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BT NETWORK INTERCONNECTION PROVISIONING MANUAL

SECTION 5 – CUSTOMER SITED INTERCONNECT

# **CONTENTS**

**CONTENTS** 2

5.1 INTRODUCTION 3

5.2 PROCEDURES AND TASK OVERVIEW 3

5.2.1 Preliminary Planning 3

5.2.2 Capacity Profile and Advance Capacity Order 3

5.2.3 Capacity Orders 3

5.2.4 Provision of Customer Sited Interconnection (CSI) 3

5.2.5 Ready for Test 4

4.2.6 Arranging Operational Testing 4

5.2.7 Bringing Into Service 4

5.2.8 Traffic on New Routes 4

5.3 TESTING 5

4.3.1 New Switches 5

4.3.2 New Switch Testing Levels 6

4.3.3 Integration Testing Requirements 6

4.3.4 Changes to Existing Switches 7

4.3.5 Switch Hot Changeover 8

4.3.6 List of Known Builds 8

4.3.7 Timescales 9

4.3.8 Operational Testing Requirements 9

4.3.9 Testing Faults & Waivers 9

5.4 DOCUMENT HISTORY 11

ANNEX A - KEY PROCESSES 12

ANNEX B - ACTIVITY OWNERS 13

ANNEX C - INTEGRATION TIMESCALES AND ACTIVITIES 14

## 5.1 INTRODUCTION

This section describes the provisioning activities required for the interconnection of:

A new OPERATOR switch with BT switches via a Customer Sited Interconnect and the provision of new Interconnection Links via a Customer Sited Interconnect between existing switches.

A new interconnect traffic route via Customer Sited Interconnect from an existing OPERATOR switch to the BT network.

A new interconnect circuit on an existing traffic route via Customer Sited Interconnect from an existing OPERATOR switch to the BT network.

## 5.2 PROCEDURES AND TASK OVERVIEW

### 5.2.1 Preliminary Planning

New Switch introduction will be identified by the OPERATOR at Technical Review Meetings, see sections 5.3.1 and 5.3.2.

Demand for new traffic routes and new interconnect circuits on existing traffic routes will be identified through traffic and capacity forecasts.

A number of technical issues (e.g. routing requirements) will require discussion at the Technical Review Meeting Forum prior to an order being placed, these are described in Section 2 of this Manual - Interconnect Planning. Contact points are shown in the Customer Service Plan.

### 5.2.2 Capacity Profile and Advance Capacity Order

Before placing Capacity Orders, the OPERATOR shall supply BT with a Capacity Ordering Profile in relation to Capacity Provision and Re-arrangement. The first four months of each Capacity profile agreed by BT shall form an Advance Capacity Order. Further information concerning Capacity Profile and Advance Capacity Order can he found in Section 3 of this Manual.

### 5.2.3 Capacity Orders

Orders will pass from the OPERATOR to the CTC. An example of an Order Form and explanatory notes are contained in Appendix 22 to this Manual.

The CTC will confirm the contractual Ready For Test (RFT) date with the OPERATOR and will deal with its agents within BT to plan the work necessary to fulfil the order.

Contractual Capacity Order time scales are contained in Paragraph 11 of the Planning and Operations Annex (Annex A) to the BT Standard Interconnect Agreement.

### 5.2.4 Provision of Customer Sited Interconnection (CSI)

The Stages, Key Activities and Activity Descriptions for the provision of new capacity by Customer Sited Interconnect are shown in Annex A.

### 5.2.5 Ready for Test

As soon as the capacity is ready for test, A Ready For Test 'RFT' certificate will be sent by the CTC to the OPERATOR to certify that the capacity has achieved RFT. An example of the certificate is contained in Appendix 20 to this Manual.

### 4.2.6 Arranging Operational Testing

Once the capacity has agreed RFT dates, a proposed test plan with dates for all the capacity in the order will be offered proposed by the OPERATOR to by the CTC BT Interconnect Testing Team and the parties will use this as the basis to jointly agree the date(s) for operational tests.

