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

BT NETWORK INTERCONNECTION PROVISIONING MANUAL

APPENDIX 9 - SIGNALLING SERVICE DESCRIPTION

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## A9.1 INTRODUCTION

This appendix contains the Signalling Service Description, the process for which is described in Sections 4.3.1 and 5.3.1 of the [Provisioning Manual](https://www.btwholesale.com/pages/static/Library/Technical_Documents_and_Procedures/Interconnect_Provisioning_Manual/index.htm).

## A9.2 SIGNALLING SERVICE DESCRIPTION

The Signalling Service Description commences on the following page.

**[CP NAME] Signalling Service Description**

Communications Provider (CP) [CPNAME] will be interconnecting to BT and will be using the following options on all connections:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Information on Switch to be Used by [CPNAME]**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SSQ Reference**  |  | **Switch Type Known to BT?**  | (Appears in the list of Known Builds as per Appendix 1 of the PSTN Provisioning Manual? Delete as appropriate) | Yes/ No |
| **Switch**  | Manufacturer |  | Type  |  | Build |  |

 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Service Types to be Used by [CPNAME]** (delete as appropriate)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Basic Telephony BT** (Geographic Calls) | Ingress | Yes/No | Egress  | Yes/No |
| **Number Translation Services** **NTS (**08xxx / 03xxx)  | Yes/No |  |
| **Premium Rate Service** **PRS** (09xxx)  | Yes/No |
| **Personal Numbering Service** **PNS** (07xxx)  | Yes/No |
| **Indirect Access IA**  | Single Stage (IA1 1xxx) | Yes/No | Two Stage (IA2 1xxx) | Yes/No |
| **Carrier Pre Select** (8xxxx)  | Yes/No |  |
| **BT Operator Services** (100/155/195) | Yes/No | **BT Directory Services** (118xxx) | Yes/No |
| **BT Emergency Service** (999) | Yes/No | **Video Calls** | Yes/No |

 |

|  |  |
| --- | --- |
| **Codes Assigned to [CPNAME] by Ofcom**  | (please add rows as necessary, insert codes and/or change to “No” as appropriate) |
|

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Code | Basic Tele-phony | Indirect Access & CPS  | Personal Numbering | Premium Rate | II Digits | NTS |
| Emerg-ency | BT Op Services | Free Phone | Low Call | National Rate |
| 01/02 | Yes | Yes | Yes | Yes |  |  | Yes | Yes | Yes |
| 1/8xxxx | Yes | Yes | Yes | Yes |  |  | Yes | Yes | Yes |
| 070xx | Yes | Yes | Yes | Yes |  |  | Yes | Yes | Yes |
| 080xx | Yes | Yes | Yes | Yes |  |  | Yes | Yes | Yes |
| 084xx | Yes | Yes | Yes | Yes |  |  | Yes | Yes | Yes |
| 087xx | Yes | Yes | Yes | Yes |  |  | Yes | Yes | Yes |
| 03xxx | Yes | Yes | Yes | Yes |  |  | Yes | Yes | Yes |
| 09xxxx | Yes | Yes | Yes | Yes |  |  | Yes | Yes | Yes |
|  |  |  |  |  | Yes | Yes |  |  |  |

  |

|  |  |
| --- | --- |
| **Signalling Details to be Observed by [CPNAME]** (delete as appropriate)

|  |
| --- |
| Calls with SHP values 0 & 1 will be processed but calls with SHP values >1 will be rejected with cause “Service Unavailable”The Charging Indicator / in the UK-ISUP Backward Call Indicator (BCI) / in the IUP ACM message and the Type of Answer (in the ANS message) / will be set as “Charge”. |

  |

Indirect Access

Only calls presented from numbers (as indicated in the calling address information) registered with [CPNAME] by their customers will be terminated/onwards routed. All other calls will be rejected with either an ‘Interactive Voice Response’ (IVR), an audio announcement or a release message with cause of “Unallocated Number”.

Calls to services not offered by [CPNAME] such as directory inquiries and “999” access will be rejected by [CPNAME] with an IVR announcement.

