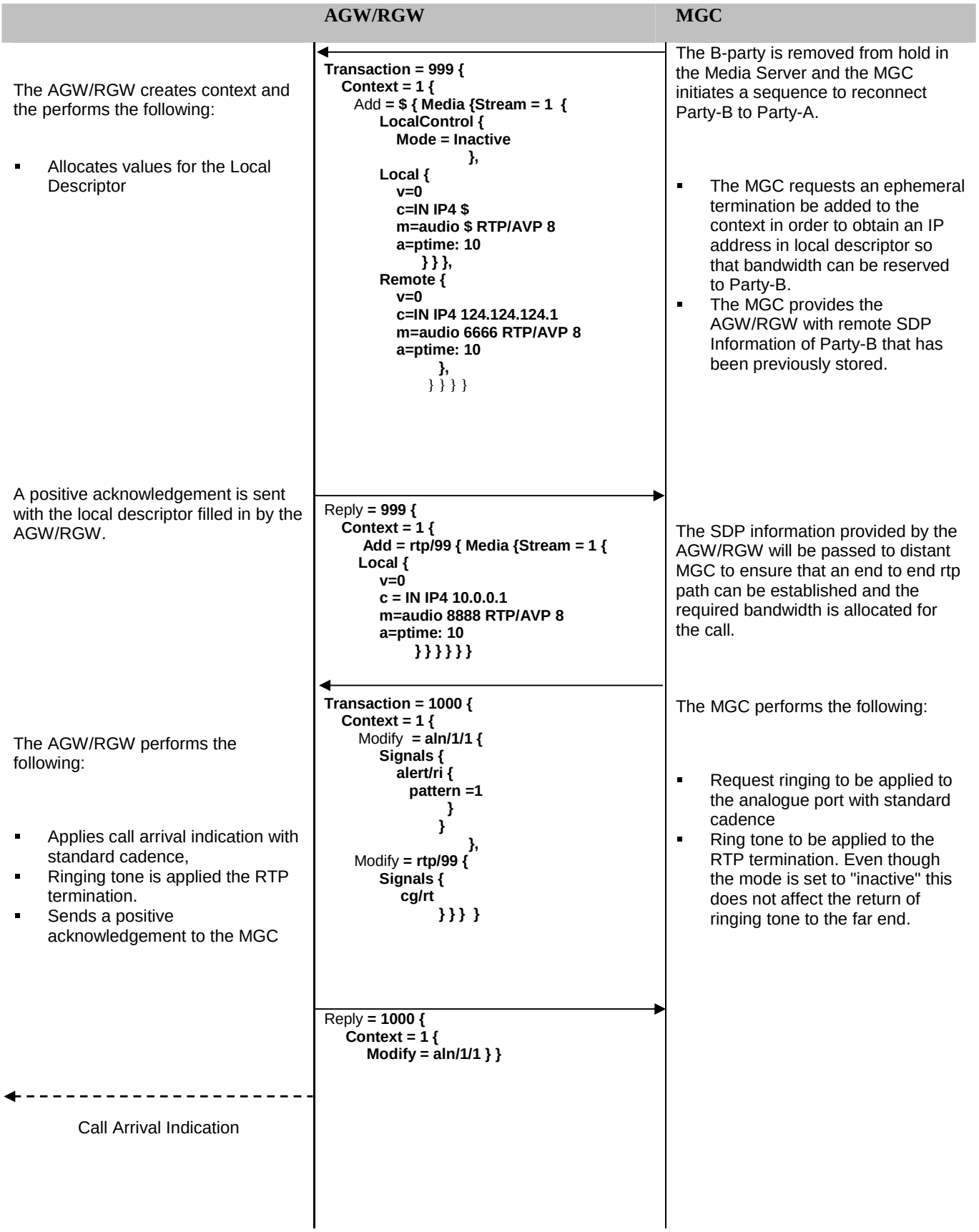

AGW/RGW
MGC
The Notify specifying the On-hook condition is acknowledged.
AGW/RGW notes that MGC has received the On-hook.
Reply = 998 {
Context = 1 {
Notify = aln/1 } }
The B-party is removed from hold in the Media Server and the MGC performs the following:
The AGW/RGW creates context and the performs the following:
Allocates values for the Local Descriptor
Requests IP address in local descriptor so that bandwidth can be reserved.
Stores recovery information against the physical termination.
Transaction = 999 {
Context = 1 {
Modify = aln/1/1 { Media { Stream = 1 {
LocalControl {
mgcinfo/db = 1234ABC
} } } },
Add = $ { Media {Stream = 1 {
LocalControl {
Mode = Inactive
},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime: 10
} } },
Remote {
v=0
c=IN IP4 124.124.124.1
m=audio 6666 RTP/AVP 8
a=ptime:10
},
} }
} }
A positive acknowledgement is sent with the local descriptor filled in by the AGW/RGW.
Reply = 999 {
Context = 1 {
Modify = aln/1/1,
Add = rtp/99 { Media {Stream = 1 {
Local {
v=0
c = IN IP4 10.0.0.1
m=audio 8888 RTP/AVP 8
a=ptime:10
} } } } } }
Transaction = 1000 {
Context = 1 {
Modify = aln/1/1 {
Signals {
alert/ri {
pattern =1
}
}
},
Modify = rtp/99 {
Signals {
cg/rt
}
}
} }
The MGC performs the following:
The AGW/RGW performs the following:
Request ringing to be applied to the analogue port with standard cadence
Ring tone to be applied to the RTP termination. Even though the mode is set to "inactive" this does not affect the return of ringing tone to the far end.
Applies call arrival indication with standard cadence,
Ringing tone is applied the RTP termination.
Sends a positive acknowledgement to the MGC

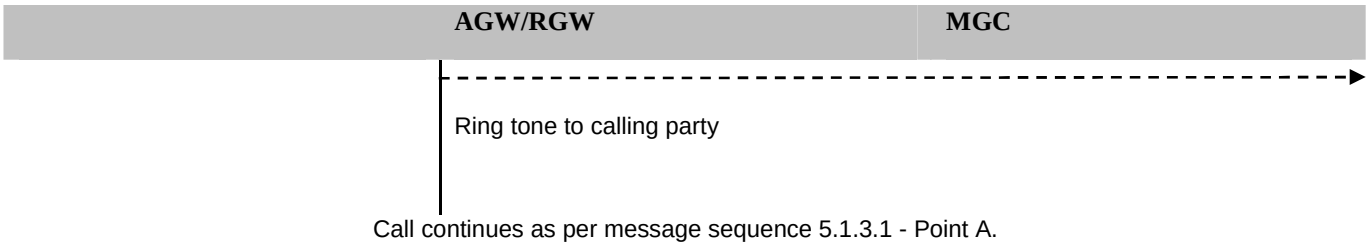


5.5.2.3 On-Hook received whilst the Analogue Termination is in a non Null Context Alternative Flow

Pre-conditions: Sequence 5.5.1.3 has been successfully executed for DEL port aln/1/1.



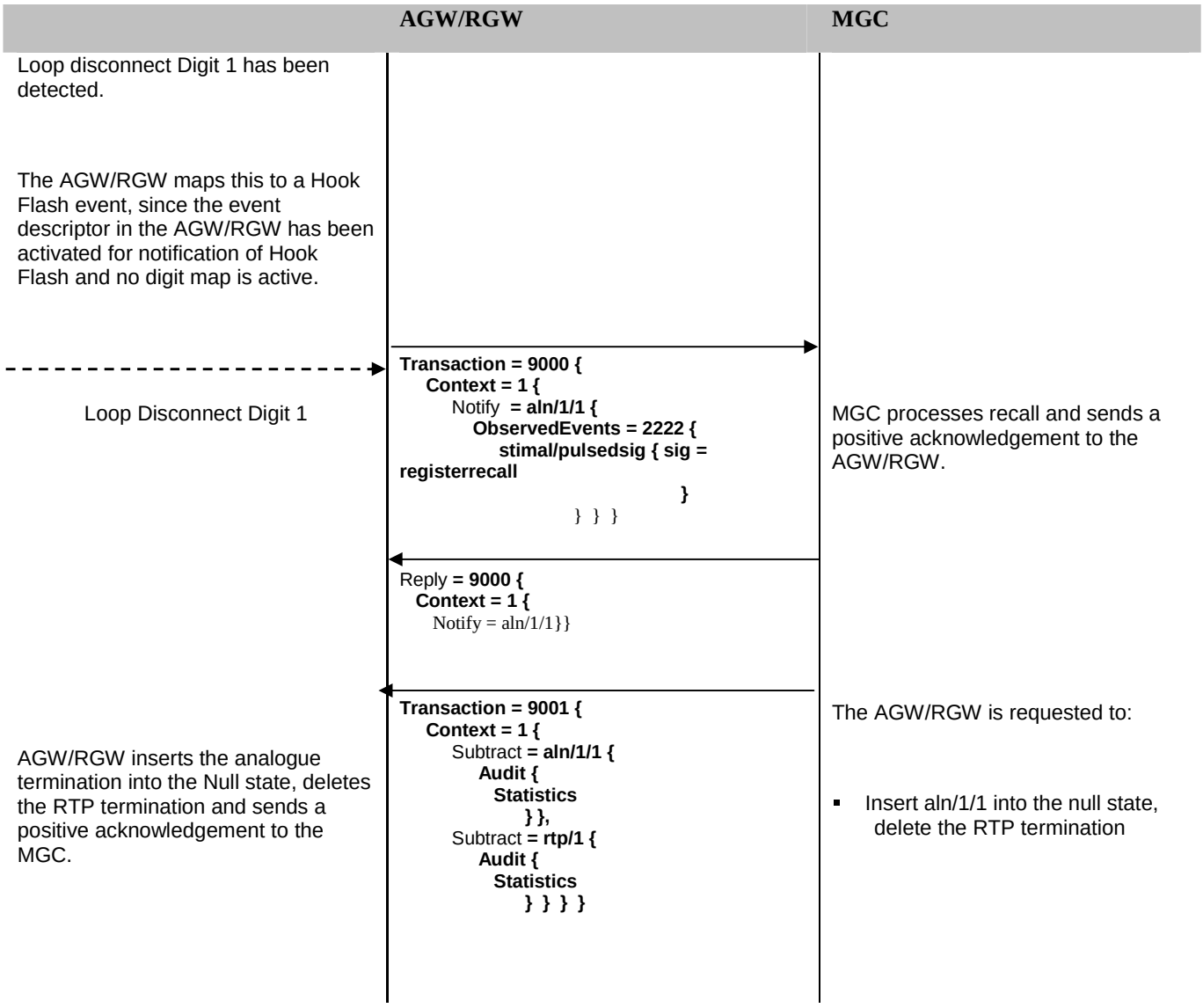

AGW/RGW
MGC
The B-party is removed from hold in the Media Server and the MGC initiates a sequence to reconnect Party-B to Party-A.
The AGW/RGW creates context and the performs the following:
Allocates values for the Local Descriptor
Transaction = 999 {
Context = 1 {
Add = $ { Media {Stream = 1 {
LocalControl {
Mode = Inactive
},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime: 10
} } },
Remote {
v=0
c=IN IP4 124.124.124.1
m=audio 6666 RTP/AVP 8
a=ptime: 10
},
} } } }
The MGC requests an ephemeral termination be added to the context in order to obtain an IP address in local descriptor so that bandwidth can be reserved to Party-B.
The MGC provides the AGW/RGW with remote SDP Information of Party-B that has been previously stored.
A positive acknowledgement is sent with the local descriptor filled in by the AGW/RGW.
Reply = 999 {
Context = 1 {
Add = rtp/99 { Media {Stream = 1 {
Local {
v=0
c = IN IP4 10.0.0.1
m=audio 8888 RTP/AVP 8
a=ptime: 10
} } } } } }
The SDP information provided by the AGW/RGW will be passed to distant MGC to ensure that an end to end rtp path can be established and the required bandwidth is allocated for the call.
Transaction = 1000 {
Context = 1 {
Modify = aln/1/1 {
Signals {
alert/ri {
pattern =1
}
}
},
Modify = rtp/99 {
Signals {
cg/rt
} } } }
The MGC performs the following:
The AGW/RGW performs the following:
Applies call arrival indication with standard cadence,
Ringing tone is applied the RTP termination.
Sends a positive acknowledgement to the MGC
Request ringing to be applied to the analogue port with standard cadence
Ring tone to be applied to the RTP termination. Even though the mode is set to "inactive" this does not affect the return of ringing tone to the far end.
Reply = 1000 {
Context = 1 {
Modify = aln/1/1 } }
Call Arrival Indication

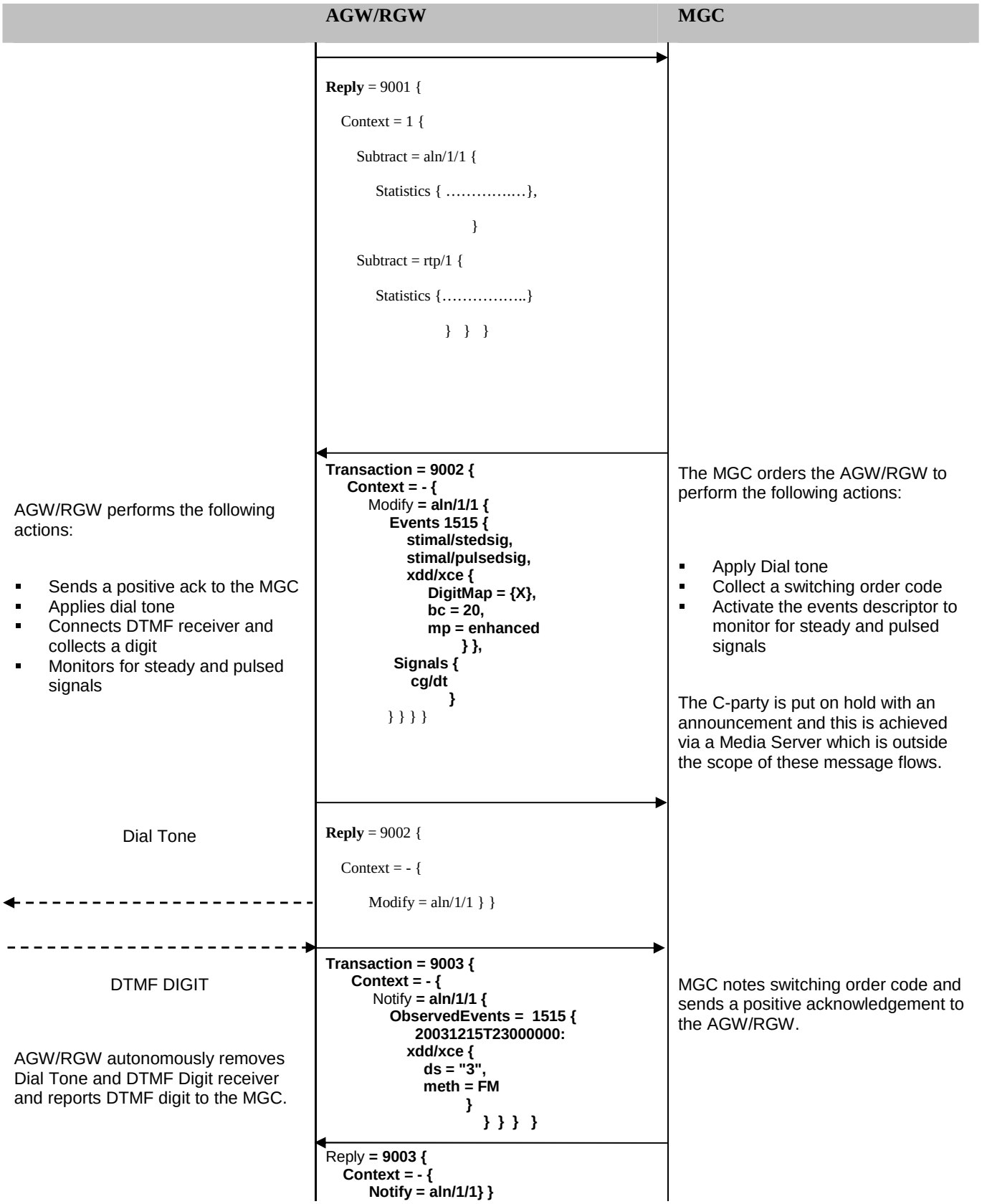


5.5.3 DEL - Register Recall to dial a switching order code for entering 3 way speech - A end

5.5.3.1 Subtraction of Analogue Termination upon receipt of Register Recall

Pre-conditions: Sequence 5.5.1.1 which then references Sequence 5.1.1.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
Reply = 9001 {
Context = 1 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/1 {
Statistics {……..}
} } }
Transaction = 9002 {
Context = - {
Modify = aln/1/1 {
Events 1515 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = {X},
bc = 20,
mp = enhanced
} },
Signals {
cg/dt
}
} } } }
The MGC orders the AGW/RGW to perform the following actions:
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects a digit
Monitors for steady and pulsed signals
Apply Dial tone
Collect a switching order code
Activate the events descriptor to monitor for steady and pulsed signals
The C-party is put on hold with an announcement and this is achieved via a Media Server which is outside the scope of these message flows.
Dial Tone
Reply = 9002 {
Context = - {
Modify = aln/1/1 } }
DTMF DIGIT
Transaction = 9003 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1515 {
20031215T23000000:
xdd/xce {
ds = "3",
meth = FM
}
} } } }
MGC notes switching order code and sends a positive acknowledgement to the AGW/RGW.
AGW/RGW autonomously removes Dial Tone and DTMF Digit receiver and reports DTMF digit to the MGC.
Reply = 9003 {
Context = - {
Notify = aln/1/1} }

AGW/RGW	MGC
The AGW/RGW enables a duplex media path.	The MGC instructs the AGW/RGW to enable a duplex media path to the media server where the multi-party conference bridge resides and stores recovery information against the physical termination.

Transaction = 9004 {
Context = $ {
Add **= aln/1/1 { Media { Stream = 1 {**
LocalControl {
Mode = SendReceive,
mgcinfo/db = 1234ABC
} } } },
Add **= $ { Media {Stream = 1 {**
LocalControl {
Mode = SendReceive
},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime: 10
} } },
Remote {
v=0
c=IN IP4 178.120.120.1
m=audio 2112 RTP/AVP 8
a=ptime: 10
},
} }
} }

A positive acknowledgement is sent to the MGC identifying the IP address and RTP port number in the local descriptor.

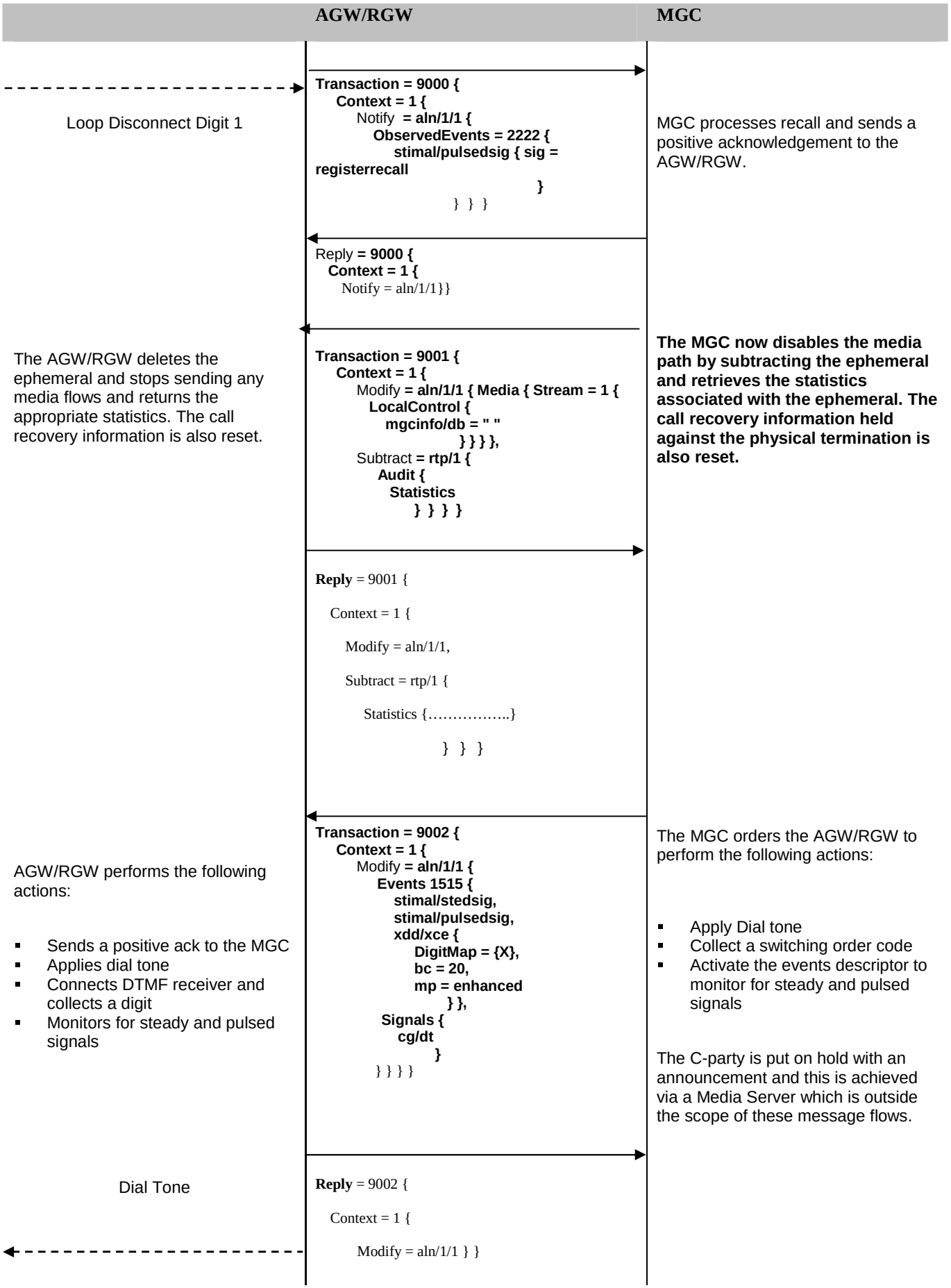
Reply **= 9004 {**
Context = 3 {
Add = aln/1/1,
Add = rtp/99 { Media {Stream = 1 {
Local {
v=0
c = IN IP4 10.0.0.1
m=audio 1112 RTP/AVP 8
a=ptime: 10
} } } } } }

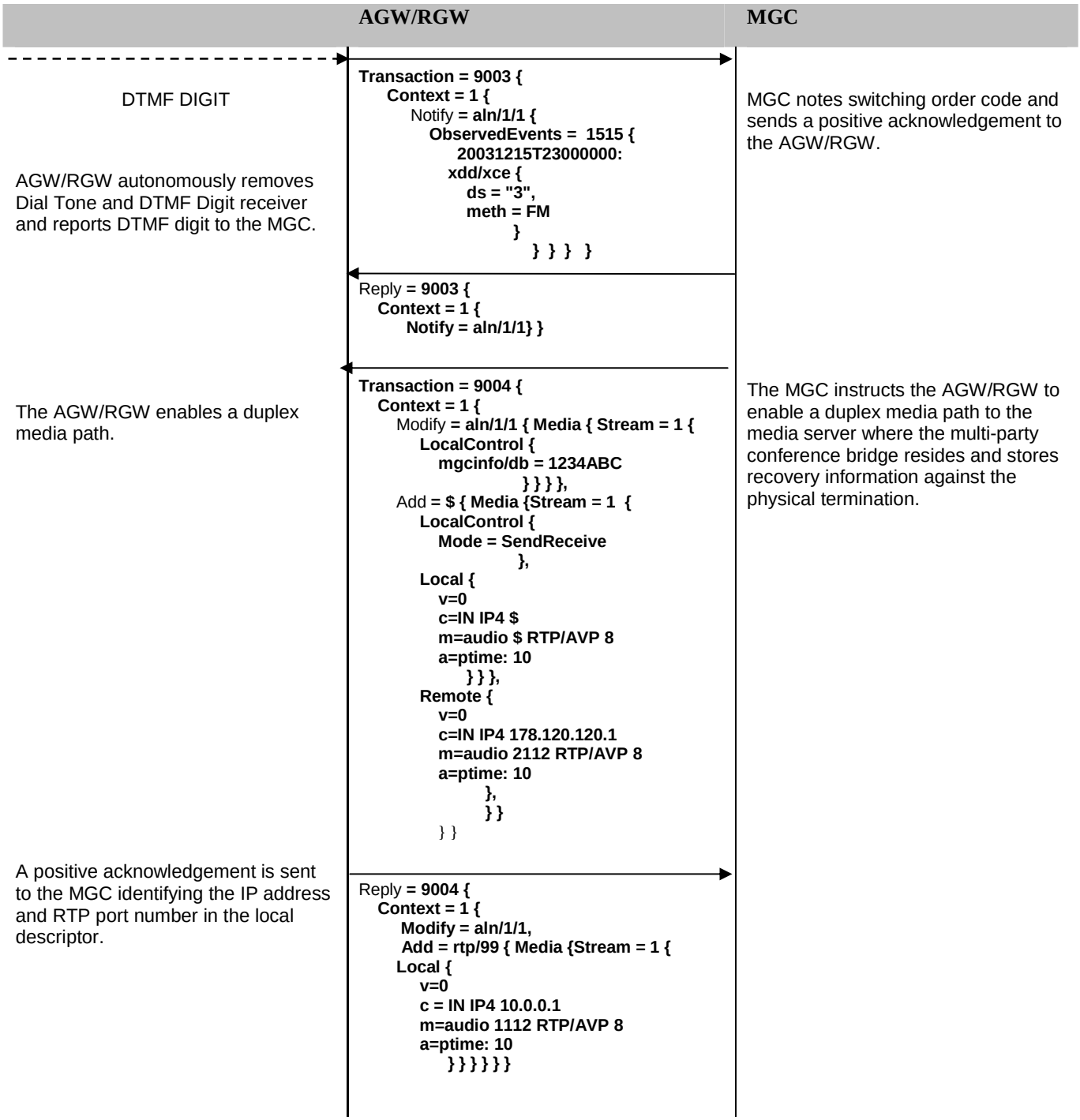
The Call is now in 3 way speech with the conferencing done in the Media Server.

5.5.3.2 Analogue Termination left in Context upon receipt of Register Recall

Pre-conditions: Sequence 5.5.1.2 which then references Sequence 5.1.1.2 has been successfully executed for DEL port aln/1/1.

AGW/RGW	MGC
Loop disconnect Digit 1 has been detected.	
The AGW/RGW maps this to a Hook Flash event, since the event descriptor in the AGW/RGW has been activated for notification of Hook Flash and no digit map is active.	


AGW/RGW
MGC
Loop Disconnect Digit 1
Transaction = 9000 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 2222 {
stimal/pulsedsig { sig = registerrecall
}
} } }
MGC processes recall and sends a positive acknowledgement to the AGW/RGW.
Reply = 9000 {
Context = 1 {
Notify = aln/1/1}}
The AGW/RGW deletes the ephemeral and stops sending any media flows and returns the appropriate statistics. The call recovery information is also reset.
Transaction = 9001 {
Context = 1 {
Modify = aln/1/1 { Media { Stream = 1 {
LocalControl {
mgcinfo/db = " "
} } } },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
The MGC now disables the media path by subtracting the ephemeral and retrieves the statistics associated with the ephemeral. The call recovery information held against the physical termination is also reset.
Reply = 9001 {
Context = 1 {
Modify = aln/1/1,
Subtract = rtp/1 {
Statistics {……..}
} } }
Transaction = 9002 {
Context = 1 {
Modify = aln/1/1 {
Events 1515 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = {X},
bc = 20,
mp = enhanced
} },
Signals {
cg/dt
}
} } } }
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects a digit
Monitors for steady and pulsed signals
The MGC orders the AGW/RGW to perform the following actions:
Apply Dial tone
Collect a switching order code
Activate the events descriptor to monitor for steady and pulsed signals
The C-party is put on hold with an announcement and this is achieved via a Media Server which is outside the scope of these message flows.
Reply = 9002 {
Context = 1 {
Modify = aln/1/1 } }
Dial Tone

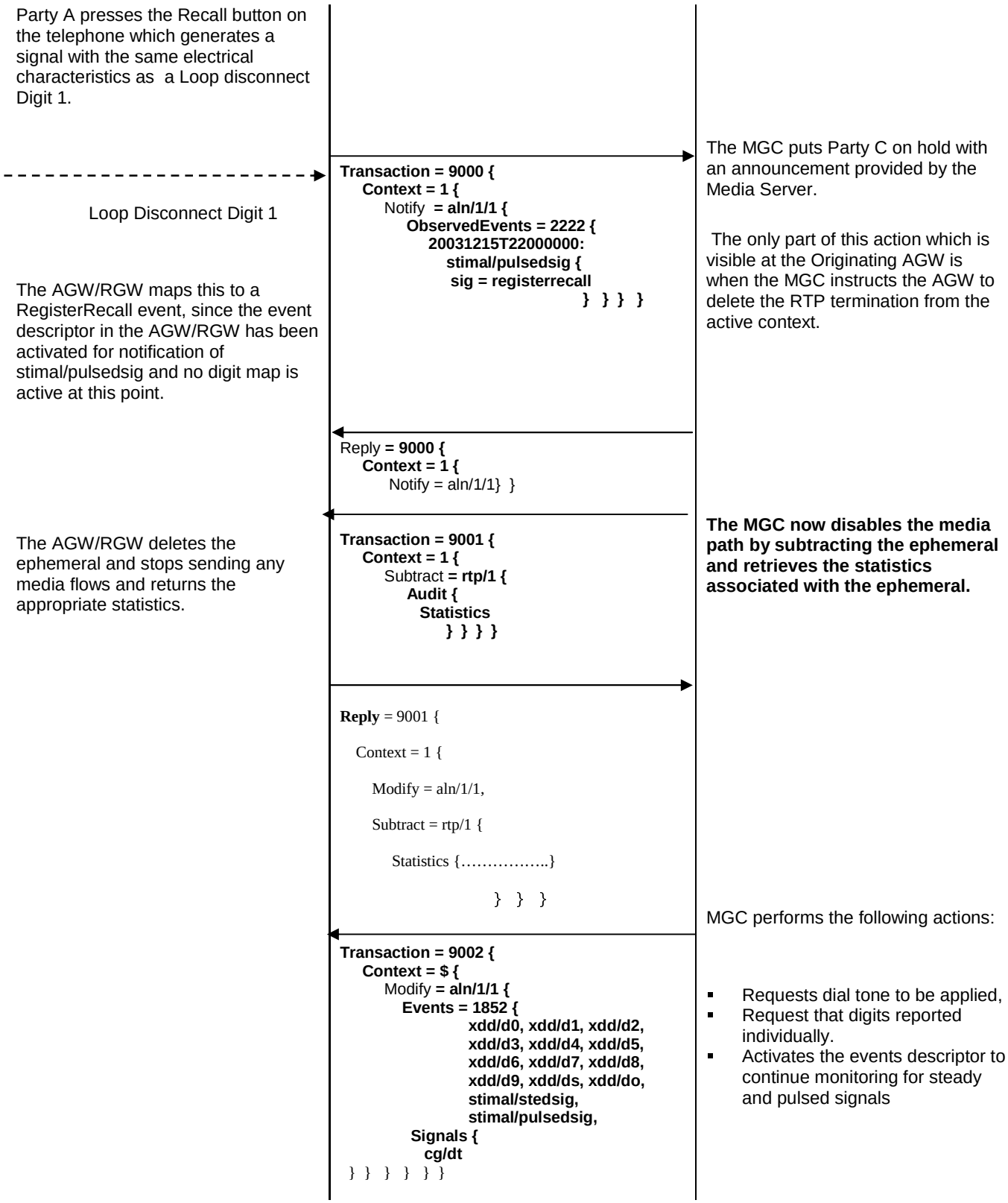


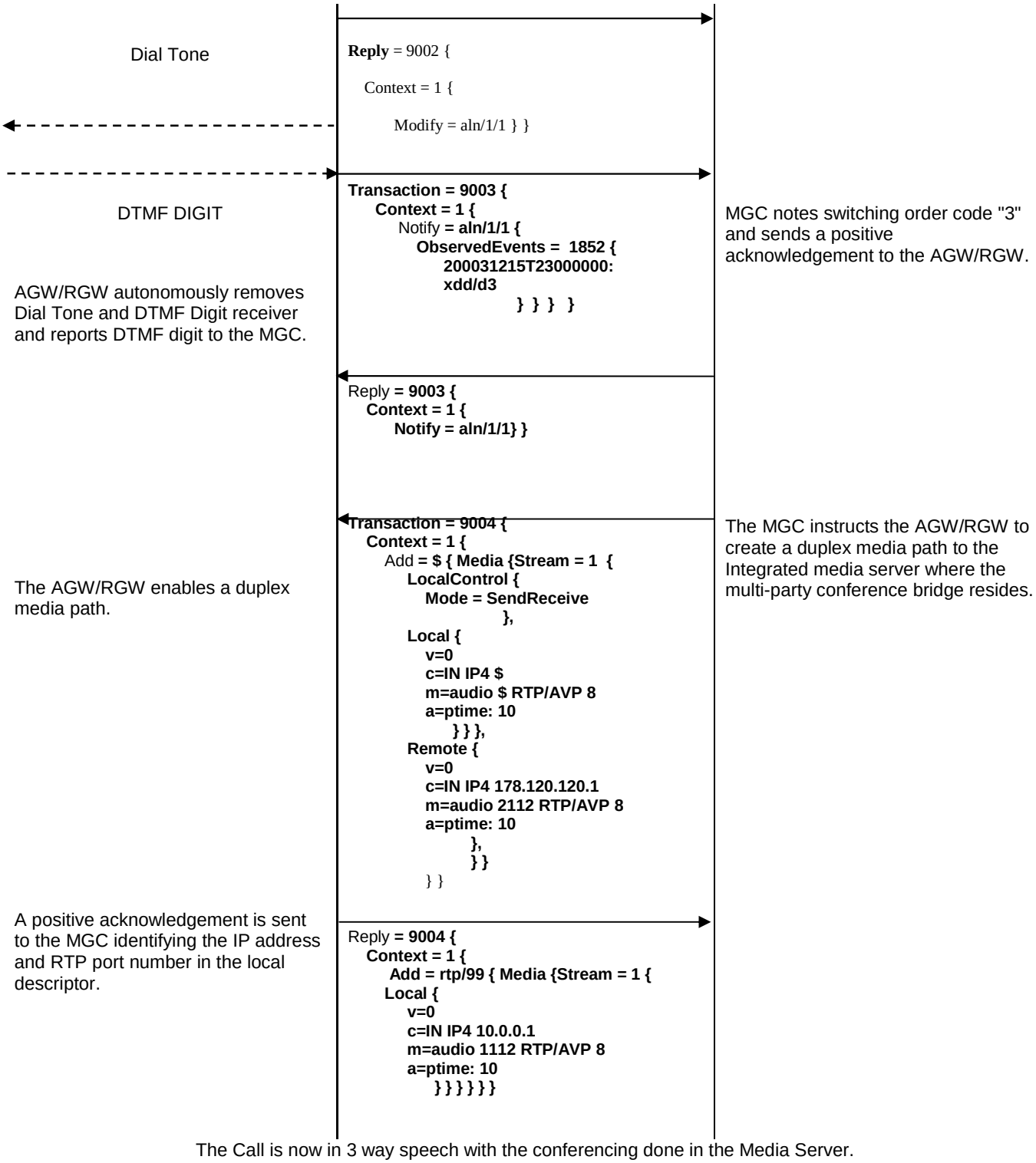
The Call is now in 3 way speech with the conferencing done in the Media Server.

5.5.3.3 Analogue Termination left in Context upon receipt of Register Recall Alternative Flow

Pre-conditions: Sequence 5.1.1.3 or 5.1.2.3 has been successfully executed for DEL port aln/1/1.

Party-A is connected to Party-C with Party-B on Hold in the Integrated Media Server.





The Call is now in 3 way speech with the conferencing done in the Media Server.

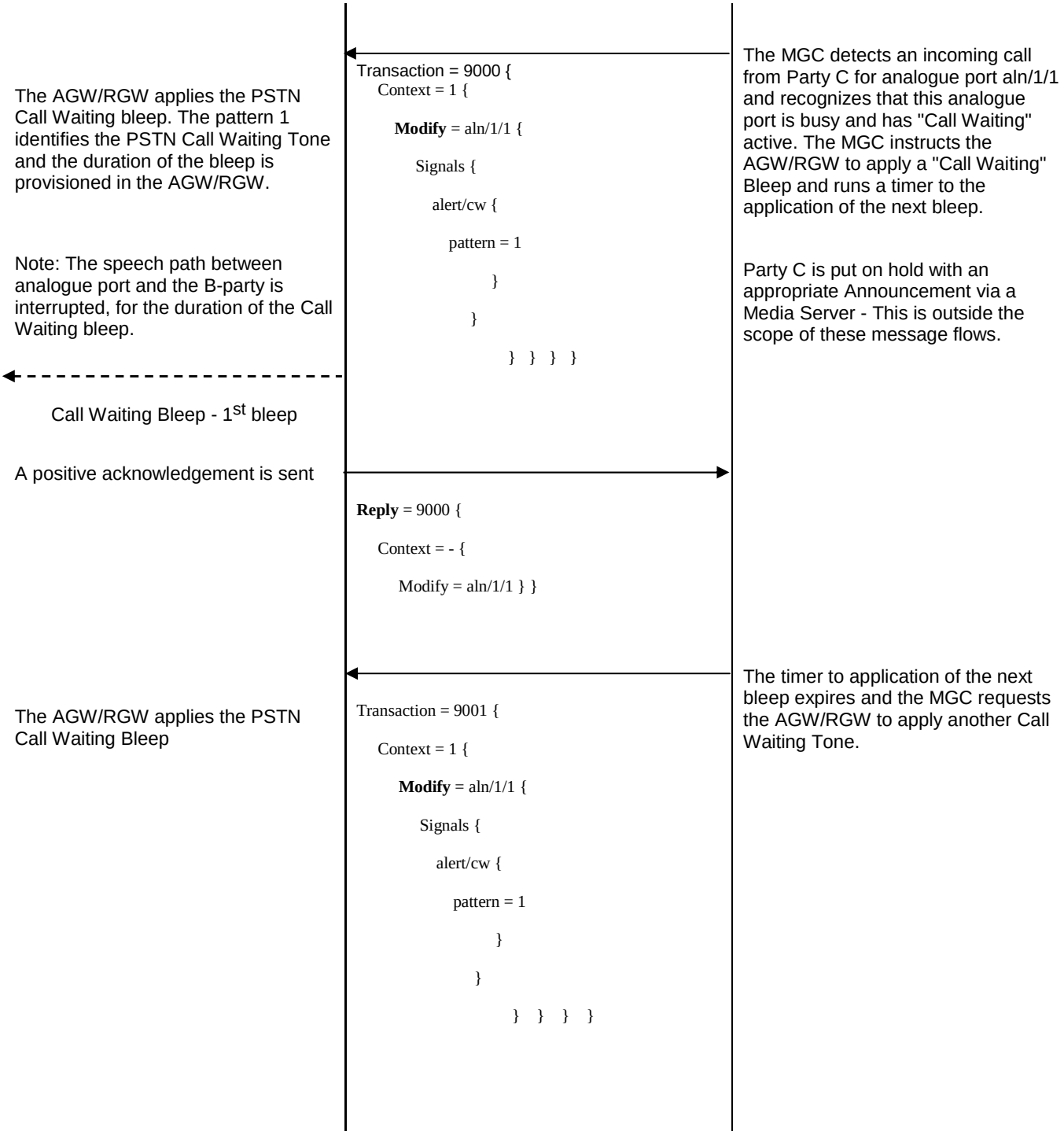
5.5.4 DEL - Call Waiting; Waiting Call Accepted - A end

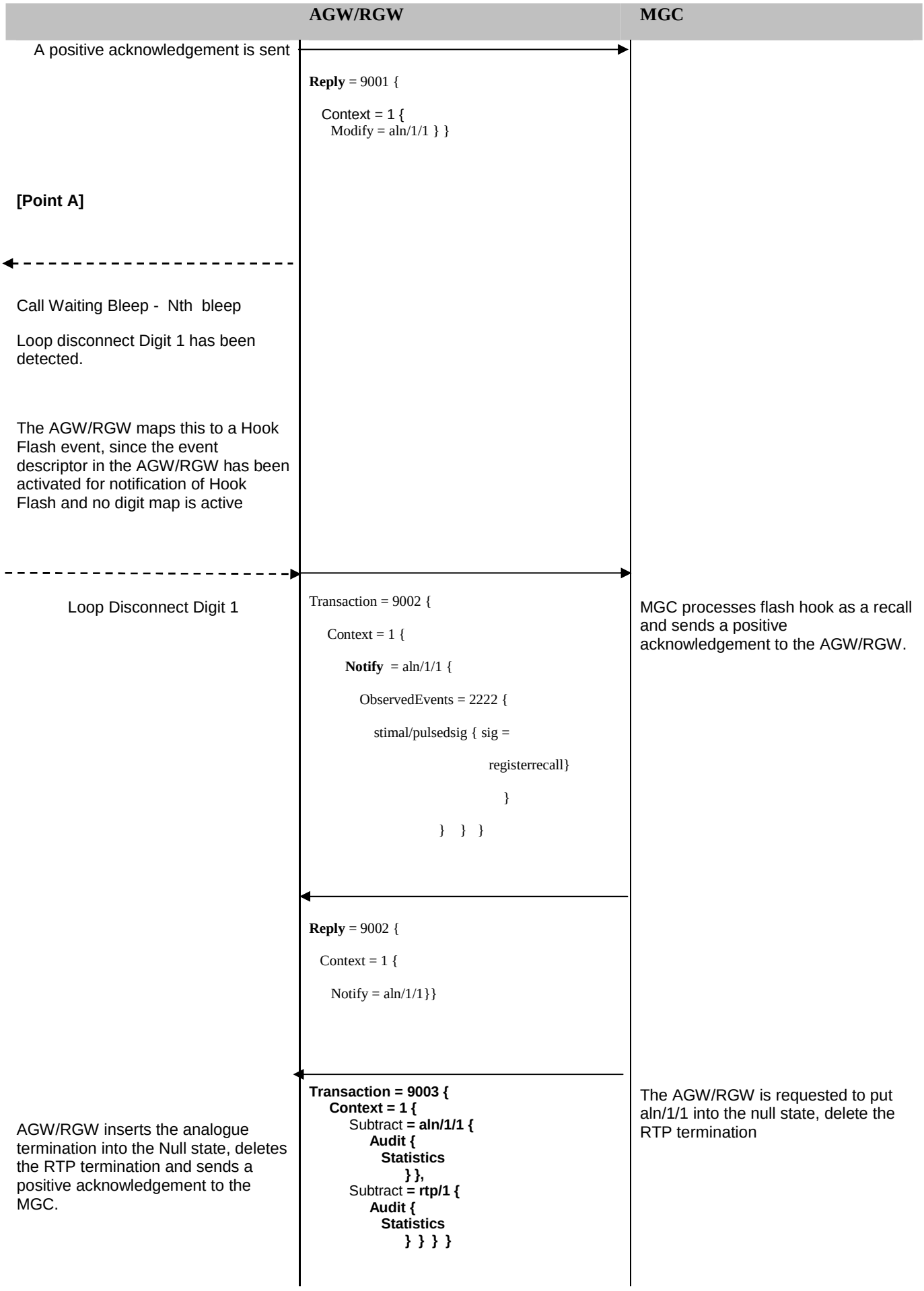
5.5.4.1 Subtraction of Analogue Termination upon receipt of Register Recall

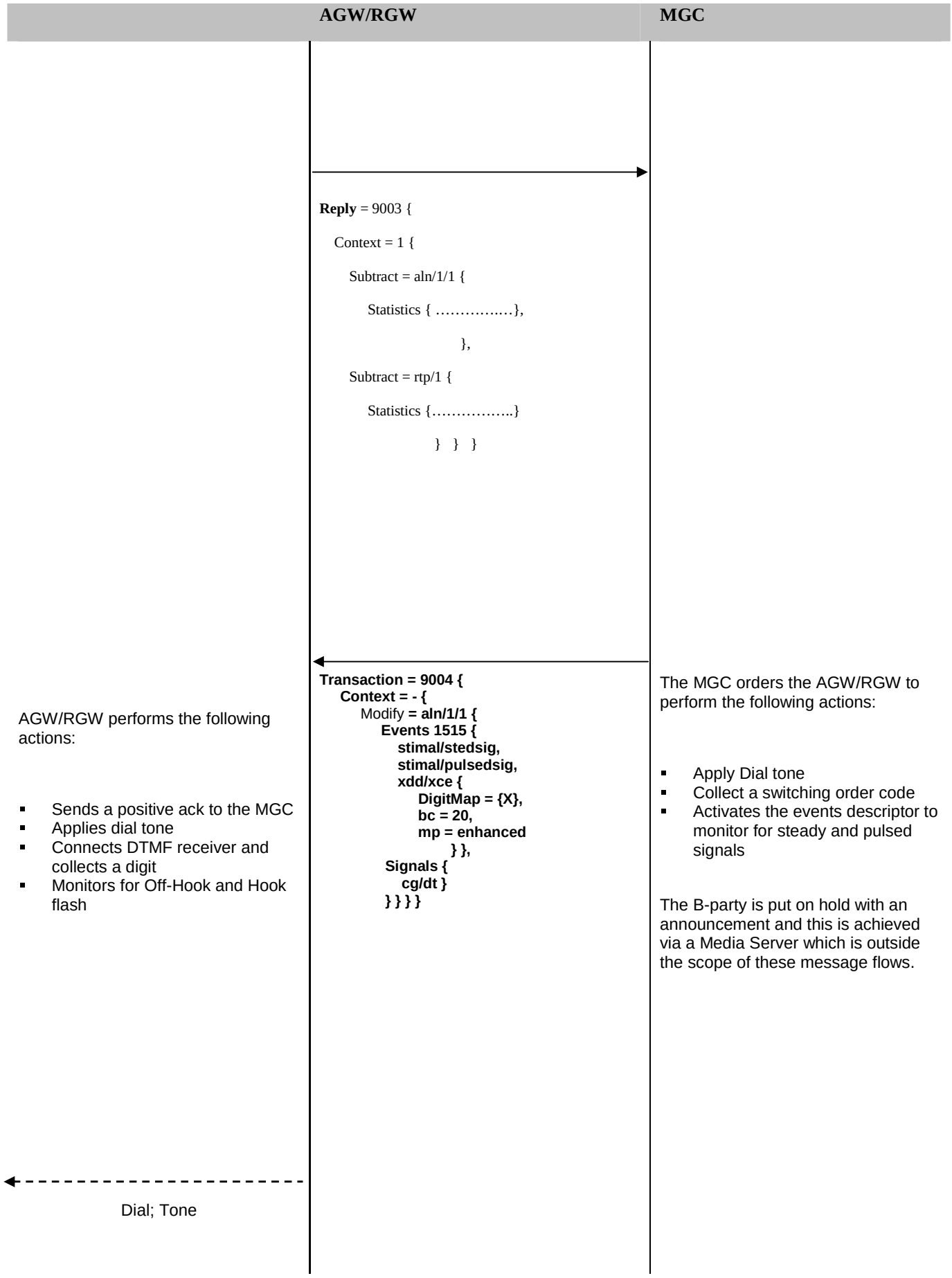
Pre-conditions: Sequence 5.1.1.1 has been successfully executed.

