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*Technical Specification*

**Telecommunications and Internet Protocol  
Harmonization Over Networks (TIPHON) Release 3;  
Technology compliance specifications;  
Part 2: H.225.0 conformance test specifications;  
Test Suite Structure and Test Purposes (TSS&TP)  
specification for Terminal, Gatekeeper and Gateway**

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**Reference**

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## Foreword

This Technical Specification (TS) has been produced by ETSI Project Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON).

The present document is part 2 of a multi-part deliverable covering the H225.0 protocol for Terminal, Gatekeeper and Gateway as identified below:

- Part 1: "Revision/update of H.225.0 Protocol Implementation Conformance Statement (PICS) proforma specification for Terminal, Gatekeeper and Gateway";
- Part 2: "H.225.0 conformance test specifications; Test Suite Structure and Test Purposes (TSS&TP) specification for Terminal, Gatekeeper and Gateway";**
- Part 3: "H.225.0 conformance test specifications; Abstract Test Suite (ATS) and PIXIT proforma specification for Terminal, Gatekeeper and Gateway".

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# 1 Scope

The present document specifies the Test Suite Structure and Test Purposes (TSS&TP) for the H225.0 protocol for Terminal, Gatekeeper and Gateway.

The objective of the present document is to provide conformance tests that give a greater probability of inter-operability. The TSS&TP specification covers the procedures described in ITU-T Recommendation H.323 [2] and ITU-T Recommendation H.225.0 [3] as specified in TS 101 883 [1].

NOTE: The present document may not cover all requirements of the current version of TS 101 883 [1], as that mapping document has not yet reached a sufficiently stable state. Further versions of this TSS&TP specification will follow TS 101 883 [1] completely and cover all its requirements.

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [6], ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8]) is used as basis for the test methodology.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

- [1] ETSI TS 101 883: "Telecommunications and Internet protocol Harmonization Over Networks (TIPHON) Release 3; Technology Mapping; Implementation of TIPHON architecture using H.323".
- [2] ITU-T Recommendation H.323 (2000): "Framework and wire-protocol for multiplexed call signalling transport".
- [3] ITU-T Recommendation H.225.0 (2000): "Call signalling protocols and media stream packetization for packet-based multimedia communication systems".
- [4] ETSI TS 101 804-1 (V1.1.1): "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 3; Release PICS; Revision/Update of H.225.0 PICS for Terminal, Gatekeeper and Gateway".
- [5] ITU-T Recommendation Q.931: "ISDN user-network interface layer 3 specification for basic call control".
- [6] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [7] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
- [8] ISO/IEC 9646-3: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN)".
- [9] ETSI TS 101 804-3: "Telecommunications and Internet Protocol Harmonization Over Networks (TIPHON) Release 3; Technology Compliance Specifications; Part 3: H.225.0 Conformance Test Specifications; Abstract Test Suite (ATS) and PIXIT proforma for Terminal, Gatekeeper and Gateway".

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions defined in ITU-T Recommendation H.323 [2], ITU-T Recommendation H.225.0 [3], ISO/IEC 9646-1 [6], ISO/IEC 9646-2 [7] and ISO/IEC 9646-3 [8] and the following apply:

**Basic Call Control (BCC):** signalling protocol associated with the DSS1 - ISDN Basic Call control procedures of ITU-T recommendation Q.931

**inopportune:** test purpose covering a signalling procedure where an inopportune message (type of message not expected in the IUT current state) is sent to the IUT

**syntactically invalid:** test purpose covering a signalling procedure where a valid (expected in the current status of the IUT) but not correctly encoded (unknown or incorrect parameter values) message is sent to the IUT, which shall react correctly and eventually reject the message

**test purpose:** non-formal test description, mainly using text

NOTE: This test description can be used as the basis for a formal test specification (e.g. Abstract Test Suite in TTCN). See ISO/IEC 9646-2.

**valid:** test purpose covering a signalling procedure where all the messages sent to or received from the IUT are valid (expected in the current status of the IUT) and correctly encoded

### 3.2 Abbreviations

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

ACF	Admission ConFirm
ADM	ADMission
APDU	Application Protocol Data Unit
ARJ	Admission ReJect
ARQ	Admission ReQuesT
ATS	Abstract Test Suite
BCC	Basic Call Control
BCF	Bandwidth ConFirm
BRJ	Bandwidth ReJect
BRQ	Bandwidth ReQuesT
DCF	Disengage ConFirm
DGK	Destination GateKeeper
DRJ	Disengage ReJect
DRQ	Disengage ReQuesT
GCF	Gatekeeper ConFirm
GDR	Gatekeeper Discovery Request
GK	GateKeeper
GRJ	Gatekeeper ReJect
GRQ	Gatekeeper ReQuesT
GW	GateWay
I	Inopportune
IUT	Implementation Under Test
LAN	Local Area Network
LCF	Location ConFirm
LRJ	Location ReJect
LRQ	Location ReQuesT
MCU	Multipoint Control Unit
MSI	Manufacturer Specific Information
PDU	Protocol Data Unit
PER	Packed Encoding Rules

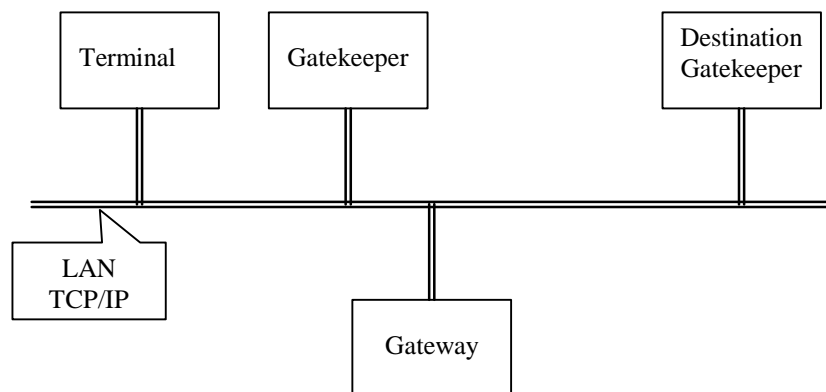
PHA	PHase A: call setup signalling procedures
PHE	PHase E: call termination signalling procedures
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
RAS	Registration, Admission and Status
RCF	Register ConFirm
REG	REGistration
RIP	Request In Progress
RRJ	Register ReJect
RRQ	Register ReQuest
S	Syntactically invalid
STA	STatus
TCP	Transmission Control Protocol
TE	TErминаl
TP	Test Purpose
TSS	Test Suite Structure
TTCN	Testing and Test Control Notation
UCF	Unregistration ConFirm
UDP	User Datagram Protocol
URJ	Unregistration ReJect
URQ	Unregistration ReQuest
V	Valid

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## 4 Architecture and Test Suite Structure (TSS)

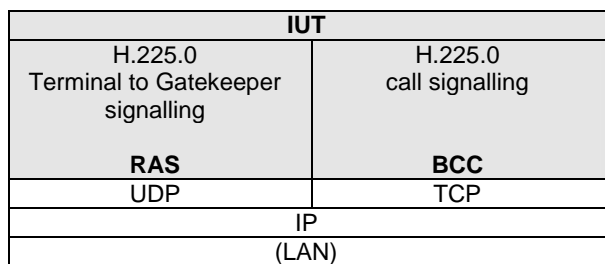
### 4.1 Architecture

The items to be tested can be one of the following: Terminal, Gatekeeper, Gateway or Destination Gatekeeper. They are a part of a Packet Based Network using a LAN with TCP/IP (see figure 1).



**Figure 1: network architecture**

The Implementation Under Test (IUT, see ISO/IEC 9646-1 [6]) for which this Test purpose specification applies consists of the H.225.0 terminal to gatekeeper signalling (RAS) and the H.225.0 call signalling (BCC) (see figure 2).



**Figure 2: protocol architecture**

## 4.2 Test Suite Structure (TSS)

The Test Suite Structure follows the network architecture and the protocol architecture. The first level is divided into 2 groups according to the protocol: RAS and BCC.

For the RAS protocol, each process is included in a corresponding sub-group: Gatekeeper Discovery Request (GDR), Registration (REG), Administration (ADM), LOC (Location), BND (Bandwidth), URG (Unregistration), DRG (Disengage) and Status (STA).

