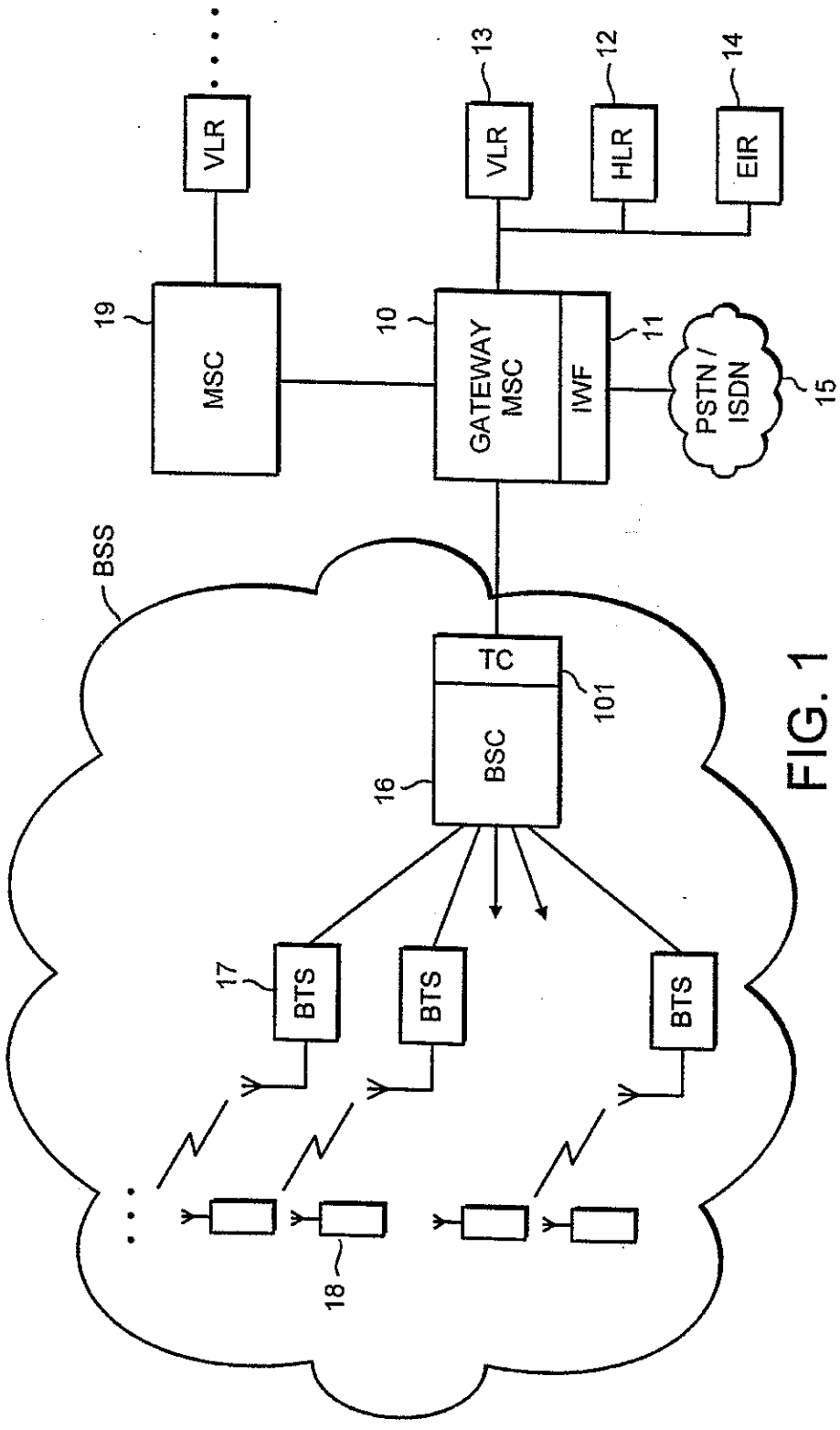
VLR
13
VLR
12
HLR
14
EIR
19
MSC
10
GATEWAY MSC
IWF
11
PSTN / ISDN
15
BSS
TC
101
BSC
16
17
BTS
BTS
BTS
18

FIG. 1

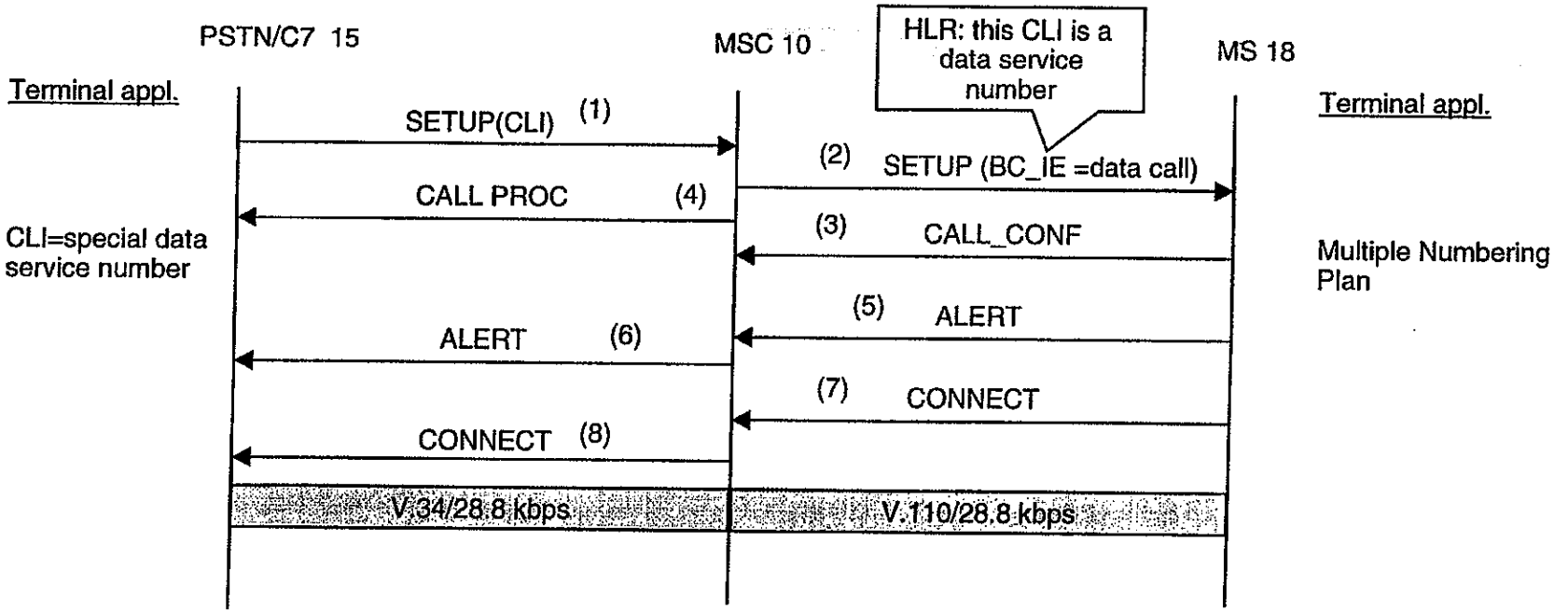

FIGURE 2

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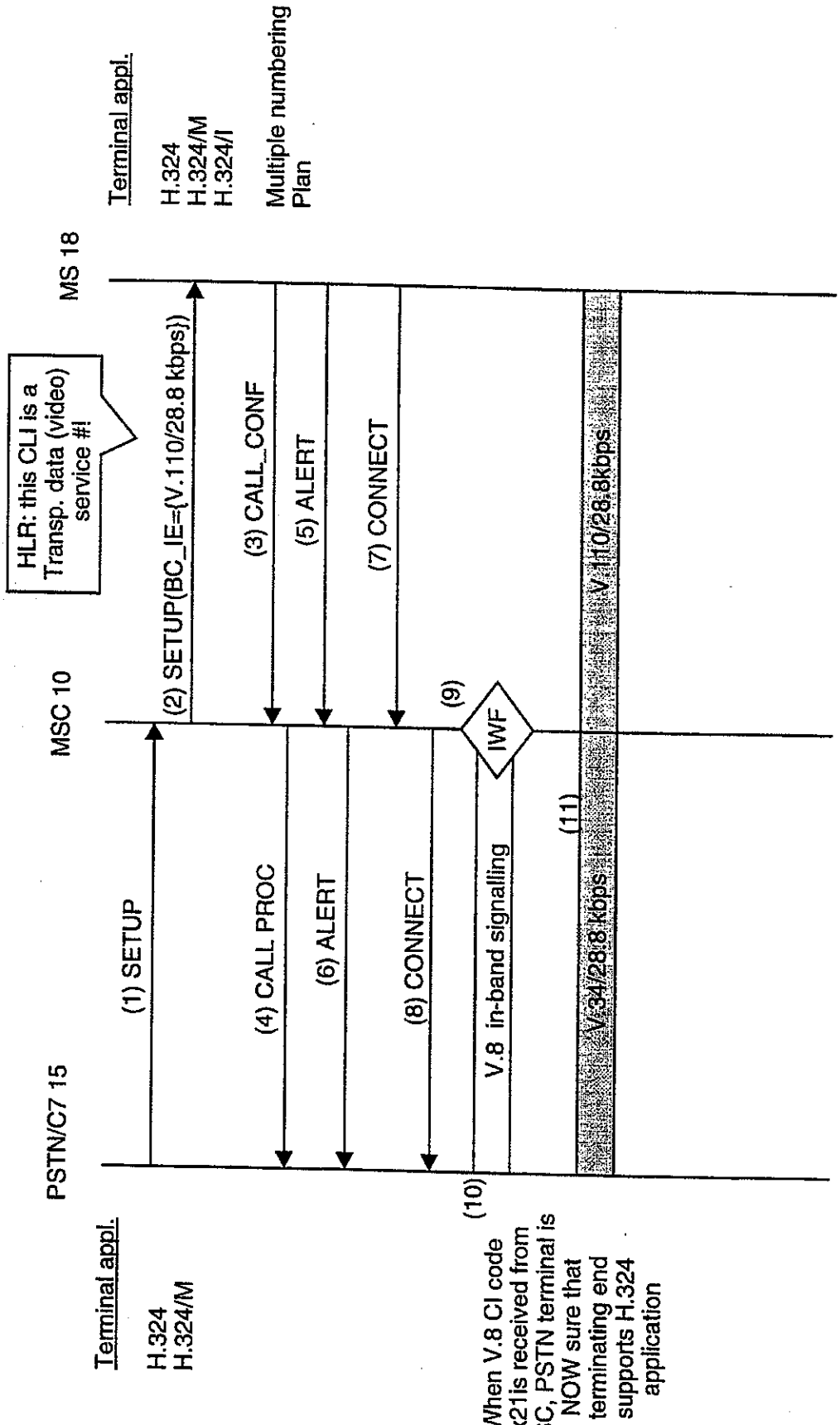
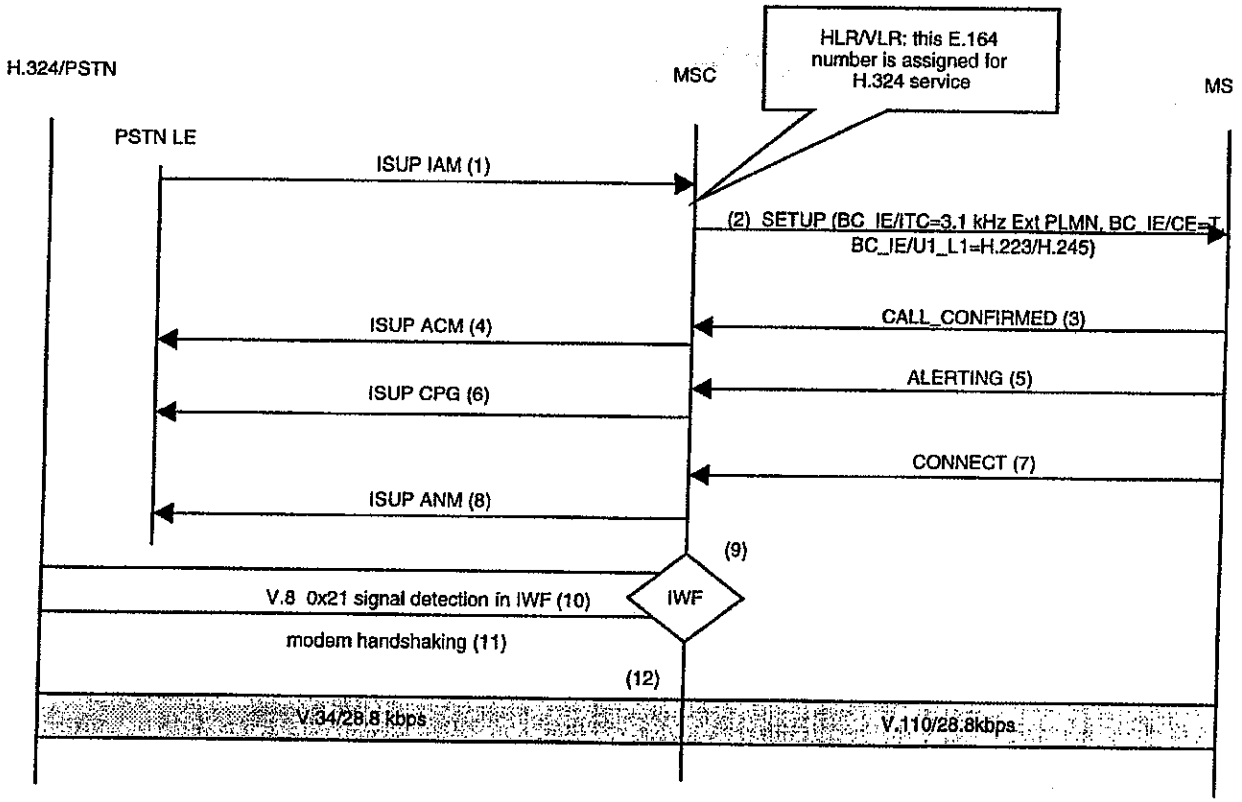

