Technical Document
TNA 137

Telecom ISDN
User-Network Interface:
Layers 1/2/3:
Basic Rate Access
(“AXE BRA”)

Access Standards
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New Zealand

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TELECOM ISDN USER-NETWORK INTERFACE
LAYERS 1/2/3
BASIC RATE ACCESS ("AXE BRA")

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FOREWORD

This Specification is issued by Telecom in compliance with its undertakings to advise the New Zealand telecommunications industry on forthcoming changes in the Telecom telecommunication networks.

This Specification is one of a series which defines the Telecom implementation of ISDN. It covers the technical requirements for the various hardware items used as the network terminations and customer premises terminal equipment interfaces, but leaves the design details and facilities of such hardware to individual manufacturers to decide.

The success of ISDN in New Zealand depends on the cooperation and support given by local hardware and software suppliers in providing the specialised equipment and systems for the various new services that this network will make possible.

This Specification describes the Layer 1/2/3 requirements for the control of ISDN services between a particular implementation of Telecom's Integrated Services Digital Network (ISDN), known as “AXE BRA”, and a single unit of user's equipment, e.g. a terminal or small business system on a Basic rate access. The Specification is prepared in a format showing compliance/exceptions to Technical Documents PTC 131 [1], TNA 133 [3] and TNA 134 [4].

“AXE BRA” is an ISDN Basic rate access implementation by Telecom with a small number of significant changes in the feature set compared with that described in Technical Documents PTC 131 [1], TNA 133 [3] and TNA 134 [4].
TELECOM ISDN USER-NETWORK INTERFACE
LAYERS 1/2/3
BASIC RATE ACCESS (“AXE BRA”)

1. Scope

The ISDN is defined in the I-series Recommendations of the Standardization Bureau of the International Telecommunication Union (ITU-T), formerly the International Telegraph and Telephone Consultative Committee (CCITT). It is a plan for organizing digital technology to provide advanced services to sophisticated digital terminals over an end-to-end digital network.

ISDN services are offered by the network to a user via an interface that provides either Basic access, consisting of one 16 kbit/s D-channel and up to two 64 kbit/s B-channels, or Primary rate access, consisting of one 64 kbit/s D-channel and up to 30 64 kbit/s B-channels.

This Specification describes the Layer 1/2/3 requirements for the access protocol for the Basic Rate Access user-network interface between a particular implementation of Telecom's Integrated Services Digital Network (ISDN), known as “AXE BRA”, and a single unit of user's equipment, e.g. a terminal or small business system. This protocol applies at the T reference point or the coincident S/T reference point.

“AXE BRA” is an ISDN Basic rate access that generally conforms to the ETSI (European Telecommunications Standards Institute) standards.

As the PTC 131 [1], TNA 133 [3] and TNA 134 [4] technical documents generally conform to the ITU-T standards, there are additional differences and changes in the feature set described in the “AXE BRA” implementation.

The interface is functionally organised into the first three layers of the ISO Open Systems Interconnection 7-layer model, consisting of the physical layer (Layer 1), the data link layer (Layer 2) and the network layer (Layer 3). Layers 1/2/3 for the Basic rate access implementation known as “AXE BRA” is the focus of this Specification.
The following Specifications together specify the requirements for ISDN connections:

<table>
<thead>
<tr>
<th>Layer</th>
<th>Basic Access</th>
<th>Primary Rate Access</th>
<th>“AXE BRA”</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>TNA 133 [3]</td>
<td>TNA 137</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TNA 134 [4]</td>
<td>TNA 137</td>
<td></td>
</tr>
</tbody>
</table>

TNA 137 defines the layer 1/2/3 aspects of the user-network interface for the attachment of terminals. It is intended for terminal vendors and users.

2. Definitions

D-Channel - A 16 kbit/s or 64 kbit/s channel carrying signalling, low speed packet switched data, and user-to-user information. (See ITU-T Recommendation I.412 [7]).

