PHS MoU Document
C-IF3.03-02-TS

Title: PHS-FWA System : Interface Specification between FWA Access Controller and Service Node - ITU-T G.965:V5.2 Interface-

Version: 02

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History of Revised Versions

Version	Date	Outline
01	Dec. 17, 1996	Established
02	June 7, 2000	Changed all WLL into FWA. Clause 2,6 are deleted. ISDN specification is added

C-IF3.03-02-TS

PHS-FWA System:

Interface Specification between FWA Access Controller and Service Node

-ITU-T G.965 : V5.2 Interface-

1. General

This specification defines a V-interface (V5.2) for the connection of a FWA Access Controller(WAC) and a Service Node (SN) for the support of the following access types:

- analogue telephone access;
- ISDN basic access;
- other analogue or digital accesses for semi-permanent connections without associated out-band signalling information,

with flexible information channel (bearer channel) allocation on a call by call and pre-connected basis which provides concentration capability within the WAC.

This specification is based on C-IF3.02 and refers to it for those parts which are common in both specification.

Major differences between the V5.1 interface and the V5.2 interface

The V5.1 Recommendation (C-IF3.02) is a complete Recommendation in itself whereas this V5.2 Recommendation references parts of V5.1 Recommendation.

V5.1 uses only one 2048 kbit/s link whereas V5.2 may use up to sixteen (16) 2048 kbit/s links on one interface.

V5.1 does not support concentration whereas V5.2 is inherently designed to support it using a dedicated protocol known as the Bearer Channel Connection (BCC) protocol.

V5.1 has no concept of communication channel protection whereas this function is available for V5.2 when that particular V5.2 interface uses more than one 2048 kbit/s link. A specific protocol, known as the protection protocol, is provided for this function.

The control protocol for V5.2 is slightly modified to that used for V5.1.

A link control protocol is specified for V5.2 as multiple links have to be managed.

Annex A

Examples of PSTN sequence on V5.2 interface

(1) Originating call (Successful call setup)
(note) This sequence includes Ground Start PBX call steup.
refer to Figure A.1/C-IF3.03

(2) Originating call (no answer signal sent to the original line)
refer to Figure A.2/C-IF3.03

(3) Originating call (answer signal sent to the original line)
refer to Figure A.3/C-IF3.03

(4) Originating call (coin box with meter pulse)
refer to Figure A.4/C-IF3.03

(5) Originating call (clear the call)
refer to Figure A.5/C-IF3.03

(6) Originating call (clear back)
refer to Figure A.6/C-IF3.03

(7) Originating call (timeout after calling party clears)
refer to Figure A.7/C-IF3.03

(8) Terminating call (normal successful call setup)
(note) This sequence includes Direct Dial In procedure.
refer to Figure A.8/C-IF3.03

(9) Terminating call (called subscriber does not answer)
refer to Figure A.9/C-IF3.03

(10) Terminating call (called subscriber re-answerd)
refer to Figure A.10/C-IF3.03

(11) Terminating call (Hooking signal from called subscriber)
refer to Figure A.11/C-IF3.03

(12) Special Features
(CLIP: Calling Line Identification Presentation , CASE1)
refer to Figure A.12/C-IF3.03

(13) Special Features
(CLIP: Calling Line Identification Presentation , CASE2)
refer to Figure A.13/C-IF3.03

(14) Special Features (Three Way Calling)

refer to Figure A.14/C-IF3.03

(15) Semi-normal sequence
(on hook before receives ESTABLISH ACK)

refer to Figure A.15/C-IF3.03

(16) Semi-normal sequence
(abandoned during ringing)

refer to Figure A.16/C-IF3.02

(17) Semi-normal sequence(Call Collision)

refer to Figure A.17/C-IF3.02

(18) Layer 3 Error (Message lost in WAC)

refer to Figure A.18/C-IF3.02

(19) Layer 3 Error (Message lost in SN)

refer to Figure A.19/C-IF3.02

(20) Layer 3 Error
(Unexpected Message in WAC , V5-state in SN uncompatible)

refer to Figure A.20/C-IF3.02

(21) Layer 3 Error
(Unexpected Message in SN , V5-state in WAC uncompatible)

refer to Figure A.21/C-IF3.02

(22) Layer 3 Error
(Unrecognige B-subscriber or destination)

refer to Figure A.22/C-IF3.02

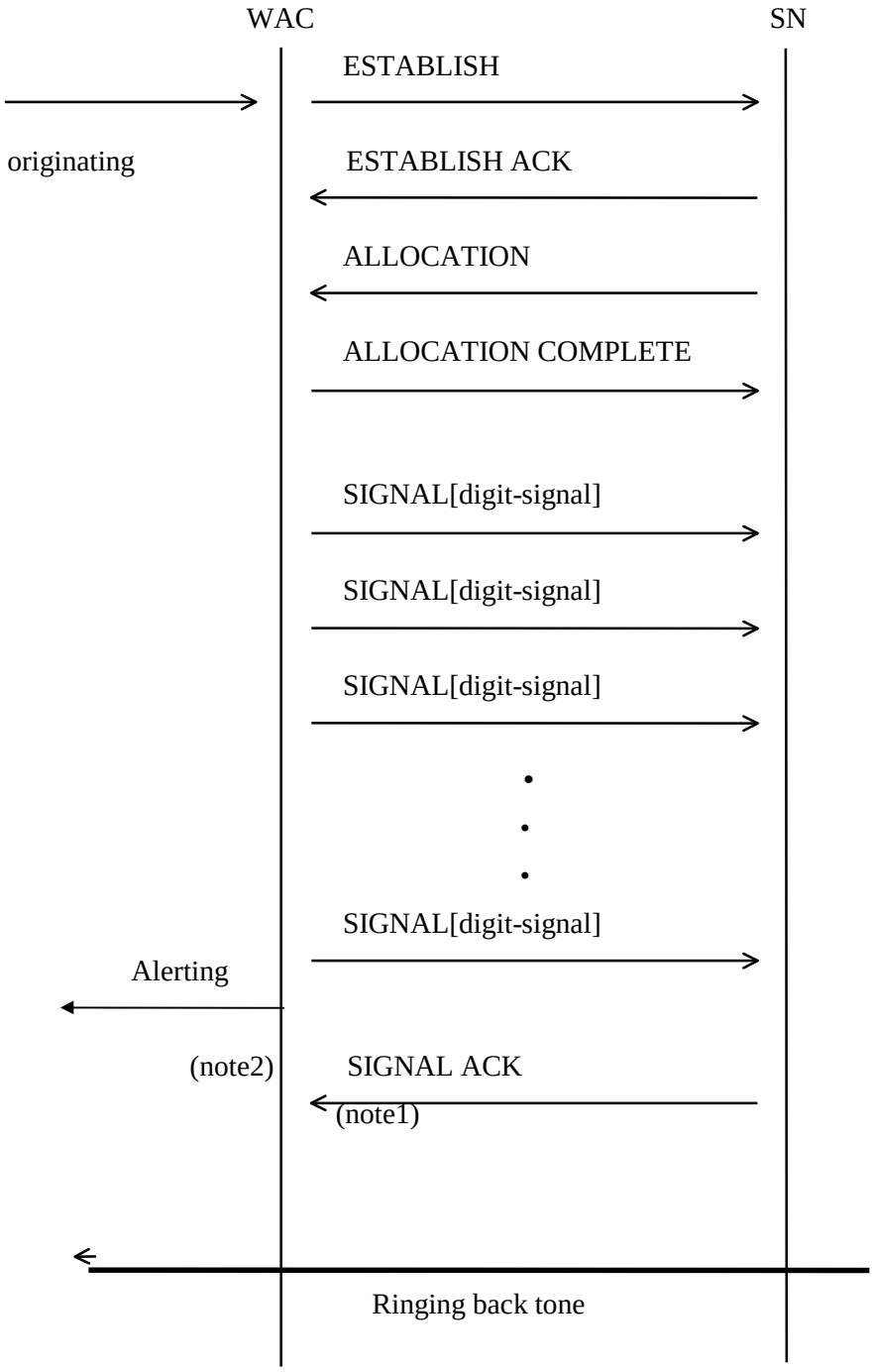
(23) Layer 3 Error
(Bearer channel allocation unseccessfully completed before first Tbcc1 expiry)

refer to Figure A.23/C-IF3.02

(24) Layer 3 Error
(Bearer channel allocation unseccessfully completed after first Tbcc1 expiry)

refer to Figure A.24/C-IF3.02

(1) Originating call (Successful call setup)



(note1) The SIGNAL ACK message shall be sent when the receiving timer of the SIGNAL message was time out.

