



## **Technical Specification**

for connecting to the

# **Broadband Integrated Services Digital Network (BISDN)**

IDA TS BISDN  
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<p><b>NOTICE</b> <b>This Specification is subject to review and revision.</b></p>
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## Part A Introduction

### 1 Scope

- 1.1 This Specification defines the minimum requirements for connecting to the  $S_B$  and  $T_B$  reference points of the reference configuration for BISDN User-Network Interface (UNI) as shown in Figure 1.
- 1.2 Part B of this Specification defines the Physical Layer characteristics for transporting ATM cells at nominal bit rates of 155,520 and 622,080 kbit/s over coaxial cables and optical fibres at the  $S_B$  and  $T_B$  reference points. It is based on the ITU-T Recommendations I.432.1 and I.432.2.
- 1.3 Part C of this Specification defines the BISDN ATM layer, traffic and congestion control, ATM adaptation layer (AAL), and signalling ATM adaptation layer (SAAL) requirements based on the ITU-T Recommendations I.361, I.371, I.363.5, and Q.2130.
- 1.4 Part D of this Specification defines the call/connection states, messages, information elements, timers and procedures used for the B-ISDN point-to-point on-demand calls on virtual channels. It is based on the ITU-T Recommendation Q.2931.
- 1.5 Part E of this Specification defines the signalling protocol for establishing and clearing point-to-multipoint calls/connections with unidirectional information transfer from the calling user (root) to all called users (leaves). Part E builds upon the capabilities of Part D. It is based on the ITU-T Recommendation Q.2971.

### 2 Reference Configuration

- 2.1 The reference configuration for BISDN UNI is shown in Figure 1. The ATM Public UNI is modelling after the BISDN UNI (Figure 2). It embraces the physical characteristics corresponding to  $T_B$  and  $U_B$  reference points as defined by the ATM Forum's ATM User-Network Interface (UNI) Specification Version 3.1. The ATM Public UNI specifies the criteria for Customer Premises Equipment (e.g. ATM end-points and private ATM switch) to a public service provider's ATM switch.
- 2.2 Interface location with respect to reference configuration is shown in Figure 1. An interface point  $I_a$  is adjacent to the B-TE or the B-NT2 on their network side; interface point  $I_b$  is adjacent to the B-NT2 and to the B-NT1 on their user side.

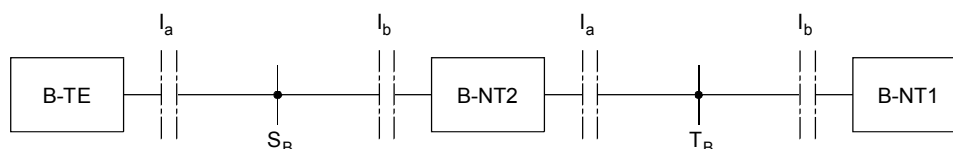


Figure 1:  
Reference configuration at reference point  $S_B/T_B$

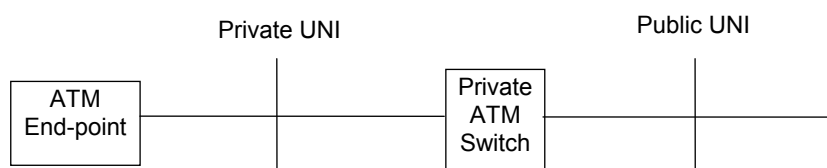
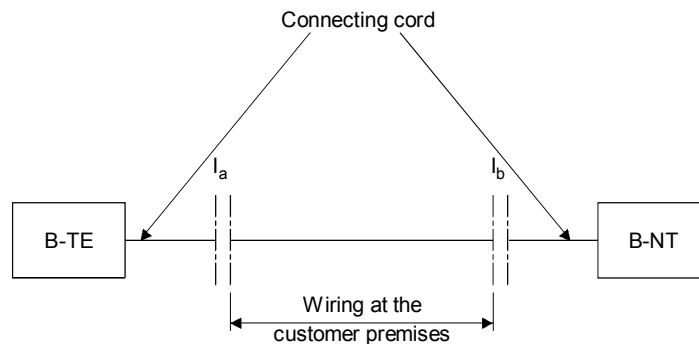


Figure 2:  
User-Network Interface Configuration

- 2.3 Interface location with respect to the customer installation is shown in Figure 3. The interface points are located between the socket and the plug of the connector attached to the B-TE, B-NT2 or B-NT1.



NOTE – The length of the connecting cord can be zero.

