

APPENDIX I

CH Installation and Maintenance Support Materials

Definitions

Cellular Communications	means a WAN Variant in the Central Region and the South Region which is capable of using mobile cellular radio technology to connect to the SM WAN.
Central Region	means the Region which covers the majority of Wales and the majority of central England.
CH No SM WAN Installation Procedure	means the procedure by which a Supplier Party installs a Communications Hub where it has not established a connection to the SM WAN as described in clauses 4.8 to 4.10 of this document
CH Status Information	means the visual information that is displayed by the Communications Hub to indicate the current operational status of the Communications Hub, as further set out in the CH Supporting Information.
CH Supporting Information	has the meaning given to that term in the CH Handover Support Materials.
CHF Identifier	has the meaning given to that term in CHTS.
Communications Hub Availability and Diagnostics Check	means the procedure set out in clause 5.2 of this document.
Communications Hub Fault Handling Procedures	means the processes set out in clauses 8.3 to 8.11 of this document.
Communications Hub Variants	means variations of Communications Hubs describing their HAN and WAN communications characteristics.
Coverage Area	means the geographical coverage of the SM WAN at a point in time.
DCC Installer Training Plan	means the training materials provided by the DCC to support the development of Communications Hub installation and maintenance training.
DCC Returns Location	means a location at which a Party should deliver Communications Hubs that it wishes to return to the DCC.
Dual Band Communications Hub	a HAN Variant which is capable of using 2.4GHz and Sub-GHz frequencies for communication on the Home Area Network (HAN).
Fault Analysis Report	means the report provided to a Party by the DCC pursuant to Section F9.11 of the Code.

Installation Location	means the location of a premises at which a Communications Hub is planned to be, or has been, installed.
Installation Point	means the location at an Installation Location where a Communications Hub is installed.
Mesh Communications Hub	means a WAN Variant in the Central Region and the South Region which is capable of using both mobile cellular radio technology and wireless mesh radio technology to connect to the SM WAN.
North Region	means the Region which covers the majority of Scotland and the majority of northern England.
Order Management System (or OMS)	has the meaning given to that term in the CH Handover Support Materials.
Return Date	means the date on which a Communications Hub is arranged to be delivered to the DCC by a Party
Return Delivery Note	means an electronic or paper form containing the information set out in clause 10.12.
Return Materials Authorisation (or RMA)	means the procedure whereby the DCC authorises a Party's request to return a Communications Hub to the DCC in accordance with clauses 10.5 to 10.7 of this document.
Significant Metallic Obstruction	means a metallic object of such scale and proximity to the Communications Hub as is likely to cause obstruction to SM WAN communications to the Communications Hub, and as further described in the CH Supporting Information.
Single Band Communications Hub	means a HAN Variant which is only capable of using 2.4GHz frequency for communication on the Home Area Network (HAN).
Special Installation Mesh Communications Hub	means a WAN Variant in the Central Region and the South Region which provides two external aerial ports on the front face to enable connection of two external aerals – one cellular (either a T1 Aerial Type, T2 Aerial Type or T3 Aerial Type) and one mesh (either an M1 Aerial Type or M2 Aerial Type). This WAN variant may not be ordered by Parties but is supplied and fitted directly by DCC.
South Region	means the Region which covers the majority of southern England.
Substantial Stone Walls	means walls with external or internal structure primarily made of stone, and of sufficient thickness to be likely to prevent connectivity to the SM WAN by the Communications Hub, as further described in the CH Supporting Information.

Working Hours	has the meaning given to that term in the CH Handover Support Materials.
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1. INTRODUCTION

Document purpose

- 1.1 Sections F7 to F9 set out principal rights and obligations applying to the installation and maintenance of Communications Hubs, which are supplemented by the provisions set out below. This document forms Appendix I of the Code.

General clarifications

- 1.2 Unless expressly stated otherwise, the obligations set out in this document are applicable to all Regions.
- 1.3 Unless expressly stated otherwise none of the obligations in this document apply to Test Communications Hubs.