**Please delete any sequences which do not apply.**

IUP Single Stage IA / CPS Call Setup with CLI

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI  | [CPNAME] | POI  | Third Party CP |
| IAM | ⇒ |  |  |  |
|  | ⇐ | ACI request |  |  |
| ACI response | ⇒ | CLI validation |  |  |
|  | ⇐ | SAD |  |  |
| SAM | ⇒ | destination number validation |  |  |
|  |  | Call set up | ⇒ |  |
|  |  |  | ⇐ | Set up acknowledge |
|  | ⇐ | ACM |  |  |
|  |  |  | ⇐ | Answer |
|  | ⇐ | ANS |  |  |
|  | ⇔ | Conversation in progress | ⇔ |  |

IUP Single Stage IA Call Setup with CLI (alternative sequence)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI  | [CPNAME] | POI  | Third Party CP |
| IFAM | ⇒ |  |  |  |
|  |  | ACI request |  |  |
|  | ⇐ |  |  |  |
| ACI response | ⇒ |  |  |  |
|  |  | CLI validation |  |  |
|  |  | destination number validation |  |  |
|  |  | Call set up | ⇒ |  |
|  |  |  | ⇐ | Set up acknowledge |
|  | ⇐ | ACM |  |  |
|  |  |  | ⇐ | Answer |
|  | ⇐ | ANS |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |

UK-ISUP Single Stage IDA/CPS call set up with CLI

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
| IAM | ⇒ |  |  |  |
| SAM | ⇒ |  |  |  |
| SAM | ⇒ |  |  |  |
|  |  | destination number validation |  |  |
|  |  | Call set up | ⇒ |  |
|  |  |  | ⇐ | Set up acknowledge |
|  | ⇐ | ACM |  |  |
|  |  |  | ⇐ | Answer |
|  | ⇐ | ANM |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |

UK-ISUP Single Stage IDA/CPS call setup with CLI (alternative sequence)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP\* |
| IAM | ⇒ | all digits |  |  |
|  |  | destination number validation |  |  |
|  |  | Call set up | ⇒ |  |
|  |  |  | ⇐ | Set up acknowledge |
|  | ⇐ | ACM |  |  |
|  |  |  | ⇐ | Answer |
|  | ⇐ | ANM |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |

\* The message flow shown is for indication purposes only. The exact messages used will be determined by the interworking protocol agreed with the relevant operator.

Personal Numbering

IUP Personal Numbering Call Setup

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
| I(F)AM | ⇒ |  |  |  |
|  |  | ACI request |  |  |
|  | ⇐ |  |  |  |
| ACI response | ⇒ |  |  |  |
|  |  | Called address validation |  |  |
|  |  | destination number database look up |  |  |
|  |  | Call set up | ⇒ |  |
|  |  |  | ⇐ | Set up acknowledge |
|  | ⇐ | ACM |  |  |
|  |  |  | ⇐ | Answer |
|  | ⇐ | ANS |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |

UK-ISUP Personal Numbering Call Setup

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
| IAM | ⇒ |  |  |  |
|  |  | Called address validation |  |  |
|  |  | destination number database look up |  |  |
|  |  | Call set up | ⇒ |  |
|  |  |  | ⇐ | Set up acknowledge |
|  | ⇐ | ACM |  |  |
|  |  |  | ⇐ | Answer |
|  | ⇐ | ANM |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |

Number Translation and Premium Rate Service

IUP NTS / PRS Call Setup

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CPPremium Rate System |
| I(F)AM | ⇒ |  |  |  |
|  |  | ACI request |  |  |
|  | ⇐ |  |  |  |
| ACI response | ⇒ |  |  |  |
|  |  | Called address validation |  |  |
|  |  | Call set up | ⇒ |  |
|  |  |  | ⇐ | Set up acknowledge |
|  | ⇐ | ACM |  |  |
|  |  |  | ⇐ | Answer |
|  | ⇐ | ANS |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |

UK-ISUP NTS / PRS Call Setup

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CPPremium Rate System |
| IAM | ⇒ |  |  |  |
|  |  | Called address validation |  |  |
|  |  | Call set up | ⇒ |  |
|  |  |  | ⇐ | Set up acknowledge |
|  | ⇐ | ACM |  |  |
|  |  |  | ⇐ | Answer |
|  | ⇐ | ANM |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |

Forward Release

IUP Calling Party Clears (Forward Release)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  | ⇔ | conversation in progress | ⇔ |  |
| caller goes on hook |  |  |  |  |
| REL | ⇒ | Release | ⇒ |  |
|  | ⇐ | REL | ⇐ | Release |
|  |  | Release | ⇒ |  |
| CCT Free | ⇒ |  |  |  |
|  | ⇐ | CCT Free |  |  |

UK-ISUP Calling Party Clears (Forward Release)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  | ⇔ | conversation in progress | ⇔ |  |
| caller goes on hook |  |  |  |  |
| REL | ⇒ | Release | ⇒ |  |
|  | ⇐ | RLC | ⇐ | Release |