Figure 3:  
**Wiring configuration**

- 2.4 In this Specification, the term "B-NT" is used to indicate network terminating layer 1 aspects of B-NT1 and B-NT2 functional groups, and the term "B-TE" is used to indicate terminal terminating layer 1 aspects of B-TE1, B-TA and B-NT2 functional groups, unless otherwise indicated. B-TE equipment may be designed to support point-to-point (Part D), point-to-multipoint (Part E) or both types of calls/connections.

## 3 General Requirements

### 3.1 Power Supply

The B-TE equipment may be a.c. powered or d.c. powered. For an a.c. powered equipment, the Specification shall be complied with when operating from an a.c. mains supply of voltage,  $230V \pm 10\%$  and frequency,  $50 \text{ Hz} \pm 2\%$ . Where external power supply is used, e.g. AC adaptor, it shall not affect the capability of the equipment to meet the Specification.

### 3.2 Identification of Equipment

The B-TE equipment shall be marked with the supplier or manufacturer's name or identification mark, and the supplier or manufacturer's model or type reference. The markings required shall be legible, indelible and readily visible.

### 3.3 Electromagnetic Compatibility & Electrical Safety Requirements

- 3.3.1 The B-TE equipment shall comply with the limits for conducted disturbance at the mains terminals and telecommunication ports, and the limits for radiated disturbance defined in the IEC CISPR 22.

- 3.3.2 The B-TE equipment shall comply with the IEC 60950-1 safety standard<sup>1</sup>. The requirements in IEC 60950-1 that are applicable to the equipment [e.g. class of equipment, type of telecommunication network voltage (TNV) circuit and types of components] shall be identified and complied with.

<sup>1</sup> The safety standard includes, among others, protection of telecommunications network service personnel and users of other equipment connected to the network from hazards in the equipment.

Note

The following notations are used in the Specification:

- CR Conformance requirement defines features and functions which must be supported at minimum.
- M Mandatory requirement is where the B-TE implementation shall conform to the requirements captured in that section (§) relating to the operation of the B-TE.
- O Optional requirement means it is optional whether the B-TE implements that function but if function is implemented, it shall conform to the requirements captured in that section (§) relating to the operation of the B-TE.
- NA Not Applicable is where the requirements specified in that section on the B-TE shall not be applicable for attachment.
- GID General Information and Definitions

## Part B BISDN User-Network Interface - Physical Layer Specification

General Characteristics	ITU-T Rec. I.432.1	CR	Remarks
<b>Functions provided by the Transmission Convergence (TC) sublayer</b>	<b>7</b>	–	Heading
<b>Transfer capability</b>	<b>7.1</b>	–	Heading
SDH-based	<b>7.1.1</b>	M	
Cell-based	<b>7.1.2</b>	NA	Cell-based systems are not supported by the local implementation.
<b>Transport-specific TC functions</b>	<b>7.2</b>	–	Refer to § 7, I.432.2
<b>ATM-specific TC functions</b>	<b>7.3</b>	–	Heading
ATM cell format	7.3.1	M	The ATM cell is defined in ITU-T Rec. I.361
Header error control (HEC)	7.3.2	Note 1	
Cell delineation	7.3.3	M	
Scrambler operation	7.3.4	–	Heading
ATM cell level scrambler for the SDH-based systems	7.3.4.1	M	
Scrambler for the cell-based systems	7.3.4.2	NA	
Scrambler for other systems	7.3.4.3	GID	For other systems, refer to the relevant clauses in the appropriate I.432 series.
Idle cells	7.3.5	M	
Note 1: The error detection of the HEC functions shall be implemented. However, the HEC receiver mode of the operation described in Figure 3/I.432.1 may be implemented.			

155 520 kbit/s and 622 080 kbit/s Operation	ITU-T Rec. I.432.2	CR	Remarks
<b>Physical medium characteristics of the UNI at 155 520 kbit/s</b>	<b>6.1</b>	–	If B-TE supports UNI at 155 520 kbit/s, then requirements under § 6.1 are applicable.
Bit rate and interface symmetry	6.1.1	M	
Timing	6.1.2	Note 2	
Jitter and wander	6.1.3	M	In accordance with ITU-T Rec. G.825 and G.958
Electrical interface	6.1.4	NA	Electrical interface is not supported by the local implementation.
Optical interface	6.1.5	M	
<b>Physical medium characteristics of the UNI at 622 080 kbit/s</b>	<b>6.2</b>	–	If B-TE supports UNI at 622 080 kbit/s, then requirements under § 6.2 are applicable.
Bit rate and interface symmetry	6.2.1 a)	Note 3	Interface is asymmetrical with 622 080 kbit/s in one direction and 155 520 kbit/s in the other direction.
	6.2.1 b)	Note 3	Interface is symmetrical with 622 050 kbit/s in both directions.
Timing	6.2.2	Note 4	
Jitter and wander	6.2.3	M	In accordance with ITU-T Rec. G.825
Electrical interface	6.2.4	NA	
Optical interface	6.2.5	M	The transmission medium shall consist of 2 single mode fibres, one for each direction, according to ITU-T Rec. G.652. Refer to IDA RS SDH 3.
Note 2: Timing shall be SDH-based where transmitter is locked to the timing received from the network clock. Cell-based systems are not supported presently by the local implementation.			
Note 3: At least one of these options, asymmetrical or symmetrical interface, must be supported. However, asymmetrical interface is not supported by the local implementation.			
Note 4: Only the SDH-based Transmission Convergence sublayer shall be specified for the 622 080 kbit/s operation.			

