**RADIO BASE STATION BACKHAUL**

**BT WHOLESALE’S OPERATIONS AND MAINTENANCE MANUAL**

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### Table of Contents

[Table of Contents 2](#_Toc90373701)

[1 Introduction 3](#_Toc90373702)

[2 Radio Base Station Backhaul Fault Handling Procedures 3](#_Toc90373703)

[3 Service Levels 3](#_Toc90373704)

[4 Planned Engineering Works (PEW) 4](#_Toc90373705)

[5 Repair Performance Monitoring 5](#_Toc90373706)

[6 Maintenance and Safety Responsibilities 5](#_Toc90373707)

[7 Compensation Scheme 6](#_Toc90373708)

[8 Circuit Fault - Mandatory Questions for MNO Response 6](#_Toc90373709)

[9 Glossary 7](#_Toc90373710)

[10 Document Control 7](#_Toc90373711)

### 1 Introduction

This Operations and Maintenance (O&M) manual provides Mobile Network Operators (MNOs) guidance on the processes and procedures for the repair and maintenance of the BT Wholesale Radio Base Station (RBS) Backhaul service.

The BT Contract for Radio Base Station Backhaul takes precedence over this document. Full details of the Repair Service Level Guarantee can be found in the Contract, which remains the authoritative document in all service level matters; it is available via the Radio Base Station Backhaul Reference Offer website.

 <https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Reference_Offers/index.htm>

Other supporting documents provided by BT include the Customer Service Plan, the Service Description and the Product Handbook.

### Radio Base Station Backhaul Fault Handling Procedures

##### Definition of Faults

The technical definition of a fault is detailed in the Contract for Radio Base Station Backhaul.

##### Fault reporting

Faults reported to BT by the MNO will be against the individual circuits. The MNO must use eCo Repair to test and report all faults with the Service and to request an update on the reported faults. The CMC may be contacted by the MNO:

(a) once the fault has been registered via eCo Repair and the fault has not been resolved within a reasonable period; and/or

(b) if the MNO has not been able to test or report using eCo Repair due to the unavailability of eCo Repair. In which case, in order for BT to accept faults, the MNO must provide BT with fault information. BT will employ structured questioning during fault reception as detailed in section 8.

The MNO shall report a fault in Service only after it has established to its reasonable satisfaction that the fault is within the BT Network or BT Equipment and not on the MNO’s system or equipment. If the fault is not attributable to the BT Network or the BT Equipment BT will charge an Abortive Visit Charge for any Site visit.

The MNO can check the progress of the fault reports using eCo Repair.

The BT FRP will be responsible for handling of faults on the BT network and will be responsible for fault clearance notification.

On receipt of a fault report, BT issues a unique reference number.

#####  Repair Contact Points

Both BT and the MNO are required to provide a fault report facility to the EnhancedCare specifications. All BT updates will be via eCo Repair. All telephone contact details (BT and MNO) must be UK mainland numbers, local rate numbers and 0800 numbers only.

### Service Levels

Faults on Radio Base Station Backhaul circuits reported to BT will be maintained to EnhancedCare levels of service. On the receipt of a fault via eCo repair, BT issues a unique reference number to acknowledge the fault.

Target response and restorations times are shown in table 1 below:

**Table 1 Response and Repair Targets**

|  |  |  |  |
| --- | --- | --- | --- |
| Maintenance Class | Operational Hours | Response Time | Target Repair Time |
| Enhanced Care | 24/7 | Within 4 Hours | Within 5 Hours |

MNOs are able to instigate escalation where the target restoration times are in jeopardy, timescales for faults are based on the Start Time as detailed in section 5.1.

### Planned Engineering Works (PEW)

Planned Engineering Works is a known programme of network engineering work within BT’s control.

BT will inform the MNO of any foreseen work it finds necessary to carry out within its own network which may affect Radio Base Station Backhaul or standards of performance as perceived by the MNO or their customers. The request for deferment of a planned outage by the MNO will be subject to negotiation and agreement with each case taken on its merits.

##### Notification

BT’s notification contact points are identified in the Customer Service Plan (CSP). The method to be used and target timescales will be discussed, and documented if required between the BT Service Manager (SM) and the MNO.

The CSP lists the contact points in both organisations. Timescales for notifying of an Advice of Interruption to Service are detailed below.