The OPERATOR should use the form in Appendix 33 of this Manual in order to arrange, or “book” Operational Testing with the BT Interconnect Testing Team, unless otherwise agreed in writing.

If the parties fail to agree an acceptable plan for the testing they should follow the disputes procedure set out in Paragraph 10 of the Planning and Operations Annex (Annex A) to the BT Standard Interconnect Agreement.

If either company cannot proceed with the test plan as scheduled a new plan mutually convenient to both companies will be agreed between the nominated operational people in both parties and advised to the CTC.

In the event of testing difficulties, which cannot be resolved quickly by the people carrying out the tests the appropriate escalation procedure defined between the OPERATOR and the BT CTC should be followed.

Please refer to section 5.3 for more information on testing requirements.

### 5.2.7 Bringing Into Service

When the appropriate operational testing has been completed satisfactorily the capacity will be left in an in an 'In Service' state, (also known as Ready For Service 'RFS').

At this point, for additional capacity on existing routes, calls may be applied in both directions as appropriate.

The CTC will then confirm that relevant commercial and technical issues are in order and will advise the OPERATOR that the capacity is open for customer service by issuing an Interconnect Completion certificate. An example of the certificate is contained in Appendix 18 to this Manual.

Once the Appendix 18 has been issued, the capacity and associated transmission systems will then be supported jointly by BT and the OPERATOR according to the agreed Operations and Maintenance activities detailed in the appropriate Operations and Maintenance Manual.

### 5.2.8 Traffic on New Routes

For new routes, as soon as the Interconnect Completion certificate has been issued by the CTC, the operator may send calls over the capacity in the OPERATOR to BT direction.

Calls in the BT to OPERATOR direction will commence on completion of the relevant Data Management Amendment 'DMA'.

## 5.3 TESTING

Testing is performed to ensure that an OPERATOR connection of capacity to the BT network will not have adverse effects on the network and customers of either party and ensure that the connection will function effectively.

Testing requirements for the first connection between the OPERATOR switch and the BT network will consist of a combination of three activities, namely

 Validation Testing (VT)

 Integration Testing (IT) and

 Operational Testing (OT)

The testing levels and specific combination will depend on whether the proposed switch type / build combination, protocol, service types and facilities to be used have been connected to the BT network previously.

Testing of subsequent connections and additional capacity on existing connections will require operational testing only, provided that the build, facilities and service types have not changed since the previous capacity provision.

All of the current testing requirements referred to in this section can be found at:

<https://www.btwholesale.com/pages/static/Library/Technical_Documents_and_Procedures/Interconnect_Manuals/index.htm>

Note that BT reserve the right to increase the testing level at any time should the testing indicate that the connection under test varies significantly in performance to that observed in previous testing to that switch.

### 4.3.1 New Switches

For each new switch they wish to connect, the OPERATOR must submit the following items:

 Switch System Questionnaire (SSQ) - Appendix 10 to this Manual

 Statement of Compliance (SOC) - Appendix 12 to this Manual

 Signalling Service Description (SSD) - Appendix 9 to this Manual

Note that the choice of switch and build, signalling method and protocol and chosen facilities will affect the level of testing required and that the implications of the chosen switch and build level may be the subject of a specific technical meeting between the companies. Additionally, if the chosen protocol is UK-ISUP, the OPERATOR must refer to Section 10 of this manual, which details specific additional requirements for this protocol.

BT will compare the information supplied by the OPERATOR to the known build of switches connected to the BT network (a copy of this list is contained in Appendix 1 to this Manual). If the switch / build are not known, or the, protocol service types or facilities are different from that previously considered as known, integration (and possibly interface) testing is required.

One of the options in 4.3.2 will be required to be completed and BT will provide an initial assessment of the level of testing required on the basis of the information supplied.

### 4.3.2 New Switch Testing Levels

Note that with reference to section 4.2.6 in this Manual, the VT and IT requirements will need to have been completed to the satisfaction of BT before the OPERATOR switch can be connected to the BT network for Operational Testing. The IT arrangements will be organised either via the TAM or directly with the BT Network Interconnect Responsible Officer (NIRO) where that arrangement is agreed in writing by all parties.

