Reference: IUP Signalling Protocol Issue: 3 (09/02/2016)

# Integration Testing Manual

## IUP Signalling Protocol

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## Document History

| Issue | Author | Date | Notes |
|---|---|---|---|
| 3 | Andy Fisk | 09/02/16 | Altered to reflect CSH Timer change |
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| 1 | Roger Felgate | 23/04/2002 | Initial Version |

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## References

[1] Current version of NICC Specification ND1006 as per NICC Publications.

## Glossary

| | |
|---|---|
| ACI | Additional Call Information Message |
| ACM | Address Complete Message |
| AIS | Alarm Indication Signal |
| ANS | Answer Message |
| ASUI | Additional Set-up Information |
| BT | British Telecom plc |
| B/W | Both way |
| CBI | CLI Blocking Indicator |
| CLI | Calling Line Identity |
| CLIP | Calling Line Identity Presentation |
| CLIR | Calling Line Identity Restriction |
| CLR | Clear Message |
| CNA | Connection Not Admitted |
| CNAxx | CNA with reason xx e.g. CNA57 |
| COLP | Connected Line Identity Presentation |
| COLR | Connected Line Identity Restriction |
| CPC | Calling Party Category |
| CPE | Customer Premises Equipment |
| CPI | Call Path Indicator |
| CSA | Called Subscriber Answer |
| CSH | Called Subscriber Held |
| CTI | Call Type Indicator |
| DLE | Digital Local Exchange |
| DMSU | Digital Main Switching |
| FCLI | Full Calling Line Identity |
| GPL | System X Group Processing Logic |
| GST | System X C7 Signalling Terminal Card |
| IAM | Initial Address Message |
| IFAM | Initial and Final Address Message |
| INT | International Indicator |
| IRC | Information Requested Code |
| ISDN | Integrated Services Digital Network |
| ISP | Internet Service Provider |
| IUP | Interconnect User Part |
| I/W | Inter-Working Indicator |
| MTP | Message Transfer Part |
| NAS | Network Access Server |
| NGNP | Non Geographic Number Portability |
| NTAI | Network Translated Address Indicator |
| CP | Other Licensed Operator |
| PCLI | Partial Calling Line Identity |
| PCM | Pulse Code Modulation |
| PNI | Presentation Number Indicator |
| POTS | Plain Ordinary Telephone Service |
| PRI | Protocol Request Indicator |
| RAN | Re-answer Message |
| REL | Release Message |
| RX | Receive |
| SASI | Send Additional Set-up Information |
| SHP | Service Handling Protocol |
| SLC | Signalling Link Code |

| | |
|---|---|
| SS7 | Signalling System number 7 |
| TLI | Terminating Line Identity |
| T/O | Time Out |
| TOOS | Temporarily Out Of Service |
| TX | Transmit |

# 1. Introduction

This test specification is designed to test the IUP SS7 CP signalling interface. The interconnection with BT will be a bothway route of 60 circuits using 2 signalling channels as shown in the configuration diagram 1 in Appendix A. Where an STP interface is also required, suitable adjustments to the configuration will be made as per diagram 2 in Appendix A. This specification also checks the operation of transmission alarms.

The interconnect route will be able to carry calls transiting through the CP equipment back to BT using one and two stage (indirect) access, calls terminating and originating in the CP network and calls to number translation facilities, such as Freephone and Premium Rate services, in the CP network.

The generic test specification is designed to check correct operation of the services available across the Interconnect, or where the CP does not support a service, that it is correctly rejected. The generic test specification will be tailored for each CP (based on the CP service description), to omit or modify tests where the generic version has been judged not relevant or practical. The agreed tests will be completed as far as is practically possible within the agreed testing period, although unpredictable events, such as nodal failure within the test configuration network, may occur and so may preclude the completion of some of the specified testing. Similarly, the reactive nature of the testing process may prompt the test teams to execute additional tests to identify and fully understand the implications of a particular test scenario. This additional testing will be undertaken at the test team's discretion, but if significant departures from the agreed test specification are envisaged, the parties involved in the original agreement will review this. Where changes are made during the course of testing to overcome non-compliance with the Interconnect requirements, an element of regression testing may be required to ensure that tests previously completed successfully have not been affected.

This interconnect testing is carried out against the UK agreed specifications [1].

# 2. Test Schedule – MTP and IUP Tests

## 2.1. Nomenclature

BT = BT NIF Model Network and associated CPE

CP = CP switch and associated CPE

## 2.2. Test Procedures

1. Check all received flag settings on initial call set-ups.
2. Overall call behaviour to be checked in all tests.
3. All test results on the signalling tester to be captured.
4. Link failures to be done by manually out of servicing the signalling at the relevant end, unless the test calls for the link to be broken.
5. Details for tests NOT required have been removed.
6. Number ranges for the BT NIF network are given in Appendix A

## 2.3. Signalling Link Management Level 2 Operation

| **2.3.1** | Check signalling link Emergency Alignment (SIE messages) by initiating alignment from both BT and CP ends | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP (SLC0) | | |
| (b) | BT > CP (SLC1) | | |
| (c) | CP > BT (SLC0) | | |
| (d) | CP > BT (SLC1) | | |

| **2.3.2** | Check signalling link Normal Alignment by initiating Alignment (SIN messages) from both BT and CP ends. | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP (SLC0) | | |
| (b) | CP > BT (SLC1) | | |

### 2.4. Signalling Link Management Level 3 Operation

| **2.4.1** | Check the correct activation of the first link of the linkset (SLC=0) from both CP and BT ends. Ensure Changeback Declarations and Changeback Acknowledgements are correctly exchanged.<br>NB Link SLC=1 should be in-service for this test. | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP | | |
| (b) | CP > BT | | |

| **2.4.2** | Check the correct activation of the second link of the linkset (SLC=1) from both CP and BT ends. Ensure Changeback Declarations and Changeback Acknowledgements are correctly exchanged.<br>Link SLC=0 should be in service for this test. | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP | | |
| (b) | CP > BT | | |

| **2.4.3** | Check the correct de-activation of the first link of the linkset (SLC=0) from both CP and BT ends. Ensure Changeover Orders (COO messages) and Changeover Acknowledgements (COA messages) are correctly exchanged.<br>Link SLC=1 should be in-service for this test. | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP | | |
| (b) | CP > BT | | |

| **2.4.4** | Check the correct de-activation of the second link of the linkset (SLC=1) from both CP and BT ends. Ensure Changeover Orders (COO messages) and Changeover Acknowledgements (COA messages) are correctly exchanged.<br>Link SLC=0 should be in-service for this test. | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP | | |
| (b) | CP > BT | | |

| **2.4.5** | Check signalling link Changeover (COO/COA messages) under fault conditions, e.g.. disconnection of the 2Megabit bearer | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP | | |
| (b) | CP > BT | | |