B-Channel - A 64 kbit/s channel that carries customer information such as voice, circuit switched or packet switched data. (See ITU-T Recommendation I.412 [7]).

PORT - An interface on a piece of equipment for the purpose of supplying an output signal or accepting an input signal.

USER - User's equipment e.g. terminal.


3. Abbreviations

- **ETSI** European Telecommunications Standards Institute
- **IEC** International Electrotechnical Commission
- **ISDN** Integrated Services Digital Network
- **ISO** International Standards Organization
- **ITU** International Telecommunications Union
- **ITU-T** International Telecommunications Union - Telecommunications Standard
- **NT1** Network Termination Type one (see ITU-T Recommendation I.411)
- **NT2** Network Termination Type Two (see ITU-T Recommendation I.411)
- **TA** Terminal Adaptor (see ITU-T Recommendation I.411)
- **TE1** Terminal Equipment of type 1 - ISDN terminal (see ITU-T Recommendation I.411)
- **TE2** Terminal Equipment of type 2 - non-ISDN terminal (see ITU-T Recommendation I.411)
- **TEI** Terminal Endpoint Identifier (see ITU-T Recommendations Q.920 and Q.921)
- **Telecom** Telecom New Zealand Limited
4. References

[14] ETS 300 012, "Basic user-network interface Layer 1 specification and test principles", 1992
[17] ETS 300 102-1, Integrated Services Digital Network (ISDN); User-network interface layer 3 Specification for basic call control, December 1990
[18] ETS 300 102-1A2, Integrated Services Digital Network (ISDN); User-network interface layer 3 Specification for basic call control, October 1993
[19] ETSI TBR 3, Integrated Services Digital Network (ISDN); Attachment Requirements for terminal equipment to connect to an ISDN using ISDN Basic rate access, November 1995.

(Note: further references are included in Specification TNA 134 [4] Part A.7.2.)

5. Specification (TNA 137)

5.1 Compliance/Exceptions to Specification PTC 131

The requirements for this layer 1 part of the Specification are defined in ITU-T Recommendation I.430 [8]. Layer 1 requirements are generally unchanged from those in Specification TNA 131 [1], except for the additional “AXE BRA” requirements and information shown below.

- Feeding voltage from LT (line terminal). The “AXE BRA” power feeding is covered by range 3, 91-99 V.
- Operation & Maintenance:
  - Continuity test: “AXE BRA” “routine test of unused lines” has been turned off
  - Power switch on/off to the line: (PL 12.2) in failure condition, line current is limited to > 10mA for one line per 64 group.
    (PL 12.3) dependent of the used line card, either PL 12.2 or the power is switched off. Line current = 0 mA if manually blocked.
5.2 Compliance/Exceptions to Specification TNA 133

The requirements for this layer 2 part of the Specification are defined in ITU-T Recommendations I.440 (Q.920) [10] and I.441 (Q.921) [11]. The options which apply are identified below. References are to clauses in Recommendation Q.921.

<table>
<thead>
<tr>
<th>Clause</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Delete the last sentence referring to abstract test suites.</td>
</tr>
<tr>
<td>2.3</td>
<td>LAPB data link connections are not supported.</td>
</tr>
<tr>
<td>3.3.3</td>
<td>SAPI value 12, defined by ETS 300 402-2 [16], is not supported.</td>
</tr>
<tr>
<td>3.6.7</td>
<td>The optional procedure for the retransmission of a REJ response frame is supported.</td>
</tr>
<tr>
<td>5.8.1</td>
<td>The optional procedures for the retransmission of a REJ response frame are supported.</td>
</tr>
<tr>
<td>5.10</td>
<td>The data link layer monitor function is implemented on the network side. It is optional on the user side.</td>
</tr>
</tbody>
</table>

Annex A

As a subscription option, Basic rate interfaces may use a single point-to-point signalling connection.