Note that in all cases, the BT NIRO will have the final decision on which testing requirements are needed and whether testing has been completed adequately.

#### 4.3.2.1 Full Testing

A new switch type not previously connected to the BT Network or a major build change to a previously connected switch may require VT using a protocol simulator, followed by IT within a captive model and finally Operational Testing (OT) at Test Case 1a (see section 4.3.8) on the first traffic route.

VT testing should be completed by the OPERATOR using the tests defined in the BT Validation Testing Manual and the test results supplied to BT for consideration.

IT may be completed using either the BT Network Integration Facility (NIF) or the OPERATORS facility using the using the tests defined in the BT Integration Testing Manual.

#### 4.3.2.2 Intermediate Level Testing

A new switch, of a type previously connected to the BT Network but with different facilities, with a revised build level or being used in a new application, will require a scaled down IT requirement followed by OT at Test Case 1a (see section 4.3.8) on the first connection.

At the discretion of the BT NIRO, if the changes will not affect the signalling interface, the IT requirement may be waived and/or the OT level reduced to Test Case 1b.

Note: A change to a different signalling protocol will generally be considered by BT as requiring Full rather than Intermediate Testing.

#### 4.3.2.3 Reduced Testing

Switch types / build combinations which are known to BT will require OT at Test Case 1b (see section 4.3.8) on the first Traffic Route, provided that the protocol, services types and facilities do not vary from those previously successfully tested.

### 4.3.3 Integration Testing Requirements

#### 4.3.3.1 Booking

Testing will be arranged by the TAM on behalf of the OPERATOR (unless otherwise agreed) with the BT NIRO. Bookings will not be accepted until a valid SSQ (or SCN) has been received and assessed. The initial booking will be tentative and a firm booking will not be in place until (as applicable) valid VT results and Provisioning Manual Appendices 9, 12, 26 and 30 are received.

Note: Test resource will be allocated on a strict “first come first served basis” with no exceptions.

#### 4.3.3.2 Timescales and Durations

The outline timescales for IT are indicated in Annex D of this section (Integration Testing Timescales and Key Activities), including key activity dates which the OPERATOR must meet in order to maintain the confirmed booking.

Actual testing duration is normally 2 weeks for Full testing and up to 1 week for Reduced testing (or re-testing). This assumes that both parties will have the appropriate resource available for the duration of the testing.

#### 4.3.3.3 Logistics

Testing is physically achieved by either the OPERATOR bringing its equipment to the Network Integration Facility (NIF) in a secure environment (if this is physically possible given the size and portability of the equipment) or by the provision of Megastreams from the OPERATORS site to the NIF.

Should there be a requirement for Megastreams to be provided the cost must be met by the OPERATOR as is the responsibility for making and progression of such orders.

#### 4.3.3.4 Delays

The durations stated in 4.3.3.2 are generally long enough to complete all of the required testing. However, if the testing encounters unexpected delays (missing resource, slow resolution of issues etc.) then all of the testing may not be completed in the agreed duration. If this is the case, BT will attempt to continue the testing beyond the end date provided that testing is making suitable progress and that resources are available.

If the duration cannot be extended, a new slot will be scheduled to start as soon as resource is available.

#### 4.3.3.5 Completion

On satisfactory completion of Integration Testing, BT will issue an “Integration Testing Report” report which detail results of the completed testing and will also detail any areas of concern, which may then require further testing during OT. A list of such recommended tests will be included in the interim report, and these tests must be performed during OT. When completed, a final report will be issued which will summarise the success of the additional tests.

### 4.3.4 Changes to Existing Switches

If the OPERATOR wishes to make a change to an in service switch build, including adding new service types, signalling protocols or facilities, they must use the Switch Change Notification (SCN) form to inform BT in advance of any operational deployment. A copy of this form is contained in Appendix 11 to this Manual.