2. GENERAL OBLIGATIONS IN RELATION TO THE INSTALLATION AND MAINTENANCE OF COMMUNICATIONS HUBS

DCC Obligations

- 2.1 The DCC shall ensure that it provides upon request to Parties a DCC Installer Training Plan which is sufficient to enable individuals accredited in accordance with it to carry out Communications Hub installation and maintenance activities in accordance with the CH Support Materials.

Supplier Party Obligations

- 2.2 Each Supplier Party shall ensure that any installations or maintenance of Communications Hubs undertaken on its behalf are undertaken by individuals that are certified to carry out Communications Hub installation and maintenance activities in accordance with the process for independent certification set out in the DCC Installer Training Plan.

3. PRE-INSTALLATION PROCEDURES

Activation prior to installation

- 3.1 A Party shall take all reasonable steps to prevent any Communications Hub in its possession from establishing a connection to the SM WAN prior to its installation for the purposes of Commissioning the Communications Hub Function.

Communications Hub inspections prior to installation

- 3.2 When installing a Communications Hub, prior to removing any packaging, a Supplier Party shall ensure that visual checks are undertaken to confirm that the packaged Communications Hub is not damaged.
- 3.3 Following the removal of all packaging, a Supplier Party shall ensure that visual checks are undertaken to confirm that the connecting pins (as described in the ICHIS) on the Communications Hub appear to be aligned and that the Communications Hub is not otherwise visibly damaged.

- 3.4 Where a Party, following inspection in accordance with clauses 3.2 and 3.3 above identifies damage to the Communications Hub or its packaging (including where the connecting pins are misaligned) that has caused or may reasonably be assumed to have caused more than superficial scratching or cosmetic damage to the body of the Communications Hub, the Party shall not attempt to install the Communications Hub and shall return the Communications Hub in accordance with clauses 10.1 to 10.20 of this document.

Pre-requisites for Fitting of Communications Hubs

- 3.5 Each installing Supplier Party shall ensure that a Communications Hub is not installed where it ascertains that:
- (a) the environmental conditions as defined in Annex C of the CH Handover Support Materials are not met; or
 - (b) the estimated temperature difference between the Communications Hub to be installed and the ICHIS compliant host exceeds 10 degrees Celsius.
- 3.6 Prior to attempting a Communications Hub installation, a Supplier Party shall ensure that the Installation Point is visually inspected to assess whether it lies entirely within a metallic enclosure or if any Significant Metallic Obstruction(s) exists. A Supplier Party shall ensure that a Communications Hub is not installed where its visual inspection determines that:
- (a) the Installation Point is entirely within a metallic enclosure; or
 - (b) a Significant Metallic Obstruction exists with respect to three or more of the following surfaces:
 - (i) the front surface of the Communications Hub;
 - (ii) the top surface of the Communications Hub;
 - (iii) the left-side surface of the Communications Hub; or
 - (iv) the right-side surface of the Communications Hub;

and where (a) or (b) applies that the use of an aerial is not determined to be likely to provide connectivity.

4. COMMUNICATIONS HUB INSTALLATION

- 4.1 When attempting the initial installation of a Communications Hub, a Supplier Party shall ensure that it uses the WAN Variant that was identified as being required for the Installation Location on the Coverage Database when the Supplier Party checked the Coverage Database, provided that this check was performed at any time within the period 30 days prior to the Installation Date.
- 4.2 It is a Supplier Party's responsibility to decide which HAN Variant to install at each customer's premises.
- 4.3 When installing a Communications Hub or Communications Hub Auxiliary Equipment, as set out in the Annex E of this document, a Supplier Party shall ensure that all appropriate tools and equipment are used.

Fitting and activation

- 4.4 A Supplier Party shall ensure that a Communications Hub is fitted according to the procedure set out in Annex A of this document.