(note2) The Alerting message shall be sent because speech-channel on air is not opened,yet.

Figure A.1/C-IF3.03

(2) Originating call (no answer signal sent to the original line)

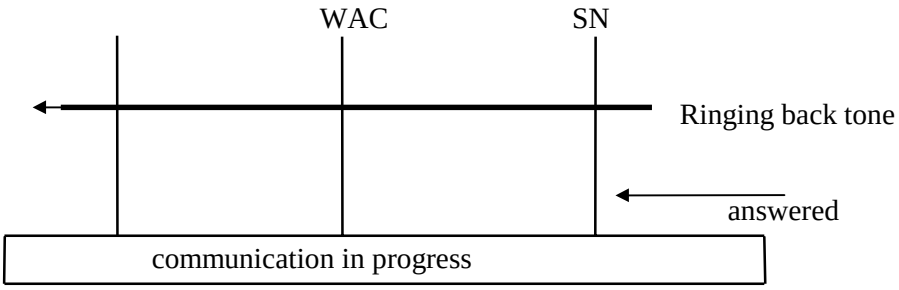


Figure A.2/C-IF3.03

(3) Originating call (answer signal sent to the original line)

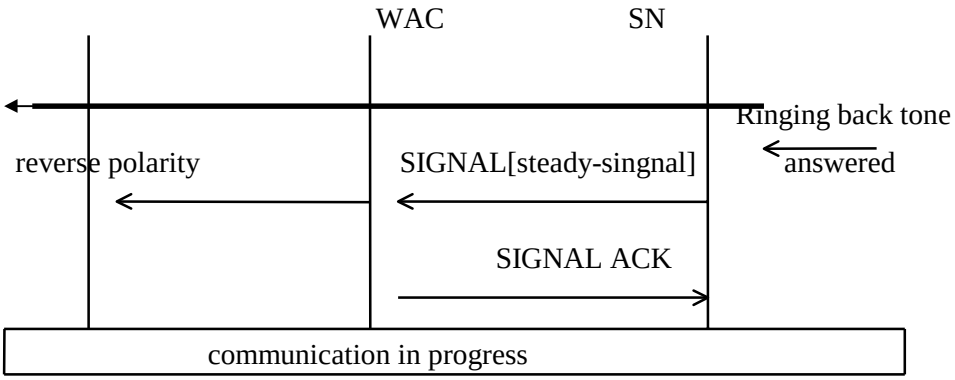


Figure A.3/C-IF3.03

(4) Originating call (coin box with meter pulse)

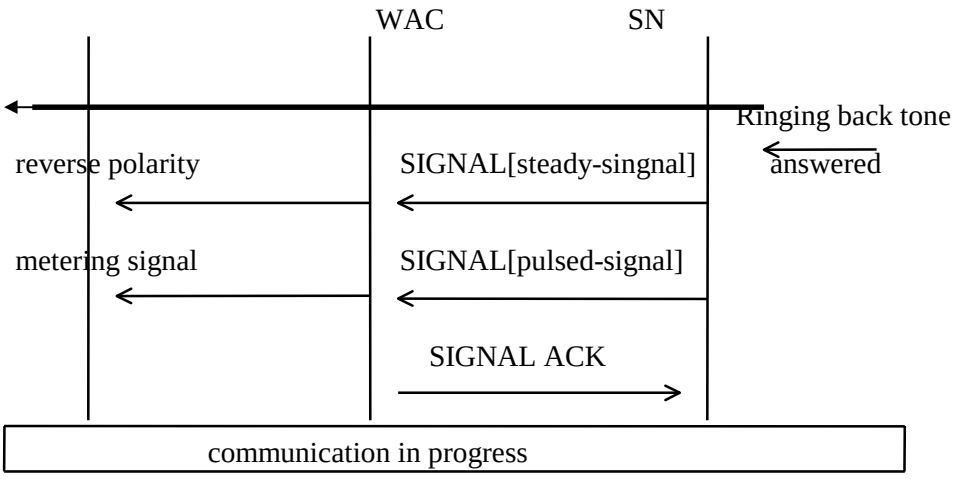


Figure A.4/C-IF3.03

(5) Originating call (clear the call)

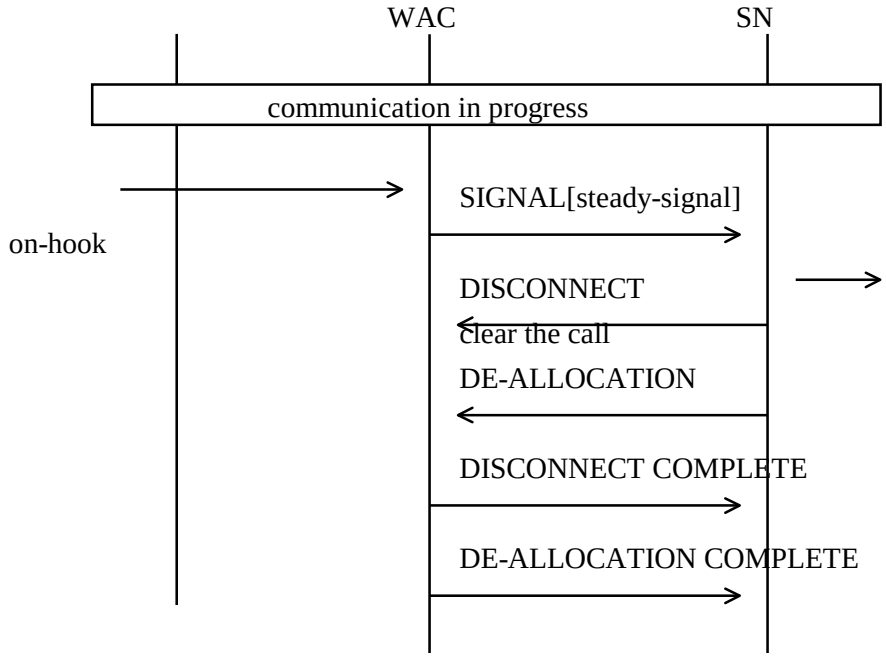
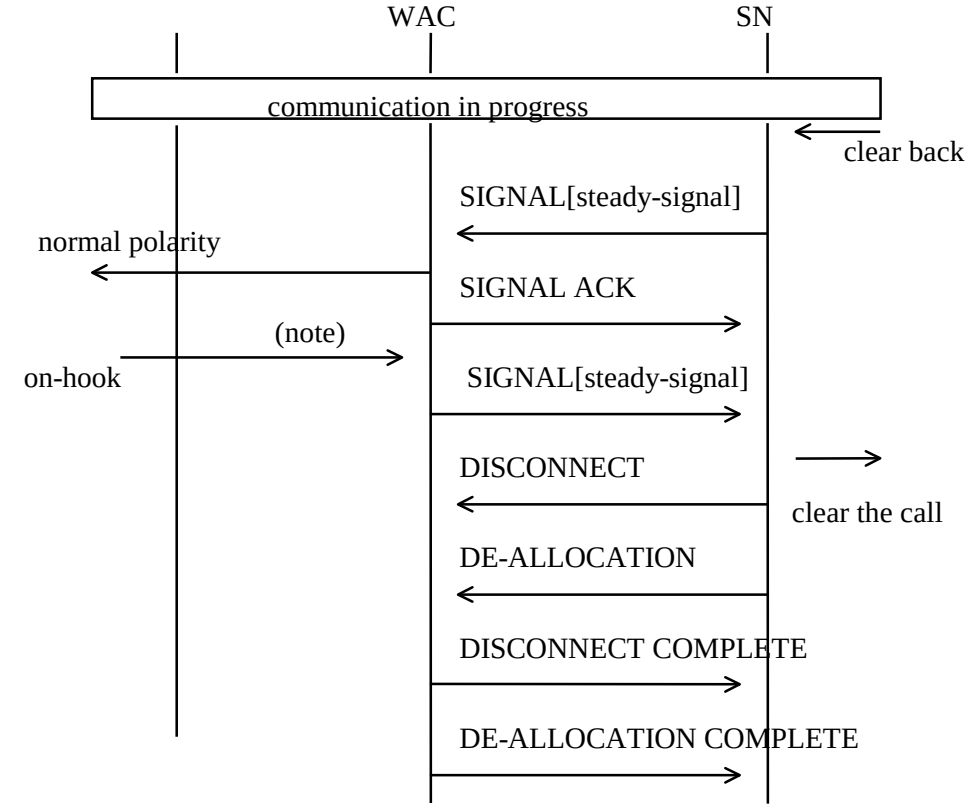