Terminal appl.
H.324
H.324/M
Multiple numbering Plan
Terminal appl.
H.324
H.324/M
H.324/I
PSTN/C7 15
MSC 10
HLR: this CLI is a Transp. data (video) service #!
MS 18
(1) SETUP
(2) SETUP(BC_IE={V.110/28.8 kbps})
(3) CALL_CONF
(4) CALL PROC
(5) ALERT
(6) ALERT
(7) CONNECT
(8) CONNECT
(9)
IWF
V.8 in-band signalling
(10)
When V.8 CI code 0x21is received from MSC, PSTN terminal is NOW sure that terminating end supports H.324 application
(11)
V.34/28.8 kbps
V.110/28.8kbps

FIGURE 3



Terminal appl.

H.324
H.324/M
H.324/I

Multiple numbering Plan

When V.8 CF code 0x21is received from PSTN, MSC sure that originating end supports H.324 application

FIGURE 4

24 NOV 2003

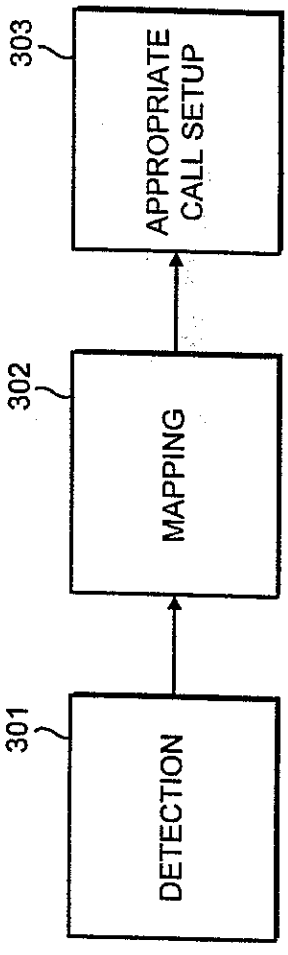


FIG. 5

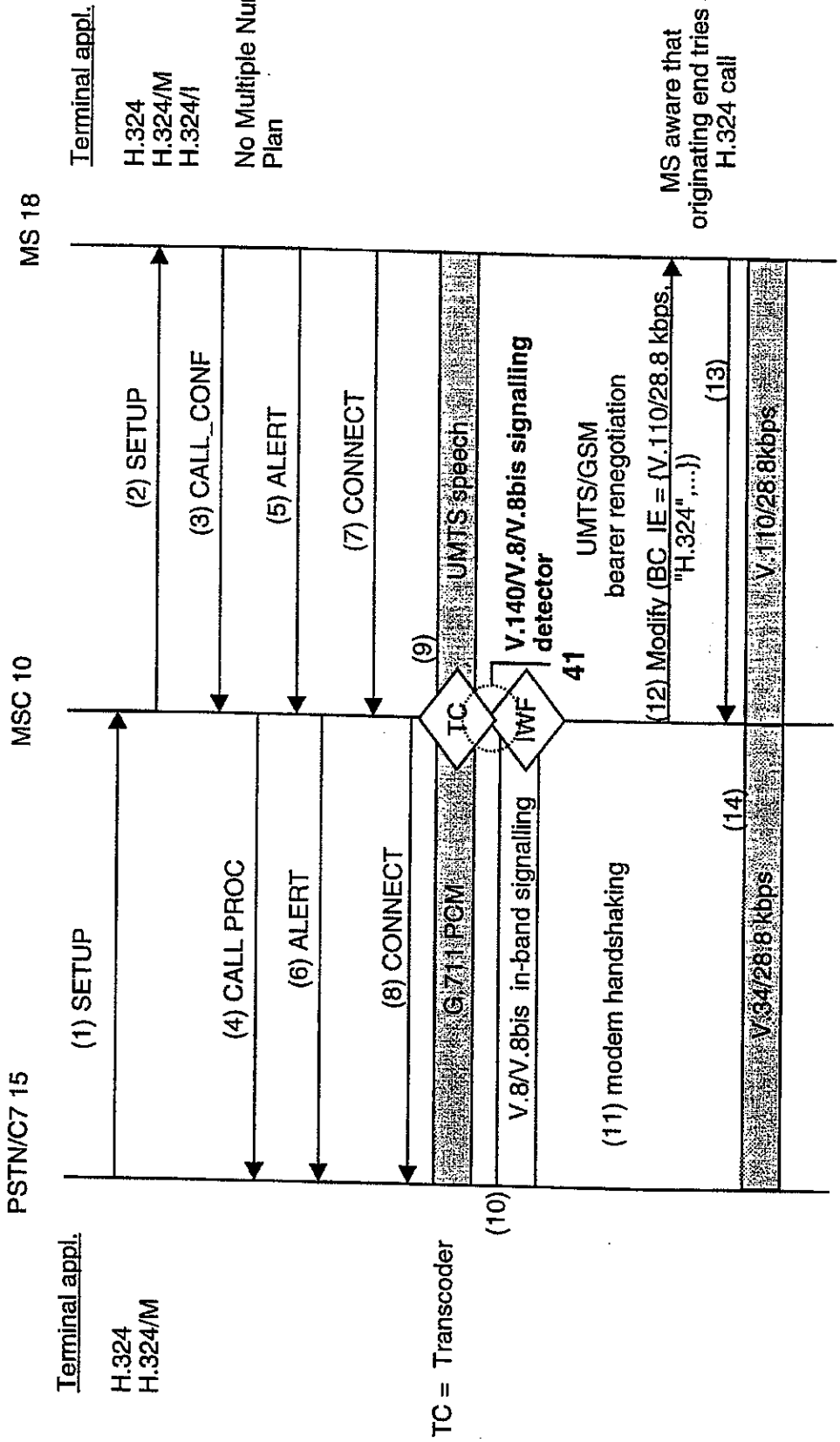

PSTN/C7 15
MSC 10
MS 18
Terminal appl.
H.324
H.324/M
H.324/I
No Multiple Numbering Plan
MS aware that originating end tries a H.324 call
(1) SETUP
(2) SETUP
(3) CALL_CONF
(4) CALL PROC
(5) ALERT
(6) ALERT
(7) CONNECT
(8) CONNECT
(9)
G.711 PCM
UMTS speech
IC
IWF
V.140/V.8/V.8bis signalling detector
41
V.8/V.8bis in-band signalling
(10)
(11) modem handshaking
UMTS/GSM bearer renegotiation
(12) Modify (BC_IE = {V.110/28.8 kbps, "H.324",...})
(13)
(14)
V.34/28.8 kbps
V.110/28.8kbps
Terminal appl.
H.324
H.324/M
TC = Transcoder