### 2.5. Link Failures During Calls

| **2.5.1** | Main link failure, prior to Address Complete | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |

| | | | |
|---|---|---|---|
| (a) | BT > CP (Failure initiated by BT) | | |
| (b) | BT > CP (Failure initiated by CP ) | | |

| **2.5.2** | Main link failure during ringing phase. | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP (Failure initiated by BT) | | |
| (b) | BT > CP (Failure initiated by CP ) | | |

| **2.5.3** | Main link failure during data transmission phase (call answered) | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP (Failure initiated by BT) | | |
| (b) | BT > CP (Failure initiated by CP ) | | |

| **2.5.4** | Both link failure during speech phase. Clear call before restoring links. | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP (Failure initiated by BT) | | |
| (b) | BT > CP (Failure initiated by CP ) | | |

| **2.5.5** | OTM MTP Tests (Call Behaviour with Signalling Link Failures) | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | OTM MTP 57 | | |
| (b) | OTM MTP 58 | | |

### 2.6. Call Set-up Variants

### 2.6.1 Single-stage access, overlap signalling

Check call parameters. If transit working is not supported the first table of tests will be used for BT to CP tests.

**BT > CP > BT (transit calls)**

Check CLI is Withheld/released/unavailable at the customer terminating equipment

| ***Test 2.6.1*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***CLI*** | ***Results*** |
|---|---|---|---|---|---|---|
| (a) | IDA+11digits | POTS | POTS | | Withheld | |
| (b) | IDA+11digits | POTS | POTS | | Release | |
| (c) | IDA+11digits | POTS | POTS | | Unavailable | |
| (d) | IDA+11digits | ISDN2 | POTS | 3.1KHz | Withheld | |
| (e) | IDA+11digits | ISDN2 | POTS | 3.1KHz | Release | |
| (f) | IDA+11digits | ISDN2 | POTS | 3.1KHz | Unavailable | |
| (g) | IDA+11digits | ISDN2 | ISDN | Speech | Withheld | |
| (h) | IDA+11digits | ISDN2 | ISDN | Speech | Release | |
| (i) | IDA+11digits | ISDN2 | ISDN | Speech | Unavailable | |
| (j) | IDA+11digits | ISDN2e | ISDN | 64Kbits | Withhold | |
| (k) | IDA+11digits | ISDN2e | ISDN | 64Kbits | Release | |
| (l) | IDA+11digits | ISDN2e | ISDN | 64Kbits | Unavailable | |
| (m) | IDA+11digits | ISDN2e | ISDN | 9.6Kbit | Withhold | |
| (n) | IDA+11digits | ISDN2e | ISDN | 9.6Kbit | Release | |
| (o) | IDA+11digits | ISDN2e | ISDN | 9.6Kbit | Unavailable | |

**CP > BT**

Check CLI is Withheld/released/unavailable at the BT terminating equipment

| *Test 2.6.1* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (p) | 11digits | POTS | POTS | | Withheld | |
| (q) | 11digits | POTS | POTS | | Release | |
| (r) | 11digits | POTS | POTS | | Unavailable | |
| (s) | 11digits | ISDN2 | POTS | 3.1KHz | Withheld | |
| (t) | 11digits | ISDN2e | ISDN | 64Kbits | Release | |
| (u) | 11digits | ISDN2e | ISDN | 9.6Kbit | Unavailable | |

**BT > CP**

Check CLI is Withheld/released/unavailable at the customer terminating equipment

| *Test 2.6.1* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (v) | 11digits | POTS | ISDN | | Release | |
| (w) | 11digits | POTS | ISDN | | Unavailable | |
| (x) | 11digits | ISDN2 | ISDN | 9.6Kbit | Withheld | |
| (y) | 11digits | ISDN2 | POTS | 64Kbits | Release | |
| (z) | 11digits | ISDN2 | ISDN | Speech | Unavailable | |

### 2.6.2 Single-stage access, 'en bloc' signalling

Check call parameters. If transit working is not supported the first table of tests will be used for BT to CP tests.

**BT > CP > BT (transit calls)**

| *Test 2.6.2* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (a) | IDA+11digits | POTS | ISDN | | Withheld | |
| (b) | IDA+11digits | POTS | ISDN | | Released | |
| (c) | IDA+11digits | POTS | ISDN | | Unavailable | |
| (d) | IDA+11digits | IDSN2 | ISDN | 3.1KHz | Withheld | |
| (e) | IDA+11digits | IDSN2 | ISDN | 3.1KHz | Released | |
| (f) | IDA+11digits | IDSN2 | ISDN | 3.1KHz | Unavailable | |
| (g) | IDA+11digits | ISDN2e | POTS | Speech | Withheld | |
| (h) | IDA+11digits | ISDN2e | POTS | Speech | Released | |
| (i) | IDA+11digits | ISDN2e | POTS | Speech | Unavailable | |
| (j) | IDA+11digits | ISDN2e | ISDN | 64Kbits | Withheld | |
| (k) | IDA+11digits | ISDN2e | ISDN | 64Kbits | Released | |
| (l) | IDA+11digits | ISDN2e | ISDN | 64Kbits | Unavailable | |
| (m) | IDA+11digits | ISDN2e | ISDN | 9.6Kbit | Withhold | |
| (n) | IDA+11digits | ISDN2e | ISDN | 9.6Kbit | Release | |
| (o) | IDA+11digits | ISDN2e | ISDN | 9.6Kbit | Unavailable | |