For BCC, 2 call phases are considered: phase A and phase E, each one forming a sub-group of BCC.

Finally each group is divided in 3 subgroups:

- V containing the valid test purposes;
- I containing the inopportune test purposes;
- S containing the invalid test purposes.

Protocol	IUT type	Process/ Phase	Test type
RAS	Endpoint (TE)	GDR	
		REG	
		URG	
		RIP	
	Gatekeeper (GK)	GDR	
		REG	
		URG	
		RIP	
BCC	Endpoint (TE)	PHA	V - I - S
		PHE	V - I - S
	Gatekeeper (GK)	PHA	V - I - S
		PHE	V - I - S
	Destination Gatekeeper (DGK)	PHA	V - I - S
		PHE	V - I - S



## 5 Test Purposes (TP)

### 5.1 Introduction

#### 5.1.1 TP naming convention

**Table 1: TP identifier naming convention scheme**

Identifier: <iut>_<protocol>_<process>_<type>_<nn>		
<iut>	= type of IUT	TE = terminal or endpoint GK, DGK
<protocol>		RAS or BCC
<process>		if RAS: GDR, REG, URG or RIP if BCC: PHA or PHE
<type>		V, I or S
<nn>	= sequential number	(01-99)

#### 5.1.2 State Definitions

##### 5.1.2.1 State definition for BCC

For the BCC protocol, the call states of ITU-T Recommendation Q.931 [5] for the user side are followed.

#### 5.1.3 TP structure

Each TP has been written in a manner, which is consistent with all other TPs. The intention of this is to make the TPs more readable and checkable. A particular structure has been used and this is illustrated in table 2. This table should be read in conjunction with any TP, i.e. use a TP as an example to fully understand the table.

**Table 2: Structure of a single TP for H.225**

TP part	Text	Example
Header	<Identifier> tab <paragraph number in base ETS>	TE_RAS_GDR_I_01 (see table 1) clause 0.0.0
Stimulus	Ensure that the IUT <state> <message already sent> <trigger> <i>see below for message structure</i> or <goal>	in the idle state having sent a XXX message on receipt of a YYY message to request a ...
Reaction	<action> <conditions> if the action is sending see below for message structure <next action>, etc.	sends, does, etc. ...
Message structure	<message type> message containing a a) <message element> b) <information element> or <filed code> encoded as <i>or</i> including <coding of the field> and <i>back to a or b</i> ,	GRQ, RRQ, SETUP, FACILITY, CONNECT, ... RasAddress, callServices, ... Bearer capability, Facility, ...
NOTE:	Text in italics will not appear in TPs and text between <> is filled in for each TP and may differ from one TP to the next.	

## 5.1.4 Test strategy

As the base standard ITU-T Recommendation H.225.0 [3] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the corresponding PICS proforma.

The TPs are only based on conformance requirements related to the externally observable behaviour of the IUT, over the TCP or UDP interface, and are limited to conceivable situations to which a real implementation is likely to be faced.

As indicated by the existence of the part 3 of this multi-part standard [9] (see foreword), the intention is to derive the test purposes to an abstract test suite in TTCN. Consequently the test purposes are written in a manner, which fit the TTCN methodology, and will consist of the textual documentation of the test cases.

## 5.2 TPs for H.225

All PICS items referred to in this clause are as specified in TS 101 804-1 [4].

Unless specified otherwise, the messages indicated are valid and contain at least the mandatory parameters and possibly optional parameters.

### 5.2.1 RAS

#### 5.2.1.1 Endpoint (TE)

##### 5.2.1.1.1 Gatekeeper discovery request (GDR)

NOTE: When multicast or unicast is not specified, both modes are accepted for GRQ message.

**Selection:** IUT supports Discovery messages, PICS T\_RM1

##### **RAS\_TE\_GDR\_V\_01 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT having sent a valid GRQ message in unicast mode, with the gatekeeper Identifier set to a value other than NULL, on receipt of a GCF message, considers to have completed the GKDiscovery procedure successfully.

##### **RAS\_TE\_GDR\_V\_02 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT having sent a valid GRQ message in multicast mode to the well-known Discovery Multicast Address and gatekeeperIdentifier missing or set to NULL, on receipt of a GCF message, considers to have completed its GKDiscovery procedure successfully.

##### **RAS\_TE\_GDR\_V\_03 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT having sent a valid GRQ message in multicast mode to the well-known Discovery Multicast Address and with gatekeeperIdentifier missing or set to NULL, on receipt of multiple GCF message from different gatekeepers, considers to have completed its GKDiscovery procedure successfully with one of them.

##### **RAS\_TE\_GDR\_V\_04 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT having sent a valid GRQ message, on receipt of a GRJ message with a value in the rejectreason field, does not consider to have completed its GKDiscovery procedure successfully.

##### **RAS\_TE\_GDR\_V\_05 clause 7.2.1 [2], clause 7.8 [3], clause 7.19 [3]**

Ensure that the IUT having sent a GRQ message, upon the first expiry of default timer for GRQ message, sends the same GRQ message again.

##### **RAS\_TE\_GDR\_V\_06 clause 7.2.1 [2], clause 7.8 [3], clause 7.19 [3]**

Ensure that the IUT having sent a GRQ message for the second time, on receipt of GCF message before the expiry of timer for a GRQ message, considers to have completed its GKDiscovery procedure successfully.

**RAS\_TE\_GDR\_V\_07 clause 7.2.1 [2], clause 7.8 [3], clause 7.19 [3]**

Ensure that the IUT having already sent a GRQ message for two times, on the expiry of timer for a GRQ message, does not send the same GRQ again.

**5.2.1.1.2 Registration Phase (REG)****RAS\_TE\_REG\_V\_01 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT before attempting a call, sends a RRQ message.

**RAS\_TE\_REG\_V\_02 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT, having completed the GKDiscovery procedure, before attempting a call, sends a RRQ message with discoveryComplete field set to TRUE.

**RAS\_TE\_REG\_V\_03 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT having sent a valid RRQ message on receipt of a RCF message, considers to have completed its Registration procedure successfully.

**RAS\_TE\_REG\_V\_04 clause 7.2.1 [2], clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT having sent a valid RRQ message on receipt of a RRJ message, restarts a gatekeeper discovery procedure.

**RAS\_TE\_REG\_V\_05 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT which is able to supply Q.931 IRR message when requested sends a RRQ message with the withsupplyUUIE element set to TRUE and on receipt of a RCF message with the alias address for the endpoint, considers to have completed its Registration procedure successfully.

**RAS\_TE\_REG\_V\_06 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT which is not already discovered the Gatekeeper, having sent a RRQ message with the discovery element set to FALSE on receipt of a RCF message, considers to have completed its Registration procedure successfully.

**RAS\_TE\_REG\_V\_07 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT which is not already discovered the Gatekeeper, having sent a RRQ message with the discovery element set to FALSE on receipt of a RRJ message with the reason code of discovery required, starts a gatekeeper discovery procedure.

**RAS\_TE\_REG\_V\_08 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT whose registration has aged out, having sent a RRQ message with the discovery element set to FALSE on receipt of a RRJ message with the reason code of discovery required, starts a gatekeeper discovery procedure.

**RAS\_TE\_REG\_V\_09 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT having sent a RRQ on receipt of a RRJ message with the reason alias address already registered, sends a GRQ message again with a different alias address.

**RAS\_TE\_REG\_V\_10 clause 7.2.2 [2], clause 7.9 [3], clause 7.19 [3]**

Ensure that the IUT having sent a RRQ message, upon the first expiry of timer for a RRQ message, sends a RRQ message again.

**RAS\_TE\_REG\_V\_11 clause 7.2.2 [2], clause 7.9 [3], clause 7.19 [3]**

Ensure that the IUT having sent a RRQ message for the second time, on receipt of RCF message before the expiry of timer for a RRQ message, considers to have completed its Registration procedure successfully.

**RAS\_TE\_REG\_V\_12 clause 7.2.2 [2], clause 7.9 [3], clause 7.19 [3]**

Ensure that the IUT having already sent a RRQ message for two times, upon the second expiry of timer for a RRQ message, does not send a RRQ message.

### 5.2.1.1.3 Unregistration Phase (URG)

NOTE: The IUT needs to have completed the registration procedure successfully for executing the following Test purposes.