Figure A.5/C-IF3.03

(6) Originating call (clear back)



(note) WAC may not transmit normal polality signal.

Figure A.6/C-IF3.03

(7) Originating call (Timeout after called party clears)

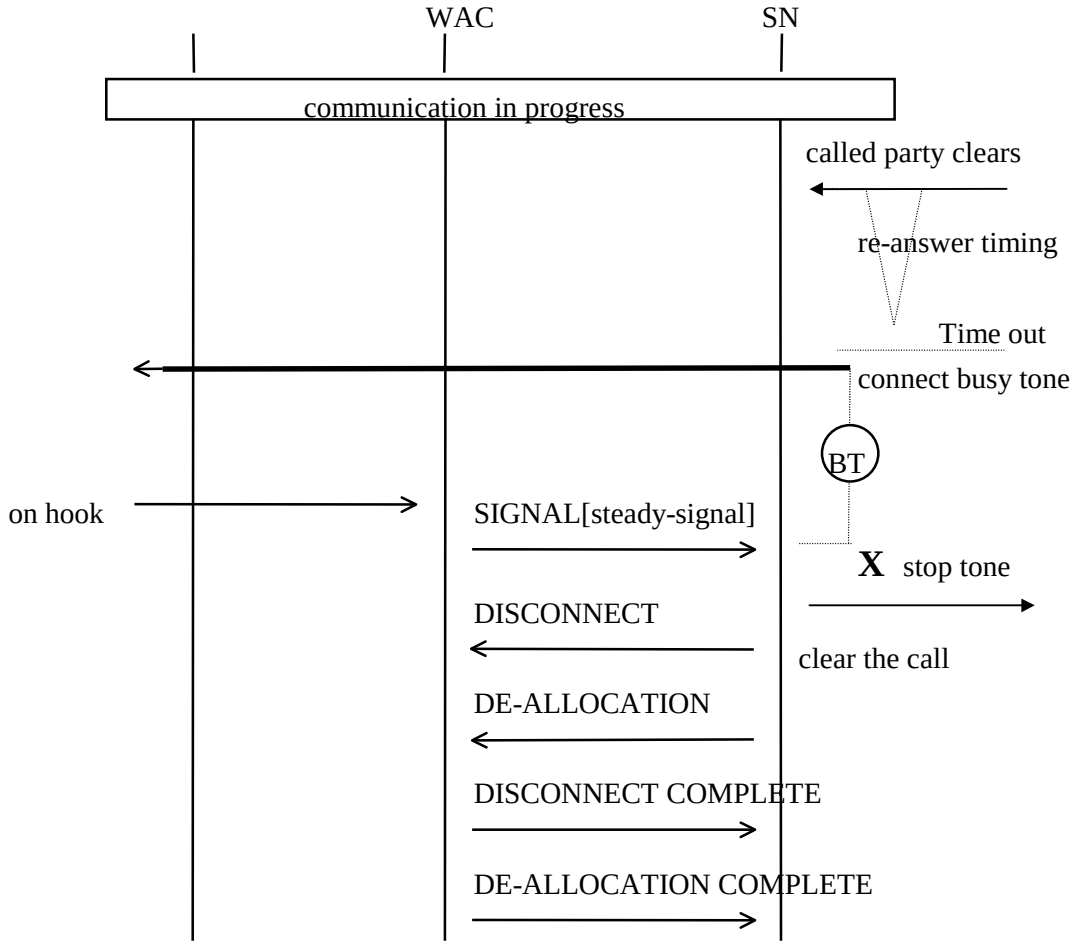


Figure A.7/C-IF3.03

(8) Terminating call (normal successful call setup)