**CP > BT**

| *Test 2.6.2* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (p) | 11digits | POTS | POTS | | Withheld | |
| (q) | 11digits | POTS | POTS | | Release | |
| (r) | 11digits | POTS | POTS | | Unavailable | |
| (s) | 11digits | ISDN2 | POTS | 3.1KHz | Withheld | |
| (t) | 11digits | ISDN2e | ISDN | 64Kbits | Release | |
| (u) | 11digits | ISDN2e | ISDN | 9.6Kbit | Unavailable | |

**BT > CP**

| *Test 2.6.2* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (v) | 11digits | POTS | ISDN | | Release | |
| (w) | 11digits | POTS | ISDN | | Unavailable | |
| (x) | 11digits | ISDN2 | ISDN | 9.6Kbit | Withheld | |

| | | | | | | |
|---|---|---|---|---|---|---|
| (y) | 11digits | ISDN2 | POTS | 64Kbits | Release | |
| (z) | 11digits | ISDN2 | ISDN | Speech | Unavailable | |

### 2.6.3 CLI checks. Two-stage access, 'en bloc' signalling

As for 2.6.2, but using 2-stage access signalling where the caller is prompted to enter authentication information.

**BT > CP > BT (transit call)**

| *Test 2.6.3* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (a) | 1xxx + 11digits + authentication | POTS | POTS | | Withheld | |
| (b) | 1xxx + 11digits + authentication | POTS | POTS | | Released | |
| (c) | 1xxx + 11digits + authentication | POTS | POTS | | Unavailable | |
| (d) | 1xxx + 11digits + authentication | IDSN2 | ISDN2 | 3.1KHz | Withheld | |
| (e) | 1xxx + 11digits + authentication | IDSN2 | ISDN2 | 3.1KHz | Released | |
| (f) | 1xxx + 11digits + authentication | IDSN2 | ISDN2 | 3.1KHz | Unavailable | |

### 2.6.4 CLI checks. 08xx access, 'en bloc' signalling

.

As for Test 2.6.2, but access is via an 08xx number which undergoes number translation in the CP network before the call is delivered to an CP termination. The call is automatically authorised because the CLI is recognised in the CP network.

**BT > CP**

| *Test 2.6.4* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (a) | 08xx + 7digits | POTS | ISDN | | Withheld | |
| (b) | 08xx + 7digits | POTS | ISDN | | Release | |
| (c) | 08xx + 7digits | POTS | ISDN | | Unavailable | |
| (d) | 08xx + 7digits | ISDN2 | ISDN | 3.1KHz | Withheld | |
| (e) | 08xx + 7digits | ISDN2 | ISDN | 3.1KHz | Release | |
| (f) | 08xx + 7digits | ISDN2 | ISDN | 3.1KHz | Unavailable | |

### 2.6.5 CLI checks. 08xx 2-stage access, 'en bloc' signalling

As for Test 2.6.4, but the CLI is unrecognised in the CP network and so the caller is prompted to enter authentication information before the call is delivered to the termination.

**BT > CP**

| *Test 2.6.5* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (a) | 08xx + 7digits + PIN | POTS | ISDN | | Withheld | |
| (b) | 08xx + 7digits + PIN | POTS | ISDN | | Released | |
| (c) | 08xx + 7digits + PIN | POTS | ISDN | | Unavailable | |
| (d) | 08xx + 7digits + PIN | IDSN2 | ISDN2 | 3.1KHz | Withheld | |
| (e) | 08xx + 7digits + PIN | IDSN2 | ISDN2 | 3.1KHz | Released | |
| (f) | 08xx + 7digits + PIN | IDSN2 | ISDN2 | 3.1KHz | Unavailable | |

### 2.6.6 CLI checks. 08xx 2-stage access, overlap signalling

As Test 2.6.5 but with overlap signalling. The CLI is unrecognised in the CP network and so the caller is prompted to enter authentication information before the call is delivered to the termination.

**BT > CP**

| *Test 2.6.6* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (a) | 08xx + 7digits + PIN | POTS | ISDN | | Withheld | |
| (b) | 08xx + 7digits + PIN | POTS | ISDN | | Released | |
| (c) | 08xx + 7digits + PIN | POTS | ISDN | | Unavailable | |
| (d) | 08xx + 7digits + PIN | IDSN2 | ISDN2 | 3.1KHz | Withheld | |
| (e) | 08xx + 7digits + PIN | IDSN2 | ISDN2 | 3.1KHz | Released | |
| (f) | 08xx + 7digits + PIN | IDSN2 | ISDN2 | 3.1KHz | Unavailable | |

### 2.6.7 Two-stage access - invalid authentication, 'en bloc' signalling

Originate calls from lines where the CLI is *NOT* registered on the CP switch. Ensure the caller is prompted to enter authentication information as DTMF tones. Enter an invalid authentication code and ensure the call is correctly rejected.

**BT > CP > BT (transit call)**

| *Test 2.6.7* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *CLI* | *Results* |
|---|---|---|---|---|---|---|
| (a) | IDA+ invalid authentication | POTS | POTS | | Withheld | |
| (b) | IDA+ invalid authentication | POTS | POTS | | Released | |
| (c) | IDA+ invalid authentication | POTS | POTS | | Unavailable | |

### 2.6.8 Reserved

### 2.6.9 Malicious Call Interception

For each test case set up the call and ensure the "last party release" flag is set in the ACM. Activate the MCI trace at the "B" end (Recall button). Confirm that the MCI trace contains a meaningful CLI - preferably the "A" party CLI. Acceptable alternatives are a FCLI containing the Helpdesk number of CP or a PCLI identifying the earliest node possible in the call routing. Clear the call at the "A" end and check CLR message passed. Wait several minutes then place the "A" end off hook again and ensure speech path still present. Clear both ends of the call.

**BT > CP > BT transit calls**

| *Test 2.6.9* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN | POTS | Speech | |
| (c) | | POTS | ISDN | Speech | |

**BT > CP**

| *Test 2.6.9* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (d) | | POTS | ISDN | | |

**CP > BT**

| *Test 2.6.9* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (e) | | ISDN | ISDN | | |

**2.6.10 Calls to Emergency Services.**

Check that the CP 'ii' code and the 4 digit zone code (for mobiles) is added to the called address (which should therefore be of the format 999iizzzz). Check also that CLI & service marks are supplied where the call is passed to BT, or that the call is rejected with a suitable announcement if the CP does not support the service. Ensure that the call is released correctly after announcement.