##### Timescales

Timescales for notifying the MNO of work on transmission line plant, which will have a direct bearing on the perceived performance of Radio Base Station Backhaul circuits, is a minimum of 3 working days.

##### BT Planned Works on Radio Base Station Backhaul Transmission Line Plant.

Such work may take one of the following forms: -

1. Change over from MAIN to STANDBY working by the use of high speed switching equipment.
2. Momentary Interruptions (MI's), which may be of maximum duration of 1 minute during "Preferred" hours
3. Out of service interruptions. Where it is necessary to carry out work and where a "make good" route does not exist a "Scheduled Outage" will be necessary.

If the MNO is unable to agree to the interruption to service then they must promptly contact BT to discuss and agree an alternative date and time

If interruption of service cannot be agreed then BT will contact the relevant escalation contact point. The escalation contact points for both BT and the MNO will be identical to those identified for resolving RBS escalations (see CSP).

It will be assumed that the work was completed as planned unless BT advises otherwise; appropriate checks should be made by the MNO before attempting to resume service.

##### Preferred Hours for Planned Works

Times when Change-Over, MI's and Out of Service interruptions may be scheduled by BT will be discussed, and documented if required, between the BT Service Manager (SM) and the MNO contact point in the CSP.

BT’s preferred hours for planned works is after 00:00 hrs and before 06:00 hrs.

### Repair Performance Monitoring

Both BT and the MNO will monitor the repair performance of Radio Base Station Backhaul components to which they have visibility and are pertinent to this Manual.

##### Performance monitoring

For each service failure, fault reporting and any subsequent performance monitoring will be against the affected Radio Base Station Backhaul circuits. This will be at the EnhancedCare service level.

BT’s monthly Quality of Service (QoS) report to individual MNOs will include reported fault volumes and out-of service times for Radio Base Station Backhaul circuits. The following definitions are applied in providing the fault measures:-

* **Fault Start Time**: The time when a Radio Base Station Backhaul circuit fault is raised by the MNO and entered onto the BT Fault Database.
* **Fault Response time**: The time it takes BT to complete a primary diagnostics test on a reported fault and advise the MNO of the findings.
* **Fault Restoration/Closure Time**: The time the MNO was notified or has been attempted to be notified. This excludes any “Park Time” and awaiting access/customer co-operation.

### Maintenance and Safety Responsibilities

Under the terms of the Interface Specification for connection to the BT System, each MNO is responsible for the equipment on its side of the Point of Connection (PoC).

##### Safe Working Conditions

It is the responsibility of each individual, under the terms of the Health and Safety at Work Act, to ensure the safety of their working environment and to work in a safe manner. The MNOs shall be prepared to accept questions and comments regarding safety from visiting working parties and to take the appropriate action. Also, visitors shall accept directions regarding safety and safe working practices from the building representative.

Should any dispute arise about a practice being unsafe work should cease and the matter escalated immediately to the representatives of each party to their central point for a management decision. The circuit will be “Parked” and the park time will be excluded from measures.

It is noted that Health and Safety matters are covered by legislation to which all organisations and individuals must adhere.

##### Laser Safety

BT's Inland Optical Network uses an Optical Live Working practise. MNO staff working with optical cable and its associated terminal equipment must be both competent and familiar with optical safety instructions using the recommended tools.

Where optical live working is used, MNOs must conform to Class/Hazard Level 1M system and locations for “Safe for live working” conditions. Where BT's staff will come into contact with MNO equipment and will carry out Optical Live working on equipment (or network), the equipment must conform to BT's standards for Optical Live Working as detailed in the section below.

An Optical Safety Advisor must be consulted to check in line with Health and Safety regulations for all other conditions, before commencing optical live working.

##### Laser Safety Equipment Conditions

* Equipment must be classified to IEC 60825 part 1 and 2
* Equipment must not exceed hazard level 1M
* Under fault conditions equipment must not exceed hazard level 1M to a confidence level of 500 FITs or better

The International Optical Safety Standards for Laser Safety are:

* IEC 60825 part 1 (BS EN 60825 part 1) - Basic Standard
* IEC 60825 part 2 (BS EN 60825 part 2) - Safety of Optical Fibre Communications Systems

Full details are published in the International Electrotechnical Commission (IEC) standards available at the following URL: [www.iec.ch](http://www.iec.ch)

### Compensation Scheme

There are two types of compensation schemes applicable to Radio Base Station Backhaul circuit faults and they are described below.