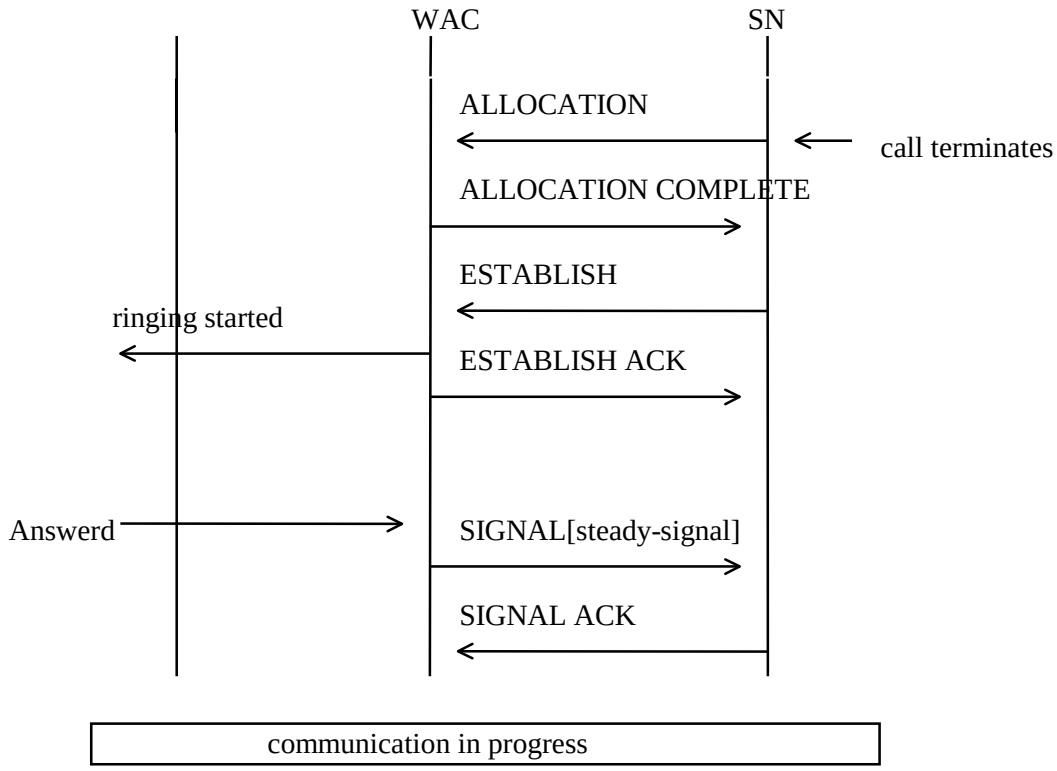
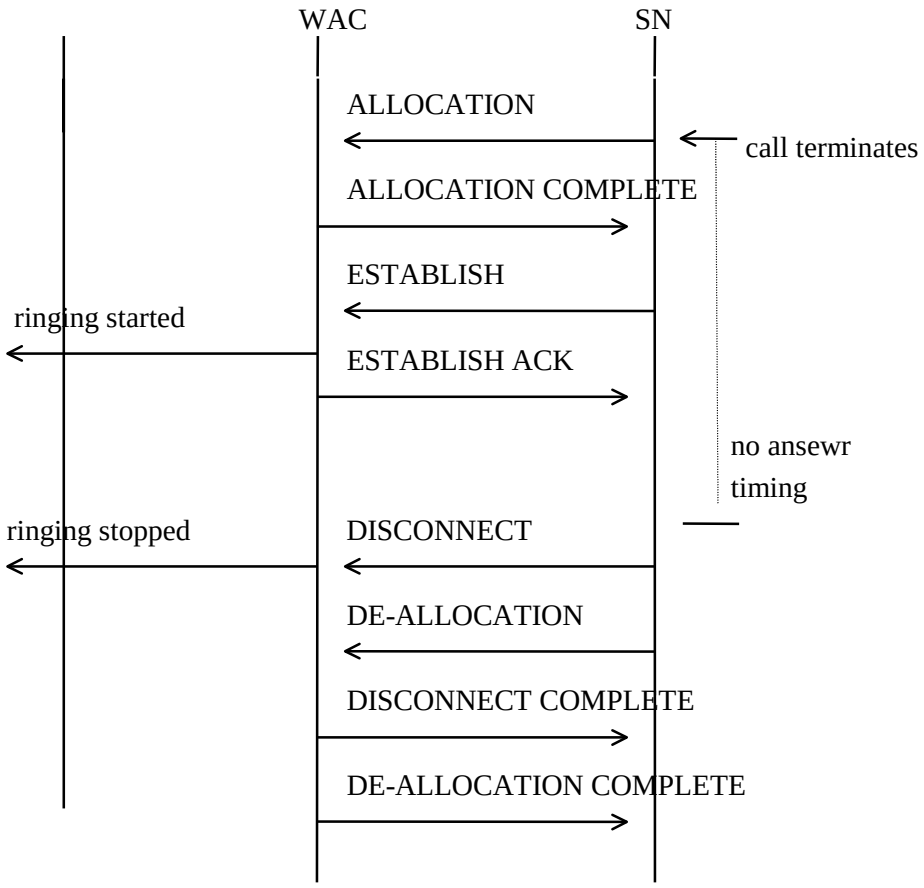


Figure A.8/C-IF3.03

(9) Terminating call (called subscriber does not answer)



(note) This sequence is used to wake-up service or effectivity utility of radio channel, etc.

Figure A.9/C-IF3.03

(10) Terminating call (called subscriber re-answerd)

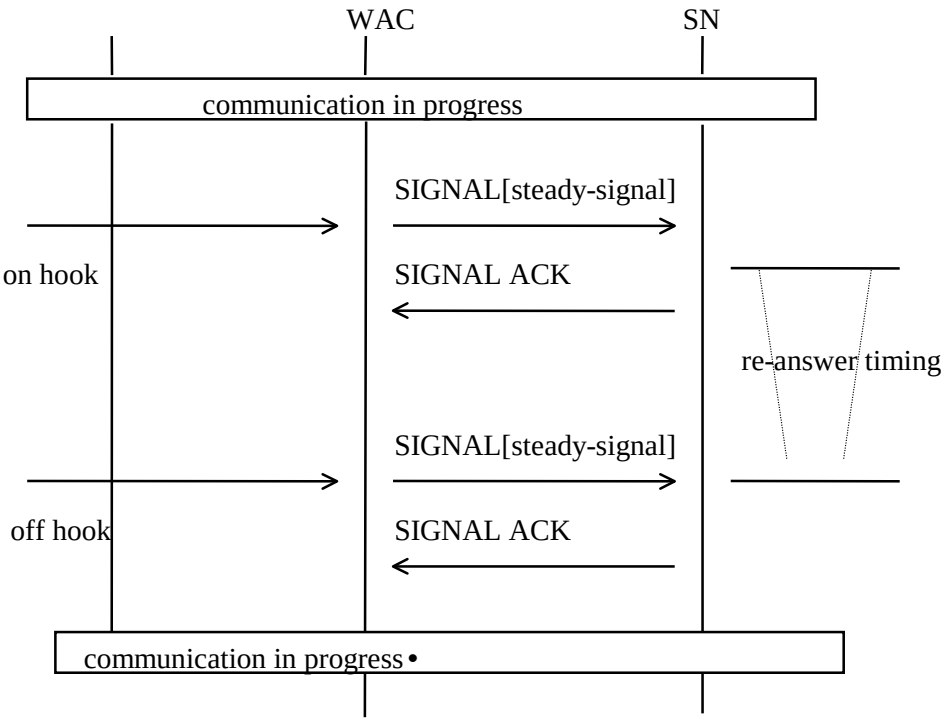
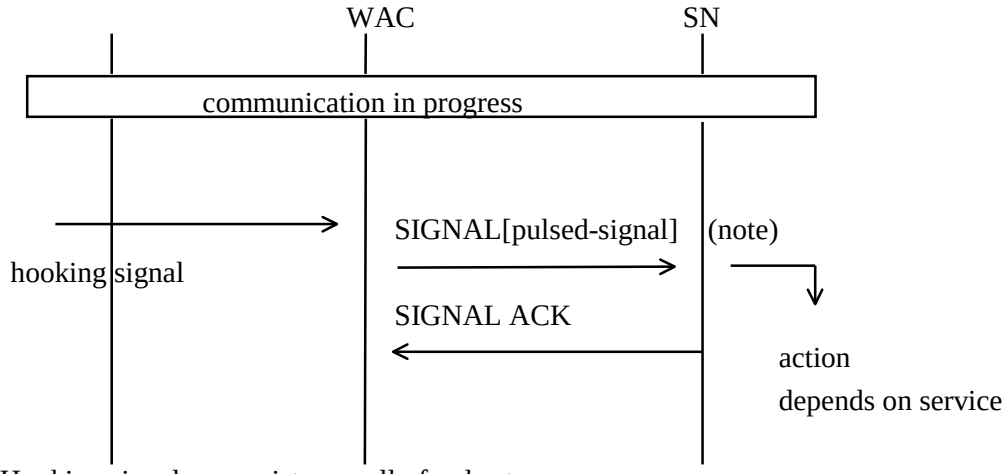


Figure A.10/C-IF3.03

(11) Special Features (Hooking signal from called subscriber)



(note) Hooking signal use register recall of pulse type.