**BT > CP > BT**

| *Test 2.6.10* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | xxxx + 999 (single-stage IDA) | POTS | OSS | | |
| (b) | xxxx + 112 (2-stage IDA) | POTS | OSS | | |

**CP > BT**

| *Test 2.6.10* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (c) | 999 | ISDN | OSS | | |
| (d) | 112 | ISDN | OSS | | |

**2.7. Call Release Variants**

**2.7.1 Forward Release of a B/W circuit prior to ACM.**

Check Release reasons for different call types. Overlap signalling to be used.
(prior to ACM on the "A" leg of the call) (Rel 48)

**BT > CP > BT**

| *Test 2.7.1* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | POTS | Speech | |
| (c) | | ISDN2 | ISDN2 | 3.1kHz | |

**CP > BT**

| *Test 2.7.1* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (d) | | ISDN | ISDN | 3.1kHz | |
| (e) | | POTS | POTS | | |

**2.7.2 Forward Release of a B/W circuit prior to Answer**

Check Release reasons for different call types; (should be 48). 'En bloc' signalling to be used.
(prior to ANS on the "B" leg of the call).

**BT > CP > BT**

| *Test 2.7.2* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN | POTS | Speech | |
| (c) | | ISDN | ISDN | 3.1kHz | |

**BT > CP**

| *Test* | *Access code* | *Orig.* | *Term.* | *Bearer* | *Results* |
|---|---|---|---|---|---|

| ***2.7.2*** | | ***Line*** | ***Line*** | ***Cap.*** | |
|---|---|---|---|---|---|
| (d) | | POTS | ISDN | | |

**CP > BT**

| ***Test 2.7.2*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (e) | | ISDN | POTS | | |
| (f) | | POTS | POTS | | |

**2.7.3 Forward Release of a B/W circuit after ANS.**
Check Release reasons (on both legs for transit calls) for different call types; (should be 48)

**BT > CP > BT**

| ***Test 2.7.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | POTS | | |
| (c) | | ISDN2 | ISDN | 3.1kHz | |

**BT > CP**

| ***Test 2.7.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (d) | | POTS | ISDN | | |

**CP > BT**

| ***Test 2.7.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (e) | | ISDN | ISDN | Speech | |
| (f) | | POTS | POTS | | |

**2.7.4 Called party clears (B/W circuit) after Answer.**
CLR or REL message expected from CP. If Release is received, check reason (should be 48).

**BT > CP > BT**

| ***Test 2.7.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN | ISDN | 3.1kHz | |
| (c) | | ISDN | ISDN | 64kbits | |
| (d) | | ISDN | ISDN | 9.6kbit | |

**BT > CP**

| ***Test 2.7.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (e) | | POTS | ISDN | | |

**CP > BT**

| ***Test 2.7.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (f) | | ISDN | POTS | | |
| (g) | | POTS | POTS | | |

**2.7.5 Resume within CSH timeout**
On receipt of a CLR message from Called party, wait less than 2 secs then resume the call at the “B” end. Check RAN message seen and transmission path re-established. Clear the call at

the “B” end again and wait until a REL is passed before clearing the “A” party. Check REL direction , timing (Anti-fraud change required by Ofcom) and reason .

**BT > CP > BT**

| ***Test 2.7.5*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN | POTS | | |

**BT > CP**

| ***Test 2.7.5*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (c) | | POTS | POTS | | |

**CP > BT**

| ***Test 2.7.5*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (d) | | ISDN | POTS | | |

### 2.8. Call Failure Variants

### 2.8.1 Ringing Tone No Reply - CSA Time-out.

In each case record the following:

- The release reason value (should be 31),
- Which end sent the initial release,
- The elapsed time between ACM and the initial release.

**BT > CP > BT**

| ***Test 2.8.1*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | POTS | Speech | |
| (c) | | ISDN2 | ISDN | 3.1kHZ | |

**BT > CP**

| ***Test 2.8.1*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (d) | | POTS | ISDN | | |

**CP > BT**

| ***Test 2.8.1*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (e) | | ISDN | POTS | | |
| (f) | | POTS | POTS | | |

### 2.8.2 Calls to TOOS lines.

Check Release or CNA values (should be 33).

**BT > CP > BT**

| ***Test 2.8.2*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN | ISDN | 64Kbits | |
| (c) | | ISDN | ISDN | 3.1kHz | |
| (d) | | ISDN2e | ISDN | 9.6Kbit | |

**BT > CP**

| ***Test 2.8.2*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| (e) | | ISDN2e | ISDN | Speech | |

**CP > BT**

| ***Test 2.8.2*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (f) | | ISDN | POTS | | |

**2.8.3 Calls to spare codes.**
Need to dial the spare code followed by the required number of digits to give the correct digit length.
Check Release value or CNA value (57).

**BT > CP > BT**

| ***Test 2.8.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN | ISDN | 3.1kHz | |
| (c) | | ISDN | ISDN | 64Kbits | |
| (d) | | ISDN2e | ISDN | 9.6Kbit | |

**BT > CP**

| ***Test 2.8.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (e) | | ISDN2e | ISDN | Speech | |

**CP > BT**

| ***Test 2.8.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (f) | | ISDN | POTS | | |

**2.8.4 Calls to engaged subscribers.**
Check Release value (47) or CAN (8)

**BT > CP > BT**

| ***Test 2.8.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | POTS | 3.1kHz | |
| (c) | | ISDN2e | ISDN | 64Kbits | |
| (d) | | ISDN2e | ISDN | 9.6Kbit | |

**BT > CP**

| ***Test 2.8.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (e) | | ISDN2e | ISDN2e | Speech | |

**CP > BT**

| ***Test 2.8.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (f) | | ISDN | POTS | | |

**2.8.5 Incomplete address dialled.**
Check Release value or CNA (1) value. Overlap signalling is needed.

**BT > CP > BT**

| ***Test 2.8.5*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | POTS | ISDN | | |
| (c) | | ISDN2e | ISDN2e | Speech | |

**BT > CP**

| ***Test 2.8.5*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (d) | | POTS | ISDN | | |

**CP > BT**

| ***Test 2.8.5*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (e) | | ISDN | POTS | | |

**2.8.6 Call Attempt with no terminating equipment.**
Check Release value or CNA (46) value

**BT > CP > BT**

| ***Test 2.8.6*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | ISDN2 | ISDN | 3.1kHz | |
| (b) | | POTS | ISDN | | |
| (c) | | ISDN2e | ISDN | 64Kbits | |
| (d) | | ISDN2e | ISDN | 9.6Kbit | |

**BT > CP**

| ***Test 2.8.6*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (e) | | POTS | ISDN | | |

**CP > BT**

| ***Test 2.8.6*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (f) | | ISDN | ISDN | Speech | |

**2.8.7 Call Attempt to an incompatible destination.**
For example, set the IFAM SHP/CPI combination to 1/1 (representing ISDN data), and route the call to a POTs termination at the CP end.