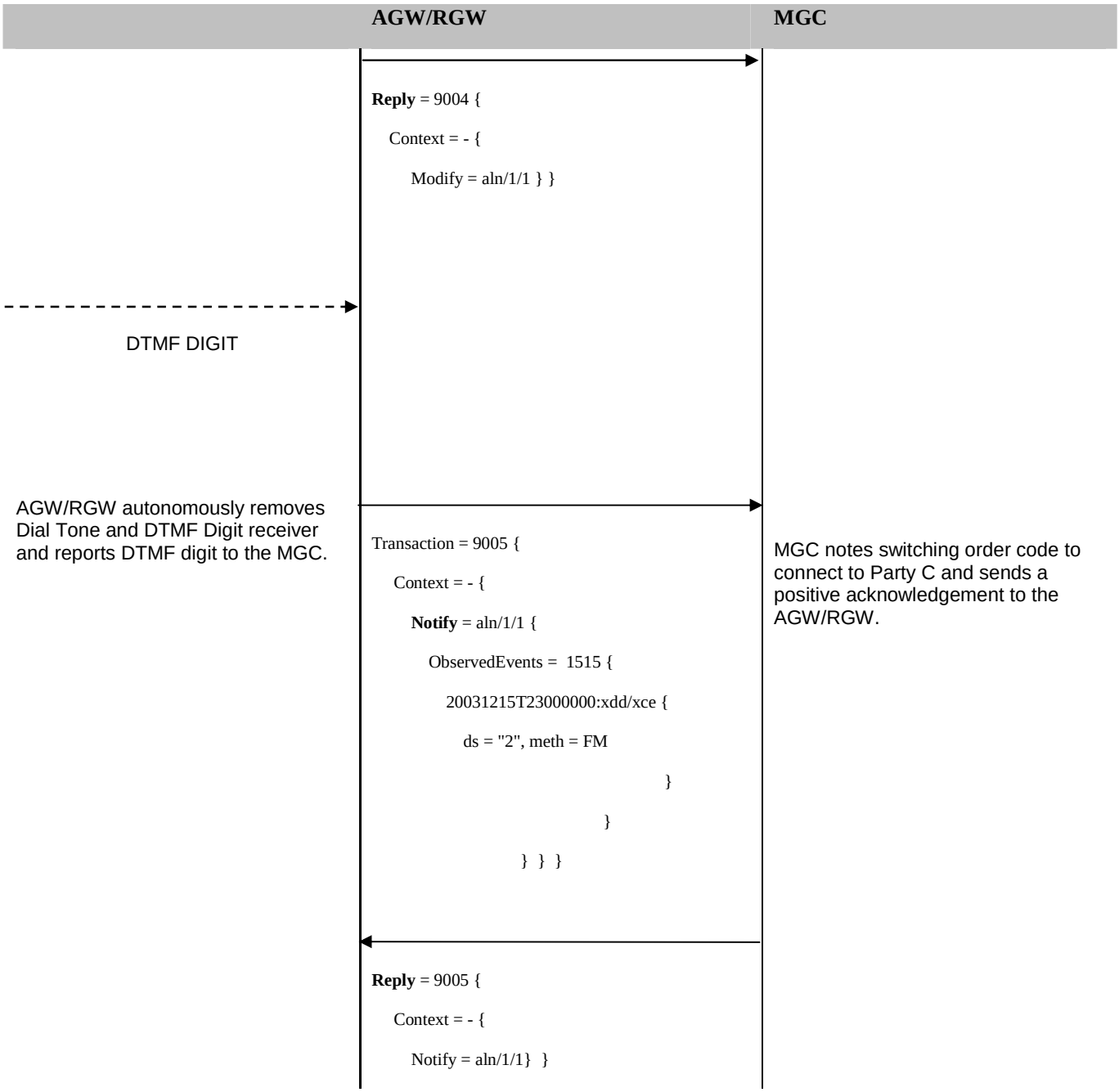
AGW/RGW	MGC

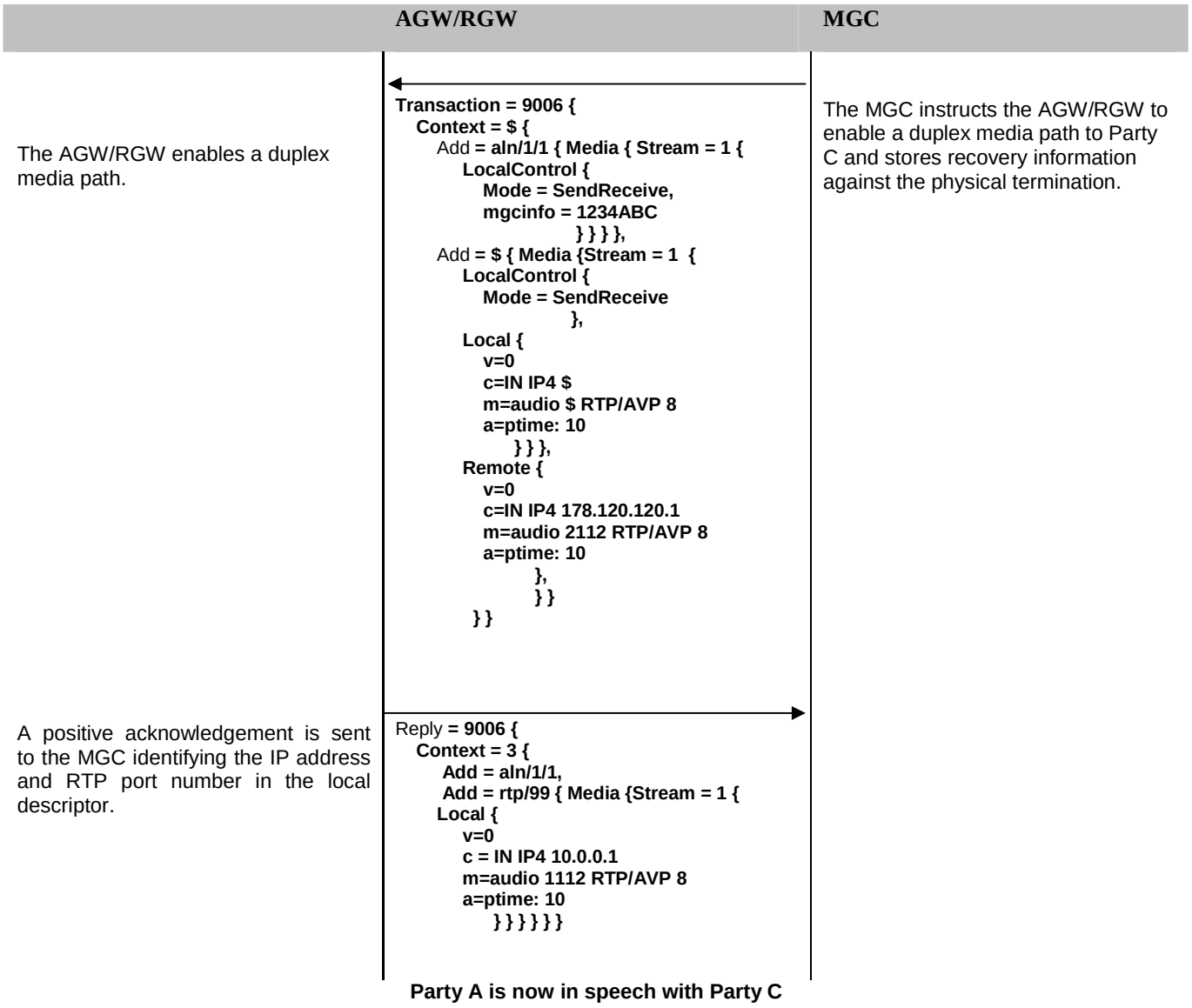
Analogue port aln/1/1 is in speech/conversation mode




AGW/RGW
MGC
A positive acknowledgement is sent
Reply = 9001 {
Context = 1 {
Modify = aln/1/1 } }
[Point A]
Call Waiting Bleep - Nth bleep
Loop disconnect Digit 1 has been detected.
The AGW/RGW maps this to a Hook Flash event, since the event descriptor in the AGW/RGW has been activated for notification of Hook Flash and no digit map is active
Loop Disconnect Digit 1
Transaction = 9002 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 2222 {
stimal/pulsedsig { sig =
registerrecall}
}
} } }
MGC processes flash hook as a recall and sends a positive acknowledgement to the AGW/RGW.
Reply = 9002 {
Context = 1 {
Notify = aln/1/1}}
Transaction = 9003 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
AGW/RGW inserts the analogue termination into the Null state, deletes the RTP termination and sends a positive acknowledgement to the MGC.
The AGW/RGW is requested to put aln/1/1 into the null state, delete the RTP termination


AGW/RGW
MGC
Reply = 9003 {
Context = 1 {
Subtract = aln/1/1 {
Statistics { ……..…},
},
Subtract = rtp/1 {
Statistics {……..}
} } }
Transaction = 9004 {
Context = - {
Modify = aln/1/1 {
Events 1515 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = {X},
bc = 20,
mp = enhanced
} },
Signals {
cg/dt }
} } } }
The MGC orders the AGW/RGW to perform the following actions:
Apply Dial tone
Collect a switching order code
Activates the events descriptor to monitor for steady and pulsed signals
The B-party is put on hold with an announcement and this is achieved via a Media Server which is outside the scope of these message flows.
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects a digit
Monitors for Off-Hook and Hook flash
Dial; Tone


AGW/RGW
MGC
Reply = 9004 {
Context = - {
Modify = aln/1/1 } }
DTMF DIGIT
AGW/RGW autonomously removes Dial Tone and DTMF Digit receiver and reports DTMF digit to the MGC.
Transaction = 9005 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 1515 {
20031215T23000000:xdd/xce {
ds = "2", meth = FM
}
}
} } }
MGC notes switching order code to connect to Party C and sends a positive acknowledgement to the AGW/RGW.
Reply = 9005 {
Context = - {
Notify = aln/1/1} }

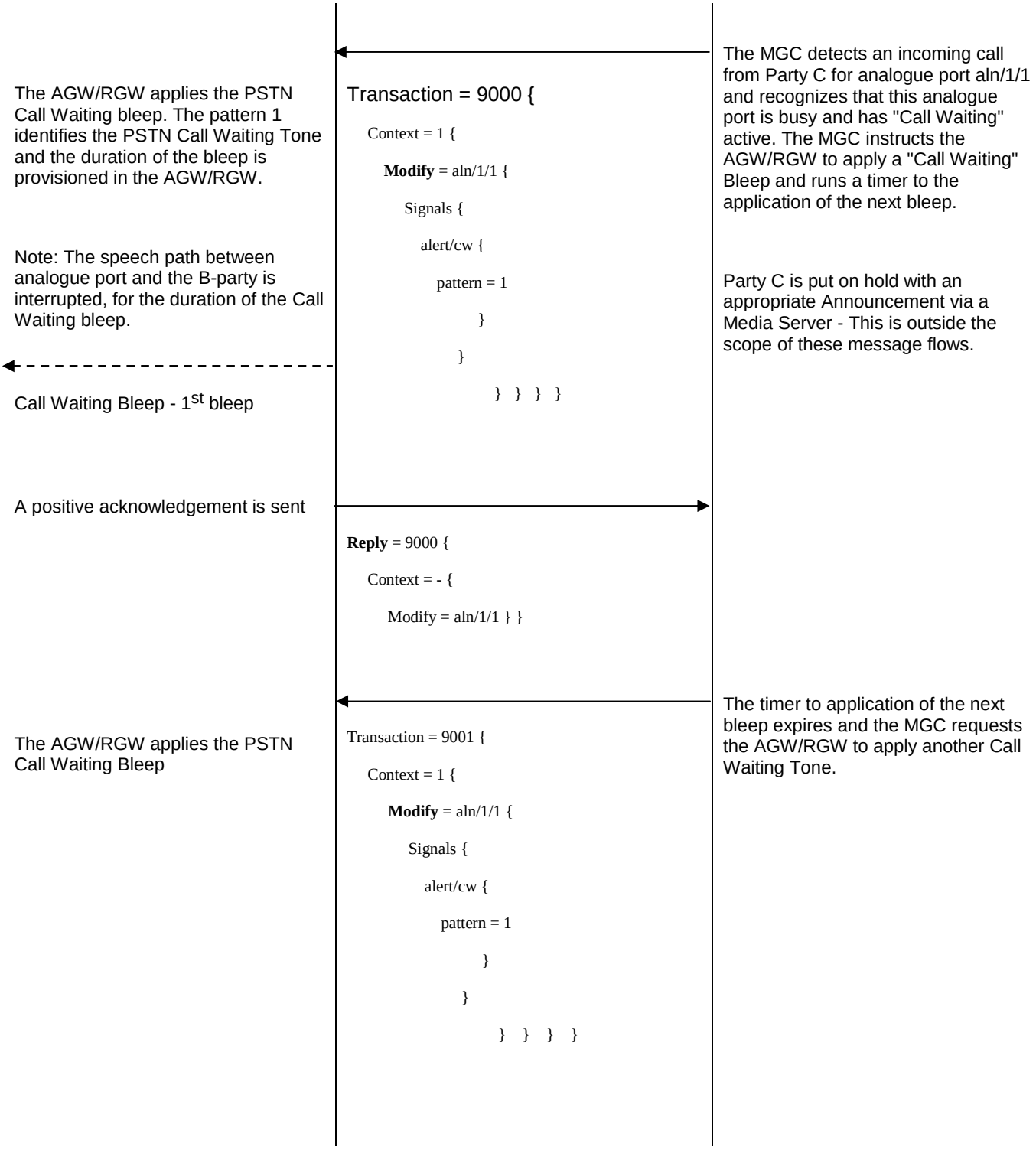

AGW/RGW
MGC
The MGC instructs the AGW/RGW to enable a duplex media path to Party C and stores recovery information against the physical termination.
Transaction = 9006 {
Context = $ {
Add = aln/1/1 { Media { Stream = 1 {
LocalControl {
Mode = SendReceive,
mgcinfo = 1234ABC
} } } },
Add = $ { Media {Stream = 1 {
LocalControl {
Mode = SendReceive
},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime: 10
} } },
Remote {
v=0
c=IN IP4 178.120.120.1
m=audio 2112 RTP/AVP 8
a=ptime: 10
},
} }
} }
The AGW/RGW enables a duplex media path.
Reply = 9006 {
Context = 3 {
Add = aln/1/1,
Add = rtp/99 { Media {Stream = 1 {
Local {
v=0
c = IN IP4 10.0.0.1
m=audio 1112 RTP/AVP 8
a=ptime: 10
} } } } } }
A positive acknowledgement is sent to the MGC identifying the IP address and RTP port number in the local descriptor.
Party A is now in speech with Party C

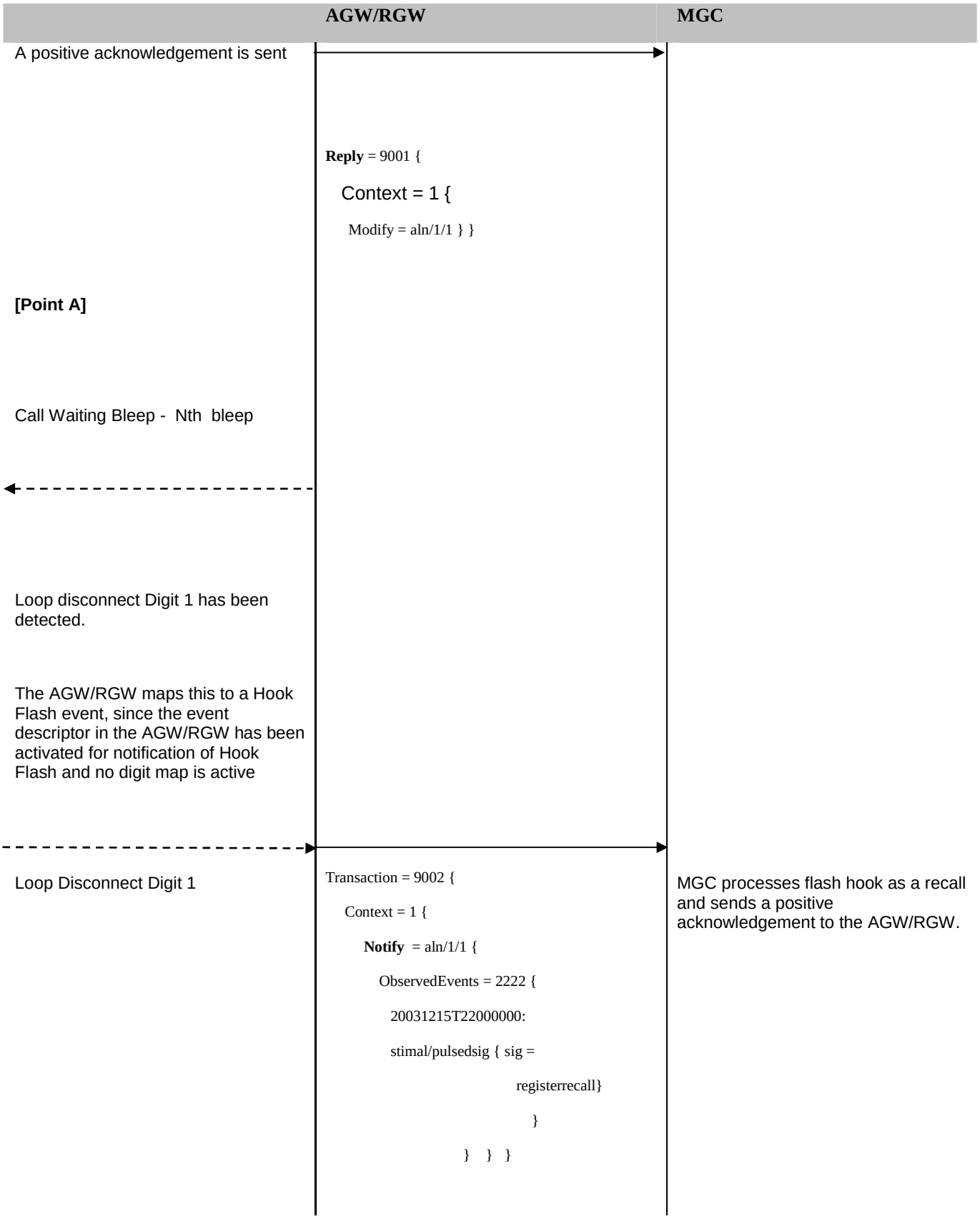
5.5.4.2 Analogue Termination left in Context upon receipt of Register Recall

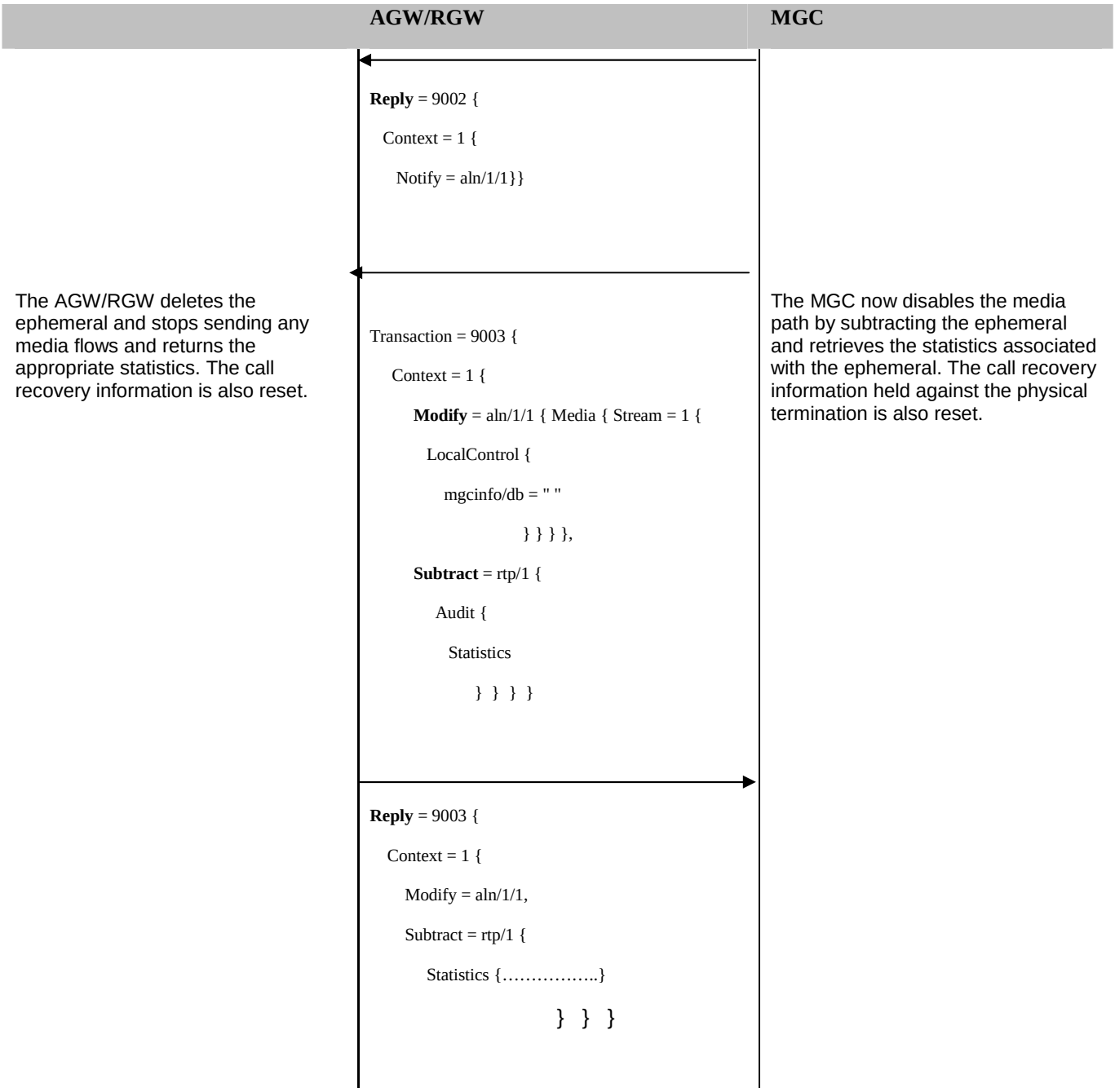
Pre-conditions: Sequence 5.1.1.2 has been successfully executed.

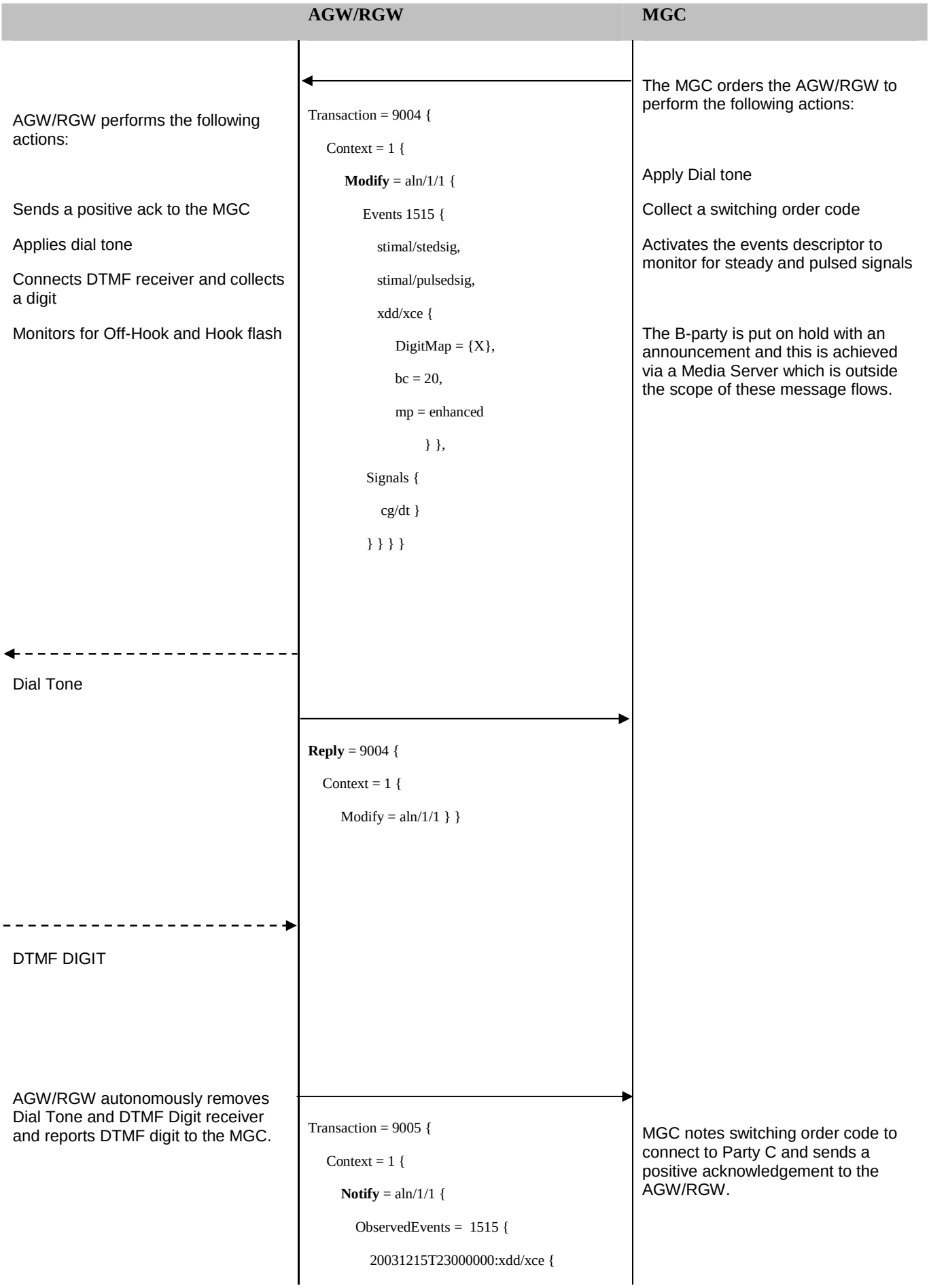
AGW/RGW	MGC

Analogue port aln/1/1 is in speech/conversation mode




AGW/RGW
MGC
A positive acknowledgement is sent
Reply = 9001 {
Context = 1 {
Modify = aln/1/1 } }
[Point A]
Call Waiting Bleep - Nth bleep
Loop disconnect Digit 1 has been detected.
The AGW/RGW maps this to a Hook Flash event, since the event descriptor in the AGW/RGW has been activated for notification of Hook Flash and no digit map is active
Loop Disconnect Digit 1
Transaction = 9002 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 2222 {
20031215T22000000:
stimal/pulsedsig { sig =
registerrecall}
}
} } }
MGC processes flash hook as a recall and sends a positive acknowledgement to the AGW/RGW.


AGW/RGW
MGC
Reply = 9002 {
Context = 1 {
Notify = aln/1/1}}
The AGW/RGW deletes the ephemeral and stops sending any media flows and returns the appropriate statistics. The call recovery information is also reset.
Transaction = 9003 {
Context = 1 {
Modify = aln/1/1 { Media { Stream = 1 {
LocalControl {
mgcinfo/db = " "
} } } },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
The MGC now disables the media path by subtracting the ephemeral and retrieves the statistics associated with the ephemeral. The call recovery information held against the physical termination is also reset.
Reply = 9003 {
Context = 1 {
Modify = aln/1/1,
Subtract = rtp/1 {
Statistics {……..}
} } }

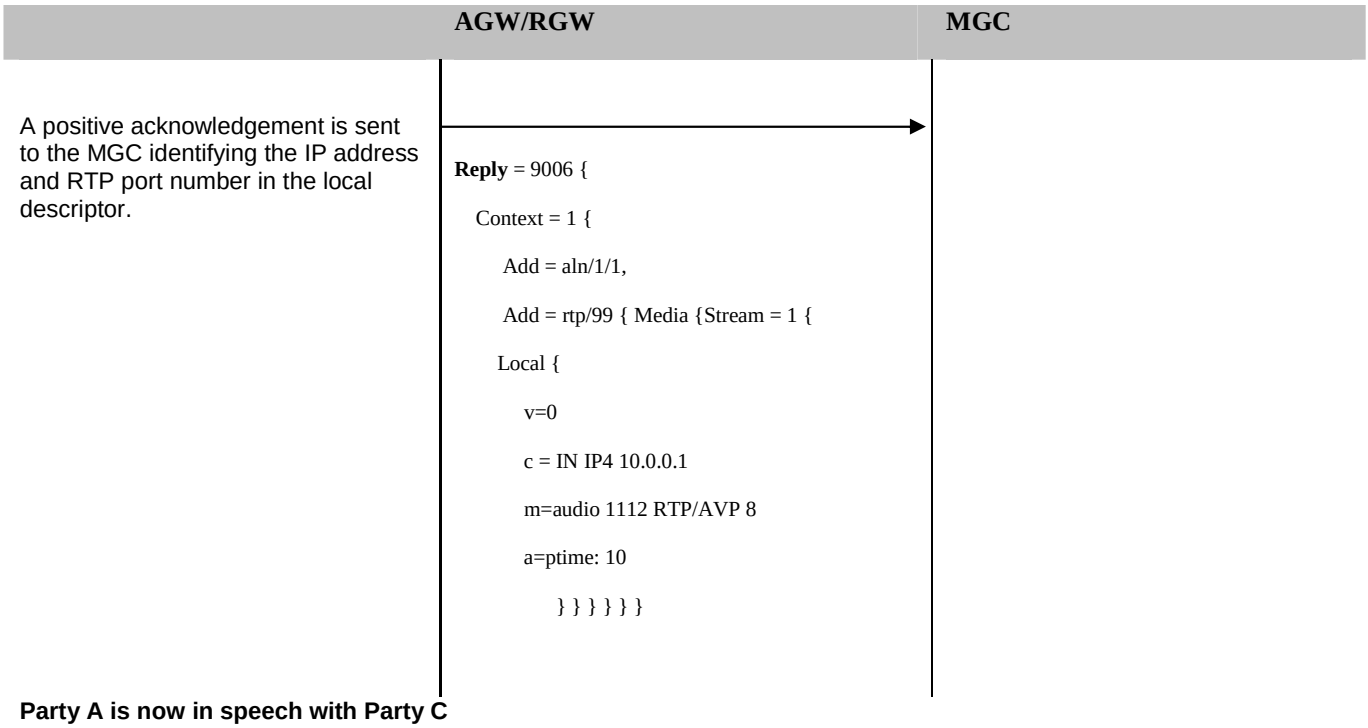

AGW/RGW
MGC
The MGC orders the AGW/RGW to perform the following actions:
AGW/RGW performs the following actions:
Transaction = 9004 {
Context = 1 {
Modify = aln/1/1 {
Events 1515 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = {X},
bc = 20,
mp = enhanced
} },
Signals {
cg/dt }
} } } }
Apply Dial tone
Collect a switching order code
Activates the events descriptor to monitor for steady and pulsed signals
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects a digit
Monitors for Off-Hook and Hook flash
The B-party is put on hold with an announcement and this is achieved via a Media Server which is outside the scope of these message flows.
Dial Tone
Reply = 9004 {
Context = 1 {
Modify = aln/1/1 } }
DTMF DIGIT
AGW/RGW autonomously removes Dial Tone and DTMF Digit receiver and reports DTMF digit to the MGC.
Transaction = 9005 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1515 {
20031215T23000000:xdd/xce {
MGC notes switching order code to connect to Party C and sends a positive acknowledgement to the AGW/RGW.

AGW/RGW	MGC
	ds = "2", meth = FM } } } } }

	Reply = 9005 {
	Context = 1 {
	Notify = aln/1/1} }

The AGW/RGW enables a duplex media path.	The MGC instructs the AGW/RGW to enable a duplex media path to Party C and stores recovery information against the physical termination.

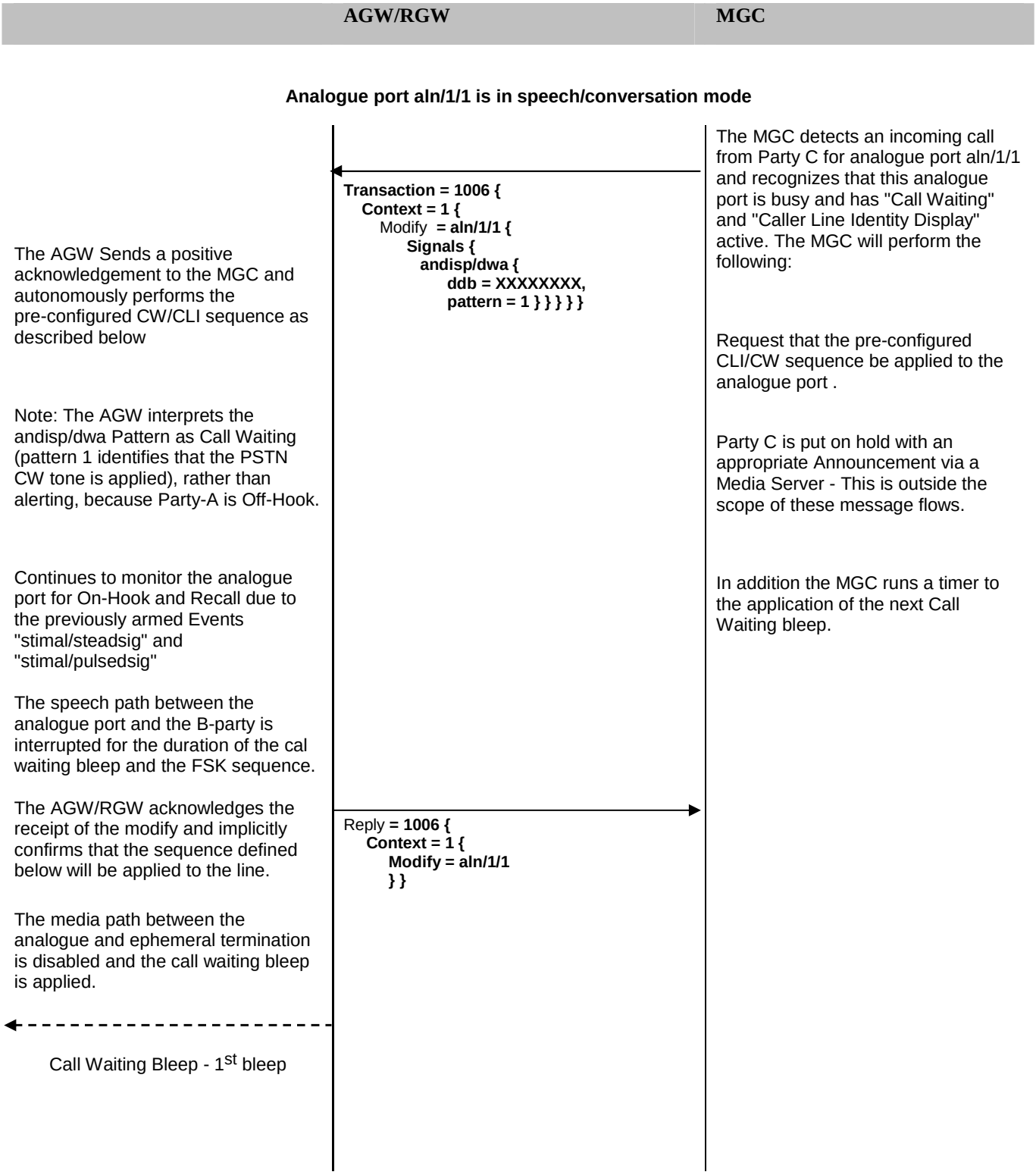
	Transaction = 9006 {
	Context = 1 {
	Modify = aln/1/1 { Media { Stream = 1 {
	LocalControl {
	mgcinfo = 1234ABC
	} } } },
	Add = $ { Media {Stream = 1 {
	LocalControl {
	Mode = SendReceive
	},
	Local {
	v=0
	c=IN IP4 $
	m=audio $ RTP/AVP 8
	a=ptime: 10
	} } },
	Remote {
	v=0
	c=IN IP4 178.120.120.1
	m=audio 2112 RTP/AVP 8
	a=ptime: 10
	},
	} }
	} }

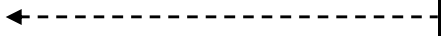
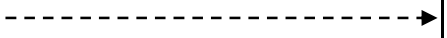
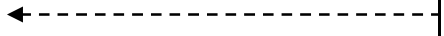

AGW/RGW
MGC
A positive acknowledgement is sent to the MGC identifying the IP address and RTP port number in the local descriptor.
Reply = 9006 {
Context = 1 {
Add = aln/1/1,
Add = rtp/99 { Media {Stream = 1 {
Local {
v=0
c = IN IP4 10.0.0.1
m=audio 1112 RTP/AVP 8
a=ptime: 10
} } } } } }
Party A is now in speech with Party C

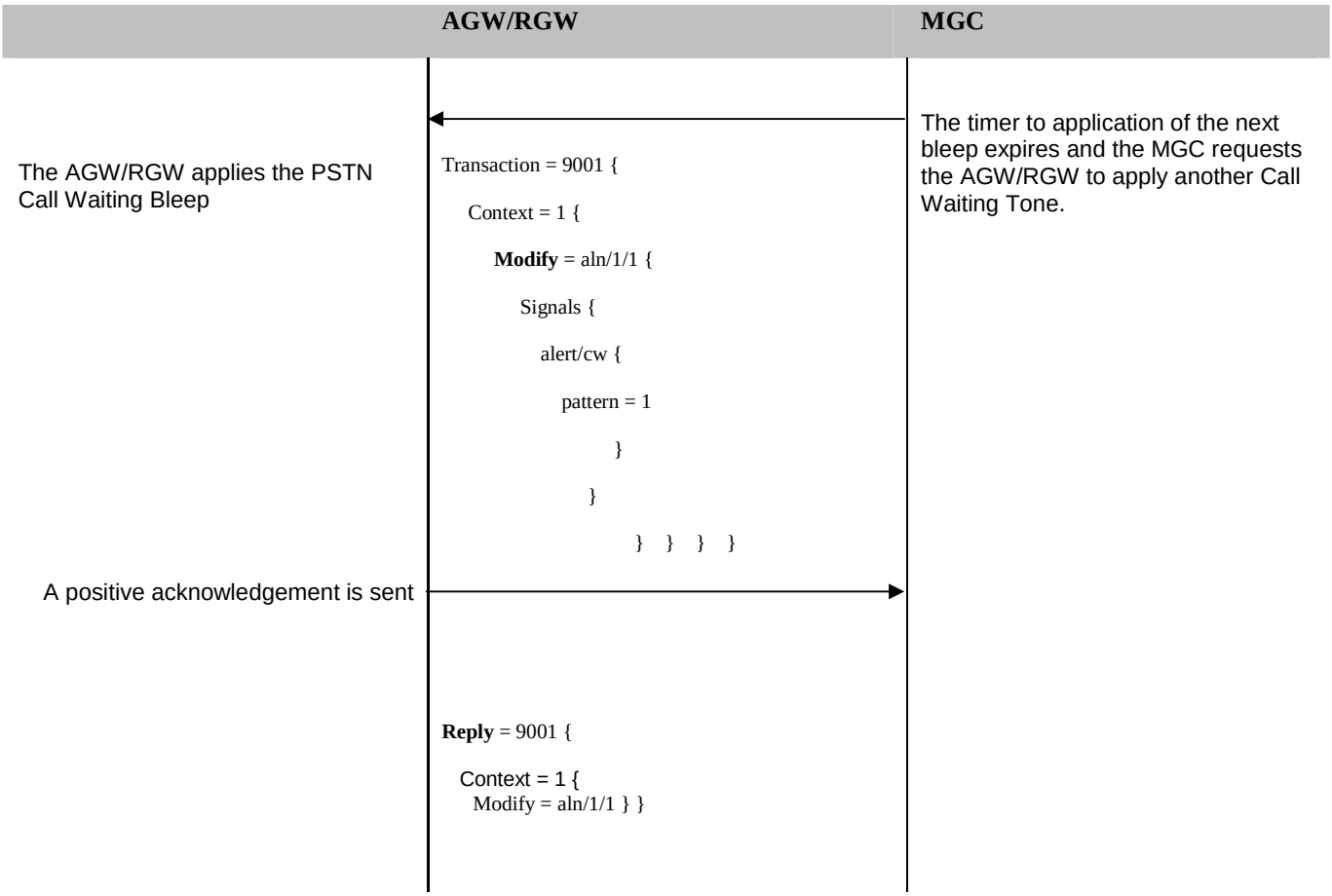
5.5.5 DEL - Call Waiting with Caller Line Identity Display; Dual Tone Alert Signal Sent; Waiting Call Accepted - A end

Pre-conditions: Sequence 5.1.1 has been successfully executed for DEL port aln/1/1.