**RAS\_TE\_URG\_V\_01 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT having sent a valid URQ message on receipt of an UCF, considers to be unregistered.

**RAS\_TE\_URG\_V\_02 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT, on receipt of a valid URQ message, sends an UCF message and considers to be unregistered.

**RAS\_TE\_URG\_V\_03 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT which is not registered, on receipt of a valid URQ message, sends an URJ with the reason for rejection in the reject reason field as notCurrentlyRegistered.

**RAS\_TE\_URG\_V\_04 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT, when the call is active, on receipt of a valid URQ message, sends an URJ with the reason for rejection in the reject reason as callInProgress.

**RAS\_TE\_URG\_V\_05 clause 7.2.2 [2], clause 7.10 [3], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, upon the first expiry of the timer for a URQ message, sends the same URQ message again.

**RAS\_TE\_URG\_V\_06 clause 7.2.2 [2], clause 7.10 [3], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message for the second time, on receipt of an UCF message before the expiry of the timer for a URQ message, considers to be unregistered.

**RAS\_TE\_URG\_V\_07 clause 7.2.2 [2], clause 7.10 [3], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message for two times, upon the expiry of the timer for a URQ message, does not send the same URQ message again.

**RAS\_TE\_URG\_V\_08 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT, having sent an URQ message on receipt of an URJ with the field altGKInfo, sends an URQ to a gatekeeperIdentifier from altGKInfo received in the URJ.

### 5.2.1.1.4 Request In Progress (RIP)

**RAS\_TE\_RIP\_V\_01 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid GRQ message in multicast mode, on receipt of a RIP message, restarts the timer and counter for the GRQ message.

**RAS\_TE\_RIP\_V\_02 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid GRQ message in multicast mode, upon the expiry of the RIP delay, sends a GRQ message again and restarts the timer.

**RAS\_TE\_RIP\_V\_03 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid GRQ message in multicast mode, on receipt of the GCF message before the expiry of the RIP delay, considers to have completed the GKDiscovery procedure successfully.

**RAS\_TE\_RIP\_V\_04 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid GRQ message in multicast mode, upon the first expiry of the RIP delay and on receipt of another RIP message, restarts the timer and counter for the GRQ message.

**RAS\_TE\_RIP\_V\_05 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid RRQ message, on receipt of a RIP message, restarts the timer and counter for the RRQ message.

**RAS\_TE\_RIP\_V\_06 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid RRQ message, upon the expiry of the RIP delay, sends a RRQ message again and restarts the timer.

**RAS\_TE\_RIP\_V\_07 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid RRQ message, on receipt of the RCF message before the expiry of the RIP delay, considers to have completed the Registration procedure successfully.

**RAS\_TE\_RIP\_V\_08 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid RRQ message, upon the first expiry of the RIP delay and on receipt of another RIP message, restarts the timer and counter for the RRQ message.

**RAS\_TE\_RIP\_V\_09 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, on receipt of a RIP message, restarts the timer and counter for the URQ message.

**RAS\_TE\_RIP\_V\_10 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, upon the expiry of the RIP delay, sends an URQ message again and restarts the timer.

**RAS\_TE\_RIP\_V\_11 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, on receipt of the UCF message before the expiry of the RIP delay, considers to be unregistered.

**RAS\_TE\_RIP\_V\_12 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, upon the first expiry of the RIP delay, sends an URQ message and on receipt of another RIP message, restarts the timer and counter for the URQ message.

## 5.2.1.2 Gatekeeper

### 5.2.1.2.1 Gatekeeper discovery request (GDR)

**RAS\_GK\_GDR\_V\_01 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT on receipt of a valid GRQ message in unicast mode, with the gatekeeper Identifier set to a value other than NULL, when it wants this endpoint to register with it, sends a GCF message.

**RAS\_GK\_GDR\_V\_02 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT on receipt of a valid GRQ message in multicast mode to the well-known Discovery Multicast Address and gatekeeperIdentifier missing or set to NULL, when it wants this endpoint to register with it, sends a GCF message.

**RAS\_GK\_GDR\_V\_03 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT on receipt of a GRQ message in unicast mode, when it does not want this endpoint to register with it, sends a GRJ message.

**RAS\_GK\_GDR\_V\_04 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT on receipt of a GRQ message in multicast mode, when it does not want this endpoint to register with it, sends no answer.

**RAS\_GK\_GDR\_V\_05 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT on receipt of a GRQ message concerning an endpoint having already discovered it, sends a GCF message.

**RAS\_GK\_GDR\_V\_06 clause 7.2.1 [2], clause 7.8 [3]**

Ensure that the IUT on receipt of a GRQ message concerning an endpoint having already registered, sends a GCF message.

### 5.2.1.2.2 Registration Phase (REG)

**RAS\_GK\_REG\_V\_01 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of a valid RRQ message, when it wants this endpoint to register with it, sends a RCF message.

**RAS\_GK\_REG\_V\_02 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of a valid RRQ message, when it does not want this endpoint to register with it, sends a RRJ message.

**RAS\_GK\_REG\_V\_03 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of a RRQ message with the willsupplyUUIE element set to TRUE, sends a RCF message.

**RAS\_GK\_REG\_V\_04 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of a RRQ message with the discovery element set to TRUE immediately after completing GKDiscovery procedure, sends a RCF message.

**RAS\_GK\_REG\_V\_05 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of a RRQ message, sends a RCF message without the timetoLive value indicating that the Gatekeeper does not support KeepAlive mechanism.

**RAS\_GK\_REG\_V\_06 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of a RRQ message, sends a RCF message with the timetoLive value indicating that the Gatekeeper supports KeepAlive mechanism.

**RAS\_GK\_REG\_V\_07 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of a RRQ message from the Endpoint which is already registered to this gatekeeper with the KeepAlive element set to TRUE before the expiry of the timetolive timer, sends a RCF message.

**RAS\_GK\_REG\_V\_08 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT, which has not already discovered the Gatekeeper, on receipt of a RRQ message with the discovery element set to FALSE, sends a RRJ message with the reason code of discovery required.

**RAS\_GK\_REG\_V\_09 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT, on receipt of a lightweight RRQ message before the expiration of the time-to live, reset the time to live timer.

**RAS\_GK\_REG\_V\_10 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT, on receipt of a full RRQ message after the expiration of the time-to live, sends a RCF message.

**RAS\_GK\_REG\_V\_11 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of a lightweight RRQ message after the time-to-live has expired, sends a RRJ message with the reason code fullRegistrationRequired or discovery required.

**RAS\_GK\_REG\_V\_12 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the IUT on receipt of an ARQ message after the time-to-live has expired, sends an ARJ message with the reject reason callerNotRegistered or CalledPartyNotRegistered.

**RAS\_GK\_REG\_V\_13 clause 7.2.2 [2], clause 7.9 [3]**

Ensure that the on receipt of a RRQ message with the alias address of an endpoint which is already registered with a different transport address, sends a RRJ message.

### 5.2.1.2.3 Unregistration Phase (URG)

**RAS\_GK\_URG\_V\_01 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT on receipt of a valid URQ message,  
sends an UCF.

**RAS\_GK\_URG\_V\_02 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT on receipt of a URQ message from an Endpoint which is not registered,  
sends an URJ.

**RAS\_GK\_URG\_V\_03 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT on receipt of an URQ message when the call is active,  
sends a URJ with the reason for rejection in the reject reason as callInProgress.

**RAS\_GK\_URG\_V\_04 clause 7.2.2 [2], clause 7.10 [3]**

Ensure that the IUT having sent an URQ message to the Endpoint on receipt of a UCF message,  
considers that the terminal is not registered any more.

**RAS\_GK\_URG\_V\_05 clause 7.2.3 [2], clause 7.13 [3], clause 7.19 [3]**

Ensure that the IUT having sent a URQ message, upon the first expiry of default timer for a URQ message,  
sends the same URQ message again.

**RAS\_GK\_URG\_V\_06 clause 7.2.3 [2], clause 7.13 [3], clause 7.19 [3]**

Ensure that the IUT having sent a URQ message for the second time, on receipt of UCF message before the second  
expiry of timer for a URQ message,  
considers that the terminal is not registered any more.