**BT > CP > BT**

| ***Test 2.8.7*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | ISDN2e | POTS | 64Kbits | |

**BT > CP**

| ***Test 2.8.7*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (b) | | ISDN | POTS | 64Kbits | |

**CP > BT**

| ***Test 2.8.7*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (c) | | ISDN | POTS | 64Kbits | |

**2.8.8 Call Attempt to a line with Incoming Call Barring**
Check Release or CNA (56) values.

**BT > CP > BT**

| *Test 2.8.8* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | ISDN | Speech | |

**BT > CP**

| *Test 2.8.8* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (c) | | POTS | ISDN | | |

**CP > BT**

| *Test 2.8.8* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (d) | | ISDN | ISDN | 64Kbits | |

## 2.9. Call Diversion

### 2.9.1 Unconditional Diversion

For transit calls, check the B leg CLI parameter values are the same as the A leg values.

**BT > CP > BT**

| *Test 2.9.1* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | ISDN2 | speech | |
| (c) | | ISDN2e | ISDN2 | 64Kbits | |

**CP > BT > CP**

| *Test 2.9.1* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (d) | | ISDN | ISDN | speech | |
| (e) | | POTS | POTS | | |

### 2.9.2 Divert on No Reply

For transit calls, check the B leg CLI parameter values are the same as the A leg values.

**BT > CP > BT**

| *Test 2.9.2* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | ISDN2 | speech | |

**BT > CP**

| *Test 2.9.2* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (c) | | ISDN2 | ISDN2 | speech | |
| (d) | | POTS | POTS | | |

### 2.9.3 Divert on Busy

For transit calls, check the B leg CLI parameter values are the same as the A leg values.

**BT > CP > BT**

| *Test 2.9.3* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | ISDN2 | 3.1KHz | |

| | | | | | |
|---|---|---|---|---|---|
| (c) | | ISDN2e | ISDN2 | 9.6Kbits | |

**BT > CP**

| ***Test 2.9.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (d) | | | | speech | |
| (e) | | | | 9.6Kbits | |

**2.9.4 Divert Unreachable – mobiles only.**

This is to simulate the base station unable to locate the mobile – removal of the SIM card would simulate this.

**BT > CP**

| ***Test 2.9.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | | | |
| (b) | | ISDN2 | | 3.1KHz | |
| (c) | | ISDN2e | | 9.6Kbits | |

**2.10 ISDN Supplementary Services**

**2.10.1Teleservices.**

Check CP responses to call attempts for the following teleservices. Check that the correct parameters are set in the IFAMs.

**BT > CP**

| ***Test 2.10.1*** | ***Service*** | ***Response*** | ***Results*** |
|---|---|---|---|
| (a) | Telefax Group 2/3 | | |
| (b) | Telefax Group 4 | | |
| (c) | Mixed Mode | | |
| (d) | Teletex (Basic mode) | | |
| (e) | International Videotex | | |
| (f) | Telex | | |

*(The first 3 can be made from an Aurora, the others can be made from a red butt).*

**2.10.2CLIP, CLIR, COLP, COLR**

Set up calls using combinations of CLIP, CLIR, COLP, and COLR. Check whether the CLI and TLI are displayed as indicated below for various call types.

| ***Originating Line*** | | | | ***Terminating Line*** | | | | ***Terminat-ing line ID shown on caller's display?*** | ***Caller's line ID shown at called party's display?*** |
|---|---|---|---|---|---|---|---|---|---|
| **CLIP** | **CLIR** | **COLP (TLID)** | **COLR** | **CLIP** | **CLIR** | **COLP (TLID)** | **COLR** | | |
| (a) | OFF | ON | | ON | | | ON | NO | YES |
| (b) | OFF | ON | | OFF | | | OFF | YES | NO |
| | | | | | | | | | |
| (c) | ON | ON | | ON | | | OFF | YES | NO |
| (d) | ON | ON | | OFF | | | ON | NO | NO |

**IUP Signalling Message Contents:**

| Originating line | | Terminating line | | IUP Signalling information | | | Terminating line ID shown on caller's display? | Caller's line ID shown at called party's display? |
|---|---|---|---|---|---|---|---|---|
| **CLIR** | **COLP (TLID)** | **CLIP** | **COLR** | **CLIB value in IFAM?** | **IQ value in 2nd ICSI?** | **IQ value in 3d ICSI?** | | |
| off | On | on | on | yes | yes | no | no | yes |
| off | On | on | off | yes | yes | yes | yes | yes |
| off | On | off | on | yes | yes | no | no | no |
| off | On | off | off | yes | yes | yes | yes | no |
| | | | | | | | | |
| on | On | on | on | yes | no | no | no | no |
| on | On | on | off | yes | no | yes | yes | no |
| on | On | off | on | yes | no | no | no | no |
| on | On | off | off | yes | no | yes | yes | no |

**BT > CP**

| ***Test 2.10.2*** | ***Bearer Cap*** | ***Results*** |
|---|---|---|
| (a) | 3.1KHz | |
| (b) | 3.1KHz | |
| (c) | Speech | |
| (d) | Speech | |

**CP > BT**

| ***Test 2.10.2*** | ***Bearer Cap*** | ***Result*** |
|---|---|---|
| (aa) | Speech | |
| (bb) | Speech | |
| (cc) | 3.1KHz | |
| (dd) | 3.1KHz | |

**2.11. Call Simulator Based Additional Tests**

The purpose of these tests is to apply parameter values that are not easily produced using the BT model network. Calls are generated by an IUP call simulator.