FIGURE 6

PSTN-MS direct call involvement, single-numbering Scheme

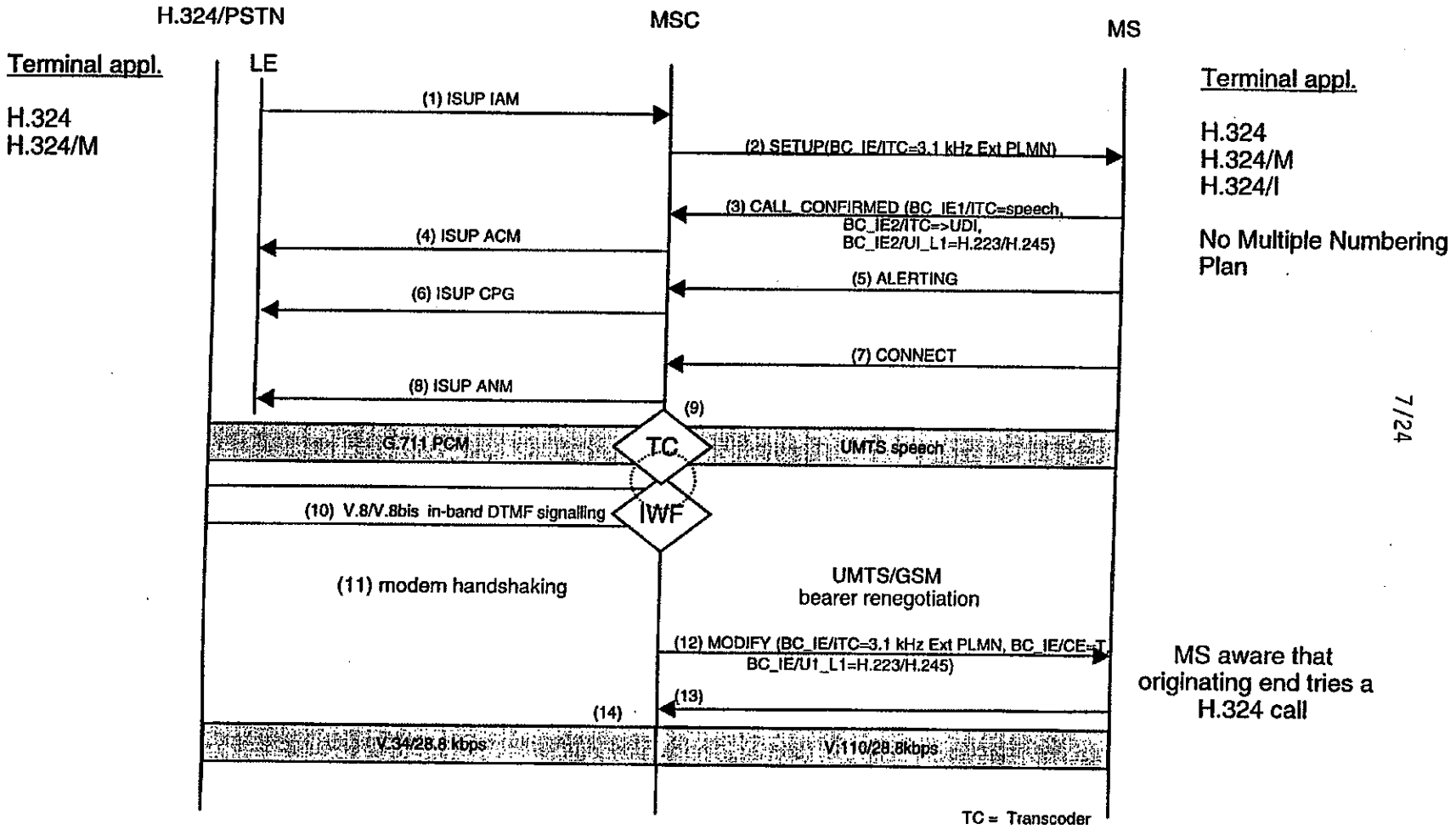


FIGURE 7

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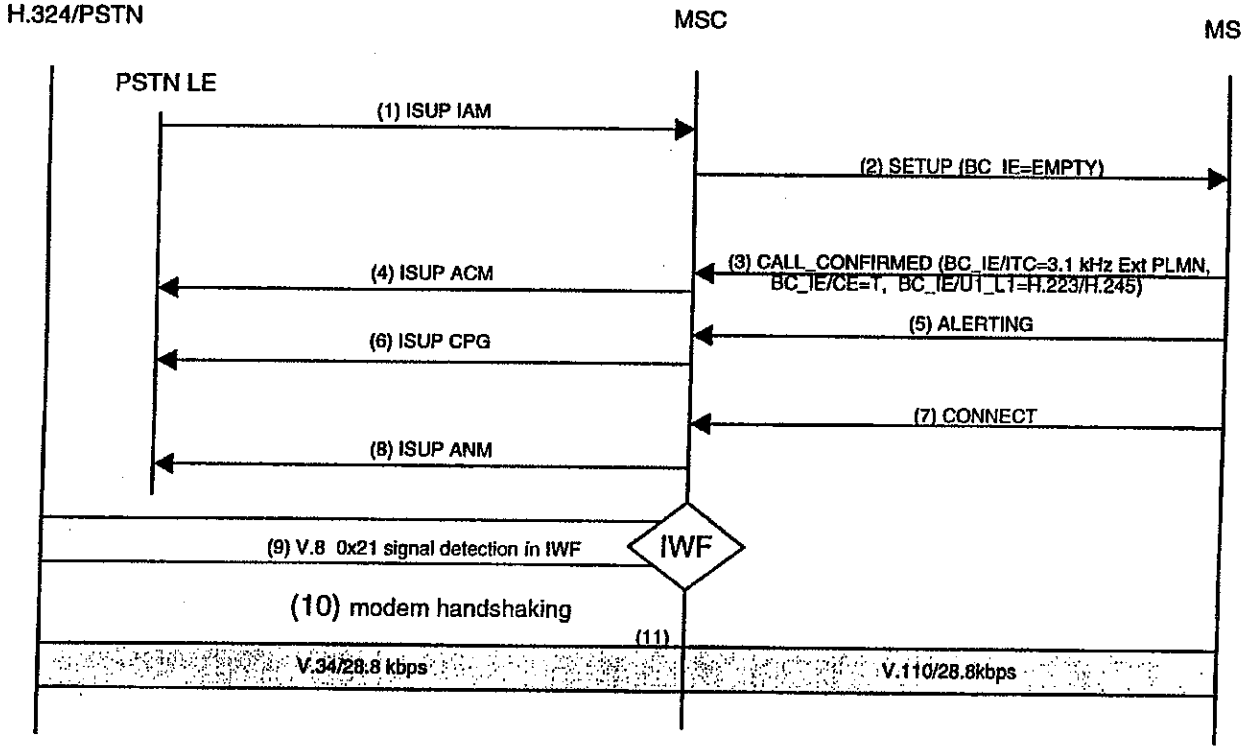
PSTN-MS direct call, single-numbering Scheme



Terminal appl.

H.324
H.324/M
H.324/I

Single numbering Plan

When V.8 CF code 0x21is received from PSTN, MSC sure that originating end supports H.324 application

FIGURE 8

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MS-PSTN Speech First, with Changeover Using V.8bis

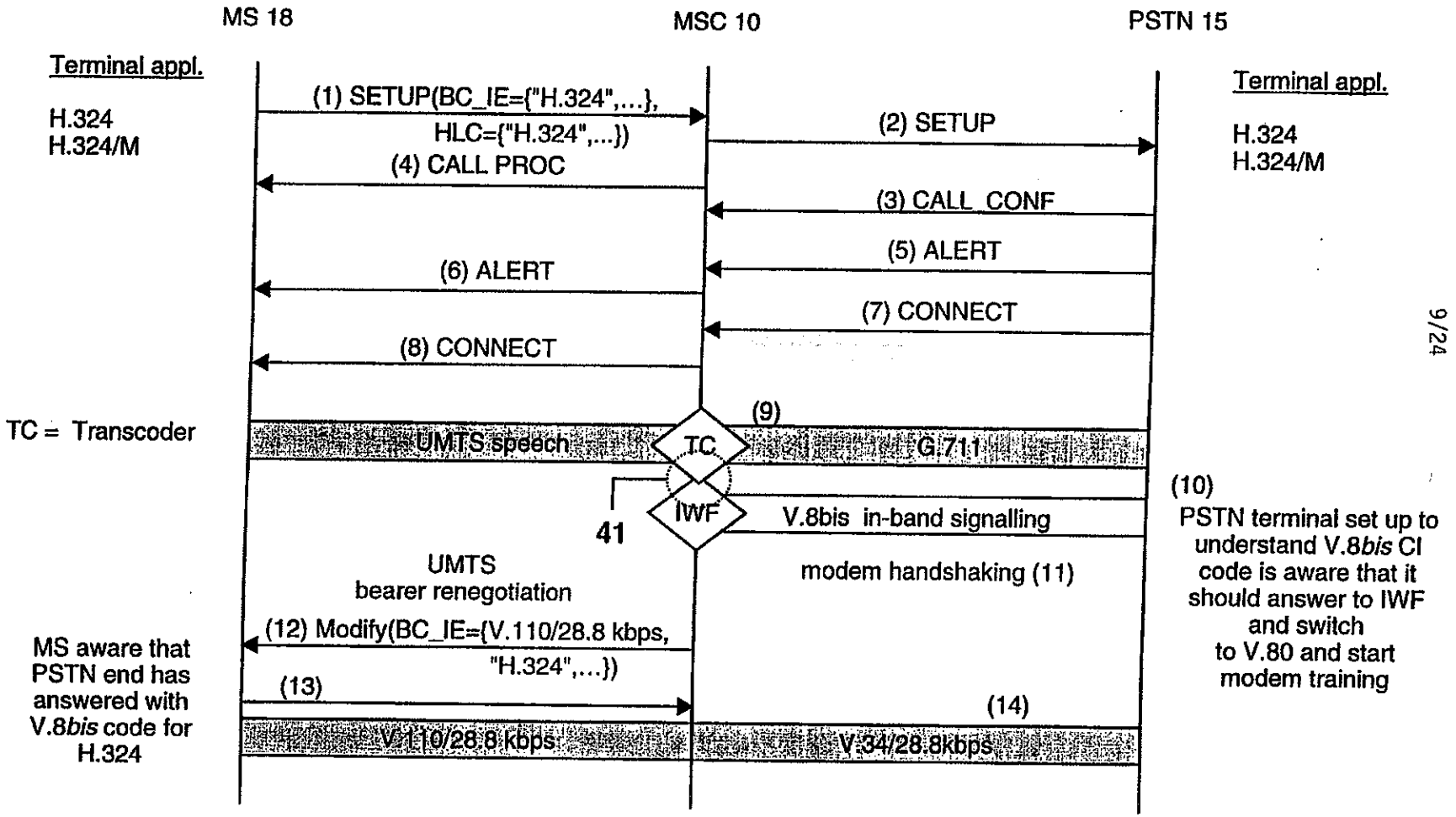

FIGURE 9

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MS - PSTN direct call without V.8bis involvement