Figure A.11/C-IF3.03

(12) Special Features
(CLIP: Calling Line Identification Presentation ,CASE1)

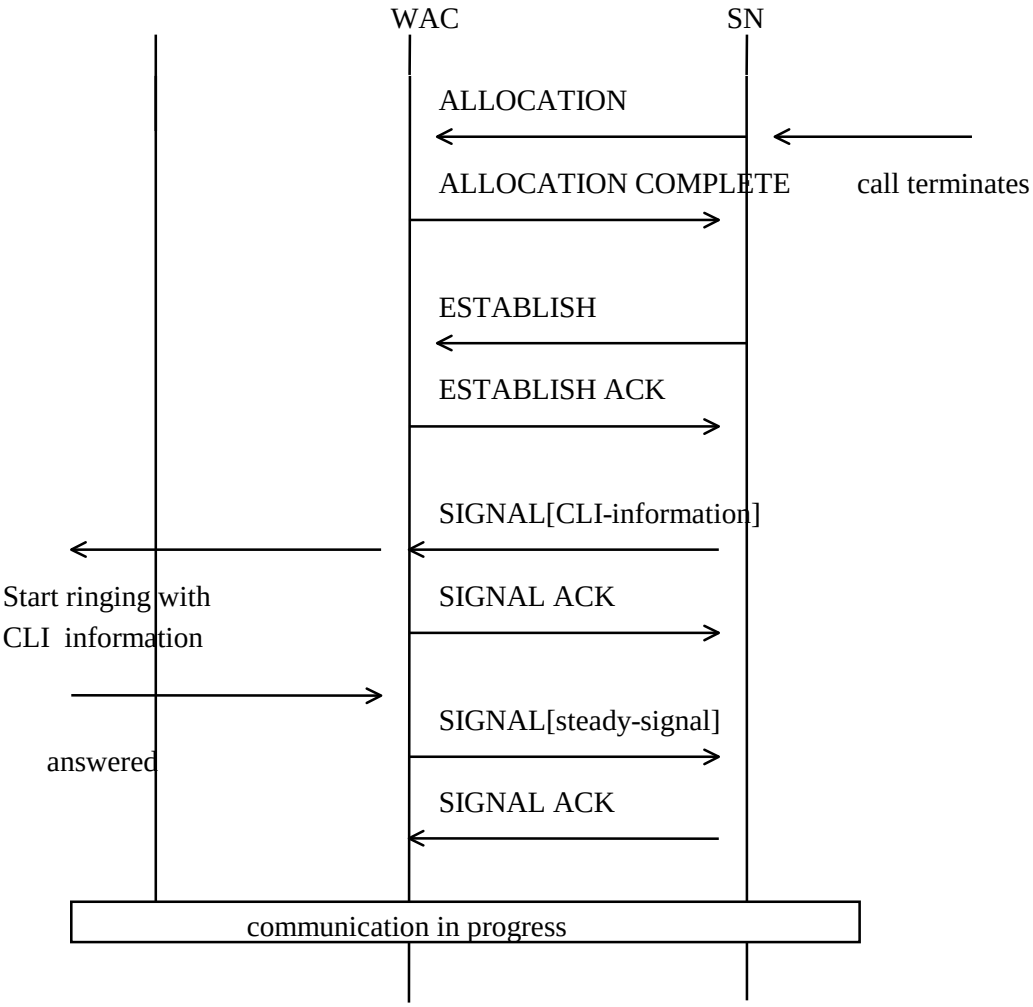


Figure A.12/C-IF3.03

(13) Special Features
(CLIP: Calling Line Identification Presentation , CASE2)

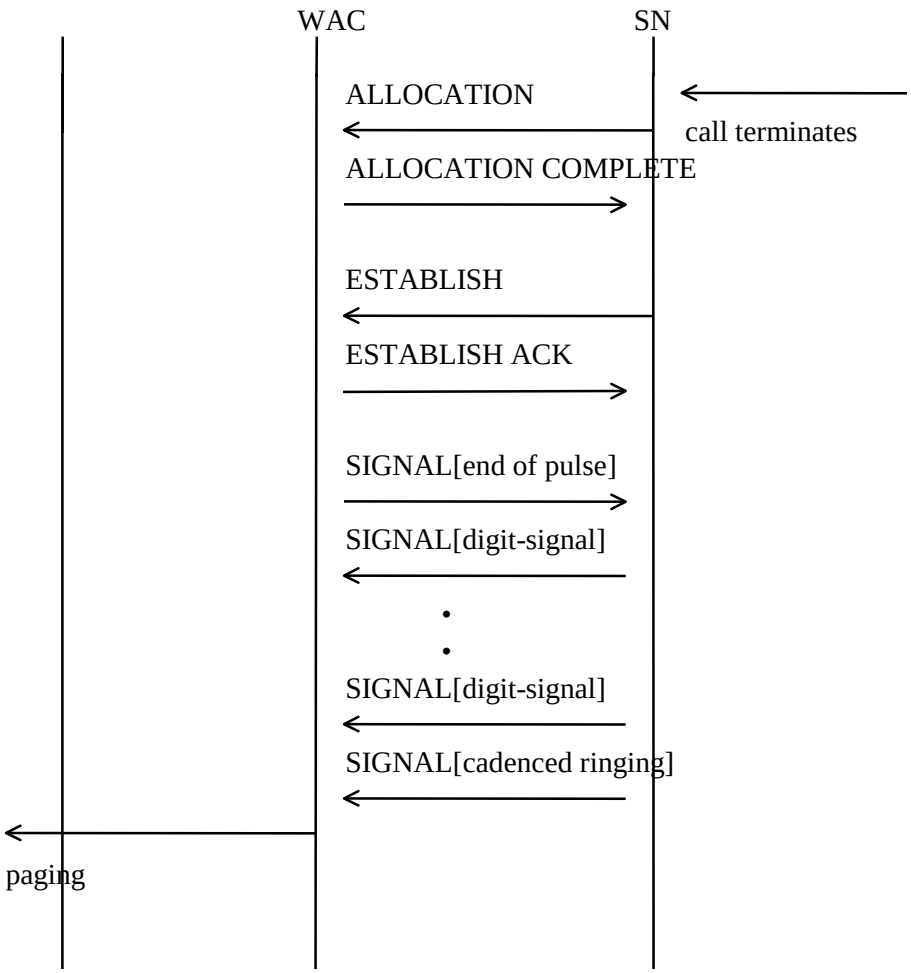


Figure A.13 /C-IF3.03

(14) Special Features (Three Way Calling)