The following shall apply to a Point-to-point signalling connection:

- Layer 2 management procedures according to subclause 5.3 shall not be used;
- the value 0 shall be used for the TEI;
- two peer-to-peer layer 3 signalling entities shall communicate over a single point-to-point data link connection within the SAP identified by SAPI value 0, making use of the acknowledged information transfer service provided by layer 2;
- any message associated with TEI administration procedures, if received, shall be discarded and no action shall be taken as a result of the receipt of that message.

Appendix I

The optional procedure for automatic negotiation of data link parameters is supported by the network. Initialization based on the values supplied by the user is not supported on “AXE BRA”.

(These Layer 2 requirements are generally unchanged from those in Specification TNA 133 [3], except for the clauses 3.6.7 & 5.8.1.)

5.3 Compliance/Exceptions to Specification TNA 134

This layer 3 part of the Specification should be read in conjunction with Specification TNA 134 [4]. Due to the large size of Specification TNA 134 [4], only exceptions and differences to its requirements in relation to the “AXE BRA” implementation have been shown in this layer 3 part of the Specification.

5.3.1 PART A - General Matters

5.3.1.1 Summary of Differences between this Specification, ITU-T Recommendations and ETSI Standards

The significant differences between this Specification and those shown in Specification TNA 134 [4] Part A-6 are summarized below.

|------------------------------------------|------------------------|---------------------------|-------|

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestion Control</td>
<td>Only applicable in the network-to-user direction.</td>
<td>Not implemented</td>
<td></td>
</tr>
<tr>
<td>Facility message</td>
<td>ETSI requirement</td>
<td>Not implemented</td>
<td></td>
</tr>
<tr>
<td>User information message</td>
<td>Implemented</td>
<td>Not implemented</td>
<td></td>
</tr>
</tbody>
</table>

### Message Format and Information Elements Coding

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestion level</td>
<td>Implemented</td>
<td>Not implemented</td>
<td></td>
</tr>
<tr>
<td>More data</td>
<td>Implemented</td>
<td>Not implemented</td>
<td></td>
</tr>
<tr>
<td>Segmented message</td>
<td>Implemented</td>
<td>Not implemented</td>
<td></td>
</tr>
<tr>
<td>Signal</td>
<td>Not implemented</td>
<td>Supports an option where all tones, except ring-back tone for user-originated calls, may be provided by the user</td>
<td></td>
</tr>
<tr>
<td>Transit network selection</td>
<td>Not implemented</td>
<td>Implemented. Max Length 6 octets</td>
<td></td>
</tr>
<tr>
<td>Facility</td>
<td>Implemented</td>
<td>Not implemented</td>
<td></td>
</tr>
<tr>
<td>Feature activation</td>
<td>Not implemented</td>
<td>Supports feature activation for switch-hook flash (ref TNA 134 [4] Part B.4.7.3)</td>
<td></td>
</tr>
<tr>
<td>Information request</td>
<td>Not implemented</td>
<td>Implemented</td>
<td></td>
</tr>
<tr>
<td>Switchhook</td>
<td>Not implemented</td>
<td>Implemented</td>
<td></td>
</tr>
</tbody>
</table>

### Procedures

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit network selection</td>
<td>Not implemented</td>
<td>Implemented</td>
<td></td>
</tr>
<tr>
<td>Incoming call</td>
<td>Implemented (network option)</td>
<td>Overlap receiving is not used.</td>
<td></td>
</tr>
<tr>
<td>Setup message delivered by point-to-point data link</td>
<td>The alternative &quot;any channel is acceptable&quot; is not supported.</td>
<td>Implemented</td>
<td></td>
</tr>
<tr>
<td>Overlap receiving</td>
<td>Implemented</td>
<td>Not implemented</td>
<td></td>
</tr>
<tr>
<td>Packet communications procedures</td>
<td>Not implemented</td>
<td>No longer supported</td>
<td></td>
</tr>
<tr>
<td>Annex C Transit network selection</td>
<td>Not implemented</td>
<td>Implemented</td>
<td></td>
</tr>
<tr>
<td>Message segmentation procedures</td>
<td>Implemented.</td>
<td>Not implemented.</td>
<td></td>
</tr>
</tbody>
</table>

### 5.3.2 PART B - Basic Call Control Procedures

#### 5.3.2.1 PART B.1 - General

No change from Specification TNA 134 [4], Part B.1.