Party-A is in conversation with Party-B, Party-C calls Party-A.



AGW/RGW		MGC
Upon Completion of the Call Waiting Bleep, the AGW/RGW now starts "T10".		
The duration of T10, DT-AS, covering timer "T11" to receipt of "TE-ACK" from the CPE, "T12" and "T13" are configurable items within the AGW/RGW. Further details for these items are defined in EN 300 659-2 [2].		
Upon expiry of "T10" the AGW/RGW applies the DT-AS and awaits the "TE-ACK" and runs timer T11 to the receipt of the TE-ACK.		
 DT-AS		
 TE-ACK	The "TE-ACK" is DTMF digit "A", "B", "C", or "D". The covering timer T11 is cancelled and the AGW/RGW starts "T12".	
Upon expiry of "T12" - the AGW/RGW generates the FSK signal which comprises a mark signal and the data block "XXXXXXX"		
 FSK		
Upon completion of the sending of the FSK data block, the timer T13 is started.		
Upon expiry of timer T13 the media path between the analogue and ephemeral termination is enabled.		



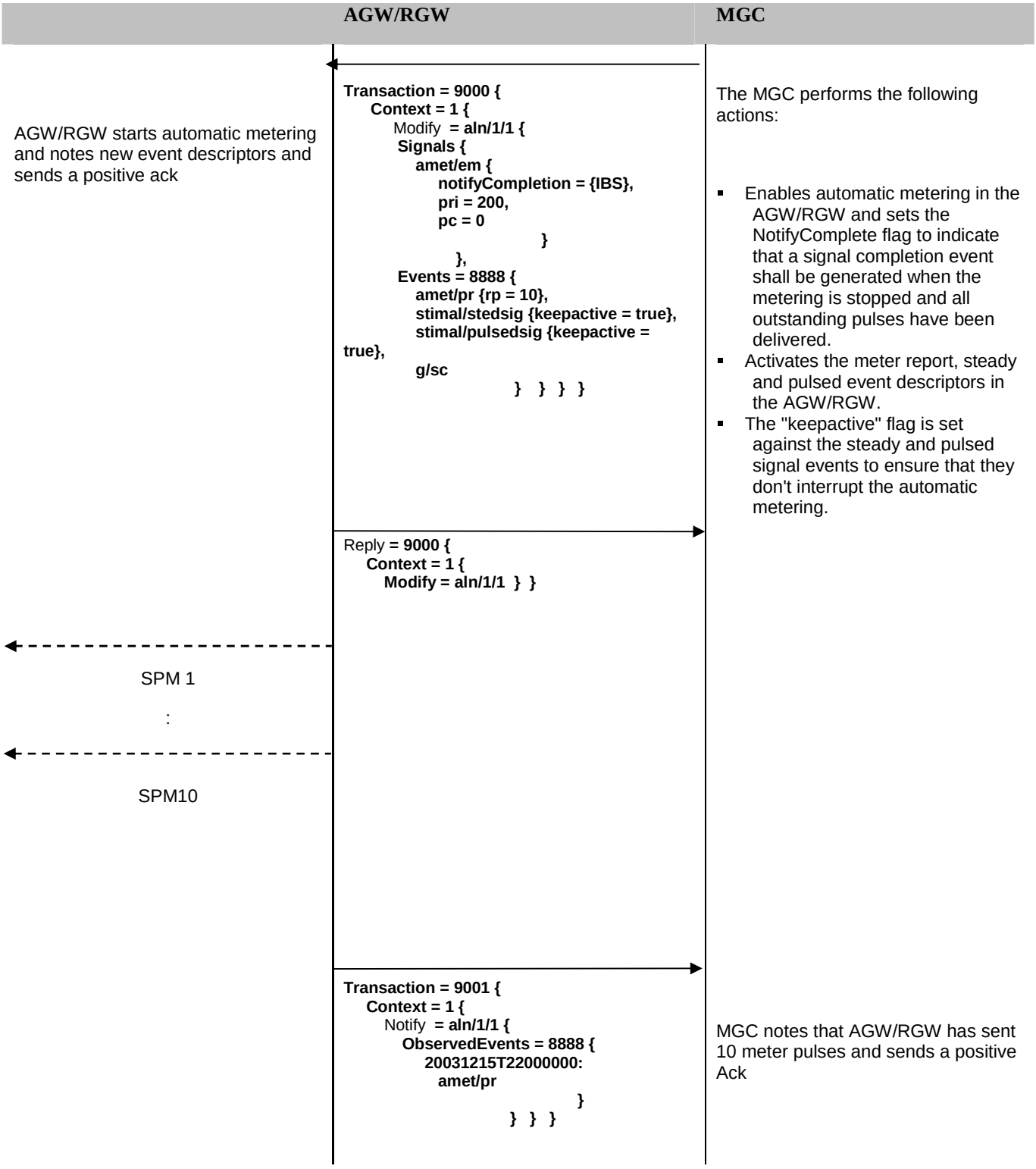
The Caller Identity followed by Call Waiting bleeps have been successfully delivered to the analogue port and the sequence continues as per message flow 5.5.4.1 or 5.5.4.2 Point A.

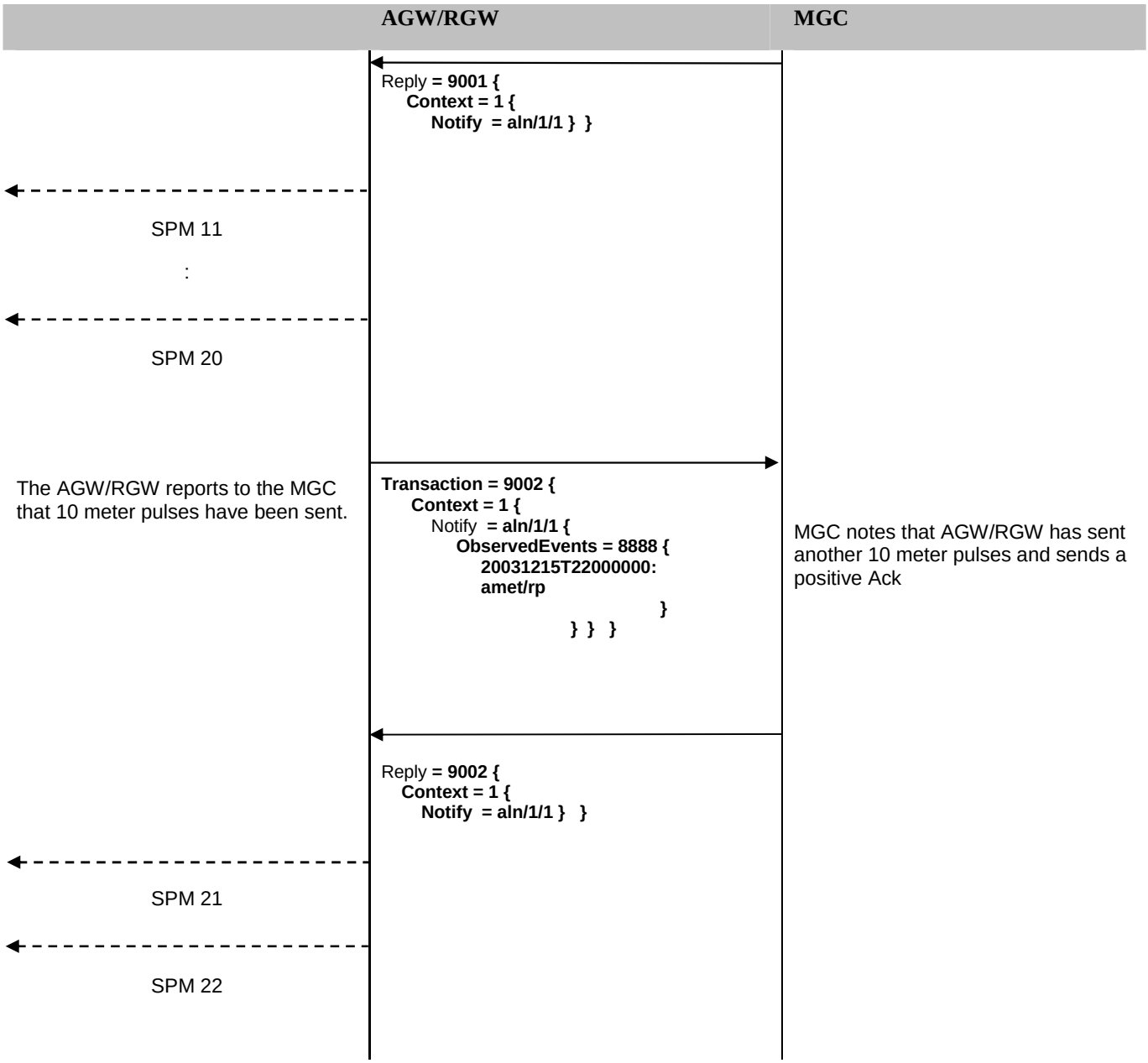
5.6 Automatic Metering

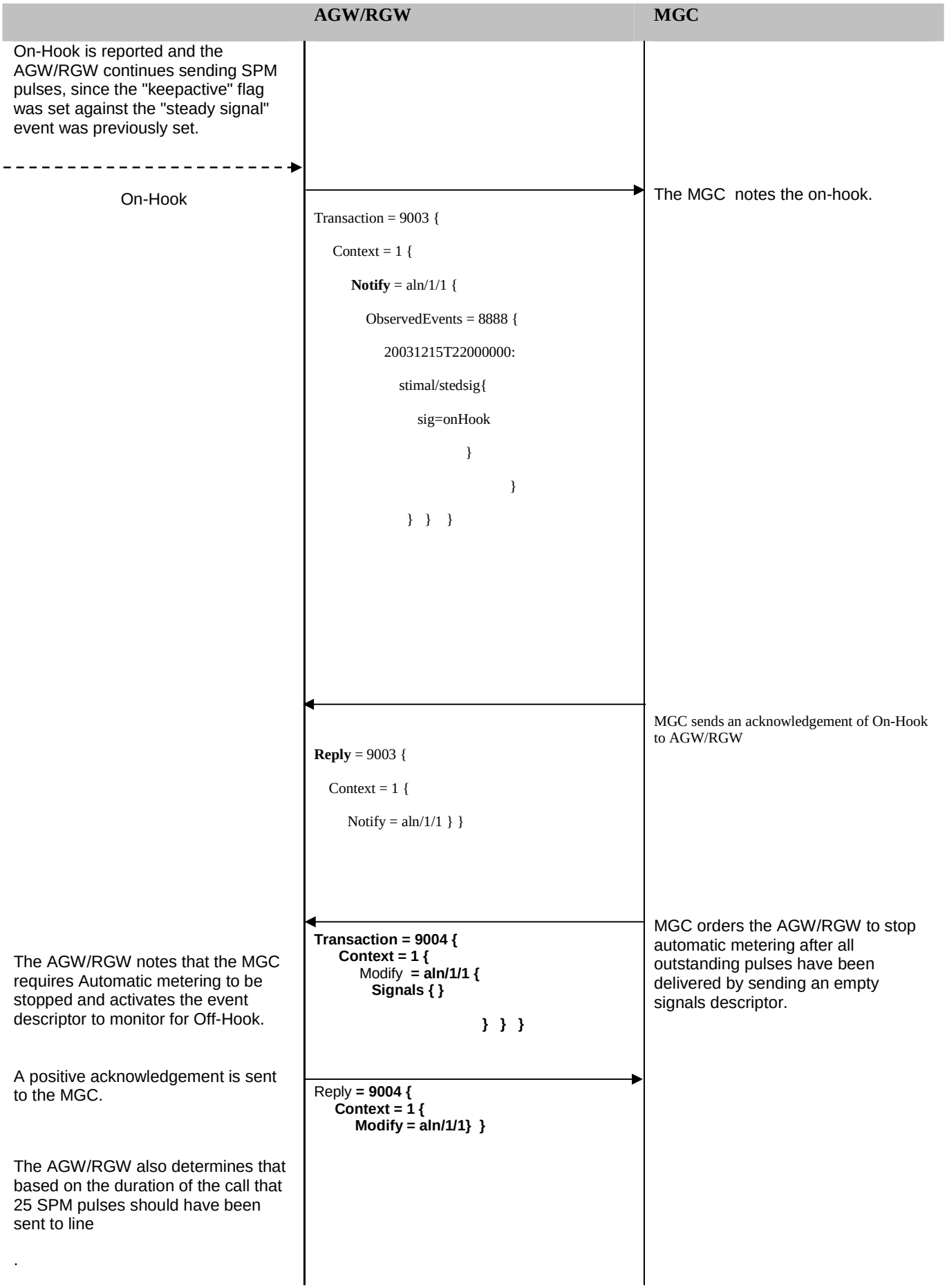
5.6.1 DEL - Automatic Metering - A end

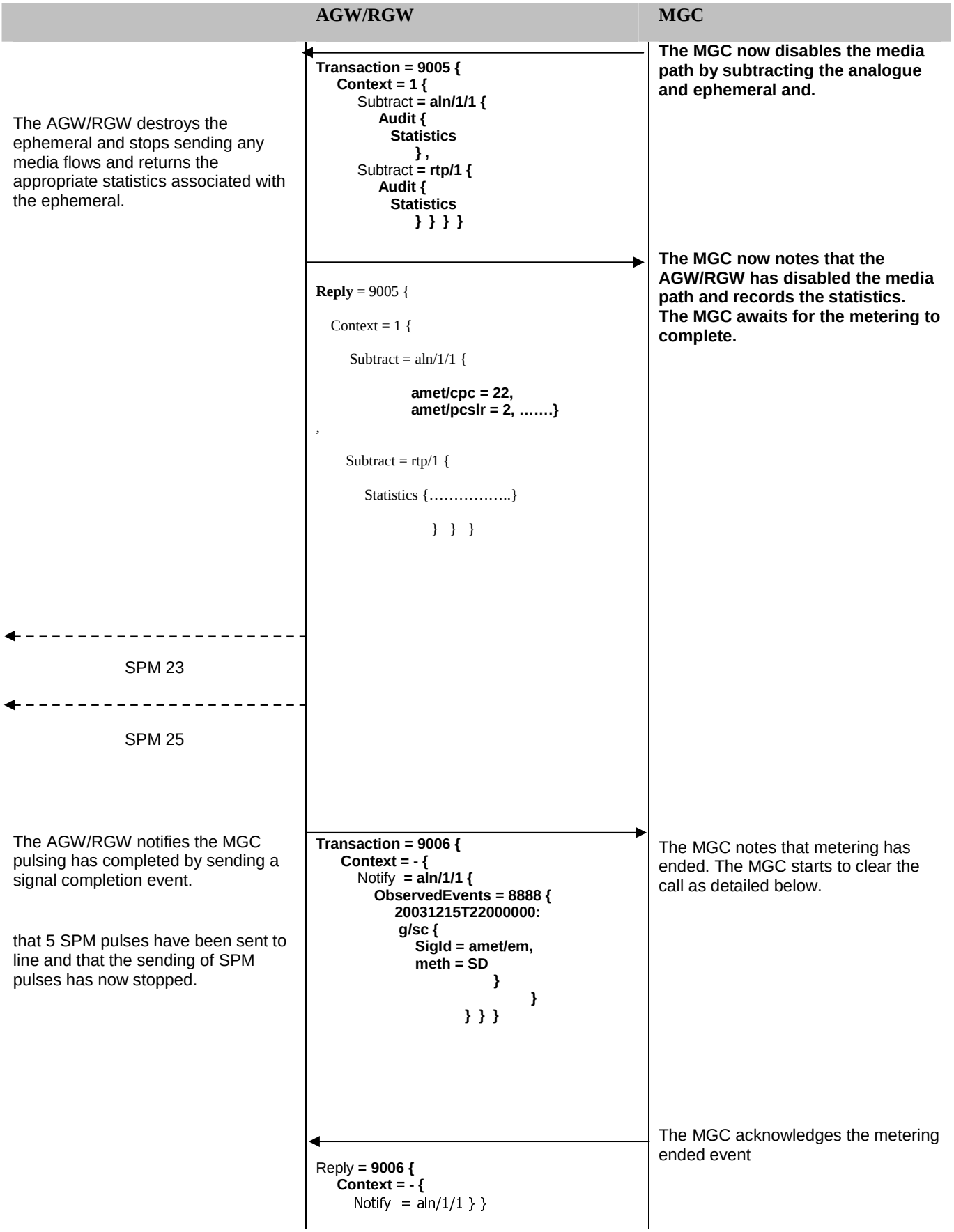
5.6.1.1 Early Subtract of the Analogue Termination from a Context

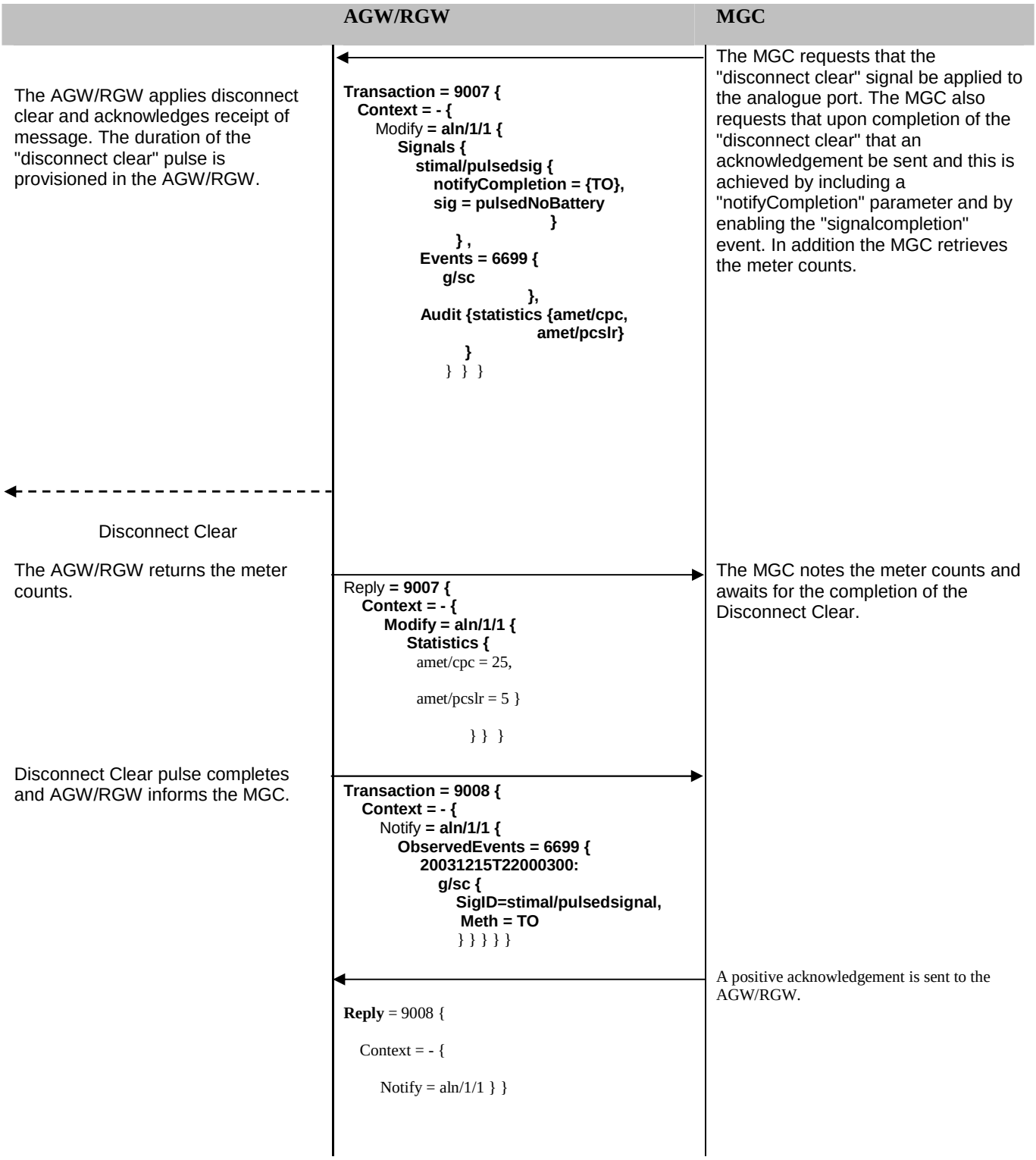
Pre-conditions: Sequence 5.1.1 has been successfully executed for DEL port aln/1/1.

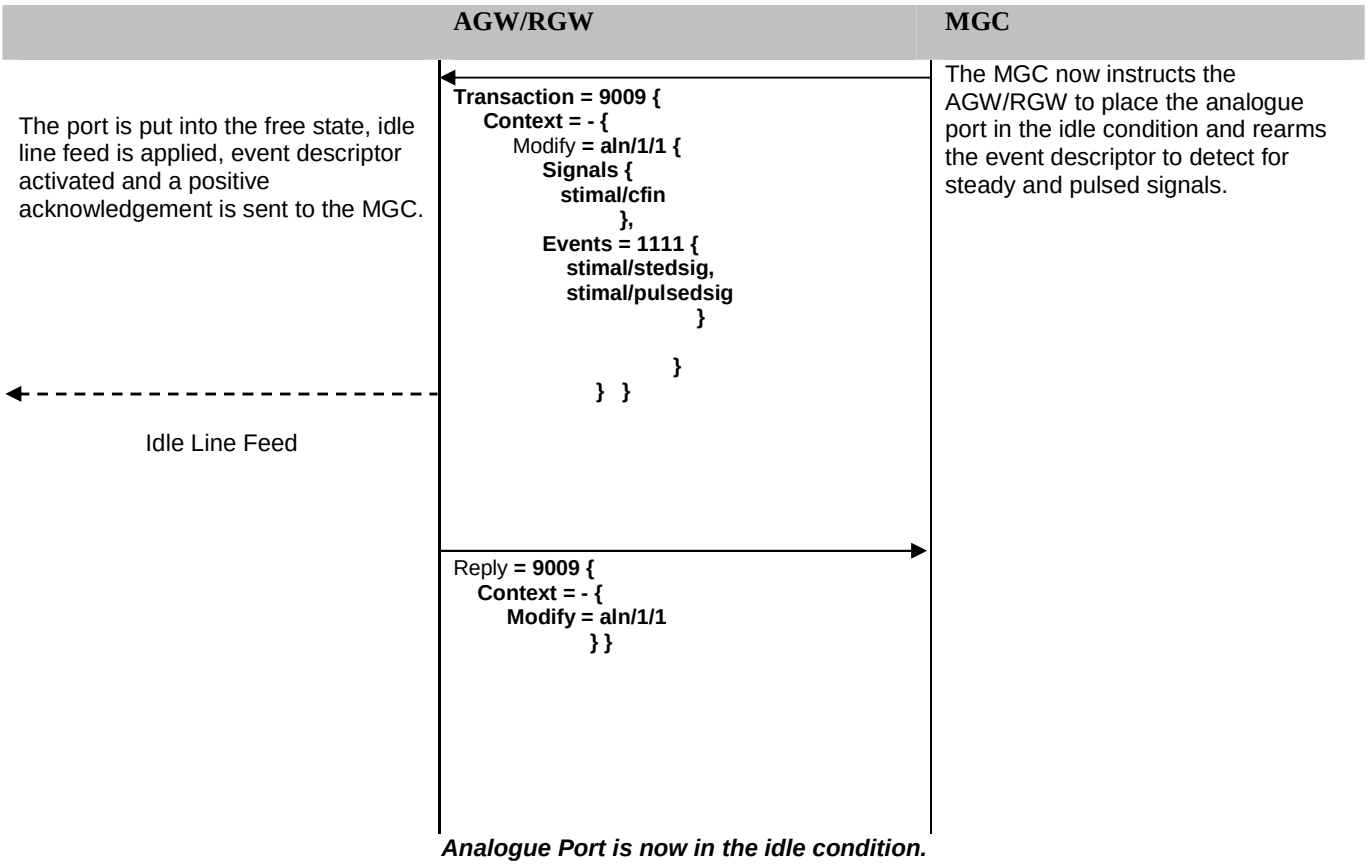



AGW/RGW
MGC
Reply = 9001 {
Context = 1 {
Notify = aln/1/1 } }
SPM 11
:
SPM 20
The AGW/RGW reports to the MGC that 10 meter pulses have been sent.
Transaction = 9002 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 8888 {
20031215T22000000:
amet/rp
}
} } }
MGC notes that AGW/RGW has sent another 10 meter pulses and sends a positive Ack
Reply = 9002 {
Context = 1 {
Notify = aln/1/1 } }
SPM 21
SPM 22


AGW/RGW
MGC
On-Hook is reported and the AGW/RGW continues sending SPM pulses, since the "keepactive" flag was set against the "steady signal" event was previously set.
On-Hook
The MGC notes the on-hook.
Transaction = 9003 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 8888 {
20031215T22000000:
stimal/stedsig{
sig=onHook
}
}
} } }
MGC sends an acknowledgement of On-Hook to AGW/RGW
Reply = 9003 {
Context = 1 {
Notify = aln/1/1 } }
MGC orders the AGW/RGW to stop automatic metering after all outstanding pulses have been delivered by sending an empty signals descriptor.
Transaction = 9004 {
Context = 1 {
Modify = aln/1/1 {
Signals { }
} } }
The AGW/RGW notes that the MGC requires Automatic metering to be stopped and activates the event descriptor to monitor for Off-Hook.
A positive acknowledgement is sent to the MGC.
Reply = 9004 {
Context = 1 {
Modify = aln/1/1} }
The AGW/RGW also determines that based on the duration of the call that 25 SPM pulses should have been sent to line
.


AGW/RGW
MGC
The MGC now disables the media path by subtracting the analogue and ephemeral and.
Transaction = 9005 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} ,
Subtract = rtp/1 {
Audit {
Statistics
} } } }
The AGW/RGW destroys the ephemeral and stops sending any media flows and returns the appropriate statistics associated with the ephemeral.
The MGC now notes that the AGW/RGW has disabled the media path and records the statistics. The MGC awaits for the metering to complete.
Reply = 9005 {
Context = 1 {
Subtract = aln/1/1 {
amet/cpc = 22,
amet/pcslr = 2, …….}
,
Subtract = rtp/1 {
Statistics {……..}
} } }
SPM 23
SPM 25
The AGW/RGW notifies the MGC pulsing has completed by sending a signal completion event.
that 5 SPM pulses have been sent to line and that the sending of SPM pulses has now stopped.
Transaction = 9006 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 8888 {
20031215T22000000:
g/sc {
SigId = amet/em,
meth = SD
}
}
} } }
The MGC notes that metering has ended. The MGC starts to clear the call as detailed below.
The MGC acknowledges the metering ended event
Reply = 9006 {
Context = - {
Notify = aln/1/1 } }

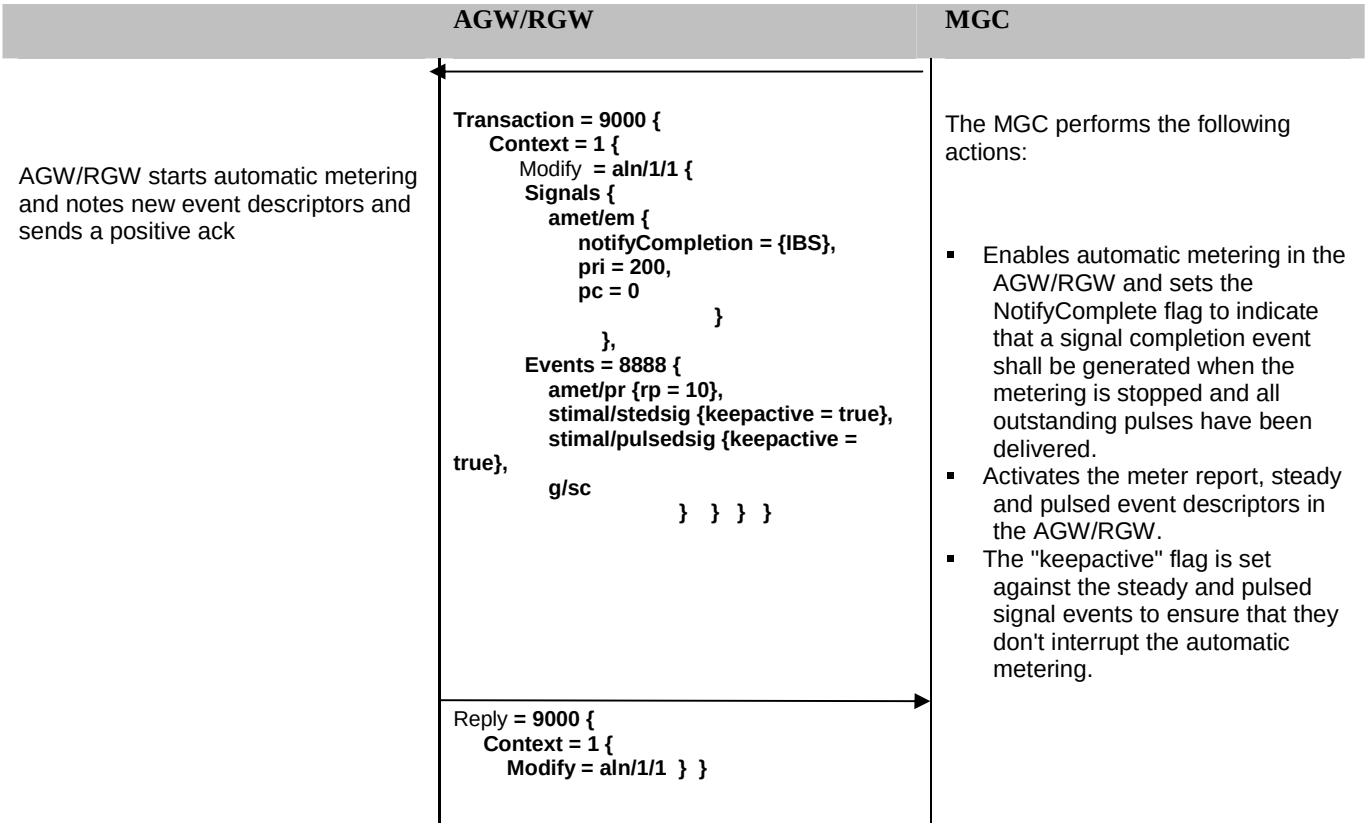

AGW/RGW
MGC
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event. In addition the MGC retrieves the meter counts.
Transaction = 9007 {
Context = - {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
} ,
Events = 6699 {
g/sc
},
Audit {statistics {amet/cpc,
amet/pcslr}
}
} } }
The AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the "disconnect clear" pulse is provisioned in the AGW/RGW.
Disconnect Clear
The AGW/RGW returns the meter counts.
Reply = 9007 {
Context = - {
Modify = aln/1/1 {
Statistics {
amet/cpc = 25,
amet/pcslr = 5 }
} } }
The MGC notes the meter counts and awaits for the completion of the Disconnect Clear.
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 9008 {
Context = - {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
A positive acknowledgement is sent to the AGW/RGW.
Reply = 9008 {
Context = - {
Notify = aln/1/1 } }

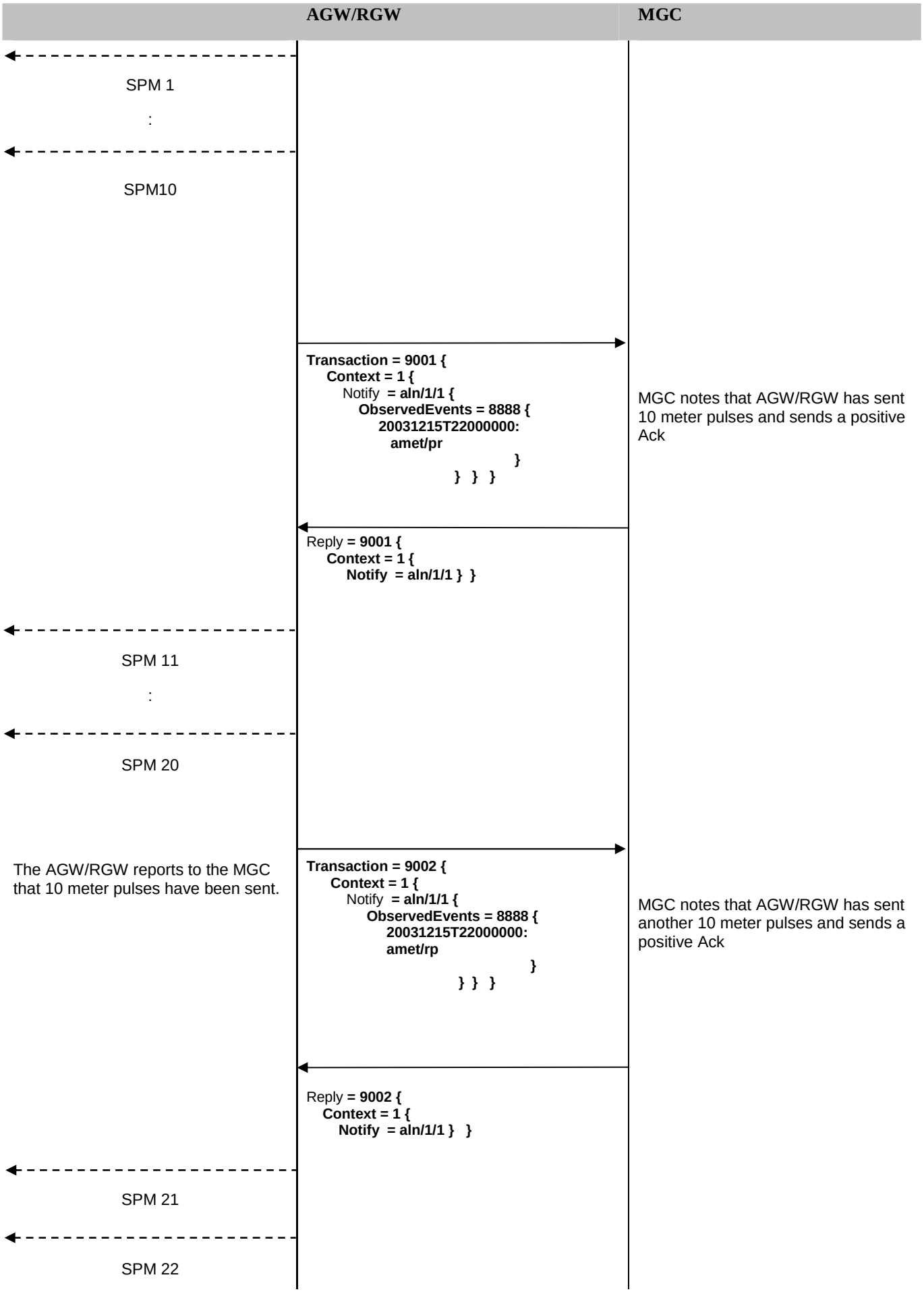


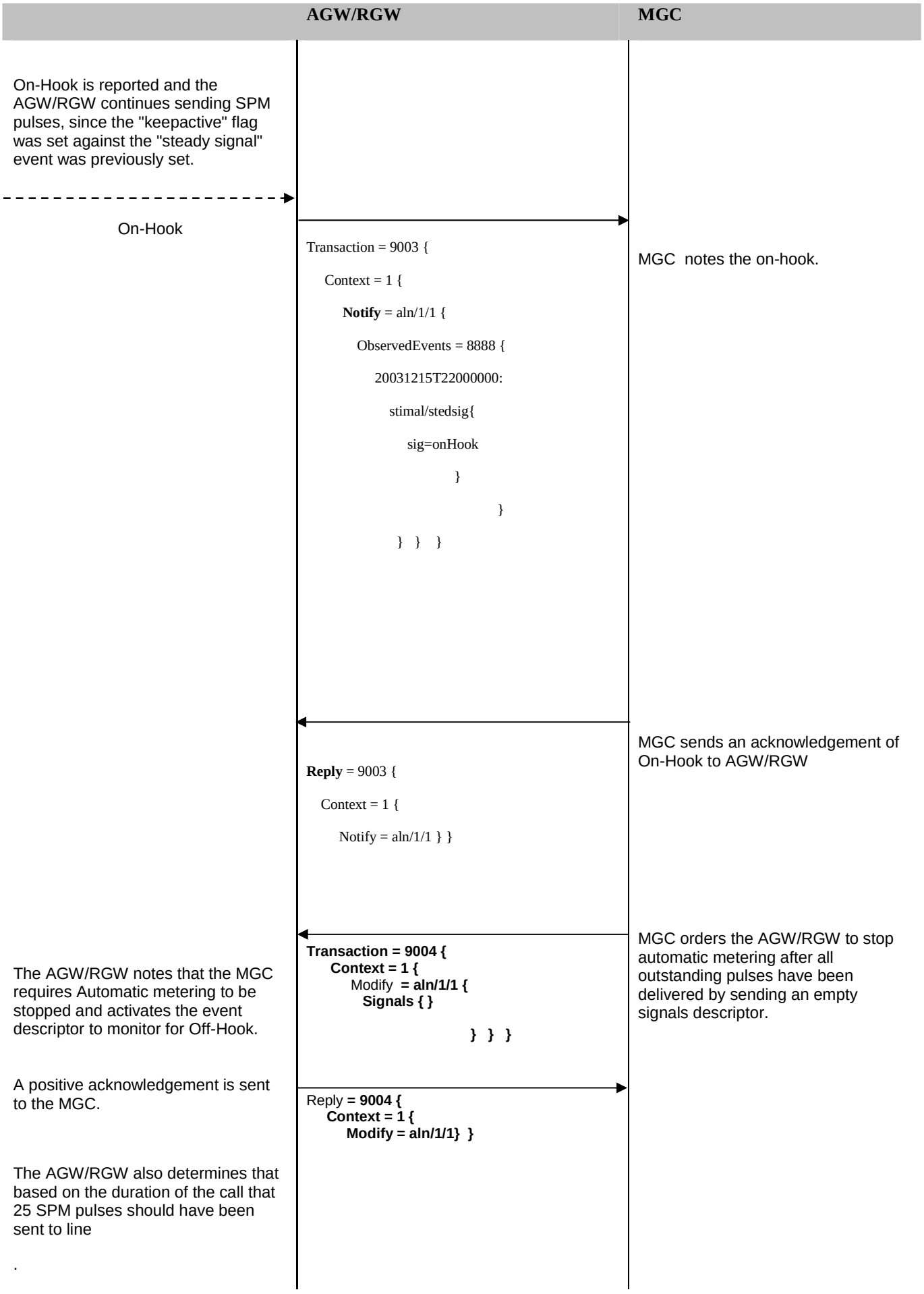
Analogue Port is now in the idle condition.