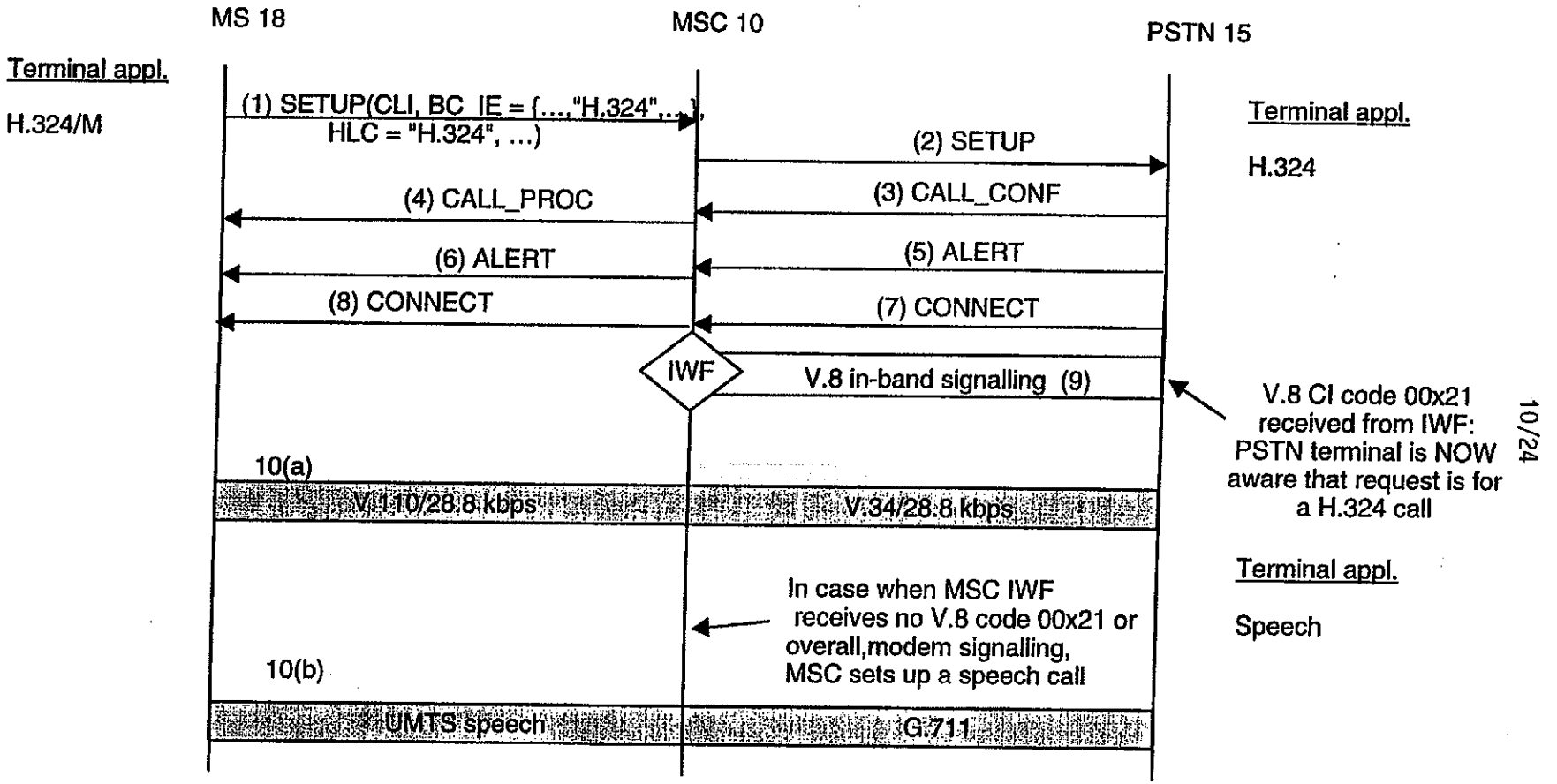

FIGURE 10

24 NOV 2003

MS - PSTN direct call without V.8bis involvement

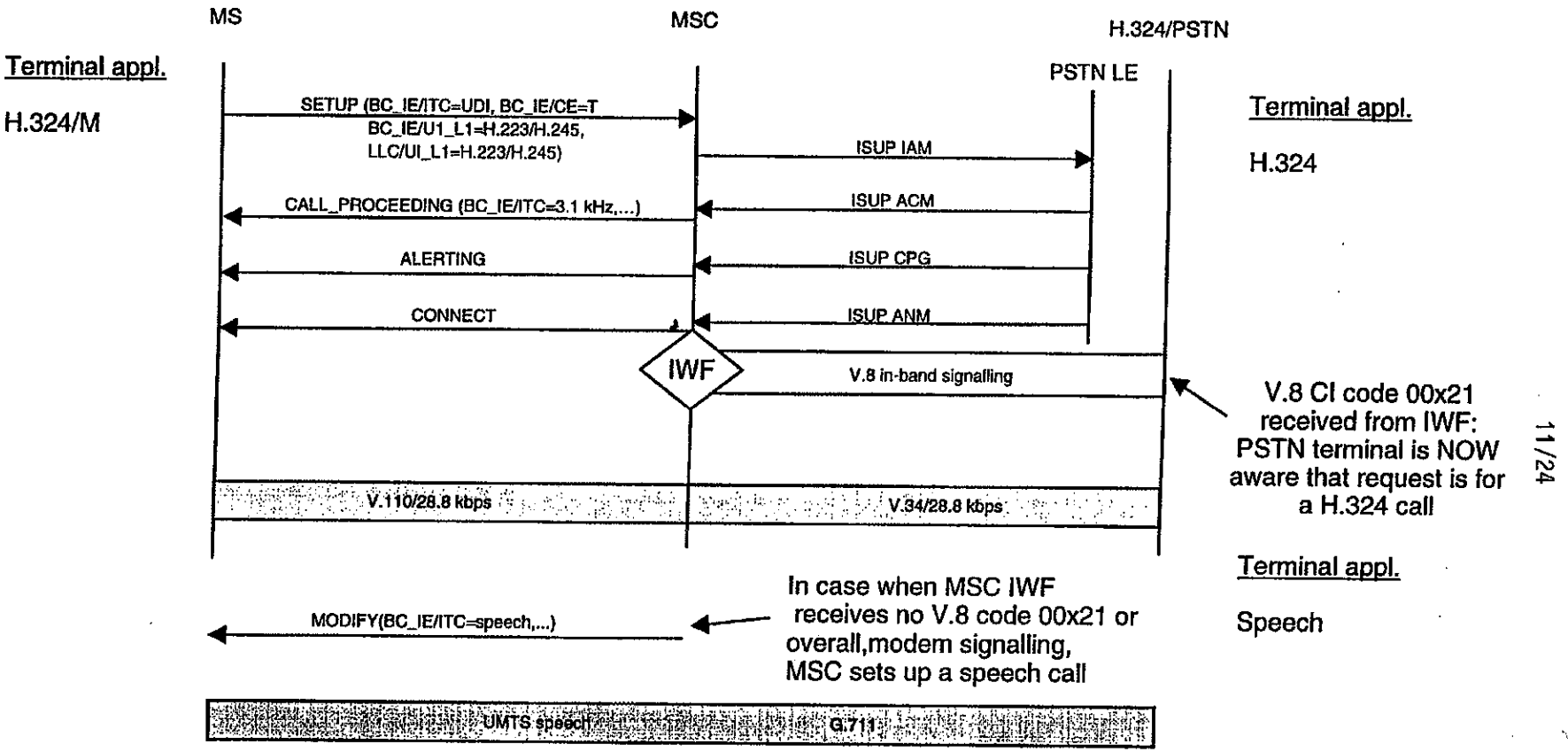

FIGURE 11

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ISDN - UMTS

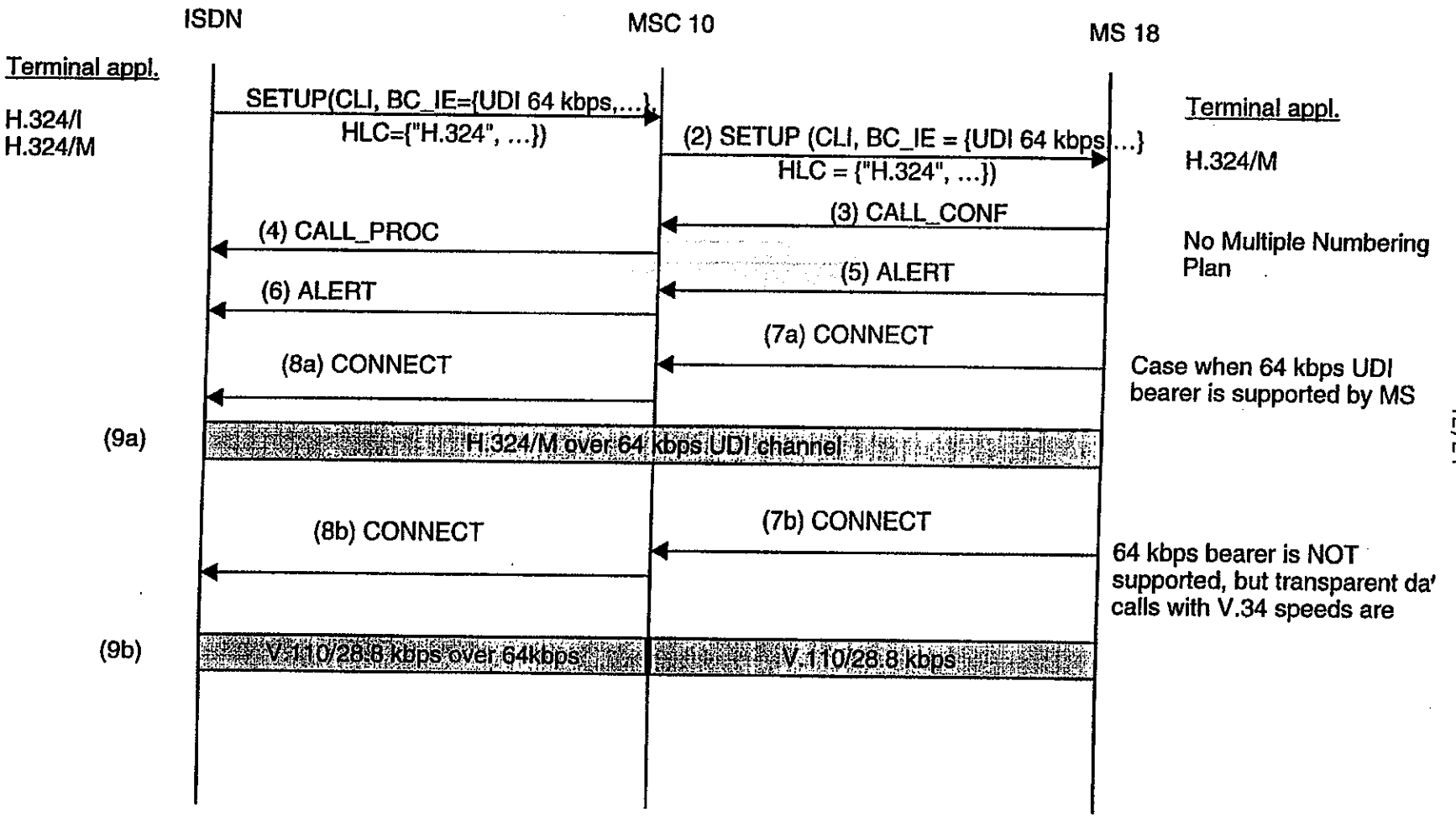

FIGURE 12

24 NOV 2003

ISDN - UMTS without end-to-end HLC

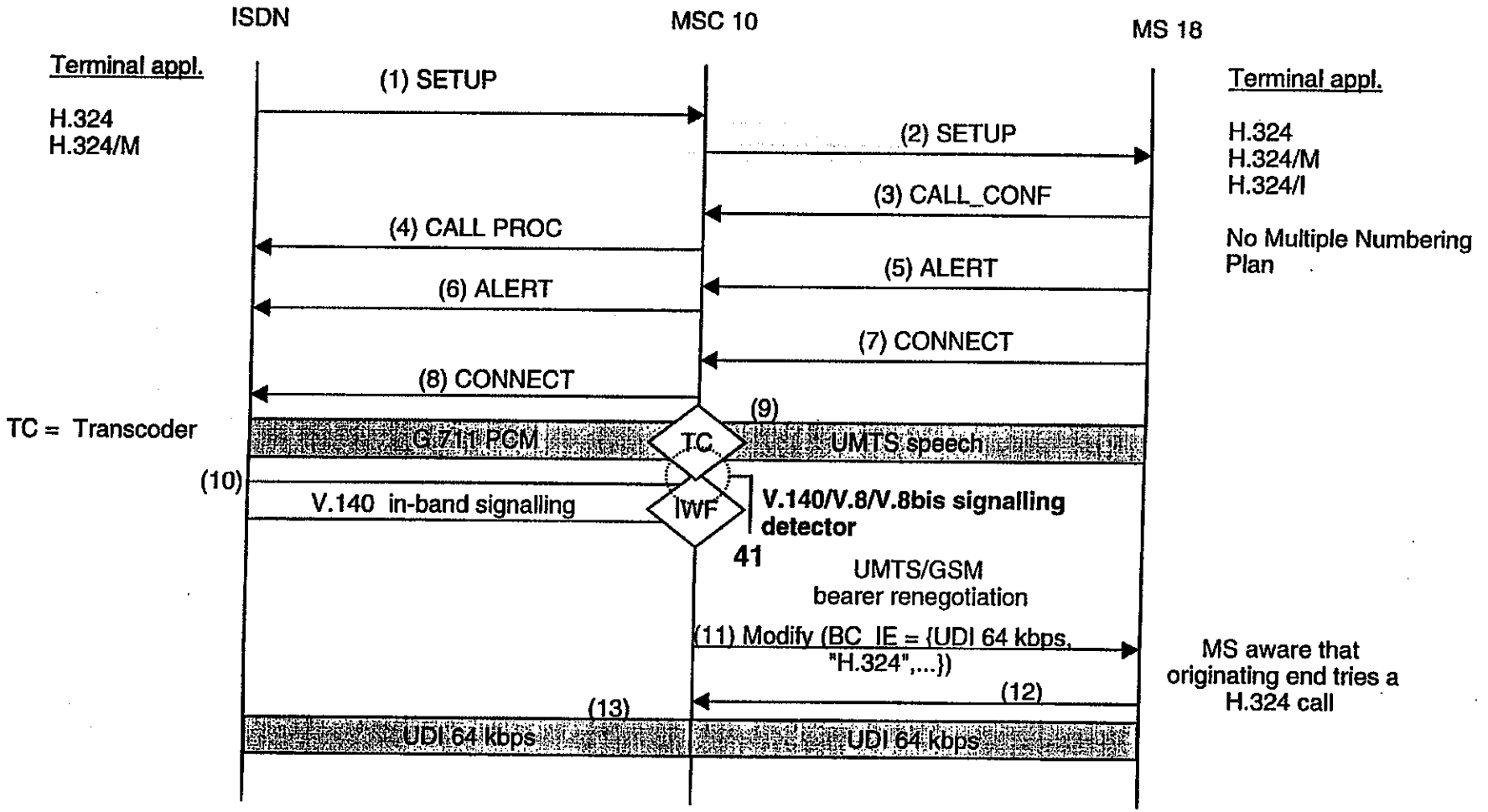

FIGURE 13

24 NOV 2003

UMTS - ISDN

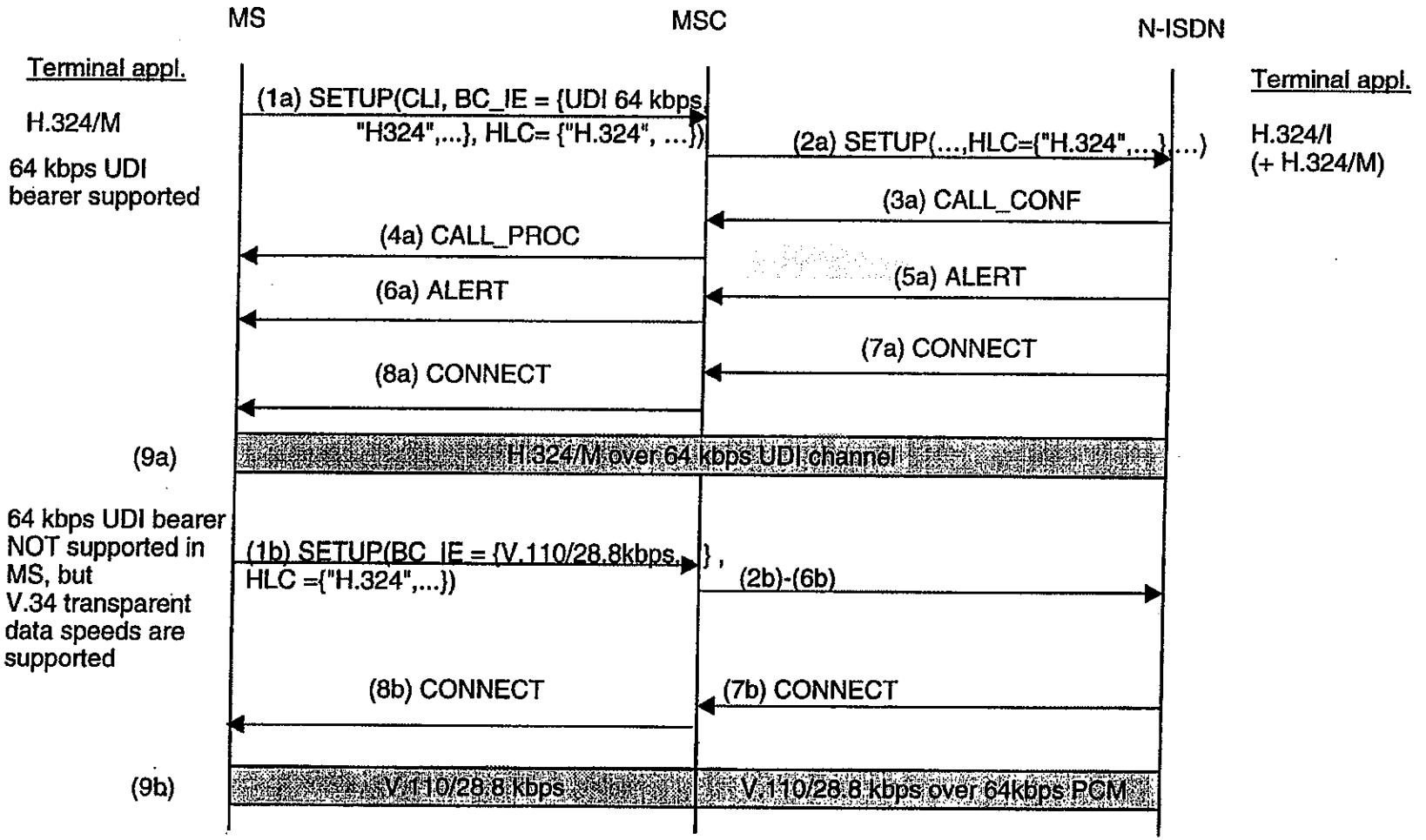

FIGURE 14

24 NOV 2003

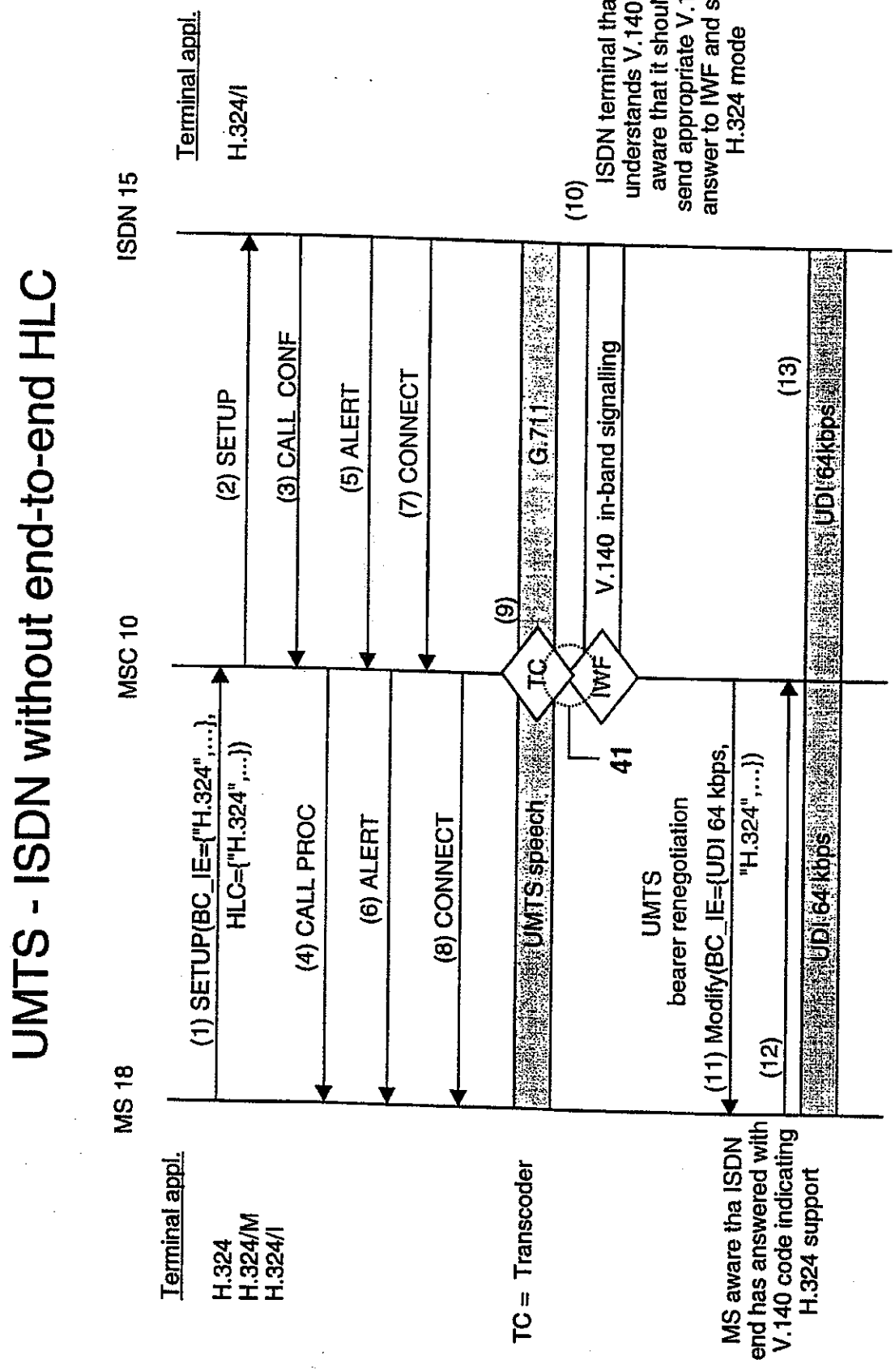
UMTS - ISDN without end-to-end HLC
MS 18
MSC 10
ISDN 15
Terminal appl.
H.324/I
(1) SETUP(BC_IE={"H.324",...},
HLC={"H.324",...})
(2) SETUP
(3) CALL_CONF
(4) CALL PROC
(5) ALERT
(6) ALERT
(7) CONNECT
(8) CONNECT
(9)
TC
IWF
G.711
V.140 in-band signalling
(10)
ISDN terminal that understands V.140 is aware that it should send appropriate V.140 answer to IWF and start H.324 mode
UMTS speech
41
UMTS
bearer renegotiation
(11) Modify(BC_IE={UDI 64 kbps,
"H.324",...})
(12)
(13)
UDI 64 kbps
UDI 64 kbps
Terminal appl.
H.324
H.324/M
H.324/I
TC = Transcoder
MS aware tha ISDN end has answered with V.140 code indicating H.324 support