#### 5.3.2.2 PART B.2 - Overview of call control

The following are exceptions from Specification TNA 134 [4], Part B.2 in relation to “AXE BRA”:

B.2.1.1.16 Overlap receiving (user side) – Noted as user side requirement in “AXE BRA”.
B.2.1.2.17 Overlap receiving (network side) – Supported in “AXE BRA”.
B.2.2 Packet-mode access connections – Not supported in “AXE BRA”.
5.3.2.3 PART B.3 - Message functional definitions and content

The following are exceptions from Specification TNA 134 [4], Part B.3 in relation to “AXE BRA”:

B.3.1.1 Alerting – The maximum length of “Channel Identification” is 3 octets for BRA. May also include “Facility” information element.

B.3.1.2 Call Proceeding – The maximum length of “Channel Identification” is 3 octets for BRA.

(Note) Congestion Control – Only applicable in the network-to-user direction.

(Note that this is an ETSI requirement not included in TNA 134 [4].)

B.3.1.3 Connect – The maximum length of “Channel Identification” is 3 octets. May also include “Facility” information element.

B.3.1.4 Connect Acknowledge – May also include “Channel Identification” information element.

B.3.1.5 Disconnect – May also include “Facility” information element.

(Note) Facility – ETSI requirement: this message is defined in ETSI T/S 46-32B.

(Note that this is an ETSI requirement not included in TNA 134 [4].)

B.3.1.6 Information – May also include “Cause” information element.

B.3.1.7 Release – May also include “Facility” information element.

B.3.1.8 Release Complete – May also include “Facility” information element.

B.3.1.9 Resume – Only applicable on a point-to-multipoint configuration in the user-to-network direction.

B.3.1.10 Resume Acknowledge – Only applicable on a point-to-multipoint configuration in the network-to-user direction. The maximum length of “Channel Identification” is 3 octets.

B.3.1.11 Resume Reject – Only applicable on a point-to-multipoint configuration in the network-to-user direction.

B.3.1.12 Setup – May also include “Facility” information element. Network Specific Facilities and Transit Network Selection are not supported

B.3.1.13 Suspend – Only applicable on a point-to-multipoint configuration in the user-to-network direction.

B.3.1.14 Suspend Acknowledge – Only applicable on a point-to-multipoint configuration in the network-to-user direction.

B.3.1.15 Suspend Reject – Only applicable on a point-to-multipoint configuration in the network-to-user direction.

(Note) User Information – Fully supported on “AXE BRA”

(Note that this is an ETSI requirement not included in TNA 134 [4].)

B.3.2 Message for Packet-mode access connection control – Not supported in “AXE BRA”.

5.3.2.4 PART B.4 - General message format and information elements coding

The following are exceptions from Specification TNA 134 [4], Part B.4 in relation to “AXE BRA”:

B.4.5.1 Coding Rules – The following information elements are not supported on “AXE BRA”: Network specific facilities, Transit network selection and Escape for extension.

B.4.5.8 Called Party Number – The maximum length is 23 octets. The following codepoints are not supported on “AXE BRA”: Type of number “abbreviated number”, and Numbering plan “telex numbering plan”.

B.4.5.10 Calling Party Number – The maximum length is 24 octets. The following codepoints are not supported on “AXE BRA”: Type of number “abbreviated number”, and Numbering plan “telex numbering plan”.

B.4.5.12 Cause – Only one “Cause” information element is transferred to the remote user. In the direction user-to-network only the first one is handled.

B.4.5.14 Congestion Level – Fully supported on “AXE BRA”

B.4.5.20 More Data – Fully supported on “AXE BRA”

B.4.5.23 Progress Indicator – The following codepoints are not supported on “AXE BRA”:
• Coding standard “other international standard”, ”national standard” and “standard specific to identified location”.