**2.11.1CP response to valid/invalid SHP/CPI values**

On completion of the run-file, check message sequence for acceptance or valid rejection.

| ***Test* 2.11.1** | ***Combination*** | ***Comments*** | ***Results*** |
|---|---|---|---|
| (a) | SHP=0, CPI=0 POTS | | |
| (b) | SHP=0, CPI=1 | | |
| (c) | SHP=0, CPI=2 | | |
| (d) | SHP=1, CPI=0 ISDN Speech | | |
| (e) | SHP=1, CPI=1 ISDN 64Kbits | | |
| (f) | SHP=1, CPI=2 ISDN 3.1 Khz | | |
| (g | SHP=2, CPI=0 OSS Speech | | |
| (h) | SHP=2, CPI=1 OSS 64Kbits | | |
| (i) | SHP=2, CPI=2 OSS 3.1Khz | | |
| (j) | SHP=3, CPI=0 Env DPNSS | | |
| (k) | SHP=3, CPI=1 DPNSS 64Kbits | | |
| (l) | SHP=3, CPI=2 DPNSS 3.1 Khz | | |
| (m) | SHP=5, CPI=0 Unknown | | |
| (n) | SHP=5, CPI=1 Unknown | | |
| (o) | SHP=8, CPI=0 Env IUP | | |

| | | | |
|---|---|---|---|
| (p) | SHP=8, CPI=1 IUP 64Kbits | | |

**2.11.2CP response to valid/invalid CPC values**
On completion of the run-file, check message sequence for acceptance or valid rejection.

| ***Test 2.11.2*** | ***Combination*** | ***Comments*** | ***Results*** |
|---|---|---|---|
| (a) | CPC=0 Unknown | | |
| (b) | CPC=1 Ord residential | | |
| (c) | CPC=4 Admin diverted | | |
| (d) | CPC=7 ISDN business | | |
| (e) | CPC=8 Public payphone | | |
| (f) | CPC=11 Service line | | |
| (g) | CPC=13 Operator call | | |
| (h) | CPC=17 Spare – reserved value | | |
| (i) | CPC=45 Spare – reserved value | | |

**2.11.3CP response, to 'no response' to an ACI request.**
Originate call attempts but do not respond to the (Type 7) ACI. Check the response.

**BT > CP > BT**

| ***Test 2.11.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | Speech | |
| (b) | | POTS | ISDN | Speech | |

**BT > CP**

| ***Test 2.11.3*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (c) | | POTS | ISDN | | |

**2.11.4 CP response to an Unrecognised FCLI**
Neither interworking nor international indicators set.
**BT > CP > BT**

| ***Test 2.11.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | ISDN2 | ISDN | 64Kbits | |
| (c) | | ISDN2 | ISDN | 9.6Kbit | |

**BT > CP**

| ***Test 2.11.4*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (d) | | POTS | ISDN | | |

**2.11.5 CP response to a partial CLI sent instead of a full CLI**
Both international and interworking bits set.

**BT > CP > BT**

| ***Test 2.11.5*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (a) | tba | POTS | POTS | | |
| (b) | tba | POTS | ISDN | | |

**BT > CP**

| ***Test 2.11.5*** | ***Access code*** | ***Orig. Line*** | ***Term. Line*** | ***Bearer Cap.*** | ***Results*** |
|---|---|---|---|---|---|
| (c) | | POTS | ISDN | | |

**2.11.6 CP response to a partial CLI sent instead of a full CLI**

Interworking indicator set but not international indicator.

**BT > CP > BT**

| *Test 2.11.6* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | POTS | | |
| (b) | | POTS | ISDN | | |

**BT > CP**

| *Test 2.11.6* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (c) | | POTS | ISDN | | |

**2.11.7 CP Switch Call Handling Capability**

| *Test Runs* | *Call sending programmes* | *Total calls* | *Calls failed* | *Success rate* | *Results* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

**2.11.8 CP response to priority calls.**

Check CPC values reflect the priority of the call.

**BT > CP**

| *Test 2.11.8* | *Access code* | *Orig. Line* | *Term Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | ISDN2 | POTS | 3.1KHz | |
| (b) | | ISDN2 | ISDN | 64Kbits | |
| (c) | | ISDN2 | ISDN | 9.6Kbit | |

**BT > CP**

| *Test 2.11.8* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (d) | | POTS | ISDN | | |

**2.11.9CP response to an IFAM containing a presentation number**

**BT > CP > BT**

| *Test 2.11.9* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | ISDN2 | POTS | 3.1KHz | |
| (b) | | POTS | POTS | | |
| (c) | | ISDN2 | ISDN | 64Kbits | |
| (d) | | ISDN2 | ISDN | 9.6Kbit | |

**BT > CP**

| *Test 2.11.9* | *Access code* | *Orig. Line* | *Term. Line* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (e) | | POTS | ISDN | | |

**2.11.10 Overload Message returned**

Send Overload message in response to the IFAM from the CP. Check CP response

**BT > CP > BT**

| *Test 2.11.10* | *Access code* | *Originating Line Type* | *Terminating Line Type* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | | POTS | | | |
| (b) | | POTS | | | |

**CP > BT**

| *Test 2.11.10* | *Access code* | *Originating Line Type* | *Terminating Line Type* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (c) | | ISDN | | | |

**2.11.11 Confusion message returned**

Send Confusion (Qualifier=2) in response to ACI from the CP. Check CP response.

**BT > CP > BT**

| *Test 2.11.11* | *Access code* | *Originating Line Type* | *Terminating Line Type* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (a) | 08xx + 7digits | POTS | ISDN | | |
| (b) | 1xxx + 11digits | POTS | ISDN | | |

**BT > CP**

| *Test 2.11.11* | *Access code* | *Originating Line Type* | *Terminating Line Type* | *Bearer Cap.* | *Results* |
|---|---|---|---|---|---|
| (c) | 08xx + 7digits | POTS | ISDN | | |

**2.11.12 Release sent on an idle circuit.**

| **Test 2.11.12** | Send a Release on an Idle Circuit | | |
|---|---|---|---|
| | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | REL > CP | | |

**2.12 Circuit Blocking Sequences**

| **2.12.1** | Blocking B/W circuits prior to Timer expiry | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP | | |
| (b) | CP > BT | | |

| **2.12.2** | Blocking B/W circuits after to Timer expiry | | |
|---|---|---|---|
| ***Test*** | ***Parameters*** | ***Comments*** | ***Results*** |
| (a) | BT > CP | | |
| (b) | CP > BT | | |