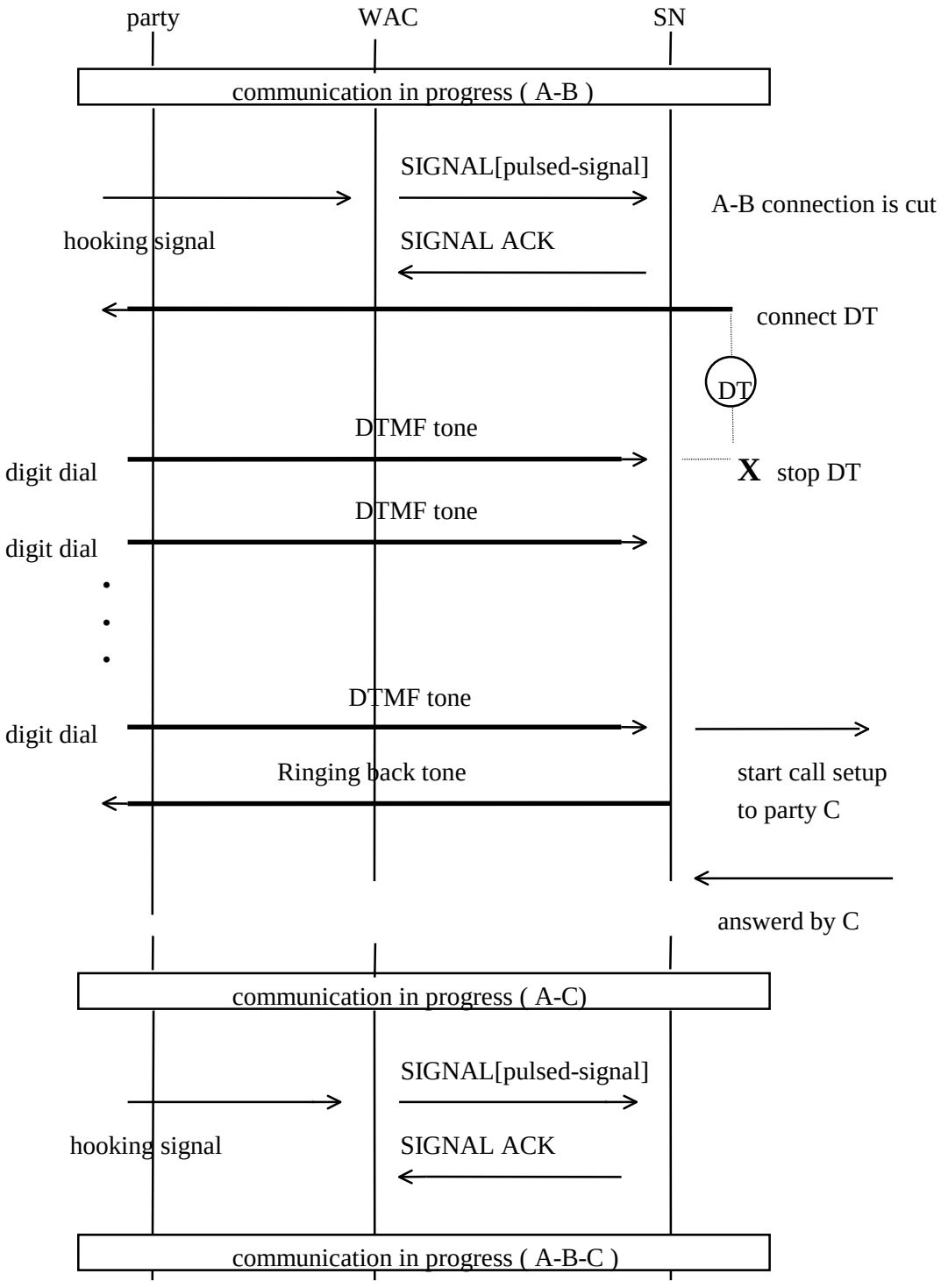


Figure A.14 /C-IF3.03

(15) Semi-normal sequence
(on hook before receives ESTABLISH ACK)

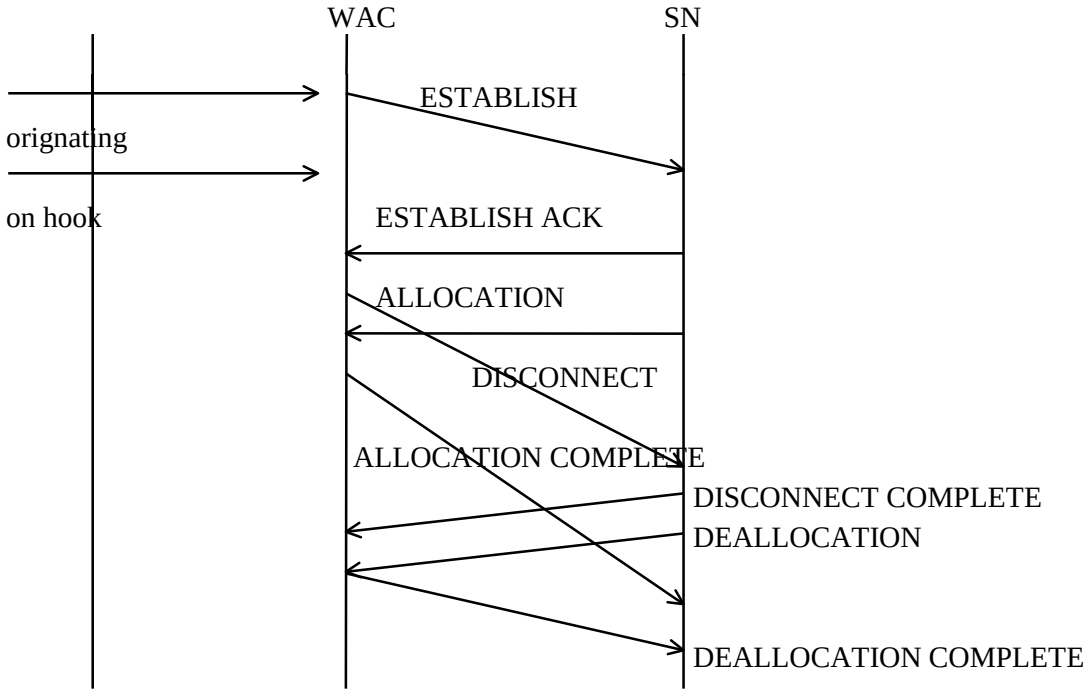


Figure A.15/C-IF3.03

(16) Semi-normal sequence
(abandoned during ringing)

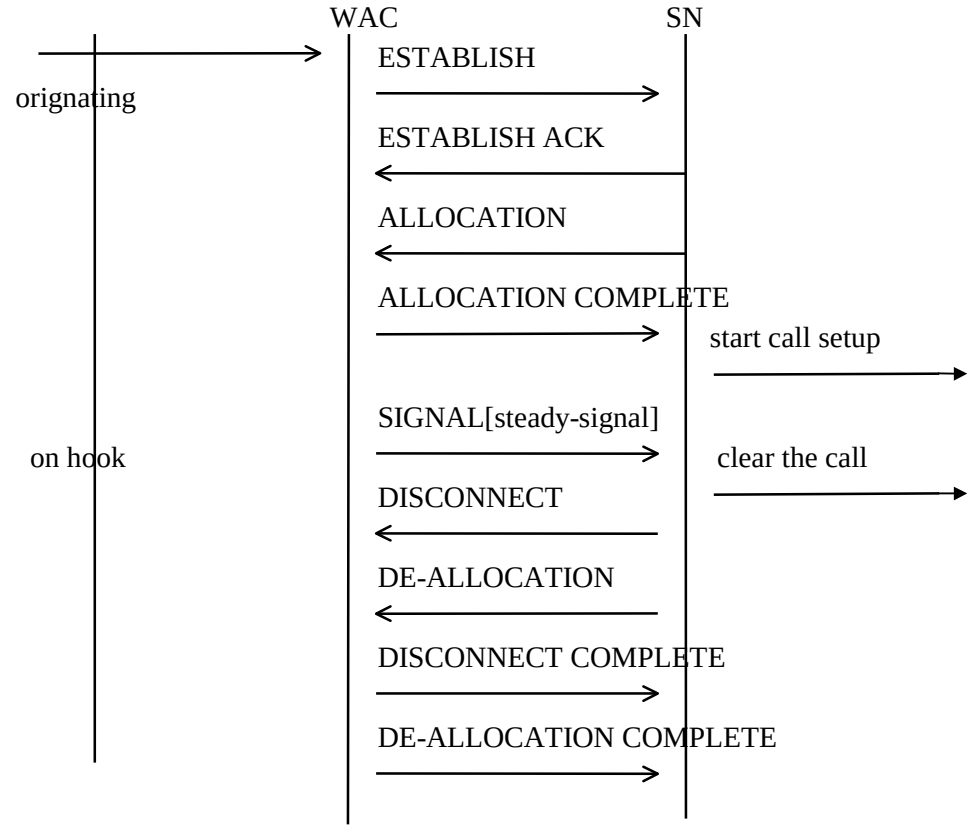


Figure A.16/C-IF3.03

(17) Semi-normal sequence (Call Collision)