Backward Release

IUP Called Party / System clears without Re-answer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  | ⇔ | conversation in progress | ⇔ |  |
|  |  | Clear | ⇐ | called party goes on hook |
|  | ⇐ |  |  |
| CSH T/O Starts |  |  |  |  |
| CSH T/O Matures | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  | ⇐ | REL |  |  |
|  |  | ⇐ | CCT Free |
|  | ⇐ | CCT Free |  |  |
| CCT Free | ⇒ |  |  |  |
|  |  | CCT Free | ⇒ |  |

UK-ISUP Called party / System clears without Re-answer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  | ⇔ | conversation in progress | ⇔ |  |
|  |  |  |  | called party goes on hook |
|  |  |  | ⇐ | Clear |
|  | ⇐ | SUS |  |  |
|  |  | CSH T/O Starts |  |  |
|  |  | CSH T/O Matures |  |  |
| REL | ⇒ |  |  |  |
|  |  | Release | ⇒ |  |
|  | ⇐ | RLC |  |  |

Backward Release (Contd)

IUP Called party / System clears with Re-answer & Forward Release

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI (BT) | CP NAME | *POI (other)* | Destination network |
|  | ⇔ | conversation in progress | ⇔ |  |
|  |  | Clear | ⇐ | called party goes on hook |
|  | ⇐ |  |  |
| CSH T/O Starts |  |  |  |  |
|  |  | Re-answer | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |
| Hang Up | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  |  | REL | ⇐ |  |
|  | ⇐ |  |  |
|  |  | CCT Free | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | CCT Free |  |  |
|  |  | ⇒ |  |

UK-ISUP Called party / System clears with Re-answer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  | ⇔ | conversation in progress | ⇔ |  |
|  |  | SUS | ⇐ | called party goes on hook |
|  | ⇐ |  |  |
| CSH T/O Starts |  |  |  |  |
|  |  | RES | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇔ | conversation in progress | ⇔ |  |
|  | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  |  | RLC | ⇐ |  |
|  | ⇐ |  |  |

Busy / Unobtainable

IUP Called Party / System Busy & Unobtainable

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  |  | CLI validation |  |  |
|  |  | Destination Number Validation |  |  |
|  |  | Call setup | ⇒ |  |
|  |  |  | ⇐ | Call Rejection (Reason\*) |
|  | ⇐ | CNA (Reason\*) |  |  |
|  |  | REL | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  | ⇒ | CCT Free |  |  |
|  |  | ⇒ |  |
|  |  | CCT Free | ⇐ |  |
|  | ⇐ |  |  |

UK-ISUP Called Party / System Busy & Unobtainable

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  |  | CLI validation |  |  |
|  |  | Destination Number Validation |  |  |
|  |  | Call setup | ⇒ |  |
|  |  | REL (Cause\*) | ⇐ | Call Release (Cause\*) |
|  | ⇐ |  |  |
|  | ⇒ | RLC |  |  |
|  |  | ⇒ |  |

\* Where protocol mappings allow, the call release reason from the Third Party CP will be translated directly through to the originating network

Unsupported Service

IUP IA Call to an Unsupported Service (e.g. ‘999’), Backward Release

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  |  | CLI validation |  |  |
|  |  | destination number validation |  |  |
|  | ⇐ | ACM |  |  |
|  | ⇔ | Voice Announcement e.g. “Please redial without the code”\* | ⇔ |  |
|  |  | REL | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  | ⇒ | CCT Free |  |  |
|  |  | ⇒ |  |
|  |  | CCT Free | ⇐ |  |
|  | ⇐ |  |  |

UK-ISUP IDA call to unsupported service e.g. ‘999’, Backward Release

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  |  | CLI validation |  |  |
|  |  | destination number validation |  |  |
|  | ⇐ | ACM | ⇐ |  |
|  |  |  |  |
|  | ⇔ | Voice Announcement e.g. “Please redial without the code”\* | ⇔ |  |
|  |  | REL | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | RLC |  |  |
|  |  | ⇒ |  |

\* ISDN data calls will be rejected with ‘Number Unobtainable’ and no announcement will be played to the caller.