**RAS\_GK\_URG\_V\_07 clause 7.2.3 [2], clause 7.13 [3], clause 7.19 [3]**

Ensure that the IUT having already sent a URQ message for two times, upon the second expiry of timer for a URQ  
message,  
does not send the URQ message again.

### 5.2.1.2.4 Request In Progress (RIP)

**RAS\_GK\_RIP\_V\_01 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, on receipt of a RIP message,  
restarts the timer and counter for the URQ message.

**RAS\_GK\_RIP\_V\_026 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, upon the expiry of the RIP delay,  
sends a URQ message again and restarts the timer.

**RAS\_GK\_RIP\_V\_03 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, on receipt of the UCF message before the expiry of the RIP  
delay,  
considers that the terminal is not registered any more.

**RAS\_GK\_RIP\_V\_04 clause 7.2 [2], clause 7.19 [3]**

Ensure that the IUT having sent a valid URQ message, upon the first expiry of the RIP delay, sends an URQ and on  
receipt of another RIP message,  
restarts the timer and counter for the URQ message.

## 5.2.2 BCC

### 5.2.2.1 Endpoint (TE)

#### 5.2.2.1.1 PHA - Call setup

##### 5.2.2.1.1.1 Valid

##### **BCC\_TE\_PHA\_V\_01 clauses 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

##### **BCC\_TE\_PHA\_V\_02 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the sourceAddress field with an E.164 type AliasAddress, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

##### **BCC\_TE\_PHA\_V\_03 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the sourceAddress field with a H323-ID type AliasAddress, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

##### **BCC\_TE\_PHA\_V\_04 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the sourceAddress field with an URL-ID type AliasAddress, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

##### **BCC\_TE\_PHA\_V\_05 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the sourceAddress field with a transportID type AliasAddress, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

##### **BCC\_TE\_PHA\_V\_06 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the sourceAddress field with an email-ID type AliasAddress, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

##### **BCC\_TE\_PHA\_V\_07 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the sourceAddress field with a partyNumber type AliasAddress, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

##### **BCC\_TE\_PHA\_V\_08 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the destinationAddress field with an E.164 type AliasAddress, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

##### **BCC\_TE\_PHA\_V\_09 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the destinationAddress field with a H323-ID type AliasAddress, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.



**BCC\_TE\_PHA\_V\_10 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the destinationAddress field with an URL-ID type AliasAddress,  
sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_V\_11 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the destinationAddress field with a transportID type AliasAddress,  
sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_V\_12 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the destinationAddress field with an email-ID type AliasAddress,  
sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_V\_13 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP containing an User-to-user information element including the destinationAddress field with a partyNumber type AliasAddress,  
sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_V\_14 clauses 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing the called party number information element including a valid Numbering plan identification other than '1001',  
sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_V\_15 clauses 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, to establish a call,  
sends a SETUP message and enters the Call Initiated call state U1.

**BCC\_TE\_PHA\_V\_16 clauses 8.1.5, 8.1.6 [2], clause 7.3.2[3], figure A.2 annex A [4]**

Ensure that the IUT in the Call Initiated call state U1, on receipt of a CALL PROCEEDING,  
sends no message and enters the Outgoing Call Proceeding call state U3.

**BCC\_TE\_PHA\_V\_17 clauses 8.1.5, 8.1.6 [2], clause 7.3.1[3], figure A.2 annex A [4]**

Ensure that the IUT in the Call Initiated call state U1, on receipt of a ALERTING message,  
sends no message and enters the Call delivered call state U4.

**BCC\_TE\_PHA\_V\_18 clauses 8.1.5, 8.1.6 [2], clause 7.3.3 [3], figure A.2 annex A [4]**

Ensure that the IUT in the Call Initiated call state U1, on receipt of a CONNECT message,  
sends no message and enters the Active call state U10.

**BCC\_TE\_PHA\_V\_19 clauses 8.1.5, 8.1.6 [2], clause 7.5 [3]**

Ensure that the IUT in the Call Initiated call state U1, on the first expiry of the timer T303,  
sends a SETUP message and remains in the Call Initiated call state U1.

**BCC\_TE\_PHA\_V\_20 clauses 8.1.5, 8.1.6 [2], clause 7.5 [3]**

Ensure that the IUT in the Call Initiated call state U1, on the second expiry of the timer T303,  
sends a RELEASE COMPLETE message containing either a Cause information element indicating the cause value 102 "recovery on timer expiry"; or an User-to-user information element including the reason field indicating why the call was released and enters the Null call state U0.

**BCC\_TE\_PHA\_V\_21 clauses 8.1.5, 8.1.6 [2], clause 7.3.2 [3], figure A.2[4]**

Ensure that the IUT in the Overlap Sending call state U2, on receipt of a CALL PROCEEDING message,  
sends no message and enters the Outgoing Call Proceeding call state U3.

**Selection:** Supports Overlap Sending PICS: T\_SC 6.

**BCC\_TE\_PHA\_V\_22** clauses 8.1.5, 8.1.6 [2], clause 7.3.1 [3], figure A.2 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of an ALERTING message, sends no message and enters the Call Delivered call state U4.

**Selection:** Supports Overlap Sending PICS: T\_SC 6.

**BCC\_TE\_PHA\_V\_23** clauses 8.1.5, 8.1.6 [2], clause 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of a CONNECT message, sends no message and enters the Active call state U10.

**Selection:** Supports Overlap Sending PICS: T\_SC 6.

**BCC\_TE\_PHA\_V\_24** clauses 8.1.5, 8.1.6 [2], clause 7.3.1[3], figure A.2 [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a ALERTING message, sends no message and enters the Call delivered call state U4.

**BCC\_TE\_PHA\_V\_25** clauses 8.1.5, 8.1.6 [2], clause 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a CONNECT message, sends no message and enters the Active call state U10.

**BCC\_TE\_PHA\_V\_26** clauses 8.1.5, 8.1.6 [2], clause 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Call delivered call state U4, on receipt of a CONNECT message, sends no message and enters the Active call state U10.

**BCC\_TE\_PHA\_V\_27** clauses 8.1.5, 8.1.6 [2], clause 7.5 [3]

Ensure that the IUT in the Call Delivered call state U4, on the expiry of the timer T301, sends a RELEASE COMPLETE message containing either a Cause information element indicating the cause value 102 "recovery on timer expiry"; or an User-to-user information element including the reason field indicating why the call was released and enters the Null call state U0.

**BCC\_TE\_PHA\_V\_28** clauses 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.9 [3], clause 5.1.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message during an all channels busy condition, sends a RELEASE COMPLETE message containing either  
a Cause information element indicating the cause value 34 "No circuit/channel available " and remains in the Null call state U0;

or

a User-to-user information element including the reason field indicating the code noBandwidth and remains in the Null call state U0.

**Selection:** Endpoint is a Gateway PICS: TR 3.

## 5.2.2.1.1.2 Inopportune

**BCC\_TE\_PHA\_I\_01** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3]

Ensure that the IUT in the Null call state U0, on receipt of a message containing an unknown message type information element,

sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_I\_02** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing a Call state information element indicating a call state other than the Null call state,

sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_I\_03** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing a Call state information element indicating the Null call state,

sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_I\_04** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing the global call reference and a Call state information element indicating a call state other than the Null call state,

sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_I\_05** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], figure A.3 [4]

Ensure that the IUT in the Call Initiated call state U1, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHA\_I\_06** clauses 8.1.5, 8.1.6 [2], clause 7.1[3], figure A.3 [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHA\_I\_07** clauses 8.1.5, 8.1.6 [2], clause 7.1[3], figure A.3 [4]

Ensure that the IUT in the Call delivered call state U4, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHA\_I\_08** clauses 8.1.5, 8.1.6 [2], clause 7.1[3], figure A.3 [4]

Ensure that the IUT in the Call Received call state U7, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**Selection:** Supports sending of ALERTING PICS: T\_BM 1.

**BCC\_TE\_PHA\_I\_09** clauses 8.1.5, 8.1.6 [2], clause 7.1[3], figure A.3 [4]

Ensure that the IUT in the Call Proceeding call state U9, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**Selection:** Supports sending of CALL PROCEEDING PICS: T\_BM 2.