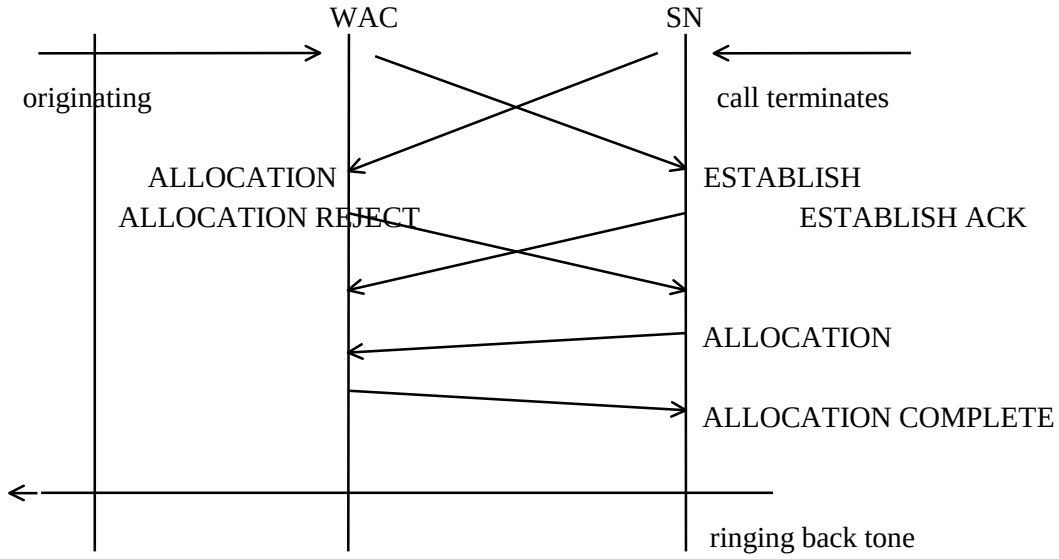


Figure A.17/C-IF3.03

(18) Layer 3 Error (Message lost in WAC)

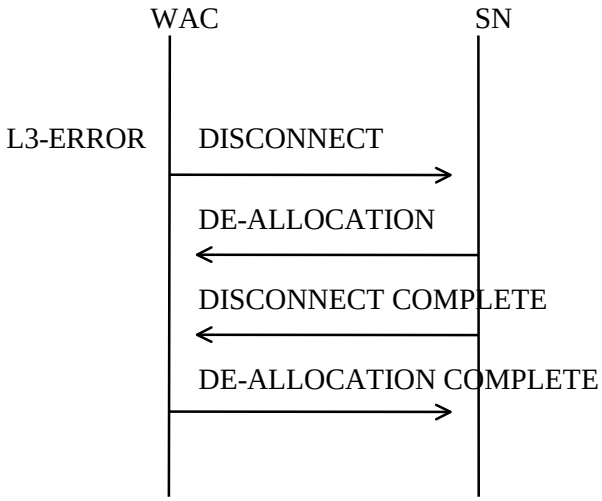


Figure A.18/C-IF3.03

(19) Layer 3 Error (Message lost in SN)

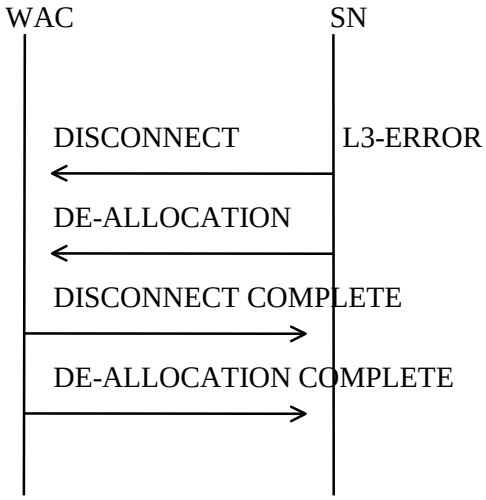


Figure A.19/C-IF3.03

(20) Layer 3 Error
(Unexpected Message in WAC , V5-state in SN uncompatible)

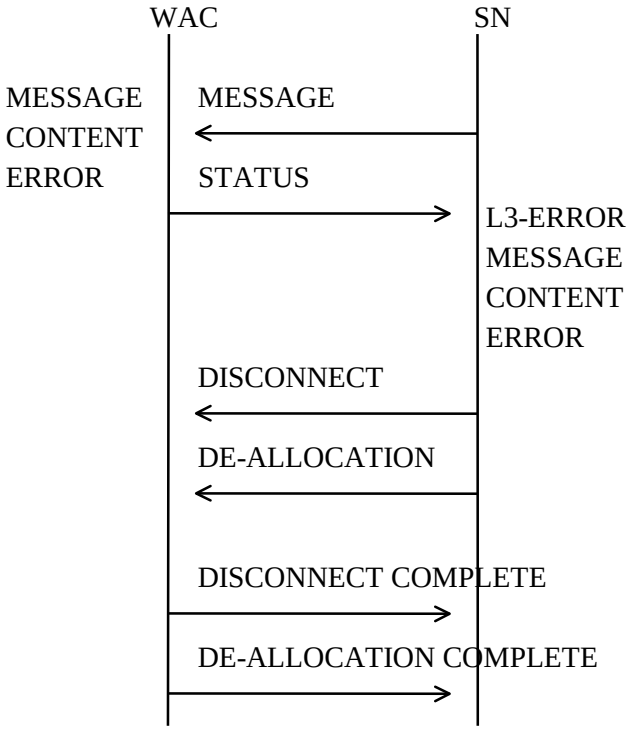


Figure A.20/C-IF3.03

(21) Layer 3 Error
(Unexpected Message in SN , V5-state in WAC uncompatible)

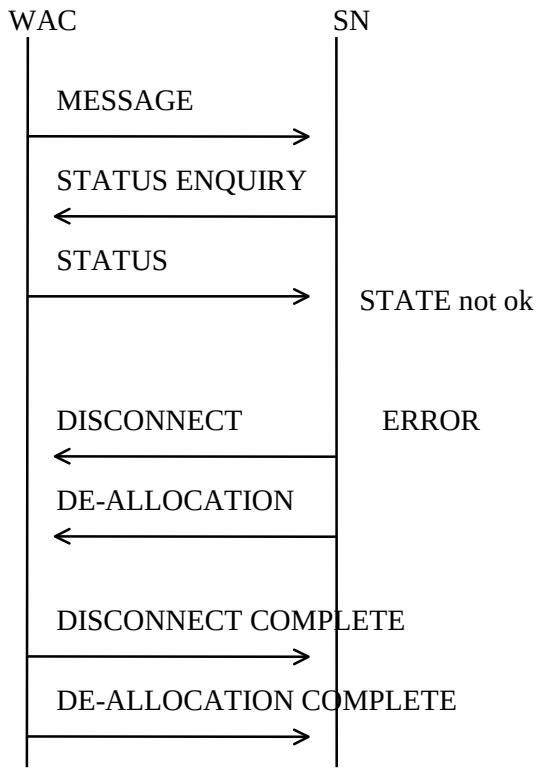


Figure A.21/C-IF3.03

(22) Layer 3 Error
(unrecognige B-subscriber or destination)