FIGURE 15

ISDN - UMTS

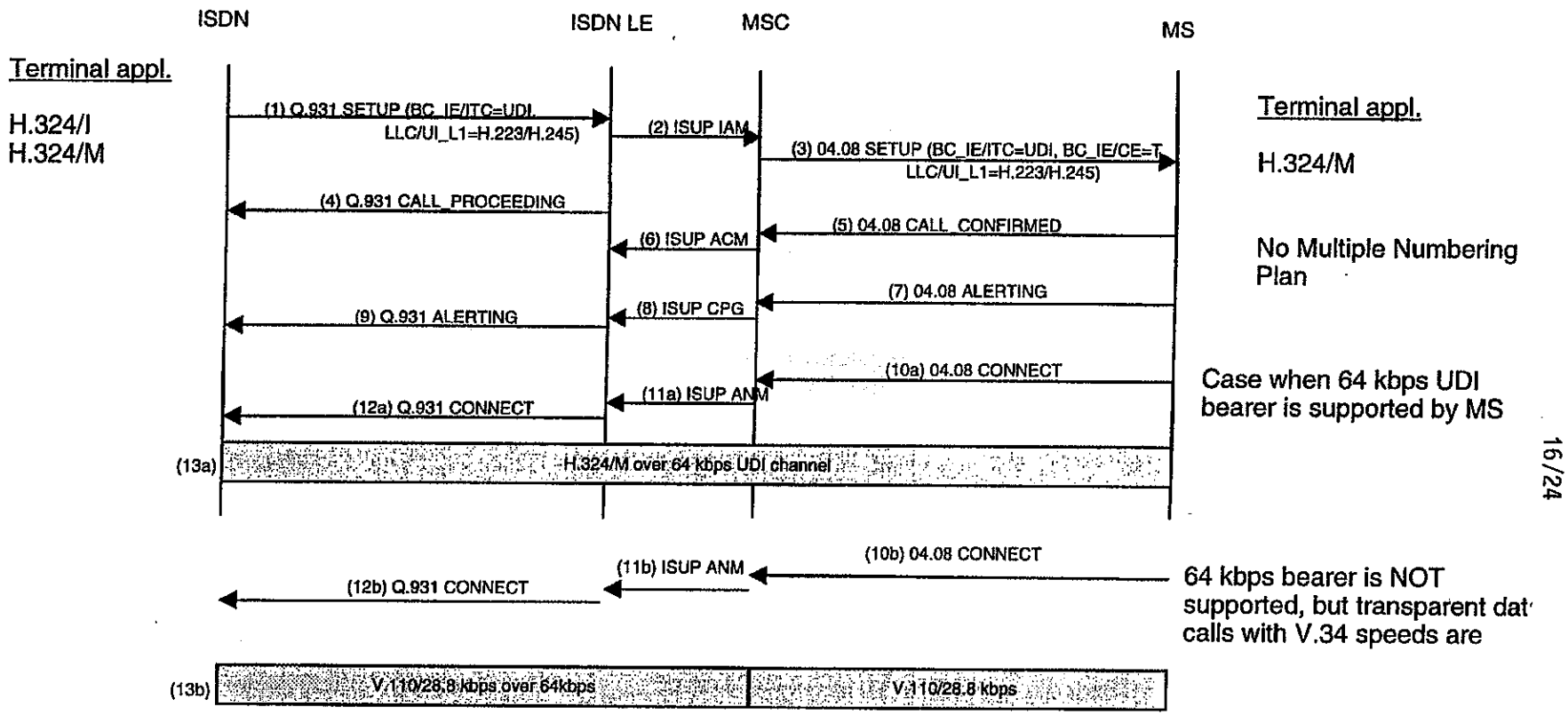

FIGURE 16

24 NOV 2003

ISDN - UMTS without end-to-end LLC

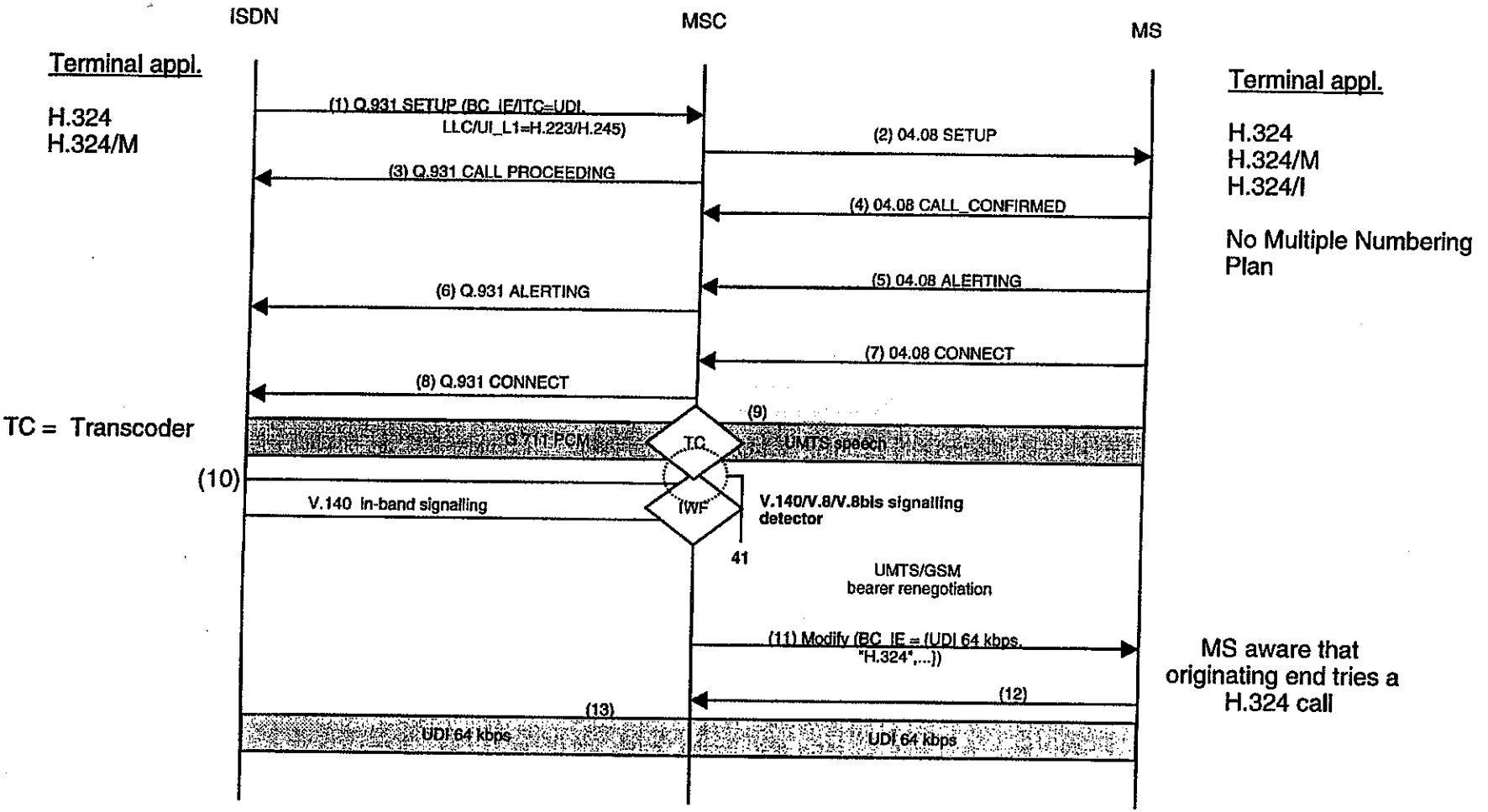

FIGURE 17

24 NOV 2003

UMTS - ISDN

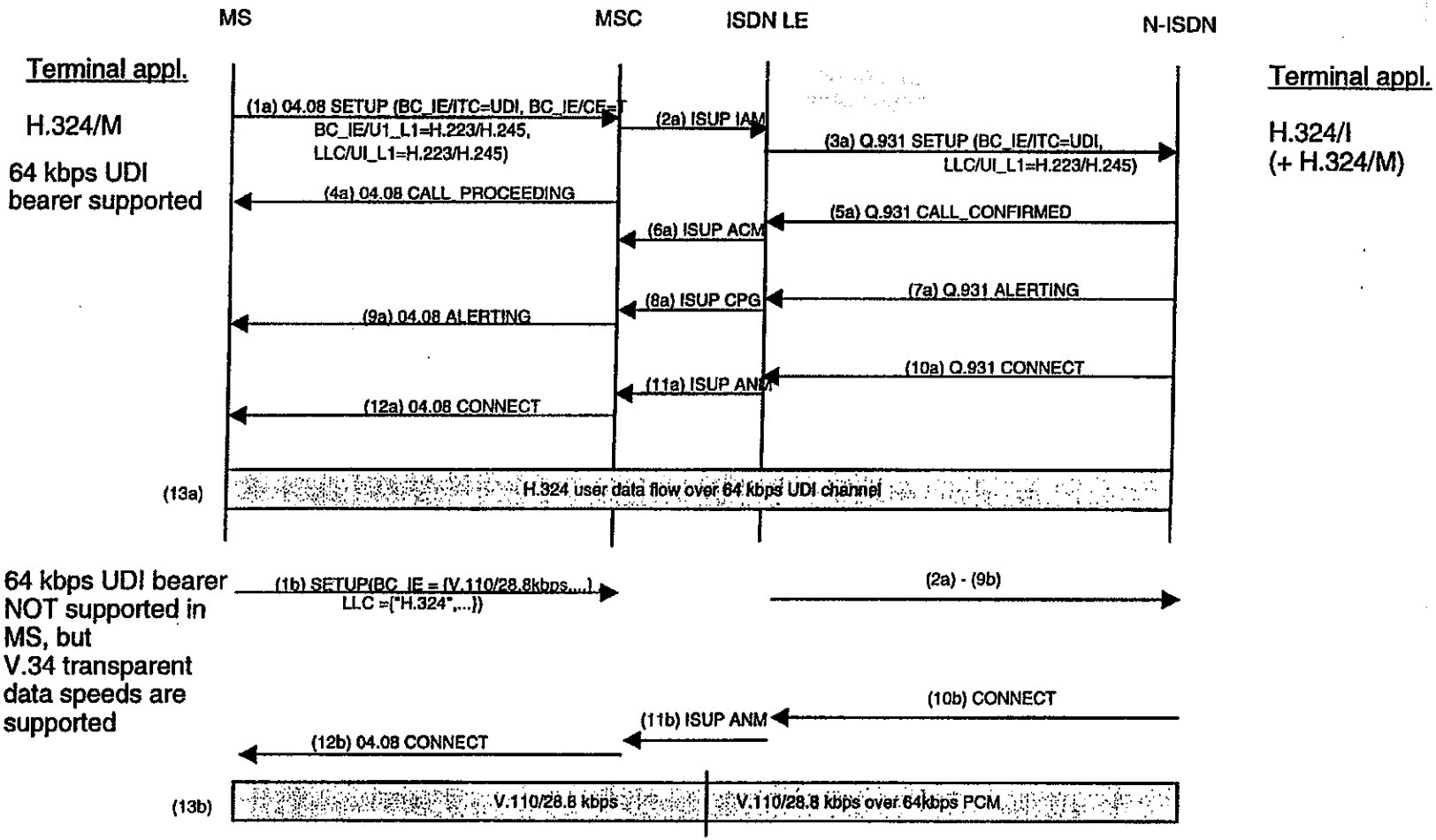

FIGURE 18

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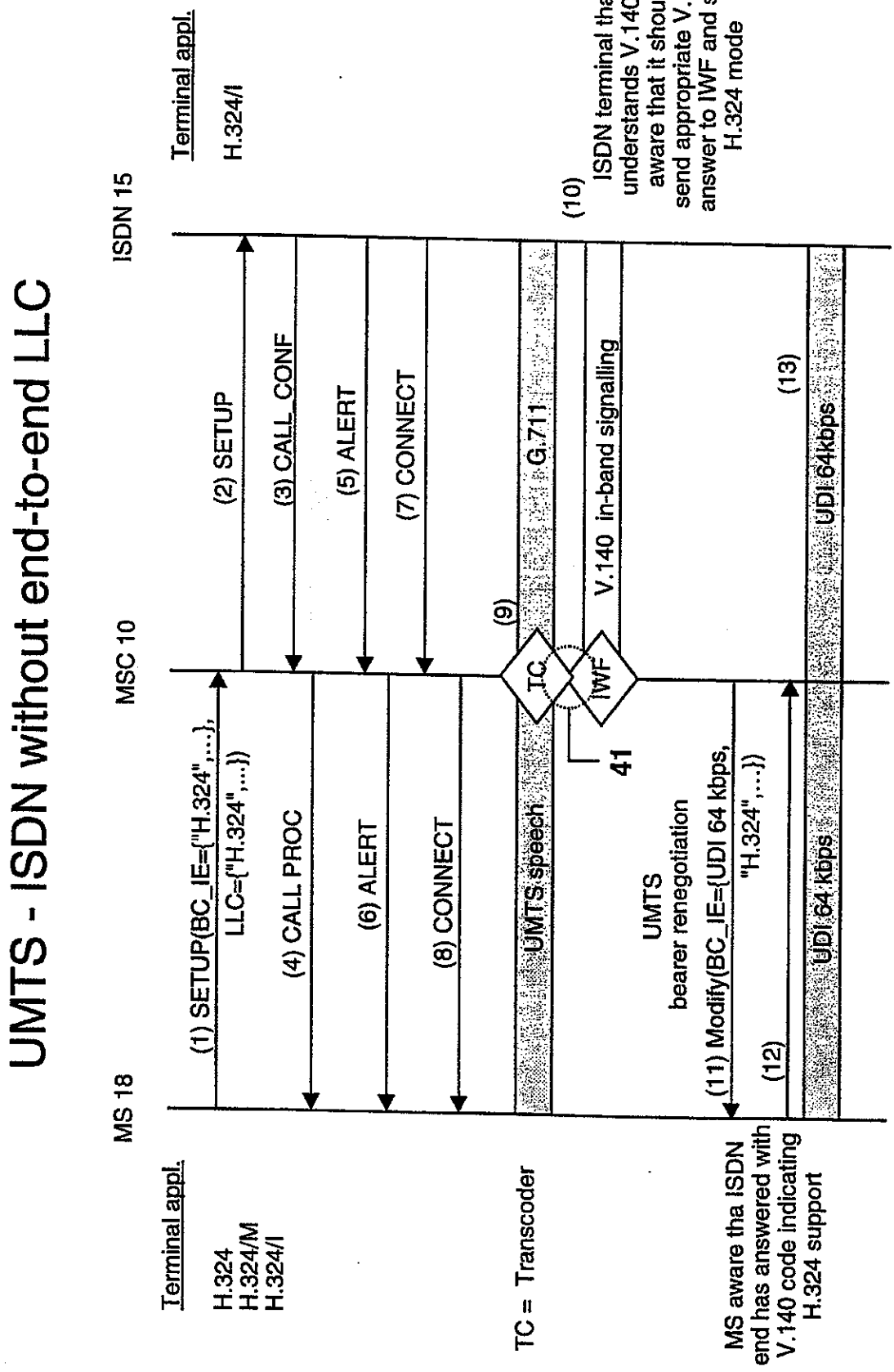
UMTS - ISDN without end-to-end LLC
MS 18
MSC 10
ISDN 15
Terminal appl.
H.324
H.324/M
H.324/I
Terminal appl.
H.324/I
(1) SETUP(BC_IE={"H.324",...},
LLC={"H.324",...})
(2) SETUP
(3) CALL_CONF
(4) CALL PROC
(5) ALERT
(6) ALERT
(7) CONNECT
(8) CONNECT
(9)
TC
IWF
G.711
UMTS speech
V.140 in-band signalling
41
(10)
ISDN terminal that understands V.140 is aware that it should send appropriate V.140 answer to IWF and start H.324 mode
UMTS
bearer renegotiation
(11) Modify(BC_IE={UDI 64 kbps,
"H.324",...})
(12)
(13)
UDI 64kbps
UDI 64 kbps
TC = Transcoder
MS aware tha ISDN end has answered with V.140 code indicating H.324 support