Unknown Destination Number

IUP Call Rejection Due To Unknown Number

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  |  | CNA (Unassigned Number) | ⇐ |  |
|  | ⇐ |  |  |
|  |  | REL | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  | ⇒ | CCT Free |  |  |
|  |  | ⇒ |  |
|  |  | CCT Free | ⇐ |  |
|  | ⇐ |  |  |

UK-ISUP Call Rejection Due to Unknown Number

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  |  | REL (Unallocated Number) | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | RLC |  |  |
|  |  | ⇒ |  |

Unknown Calling Line Identity

IUP CLI Validation Failure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  | ⇐ | CNA (Unassigned Number) |  | CLI fails validation |
|  |  | REL | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  | ⇒ | CCT Free |  |  |
|  |  | ⇒ |  |
|  |  | CCT Free | ⇐ |  |
|  | ⇐ |  |  |

UK-ISUP CLI Validation Failure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI | [CPNAME] | POI | Third Party CP |
|  | ⇐ | ACM (announcement, without advertisement) |  | CLI fails validation |
|  | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  |  | RLC | ⇐ |  |
|  | ⇐ |  |  |

Priority Call

IUP Priority Call Setup

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI  | [CPNAME] | POI  | Third Party CP |
|  |  |  | ⇐ | IFAM (999/112) |
|  | ⇐ | IFAM (999+II+ZC) |  |  |
|  | ⇒ | ACI 7 (Service Marks) |  |  |
|  |  | ⇒ |  |
|  |  | ACI 3 | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | ACM |  |  |
|  |  | ⇒ |  |
|  | ⇒ | ANS |  |  |
|  |  | ⇒ |  |
|  | ⇔ | Conversation in progress | ⇔ |  |
|  | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  |  | REL | ⇐ |  |
|  | ⇐ |  |  |
|  |  | CCT Free | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | CCT Free |  |  |
|  |  | ⇒ |  |

II = II Digits = Interconnect Identity Digits ZC = Zone Code (Mobile Only)

UK-ISUP Priority Call Setup

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BT | POI  | [CPNAME] | POI  | Third Party CP |
|  |  |  | ⇐ | IAM (999/112+ZC) |
|  | ⇐ | IAM (999+II+ZC) |  |  |
|  | ⇒ | INR (Service Marks) |  |  |
|  |  | ⇒ |  |
|  |  | INF | ⇐ |  |
|  | ⇐ |  |  |
|  | ⇒ | ACM |  |  |
|  |  | ⇒ |  |
|  | ⇒ | ANM |  |  |
|  |  | ⇒ |  |
|  | ⇔ | Conversation in progress | ⇔ |  |
|  | ⇒ | REL |  |  |
|  |  | ⇒ |  |
|  |  | RLC | ⇐ |  |
|  | ⇐ |  |  |

II = II Digits = Interconnect Identity Digits ZC = Zone Code (Mobile Only)

Glossary of Signalling Abbreviations and Mnemonics

ACI Additional Call Information

ACM Address Complete Message

ANM Answer Message (UK-ISUP)

ANS Answer Message (IUP)

CLI Calling Line Identity

DTMF Dual Tone Multi-Frequency

IAM Initial address message

I(F)AM Indicates either an IAM or an IFAM may be expected

IFAM Initial & Final Address Message

PIN Personal Identification Number

POI Point of Interconnect

SAD Subsequent Address Request

SAM Subsequent Address Message

REL Release

RLC Release Complete

CCTF Circuit Free

|  |  |  |
| --- | --- | --- |
|  | **Signatories:**  |  |
|  | **For BT** | **For [CPNAME]** |  |
|  |  |
|  | Name: |  |  | Name:  |  |  |  |
|  |  |  |  |
|  | Role: | BT Interconnect NIRO |  | Role: |  |  |  |
|  |  |  |  |
|  | Phone: |  |  | Phone:  |  |  |  |
|  |  |  |  |
|  | Email: |  |  | Email:  |  |  |  |
|  |  |  |  |
|  | Signature:  |  |  | Signature: |  |  |  |
|  |  |  |  |
|  | Date: |  |  | Date:  |  |  |  |
|  |  |  |  |
|  |  |  |  |

## A9.3 DOCUMENT HISTORY

|  |  |  |  |
| --- | --- | --- | --- |
| **ISSUE No.** | **DATE** | **AUTHOR** | **SUMMARY OF CHANGES** |
| 1.0 | 07/09/2012 | Graham Hinch | Full issue, no changes from draft |
| 1.0 Draft | 03/04/2012 | Graham Hinch | First Draft - replaces ITI Pack versions of the C7/SS7 Service Description, unifying IUP and UK-ISUP  |

END OF APPENDIX

##