Functions provided by the transmission convergence (TC) sublayer	ITU-T Rec. I.432.2	CR	Remarks
<b>Transfer capability</b>	<b>7.1</b>	–	Heading
SDH-based	7.1.1	–	Heading
Interface at 155 520 kbit/s	7.1.1.1	Note 5	
Interface at 622 080 kbit/s	7.1.1.2	Note 5	
Cell-based	7.1.2	NA	Cell-based systems are not supported by the local implementation.
<b>Transport-specific TC functions</b>	<b>7.2</b>	–	Heading
SDH-based	7.2.1	–	Heading
Interface structure at 155 520 kbit/s	7.2.1.1	Note 5	
Interface structure at 622 080 kbit/s	7.2.1.2	Note 5	
OAM functionality	7.2.1.3	M	
Cell-based	7.2.2	NA	Cell-based systems are not supported by the local implementation.
<b>ATM-specific TC functions</b>	<b>7.3</b>	M	Refer to Part A
<b>OAM Operational Functionality</b>	<b>8</b>	–	Heading
<b>SDH-based</b>	<b>8.1</b>	M	
<b>Cell-based</b>	<b>8.2</b>	NA	Cell-based systems are not supported by the local implementation.
<b>Power Feeding</b>	<b>9</b>	O	The provision of power to the B-NT1 via UNI is optional.
Note 5: At least one of these options, interface at 155 520 kbit/s or 622 080 kbit/s must be supported.			

## Part C BISDN ATM Layer Specification

B-ISDN ATM Layer Specification	ITU-T Rec. I.361	ATM-F UNI V3.1	CR	Remarks
Cell structure	2.1	3.3	M	
Cell header and encoding at UNI	2.2	3.3	M	
Pre-assigned values of the physical cell header	2.2.1	3.3	M	
Generic Flow Control (GFC) field	2.2.2	3.3	M	The public network may choose to implement the "uncontrolled transmission" set of procedures. Uncontrolled equipment shall always set the GFC field to 0000. Any equipment (controlled or uncontrolled) connected to an interface where there is no controlling equipment shall not execute the controlled procedures.
Routing field (VPI/VCI)	2.2.3	3.3 and 3.4.3	M	Point-to-point signalling will use VPI = 0, VCI = 5 and PTI = 0AA (AA bits are available for use by an ATM layer function) The B-TE shall support VPI = 0 and VCI = 16 as the default for ILMI cells. The B-TE shall set the CLP bit to zero before transmitting an ILMI cell.
Payload Type (PT) field	2.2.4	3.4.4	M	The equipment shall comply with the payload type identifier (PTI) coding if ATM layer OAM functions are supported.

Traffic and Congestion Control in BISDN	ITU-T Rec. I.371	ATM-F UNI V3.1	CR	Remarks
Usage Parameter Control (UPC)	7.2.3	3.6	M	

B-ISDN ATM Adaptation Layer Specification: Type 5 AAL	ITU-T Rec. I.363.5	ATM-F UNI V3.1	CR	Remarks
Service provided by the Common Part of the AAL type 5	7	–	M	
Functions, structure and coding of the AAL type 5	9	–	M	
Segmentation and Reassembly (SAR) sublayer	9.1	–	M	
Convergence Sublayer (CS)	9.2	–	M	
Procedures	10	–	M	
Procedures for the SAR sublayer	10.1	–	M	
Procedures of the CPCS for the Message Mode service	10.2	–	M	

B-ISDN Signalling ATM Adaptation Layer	ITU-T Rec. Q.2130	ATM-F UNI V3.1	CR	Remarks
Service Specific Coordination Function for Support of Signalling at the User-Network Interface (SSCF at UNI)	Annex A	–	M	