## 5.2.2.1.1.3 Syntactically invalid

**BCC\_TE\_PHA\_S\_01** clauses 8.1.5, 8.1.6 [2], clause 7.2.1.1 [3], clause 5.8.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an erroneous protocol discriminator information element, coded other than '08'H, sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_S\_02** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a message which is too short to contain a complete message type information element, sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_S\_03** clauses 8.1.5, 8.1.6 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing all mandatory information elements but containing an invalid call reference information element format (octet 1, bits 8 – 5 ≠ '0000'B), sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_S\_04** clauses 8.1.5, 8.1.6 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an invalid call reference information element format (octet 1, bits 4 to 1, length too high), sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_S\_05** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clauses 5.8.5.1, 5.8.6.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a mandatory information element out of sequence, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_S\_06** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.5.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a non-mandatory information element out of sequence, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_S\_07** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.6.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message with a mandatory information element missing, sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_S\_08** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.6.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a mandatory information element with content error,

sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_S\_09** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.7.1, 5.8.6.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an unrecognized information element (coded comprehension required),

sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_S\_10** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.7.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an unrecognized information element (coded comprehension not required),

sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_S\_11** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.7.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a non-mandatory information element with content error,

sends any of a CALL PROCEEDING, ALERTING or CONNECT message and enters the relevant call state Incoming Call Proceeding U9, Call Received U7 or Active call state U10.

**BCC\_TE\_PHA\_S\_12** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing the dummy call reference,

sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_S\_13** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.3.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a call reference flag bit set to 1,

sends no message and remains in the Null call state U0.

**BCC\_TE\_PHA\_S\_14** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.6.1 [4]

Ensure that the IUT in the Call Initiated call state U1, on receipt of a CALL PROCEEDING message with a mandatory information element missing,

sends no message and enters the Outgoing Call Proceeding call state U3.

**BCC\_TE\_PHA\_S\_15** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3], clause 5.8.6.1 [4]

Ensure that the IUT in the Call Initiated call state U1, on receipt of a ALERTING message with a mandatory information element missing,

sends no message and enters the Call Delivered call state U4.

## 5.2.2.1.2 PHE - Call termination

## 5.2.2.1.2.1 Valid

**BCC\_TE\_PHE\_V\_01** clause 8.5 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message,

closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHE\_V\_02** clause 8.5 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, to release the call,

sends a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

## 5.2.2.1.2.2 Inopportune

**BCC\_TE\_PHE\_I\_01** clauses 8.1.5, 8.1.6 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a message containing an unknown message type information element,

sends no message and remains in the Active call state U10.

### 5.2.2.1.2.3 Syntactically invalid

**BCC\_TE\_PHE\_S\_01** clause 8.5 [2], clause 7.2.1.1 [3], clause 5.8.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an erroneous protocol discriminator information element, coded other than '08'H,  
sends no message and remains in the Active call state U10.

**BCC\_TE\_PHE\_S\_02** clause 8.5 [2], clause 7.1 [3], clause 5.8.2 [4]

Ensure that the IUT in the Active call state U10, on receipt of a message which is too short to contain a complete message type information element,  
sends no message and remains in the Active call state U10.

**BCC\_TE\_PHE\_S\_03** clause 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an invalid call reference information element format (octet 1, bits 8 – 5 ≠ '0000'B),  
sends no message and remains in the Active call state U10.

**BCC\_TE\_PHE\_S\_04** clause 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an invalid call reference information element format (octet 1, bits 4 to 1, length too high),  
sends no message and remains in the Active call state U10.

**BCC\_TE\_PHE\_S\_05** clause 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing the dummy call reference,  
sends no message and remains in the Active call state U10.

**BCC\_TE\_PHE\_S\_06** clause 8.5 [2], clause 7.1 [3], clauses 5.8.5.1, 5.8.6.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing a mandatory information element out of sequence,  
closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHE\_S\_07** clause 8.5 [2], clause 7.1 [3], clause 5.8.5.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing a non-mandatory information element out of sequence,  
closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHE\_S\_08** clause 8.5 [2], clause 7.1 [3], clause 5.8.6.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message with a mandatory information element missing,  
closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHE\_S\_09** clause 8.5 [2], clause 7.1 [3], clause 5.8.6.2 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing a mandatory information element with content error,  
closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHE\_S\_10** clause 8.5 [2], clause 7.1 [3], clauses 5.8.7.1, 5.8.6.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an unrecognized information element (coded comprehension required),  
closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHE\_S\_11** clause 8.5 [2], clause 7.1 [3], clause 5.8.7.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an unrecognized information element (coded comprehension not required),  
closes call signalling channel and enters the Null call state U0.

**BCC\_TE\_PHE\_S\_12** clause 8.5 [2], clause 7.1 [3], clause 5.8.7.2 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing a non-mandatory information element with content error,  
closes call signalling channel and enters the Null call state U0.

## 5.2.2.2 Gatekeeper (GK)

### 5.2.2.2.1 Phase A - Call setup

#### 5.2.2.2.1.1 Valid

##### **BCC\_GK\_PHA\_V\_01 clauses 6.4, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, after admission procedure is finished, on receipt of a SETUP message, from the calling endpoint,

enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint

and

sends a SETUP message, to the Destination Gatekeeper and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

##### **BCC\_GK\_PHA\_V\_02 clauses 6.4, 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, after admission procedure is finished, on receipt of a SETUP message, from the calling endpoint, containing an User-to-user information element including the destinationAddress field with an E.164 type AliasAddress,

enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint

and

sends a SETUP message, to the Destination Gatekeeper and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

##### **BCC\_GK\_PHA\_V\_03 clauses 6.4, 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, after admission procedure is finished, on receipt of a SETUP message, from the calling endpoint, containing an User-to-user information element including the destinationAddress field with an H323-ID type AliasAddress,

enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint

and

sends a SETUP message, to the Destination Gatekeeper and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

##### **BCC\_GK\_PHA\_V\_04 clauses 6.4, 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, after admission procedure is finished, on receipt of a SETUP message, from the calling endpoint, containing an User-to-user information element including the destinationAddress field with an URL-ID type AliasAddress,

enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint

and

sends a SETUP message, to the Destination Gatekeeper and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

##### **BCC\_GK\_PHA\_V\_05 clauses 6.4, 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, after admission procedure is finished, on receipt of a SETUP message, from the calling endpoint, containing an User-to-user information element including the destinationAddress field with an transportID type AliasAddress,

enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint

and

sends a SETUP message, to the Destination Gatekeeper and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_V\_06 clauses 6.4, 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, after admission procedure is finished, on receipt of a SETUP message, from the calling endpoint, containing an User-to-user information element including the destinationAddress field with an email-ID type AliasAddress,

enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint

and

sends a SETUP message, to the Destination Gatekeeper and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_V\_07 clauses 6.4, 7.1.3, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, after admission procedure is finished, on receipt of a SETUP message, from the calling endpoint, containing an User-to-user information element including the destinationAddress field with an partyNumber type AliasAddress,

enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint

and

sends a SETUP message, to the Destination Gatekeeper and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_V\_08 clauses 6.4, 8.1.5, 8.1.6 [2], clauses 7.1, 7.3.10 [3]**

Ensure that the IUT in the Null call state U0, after admission procedure is finished, on receipt of a SETUP message, from the calling endpoint, containing the called party number information element including a valid Numbering plan identification other than '1001',

enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint

and

sends a SETUP message, to the Destination Gatekeeper and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_V\_09 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.2[3], figure A.2 [4]**

Ensure that the IUT in the Call Initiated call state U1, on receipt of a CALL PROCEEDING message, from the destination Gatekeeper,

sends no message and enters the Outgoing Call Proceeding call state U3.

**BCC\_GK\_PHA\_V\_10 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.1[3], figure A.2 [4]**

Ensure that the IUT in the Call Initiated call state U1, on receipt of a ALERTING message, from the destination Gatekeeper,

enters the Call Delivered call state U4 in the interface with the destination Gatekeeper

and

optionally sends the ALERTING message to the calling endpoint and enters the Call Received call state U7 in the interface with the calling endpoint.

**BCC\_GK\_PHA\_V\_11 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.3 [3], figure A.2 [4]**

Ensure that the IUT in the Call Initiated call state U1, on receipt of a CONNECT message, from the destination Gatekeeper,

enters the Active call state U10 in the interface with the destination Gatekeeper

and

sends the CONNECT message to the calling endpoint and enters the Active call state U10 in the interface with the calling endpoint.