• Progress description 1, 4 and 8 in user-to-network direction.

B.4.5.26 Segmented Message – Fully supported on “AXE BRA”
B.4.5.26 Sending Complete – Fully supported on “AXE BRA”
B.4.5.28 Signal – Not supported on “AXE BRA”
B.4.5.29 Transit Network Selection – Not supported on “AXE BRA”

B.4.6 Information Elements for Packet Communication - Not supported on “AXE BRA”
B.4.7.3 Feature Activation - Not supported on “AXE BRA”.

5.3.2.5 PART B.5 - Circuit-switched call control procedures
The following are exceptions from Specification TNA 134 [4], Part B.5 in relation to “AXE BRA”:
B.5.1.4 Invalid Call Information – Causes #3 “no route to destination” and #22 ”number changed” are not supported on “AXE BRA”.
B.5.1.5.1 Call proceeding, en-bloc sending – Cause code #58 ”bearer capability not presently available” is not generated on “AXE BRA”.
B.5.1.5.2 Call proceeding, overlap sending – Cause code #58 ”bearer capability not presently available” is not generated on “AXE BRA”.
B.5.1.10 Transit Network Selection – Not supported on “AXE BRA”
B.5.2.1 Incoming Call – Fully supported on “AXE BRA”
B.5.2.3.1 Setup message delivered by point-to-point data link – The alternative ”any channel is acceptable” is not supported.
B.5.2.4 Overlap receiving – Fully supported on “AXE BRA”

5.3.2.6 PART B.6 - Packet communication procedures
Packet communications is not supported on “AXE BRA”.

5.3.2.7 PART B.7 - User signalling bearer service call control procedures
Not currently used by Telecom (no change from Specification TNA 134 [4], Part B.7).

5.3.2.8 PART B.8 - Circuit-mode multirate (64 kbit/s base rate) procedures
Not currently used by Telecom (no change from Specification TNA 134 [4], Part B.8).

5.3.2.9 PART B.9 - List of system parameters
B.9.1 Timers in the network side – T320 and T321 not supported in “AXE BRA”

5.3.2.10 PART B. Annex A User side and network side SDL diagrams
No change from Specification TNA 134 [4], Part B. Annex A.

5.3.2.11 PART B. Annex B Compatibility and address checking
No change from Specification TNA 134 [4], Part B. Annex B.

5.3.2.12 PART B. Annex C Transit network selection
Transit network selection is not supported on “AXE BRA”.

5.3.2.13 PART B. Annex D Extensions for symmetric call operation
Not currently used by Telecom (no change from Specification TNA 134 [4], Part B. Annex D).
5.3.2.14 PART B. Annex E Network specific facility selection
Network specific facility selection is not supported on “AXE BRA” and not currently used by Telecom (no change from Specification TNA 134 [4], Part B. Annex E).

5.3.2.15 PART B. Annex F D-channel backup procedures
D-channel backup is not supported on “AXE BRA”.

5.3.2.16 PART B. Annex G Use of progress indicators
Use of progress indicators is supported on “AXE BRA”. No change from Specification TNA 134 [4], Part B. Annex G.

5.3.2.17 PART B. Annex H Message segmentation procedures
Message segmentation procedures is supported on “AXE BRA” but not used by Telecom (Specification TNA 134 [4], Part B. Annex H).

5.3.2.18 PART B. Annex I Low layer information coding principles
No change from Specification TNA 134 [4], Part B. Annex I.

5.3.2.19 PART B. Annex J Low layer compatibility negotiation
No change from Specification TNA 134 [4], Part B. Annex J.

5.3.2.20 PART B. Annex K Procedures for establishment of bearer connection prior to call acceptance
No change from Specification TNA 134 [4], Part B. Annex K.

5.3.2.21 PART B. Annex L Optional procedures for bearer service change
Optional procedures for bearer service change is not supported on “AXE BRA” and not currently used by Telecom (no change from Specification TNA 134 [4], Part B. Annex L).