## Part D B-ISDN User-Network Interface (UNI) Layer 3 Specification

Capabilities supported by this Recommendations	ITU-T Rec. Q.2931	ATM-F UNI V3.1	CR	Remarks
Support of demand (switched channel connections)	1.3.1	5.1.2.1	M	
Support of point-to-point connections	1.3.2	5.1.2.2	M	
Support of connections with symmetric or asymmetric bandwidth	1.3.3	5.1.2.3	M	
Support of a single connection call	1.3.4	5.1.2.4	M	
Protocol support for basic signalling functions	1.3.5	5.1.2.5	M	
Support of Class A, Class C and Class X	1.3.6	5.1.2.6	M	At least one of these options shall be support.
Support of Signalling parameter request and Indication	1.3.7	5.1.2.7	NA	The negotiation of signalling parameters (e.g. QoS, cell transfer rate) between the users and the network is not supported. Instead, the sender chooses a value for each parameter to be sent in the connection SETUP request, and the receiver indicates whether or not the chosen values can be accommodated.
VPCI/VCI support	1.3.8	5.1.2.8	M	The negotiation of VCI is not supported by local implementation.
Out-of-band signalling	1.3.9	5.1.2.9	M	VCI = 5, VPCI = 0
Support of error recovery	1.3.10	5.1.2.10	M	
Support of public UNI ATM addressing	1.3.11	5.1.2.11	M	B-ISDN addressing structure A (ITU-T Rec. E.191)
Support of end-to-end compatibility parameter identification	1.3.12	5.1.2.13	O	
Signalling interworking with N-ISDN and provision of N-ISDN services	1.3.13	–	NA	Not supported by local implementation
Forward compatibility	1.3.14	–	NA	Not supported by local implementation

Overview of call/connection control	ITU-T Rec. Q.2931	ATM-F UNI V3.1	CR	Remarks
<b>B-ISDN call/connection states</b>	<b>2.1</b>	<b>5.2.1</b>	<b>GID</b>	
Call/connection states at the user side of the interface	2.1.1	5.2.1.1	M	
Null (U0)	2.1.1.1	5.2.1.1.1	M	
Call initiated (U1)	2.1.1.2	5.2.1.1.2	M	
Outgoing call proceeding (U3)	2.1.1.3	5.2.1.1.3	M	
Call present (U6)	2.1.1.5	5.2.1.1.5	M	
Call delivered (U4)	2.1.1.4	5.2.1.1.4	NA	Not Supported
Call received (U7)	2.1.1.6	5.2.1.1.6	NA	Not Supported
Connect request (U8)	2.1.1.7	5.2.1.1.7	M	
Incoming call proceeding (U9)	2.1.1.8	5.2.1.1.8	O	"M" if CALL PROCEEDING message is sent by user.
Active (U10)	2.1.1.9	5.2.1.1.9	M	
Release request (U11)	2.1.1.10	5.2.1.1.10	M	
Release indication (U12)	2.1.1.11	5.2.1.1.11	M	
Call/connection states at the network side of the interface	2.1.2	5.2.1.2	GID	
Additional B-ISDN call/connection states relating to interworking requirements	2.2	5.2.2	NA	Not supported by local implementation
B-ISDN call/connection states for global call reference	2.3	5.2.3	M	

Message functional definitions and content	ITU-T Rec. Q.2931	ATM-F UNI V3.1	CR	Remarks
<b>Messages for B-ISDN call and connection control</b>	<b>3.1</b>	5.3.1	Note 1	
ALERTING	3.1.1	5.3.1.1	NA	Not supported by local implementation
CALL PROCEEDING	3.1.2	5.3.1.2	M	
CONNECT	3.1.3	5.3.1.3	M	
CONNECT ACKNOWLEDGE	3.1.4	5.3.1.4	Note 2	
RELEASE	3.1.5	5.3.1.5	M	
RELEASE COMPLETE	3.1.6	5.3.1.6	M	
SETUP	3.1.7	5.3.1.7	M	
STATUS	3.1.8	5.3.1.8	M	
STATUS ENQUIRY	3.1.9	5.3.1.9	M	
NOTIFY	3.1.10	–	NA	Not supported by local implementation
<b>Additional or modified messages related for the support of 64 kbits/s based ISDN circuit-mode services</b>	<b>3.2</b>	5.3.2	NA	Not supported by local implementation
<b>Messages used with the global call reference</b>	<b>3.3</b>	5.3.4	Note 1	Restart of all virtual channels within a virtual path is not supported.
<p>Note 1: Refer to IDA RS BISDN 2, Annex 1 on "Guide to the message structure and information elements of each message" for the content of each message.</p> <p>Note 2: It is optional whether a B-TE transmits this message but all B-TEs must be able to receive the message and handle it correctly as defined in the procedures specified in ITU-T Rec. Q.2931 clause 5.2 and all its subsections.</p>				