**7.1 Reduced Charge Scheme (RCS)**

BT shall be liable to pay compensation payments to the MNO for failure to achieve repair time-scales in accordance with Table 4 below. Such compensation shall be payable where BT fails to repair within the time-scales set out below in respect of RBS Backhaul ccts and shall be calculated in respect of the period commencing on the expiry of the applicable repair time set out herein and expiring at the time the RBS Backhaul cct is repaired.

**Table 4** **Reduced Charge Scheme** Targets

|  |  |
| --- | --- |
| **RBS Backhaul cct:** | **Compensation payable by BT**  |
| MNO has EnhancedCare for RBS Backhaul ccts | 15% of the monthly rental payable for the RBS Backhaul Circuit being repaired per hour or part of an hour, of delay in repair  |

Under the RCS compensation Scheme delays in repair of circuits shall automatically be payable after 5 hours and the amount shall be deducted from the next quarterly bill.

RCS is credited on a quarterly basis and is payable at a fixed proportion of monthly rental without limit**.**

The level of compensation payable per delayed repair is directly related to the outage time.

**7.2 Availability Compensation Scheme (ACS)**

Where three or more faults occur during a 12-month period on any individual circuit, a MNO will not be liable to pay monthly rental during any month in which there is a subsequent fault. ACS is credited on a quarterly basis.

This situation will continue until such time as there has been twelve successive months without a fault. The full criteria for qualifying faults are dealt within the Qualification Criteria for ACS section.

**7.3 Qualification Criteria for ACS**

To qualify for compensation under the ACS, a fault must be:

* Reported by the customer.
* "Faulty" when reported.
* Suffering totalloss of service for greater than a minute (not erroring)
* Available for immediate intrusive testing
* A provable fault by BT
* Not subject to RCS compensation
* Not caused by MNO/Customer equipment
* Not caused by matters beyond BT's reasonable control

**7.4 Exception to Repair RCS**

Where a circuit is reported faulty within 3 months from installation and is proven to never to have worked, the compensation to the MNO will be based on the provision Reduced Compensation Scheme (RCS)

1. **Circuit Fault - Mandatory Questions for MNO Response**

|  |
| --- |
| 1. What is the circuit number that you wish to report?
 |
| 1. Confirm company name?
 |
| 1. Confirm A/End and B/End address?
 |
| 1. What is the name and contact details for the person reporting the fault?
 |
| 1. Fault reference number/code to be exchanged?
 |
| 1. Customer contact details for hand back? (\*Only UK mainland number, local rate numbers and 0800 numbers are acceptable)
 |
| 1. What are the contact details for the person who may assist BT with diagnostics and restoration?
 |
| 1. 24 hour on site contact name and number/Access details?
 |
| 1. What is the nature of the fault and time of failure?
 |
| 1. Has the customer, checked/reset/plugged in equipment?

(What other checks have been made, if any? This may include a description of any fault lights) |
| 1. Has the circuit ever worked?
 |
| 1. Is it OK for obtrusive testing of the circuit?
 |

### Glossary

|  |  |
| --- | --- |
| **Abbreviations** | **Definition** |
| CSC | Customer Sited Connection |
| SM | Service Manager |
| CSP | Customer Service Plan |
| FRP | Fault Reception Point |
| IEC | International Electrotechnical Commission |
| MNO | Mobile Network Operator |
| MSC | Mobile Switching Centre |
| O&M | Operations and Maintenance |
| PoC | Point of Connection |
| QoS | Quality of Service report |
| RBS | Radio Base Station Backhaul |
| RCS | Reduced Charges Scheme  |

### Document Control

This document is owned and maintained by the BT Wholesale Markets Radio Base Station Backhaul Product Team.

This document will be reviewed and updated periodically as the need arises.

|  |  |  |
| --- | --- | --- |
| **Version No** | **Date** | **Reason for Change** |
| Issue 1 | 13 December 2004 | First Issue |
| Issue 2 | 01 June 2005 | Inclusion of RCS / ACS Information |
| Issue 3 | 08 May 2009 | Document Review |

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