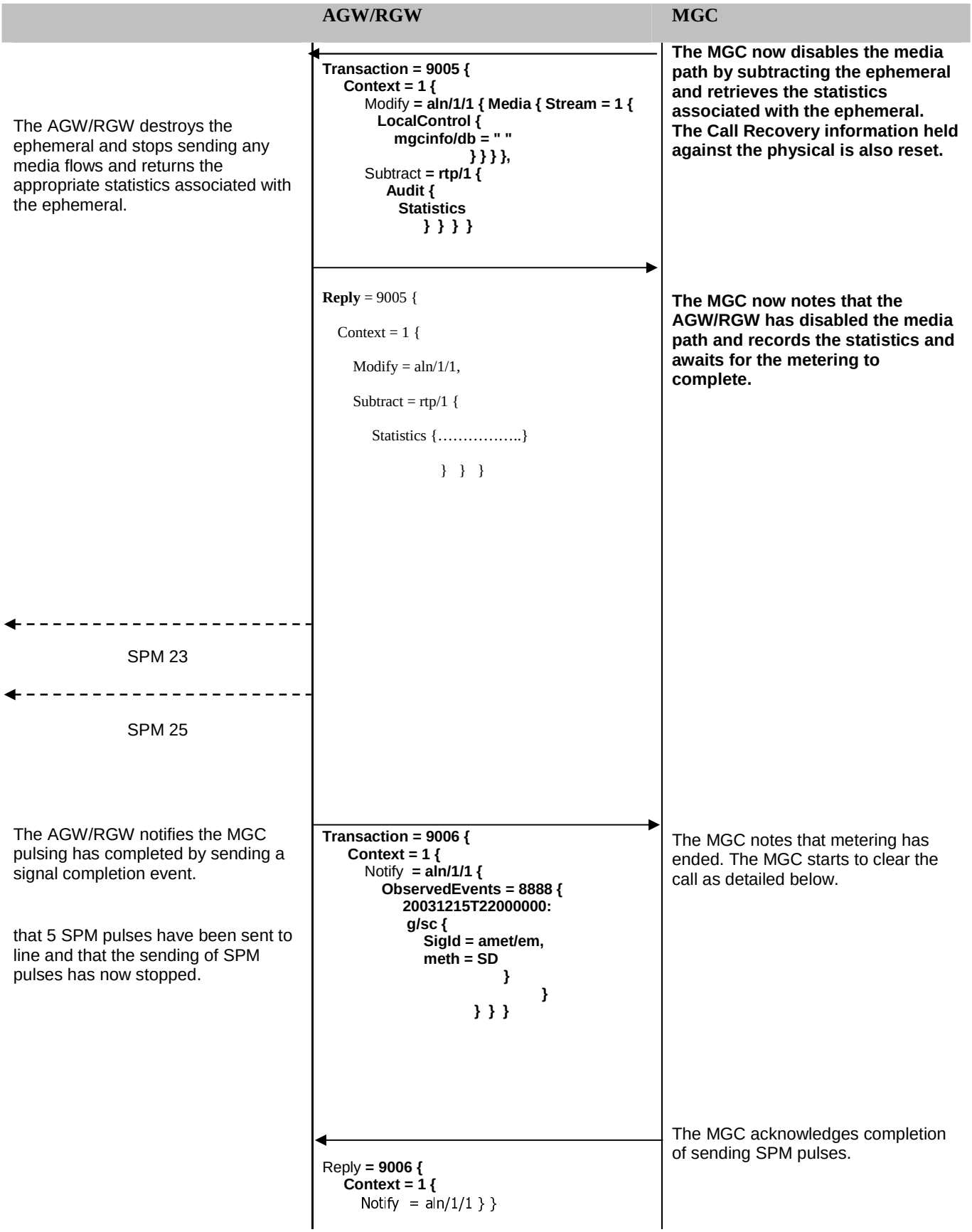
5.6.1.2 Late Subtract of the Analogue Termination from a Context

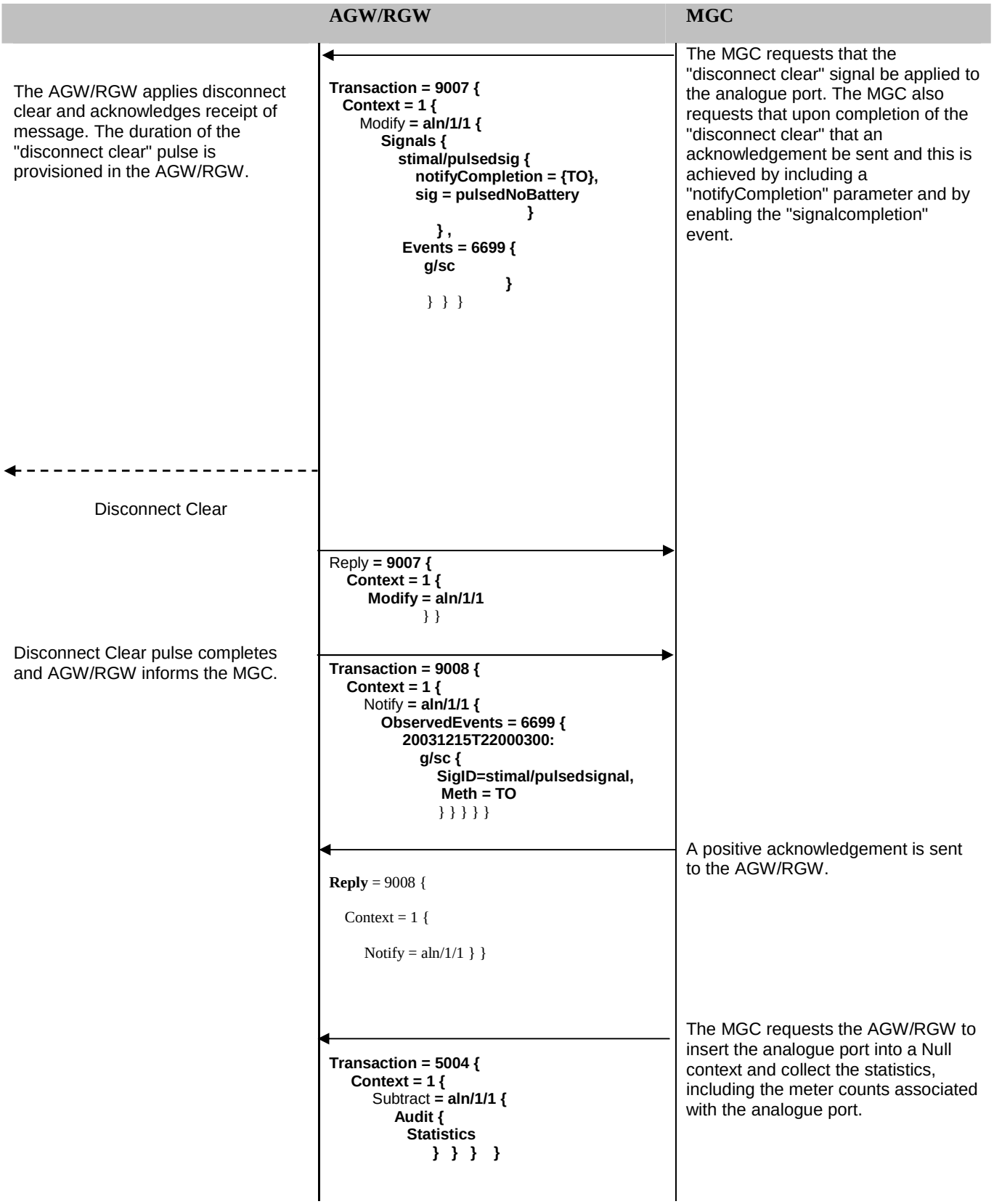
Pre-conditions: Sequence 5.1.1 has been successfully executed for DEL port aln/1/1.

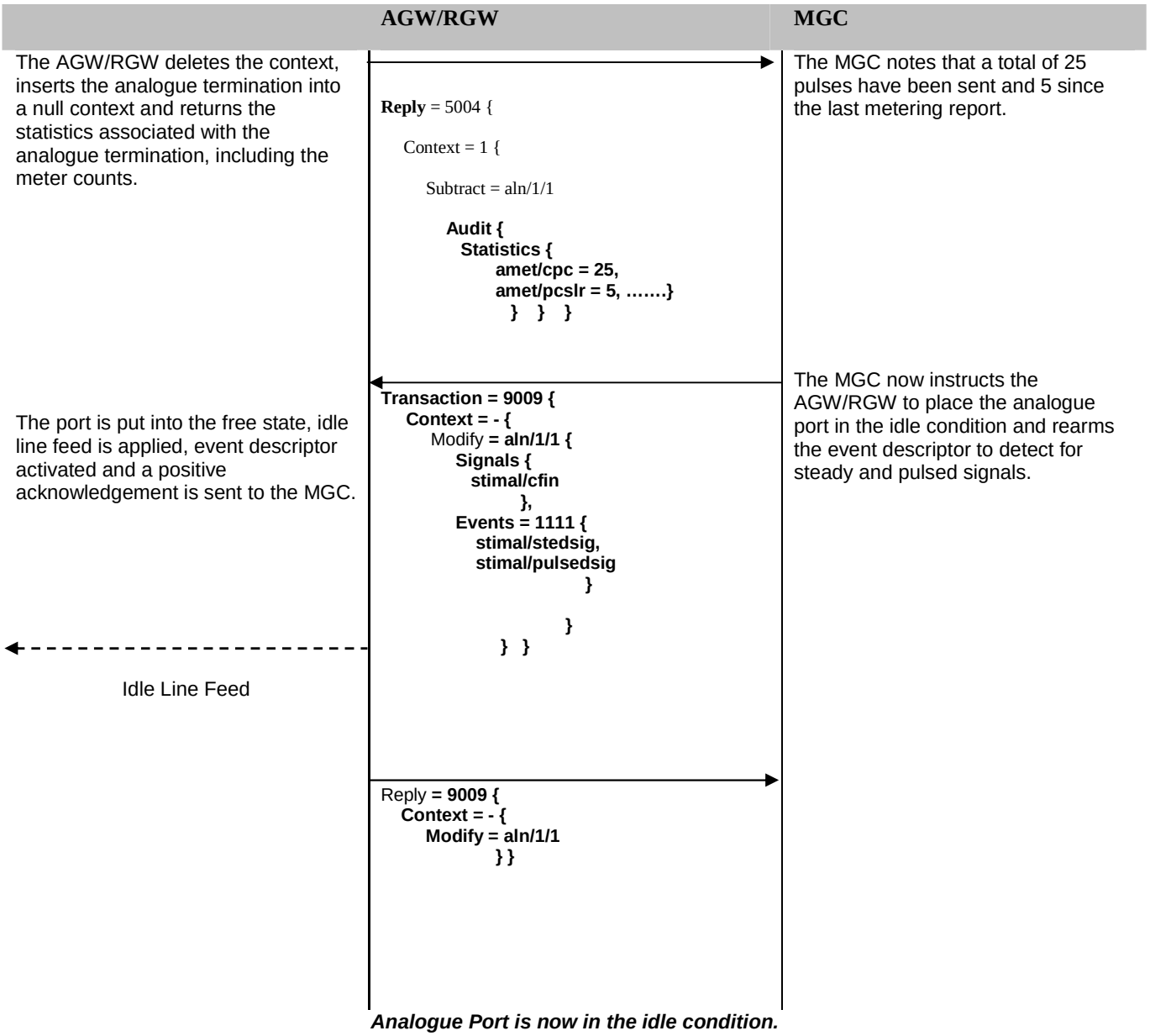



AGW/RGW
MGC
SPM 1
:
SPM10
Transaction = 9001 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 8888 {
20031215T22000000:
amet/pr
}
} } }
MGC notes that AGW/RGW has sent 10 meter pulses and sends a positive Ack
Reply = 9001 {
Context = 1 {
Notify = aln/1/1 } }
SPM 11
:
SPM 20
The AGW/RGW reports to the MGC that 10 meter pulses have been sent.
Transaction = 9002 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 8888 {
20031215T22000000:
amet/rp
}
} } }
MGC notes that AGW/RGW has sent another 10 meter pulses and sends a positive Ack
Reply = 9002 {
Context = 1 {
Notify = aln/1/1 } }
SPM 21
SPM 22


AGW/RGW
MGC
On-Hook is reported and the AGW/RGW continues sending SPM pulses, since the "keepactive" flag was set against the "steady signal" event was previously set.
On-Hook
Transaction = 9003 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 8888 {
20031215T22000000:
stimal/stedsig{
sig=onHook
}
}
} } }
MGC notes the on-hook.
MGC sends an acknowledgement of On-Hook to AGW/RGW
Reply = 9003 {
Context = 1 {
Notify = aln/1/1 } }
MGC orders the AGW/RGW to stop automatic metering after all outstanding pulses have been delivered by sending an empty signals descriptor.
Transaction = 9004 {
Context = 1 {
Modify = aln/1/1 {
Signals { }
} } }
The AGW/RGW notes that the MGC requires Automatic metering to be stopped and activates the event descriptor to monitor for Off-Hook.
A positive acknowledgement is sent to the MGC.
Reply = 9004 {
Context = 1 {
Modify = aln/1/1} }
The AGW/RGW also determines that based on the duration of the call that 25 SPM pulses should have been sent to line
.

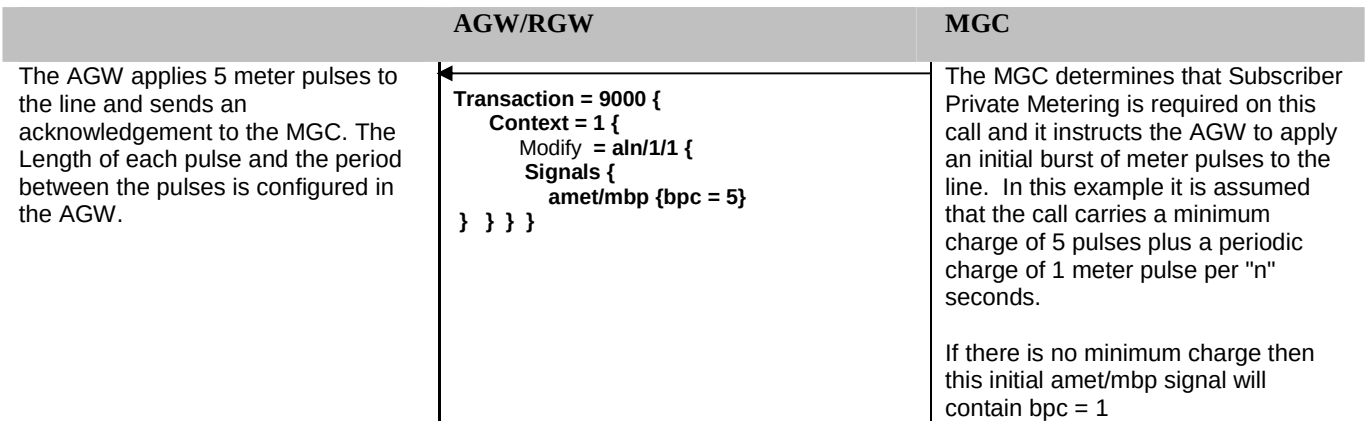

AGW/RGW
MGC
The MGC now disables the media path by subtracting the ephemeral and retrieves the statistics associated with the ephemeral. The Call Recovery information held against the physical is also reset.
Transaction = 9005 {
Context = 1 {
Modify = aln/1/1 { Media { Stream = 1 {
LocalControl {
mgcinfo/db = " "
} } } },
Subtract = rtp/1 {
Audit {
Statistics
} } } }
The AGW/RGW destroys the ephemeral and stops sending any media flows and returns the appropriate statistics associated with the ephemeral.
Reply = 9005 {
Context = 1 {
Modify = aln/1/1,
Subtract = rtp/1 {
Statistics {……..}
} } }
The MGC now notes that the AGW/RGW has disabled the media path and records the statistics and awaits for the metering to complete.
SPM 23
SPM 25
Transaction = 9006 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 8888 {
20031215T22000000:
g/sc {
SigId = amet/em,
meth = SD
}
}
} } }
The AGW/RGW notifies the MGC pulsing has completed by sending a signal completion event.
that 5 SPM pulses have been sent to line and that the sending of SPM pulses has now stopped.
The MGC notes that metering has ended. The MGC starts to clear the call as detailed below.
Reply = 9006 {
Context = 1 {
Notify = aln/1/1 } }
The MGC acknowledges completion of sending SPM pulses.

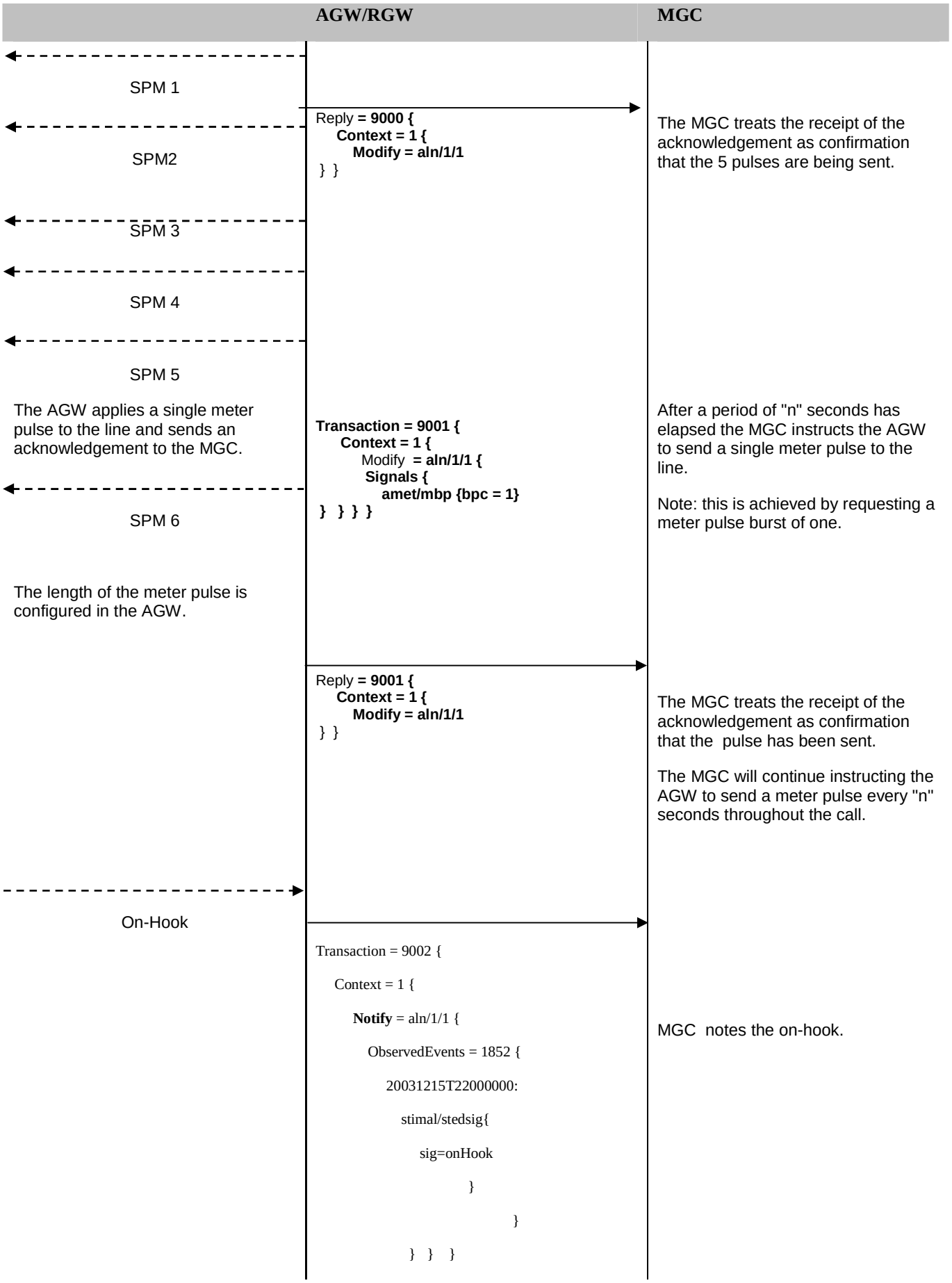

AGW/RGW
MGC
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
Transaction = 9007 {
Context = 1 {
Modify = aln/1/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
} ,
Events = 6699 {
g/sc
}
} } }
The AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the "disconnect clear" pulse is provisioned in the AGW/RGW.
Disconnect Clear
Reply = 9007 {
Context = 1 {
Modify = aln/1/1
} }
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 9008 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
A positive acknowledgement is sent to the AGW/RGW.
Reply = 9008 {
Context = 1 {
Notify = aln/1/1 } }
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the statistics, including the meter counts associated with the analogue port.
Transaction = 5004 {
Context = 1 {
Subtract = aln/1/1 {
Audit {
Statistics
} } } }

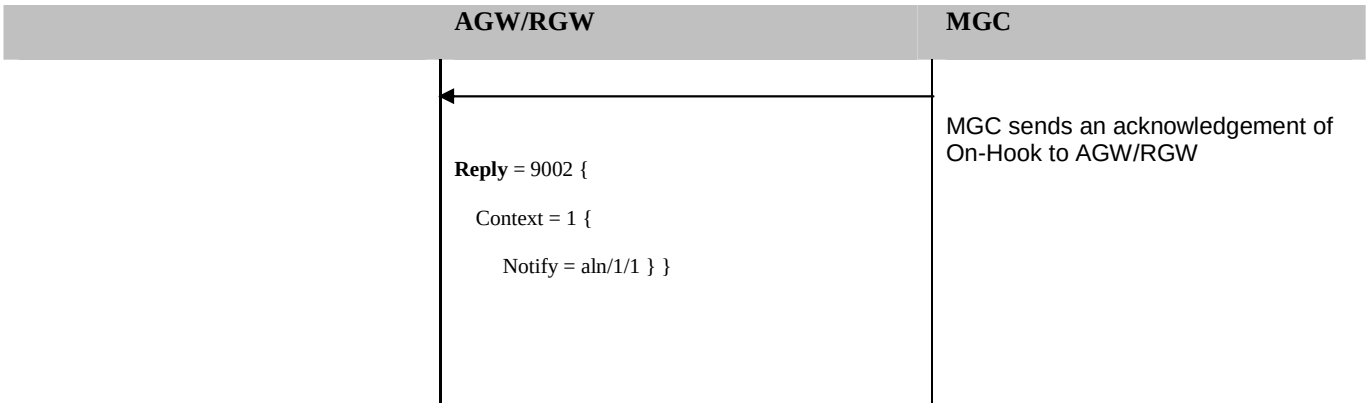


5.6.1.3 DEL - Automatic Metering - A end. Alternative Method

Pre-conditions: Sequence 5.1.1 has been successfully executed for DEL port aln/1/1.




AGW/RGW
MGC
SPM 1
Reply = 9000 {
Context = 1 {
Modify = aln/1/1
} }
The MGC treats the receipt of the acknowledgement as confirmation that the 5 pulses are being sent.
SPM2
SPM 3
SPM 4
SPM 5
The AGW applies a single meter pulse to the line and sends an acknowledgement to the MGC.
Transaction = 9001 {
Context = 1 {
Modify = aln/1/1 {
Signals {
amet/mbp {bpc = 1}
} } } }
After a period of "n" seconds has elapsed the MGC instructs the AGW to send a single meter pulse to the line.
Note: this is achieved by requesting a meter pulse burst of one.
SPM 6
The length of the meter pulse is configured in the AGW.
Reply = 9001 {
Context = 1 {
Modify = aln/1/1
} }
The MGC treats the receipt of the acknowledgement as confirmation that the pulse has been sent.
The MGC will continue instructing the AGW to send a meter pulse every "n" seconds throughout the call.
On-Hook
Transaction = 9002 {
Context = 1 {
Notify = aln/1/1 {
ObservedEvents = 1852 {
20031215T22000000:
stimal/stedsig{
sig=onHook
}
}
} } }
MGC notes the on-hook.



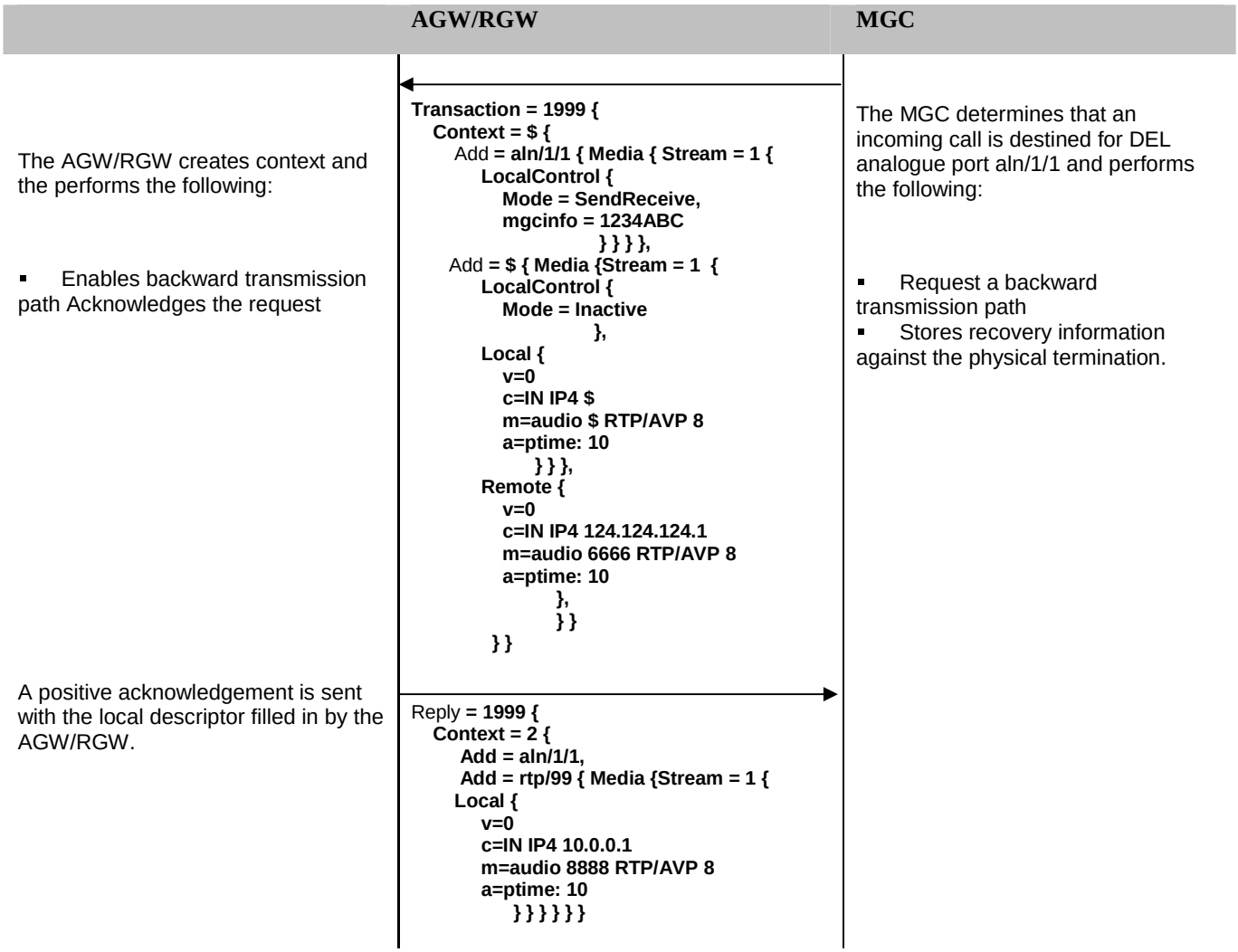
The call cleardown sequence continues as described in 5.3.1

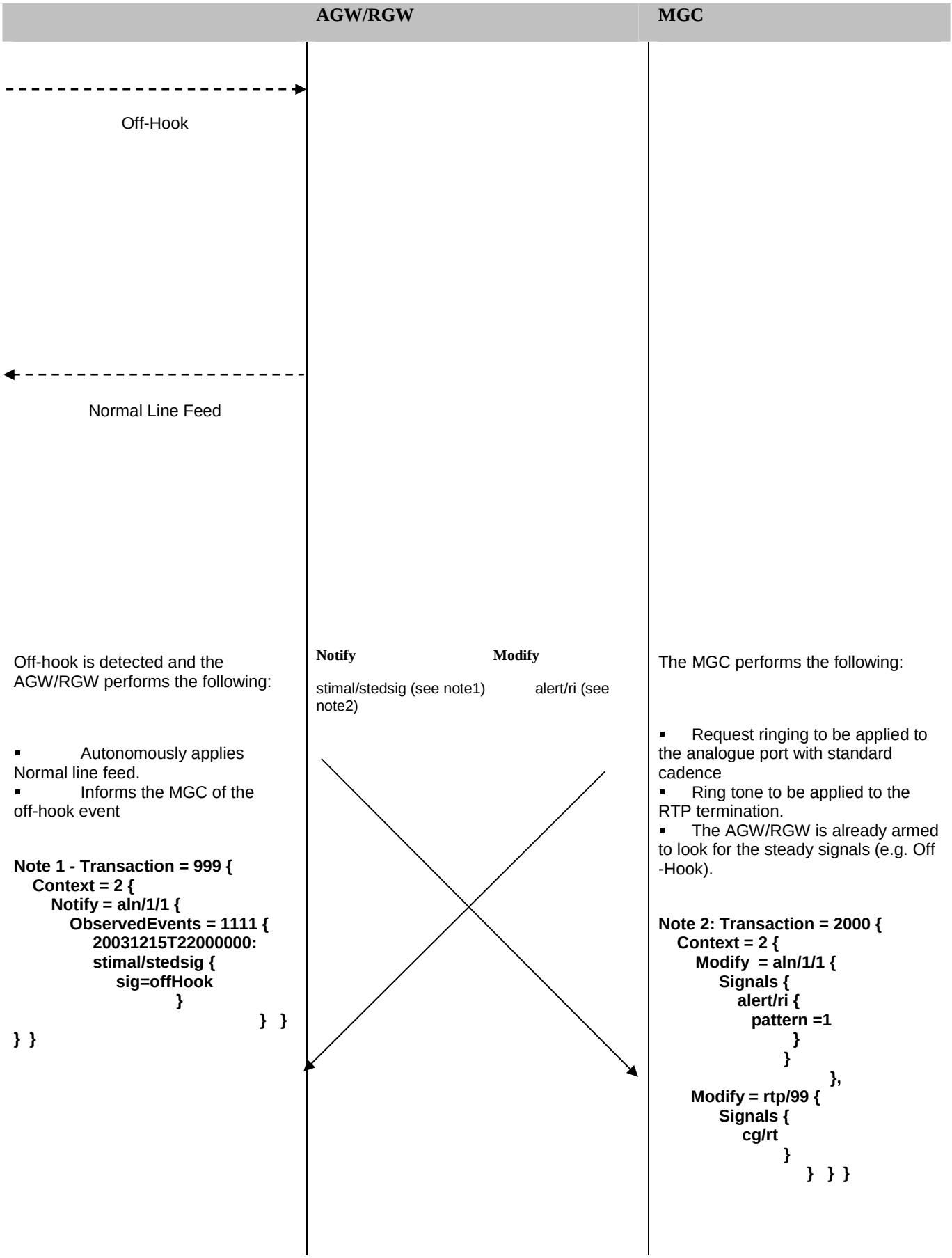
5.7 Call Collision

5.7.1 DEL - Call Collision; Outgoing Call has priority

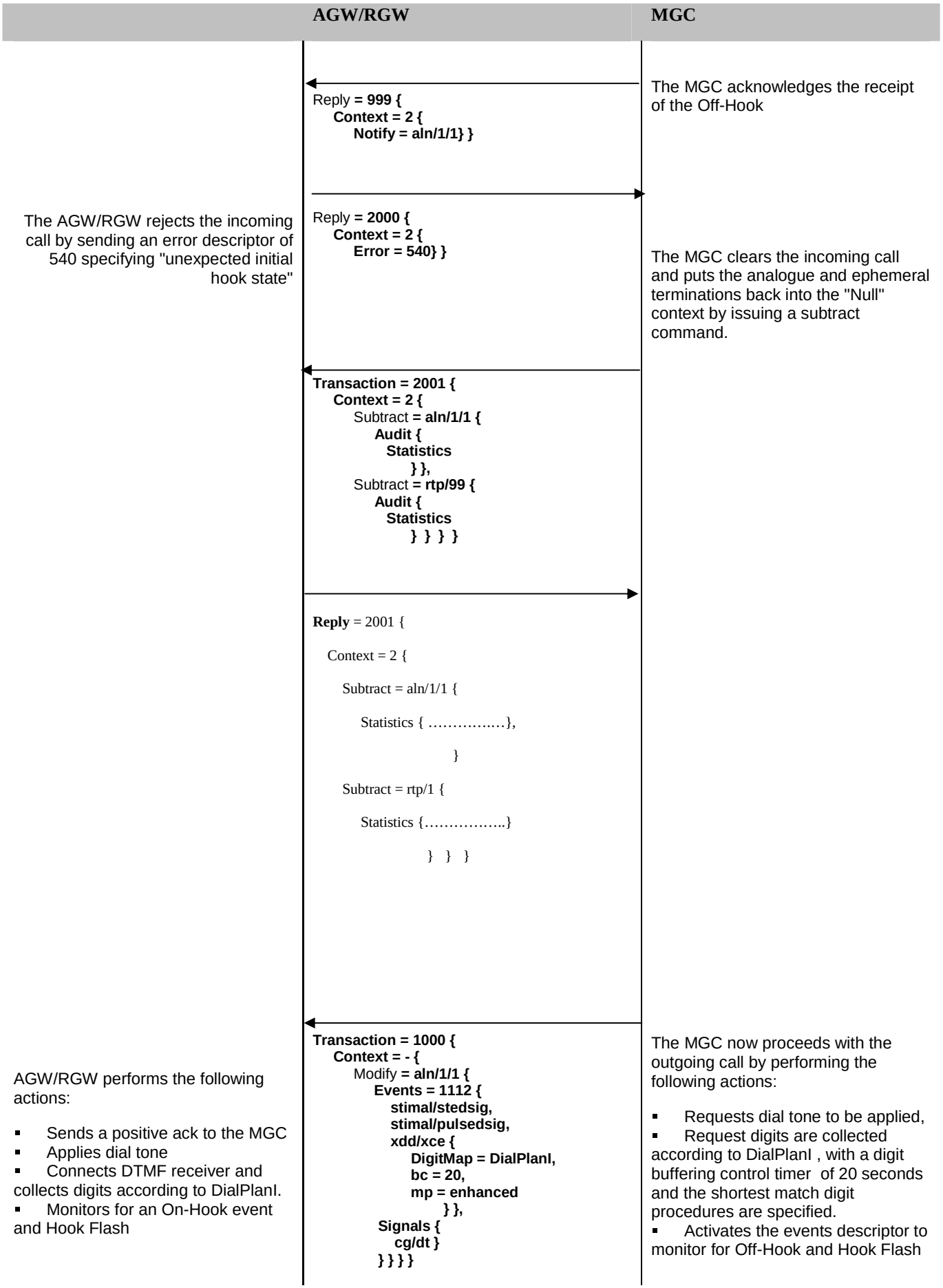
Pre-conditions: Sequence 4.1.1 has been successfully executed.

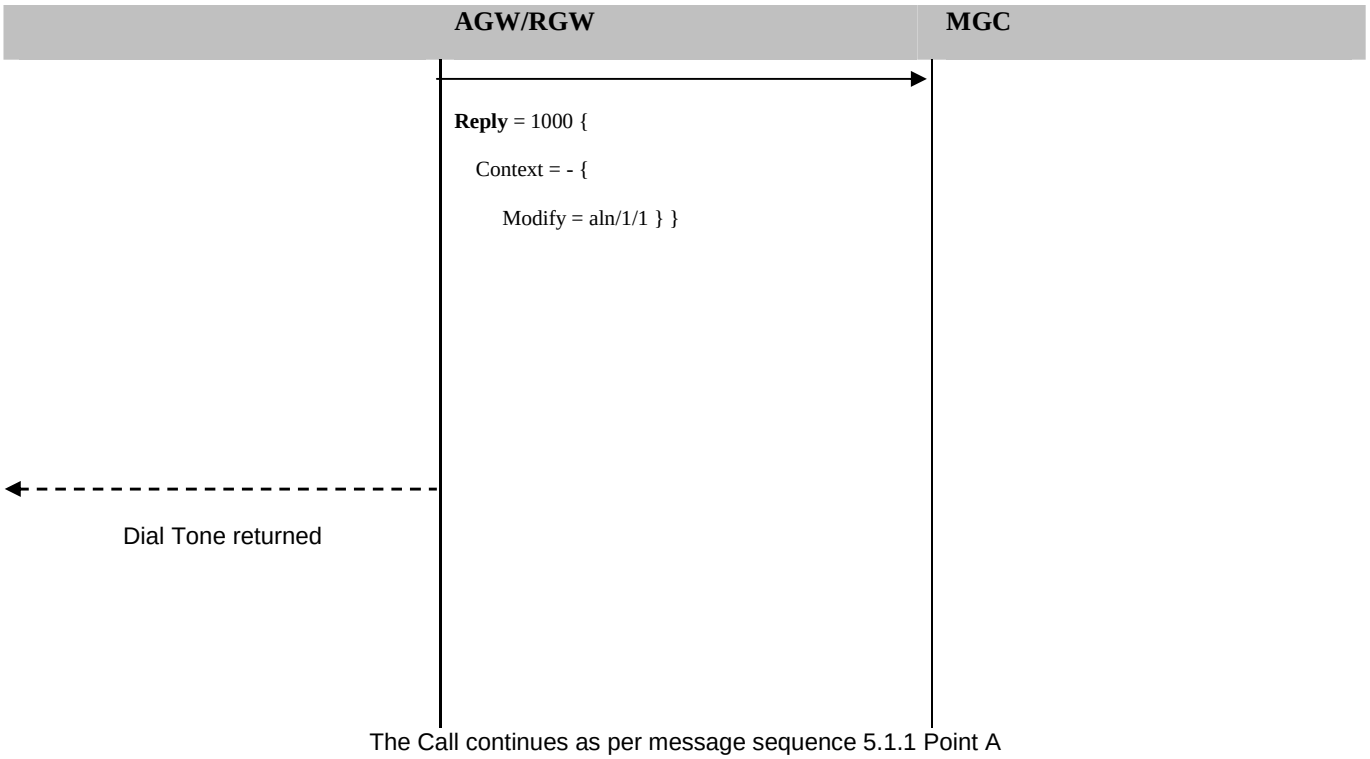
5.7.1.1 Early Addition of Analogue Termination to a Context



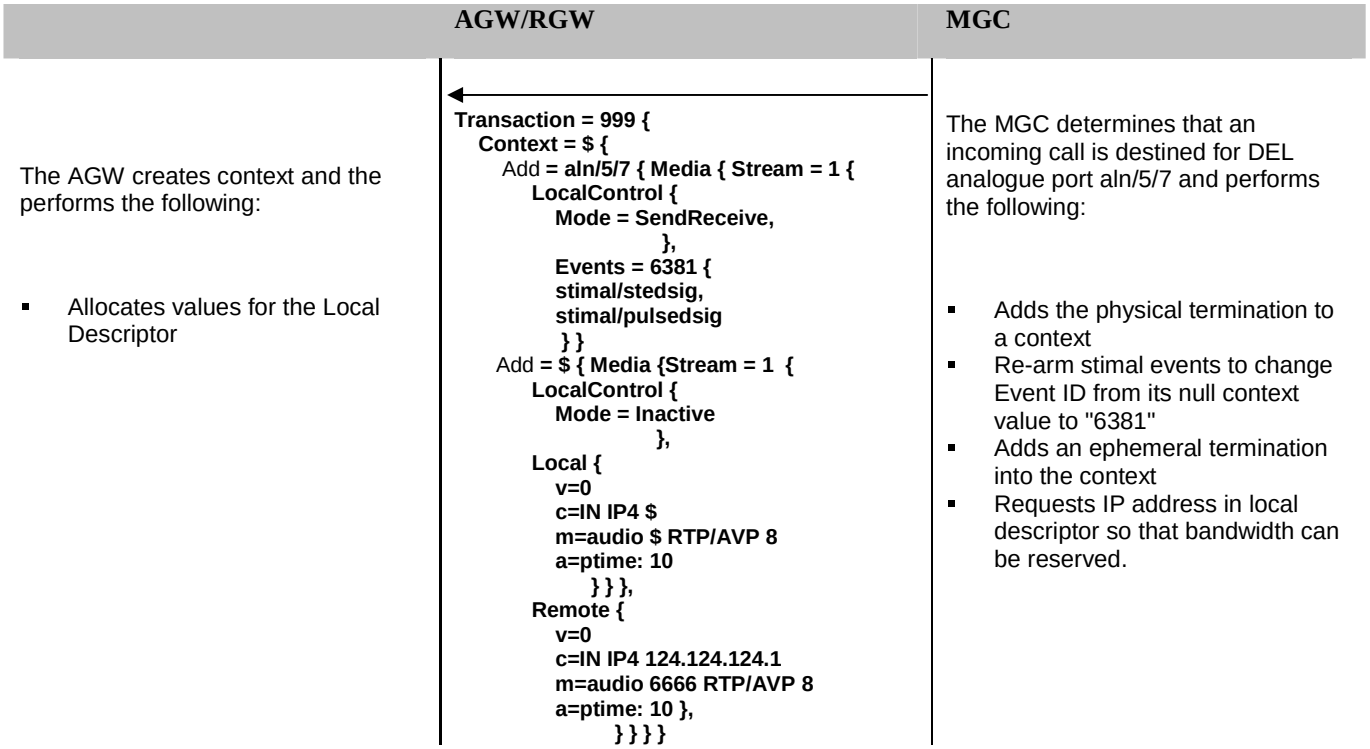


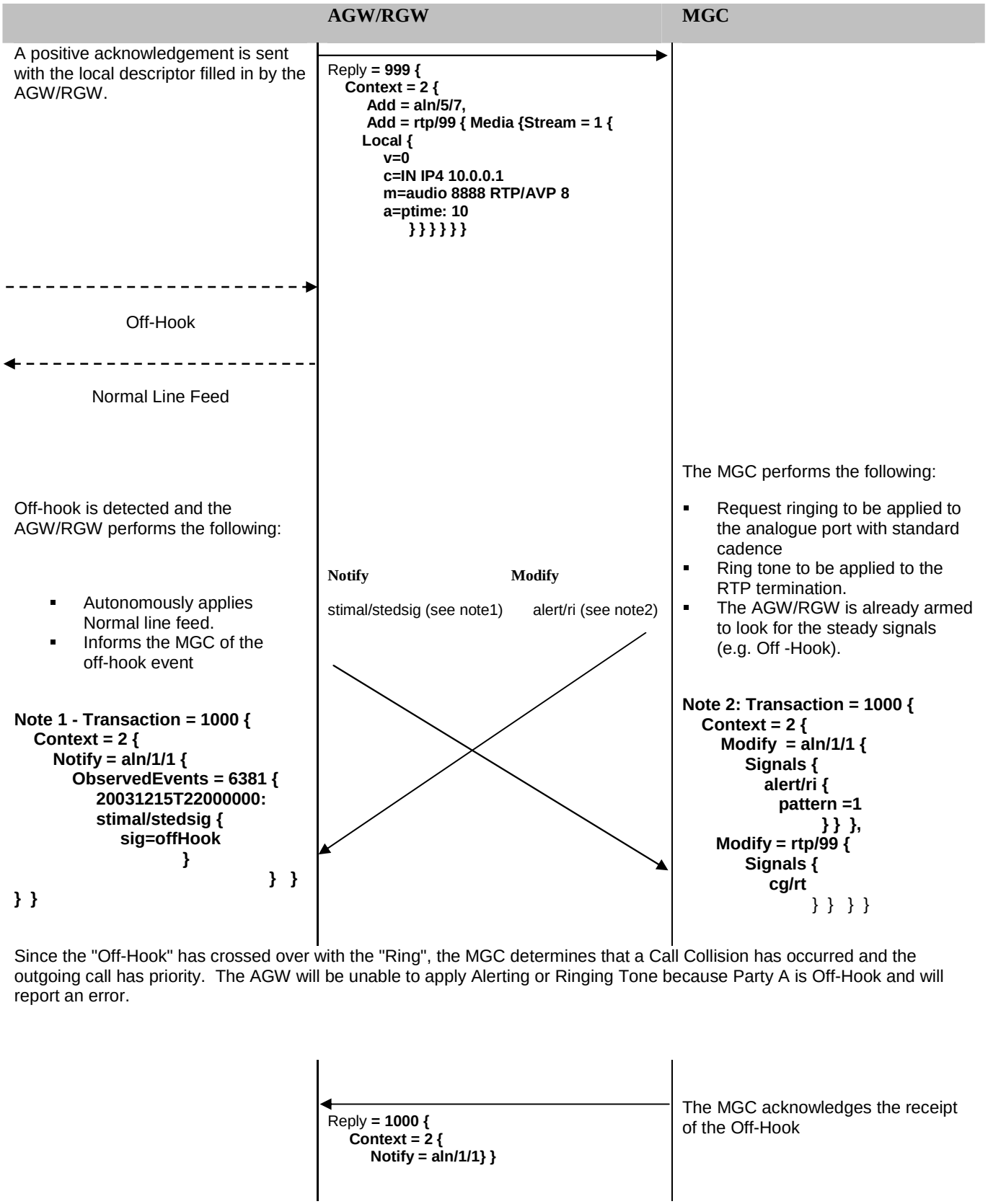
Since the "Off-Hook" has crossed over with the "Ring", then the MGC determines that a Call Collision has occurred and the outgoing call has priority.