5.3.2.22 PART B. Appendix I Definition of causes values
No change from Specification TNA 134 [4], Part B. Appendix I.

5.3.2.23 PART B. Appendix II Example message flow diagrams and example conditions for cause mapping
No change from Specification TNA 134 [4], Part B. Appendix II.

5.3.3 PART C - Generic Procedures for the Control of ISDN Supplementary Services
The following are exceptions from Specification TNA 134 [4], Part C in relation to “AXE BRA”:

5.3.3.1 PART C.2.1.1.2 - Feature Key Management protocol
Feature key management is not supported on “AXE BRA”.

5.3.3.2 PART C.2.1.1.3 - Information Request Procedure
Information request procedure is not supported on “AXE BRA”.

5.3.3.3 PART C.5 - Feature Key Management protocol
Feature key management protocol is not supported on “AXE BRA”

5.3.4 PART D - Procedures for Specific Supplementary Services
5.3.4.1 PART D.1 - General
“AXE BRA” has a small number of changes in feature set compared with that described in Specification TNA 134 [4], Part D, as noted in the following paragraphs.
5.3.4.2 PART D.2 - Direct Dialling In
No change from Specification TNA 134 [4], Part D.2.

5.3.4.3 PART D.3 - Multiple Subscriber Number
No change from Specification TNA 134 [4], Part D.3.

5.3.4.4 PART D.4 - Calling line identification Presentation
No change from Specification TNA 134 [4], Part D.4.

5.3.4.5 PART D.5 - Calling line identification Restriction
No change from Specification TNA 134 [4], Part D.5.

5.3.4.6 PART D.6 - Connected line identification Presentation
Connected line identification Presentation is not currently used on “AXE BRA”.

5.3.4.7 PART D.7 - Connected line identification Restriction
No change from Specification TNA 134 [4], Part D.7.

5.3.4.8 PART D.8 - Malicious Call Identification
No change from Specification TNA 134 [4], Part D.8.

5.3.4.9 PART D.9 - Sub-addressing
No change from Specification TNA 134 [4], Part D.9.

5.3.4.10 PART D.10 - Call Transfer
Call Transfer is not supported on “AXE BRA”.

5.3.4.11 PART D.11 - Call Forwarding Busy
No change from Specification TNA 134 [4], Part D.11.

5.3.4.12 PART D.12 - Call Forwarding No Reply
No change from Specification TNA 134 [4], Part D.12.

5.3.4.13 PART D.13 - Call Forwarding Unconditional
No change from Specification TNA 134 [4], Part D.13.

5.3.4.14 PART D.14 - Call Deflection
Call deflection is not currently used on “AXE BRA”.

5.3.4.15 PART D.15 - Line Hunting
No change from Specification TNA 134 [4], Part D.15.

5.3.4.16 PART D.16 - Call Waiting
Call Waiting is not currently used on “AXE BRA”.

5.3.4.17 PART D.17 - Completion of Calls to Busy Subscriber
Completion of Calls to Busy Subscriber is not currently used on “AXE BRA”.

5.3.4.18 PART D.18 - Terminal Portability
No change from Specification TNA 134 [4], Part D.18.

5.3.4.19 PART D.19 - Conference Calling
No change from Specification TNA 134 [4], Part D.19.
5.3.4.20 PART D.20 - Three Party Service
No change from Specification TNA 134 [4], Part D.20.

5.3.4.21 PART D.21 - Outgoing Call Barring
No change from Specification TNA 134 [4], Part D.21.

5.3.4.22 PART D.22 - Credit Card Calling
No change from Specification TNA 134 [4], Part D.22.

5.3.4.23 PART D.23 - Advice of Charge
No change from Specification TNA 134 [4], Part D.23.

5.3.4.24 PART D.24 - Reverse Charging
No change from Specification TNA 134 [4], Part D.24.

5.3.4.25 PART D.25 - User-to-User Signalling
Only UUS service 1 and 3 are supported on “AXE BRA”.

5.3.4.26 PART D.26 - Dialled Number Information Service
Dialled Number Information Service is not supported on “AXE BRA”.