FIGURE 19

UMTS - UMTS

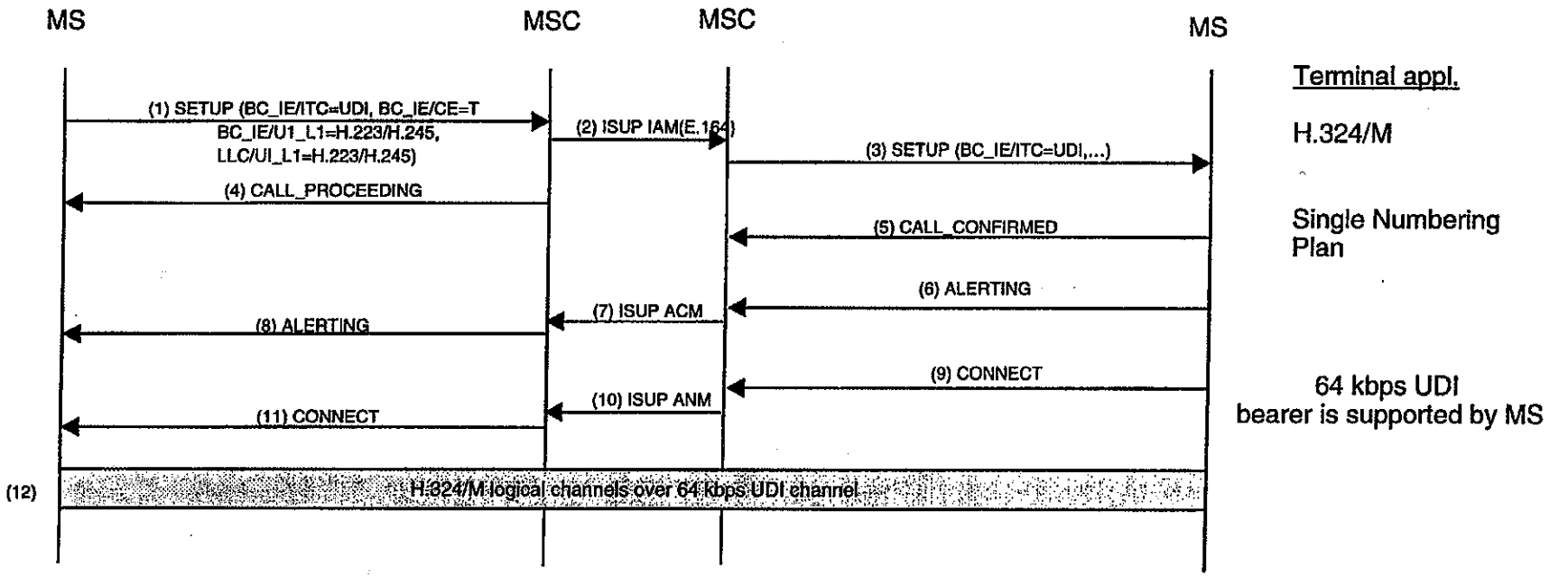

FIGURE 20

24 NOV 2003

UMTS - 2G

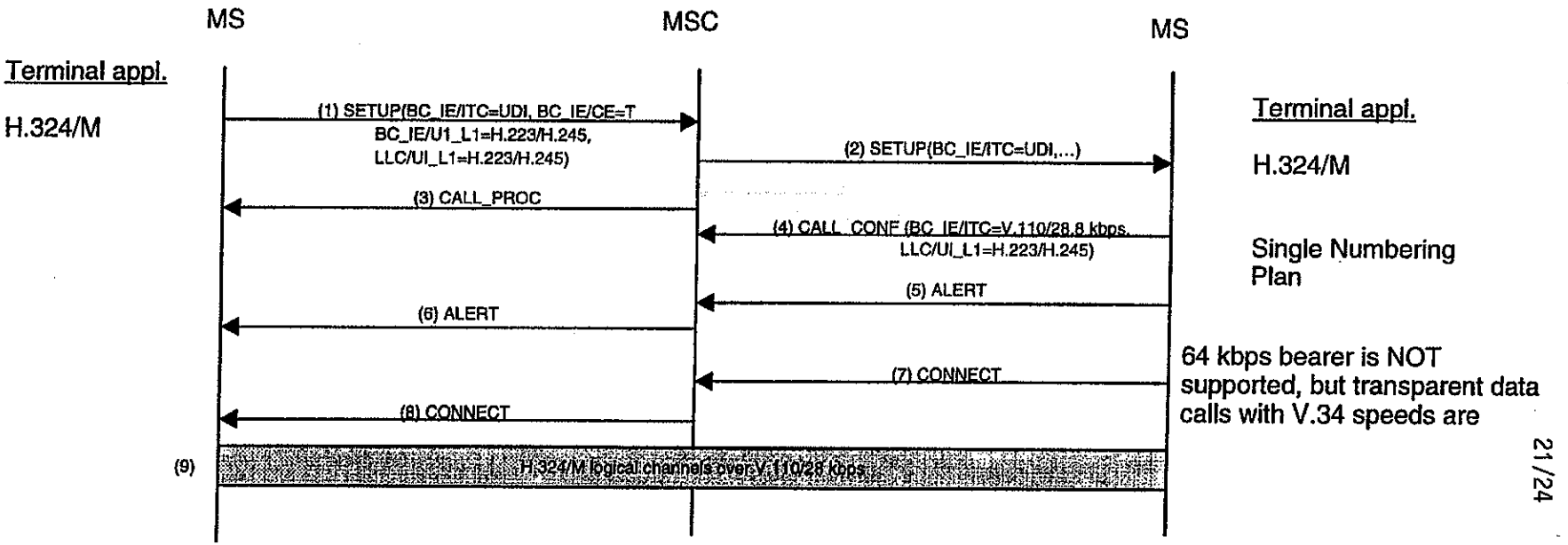

FIGURE 21

27 NOV 2003

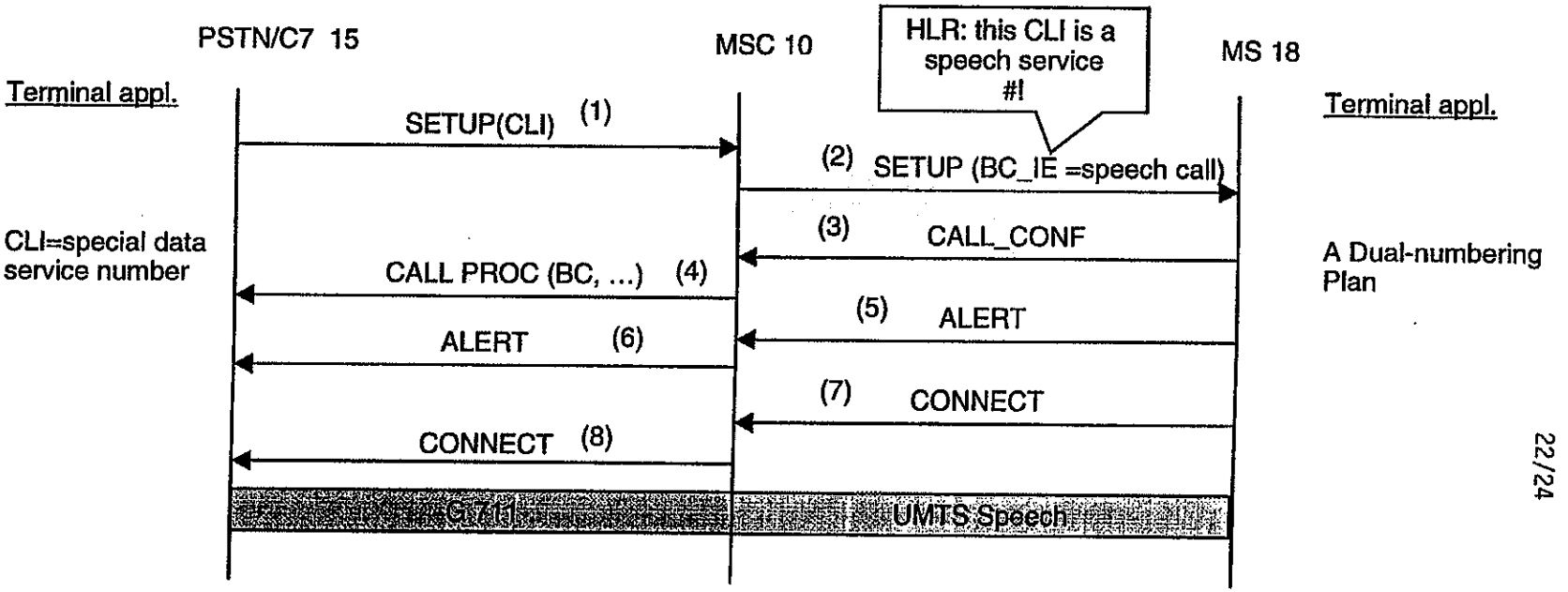

FIGURE 22

27 NOV 2003

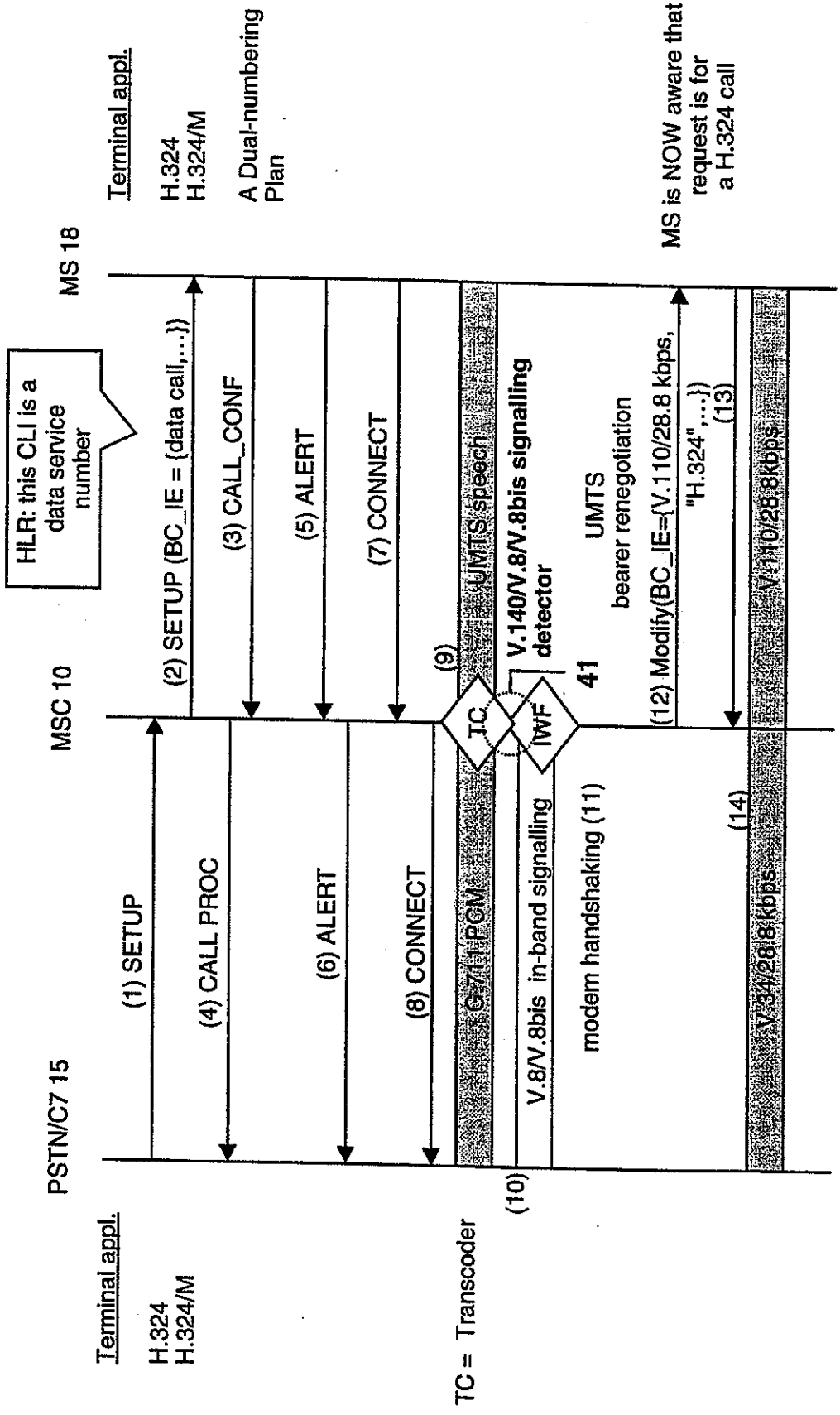
Terminal appl.
H.324
H.324/M
PSTN/C7 15
MSC 10
HLR: this CLI is a data service number
MS 18
Terminal appl.
H.324
H.324/M
A Dual-numbering Plan
MS is NOW aware that request is for a H.324 call
(1) SETUP
(2) SETUP (BC_IE = {data call,...})
(3) CALL_CONF
(4) CALL PROC
(5) ALERT
(6) ALERT
(7) CONNECT
(8) CONNECT
(9)
G.711 PCM
UMTS speech
V.140/V.8/V.8bis signalling detector
41
UMTS bearer renegotiation
(12) Modify(BC_IE={V.110/28.8 kbps, "H.324",...})
(13)
(14)
V.8/V.8bis in-band signalling
modem handshaking (11)
(10)
TC
IWF
V.34/28.8 kbps
V.110/28.8kbps
TC = Transcoder

FIGURE 23

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V.8	
	Call function category (Octet – "callf0")
100	PSTN Multimedia Terminal (Bits 567)
	Modulation modes category (Octet – "modn0")
1	V.34 duplex availability (Bit 6)
V.25ter	
	Modulation control commands
	Modulation reporting control (+MR)
+MCR: V34	+MCR: <carrier>
+MRR: 28800	+MRR: <rate>
V.8bis	
	Standard information field - {SPar(1)} coding
	Standard information field – Data {NPar(2)} coding (Octet 2)
1	Rec. V.34 duplex mode (Bit 5)
	Standard information field - {SPar(1)} coding
	Standard information field – H.324 multimedia terminal {NPar(2)} coding
1	Video (Bit 1)
	Standard information field - {SPar(1)} coding
	Standard information field – H.324 multimedia terminal {NPar(2)} coding
1	Audio (Bit 2)

	UMTS
	Bearer Capability
	Bearer Capability Information Element
	Transfer mode (octet 3)
0	Circuit mode (Bit 4)
	Bearer Capability Information Element
	Duplex mode (octet 4)
1	Full duplex (Bit 4)
	Bearer Capability Information Element
	Synchronous/Asynchronous (octet 6)
0	Synchronous (Bit 1)
	Bearer Capability Information Element
	Fixed network user rate (octet 6d)
00100	28.8 kbps (Bits 54321)
	Bearer Capability Information Element
	Acceptable channel codings (octet 6e)
1	TCH/F14.4 acceptable (Bit 7)
	Bearer Capability Information Element
	Acceptable channel codings (octet 6e)
1	TCH/F9.6 acceptable (Bit 5)
	Bearer Capability Information Element
	Acceptable channel codings (octet 6e)
1	TCH/F4.8 acceptable (Bit 4)
	Bearer Capability Information Element
	Maximum number of traffic channels (octet 6e)
001	2 TCH (Bits 321)
	Bearer Capability Information Element
	Connection element (octet 6c)
00	Transparent (Bits 76)
	Bearer Capability Information Element
	Other modem type (octet 6d)
10	V.34 (Bits 76)
	High Layer Compatibility
	High Layer Compatibility Information Element
	High layer characteristics identification (octet 4)
1100001	PSTN Multimedia Terminal (Bits 7654321)

Figure 24