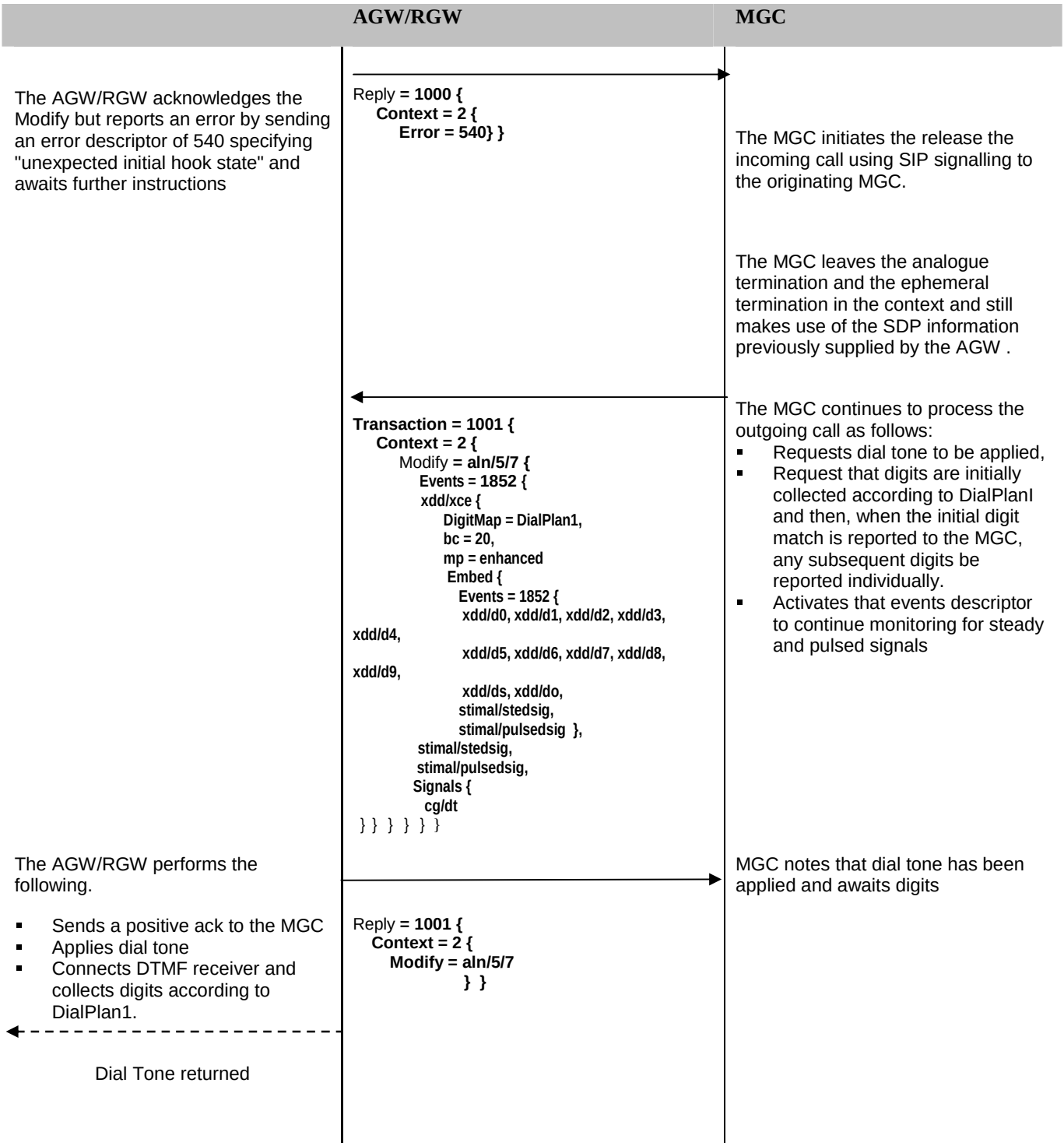

AGW/RGW
MGC
The MGC acknowledges the receipt of the Off-Hook
Reply = 999 {
Context = 2 {
Notify = aln/1/1} }
Reply = 2000 {
Context = 2 {
Error = 540} }
The AGW/RGW rejects the incoming call by sending an error descriptor of 540 specifying "unexpected initial hook state"
The MGC clears the incoming call and puts the analogue and ephemeral terminations back into the "Null" context by issuing a subtract command.
Transaction = 2001 {
Context = 2 {
Subtract = aln/1/1 {
Audit {
Statistics
} },
Subtract = rtp/99 {
Audit {
Statistics
} } } }
Reply = 2001 {
Context = 2 {
Subtract = aln/1/1 {
Statistics { ……..…},
}
Subtract = rtp/1 {
Statistics {……..}
} } }
Transaction = 1000 {
Context = - {
Modify = aln/1/1 {
Events = 1112 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = DialPlanI,
bc = 20,
mp = enhanced
} },
Signals {
cg/dt }
} } } }
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects digits according to DialPlanI.
Monitors for an On-Hook event and Hook Flash
The MGC now proceeds with the outgoing call by performing the following actions:
Requests dial tone to be applied,
Request digits are collected according to DialPlanI , with a digit buffering control timer of 20 seconds and the shortest match digit procedures are specified.
Activates the events descriptor to monitor for Off-Hook and Hook Flash



5.7.1.2 Early Addition of Analogue Termination to a Context Alternative Flow




AGW/RGW
MGC
A positive acknowledgement is sent with the local descriptor filled in by the AGW/RGW.
Reply = 999 {
Context = 2 {
Add = aln/5/7,
Add = rtp/99 { Media {Stream = 1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 8888 RTP/AVP 8
a=ptime: 10
} } } } } }
Off-Hook
Normal Line Feed
The MGC performs the following:
Request ringing to be applied to the analogue port with standard cadence
Ring tone to be applied to the RTP termination.
The AGW/RGW is already armed to look for the steady signals (e.g. Off -Hook).
Off-hook is detected and the AGW/RGW performs the following:
Autonomously applies Normal line feed.
Informs the MGC of the off-hook event
Notify
stimal/stedsig (see note1)
Modify
alert/ri (see note2)
Note 1 - Transaction = 1000 {
Context = 2 {
Notify = aln/1/1 {
ObservedEvents = 6381 {
20031215T22000000:
stimal/stedsig {
sig=offHook
}
} }
} }
Note 2: Transaction = 1000 {
Context = 2 {
Modify = aln/1/1 {
Signals {
alert/ri {
pattern =1
} } },
Modify = rtp/99 {
Signals {
cg/rt
} } } }
Since the "Off-Hook" has crossed over with the "Ring", the MGC determines that a Call Collision has occurred and the outgoing call has priority. The AGW will be unable to apply Alerting or Ringing Tone because Party A is Off-Hook and will report an error.
Reply = 1000 {
Context = 2 {
Notify = aln/1/1} }
The MGC acknowledges the receipt of the Off-Hook



The Call continues as per message sequence 5.1.1.3 or 5.1.2.3 Point A but note that the Termination IDs and Context ID will be as shown above and not as shown in 5.1.1.3 or 5.1.2.3

6 LCPBX Message Flows

The message flows for a Loop Calling PBX analogue port are identical to those of a Direct Exchange Line, but with the exception below:

The "endofcall" signal which is generated via the H.248 signal "stimal/pulsedsig {sig =pulsedReducedBattery}" is replaced with "disconnect clear" signal which is generated via the H.248 signal "stimal/pulsedsig {sig = pulsedNoBattey}".

NOTE: Note no signal completion response is required in this situation.

7 ECPBX Message Flows

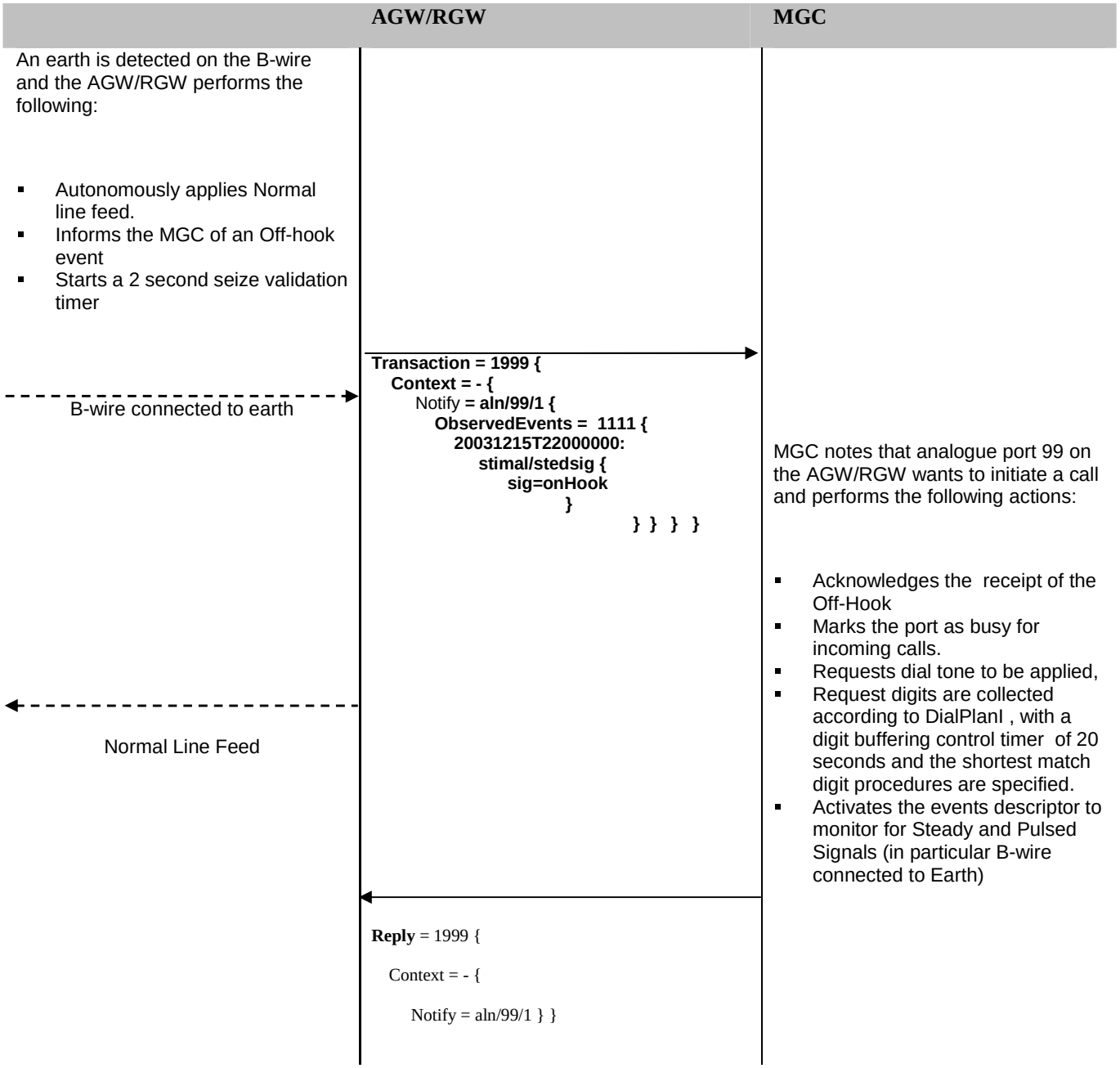
This clause contains message flows that are applicable to Earth Calling PBX (ECPBX) ports.

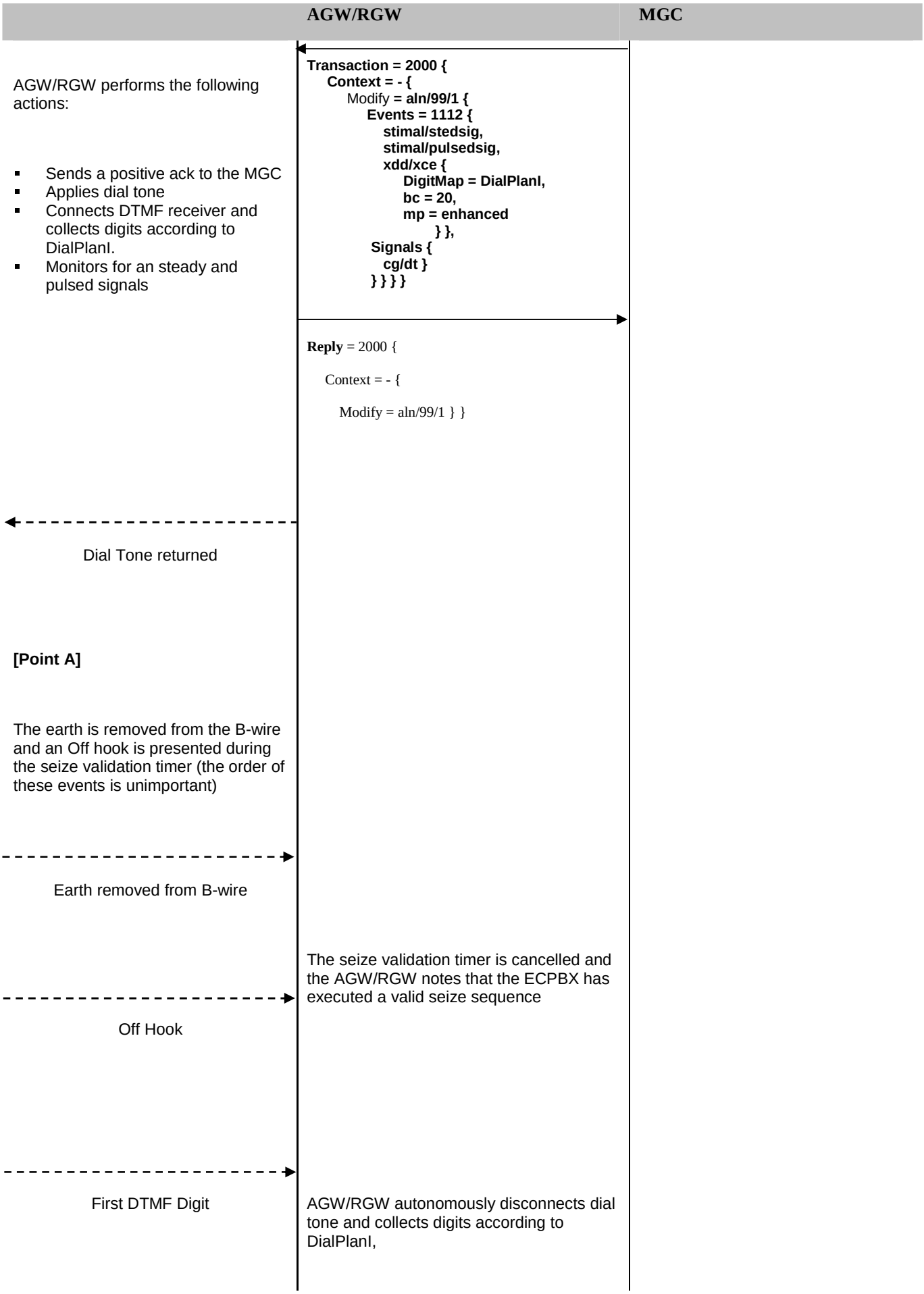
7.1 Call Establishment

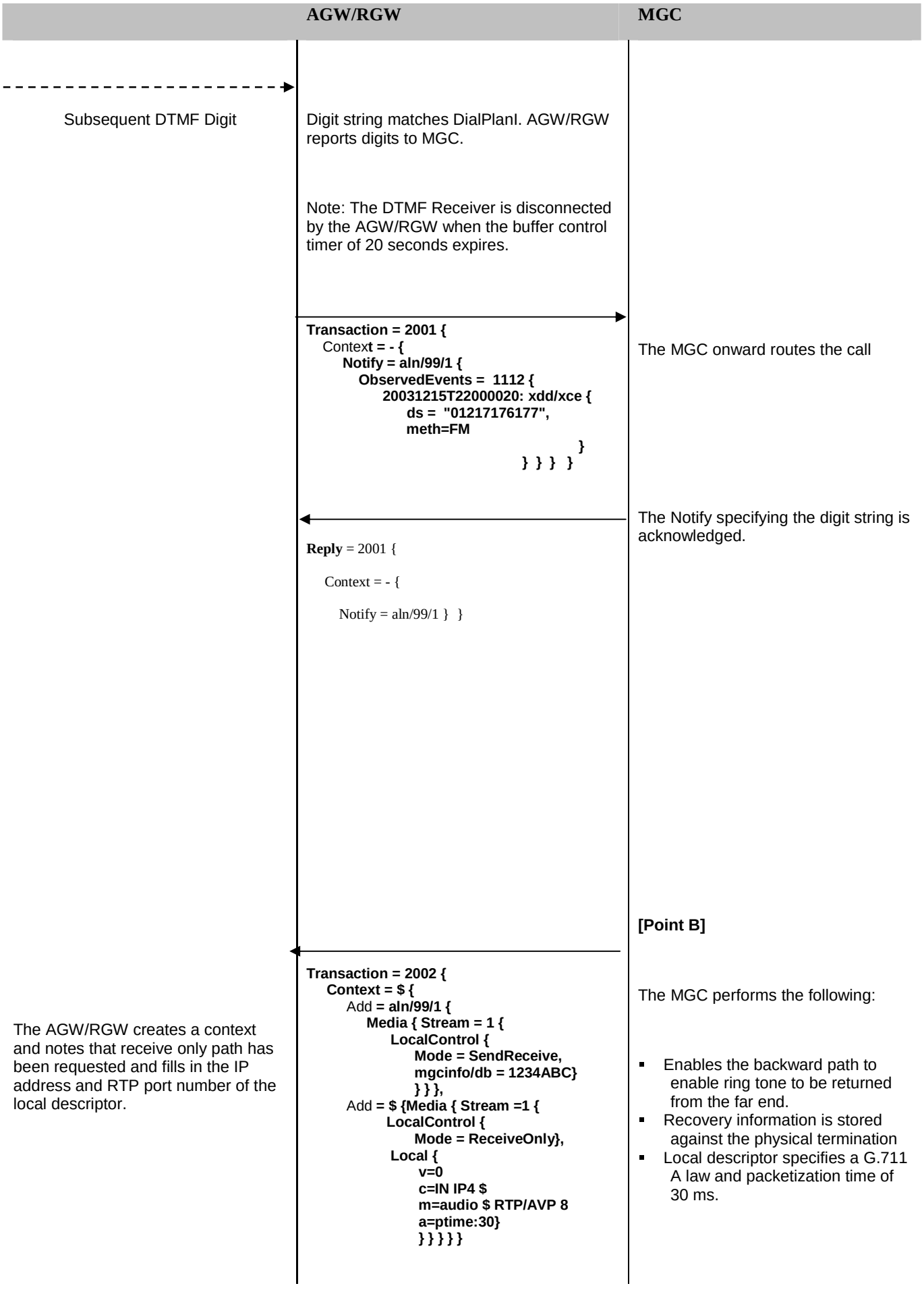
7.1.1 ECPBX - Successful Outgoing Voice Call initiated using DTMF Digits - A end

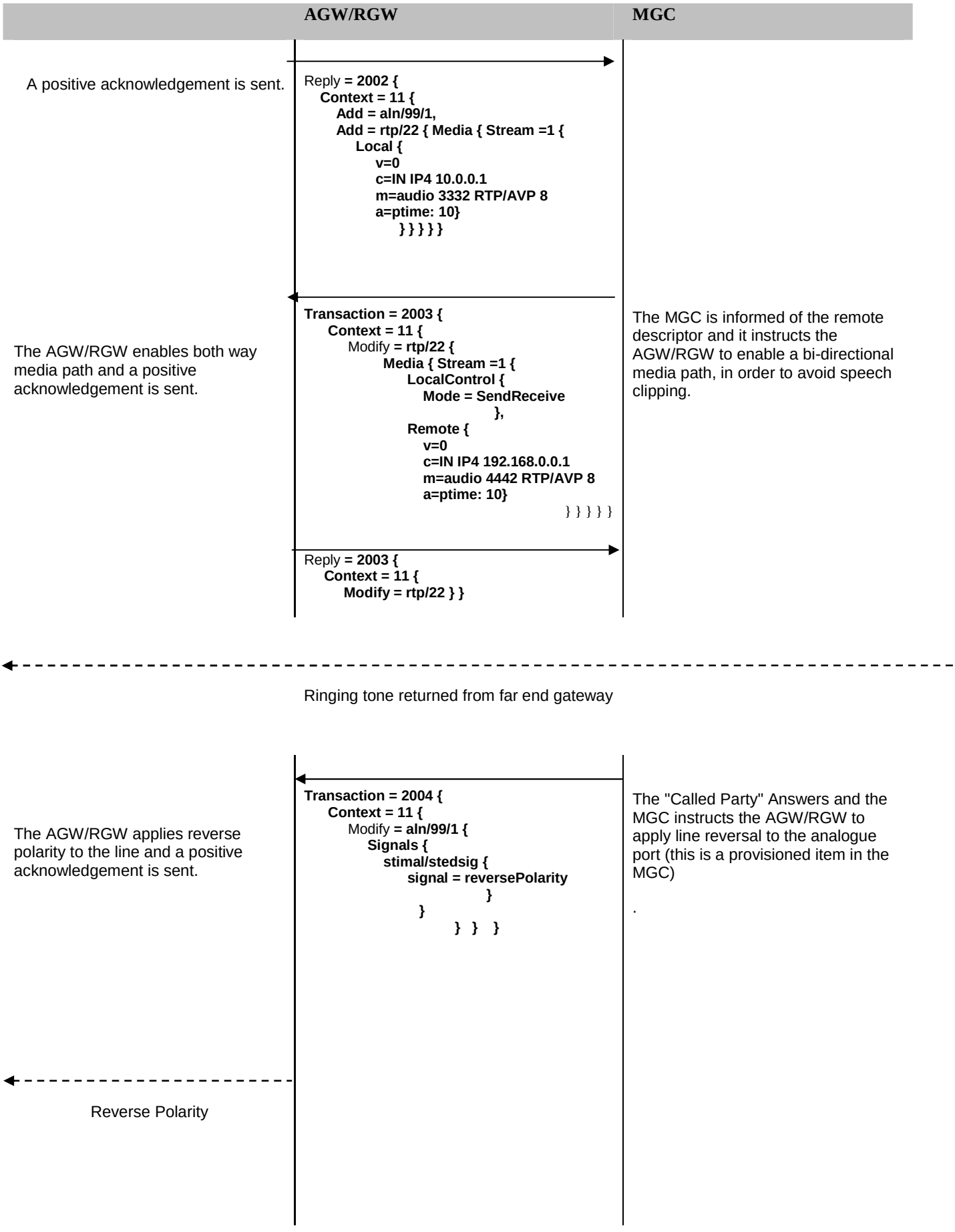
7.1.1.1 Late Addition of Analogue Termination into a Context

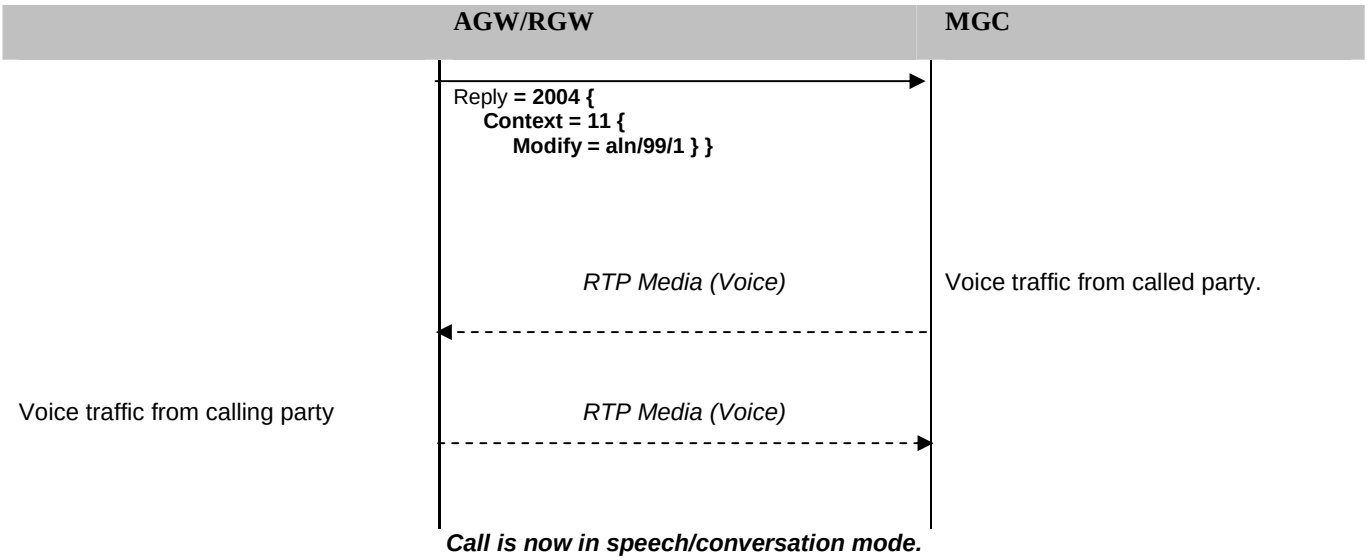
Pre-conditions: Sequence 4.1.1 has been successfully executed for ECPBX port aln/99/1.




AGW/RGW
MGC
Transaction = 2000 {
Context = - {
Modify = aln/99/1 {
Events = 1112 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = DialPlanI,
bc = 20,
mp = enhanced
} },
Signals {
cg/dt }
} } } }
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects digits according to DialPlanI.
Monitors for an steady and pulsed signals
Reply = 2000 {
Context = - {
Modify = aln/99/1 } }
Dial Tone returned
[Point A]
The earth is removed from the B-wire and an Off hook is presented during the seize validation timer (the order of these events is unimportant)
Earth removed from B-wire
The seize validation timer is cancelled and the AGW/RGW notes that the ECPBX has executed a valid seize sequence
Off Hook
First DTMF Digit
AGW/RGW autonomously disconnects dial tone and collects digits according to DialPlanI,

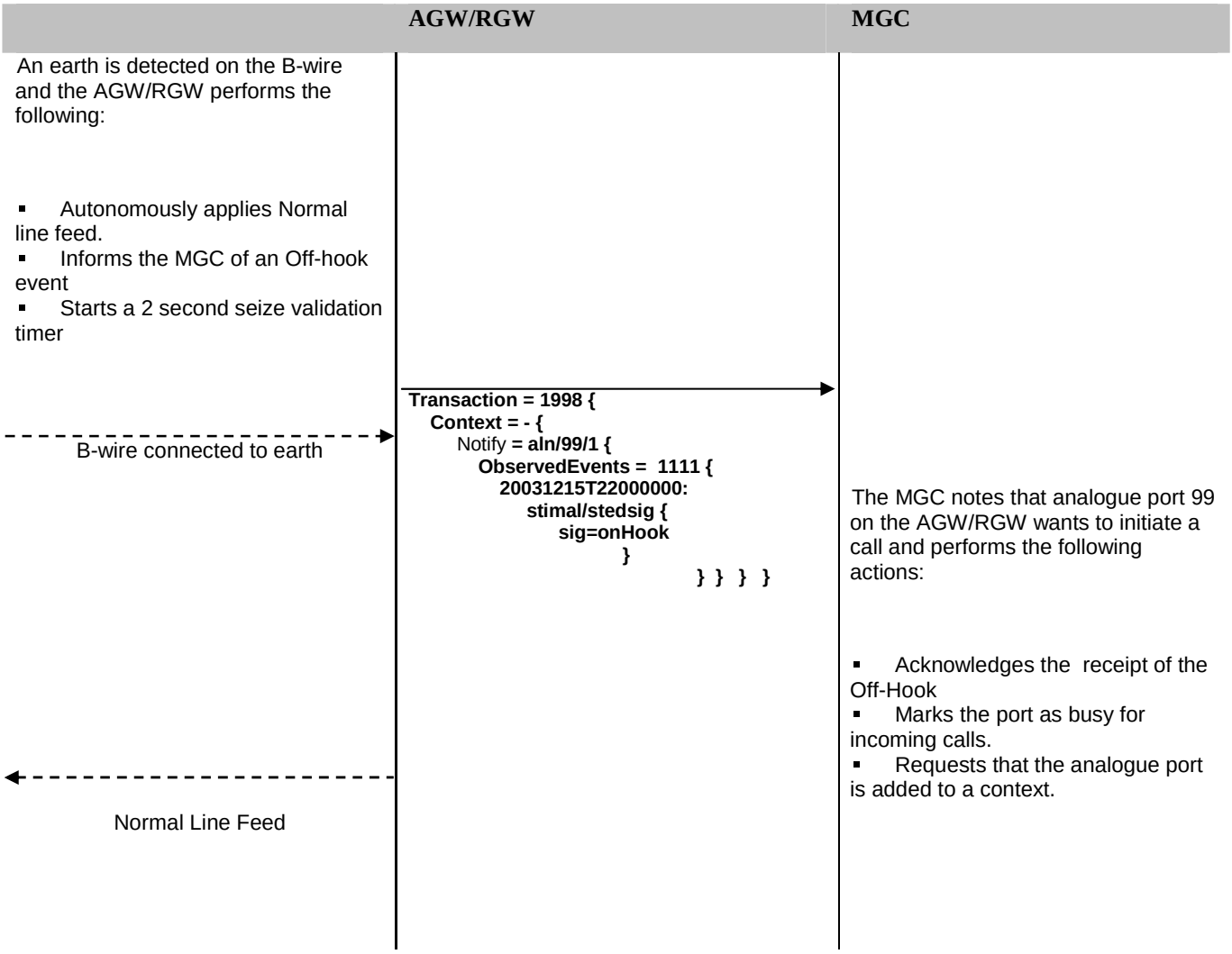

AGW/RGW
MGC
Subsequent DTMF Digit
Digit string matches DialPlanI. AGW/RGW reports digits to MGC.
Note: The DTMF Receiver is disconnected by the AGW/RGW when the buffer control timer of 20 seconds expires.
Transaction = 2001 {
Context = - {
Notify = aln/99/1 {
ObservedEvents = 1112 {
20031215T22000020: xdd/xce {
ds = "01217176177",
meth=FM
}
} } } }
The MGC onward routes the call
The Notify specifying the digit string is acknowledged.
Reply = 2001 {
Context = - {
Notify = aln/99/1 } }
[Point B]
Transaction = 2002 {
Context = $ {
Add = aln/99/1 {
Media { Stream = 1 {
LocalControl {
Mode = SendReceive,
mgcinfo/db = 1234ABC}
} } },
Add = $ {Media { Stream =1 {
LocalControl {
Mode = ReceiveOnly},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime:30}
} } } } }
The MGC performs the following:
The AGW/RGW creates a context and notes that receive only path has been requested and fills in the IP address and RTP port number of the local descriptor.
Enables the backward path to enable ring tone to be returned from the far end.
Recovery information is stored against the physical termination
Local descriptor specifies a G.711 A law and packetization time of 30 ms.

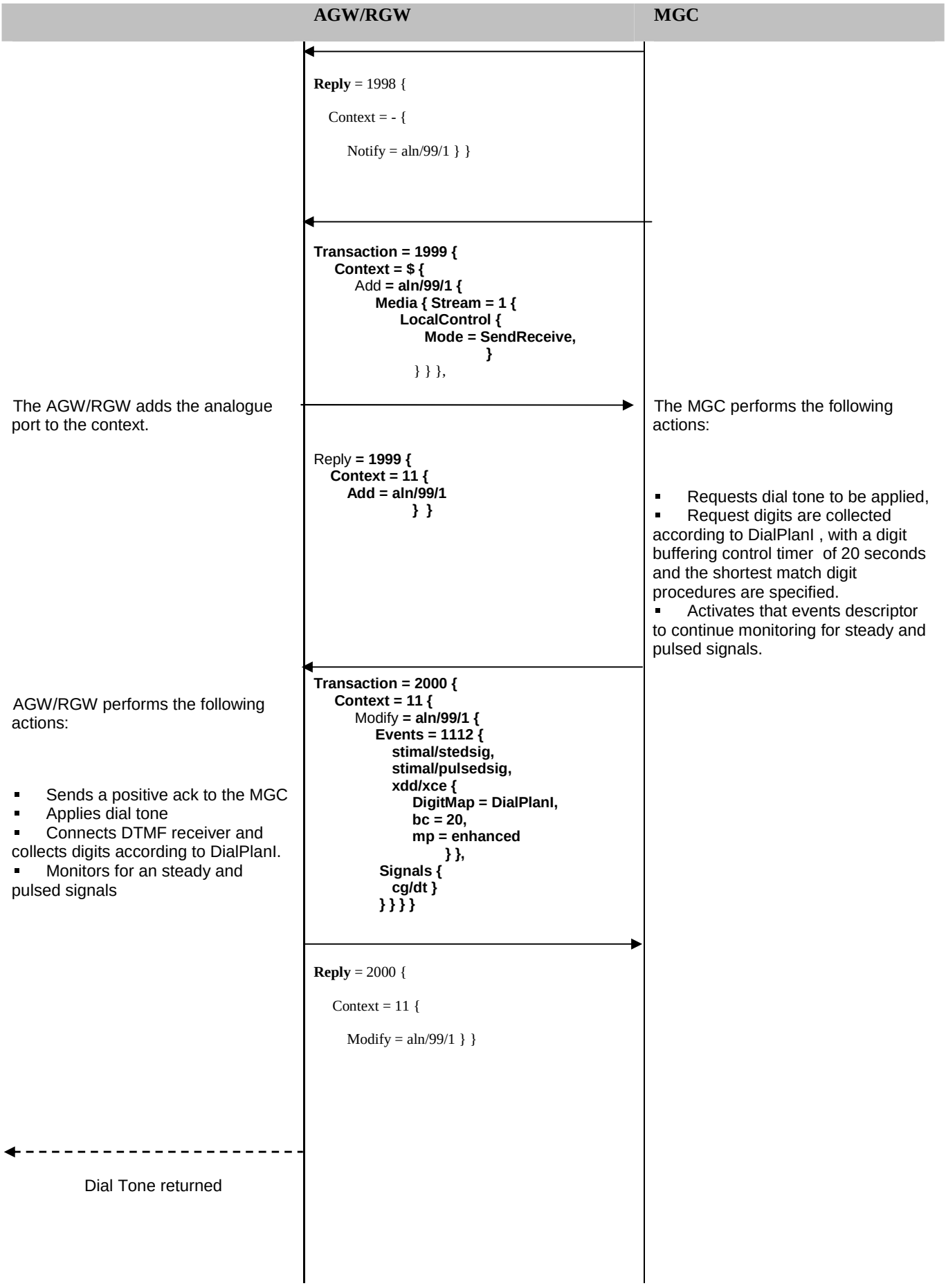

AGW/RGW
MGC
A positive acknowledgement is sent.
Reply = 2002 {
Context = 11 {
Add = aln/99/1,
Add = rtp/22 { Media { Stream =1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 3332 RTP/AVP 8
a=ptime: 10}
} } } } }
Transaction = 2003 {
Context = 11 {
Modify = rtp/22 {
Media { Stream =1 {
LocalControl {
Mode = SendReceive
},
Remote {
v=0
c=IN IP4 192.168.0.0.1
m=audio 4442 RTP/AVP 8
a=ptime: 10}
} } } } }
The AGW/RGW enables both way media path and a positive acknowledgement is sent.
The MGC is informed of the remote descriptor and it instructs the AGW/RGW to enable a bi-directional media path, in order to avoid speech clipping.
Reply = 2003 {
Context = 11 {
Modify = rtp/22 } }
Ringing tone returned from far end gateway
Transaction = 2004 {
Context = 11 {
Modify = aln/99/1 {
Signals {
stimal/stedsig {
signal = reversePolarity
}
}
} } }
The AGW/RGW applies reverse polarity to the line and a positive acknowledgement is sent.
The "Called Party" Answers and the MGC instructs the AGW/RGW to apply line reversal to the analogue port (this is a provisioned item in the MGC)
.
Reverse Polarity

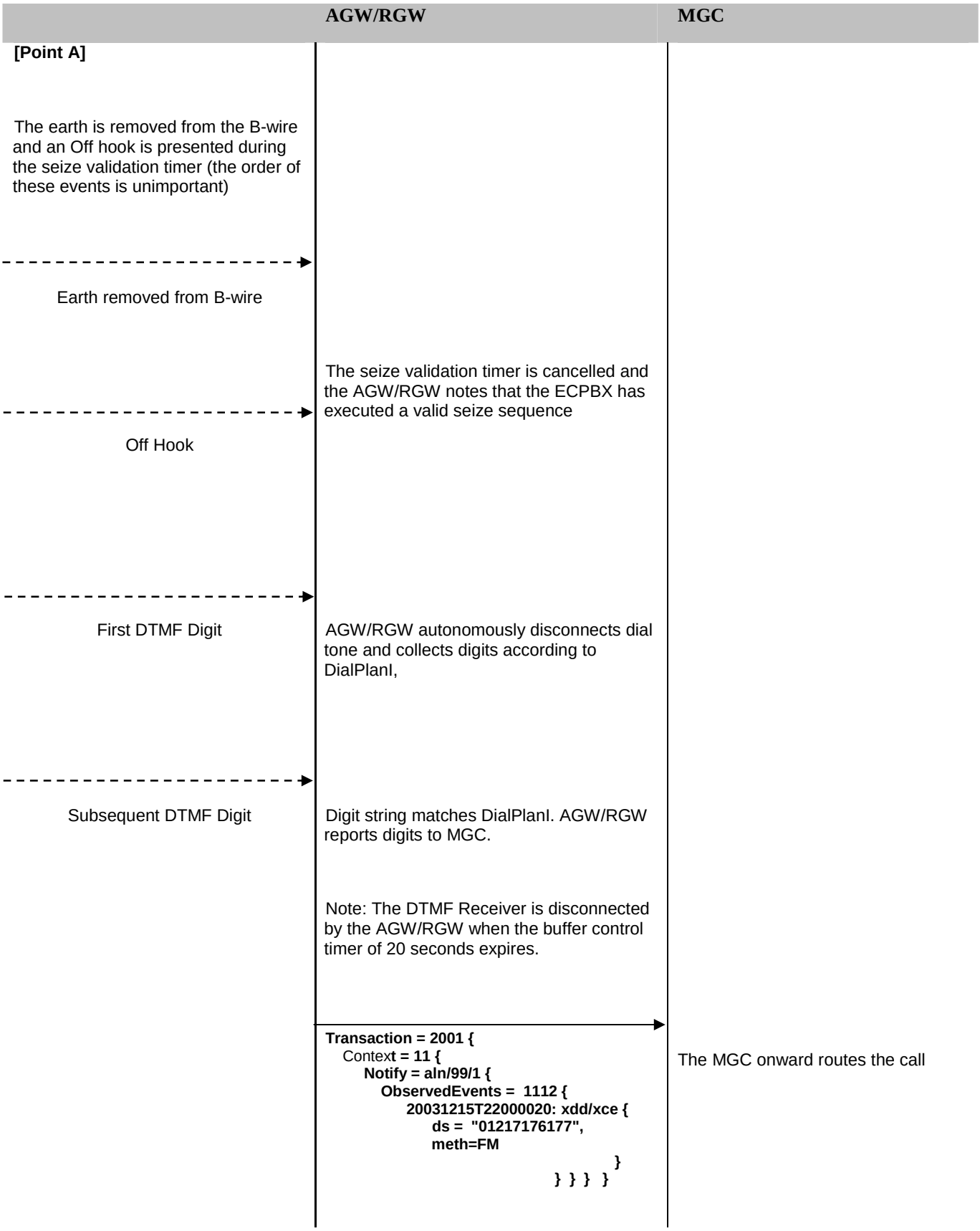


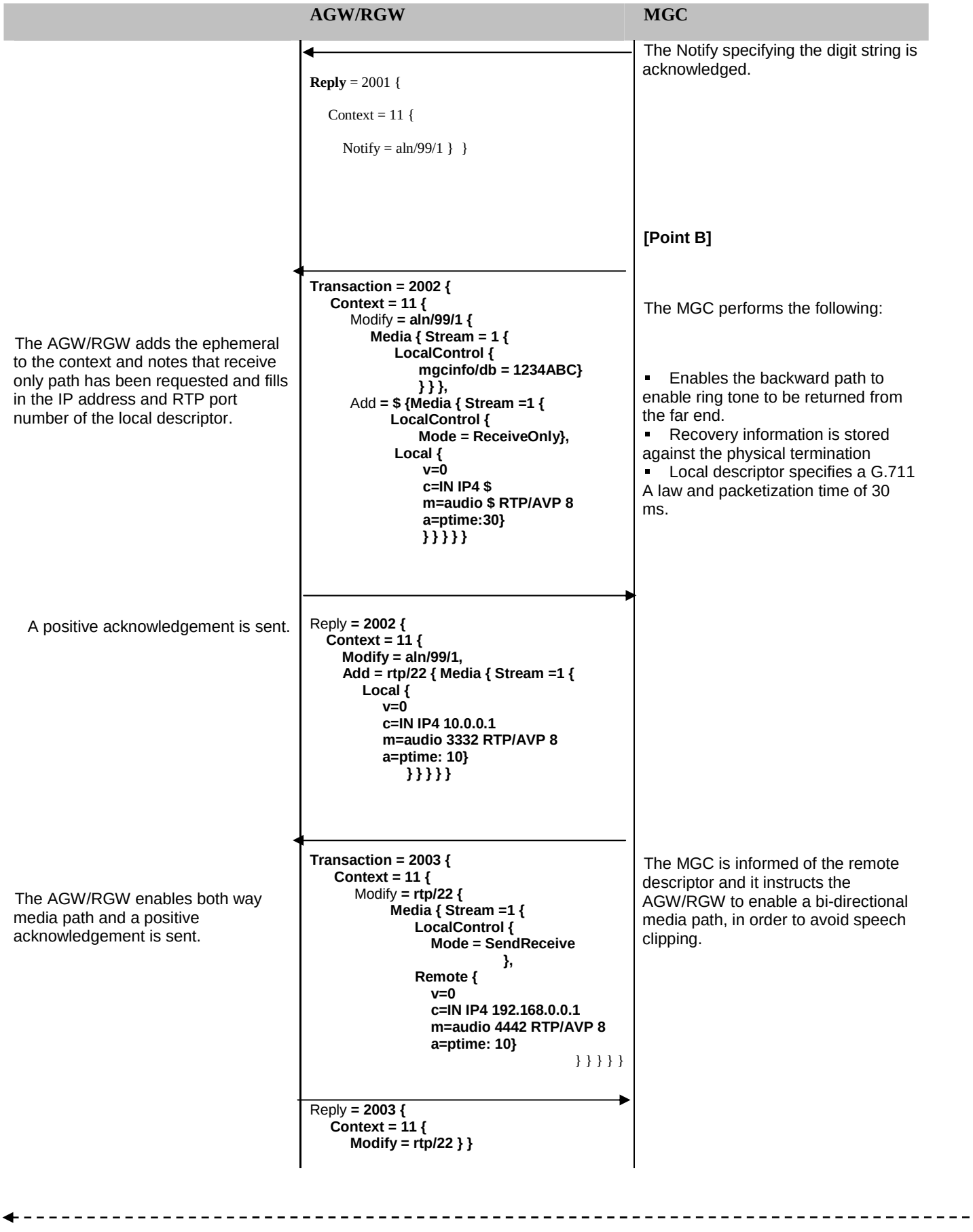
7.1.1.2 Early Addition of Analogue Termination into a Context

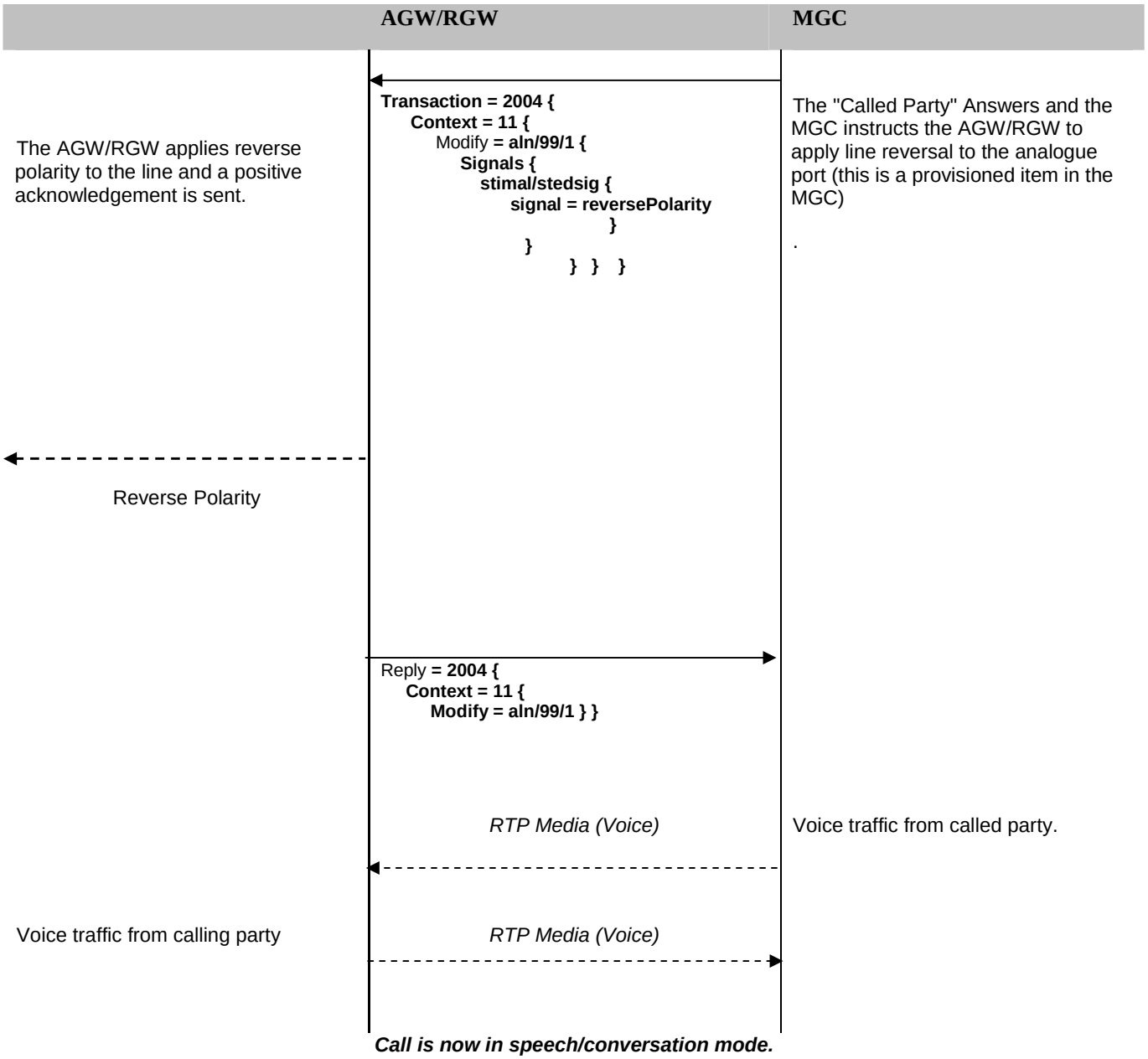
Pre-conditions: Sequence 4.1.1 has been successfully executed for ECPBX port aln/99/1.