**2.13. Provocative Tests - Normal Conditions**

| **2.13.1** | At BT, and with calls in progress, out of service a SS7 signalling card associated with the CP signalling route. Check for satisfactory interworking behaviour. Clear the calls. Return to service and check for satisfactory interworking behaviour. | |
|---|---|---|
| | ***Comments*** | ***Results*** |
| | | |

| 2.13.2 | At CP, and with calls in progress, out of service a SS7 signalling card associated with the BT signalling route. Check for satisfactory interworking behaviour. Clear the calls. Return the affected hardware to service and check for satisfactory interworking behaviour | |
|---|---|---|
| | ***Comments*** | ***Results*** |
| | | |

| 2.13.3 | 2 Megabit bearer line breaks Only one PCM system to be broken - the other remains intact throughout the test. | | |
|---|---|---|---|
| ***Test*** | ***Combination*** | ***Comment*** | ***Results*** |
| (a) | BT 2sec break TX | | |
| (b) | BT 20sec break TX | | |
| (c) | BT 2sec break RX | | |
| (d) | BT 20sec break RX | | |
| (e) | BT 2sec break TX and RX | | |
| (f) | BT 20sec break TX and RX | | |
| (g) | BT 6mins break TX and RX | | |
| (h) | CP 2sec break TX | | |
| (i) | CP 20sec break TX | | |
| (j) | CP 2sec break RX | | |
| (k) | CP 20sec break RX | | |
| (l) | CP 2sec break TX and RX | | |
| (m) | CP 20sec break TX and RX | | |

**2.14. Restart and Restoration Tests**

| 2.14.1 | ***BT Restart. (Small)***<br>Call to be set up in each direction, ccts blocked from each end, some before Timer expiry (3 mins), some after Timer expiry. Check calls survive the restart and that the ccts are in correct states after the restart. |
|---|---|
| ***Comments*** | ***Results*** |
| | |

| 2.14.2 | ***BT Restoration (Large restart)***<br>Call to be set up in each direction, ccts blocked from each end, some before Timer expiry (3 mins), some after Timer expiry Check calls do not survive the restart and that the ccts are in correct states after the restoration. |
|---|---|
| ***Comments*** | ***Results*** |

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

| | |
|---|---|
| **2.14.3** | ***CP Small Restart***<br>Call to be set up in each direction, ccts blocked from each end, some before Timer expiry (x mins), some after Timer expiry. Check calls survive the restart and that the ccts are in correct states after the restart. |
| ***Comments*** | ***Results*** |
| | |

| | |
|---|---|
| **2.14.4** | ***CP Restoration (Large Restart)***<br>Call to be set up in each direction, ccts blocked from each end some before Timer expiry (x mins), some after Timer expiry. Check call survivability over the restoration, and check that the ccts are in correct states after the restoration. |
| ***Comments*** | ***Results*** |
| | |

**2.15. STP functionality**

Refer to the connection diagram in appendix A. The purpose of these tests is to check the action of the CP switch on receipt of TFP/TFA messages from the STP node (DMSU). Ensure any signalling links directly connecting the CP and Harrier are out of service for the duration of the STP tests.

| | |
|---|---|
| **2.15.1** | ***Out of service the signalling links between Harrier and the DMSU. Ensure that on receipt of TFP the OLO sends RST messages every 30-60 seconds about Harrier. Make a call from Bulldog and ensure that the call sets up correctly*** |
| ***Comments*** | ***Results*** |
| | |

| | |
|---|---|
| **2.15.2** | ***Out of service the signalling links between the OLO and the DMSU. Ensure that no messages related to call setup/cleardown are sent on the OLO route*** |
| ***Comments*** | ***Results*** |
| | |

| | |
|---|---|
| **2.15.3** | ***Return to service the signalling links between the OLO and the DMSU. Ensure that the OLO sends RST messages every 30-60 seconds about Harrier. Make a call from Bulldog and ensure the call sets up correctly*** |
| ***Comments*** | ***Results*** |
| | |

| | |
|---|---|
| **2.15.4** | ***Return to service the signalling links between Harrier and the DMSU. Ensure that on receipt of TFA the OLO stops sending RST messages. Make a call from Bulldog and Harrier and ensure both set up correctly*** |
| ***Comments*** | ***Results*** |
| | |

**2.16. Alarm tests**

| **2.16.1** | ***Check that the nominal pulse rate is 2048kbits/s +/- 50ppm*** |
|---|---|
| ***Comments*** | ***Results*** |

| **2.16.2** | ***Check that the frame alignment signal errors does not exceed 1 in a 15 minute period*** |
|---|---|
| ***Comments*** | ***Results*** |

| **2.16.3** | ***Check that an alarm indication is generated for a loss of the outgoing signal*** |
|---|---|
| ***Comments*** | ***Results*** |

| **2.16.4** | ***Check that an alarm indication is generated for a loss of outgoing frame alignment*** |
|---|---|
| ***Comments*** | ***Results*** |

| **2.16.5** | ***Check that an alarm indication is generated if the error rate in the frame alignment signal is 1 in $10^{-3}$*** |
|---|---|
| ***Comments*** | ***Results*** |