General message format and information elements coding	ITU-T Rec. Q.2931	ATM-F UNI V3.1	CR	Remarks
<b>Overview</b>	<b>4.1</b>	5.4.1	M	
<b>Protocol discriminator</b>	<b>4.2</b>	5.4.2	M	
<b>Call reference</b>	<b>4.3</b>	5.4.3	M	
<b>Message type, and message length</b>	<b>4.4</b>	5.4.4	–	
Message type (including message compatibility instruction indicator)	4.4.1	5.4.4.1	M	
Message length	4.4.2	5.4.4.2	M	
<b>Variable length information elements for B-ISDN environment</b>	<b>4.5</b>	5.4.5	–	
Coding rules	4.5.1	5.4.5.1	M	Note 3 and Note 4
Extensions of codesets	4.5.2	5.4.5.2	NA	Only codeset 0 is used.
Broadband locking shift procedure	4.5.3	5.4.5.3	NA	Note 5
Broadband non-locking shift procedure	4.5.4	5.4.5.4	NA	Note 5
ATM adaptation layer parameters	4.5.5	5.4.5.5	Note 5	
ATM traffic descriptor	4.5.6	5.4.5.6	M	
Broadband bearer capability	4.5.7	5.4.5.7	M	
Broadband High Layer information	4.5.8	5.4.5.8	Note 5	
Broadband low layer information	4.5.9	5.4.5.9	Note 5	
Call state	4.5.10	5.4.5.10	M	
Called party number	4.5.11	5.4.5.11	M	
Called party sub-address	4.5.12	5.4.5.12	Note 5	
Calling party number	4.5.13	5.4.5.13	Note 5	
Calling party sub-address	4.5.14	5.4.5.14	Note 5	
Cause	4.5.15	5.4.5.15	M	The contents and the use of the cause information element are defined in ITU-T Rec. Q.2610 and Q.850.
Connection identifier	4.5.16	5.4.5.16	Note 5	“exclusive VPCI; any VCI” is not supported by local implementation
End-to-end transit delay	4.5.17	5.4.5.17	NA	Note 5 Not supported by local implementation
Quality of Service parameter	4.5.18	5.4.5.18	M	
Broadband repeat indicator	4.5.19	5.4.5.19	Note 5	
Restart indicator	4.5.20	5.4.5.20	M	
Broadband sending complete	4.5.21	5.4.5.21	Note 5	
Transit network selection	4.5.22	5.4.5.22	Note 5	
Notification indicator	4.5.23	–	NA	Note 5 Not supported
OAM traffic descriptor	4.5.24	–	NA	Note 5 Not supported
Information elements for the support of 64 kbits/s based ISDN circuit-mode services	4.6	5.4.6	NA	Not supported
<p>Note 3 Refer to IDA RS BISDN 2, Annex 2 on "Guide to information elements recognised by B-ISDN" for the content of each information element.</p> <p>Note 4 The use of the information element identifier value “1111 1111” as an extension mechanism is not supported and information elements with this identifier value will be treated as unrecognised information elements.</p> <p>Note 5 B-TEs may not be able to support the information element but must be able to receive it and handle it correctly according to the procedures as specified in ITU-T Rec. Q.2931 section 5.6.8.1 for unrecognised information elements.</p>				

B-ISDN call/connection control procedures	ITU-T Rec. Q.2931	ATM-F UNI V3.1	CR	Remarks
<b>Call/connection establishment at the originating interface</b>	<b>5.1</b>	5.5.1	M	
Call/Connection request	5.1.1	5.5.1.1	M	Sending complete is optionally included by the user. Retransmission of SETUP is optional in local implementation.
Connection identifier (VPCI/VCI) allocation/selection -Origination	5.1.2	5.5.1.2.1	M	Associated signalling is not supported by local implementation.
Associated signalling	5.1.2.1	–	NA	Not supported by local implementation
Non-associated signalling	5.1.2.2	5.5.1.2.1	M	The Connection identifier information element is not included in the SETUP message in the local implementation. The network selects any available VPCI and VCI.
Use of VPCI	5.1.2.3	5.5.1.2.2	M	For local implementation, the signalling virtual channel controls a single interface at the user side, and the VPI and VPCI have the same numerical value at the user side.
VCI range	5.1.2.4	5.5.1.2.3	M	VCI values 0-15 are reserved by ITU-T VCI values 16-31 are reserved by ATM Forum
QoS and traffic parameters selection procedures	5.1.3	5.5.1.3	M	If the network detects that the ATM traffic descriptor information element contains a non-supported set of traffic parameters, the network shall return a RELEASE COMPLETE message with cause #73, "Unsupported combination of traffic parameters."
Invalid call/connection control information	5.1.4	5.5.1.4	M	
Call/connection proceeding	5.1.5	5.5.1.5	O	
Call/connection confirmation indication	5.1.6	5.5.1.6	NA	Not supported by local implementation
Call/connection acceptance	5.1.7	5.5.1.7	M	
Call/connection rejection	5.1.8	5.5.1.8	M	
Transit network selection	5.1.9	5.5.1.9	O	
Extension of symmetric call operation	–	5.5.1.10	O	Extensions to allow optional sending of CALL PROCEEDING message is supported by local implementation.