**BCC\_GK\_PHA\_V\_12 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.5 [3], figure A.2 [4]**

Ensure that the IUT in the Call Initiated call state U1, on the first expiry of the timer T303,

sends a SETUP message and remains in the Call Initiated call state U1.

**BCC\_GK\_PHA\_V\_13** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.5 [3], figure A.2 [4]

Ensure that the IUT in the Call Initiated call state U1, on the second expiry of the timer T303, sends a RELEASE COMPLETE message containing either a Cause information element indicating the cause value 102 "recovery on timer expiry"; or an User-to-user information element including the reason field indicating why the call was released and enters the Null call state U0.

**BCC\_GK\_PHA\_V\_14** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1, 7.3.2 [3], figure A.2 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of a CALL PROCEEDING message, from the destination Gatekeeper, sends no message and enters the Outgoing Call Proceeding call state U3.

**BCC\_GK\_PHA\_V\_15** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.1 [3], figure A.2 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of an ALERTING message, from the destination Gatekeeper,

enters the Call delivered call state U4 in the interface with the destination Gatekeeper

and

optionally sends the ALERTING message to the calling endpoint and enters the Call received call state U7 in the interface with the calling endpoint.

**BCC\_GK\_PHA\_V\_16** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of a CONNECT message, from the destination Gatekeeper,

enters the Active call state U10 in the interface with the destination Gatekeeper

and

sends the CONNECT message to the calling endpoint and enters the Active call state U10 in the interface with the calling endpoint.

**BCC\_GK\_PHA\_V\_17** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.1[3], figure A.2 [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a ALERTING message, from the destination Gatekeeper,

enters the Call delivered call state U4 in the interface with the destination Gatekeeper

and

optionally sends the ALERTING message to the calling endpoint and enters the Call received call state U7 in the interface with the calling endpoint.

**BCC\_GK\_PHA\_V\_18** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a CONNECT message, from the destination Gatekeeper,

enters the Active call state U10 in the interface with the destination Gatekeeper

and

sends the CONNECT message to the calling endpoint and enters the Active call state U10 in the interface with the calling endpoint.

**BCC\_GK\_PHA\_V\_19** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Call delivered call state U4, on receipt of a CONNECT message, from the destination Gatekeeper,

enters the Active call state U10 in the interface with the destination Gatekeeper

and

sends the CONNECT message to the calling endpoint and enters the Active call state U10 in the interface with the calling endpoint.



## 5.2.2.2.1.2 Inopportune

**BCC\_GK\_PHA\_I\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3]

Ensure that the IUT in the Null call state U0, on receipt of a message containing an unknown message type information element, from the calling endpoint,  
sends no message to the calling endpoint and remains in the Null call state U0.

**BCC\_GK\_PHA\_I\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3]

Ensure that the IUT in the Null call state U0, on receipt of a message containing an unknown message type information element, from the destination Gatekeeper,  
sends no message to the destination Gatekeeper and remains in the Null call state U0.

**BCC\_GK\_PHA\_I\_03** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing a Call state information element indicating a call state other than the Null call state,  
sends no message and remains in the Null call state U0.

**BCC\_GK\_PHA\_I\_04** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing a Call state information element indicating the Null call state,  
sends no message and remains in the Null call state U0.

**BCC\_GK\_PHA\_I\_05** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing the global call reference and a Call state information element indicating a call state other than the Null call state,  
sends no message and remains in the Null call state U0.

**BCC\_GK\_PHA\_I\_06** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], figure A.3 annex A [4]

Ensure that the IUT in the Call Initiated call state U1, on receipt of a RELEASE COMPLETE message,  
closes call signalling channel and enters the Null call state U0.

**BCC\_GK\_PHA\_I\_07r** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], figure A.3 annex A [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of a RELEASE COMPLETE message,  
closes call signalling channel and enters the Null call state U0.

**BCC\_GK\_PHA\_I\_08** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], figure A.3 annex A [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a RELEASE COMPLETE message,  
closes call signalling channel and enters the Null call state U0.

**BCC\_GK\_PHA\_I\_09** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], figure A.3 annex A [4]

Ensure that the IUT in the Call delivered call state U4, on receipt of a RELEASE COMPLETE message,  
closes call signalling channel and enters the Null call state U0.

**BCC\_GK\_PHA\_I\_10** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], figure A.3 annex A [4]

Ensure that the IUT in the Call Received call state U7, on receipt of a RELEASE COMPLETE message,  
closes call signalling channel and enters the Null call state U0.

**Selection:** Supports sending of ALERTING PICS: T\_BM 1.

**BCC\_GK\_PHA\_I\_11** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], figure A.3 annex A [4]

Ensure that the IUT in the Call Proceeding call state U9, on receipt of a RELEASE COMPLETE message,  
closes call signalling channel and enters the Null call state U0.

**Selection:** Supports sending of CALL PROCEEDING PICS: T\_BM 2.

## 5.2.2.2.1.3 Syntactically Invalid

**BCC\_GK\_PHA\_S\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.2.1.1 [3], clause 5.8.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an erroneous protocol discriminator information element, coded other than '08'H,  
sends no message and remains in the Null call state U0.

**BCC\_GK\_PHA\_S\_02 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.2 [4]**

Ensure that the IUT in the Null call state U0, on receipt of a message which is too short to contain a complete message type information element,

sends no message and remains in the Null call state U0.

**BCC\_GK\_PHA\_S\_03 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an invalid call reference information element format (octet 1, bits 8 – 5 ≠ '0000'B),

sends no message and remains in the Null call state U0.

**BCC\_GK\_PHA\_S\_04 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an invalid call reference information element format (octet 1, bits 4 to 1, length too high),

sends no message and remains in the Null call state U0.

**BCC\_GK\_PHA\_S\_05 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.5.1, 5.8.6.1 [4]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a mandatory information element out of sequence, from the calling endpoint,

enters the Call Present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint;

and

sends a SETUP message, to the Destination Gatekeeper, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_S\_06 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.5.1[4]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a non-mandatory information element out of sequence, from the calling endpoint,

enters the Call Present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint;

and

sends a SETUP message, to the Destination Gatekeeper, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_S\_07 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.6.1 [4]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message with a mandatory information element missing,

enters the Call Present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint;

and

sends a SETUP message, to the Destination Gatekeeper, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_S\_08 clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.6.2 [4]**

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a mandatory information element with content error,

enters the Call Present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint;

and

sends a SETUP message, to the Destination Gatekeeper, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_S\_09** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.7.1, 5.8.6.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an unrecognized information element (coded comprehension required),

enters the Call Present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint;

and

sends a SETUP message, to the Destination Gatekeeper, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_S\_10** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.7.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an unrecognized information element (coded comprehension not required),

enters the Call Present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint;

and

sends a SETUP message, to the Destination Gatekeeper, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_S\_11** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.7.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a non-mandatory information element with content error,

enters the Call Present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling endpoint;

and

sends a SETUP message, to the Destination Gatekeeper, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHA\_S\_12** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], clause 5.8.3.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing the dummy call reference, sends no message and remains in the Null call state U0.

**BCC\_GK\_PHA\_S\_13** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1[3], clause 5.8.3.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a call reference flag bit set to 1,

sends no message and remains in the Null call state U0.

## 5.2.2.2.2 Phase E - Call termination

## 5.2.2.2.2.1 Valid

**BCC\_GK\_PHE\_V\_01** clauses 6.4, 8.5 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message from the calling endpoint,

enters the Null call state U0 in the interface with the calling endpoint;

and

sends the RELEASE COMPLETE message to the destination Gatekeeper and enters in the Null call state U0 in the interface with the destination Gatekeeper.

**BCC\_GK\_PHE\_V\_02** clauses 6.4, 8.5 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message from the destination gatekeeper,

enters the Null call state U0 in the interface with the destination gatekeeper;

and

sends the RELEASE COMPLETE message to the calling endpoint and enters in the Null call state U0 in the interface with the calling endpoint.

**BCC\_GK\_PHE\_V\_03** clauses 6.4, 8.5 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, to release the call;

sends a RELEASE COMPLETE message and enters the Null call state U0.