5.3.4.27 PART D.27 - Dialled Number Information Restriction
Dialled Number Information Restriction is not supported on “AXE BRA”.

5.3.4.28 PART D.28 - Date and Time
No change from Specification TNA 134 [4], Part D.28.

6. Compliance with ETSI Standards

6.1 Layer 1 Compliance
ETS 300 012 [14] is based on the 1988 version of ITU-T Recommendation I.430 [8] with modifications and additions. These changes were essentially included in the latest version of ITU-T Recommendation I.430 [8] on which this layer 1 part of the Specification is based.

Compliance with ETS 300 012 [14] will be accepted as compliance with this layer 1 part of the Specification.

(Note that this layer 1 compliance is unchanged from that in Specification PTC 131 [1].)

6.2 Layer 2 Compliance
Compliance with ETS 300 402-2, "Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer: Part 2: General protocol specification [ITU-T Recommendation Q.921 (1993), modified]", 1995 [16] will be considered as compliance with this layer 2 part of the Specification.

(Note that this layer 2 compliance is unchanged from that in Specification TNA 133 [3].)

6.3 Layer 3 Compliance
Please refer to sections 5.3.1.1 and 6.4.2 of this Specification.
6.4 Test Compliance

6.4.1 TBR 3 Compliance

For “AXE BRA”, a test report is required showing compliance with ETSI TBR 3, “ISDN Attachment Requirements for terminal equipment to connect to an ISDN using ISDN Basic rate access”, Nov 1995 [19], together with supplementary testing outlined in section 6.4.2 following.

6.4.2 ISDN Layer 3 Supplementary Testing

The following tests, related to Telecom's ISDN and likely to affect NZ users, are not covered in a standard ETSI ISDN test report. In view of this, applicants for “AXE BRA” ISDN Telepermits are required to carry out these additional tests and to verify that the requirements are complied with.

"EUT" signifies "Equipment Under Test":-

I. Applicable to all ISDN CPE:

1. Redirecting Number IE (Information Element). Ref. Amendment 2, TNA 134 [4] Part B.4.7.5. The purpose of the Redirecting number information element is to identify the redirecting party of a call.

   The test checks that calls with the Redirecting number information element in the SETUP message are accepted by the EUT. The extraction and processing of the redirecting information element is left to the equipment supplier. This is a subscription option.

   EUT shall accept calls with Redirecting Number IE PASS/FAIL

2. Date and Time IE. Ref. Amendment 2, TNA 134 [4] Part B.4.5.15. The Purpose of the Date/Time information element is to provide the date and time to the user. It indicates the point in time when the message has been generated by the network.

   The tests check that calls with the Date/Time information element in the SETUP or CONNECT messages are accepted by the EUT. The extraction and processing/display of the date and time information element is left to the equipment supplier.

   EUT accepts call Setup with date and time PASS/FAIL
   EUT accepts Connect with date and time PASS/FAIL

II. Only for EUTs intended to support Telecom CENTREX

Not required for “AXE BRA”, as Telecom CENTREX is not supported.

III. Only for EUTs with Analogue ports (Terminal adapters)

Analogue port Setup message including Progress Indicator.

An analogue port coded as "Speech or 3.1kHz audio", but without a "Call is not end-to-end ISDN" Progress Indicator, cannot be used by both Voice and Data devices when calling ISDN terminals that adhere to all compatibility checks.

As examples, an ISDN Fax may not answer calls from a Fax originating from a "Speech" port; or a PABX or ISDN phone may not accept voice calls originating from a 3.1kHz Audio (VF Data) port.

NOTE: A 3.1kHz audio call without the Progress Indicator IE "Call is not end to end ISDN" is regarded by some terminals as a data call.

[EUT->NT] SETUP, Analogue port includes Prog Ind IE YES/NO

Terminal adapters are to be tested by a Telecom-accredited laboratory to ensure that the analogue port complies with PTC 200.
END