AGW/RGW
MGC
Reply = 1998 {
Context = - {
Notify = aln/99/1 } }
Transaction = 1999 {
Context = $ {
Add = aln/99/1 {
Media { Stream = 1 {
LocalControl {
Mode = SendReceive,
}
} } },
The AGW/RGW adds the analogue port to the context.
The MGC performs the following actions:
Reply = 1999 {
Context = 11 {
Add = aln/99/1
} }
Requests dial tone to be applied,
Request digits are collected according to DialPlanI , with a digit buffering control timer of 20 seconds and the shortest match digit procedures are specified.
Activates that events descriptor to continue monitoring for steady and pulsed signals.
Transaction = 2000 {
Context = 11 {
Modify = aln/99/1 {
Events = 1112 {
stimal/stedsig,
stimal/pulsedsig,
xdd/xce {
DigitMap = DialPlanI,
bc = 20,
mp = enhanced
} },
Signals {
cg/dt }
} } } }
AGW/RGW performs the following actions:
Sends a positive ack to the MGC
Applies dial tone
Connects DTMF receiver and collects digits according to DialPlanI.
Monitors for an steady and pulsed signals
Reply = 2000 {
Context = 11 {
Modify = aln/99/1 } }
Dial Tone returned


AGW/RGW
MGC
[Point A]
The earth is removed from the B-wire and an Off hook is presented during the seize validation timer (the order of these events is unimportant)
Earth removed from B-wire
The seize validation timer is cancelled and the AGW/RGW notes that the ECPBX has executed a valid seize sequence
Off Hook
First DTMF Digit
AGW/RGW autonomously disconnects dial tone and collects digits according to DialPlanI,
Subsequent DTMF Digit
Digit string matches DialPlanI. AGW/RGW reports digits to MGC.
Note: The DTMF Receiver is disconnected by the AGW/RGW when the buffer control timer of 20 seconds expires.
Transaction = 2001 {
Context = 11 {
Notify = aln/99/1 {
ObservedEvents = 1112 {
20031215T22000020: xdd/xce {
ds = "01217176177",
meth=FM
}
} } } }
The MGC onward routes the call


AGW/RGW
MGC
The Notify specifying the digit string is acknowledged.
Reply = 2001 {
Context = 11 {
Notify = aln/99/1 } }
[Point B]
Transaction = 2002 {
Context = 11 {
Modify = aln/99/1 {
Media { Stream = 1 {
LocalControl {
mgcinfo/db = 1234ABC}
} } },
Add = $ {Media { Stream =1 {
LocalControl {
Mode = ReceiveOnly},
Local {
v=0
c=IN IP4 $
m=audio $ RTP/AVP 8
a=ptime:30}
} } } } }
The MGC performs the following:
The AGW/RGW adds the ephemeral to the context and notes that receive only path has been requested and fills in the IP address and RTP port number of the local descriptor.
Enables the backward path to enable ring tone to be returned from the far end.
Recovery information is stored against the physical termination
Local descriptor specifies a G.711 A law and packetization time of 30 ms.
Reply = 2002 {
Context = 11 {
Modify = aln/99/1,
Add = rtp/22 { Media { Stream =1 {
Local {
v=0
c=IN IP4 10.0.0.1
m=audio 3332 RTP/AVP 8
a=ptime: 10}
} } } } }
A positive acknowledgement is sent.
Transaction = 2003 {
Context = 11 {
Modify = rtp/22 {
Media { Stream =1 {
LocalControl {
Mode = SendReceive
},
Remote {
v=0
c=IN IP4 192.168.0.0.1
m=audio 4442 RTP/AVP 8
a=ptime: 10}
} } } } }
The MGC is informed of the remote descriptor and it instructs the AGW/RGW to enable a bi-directional media path, in order to avoid speech clipping.
Reply = 2003 {
Context = 11 {
Modify = rtp/22 } }
The AGW/RGW enables both way media path and a positive acknowledgement is sent.
Ringing tone returned from far end gateway

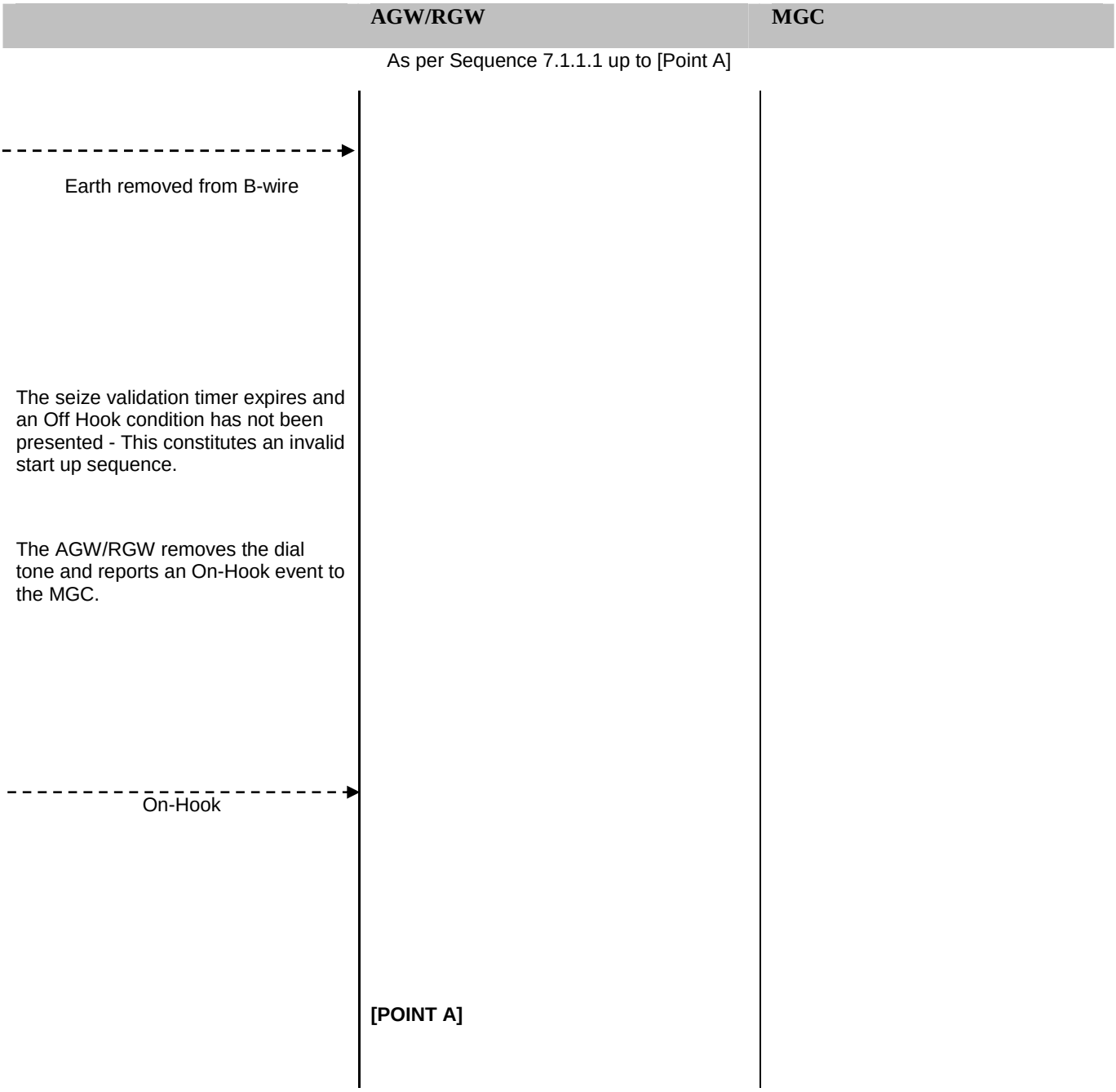

AGW/RGW
MGC
Transaction = 2004 {
Context = 11 {
Modify = aln/99/1 {
Signals {
stimal/stedsig {
signal = reversePolarity
}
}
} } }
The "Called Party" Answers and the MGC instructs the AGW/RGW to apply line reversal to the analogue port (this is a provisioned item in the MGC)
.
The AGW/RGW applies reverse polarity to the line and a positive acknowledgement is sent.
Reverse Polarity
Reply = 2004 {
Context = 11 {
Modify = aln/99/1 } }
RTP Media (Voice)
Voice traffic from called party.
Voice traffic from calling party
RTP Media (Voice)
Call is now in speech/conversation mode.

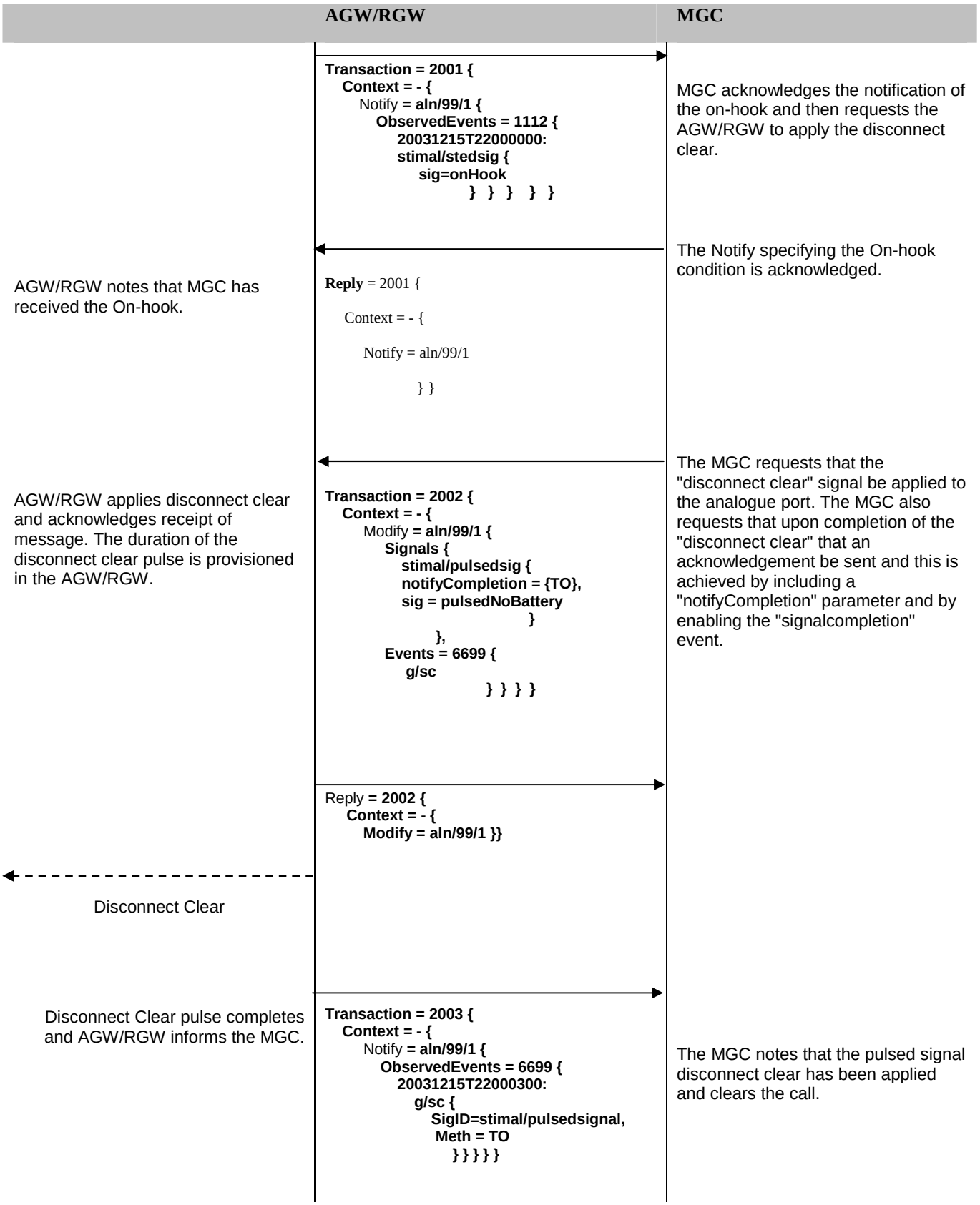
7.2 Unsuccessful Call Establishment

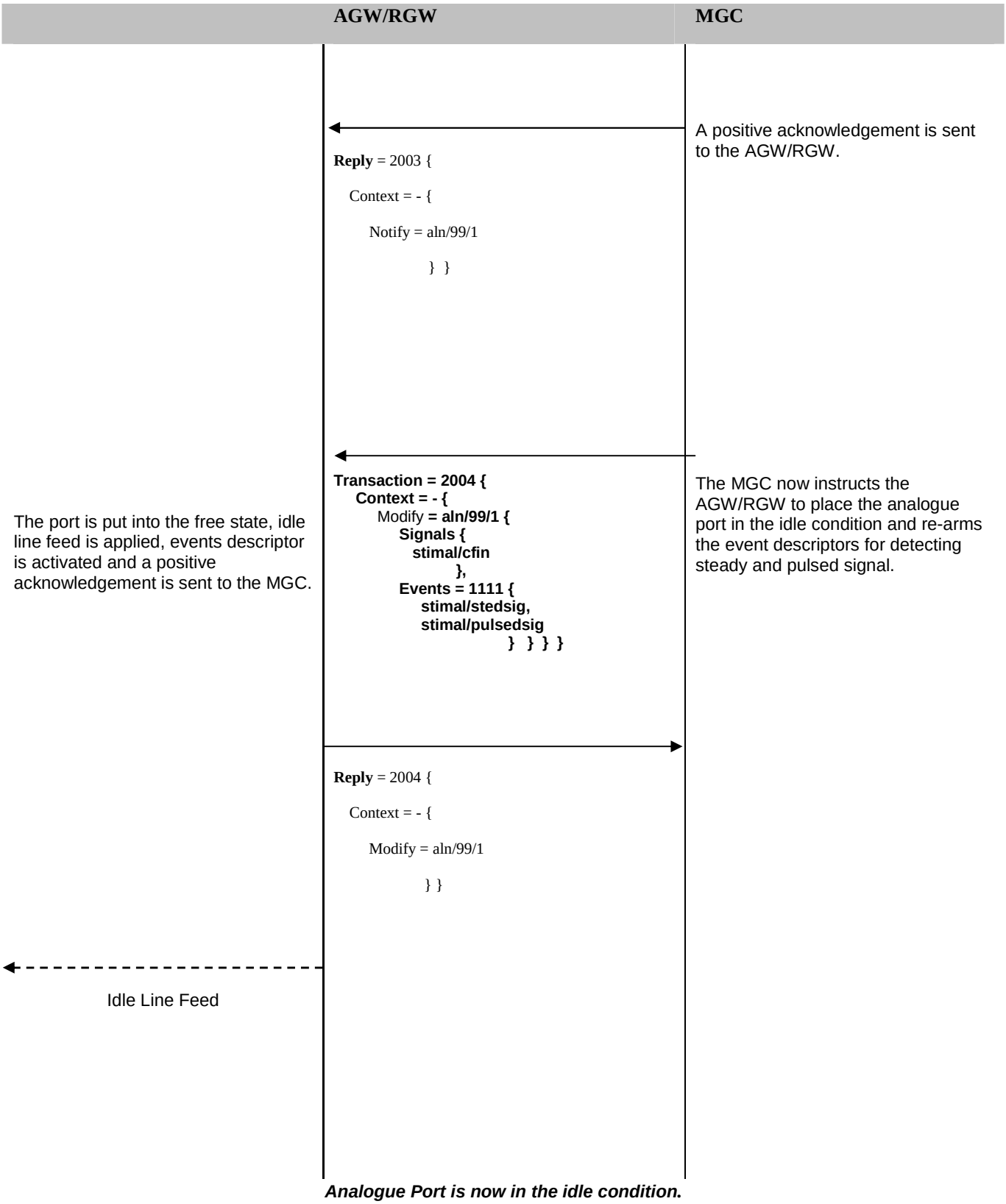
7.2.1 ECPBX - Faulty Seize - Earth removed from B-wire, but no Off-Hook is present - A end

7.2.1.1 Analogue Termination in a null Context

Pre-conditions: Sequence 4.1.1 has been successfully executed for ECPBX port aln/99/1.



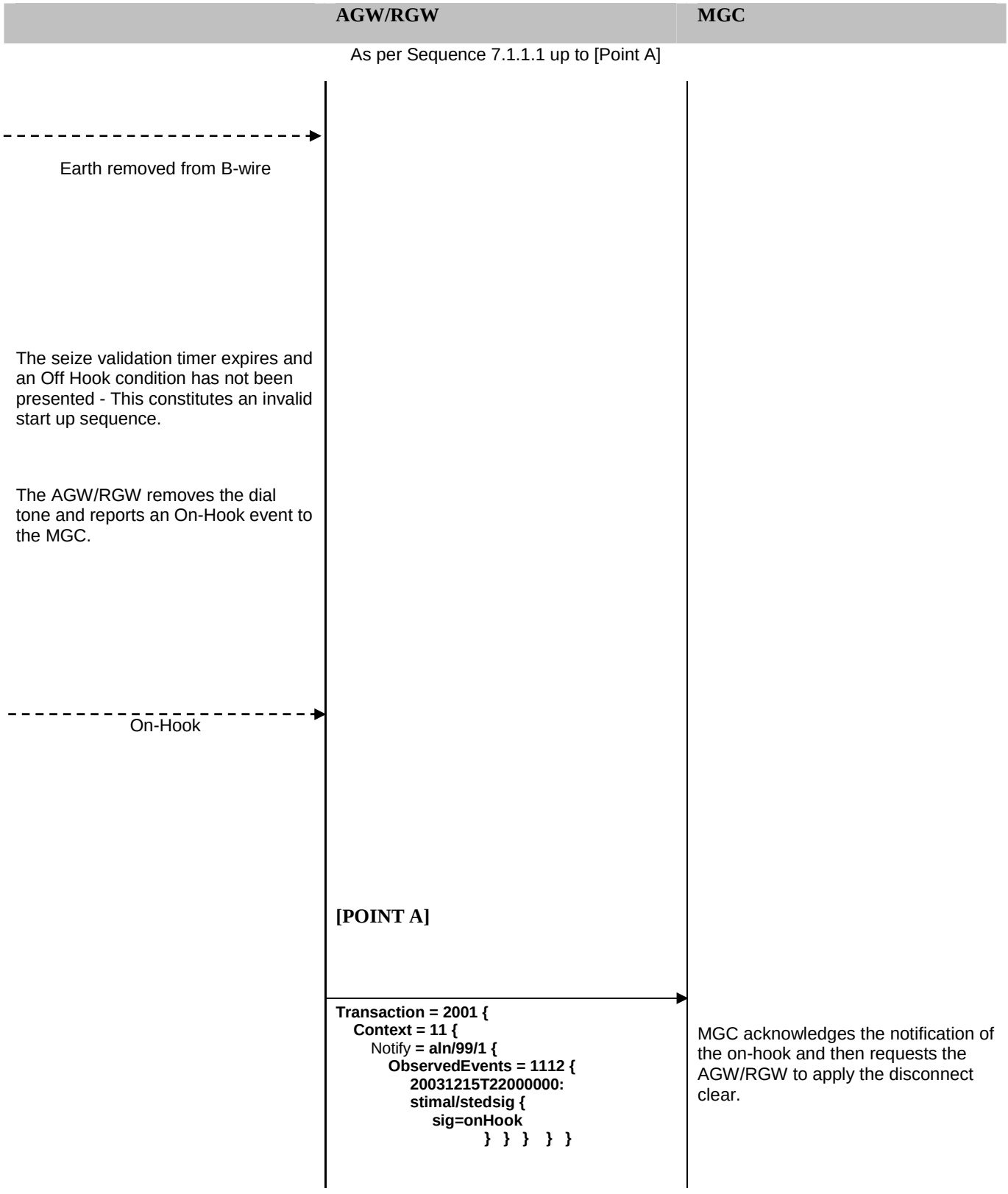

AGW/RGW
MGC
Transaction = 2001 {
Context = - {
Notify = aln/99/1 {
ObservedEvents = 1112 {
20031215T22000000:
stimal/stedsig {
sig=onHook
} } } } }
MGC acknowledges the notification of the on-hook and then requests the AGW/RGW to apply the disconnect clear.
The Notify specifying the On-hook condition is acknowledged.
AGW/RGW notes that MGC has received the On-hook.
Reply = 2001 {
Context = - {
Notify = aln/99/1
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Transaction = 2002 {
Context = - {
Modify = aln/99/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
Reply = 2002 {
Context = - {
Modify = aln/99/1 }}
Disconnect Clear
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 2003 {
Context = - {
Notify = aln/99/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.

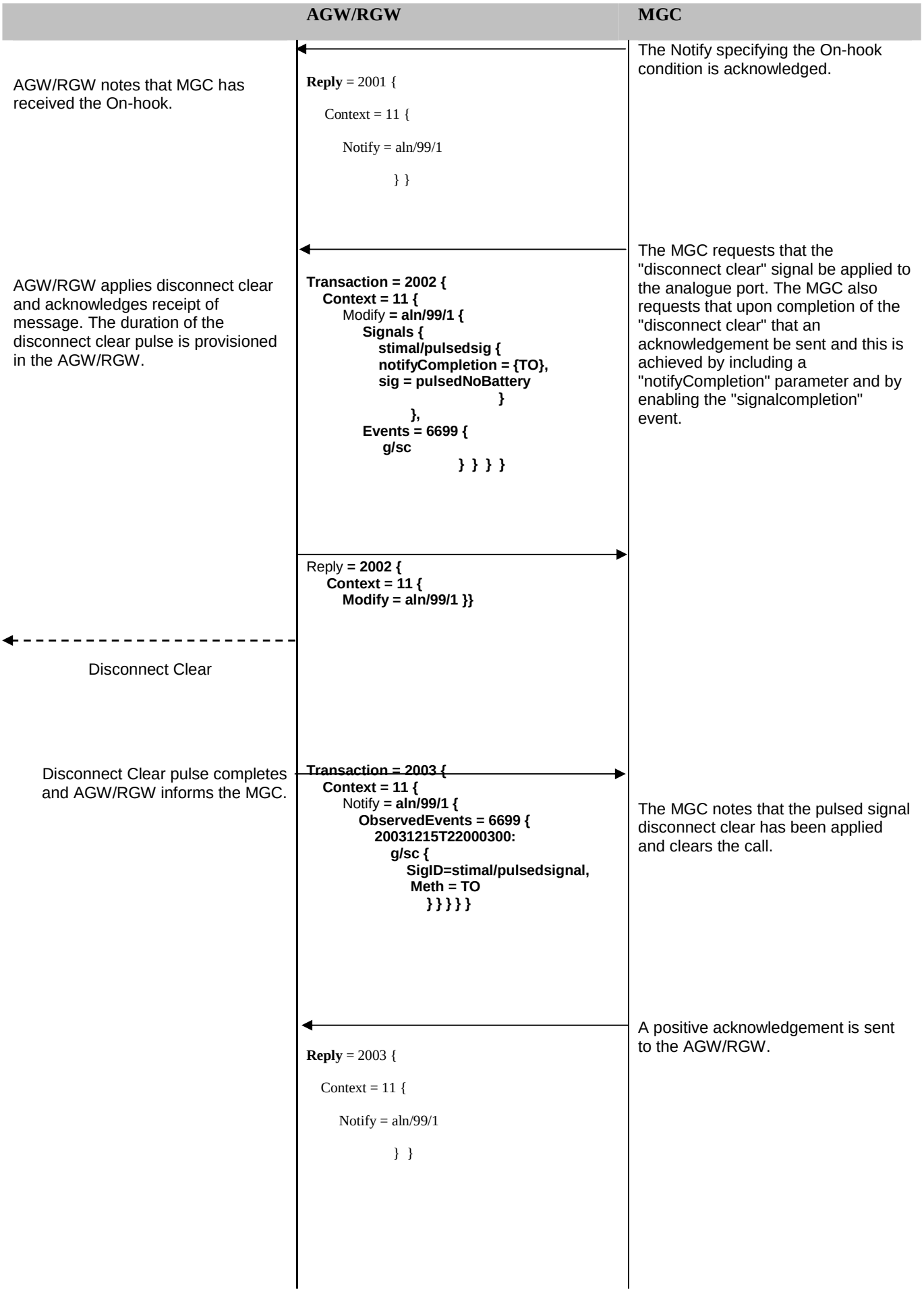


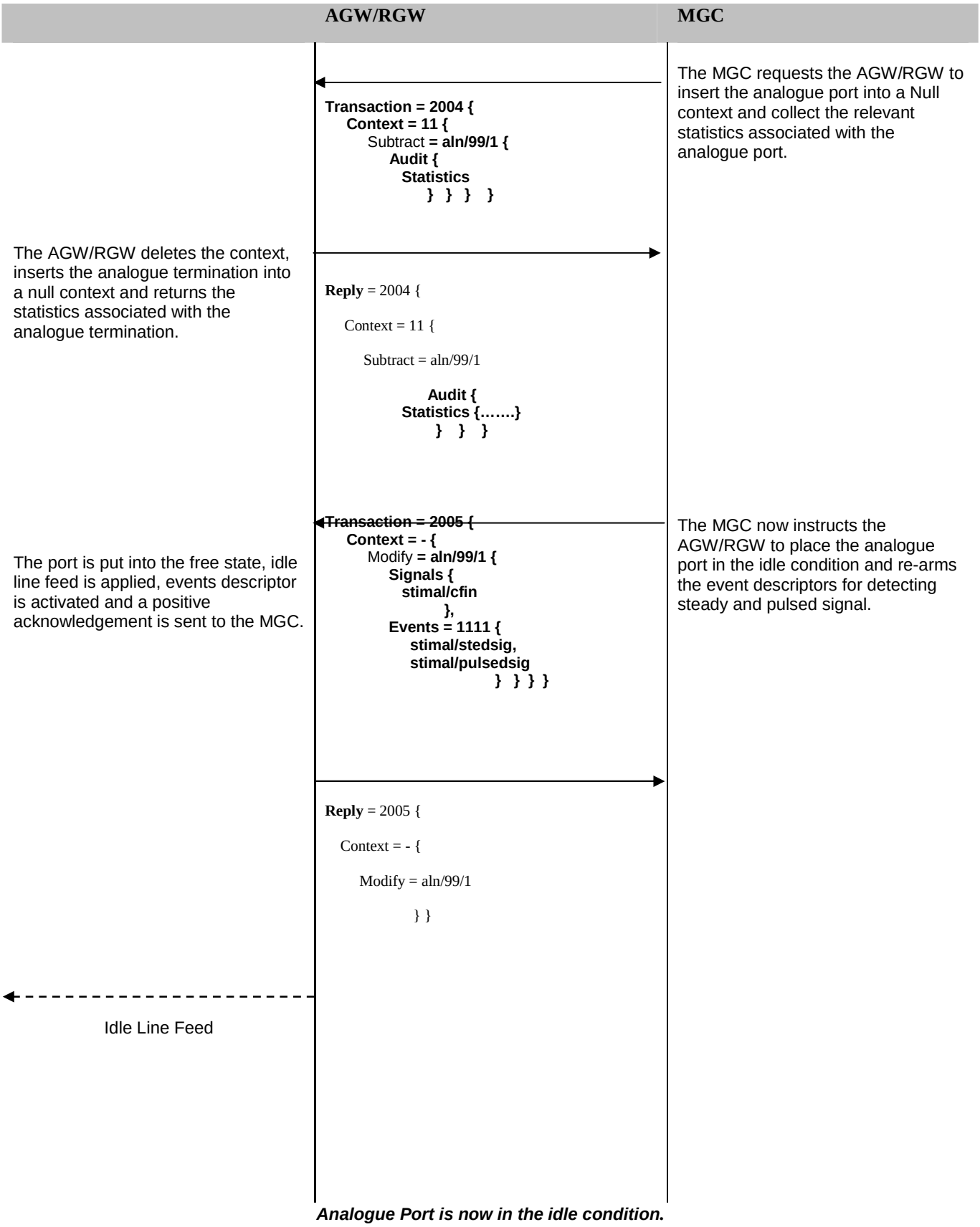
Analogue Port is now in the idle condition.

7.2.1.2 Analogue Termination in a non Null Context

Pre-conditions: Sequence 4.1.1 has been successfully executed for ECPBX port aln/99/1.




AGW/RGW
MGC
The Notify specifying the On-hook condition is acknowledged.
AGW/RGW notes that MGC has received the On-hook.
Reply = 2001 {
Context = 11 {
Notify = aln/99/1
} }
The MGC requests that the "disconnect clear" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the disconnect clear pulse is provisioned in the AGW/RGW.
Transaction = 2002 {
Context = 11 {
Modify = aln/99/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedNoBattery
}
},
Events = 6699 {
g/sc
} } } }
Reply = 2002 {
Context = 11 {
Modify = aln/99/1 }}
Disconnect Clear
Disconnect Clear pulse completes and AGW/RGW informs the MGC.
Transaction = 2003 {
Context = 11 {
Notify = aln/99/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
} } } } }
The MGC notes that the pulsed signal disconnect clear has been applied and clears the call.
A positive acknowledgement is sent to the AGW/RGW.
Reply = 2003 {
Context = 11 {
Notify = aln/99/1
} }


AGW/RGW
MGC
The MGC requests the AGW/RGW to insert the analogue port into a Null context and collect the relevant statistics associated with the analogue port.
Transaction = 2004 {
Context = 11 {
Subtract = aln/99/1 {
Audit {
Statistics
} } } }
The AGW/RGW deletes the context, inserts the analogue termination into a null context and returns the statistics associated with the analogue termination.
Reply = 2004 {
Context = 11 {
Subtract = aln/99/1
Audit {
Statistics {…….}
} } }
Transaction = 2005 {
Context = - {
Modify = aln/99/1 {
Signals {
stimal/cfin
},
Events = 1111 {
stimal/stedsig,
stimal/pulsedsig
} } } }
The MGC now instructs the AGW/RGW to place the analogue port in the idle condition and re-arms the event descriptors for detecting steady and pulsed signal.
The port is put into the free state, idle line feed is applied, events descriptor is activated and a positive acknowledgement is sent to the MGC.
Reply = 2005 {
Context = - {
Modify = aln/99/1
} }
Idle Line Feed
Analogue Port is now in the idle condition.

7.2.2 ECPBX - Faulty Seize - Earth is not removed from the B-wire - A end

7.2.2.1 Analogue Termination in a Null Context

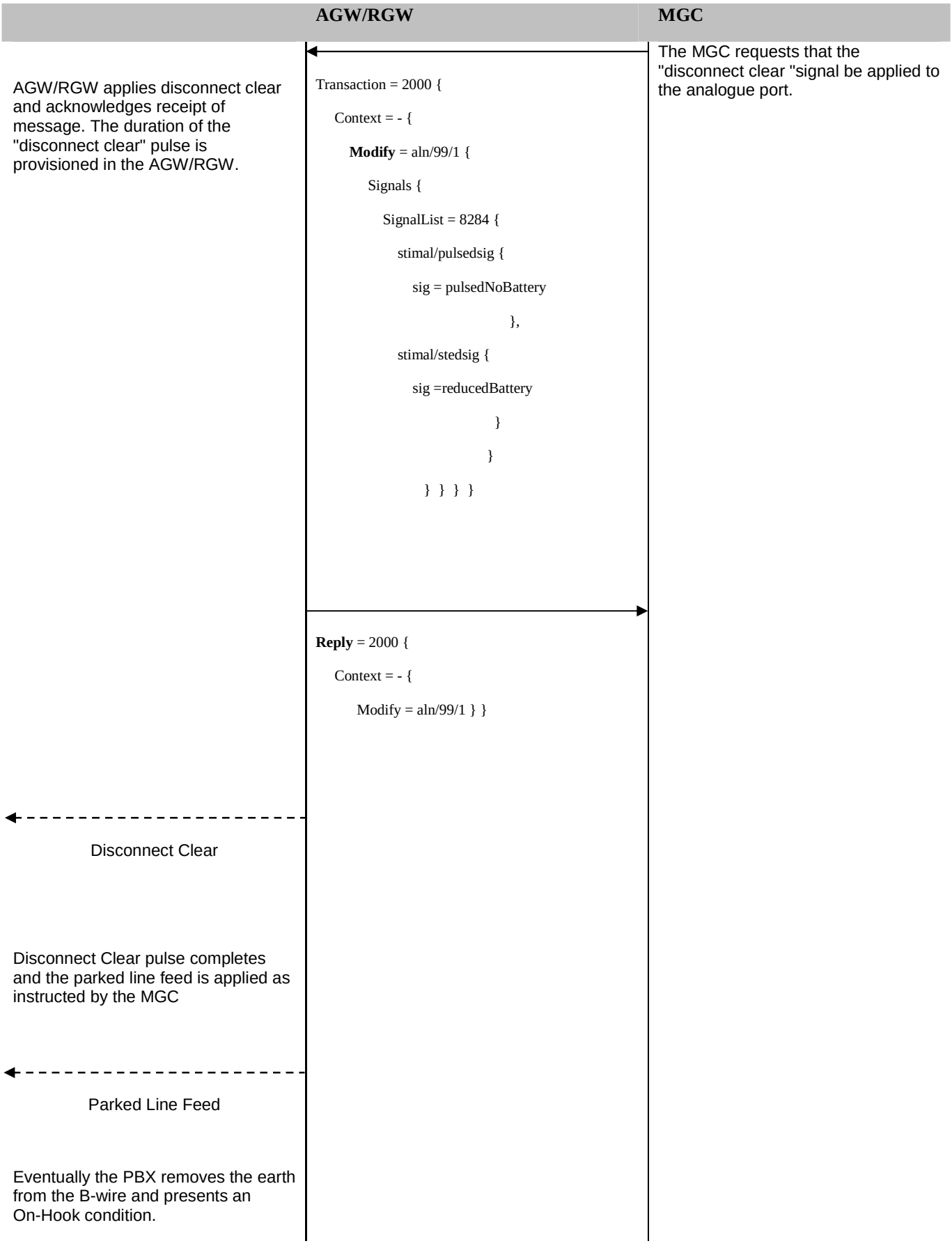
Pre-conditions: Sequence 4.1.1 has been successfully executed for ECPBX port aln/99/1.

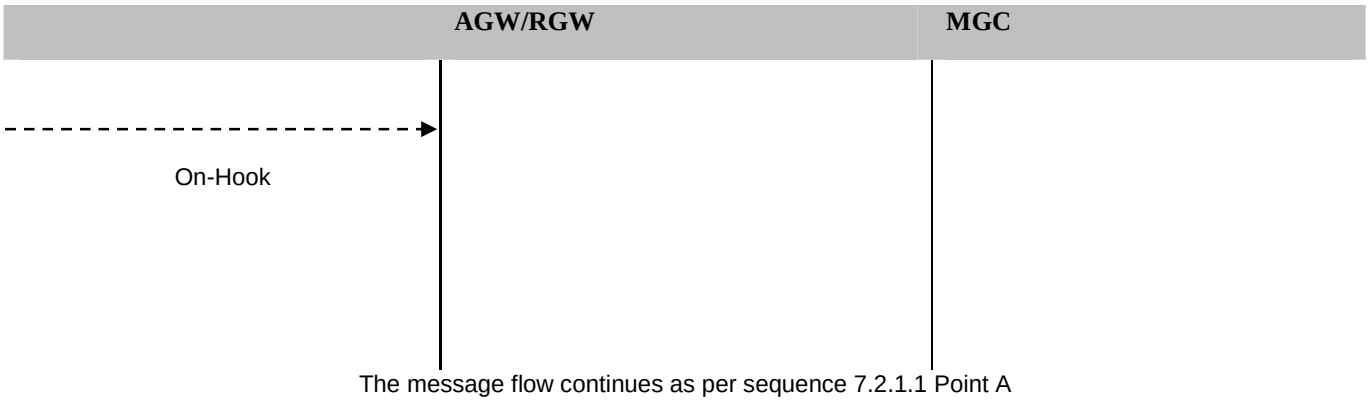
AGW/RGW		MGC
	As per Sequence 7.1.1.1 up to [Point A]	
The seize validation timer expires and the earth has not been removed from the B-wire. This constitutes an invalid start up sequence.		
The AGW/RGW removes the dial tone, reports B-wire connected to earth event to the MGC.	→	

	Transaction = 1999 {
	Context = - {
	Notify = aln/99/1 {
	ObservedEvents = 1112 {
	20031215T22000000:
	stimal/stedsig{
	sig=b-wireConnectedToearth
	}
	} } } }
		MGC acknowledges notes the notification of the B-wire connected to earth and performs the following:
		• Generates a fault report
		• A positive ack is sent to the AGW/RGW to indicate that the B-wire Connected to Earth event notification has been received.
		• Requests the AGW/RGW to apply disconnect clear followed by parked line feed as part of a Signal List.

	←	The Notify specifying the B-wire connected to earth condition is acknowledged.