B-ISDN call/connection control procedures	ITU-T Rec. Q.2931	ATM-F UNI V3.1	CR	Remarks
<b>Call/connection establishment at the destination interface - Point-to-point access configuration call offering</b>	<b>5.2</b>	5.5.2	M	
Incoming call/connection request	5.2.1	5.5.2.1	M	Overlap receiving is not supported by local implementation. Retransmission of SETUP message is optional in local implementation.
Address and compatibility check	5.2.2	5.5.2.2	O	The procedures to perform compatibility checking are implementation dependent.
Address check	5.2.2.1		M	
Compatibility check	5.2.2.2		M	
Connection identifier (VPCI/VCI) allocation/selection - Destination	5.2.3	5.5.2.3	M	Associated signalling is not supported by local implementation.
Associated signalling	5.2.3.1		NA	Not supported by local implementation
Non-associated signalling	5.2.3.2	5.5.2.3	M	Local implementation supports "exclusive VPCI; exclusive VCI" only.
QoS and traffic parameter selection procedures	5.2.4	5.5.2.4	M	
Call/connection confirmation	5.2.5	5.5.2.5	–	Heading
Response to en bloc SETUP or completion of overlap receiving	5.2.5.1	5.5.2.5.1	M	Error procedure using network-specific cause value 23, "user rejects call with CLIR" is added. Overlap receiving is not supported by local implementation.
Receipt of CALL PROCEEDING and ALERTING	5.2.5.2	5.5.2.5.2	M	ALERTING message is not supported by local implementation.
Called user clearing during incoming call establishment	5.2.5.3	5.5.2.5.3	M	Timer T301 is not supported by local implementation.
Call failure	5.2.5.4	5.5.2.5.4	M	Timer T301 is not supported by local implementation.
Call/connection acceptance	5.2.6	5.5.2.6	M	
Active indication	5.2.7	5.5.2.7	M	Timer T301 not supported by local implementation.
<b>Call/connection establishment at the destination - Point-to-multipoint access arrangement call offering</b>	<b>5.3</b>	5.5.3	NA	This capability is outside the scope of this Recommendation.
<b>Call/connection clearing</b>	<b>5.4</b>	5.5.4	M	
<b>Restart procedure</b>	<b>5.5</b>	5.5.5	GID	The user shall implement these procedures for point-to-point configuration. Restart of all virtual channels within a virtual path is not supported.
Sending RESTART	5.5.1	5.5.5.1	M	
Receipt of RESTART	5.5.2	5.5.5.2	M	
<b>Handling of error conditions</b>	<b>5.6</b>	5.5.6	M	
<b>Error procedures with explicit action indication</b>	<b>5.7</b>		NA	Not supported by local implementation
<b>Handling of messages with insufficient information</b>	<b>5.8</b>		NA	Not supported by local implementation
<b>Notification procedures</b>	<b>5.9</b>		NA	Not supported by local implementation

Title	ITU-T Rec. Q.2931	ATM-F UNI V3.1	CR	Remarks
Procedures for the support of 64 kbits/s based circuit-mode ISDN services in B-ISDN and access signalling interworking between N-ISDN and B-ISDN	6	–	NA	Not supported by local implementation
List of timers	7	5.7	GID	
Timers in the network side	7.1	5.7.1	GID	
Timers in the user side	7.2	5.7.2	M	T301 is not supported by local implementation.
Address registration	–	5.8	O	
Primitives	8	–	GID	