Both companies will jointly assess the implications of the proposed change and agree the appropriate testing procedure (if any). Generally this will follow the guidance for intermediate testing as detailed in section 4.3.2.2. If Operational Testing is required, the level will be Test Case 4a or 4b.

### 4.3.5 Switch Hot Changeover

BT will accept the ‘Hot Changeover’ (i.e. the in-service change of one switch type for another) of switches by an OPERATOR subject to the conditions below:

• The new switch replaces an existing in-service switch.

• The new and old switch will use the same IWPC unless otherwise agreed.

• The new and old switch will use the same interconnect signalling protocol.

• Services and applications that the OPERATORS new switch is using have previously completed IT and OT at Test Case 1a level (Appendix 1 to this manual refers).

• No additional functionality is added to the switch as a result of the changeover (if additional functionality is provided it must be turned off until suitable assessment is made, see section 4.3.4).

• Both BT and the OPERATOR have the right to monitor the routes after changeover and request Operational Testing to take place should calls fail or other anomalies occur.

• The new switch has undergone Operational Testing at Test Case 1a by the OPERATOR after commissioning by the manufacturer, and the results made available to the BT NIRO in advance of the changeover.

• The OPERATOR must retain the option to revert the route(s) to the previous switch should serious network management conditions occur (in either network) as a result of the changeover.

• If a break in service occurs during the changeover, the OPERATOR must arrange a Planned Engineering Work (PEW) via the BT CTC (if the changeover is being made via a means transparent to BT, with no service break, the OPERATOR must still inform the CTC of the scheduled changeover time(s))

• The OPERATOR must accept that any faults that occur during or immediately following such changeovers are on their network, as the routes have been previously tested during Operational Testing and progress resolution of such faults accordingly.

• The OPERATOR agrees that only one new switch is changed over at a time, i.e. further switches must wait until an agreed (with the BT NIRO) assessment period has passed.

### 4.3.6 List of Known Builds

Following the satisfactorily completion of all of the appropriate phases of testing (VT, IT & OT as defined in section 4.3.2) the new/updated switch and build will be considered as “Known” and hence suitable for in service connection to the BT Network (and therefore for carrying operational traffic).

At this point the “List of Known Builds” (see Appendix 1 to this manual) will be updated by the BT NIRO to include the switch type / build and the tested protocols, service types and facilities.

### 4.3.7 Timescales

Generic timescales for the complete cycle of testing phases is set out in Paragraph 14 of the Planning and Operations Annex (Annex A) to the BT Standard Interconnect Agreement.

#### 4.3.7.1 Integration Testing Timescales

Expected timescales for completion of Integration Testing including key OPERATOR activities are defined in Annex D of this section and sub-section 4.3.3.2.

#### 4.3.7.2 Operational Testing Timescales

Timescales for completion of Operational Testing will depend on the software build of the OPERATOR switch, the number of service types to be tested, the number of routes and the number of 2Mb/s on each route. The Operational Testing Manual Guide contains details of the typical time scales for each Test Case.

### 4.3.8 Operational Testing Requirements

Operational Testing is used to confirm that the switch data and network equipment is suitable for connection to the BT network for customer services. In general, the OT phase will concentrate more on service types and the end to end customer service experience. Testing will be performed in all cases with non-operational traffic (i.e. test calls) and the testing requirements are defined in Operational Testing Manuals (OTMs).

The level of Operational Testing, known as 'Test Case', required on a particular route or capacity is related to testing performed on previous traffic routes or capacity. In general the amount of testing required will reduce as more routes are completed from the BT Network to the OPERATORS switch. However, the first route Test Case will always depend on the testing level as specified in Section 4.3.2.

Operational testing is specified in the Operational Testing Manuals and the specific requirements and procedures for operational testing, including information about service types, test cases and typical timescales is contained in the Operational Testing Manual Guide

### 4.3.9 Testing Faults & Waivers

Where testing identifies issues that need to be resolved before the testing can be completed successfully, the party deemed to be owning the issue must endeavour to resolve that issue before the allocated time for the testing expires, otherwise the testing will be deemed to have failed and the full testing will need to be repeated at a later date.