- 4.5 On completion of the fitting procedure, the relevant Supplier Party shall ensure that the activation procedures for the Device Model that has been fitted are undertaken, as set out in Annex B of this document.
- 4.6 Where, during the installation process, the Supplier Party suspects that a fault has occurred with the Communications Hub, the relevant Supplier Party shall follow the procedures set out in clauses 8.1 to 8.13 of this document.

Post Installation Update Procedure

- 4.7 Where following completion of both the relevant fitting procedures and the relevant activation procedures, the Communications Hub is successfully connected to the SM WAN, the relevant Supplier Party shall:
- (a) ensure that the Communications Hub is fitted with a security seal; and
 - (b) submit a Service Request 8.14.1 (Communications Hub Status Update – Installation Success) in accordance with the DUIS within five (5) Working Days.

CH No SM WAN Installation Procedure

- 4.8 Where, following the fitting and activation procedure, a Supplier Party wishes to leave a Communications Hub installed without establishing a connection to the SM WAN, the Supplier Party shall:
- (a) ensure that the power supply to the Communications Hub is capable of being maintained following fitting and activation;
 - (b) verify that the CH Status Information does not indicate any fault other than failure to connect to the SM WAN;
 - (c) ensure that the Communications Hub is fitted with a security seal; and
 - (d) the relevant Supplier Party shall notify the DCC by submitting a Service Request 8.14.2 (Communications Hub Status Update Install No SM WAN) in accordance with the DUIS, within three (3) Working Days.
- 4.9 Pursuant to 4.8(d) a Supplier Party submitting an 8.14.2 Service Request shall indicate whether each of the following conditions exists:
- (a) a Significant Metallic Obstruction exists at the Installation Point with respect to any of the following surfaces;
 - (i) the front surface of the Communications Hub;
 - (ii) the top surface of the Communications Hub;
 - (iii) the left-side surface of the Communications Hub; or
 - (iv) the right-side surface of the Communications Hub.
 - (b) (without detailed or expert assessment), the Installation Point appears to have Substantial Stone Walls; or

- (c) the Installation Point is in a shared or communal area, outside the individual premises.

4.10 Following receipt of a Service Request 8.14.2 (Communications Hub Status Update Install No SM WAN), the DCC shall create an Incident and shall include within the Incident details of any Network Enhancement Plan affecting the Installation Location.

5. COMMUNICATIONS HUB DIAGNOSTICS

5.1 Where, following successful installation of a Communications Hub and Commissioning of the related Communications Hub Function, a Supplier Party identifies a potential Communications Hub fault, pursuant to Section H9.6 of the Code, that Supplier Party shall take all reasonable steps to complete the Communications Hub Availability and Diagnostics Check procedure prior to raising an Incident with the DCC.

Communications Hub Availability and Diagnostics Check

5.2 A Supplier Party may undertake a Communications Hub Availability and Diagnostics Check, by either:

- (a) utilising the Self-Service Interface to complete the Communications Hub availability and diagnostic check as defined in the Self-Service Interface Access Control Specification and the SSI Baseline Requirements Document; or
- (b) sending Service Requests 6.13: (Read Event or Security Log) for the CHF event log and Service Request 8.9: (Read Device Log) for the CHF Device Log, in accordance with DUIS and interpreting the Service Responses received.

5.3 Where any Communications Hub Availability and Diagnostics Check indicates that the Communications Hub Function does not:

- (a) have a network status of 'activated'; or
- (b) the Communications Hub Availability and Diagnostics Check response indicates that an error has occurred;

the Supplier Party shall verify that the SMI Status of the Communications Hub Function is not 'pending', 'installed not commissioned' or 'decommissioned', prior to raising an Incident.

5.4 Where any Communications Hub Availability and Diagnostics Check indicates that the SM WAN is unavailable for the Communications Hub, the Supplier Party shall check that there is no planned maintenance or existing DCC notified problem relating to SM WAN connectivity affecting the Installation Location by using the SM WAN network coverage functionality of the Self-Service Interface, prior to raising an Incident.

5.5 A Supplier Party shall include any relevant information from the Communications Hub Availability and Diagnostics Check in any Incident raised relating to that Communications Hub.