Annexes and Appendices	ITU-T Rec. Q.2931	ATM-F UNI V3.1	CR	Remarks
User side SDL diagrams	Annex A.2		M	–
Compatibility checking	Annex B	Annex B	M	
Broadband low layer information negotiation	Annex C	Annex C	O	
Transit network selection	Annex D	Annex D	O	Only one transit network selection is supported.
Mapping functions to support 64 kbit/s based circuit-mode ISDN services in B-ISDN and interworking between N-ISDN and B-ISDN (DSS 1/DSS 2)	Annex E	–	NA	Not supported
ATM adaptation layer parameters indication and negotiation	Annex F	Annex F	O	
–	Annex G	–	–	Reserved for future use
Extensions for symmetric call operation	Annex H	–	O	–
Handling of the OAM traffic descriptor	Annex I	–	NA	Not supported
Definitions, Abbreviations and References	Annex J	–	GID	–
Handling of the end-to-end transit delay information element	Annex K	–	NA	Not supported
Examples for message structure and information element format	Annex L	–	GID	–
Guidelines for the use of Instruction indicators	Appendix I	–	NA	Not supported
Information items for connection establishment in B-ISDN	Appendix II	–	GID	–
Status monitoring procedures for Semi-Permanent Virtual Channel Connections	Appendix III	–	GID	–

## Part E BISDN User-Network Interface (UNI) Layer 3 Specification for Point-To-Multipoint Call/Connection Control

State Definitions	ITU-T Rec. Q.2971	ATM-F UNI V3.1	CR	Remarks
<b>B-ISDN party states</b>	<b>7.2.1</b>	–	M	Party alerting delivered (P3) and Party alerting received (P4) are not supported by local implementation.

Coding Requirements	ITU-T Rec. Q.2971	ATM-F UNI V3.1	CR	Remarks
<b>Messages</b>	<b>8.1</b>	–	GID	
Modifications of messages in Q.2931	8.1.1	–	M	Note 1
ALERTING	8.1.1.1	–	NA	Not supported by local implementation
CALL PROCEEDING	8.1.1.2	–	M	
CONNECT	8.1.1.3	–	M	
SETUP	8.1.1.4	–	M	
STATUS	8.1.1.5	–	M	
STATUS ENQUIRY	8.1.1.6	–	M	
NOTIFY	8.1.1.7	–	NA	Not supported by local implementation
Messages for point-to-multipoint call and connection control	8.1.2	5.3.5	GID	Note 2
ADD PARTY	8.1.2.1	5.3.5.1	M	
ADD PARTY ACKNOWLEDGE	8.1.2.2	5.3.5.2	M	
PARTY ALERTING	8.1.2.3		NA	Not supported by local implementation
ADD PARTY REJECT	8.1.2.4	5.3.5.3	M	
DROP PARTY	8.1.2.5	5.3.5.4	M	
DROP PARTY ACKNOWLEDGE	8.1.2.6	5.3.5.5	M	
<b>Information elements</b>	<b>8.2</b>	–	M	Note 3
<p>Note 1 Refer to IDA RS BISDN 2, Annex 3 on "Modifications of messages in Q.2931" for the additional content of each message.</p> <p>Note 2 Refer to IDA RS BISDN 2, Annex 4 on "Messages for point-to-multipoint call and connection control (8.1.2/Q.2971)" for the content of each message.</p> <p>Note 3 Refer to IDA RS BISDN 2, Annex 5 on "Guide to information elements recognised by B-ISDN for point-to-multipoint call/connection control" for the content of each information element.</p>				

Signalling Procedures at the coincident S <sub>B</sub> and T <sub>B</sub> reference point	ITU-T Rec. Q.2971	ATM-F UNI V3.1	CR	Remarks
Adding a party at the originating interface	9.1	5.6.1	-	Heading
Setup of the first party	9.1.1	5.6.1.1	M	
Adding a party	9.1.2	5.6.1.2, 5.6.1.3	M	
Add party received	9.1.3	5.6.1.4	M	
Party alerting	9.1.4	-	NA	Not supported by local implementation
Add party failure	9.1.5	-	NA	Not supported by local implementation
Add party connected	9.1.6	5.6.1.5	M	
Add party rejection	9.1.7	5.6.1.6	M	
Transit network selection	9.1.8		NA	Not supported by local implementation
<b>Add party establishment at the destination interface</b>	<b>9.2</b>	5.6.2	M	
Incoming add party request	-	5.6.2.1	M	
Address and compatibility check	-	5.6.2.2	O	
Connection identifier (VPCI/VCI) allocation/selection - destination	-	5.6.2.3	M	
QoS and traffic parameter selection procedures	-	5.6.2.4	M	
Call/connection confirmation	-	5.6.2.5	M	
Call/connection accept	-	5.6.2.6	M	
Active indication	-	5.6.2.7	M	
Leaf does not support multipoint procedures	9.2.1	-	NA	Not supported by local implementation
<b>Party dropping</b>	<b>9.3</b>	5.6.3	M	Heading
<b>Restart procedure</b>	<b>9.4</b>	5.6.4	M	
<b>Handling of error conditions</b>	<b>9.5</b>	5.6.5	M	
<b>Notification procedure</b>	<b>9.6</b>	-	NA	Not supported by local implementation