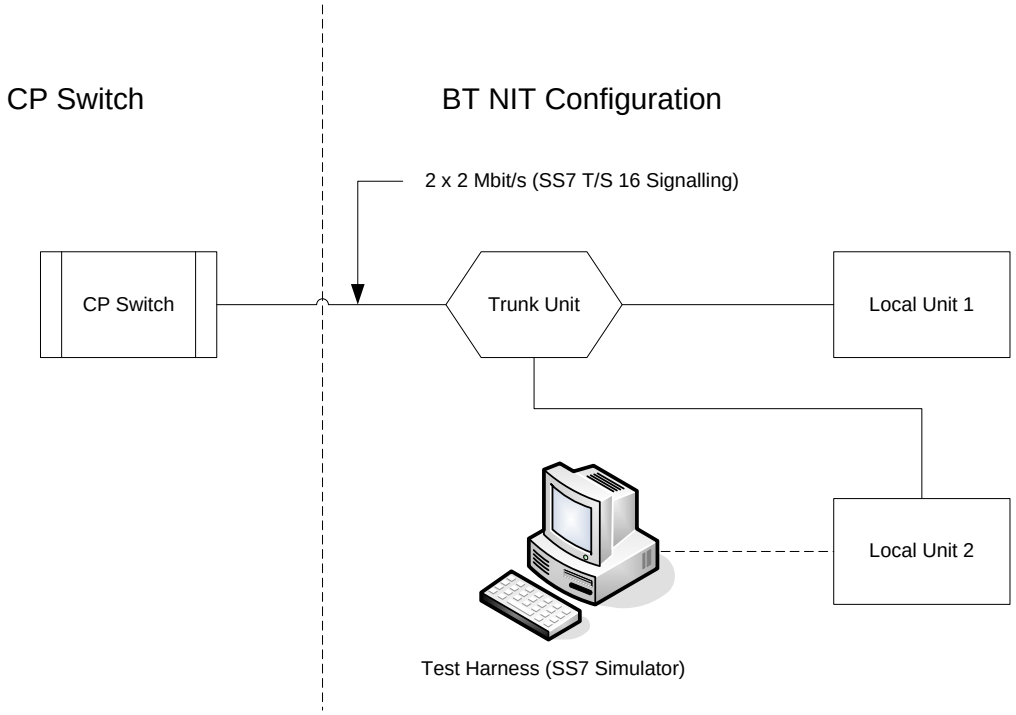
| **2.16.6** | ***Chech response to AIS (alarm indication signal)*** |
|---|---|
| ***Comments*** | ***Results*** |

| **2.16.7** | ***Check for false AIS*** |
|---|---|
| ***Comments*** | ***Results*** |

**END OF MAIN TEXT**

## APPENDIX A - TEST CONFIGURATION

### 1. Direct Interconnect tests



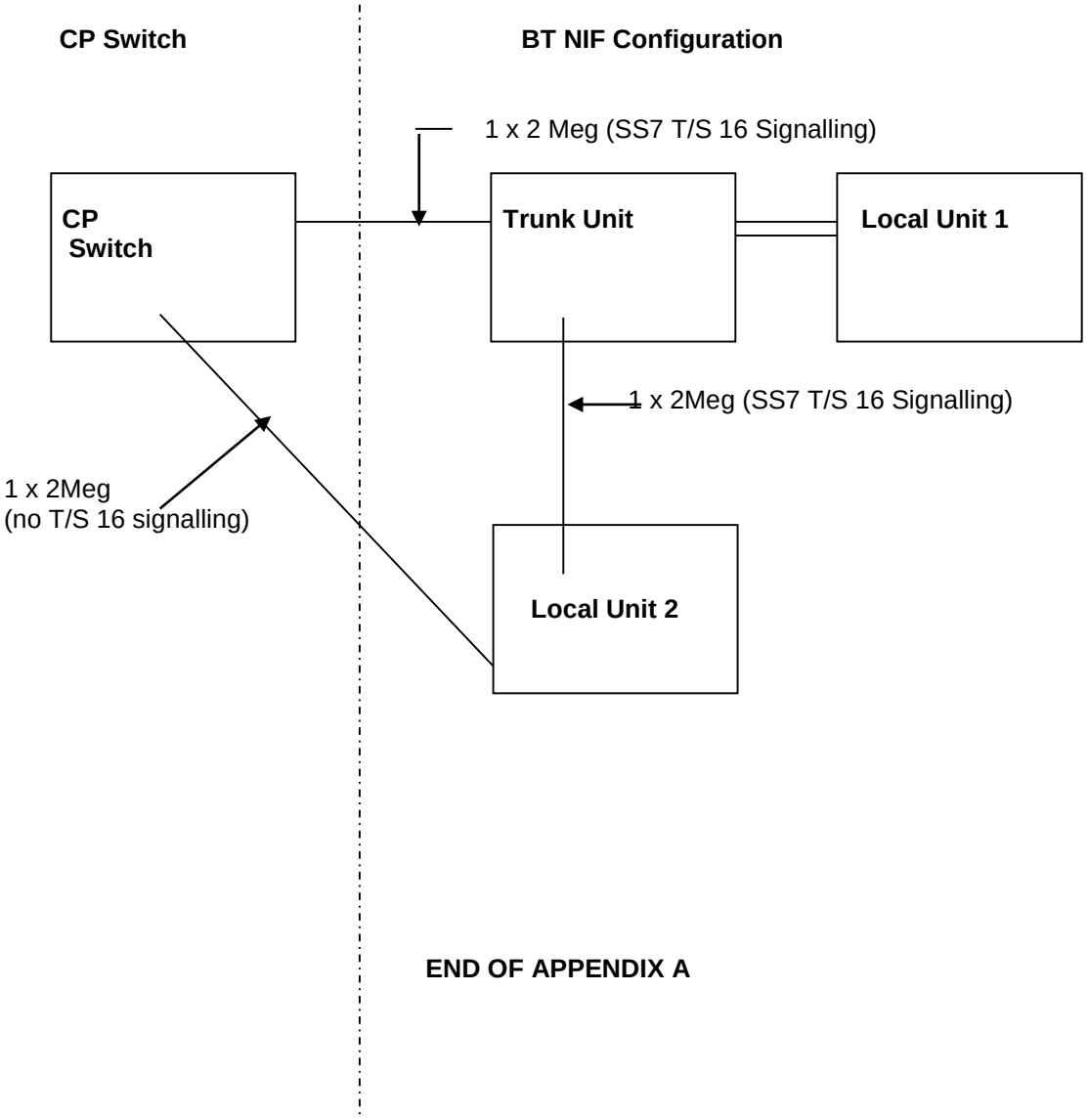

| CP Point Code = | yyy(hex) |
|---|---|

| BT Point Code = | xxx (hex) |
|---|---|

| CP<br>Number Plan |
|---|
| |
| |
| |
| |

| BT<br>Number Plan |
|---|
| 0191 2 + 6 digits (Local System X) |
| 02920 + 6 digits (Local System X) |
| 0207 3+ 6 digits (Local AXE10) |
| 01333/4 + 6 digits (Local AXE10) |

**2 STP Interconnect tests**




**END OF APPENDIX A**

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