## 5.2.2.2.2.2 Inopportune

**BCC\_GK\_PHE\_I\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a message containing an unknown message type information element, from the calling endpoint,

sends no message to the calling endpoint and remains in the Active call state U10.

**BCC\_GK\_PHE\_I\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a message containing an unknown message type information element, from the destination Gatekeeper,

sends no message to the destination Gatekeeper and remains in the Active call state U10.

## 5.2.2.2.2.3 Syntactically invalid

**BCC\_GK\_PHE\_S\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.2.1.1 [3], clause 5.8.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an erroneous protocol discriminator information element, coded other than '08'H,

sends no message and remains in the Active call state U10.

**BCC\_GK\_PHE\_S\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.2 [4]

Ensure that the IUT in the Active call state U10, on receipt of a message which is too short to contain a complete message type information element,

sends no message and remains in the Active call state U10.

**BCC\_GK\_PHE\_S\_03** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an invalid call reference information element format (octet 1, bits 8 – 5 ≠ '0000'B),

sends no message and remains in the Active call state U10.

**BCC\_GK\_PHE\_S\_04** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an invalid call reference information element format (octet 1, bits 4 to 1, length too high),

sends no message and remains in the Active call state U10.

**BCC\_GK\_PHE\_S\_05** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing the dummy call reference,

sends no message and remains in the Active call state U10.

**BCC\_GK\_PHE\_S\_06** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clauses 5.8.5.1, 5.8.6.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling endpoint, containing a mandatory information element out of sequence,

sends a RELEASE COMPLETE message to the destination Gatekeeper, and enters in the Null call state U0 in both interfaces.

**BCC\_GK\_PHE\_S\_07** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.5.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling endpoint, containing a non-mandatory information element out of sequence,

sends a RELEASE COMPLETE message to the destination Gatekeeper, and enters in the Null call state U0 in both interfaces.

**BCC\_GK\_PHE\_S\_08** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.6.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling endpoint, with a mandatory information element missing,

sends a RELEASE COMPLETE message to the destination Gatekeeper, and enters in the Null call state U0 in both interfaces.

**BCC\_GK\_PHE\_S\_09** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.6.2 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling endpoint, containing a mandatory information element with content error,

sends a RELEASE COMPLETE message to the destination Gatekeeper, and enters in the Null call state U0 in both interfaces.

**BCC\_GK\_PHE\_S\_10** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clauses 5.8.7.1, 5.8.6.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling endpoint, containing an unrecognized information element (coded comprehension required),

sends a RELEASE COMPLETE message to the destination Gatekeeper, and enters in the Null call state U0 in both interfaces.

**BCC\_GK\_PHE\_S\_11** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.7.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling endpoint, containing an unrecognized information element (coded comprehension not required),

sends a RELEASE COMPLETE message to the destination Gatekeeper, and enters in the Null call state U0 in both interfaces.

**BCC\_GK\_PHE\_S\_12** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.7.2 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling endpoint, containing a non-mandatory information element with content error,

sends a RELEASE COMPLETE message to the destination Gatekeeper, and enters in the Null call state U0 in both interfaces.

### 5.2.2.3 Destination GK (DGK)

#### 5.2.2.3.1 Phase A - Call setup

##### 5.2.2.3.1.1 Valid

**BCC\_DGK\_PHA\_V\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.10 [3]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message, from the calling Gatekeeper, enters the Call present call state U6; and optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling Gatekeeper;

and

sends a SETUP message, to the called endpoint, and enters the Call Initiated call state U1 in the interface with the called endpoint.

**BCC\_DGK\_PHA\_V\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.2 [3], figure A.2 [4]

Ensure that the IUT in the Call Initiated call state U1, on receipt of a CALL PROCEEDING message, from the called endpoint,

sends no message and enters the Outgoing Call Proceeding call state U3 in the interface with the called endpoint.

**BCC\_DGK\_PHA\_V\_03** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.1 [3], figure A.2 [4]

Ensure that the IUT in the Call Initiated call state U1, on receipt of a ALERTING message, from the called endpoint, enters the Call delivered call state U4 in the interface with the called endpoint;

and

optionally sends the ALERTING message to the calling Gatekeeper and enters the Call received call state U7 in the interface with the calling Gatekeeper.

**BCC\_DGK\_PHA\_V\_04** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Call Initiated call state U1, on receipt of a CONNECT message, from the called endpoint, enters the Active call state U10 in the interface with the called endpoint;

and

sends the CONNECT message to the calling Gatekeeper and enters the Active call state U10 in the interface with the calling Gatekeeper.

**BCC\_DGK\_PHA\_V\_05** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.5 [3], figure A.2 [4]

Ensure that the IUT in the Call Initiated call state U1, on the first expiry of the timer T303, sends a SETUP message and remains in the Call Initiated call state U1.

**BCC\_DGK\_PHA\_V\_06** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.5 [3], figure A.2 [4]

Ensure that the IUT in the Call Initiated call state U1, on the second expiry of the timer T303, sends a RELEASE COMPLETE message containing either a Cause information element indicating the cause value 102 "recovery on timer expiry"; or an User-to-user information element including the reason field indicating why the call was released and enters the Null call state U0.

**BCC\_DGK\_PHA\_V\_07** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.2 [3], figure A.2 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of a CALL PROCEEDING message, from the called endpoint,

sends no message and enters the Outgoing Call Proceeding call state U3.

**BCC\_DGK\_PHA\_V\_08** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.1 [3], figure A.2 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of an ALERTING message, from the called endpoint,

enters the Call delivered call state U4 in the interface with the called endpoint;

and

optionally sends the ALERTING message to the calling Gatekeeper and enters the Call received call state U7 in the interface with the calling Gatekeeper.

**BCC\_DGK\_PHA\_V\_09** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of a CONNECT message, from the called endpoint, enters the Active call state U10 in the interface with the called endpoint;

and

sends the CONNECT message to the calling Gatekeeper and enters the Active call state U10 in the interface with the calling Gatekeeper.

**BCC\_DGK\_PHA\_V\_10** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.1 [3], figure A.2 [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a ALERTING message, from the called endpoint,

enters the Call delivered call state U4 in the interface with the called endpoint;

and

optionally sends the ALERTING message to the calling Gatekeeper and enters the Call received call state U7 in the interface with the calling Gatekeeper.

**BCC\_DGK\_PHA\_V\_11** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a CONNECT message, from the called endpoint,

enters the Active call state U10 in the interface with the called endpoint;

and

sends the CONNECT message to the calling Gatekeeper and enters the Active call state U10 in the interface with the calling Gatekeeper.

**BCC\_DGK\_PHA\_V\_12** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clauses 7.1, 7.3.3 [3], figure A.2 [4]

Ensure that the IUT in the Call delivered call state U4, on receipt of a CONNECT message, from the called endpoint, enters the Active call state U10 in the interface with the called endpoint;

and

sends the CONNECT message to the calling Gatekeeper and enters the Active call state U10 in the interface with the calling Gatekeeper.

## 5.2.2.3.1.2 Inopportune

**BCC\_DGK\_PHA\_I\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3]

Ensure that the IUT in the Null call state U0, on receipt of a message, from the called endpoint, containing an unknown message type information element,

sends no message, to the called endpoint, and remains in the Null call state U0.

**BCC\_DGK\_PHA\_I\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3]

Ensure that the IUT in the Null call state U0, on receipt of a message, from the calling Gatekeeper, containing an unknown message type information element,

sends no message, to the calling Gatekeeper, and remains in the Null call state U0.

**BCC\_DGK\_PHA\_I\_03** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing a Call state information element indicating a call state other than the Null call state,

sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_I\_04** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing a Call state information element indicating the Null call state,

sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_I\_05** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clauses 5.8.3.2 g), 5.8.11 [4]

Ensure that the IUT in the Null call state U0, on receipt of a STATUS message containing the global call reference and a Call state information element indicating a call state other than the Null call state,

sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_I\_06** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], figure A.3 [4]

Ensure that the IUT in the Call Initiated call state U1, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**BCC\_DGK\_PHA\_I\_07** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], figure A.3 [4]

Ensure that the IUT in the Overlap Sending call state U2, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**BCC\_DGK\_PHA\_I\_08** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], figure A.3 [4]

Ensure that the IUT in the Outgoing Call Proceeding call state U3, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**BCC\_DGK\_PHA\_I\_09** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], figure A.3 [4]

Ensure that the IUT in the Call delivered call state U4, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**BCC\_DGK\_PHA\_I\_10** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], figure A.3 [4]

Ensure that the IUT in the Call Received call state U7, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**Selection:** Supports sending of ALERTING PICS: T\_BM 1.