Where an issue cannot be cleared in a short space of time, and is deemed to be non-service affecting, the parties may agree a Waiver (form contained in Appendix 34 to this Manual) which will clearly detail the proposed resolution and time scale for resolving the issue.

When the waiver is in place (agreed and signed by both parties), testing may move on to the next step, or, if appropriate the route may be allowed into service.

Note that the party which was not resolving the issue may insist on further IT and/or OT testing or monitoring of routes to confirm the success of the patch / build change to correct the issue.

When the issue has been resolved to the satisfaction of both parties (including completion of additional testing requirements) the waiver is considered to be void.

If the waiver is not cleared in the agreed timescale, BT reserves the right to increase testing levels for the subsequent routes until the issue is resolved.

## 5.4 DOCUMENT HISTORY

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| --- | --- | --- | --- |
| **ISSUE No.** | **DATE** | **AUTHOR** | **SUMMARY OF CHANGES** |
| 4.0 | 07/09/2012 | Graham Hinch | Full issue, no changes from draft |
| Draft 4.0 | 01/06/2012 | Graham Hinch | Change to section 5.2.6 to reflect current practice and include reference to new Appendix 33 (Operational Test Booking Form).Re-organisation of section 5.3 to follow logical order and include reference to Annex D (Integration Testing Timescales) and new Appendices 9 (Signalling Service Description) & 34 (Waiver Form) |
| 3.3 | 21/01/2005 | Kevin Young | Paragraph 5.3.4 amended to include requirement that both new and old switch use the same interconnect signalling protocol and correction to refer to Test Case 1a. |
| 3.2 | 11/07/2002 | Kevin Young | Revision of all sections; change of CMC to CTC; revised testing information; Hot Change Over section added |
| 3.1 | 16/10/2000 | Kevin Young | Conversion of all previous CSI sections into one CSI section, restructured accordingly.  |

# ANNEX A - KEY PROCESSES



# ANNEX B - ACTIVITY OWNERS

| **Activity Name** | **Activity Descriptions** | **Owner** |
| --- | --- | --- |
| **OPERATOR sends Firm Order to BT** | **OPERATOR sends Capacity Order to BT** | **OPERATOR** |
| **Order validation by BT CTC** | **The CTC will validate the order against the agreed arrangements for the interconnect contained in the Technical Master Plan. An invalid order will be passed back to the OPERATOR and will not be progressed.** | **BT CTC** |
| **Network Capacity Assigned** | **BT assigns DLTs and Intra Building Links for the 2 Mbit/s interconnect systems.** | **BT NETWORKS** |
| **Advise RFT Date** | **BT advises the OPERATOR of the RFT date(s) for the order.** | **BT CTC** |
| **Schedule Test Dates** | **BT and the OPERATOR agree Operational Test Schedule for the order.** | **BT CTC and OPERATOR** |
| **SRAs issued to BT and OPERATOR** | **Signalling and Routing Advice(s) are issued by BT and sent out within BT and to the OPERATOR.** | **BT CTC** |
| **Circuit Provision and Databuild** | **The 2 Mbit/s interconnect systems are provided and the data built.** | **BT NETWORKS** |
| **RFT Declared** | **The Interconnect route is declared to be Ready For Test and a Ready for Test Certificate is issued to the OPERATOR.** | **BT CTC** |
| **Operational****Testing** | **At the time when Operational Testing is due to start the testing teams in both BT and the OPERATOR will contact each other and then jointly carry out the Tests as specified in the relevant Operational Testing Manual.** | **BT CTC & BT NETWORKS** |
| **Bring Into Service** | **Subject to testing being completed satisfactorily both parties will sign the Ready for Service Certificate. Once the RFS Certificate has been signed off the circuits will be available for introduction to public service. The bringing into service activities are described in paragraph 5.2.6.** | **BT CTC and OPERATOR** |

# ANNEX C - INTEGRATION TIMESCALES AND ACTIVITIES

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 END OF SECTION