Title	ITU-T Rec. Q.2971	ATM-F UNI V3.1	CR	Remarks
<b>Procedures at the T<sub>B</sub> reference point for interworking with private B-ISDNs</b>	<b>10</b>	-	NA	Not supported by local implementation
<b>Interworking with other networks</b>	<b>11</b>	-	NA	Not supported by local implementation
<b>Interactions with supplementary services</b>	<b>12</b>	-	NA	Not supported by local implementation
<b>Parameter values</b>	<b>13</b>	-	M	
<b>Timers at the user side</b>	<b>13.1</b>	5.7.2	M	
<b>Timers at the network side</b>	<b>13.2</b>	5.7.1	GID	

<b>Annexes and Appendices</b>	<b>ITU-T Rec. Q.2971</b>	<b>ATM-F UNI V3.1</b>	<b>CR</b>	<b>Remarks</b>
<b>Extensions for symmetric call operations</b>	<b>Annex A</b>	–	GID	
<b>Transit network selection</b>	<b>Annex B</b>	–	NA	Not supported by local implementation
<b>Amendments to Recommendation Q.2951 to support calls/connections using the procedures of Q.2971</b>	<b>Annex C</b>	–	GID	
<b>Amendments to Recommendation Q.2957 to support calls/connections using the procedures of Recommendation Q.2971</b>	<b>Annex D</b>	–	GID	
<b>Handling of the End-to-end transit delay information element</b>	<b>Annex E</b>	–	NA	Not supported by local implementation
<b>SDL Diagrams</b>	<b>Annex F</b>	–	GID	
<b>Information flows</b>	<b>Appendix I</b>	–	GID	
<b>Instruction indicators</b>	<b>Appendix II</b>	–	NA	Not supported

## Annex A: References

For the technical requirements captured in this Specification, reference has been made to the following documents:

ITU-T Rec. I.432.1 (02/99)	B-ISDN user-network interface – Physical layer specification: General characteristics
ITU-T Rec. I.432.2 (02/99)	B-ISDN user-network interface – Physical layer specification: 155 520 kbit/s and 622 080 kbit/s operation
ITU-T Rec. I.361 (02/99)	B-ISDN ATM layer specification
ITU-T Rec. I.363.5 (08/96)	B-ISDN ATM Adaptation Layer specification: Type 5 AAL
ITU-T Rec. I.371 (03/04)	Traffic control and congestion control in B-ISDN
ITU-T Rec. Q.2130 (07/94)	B-ISDN Signalling ATM Adaptation Layer – Service Specific Coordination Function for Support of Signalling at the User Network Interface (SSFC at UNI)
ITU-T Rec. Q.2931 (02/95)	Broadband Integrated Services Digital Network (B-ISDN) – Digital Subscriber Signalling System No. 2 (DSS 2) – User-Network Interface (UNI) Layer 3 Specification for Basic Call/Connection Control
ITU-T Rec. Q.2971 (10/95)	Broadband Integrated Services Digital Network (B-ISDN) – Digital Subscriber Signalling System No. 2 (DSS 2) – User-Network Interface (UNI) Layer 3 Specification for Point-to-Multipoint Call/Connection Control
ATM Forum, af-uni-0010.002	ATM User-Network Interface (UNI) Specification Version 3.1
IEC 60950-1: 2001	Information Technology Equipment – Safety
IEC CISPR 22: 2003-04	Information Technology Equipment – Radio disturbance characteristics – Limits and methods of measurement
IDA RS BISDN 1 (Dec 99)	Reference Specification for B-ISDN User-Network Interface (UNI) – Physical Layer
IDA RS BISDN 2 (Dec 99)	Reference Specification for B-ISDN User-Network Interface (UNI) – Basic Call/Connection Control

## Annex B: Corrigendum / Addendum

Changes to IDA TS BISDN Issue 1, Jul 05			
Page	TS Ref.	Items Changed	Effective Date
—	—	Change of IDA's address at cover page to Mapletree Business City.	1 May 11

Changes to IDA TS BISDN 1 Issue 1 Rev 1			
Page	TS Ref.	Items Changed	Effective Date
—	—	<p>Title of Specification has been renamed as "Technical Specification for connecting to the Broadband Integrated Services Digital Network (BISDN) [IDA TS BISDN Issue 1].</p> <p>The Technical Specification has also incorporated the EMC requirements, previously published under the IDA TS EMC Issue 1 Rev 1.</p> <p>Changes are mainly editorial in nature, in which the essential technical requirements for compliance remain unchanged.</p>	21 Jul 05