**BCC\_DGK\_PHA\_I\_11** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], figure A.3 [4]

Ensure that the IUT in the Call Proceeding call state U9, on receipt of a RELEASE COMPLETE message, closes call signalling channel and enters the Null call state U0.

**Selection:** Supports sending of CALL PROCEEDING PICS: T\_BM 2.

## 5.2.2.3.1.3 Syntactically Invalid

**BCC\_DGK\_PHA\_S\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.2.1.1 [3], clause 5.8.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an erroneous protocol discriminator information element, coded other than '08'H,  
sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_S\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a message which is too short to contain a complete message type information element,  
sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_S\_03** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an invalid call reference information element format (octet 1, bits 8 – 5 ≠ '0000'B),  
sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_S\_04** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an invalid call reference information element format (octet 1, bits 4 to 1, length too high),  
sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_S\_05** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clauses 5.8.5.1, 5.8.6.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message, from the calling Gatekeeper, containing a mandatory information element out of sequence,

enters the Call present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling Gatekeeper;

and

sends a SETUP message, to the called endpoint, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the called endpoint.

**BCC\_DGK\_PHA\_S\_06** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.5.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a non-mandatory information element out of sequence,

enters the Call present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling Gatekeeper;

and

sends a SETUP message, to the called endpoint, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the called endpoint.

**BCC\_DGK\_PHA\_S\_07** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.6.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message with a mandatory information element missing,

enters the Call present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling Gatekeeper;

and

sends a SETUP message, to the called endpoint, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the called endpoint.



**BCC\_DGK\_PHA\_S\_08** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.6.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a mandatory information element with content error,

enters the Call present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling Gatekeeper;

and

sends a SETUP message, to the called endpoint, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the called endpoint.

**BCC\_DGK\_PHA\_S\_09** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clauses 5.8.7.1, 5.8.6.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an unrecognized information element (coded comprehension required),

enters the Call present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling Gatekeeper;

and

sends a SETUP message, to the called endpoint, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the called endpoint.

**BCC\_DGK\_PHA\_S\_10** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.7.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing an unrecognized information element (coded comprehension not required),

enters the Call present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling Gatekeeper;

and

sends a SETUP message, to the called endpoint, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the called endpoint.

**BCC\_DGK\_PHA\_S\_11** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.7.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a non-mandatory information element with content error,

enters the Call present call state U6; optionally sends a CALL PROCEEDING message and enters the Incoming Call Proceeding call state U9 in the interface with the calling Gatekeeper;

and

sends a SETUP message, to the called endpoint, containing the User-to-user information element including a TransportAddress in destCallSignalAddress field and enters the Call Initiated call state U1 in the interface with the called endpoint.

**BCC\_DGK\_PHA\_S\_12** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing the dummy call reference, sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_S\_13** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.3.2 [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing a call reference flag bit set to 1,

sends no message and remains in the Null call state U0.

**BCC\_DGK\_PHA\_S\_14** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3], clause 5.8.3.2 f) [4]

Ensure that the IUT in the Null call state U0, on receipt of a SETUP message containing the global call reference, sends a STATUS message, to the calling Gatekeeper, containing the global call reference and a Call state information element indicating the call state associated with the global call reference and a Cause information element indicating the cause value 81 "invalid call reference value" and remains in the Null call state U0.

### 5.2.2.3.2 Phase E - Call termination

#### 5.2.2.3.2.1 Valid

##### **BCC\_DGK\_PHE\_V\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message from the calling Gatekeeper,

enters the Null call state U0 in the interface with the calling Gatekeeper;

and

sends the RELEASE COMPLETE message to the called endpoint and enters in the Null call state U0 in the interface with the called endpoint.

##### **BCC\_DGK\_PHE\_V\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message from the called endpoint,

enters the Null call state U0 in the interface with the called endpoint;

and

sends the RELEASE COMPLETE message to the calling Gatekeeper and enters in the Null call state U0 in the interface with the calling Gatekeeper.

##### **BCC\_DGK\_PHE\_V\_03** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, to release the call;

executes the disengage procedure and enters the Null call state U0.

#### 5.2.2.3.2.2 Inopportune

##### **BCC\_DGK\_PHE\_I\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a message, from the called endpoint, containing an unknown message type information element,

sends no message to the called endpoint and remains in the Active call state U10.

##### **BCC\_DGK\_PHE\_I\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8 [2], clause 7.1 [3]

Ensure that the IUT in the Active call state U10, on receipt of a message, from the calling Gatekeeper, containing an unknown message type information element,

sends no message to the called endpoint and remains in the Active call state U10.

#### 5.2.2.3.2.3 Syntactically invalid

##### **BCC\_DGK\_PHE\_S\_01** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.2.1.1 [3], clause 5.8.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an erroneous protocol discriminator information element, coded other than '08'H,

sends no message and remains in the Active call state U10.

##### **BCC\_DGK\_PHE\_S\_02** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.2 [4]

Ensure that the IUT in the Active call state U10, on receipt of a message which is too short to contain a complete message type information element,

sends no message and remains in the Active call state U10.

##### **BCC\_DGK\_PHE\_S\_03** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing all mandatory information elements but containing an invalid call reference information element format (octet 1, bits 8 – 5 ≠ '0000'B),

sends no message and remains in the Active call state U10.

##### **BCC\_DGK\_PHE\_S\_04** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]

Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing an invalid call reference information element format (octet 1, bits 4 to 1, length too high),

sends no message and remains in the Active call state U10.

- BCC\_DGK\_PHE\_S\_05** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.2.1.2 [3], clause 5.8.3.1 [4]  
Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message containing the dummy call reference,  
sends no message and remains in the Active call state U10.
- BCC\_DGK\_PHE\_S\_06** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clauses 5.8.5.1, 5.8.6.1 [4]  
Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling Gatekeeper, containing a mandatory information element out of sequence,  
sends a RELEASE COMPLETE message, to the called endpoint, and enters in the Null call state U0 in both interfaces.
- BCC\_DGK\_PHE\_S\_07** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.5.1[4]  
Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling Gatekeeper, containing a non-mandatory information element out of sequence,  
sends a RELEASE COMPLETE message, to the called endpoint, and enters in the Null call state U0 in both interfaces.
- BCC\_DGK\_PHE\_S\_08** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.6.1 [4]  
Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling Gatekeeper, with a mandatory information element missing,  
sends a RELEASE COMPLETE message, to the called endpoint, and enters in the Null call state U0 in both interfaces.
- BCC\_DGK\_PHE\_S\_09** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.6.2 [4]  
Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling Gatekeeper, containing a mandatory information element with content error,  
sends a RELEASE COMPLETE message, to the called endpoint, and enters in the Null call state U0 in both interfaces.
- BCC\_DGK\_PHE\_S\_10** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clauses 5.8.7.1, 5.8.6.1 [4]  
Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling Gatekeeper, containing an unrecognized information element (coded comprehension required),  
sends a RELEASE COMPLETE message, to the called endpoint, and enters in the Null call state U0 in both interfaces.
- BCC\_DGK\_PHE\_S\_11** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.7.1 [4]  
Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling Gatekeeper, containing an unrecognized information element (coded comprehension not required),  
sends a RELEASE COMPLETE message, to the called endpoint, and enters in the Null call state U0 in both interfaces.
- BCC\_DGK\_PHE\_S\_12** clauses 6.4, 8.1.5, 8.1.6, 8.1.8, 8.5 [2], clause 7.1 [3], clause 5.8.7.2 [4]  
Ensure that the IUT in the Active call state U10, on receipt of a RELEASE COMPLETE message, from the calling Gatekeeper, containing a non-mandatory information element with content error,  
sends a RELEASE COMPLETE message, to the called endpoint, and enters in the Null call state U0 in both interfaces.

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## History

<b>Document history</b>		
V1.1.1	February 2002	Publication