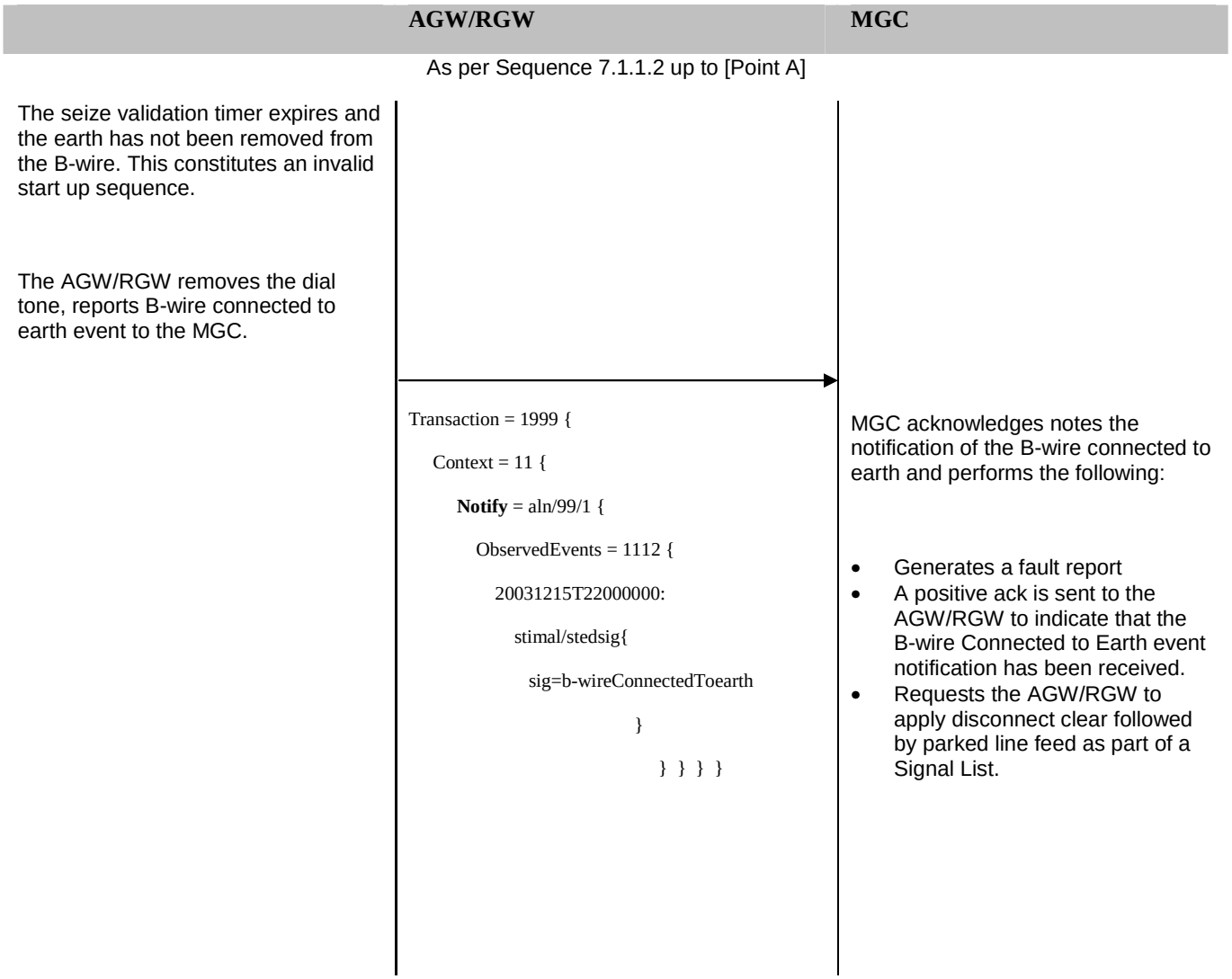
AGW/RGW notes that MGC has received the B-wire connected to earth event.	**Reply** = 1999 {
	Context = - {
	Notify = aln/99/1 } }	

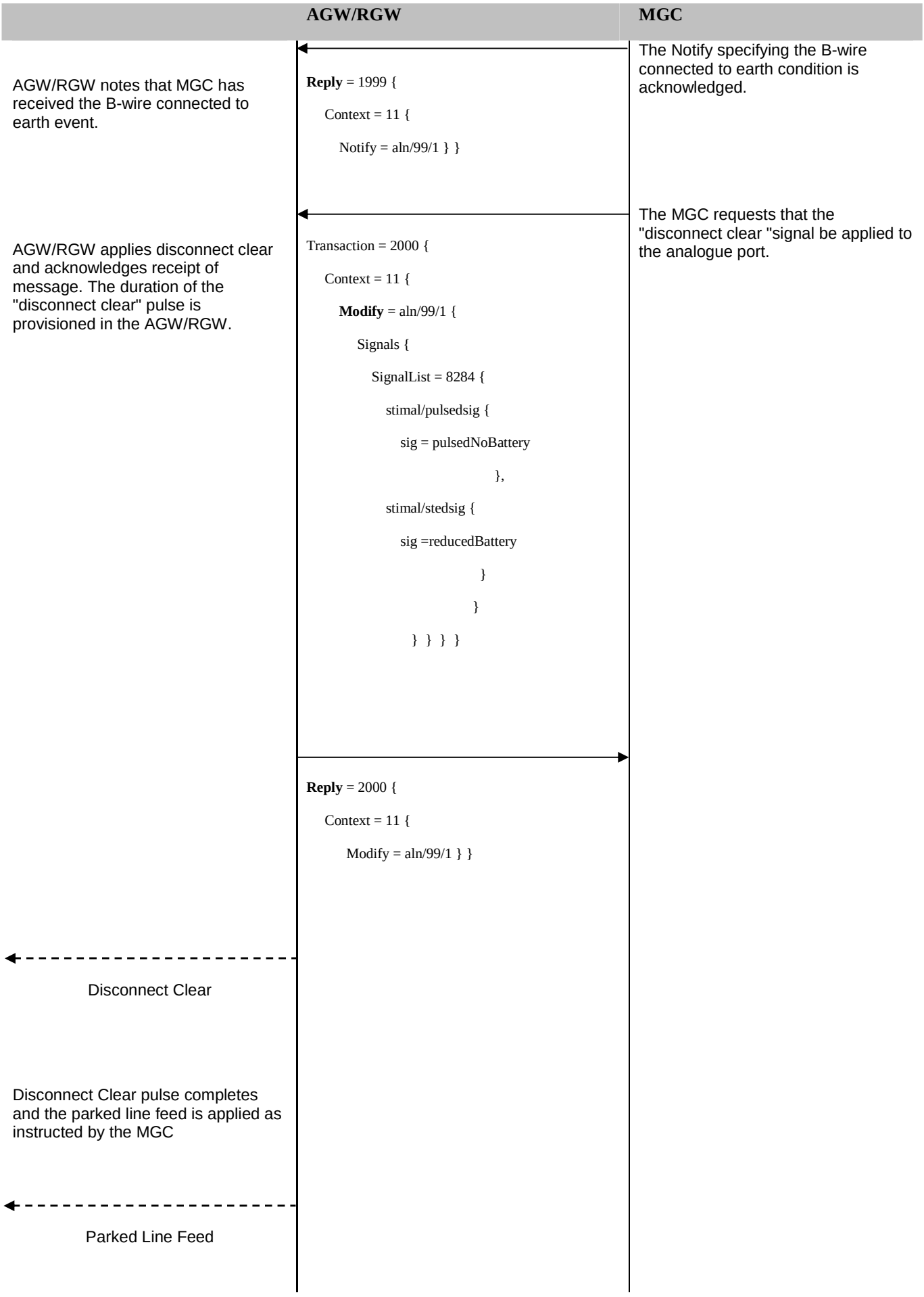

AGW/RGW
MGC
The MGC requests that the "disconnect clear "signal be applied to the analogue port.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the "disconnect clear" pulse is provisioned in the AGW/RGW.
Transaction = 2000 {
Context = - {
Modify = aln/99/1 {
Signals {
SignalList = 8284 {
stimal/pulsedsig {
sig = pulsedNoBattery
},
stimal/stedsig {
sig =reducedBattery
}
}
} } } }
Reply = 2000 {
Context = - {
Modify = aln/99/1 } }
Disconnect Clear
Disconnect Clear pulse completes and the parked line feed is applied as instructed by the MGC
Parked Line Feed
Eventually the PBX removes the earth from the B-wire and presents an On-Hook condition.

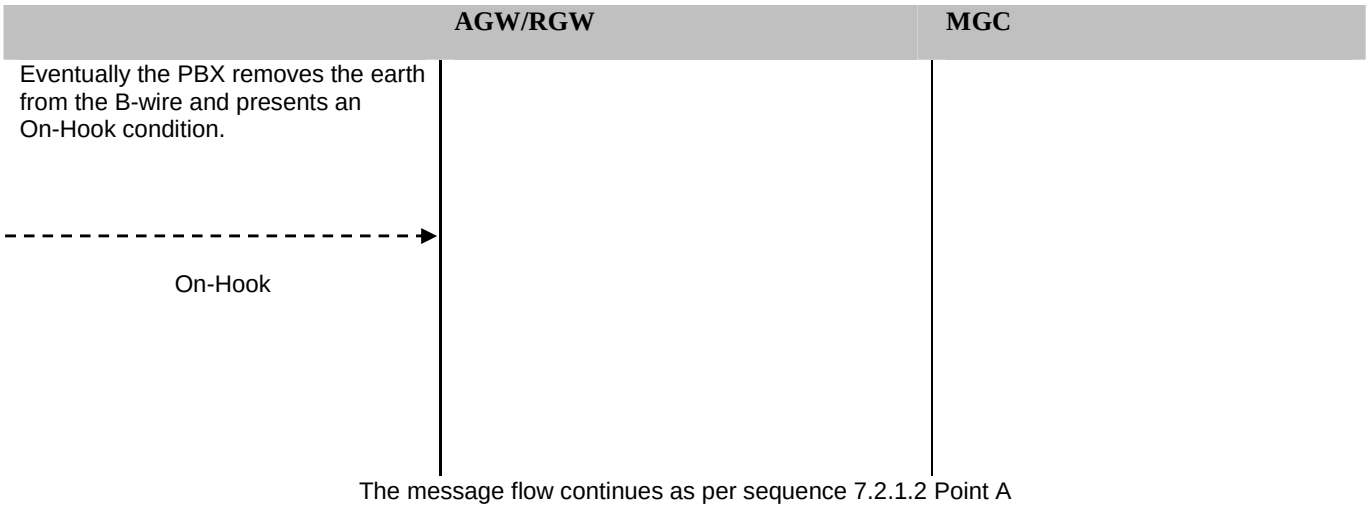


7.2.2.2 Analogue Termination in a non Null Context

Pre-conditions: Sequence 4.1.1 has been successfully executed for ECPBX port aln/99/1.




AGW/RGW
MGC
The Notify specifying the B-wire connected to earth condition is acknowledged.
AGW/RGW notes that MGC has received the B-wire connected to earth event.
Reply = 1999 {
Context = 11 {
Notify = aln/99/1 } }
The MGC requests that the "disconnect clear "signal be applied to the analogue port.
AGW/RGW applies disconnect clear and acknowledges receipt of message. The duration of the "disconnect clear" pulse is provisioned in the AGW/RGW.
Transaction = 2000 {
Context = 11 {
Modify = aln/99/1 {
Signals {
SignalList = 8284 {
stimal/pulsedsig {
sig = pulsedNoBattery
},
stimal/stedsig {
sig =reducedBattery
}
}
} } } }
Reply = 2000 {
Context = 11 {
Modify = aln/99/1 } }
Disconnect Clear
Disconnect Clear pulse completes and the parked line feed is applied as instructed by the MGC
Parked Line Feed



7.3 Call Cleardown

The call cleardown message flows for an Earth Calling PBX analogue port are identical to those of a Direct Exchange Line, but with the exception below:

- The "endofcall" signal which is generated via the H.248 signal "stimal/pulsedsig {sig =pulsedReducedBattery}" is replaced with "disconnect clear" signal which is generated via the H.248 signal "stimal/pulsedsig {sig = pulsedNoBattey}".

NOTE: Note no signal completion response is required upon completion of the "endofcall" signal.

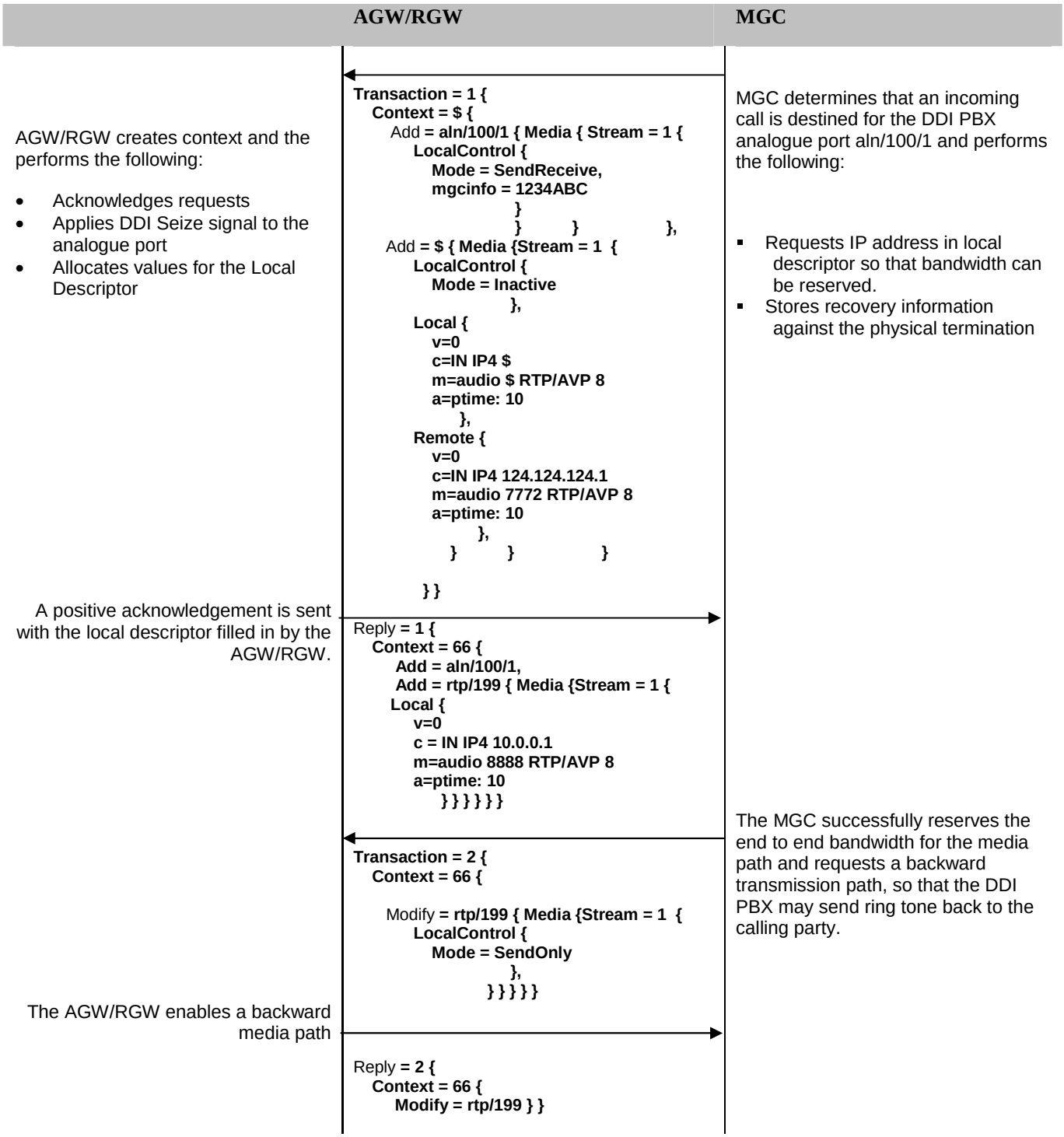
8 DDI PBX Message Flows

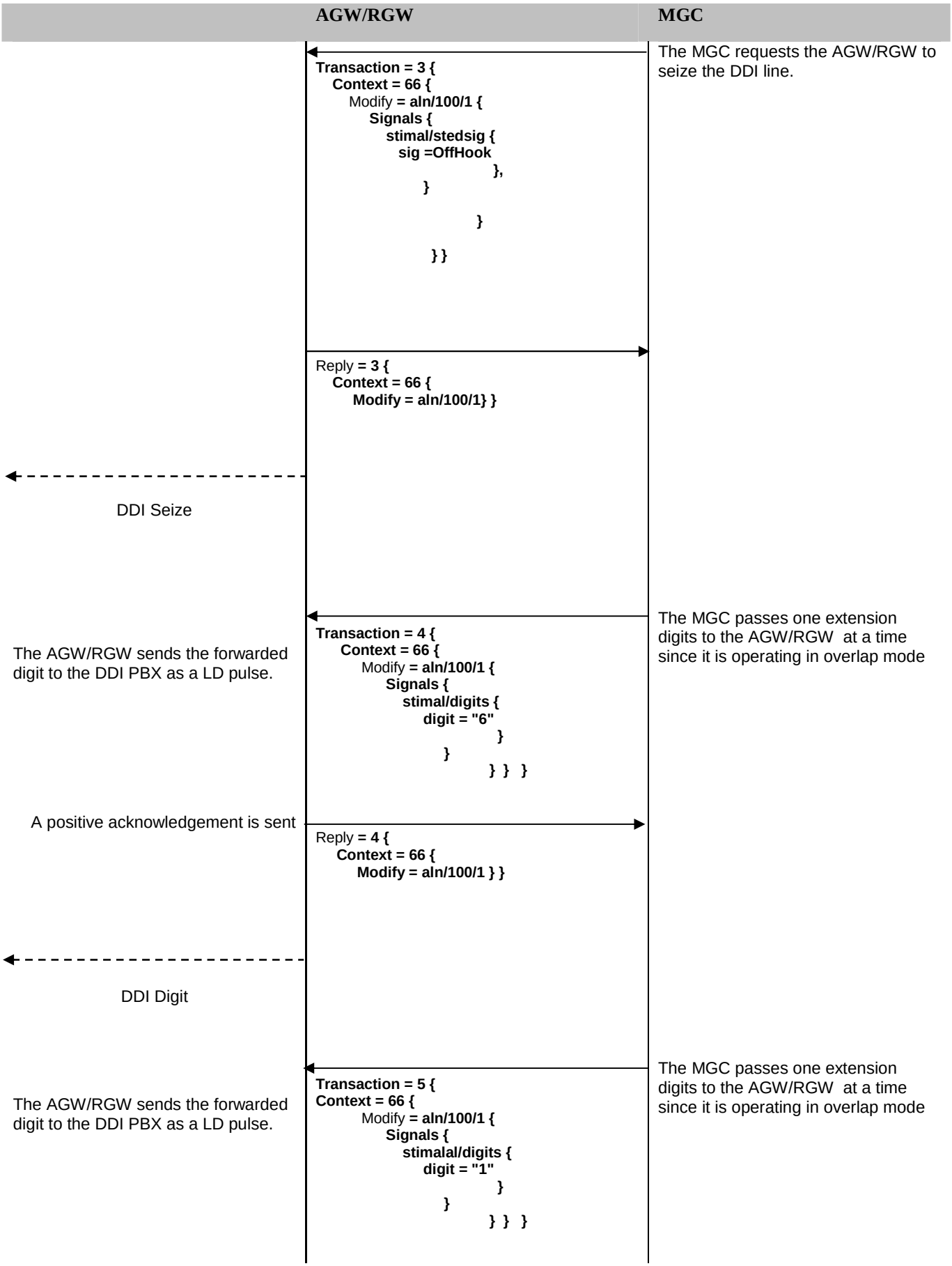
This clause contains message flows that are applicable to DDI PBX ports.

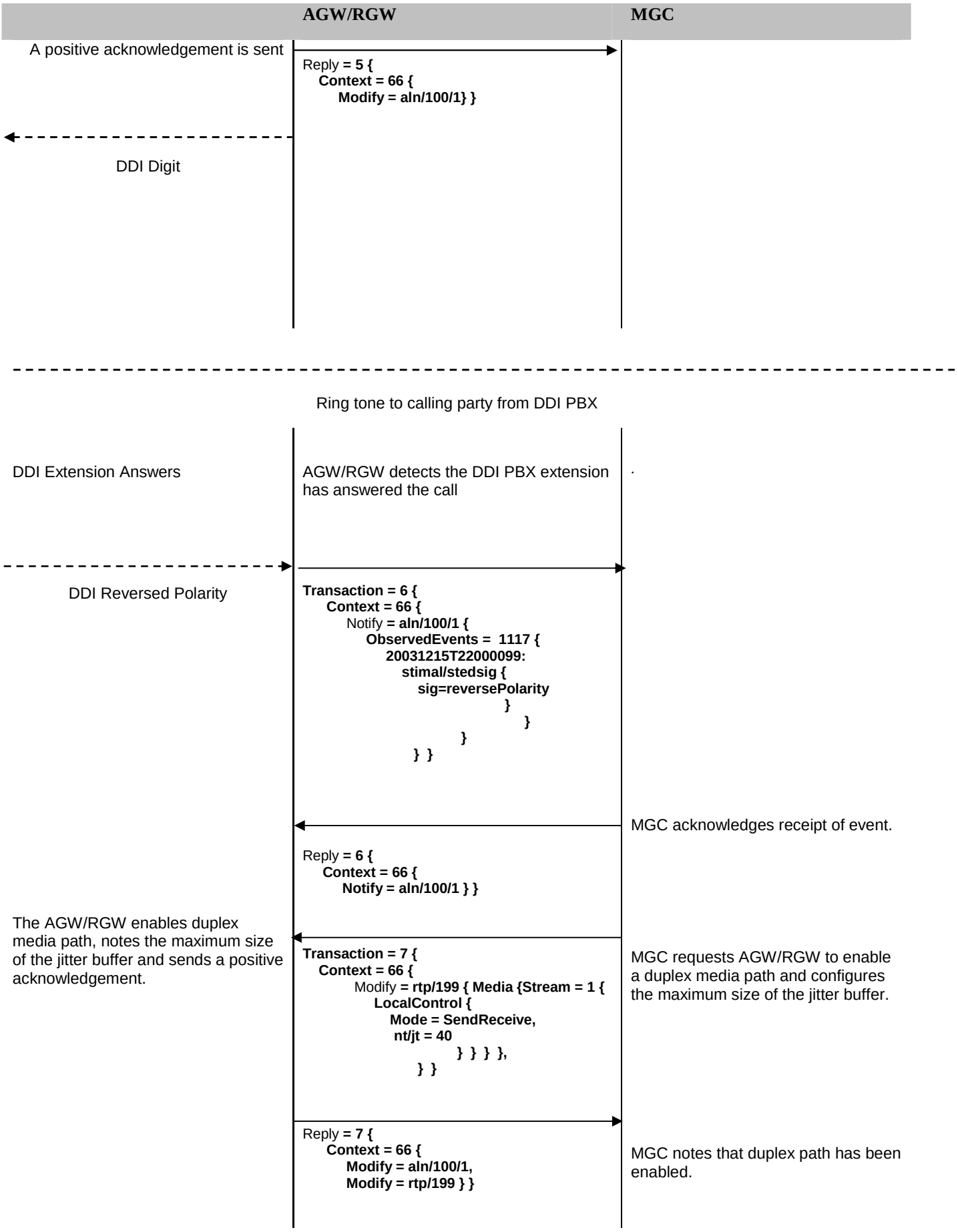
8.1 Call Establishment

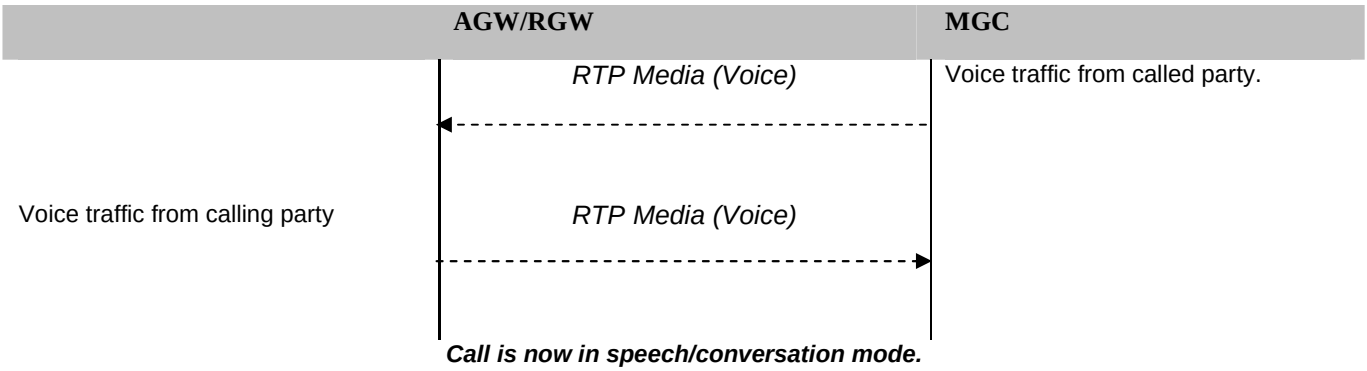
8.1.1 DDI PBX - Successful Incoming Call

Pre-conditions: Sequence 4.1.1 has been successfully executed for DDI port aln/100/1.



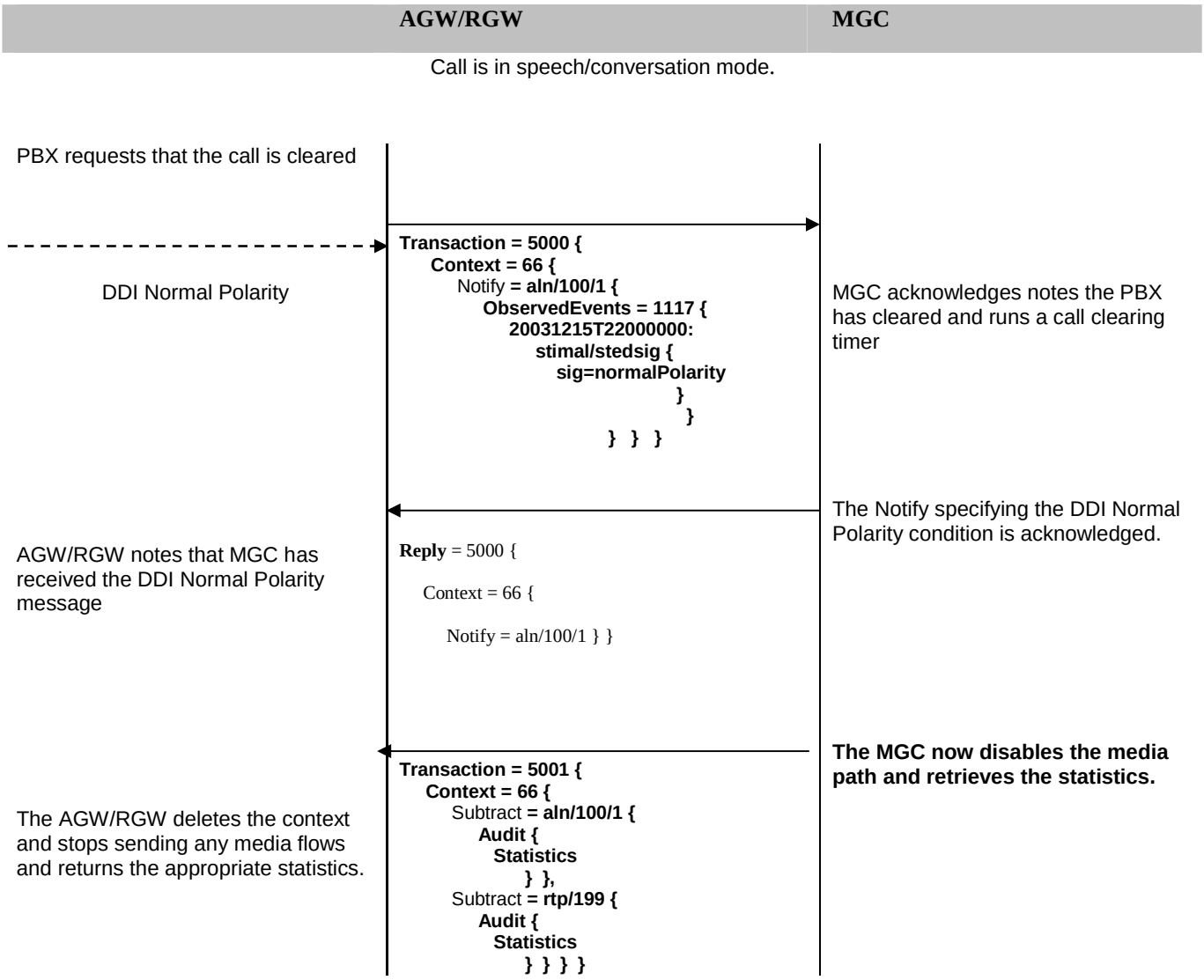

AGW/RGW
MGC
The MGC requests the AGW/RGW to seize the DDI line.
Transaction = 3 {
Context = 66 {
Modify = aln/100/1 {
Signals {
stimal/stedsig {
sig =OffHook
},
}
}
} }
Reply = 3 {
Context = 66 {
Modify = aln/100/1} }
DDI Seize
The MGC passes one extension digits to the AGW/RGW at a time since it is operating in overlap mode
Transaction = 4 {
Context = 66 {
Modify = aln/100/1 {
Signals {
stimal/digits {
digit = "6"
}
}
} } }
The AGW/RGW sends the forwarded digit to the DDI PBX as a LD pulse.
A positive acknowledgement is sent
Reply = 4 {
Context = 66 {
Modify = aln/100/1 } }
DDI Digit
The MGC passes one extension digits to the AGW/RGW at a time since it is operating in overlap mode
Transaction = 5 {
Context = 66 {
Modify = aln/100/1 {
Signals {
stimalal/digits {
digit = "1"
}
}
} } }
The AGW/RGW sends the forwarded digit to the DDI PBX as a LD pulse.

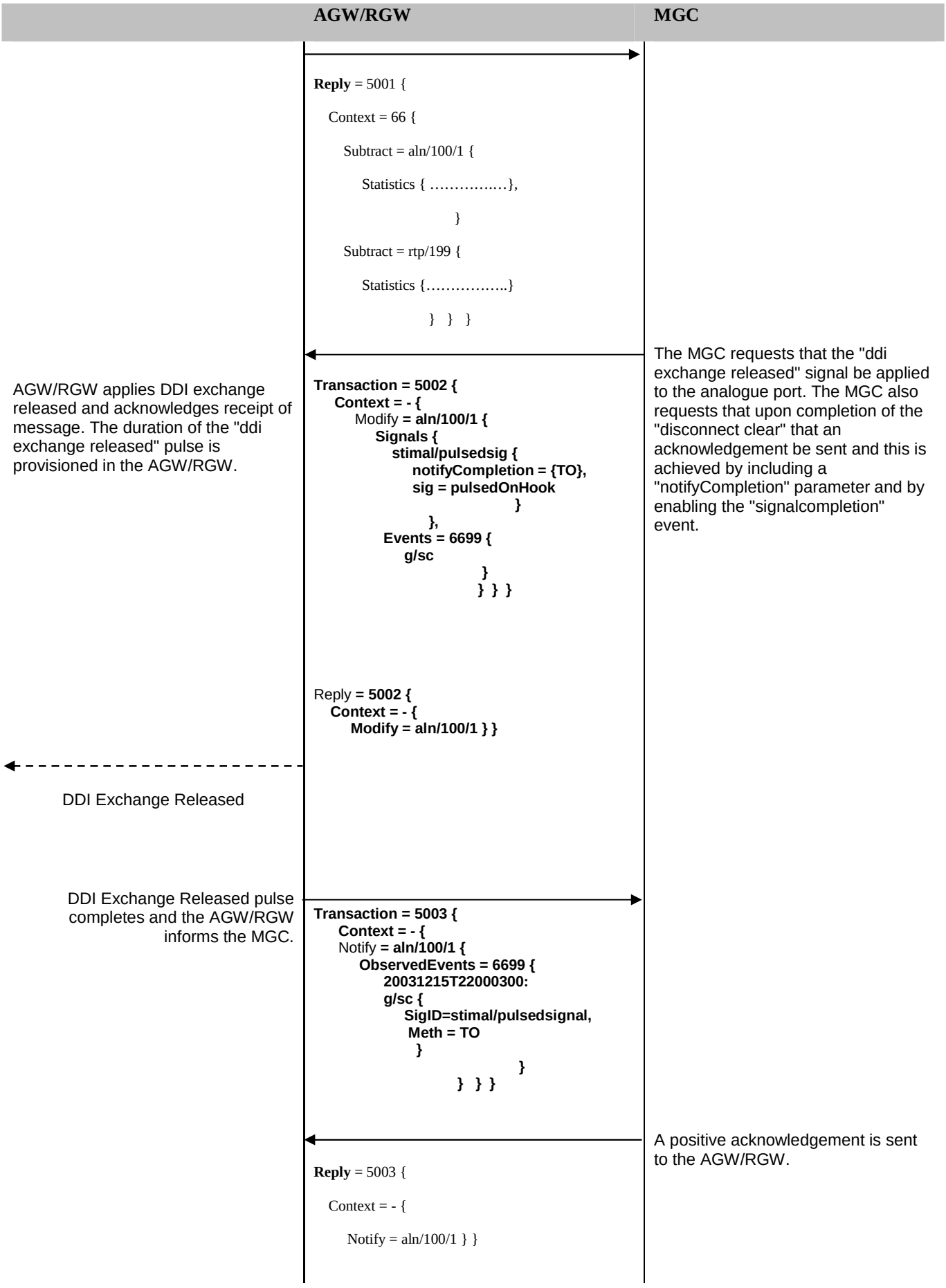

AGW/RGW
MGC
A positive acknowledgement is sent
Reply = 5 {
Context = 66 {
Modify = aln/100/1} }
DDI Digit
Ring tone to calling party from DDI PBX
DDI Extension Answers
AGW/RGW detects the DDI PBX extension has answered the call
DDI Reversed Polarity
Transaction = 6 {
Context = 66 {
Notify = aln/100/1 {
ObservedEvents = 1117 {
20031215T22000099:
stimal/stedsig {
sig=reversePolarity
}
}
}
} }
MGC acknowledges receipt of event.
Reply = 6 {
Context = 66 {
Notify = aln/100/1 } }
The AGW/RGW enables duplex media path, notes the maximum size of the jitter buffer and sends a positive acknowledgement.
Transaction = 7 {
Context = 66 {
Modify = rtp/199 { Media {Stream = 1 {
LocalControl {
Mode = SendReceive,
nt/jt = 40
} } } },
} }
MGC requests AGW/RGW to enable a duplex media path and configures the maximum size of the jitter buffer.
Reply = 7 {
Context = 66 {
Modify = aln/100/1,
Modify = rtp/199 } }
MGC notes that duplex path has been enabled.

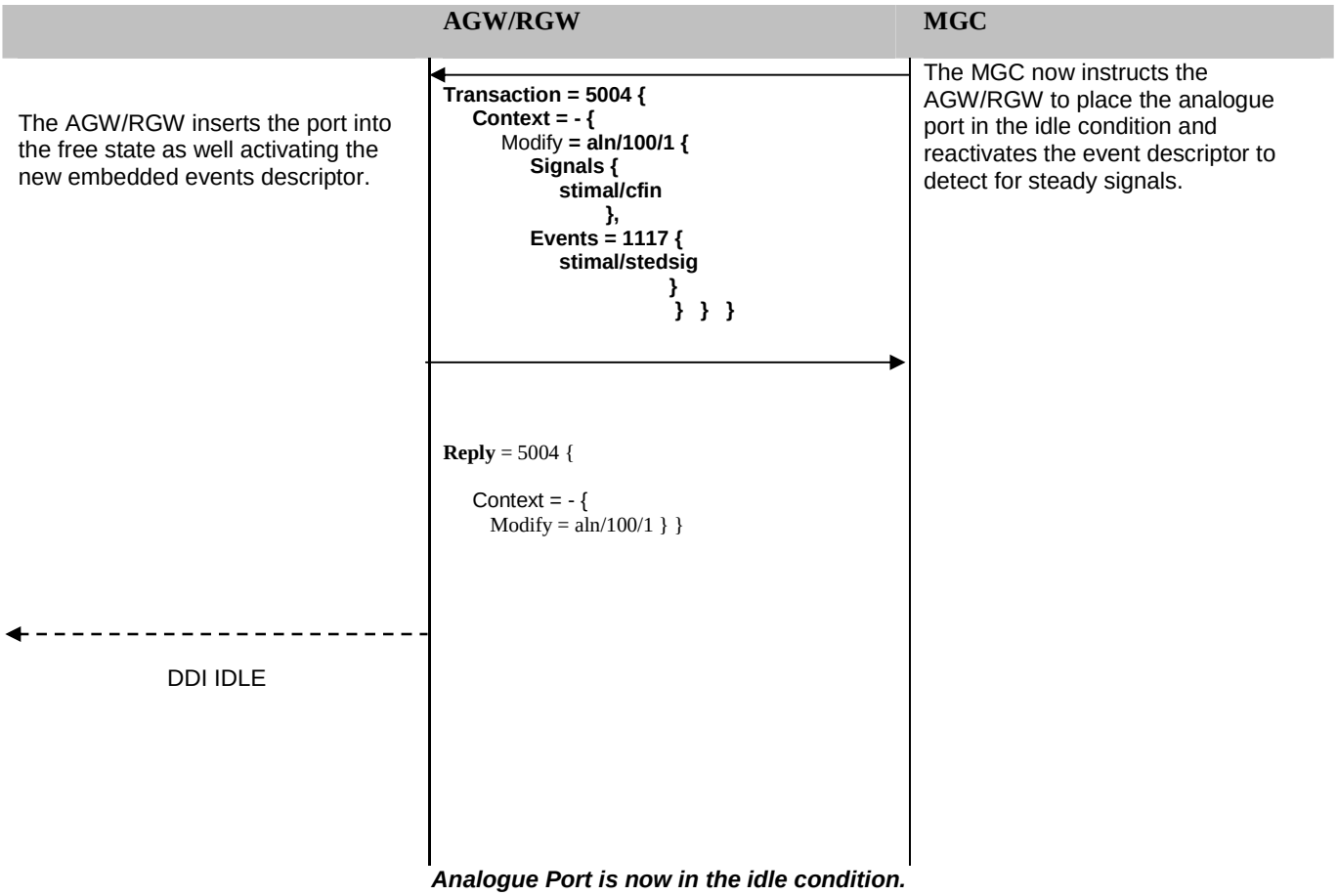


8.1.2 DDI PBX - PBX Clears during active call

Pre-conditions: Sequence 8.1.1 has been successfully executed for DDI port aln/100/1.