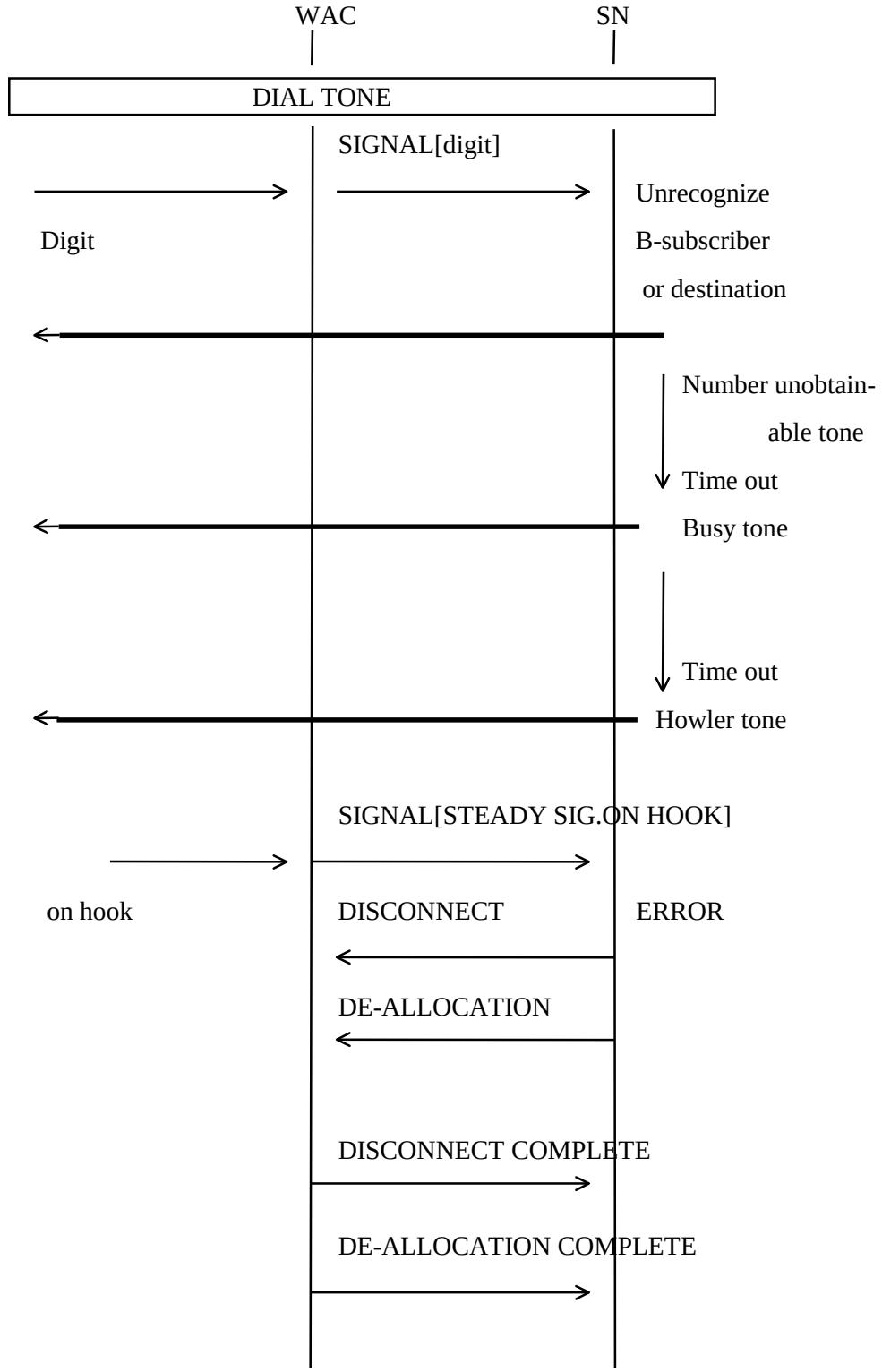


Figure A.22/C-IF3.03

(23) Layer 3 Error
(Bearer channel allocation unseccessfully completed before first Tbcc1 expiry)

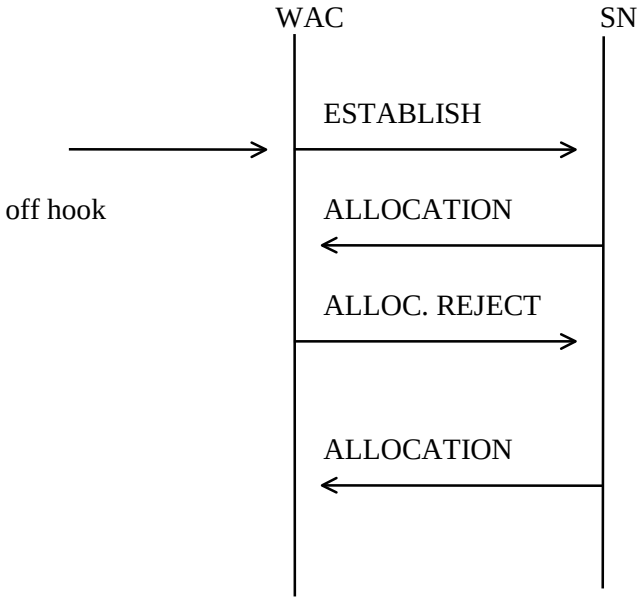


Figure A.23/C-IF3.03

(24) Layer 3 Error
(Bearer channel allocation unseccessfully completed after first Tbcc1 expiry)

refer to Figure A.24

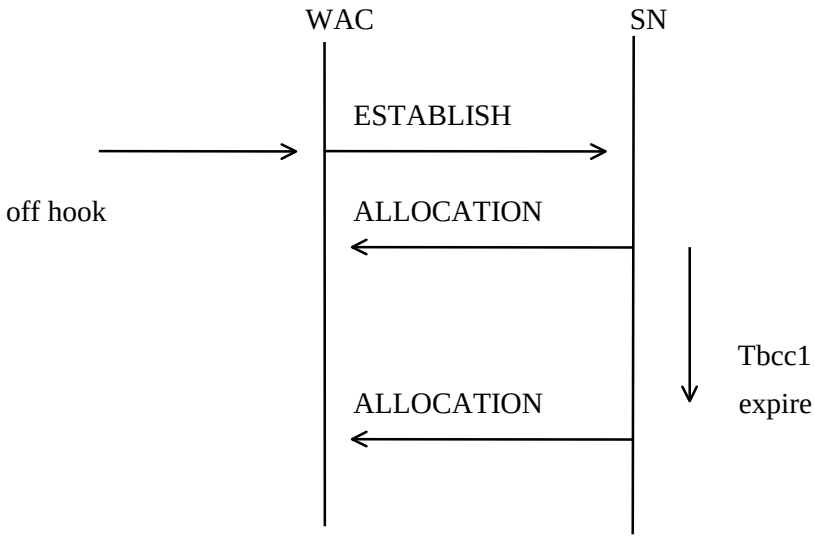


Figure A.24/C-IF3.03