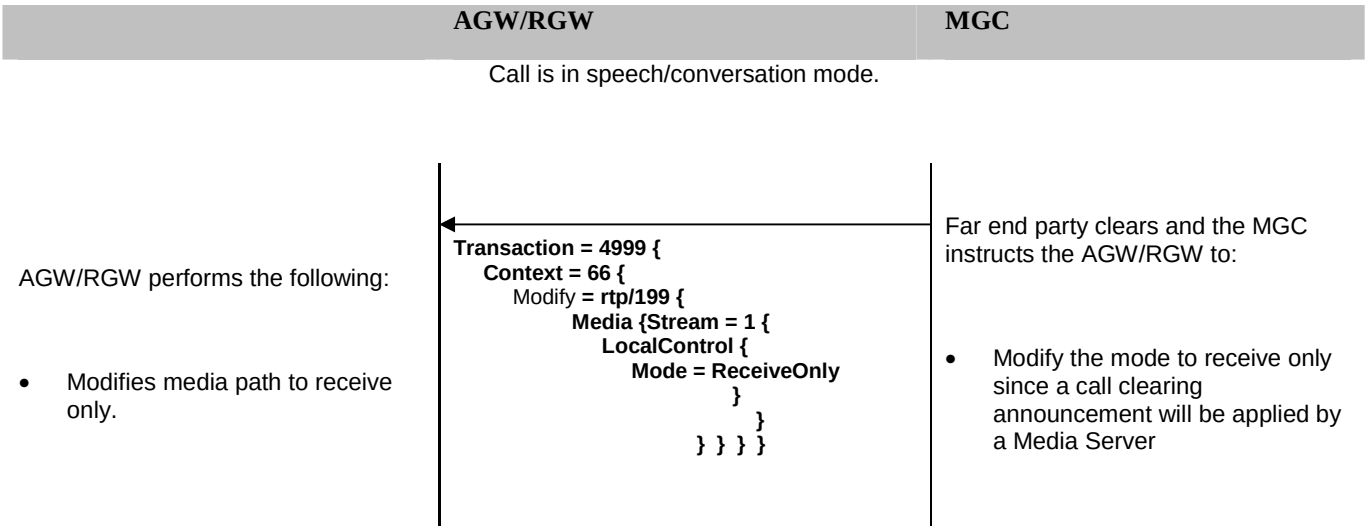


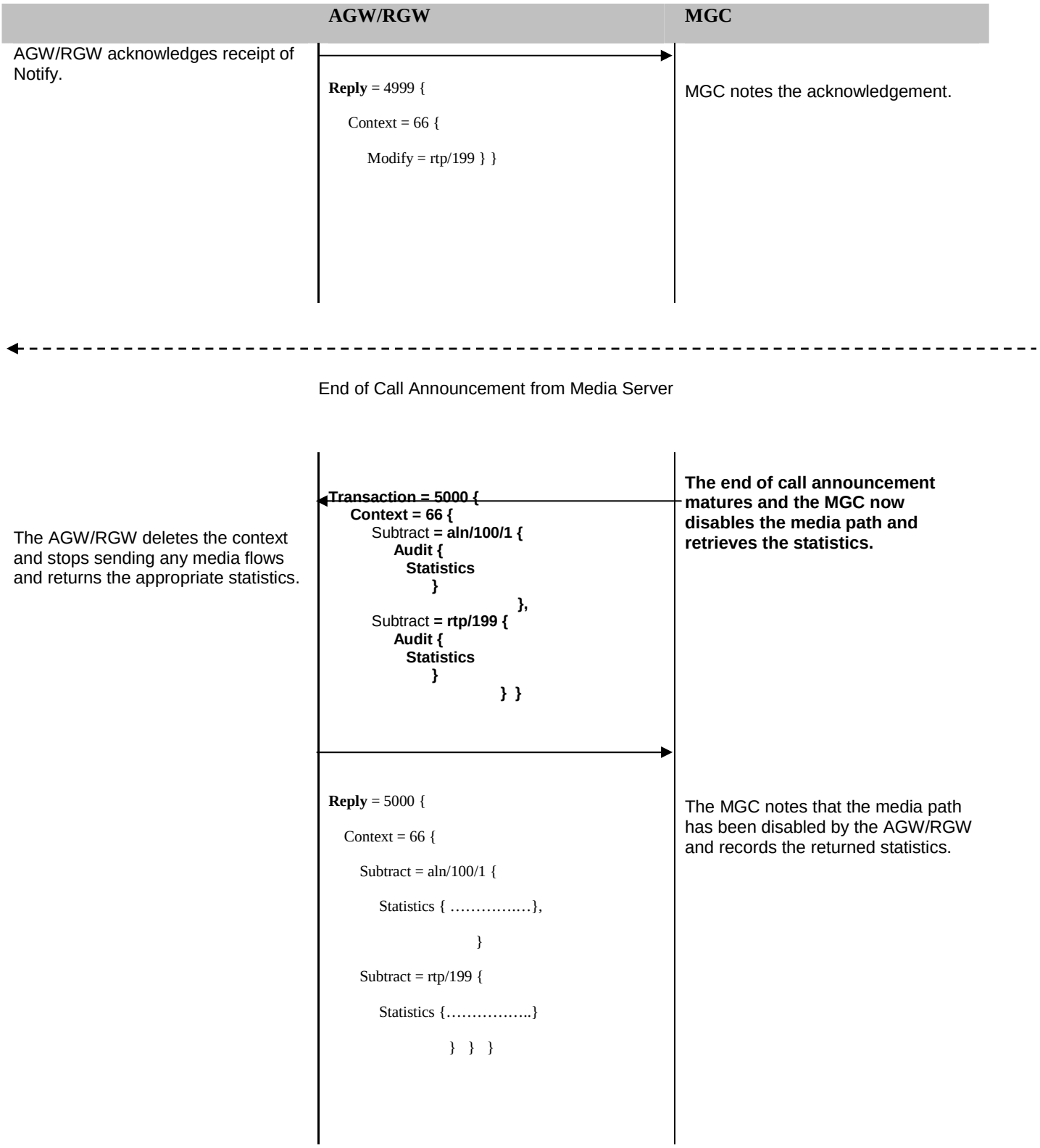

AGW/RGW
MGC
Reply = 5001 {
Context = 66 {
Subtract = aln/100/1 {
Statistics { ……..…},
}
Subtract = rtp/199 {
Statistics {……..}
} } }
The MGC requests that the "ddi exchange released" signal be applied to the analogue port. The MGC also requests that upon completion of the "disconnect clear" that an acknowledgement be sent and this is achieved by including a "notifyCompletion" parameter and by enabling the "signalcompletion" event.
AGW/RGW applies DDI exchange released and acknowledges receipt of message. The duration of the "ddi exchange released" pulse is provisioned in the AGW/RGW.
Transaction = 5002 {
Context = - {
Modify = aln/100/1 {
Signals {
stimal/pulsedsig {
notifyCompletion = {TO},
sig = pulsedOnHook
}
},
Events = 6699 {
g/sc
}
} } }
Reply = 5002 {
Context = - {
Modify = aln/100/1 } }
DDI Exchange Released
DDI Exchange Released pulse completes and the AGW/RGW informs the MGC.
Transaction = 5003 {
Context = - {
Notify = aln/100/1 {
ObservedEvents = 6699 {
20031215T22000300:
g/sc {
SigID=stimal/pulsedsignal,
Meth = TO
}
}
} } }
A positive acknowledgement is sent to the AGW/RGW.
Reply = 5003 {
Context = - {
Notify = aln/100/1 } }

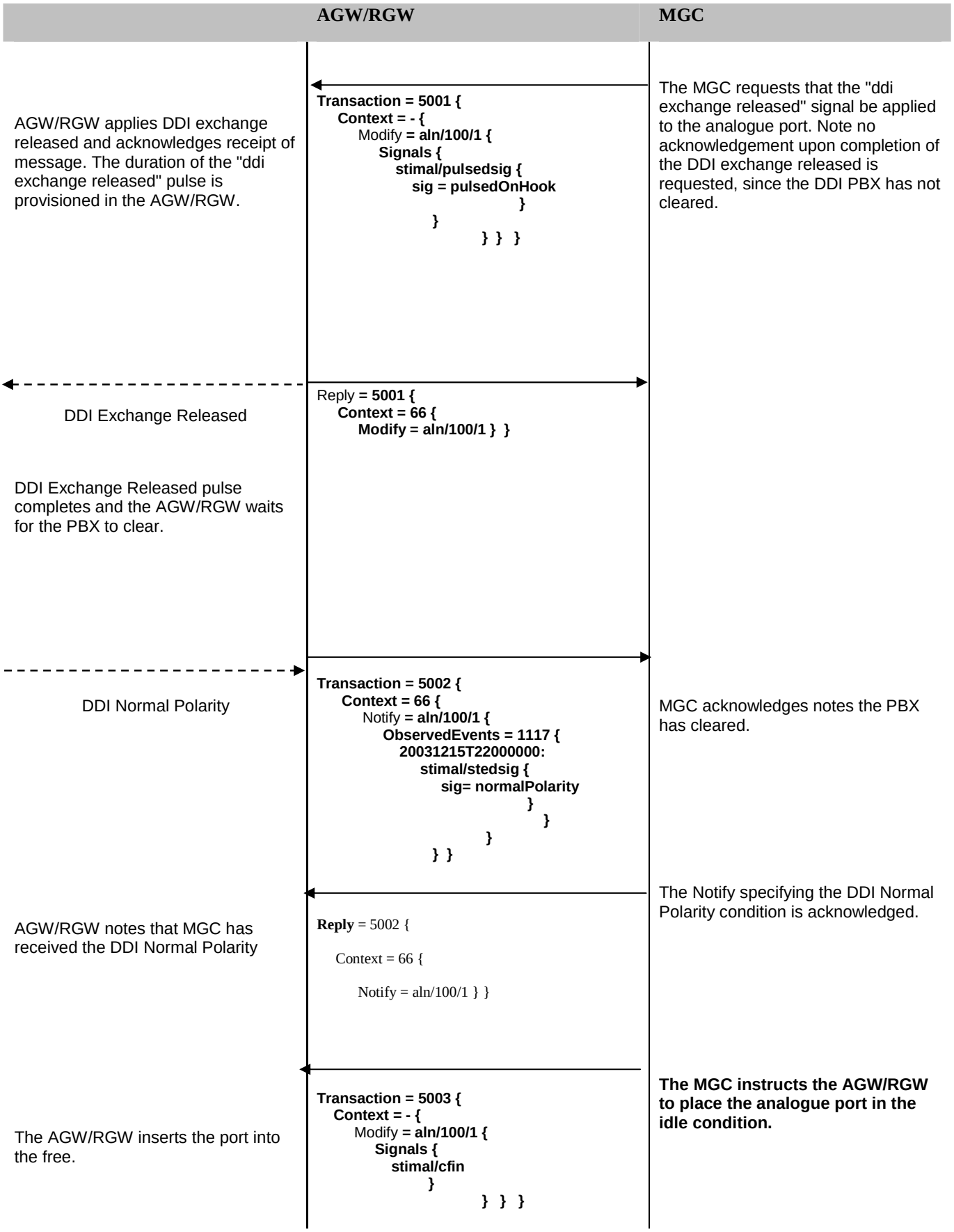


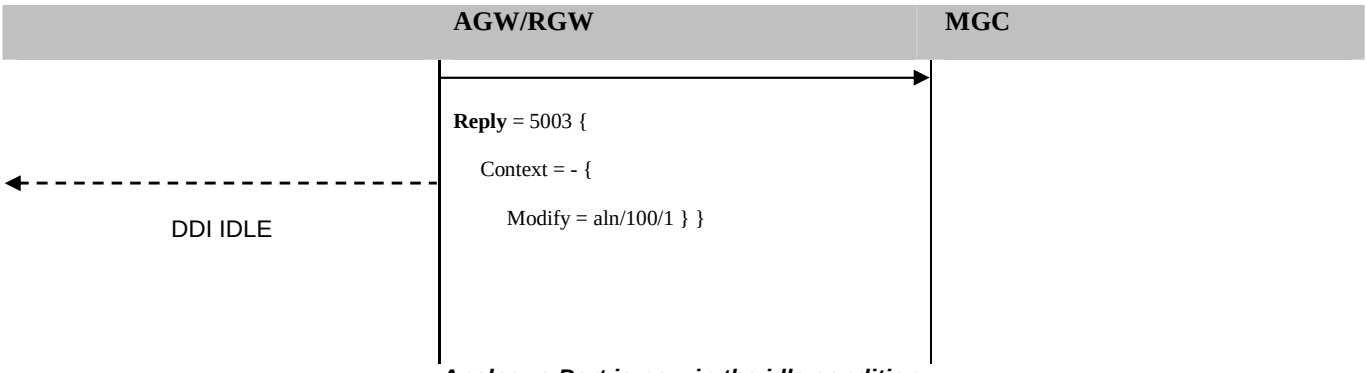
8.1.3 DDI PBX - Calling Party clears during active call; End of Call Announcement connected by Media Server

Pre-conditions: Sequence 8.1.1 has been successfully executed for DDI port aln/100/1.




AGW/RGW
MGC
AGW/RGW acknowledges receipt of Notify.
Reply = 4999 {
Context = 66 {
Modify = rtp/199 } }
MGC notes the acknowledgement.
End of Call Announcement from Media Server
The AGW/RGW deletes the context and stops sending any media flows and returns the appropriate statistics.
Transaction = 5000 {
Context = 66 {
Subtract = aln/100/1 {
Audit {
Statistics
}
},
Subtract = rtp/199 {
Audit {
Statistics
}
} }
The end of call announcement matures and the MGC now disables the media path and retrieves the statistics.
Reply = 5000 {
Context = 66 {
Subtract = aln/100/1 {
Statistics { ……..…},
}
Subtract = rtp/199 {
Statistics {……..}
} } }
The MGC notes that the media path has been disabled by the AGW/RGW and records the returned statistics.

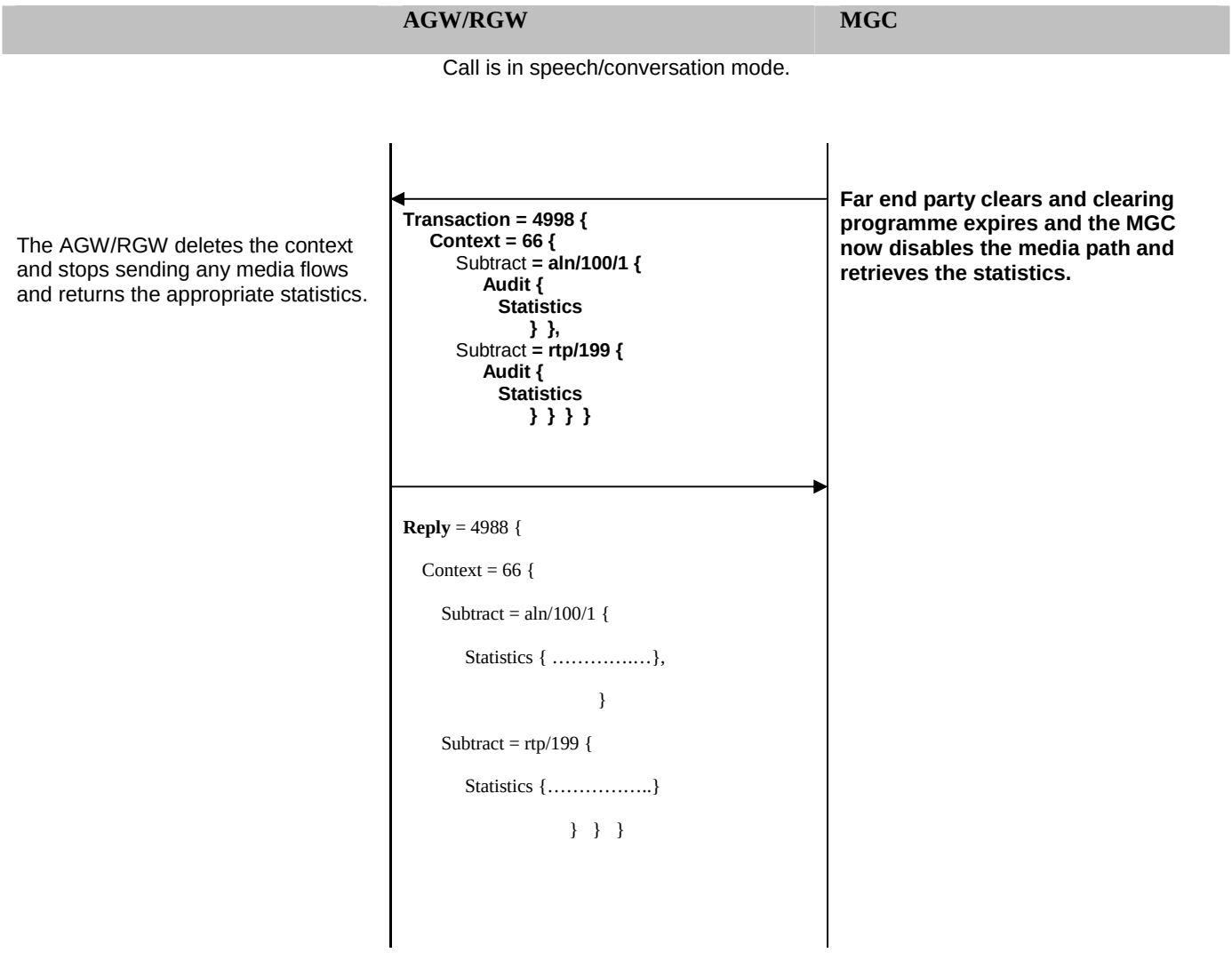

AGW/RGW
MGC
The MGC requests that the "ddi exchange released" signal be applied to the analogue port. Note no acknowledgement upon completion of the DDI exchange released is requested, since the DDI PBX has not cleared.
Transaction = 5001 {
Context = - {
Modify = aln/100/1 {
Signals {
stimal/pulsedsig {
sig = pulsedOnHook
}
}
} } }
AGW/RGW applies DDI exchange released and acknowledges receipt of message. The duration of the "ddi exchange released" pulse is provisioned in the AGW/RGW.
Reply = 5001 {
Context = 66 {
Modify = aln/100/1 } }
DDI Exchange Released
DDI Exchange Released pulse completes and the AGW/RGW waits for the PBX to clear.
Transaction = 5002 {
Context = 66 {
Notify = aln/100/1 {
ObservedEvents = 1117 {
20031215T22000000:
stimal/stedsig {
sig= normalPolarity
}
}
}
} }
DDI Normal Polarity
MGC acknowledges notes the PBX has cleared.
The Notify specifying the DDI Normal Polarity condition is acknowledged.
Reply = 5002 {
Context = 66 {
Notify = aln/100/1 } }
AGW/RGW notes that MGC has received the DDI Normal Polarity
Transaction = 5003 {
Context = - {
Modify = aln/100/1 {
Signals {
stimal/cfin
}
} } }
The MGC instructs the AGW/RGW to place the analogue port in the idle condition.
The AGW/RGW inserts the port into the free.

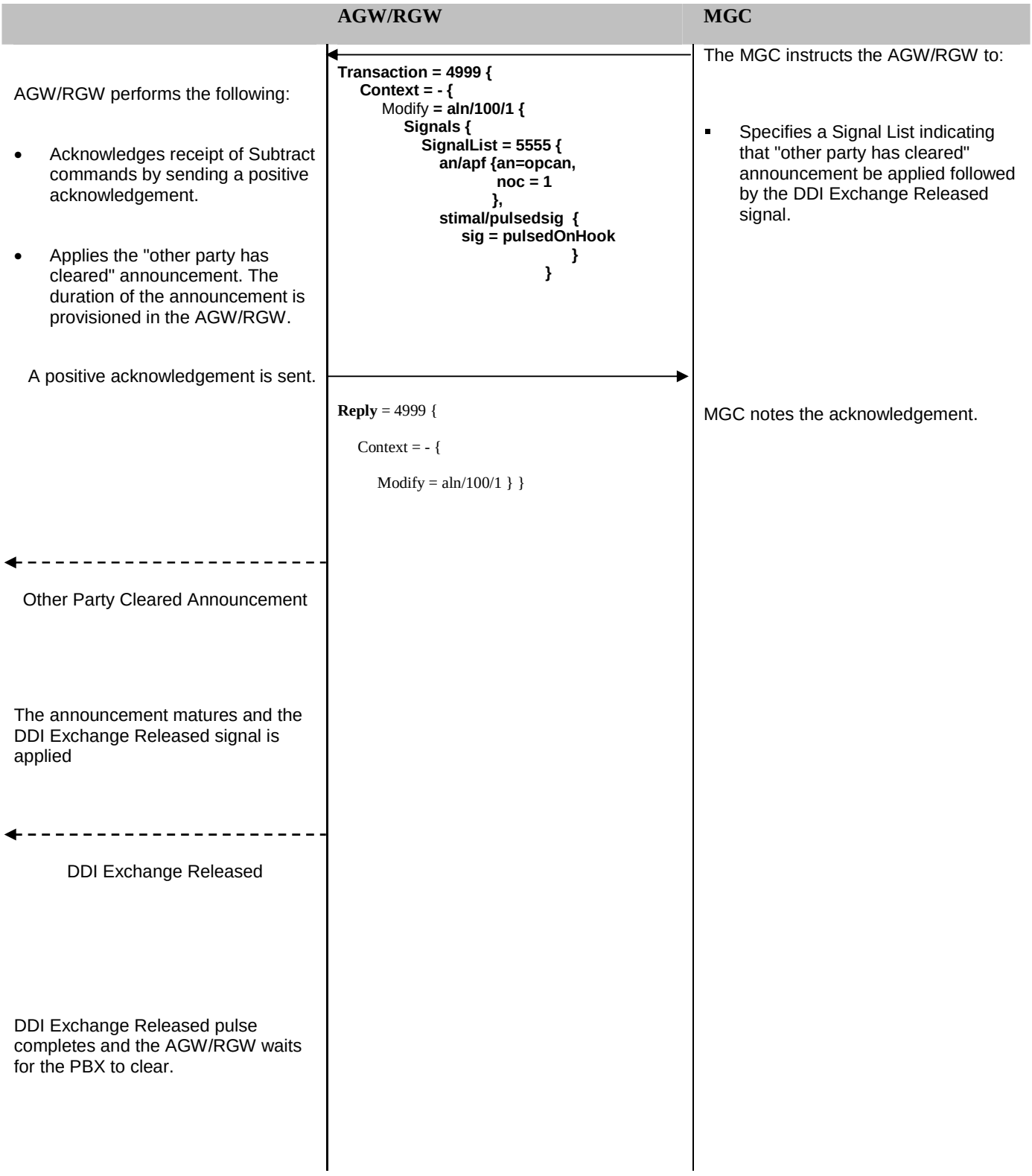


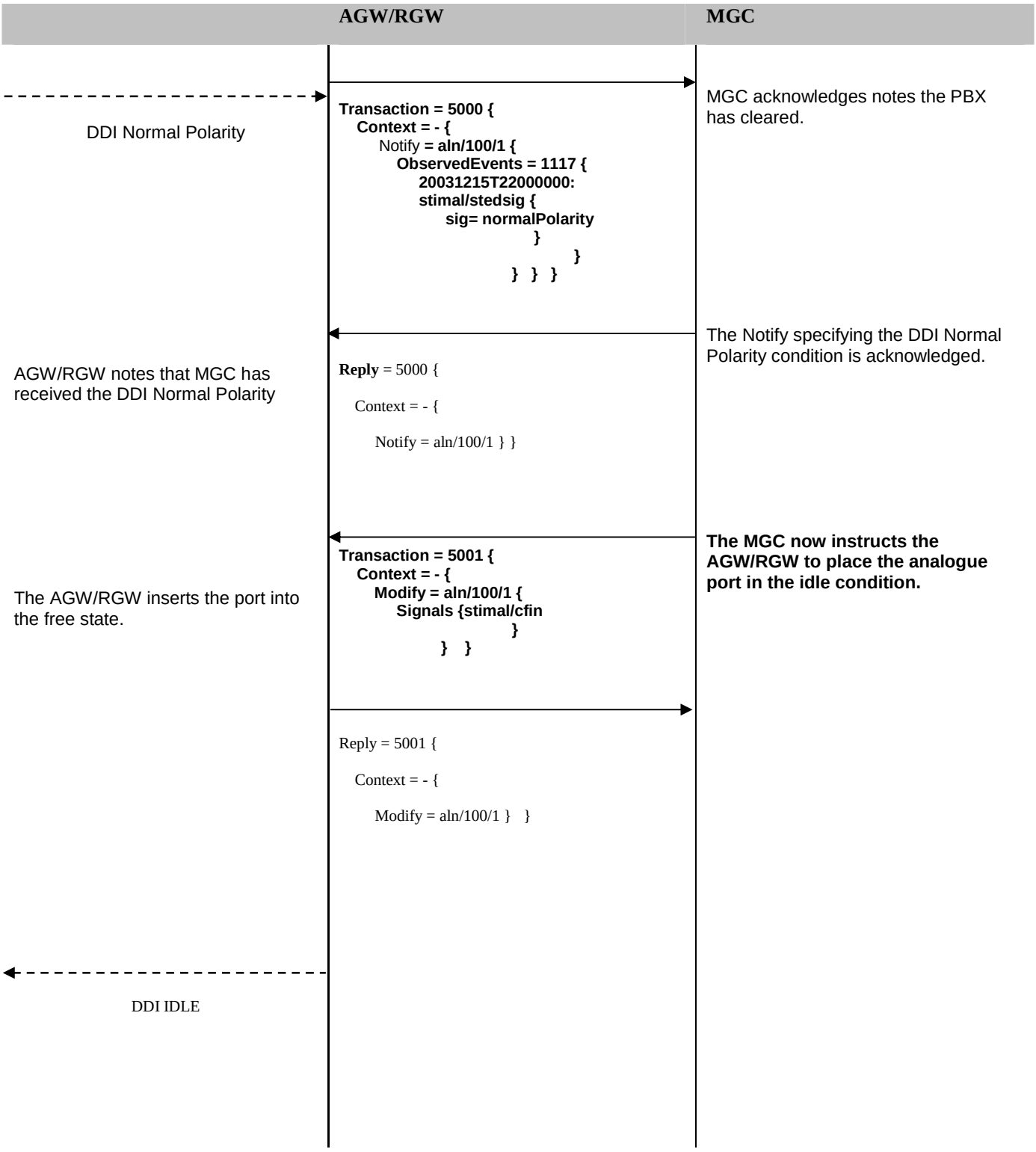
Analogue Port is now in the idle condition.

8.1.4 DDI PBX - Calling Party clears during active call; End of Call Announcement connected by AGW/RGW

Pre-conditions: Sequence 8.1.1 has been successfully executed for DDI port aln/100/1.



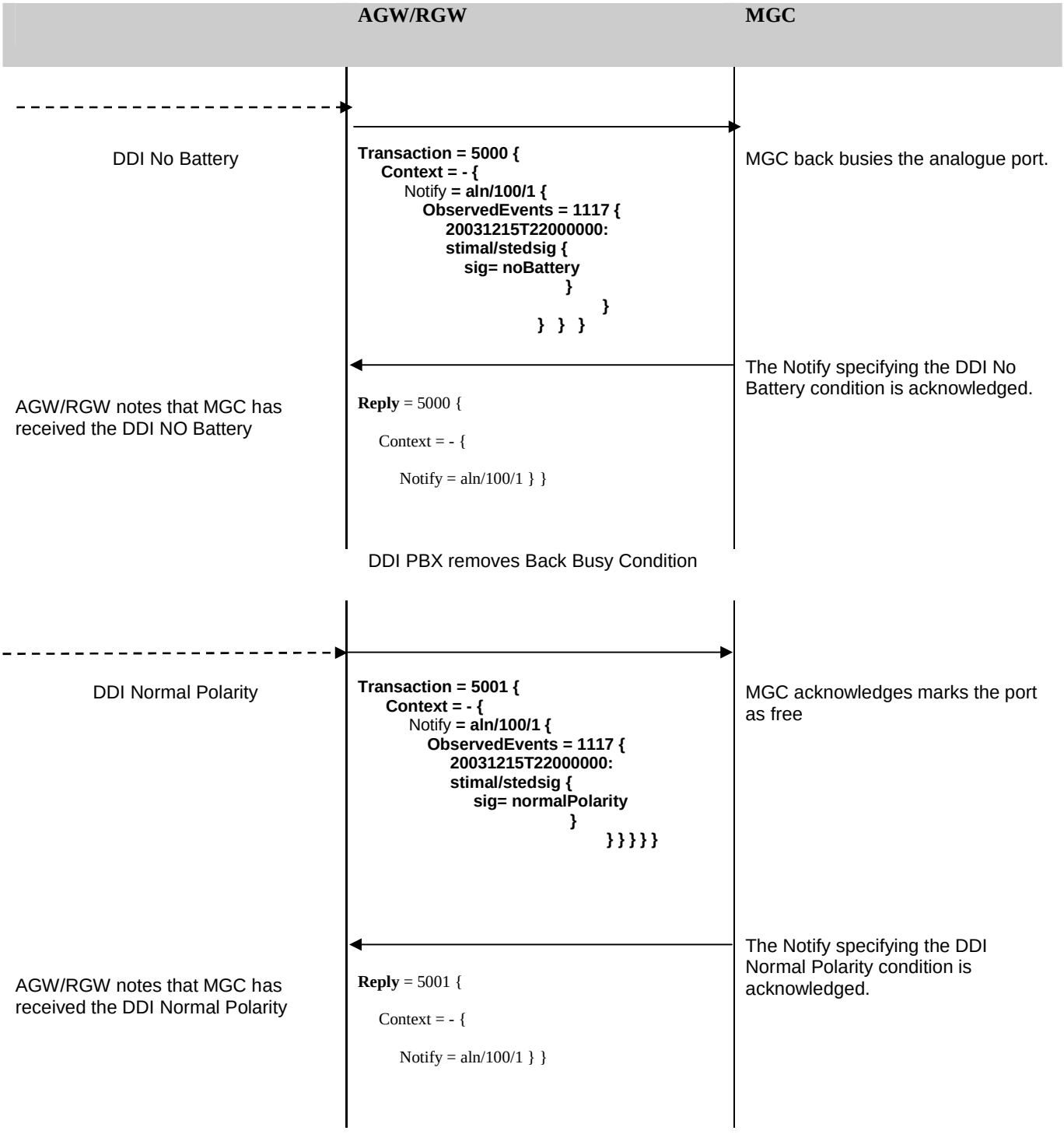

AGW/RGW
MGC
The MGC instructs the AGW/RGW to:
Specifies a Signal List indicating that "other party has cleared" announcement be applied followed by the DDI Exchange Released signal.
Transaction = 4999 {
Context = - {
Modify = aln/100/1 {
Signals {
SignalList = 5555 {
an/apf {an=opcan,
noc = 1
},
stimal/pulsedsig {
sig = pulsedOnHook
}
}
AGW/RGW performs the following:
Acknowledges receipt of Subtract commands by sending a positive acknowledgement.
Applies the "other party has cleared" announcement. The duration of the announcement is provisioned in the AGW/RGW.
A positive acknowledgement is sent.
Reply = 4999 {
Context = - {
Modify = aln/100/1 } }
MGC notes the acknowledgement.
Other Party Cleared Announcement
The announcement matures and the DDI Exchange Released signal is applied
DDI Exchange Released
DDI Exchange Released pulse completes and the AGW/RGW waits for the PBX to clear.

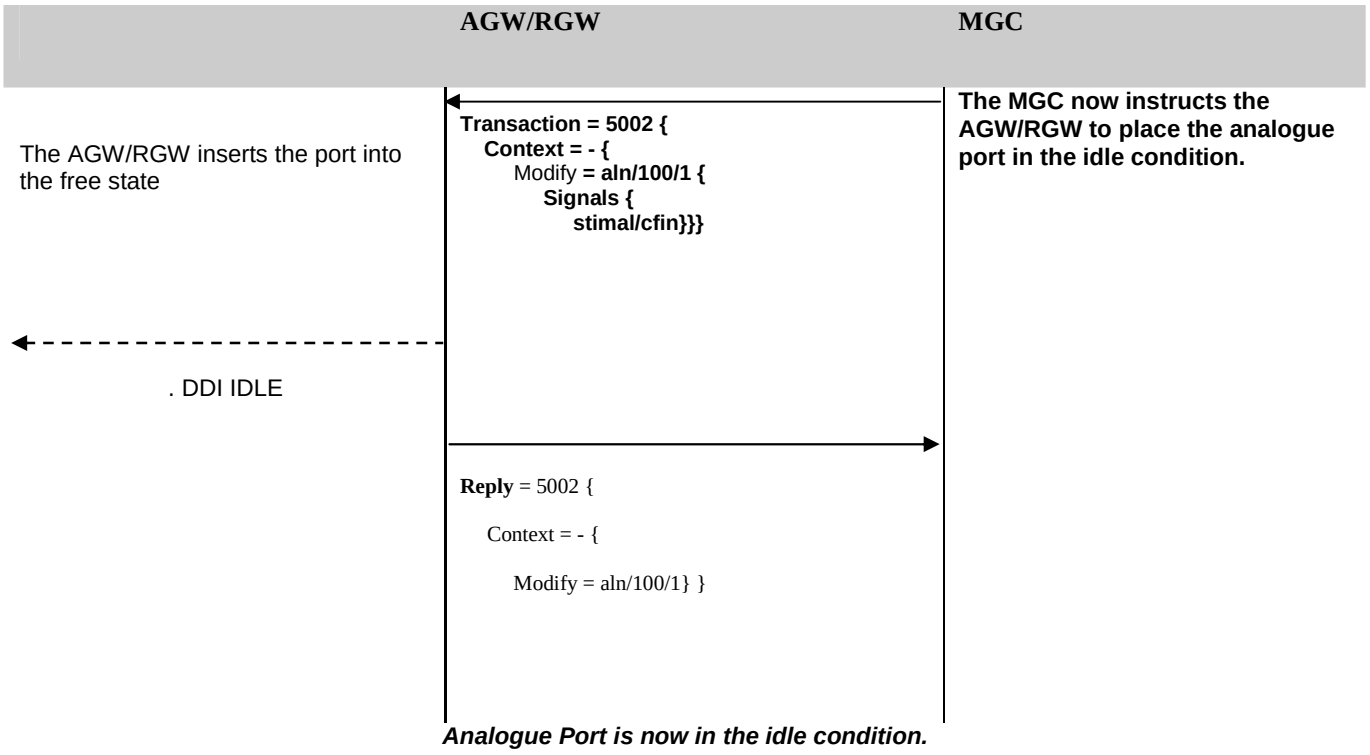


Analogue Port is now in the idle condition.

8.1.5 DDI PBX - PBX applies back busy whilst the analogue port is in the idle state

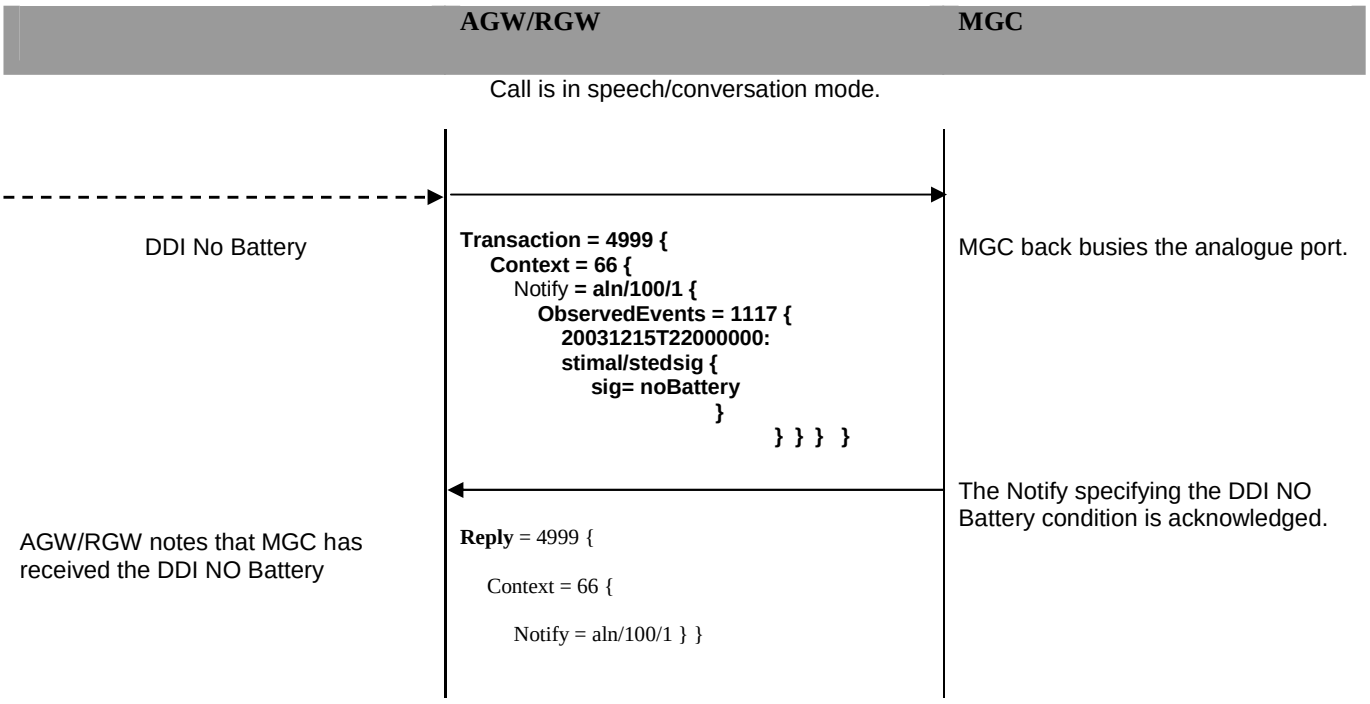
Pre-conditions: Sequence 4.1.1.1 has been successfully executed for DDI port aln/100/1.

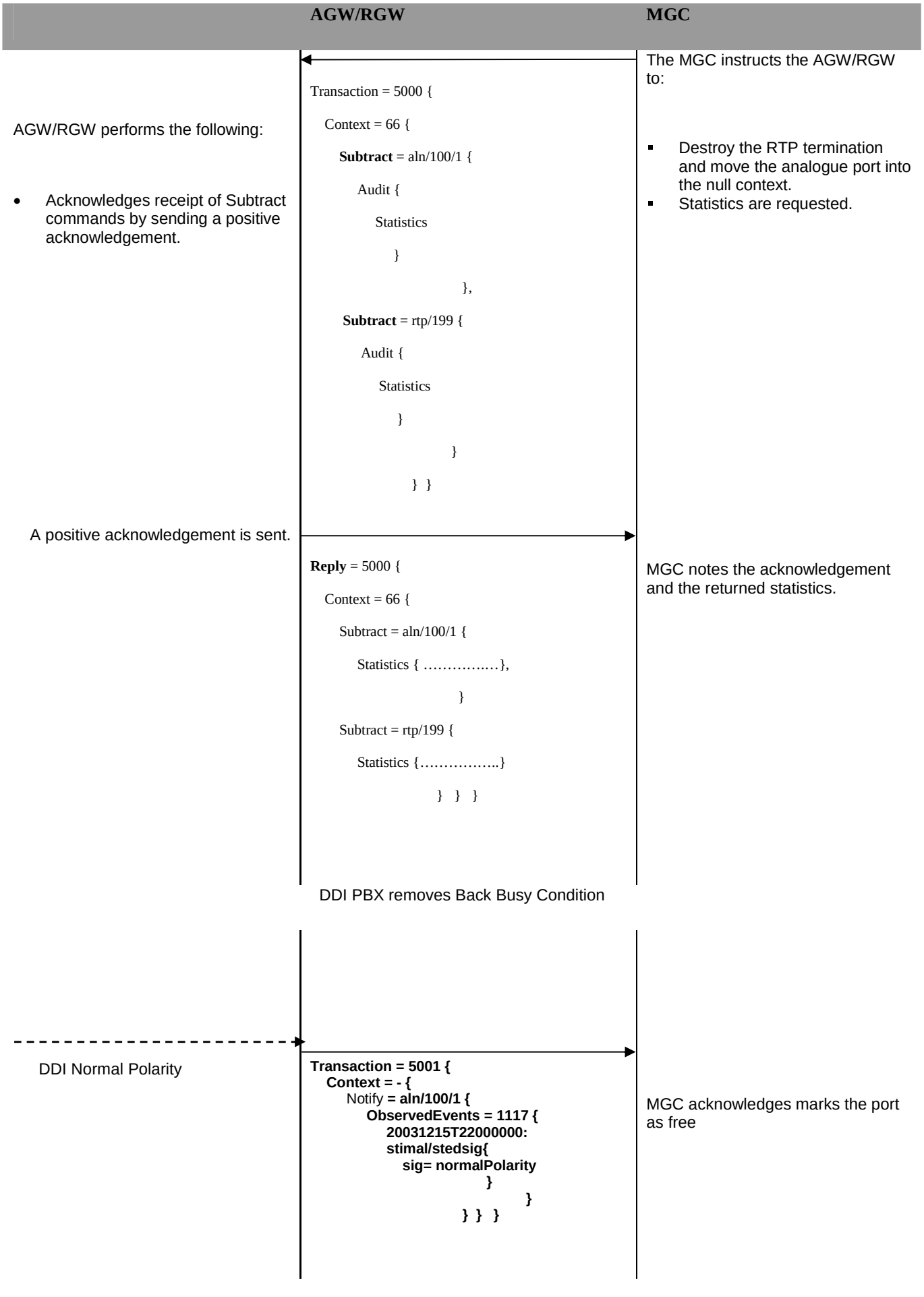


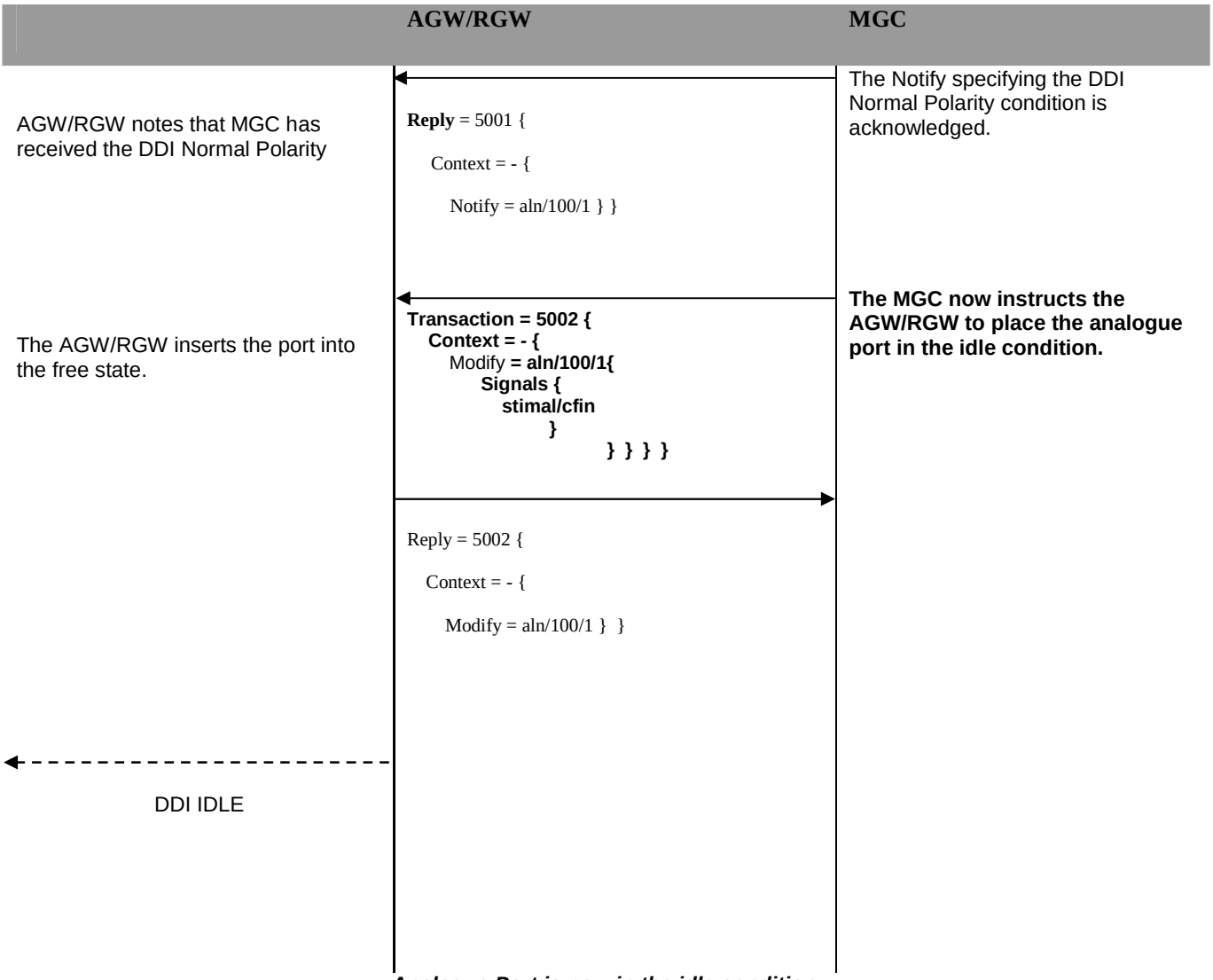


8.1.6 DDI PBX - PBX applies back busy during the active state

Pre-conditions: Sequence 8.1.1 has been successfully executed for DDI port aln/100/1.




AGW/RGW
MGC
The MGC instructs the AGW/RGW to:
Transaction = 5000 {
Context = 66 {
Subtract = aln/100/1 {
Audit {
Statistics
}
},
Subtract = rtp/199 {
Audit {
Statistics
}
}
} }
AGW/RGW performs the following:
Acknowledges receipt of Subtract commands by sending a positive acknowledgement.
Destroy the RTP termination and move the analogue port into the null context.
Statistics are requested.
A positive acknowledgement is sent.
Reply = 5000 {
Context = 66 {
Subtract = aln/100/1 {
Statistics { ……..…},
}
Subtract = rtp/199 {
Statistics {……..}
} } }
MGC notes the acknowledgement and the returned statistics.
DDI PBX removes Back Busy Condition
DDI Normal Polarity
Transaction = 5001 {
Context = - {
Notify = aln/100/1 {
ObservedEvents = 1117 {
20031215T22000000:
stimal/stedsig{
sig= normalPolarity
}
}
} } }
MGC acknowledges marks the port as free



Analogue Port is now in the idle condition.

History

Document history		
V1.1.1	February 2007	Publication