6. SPECIAL INSTALLATIONS & MODIFICATIONS

6.1 Where DCC identifies that resolution of an Incident relating to the ability to connect to the SM WAN requires work to be undertaken at a premises, the DCC shall notify the Supplier Party that raised the Incident accordingly. Such notification shall include details of the potential work required. The Supplier Party that

raised the Incident may request that the DCC undertakes such work at the premises and the DCC shall be required to undertake such work, subject to the provisions of Section F7.5 – F7.7 of the Code.

- 6.2 Where a Supplier Party requires the DCC to undertake work at the premises, the Supplier Party shall update the Incident accordingly. The Supplier Party shall update the Incident with the following information when it is available:
- (a) confirmation that consent for the work to be carried out has been obtained in accordance with Section F7.5 and F7.6 of the Code;
 - (b) the date and time at which the DCC should attend the relevant premises to carry out the work where;
 - (i) the Supplier Party shall ensure that the date shall be a Working Day, and the time shall be between 09:00 and 17:00;
 - (ii) the Supplier Party shall ensure that the date is no less than five (5) Working Days after the date of this update; and
 - (c) contact details that the DCC should use to confirm attendance prior to the agreed date and time or in the event that further liaison with the Supplier Party is required
 - (d) details of the reasoning for the need for DCC to attend.
- 6.3 Following the updates made pursuant to clause 6.2, the DCC shall subsequently update the Incident to provide contact details for its field force engineers at least one full Working Day prior to the date and time set for attendance at the relevant premises.
- 6.4 The DCC shall take all reasonable steps to attend the relevant premises at the specified date and time to undertake the work in accordance with Section F7.7 of the Code and shall notify the Supplier Party immediately where a delay to arrival is likely.
- 6.5 Where the DCC fails to meet the appointment, the DCC shall provide a list of reasonable options for revised dates and times from which the Supplier Party may select. Where the Supplier Party selects one of the potential dates and times offered by the DCC the provisions of clause 6.4 shall apply to that new date and time.
- 6.6 Where, in the Central Region and South Region, the DCC attends the relevant premises and identifies that T3 Aerial Type is required to resolve an Incident, the DCC shall:
- (a) provide a T3 Aerial Type and any other equipment required to achieve connectivity between the Communications Hub and the SM WAN; and
 - (b) undertake such authorised work as is required to install such aerial and any additional required equipment.
- 6.7 Where, in the Central Region and South Region, the DCC attends the relevant premises and identifies that a Special Installation Mesh Communications Hub is required to resolve an Incident, the Supplier Party shall install a Special Installation Mesh Communications Hub provided by the DCC (as further set out in the CH Handover Support Materials) by following the fitting procedure set out in Annex A.1 of this document.

- 6.8 Following completion by the Supplier Party of the fitting procedure set out in Annex A.1 of this document for a Special Installation Mesh Communications Hub, the DCC shall:
- (a) provide any aerial as deemed necessary (T1 Aerial Type, T2 Aerial Type, T3 Aerial Type, M1 Aerial Type or M2 Aerial Type) and any other equipment required to connect the Special Installation Mesh Communications Hub to the SM WAN; and
 - (b) undertake such work as is required to install such aerials or other equipment.
- 6.9 Where successful connection to the SM WAN is indicated, following installation of either:
- (a) a Special Installation Mesh Communications Hub, with associated aerials and any additional required equipment:
- or
- (b) a T3 Aerial Type;
- the Supplier Party shall complete the procedure set out in clause 4.7.
- 6.10 Where successful connection to the SM WAN is not achieved, following installation of a Special Installation Mesh Communications Hub, associated aerials and any additional required equipment, the Supplier Party may either:
- (a) follow the fault handling procedure in accordance with clauses 8.3 to 8.6;
 - (b) leave the Special Installation Mesh Communications Hub installed without establishing a connection to the SM WAN by following the CH No SM WAN Installation Procedure; or
 - (c) remove the Special Installation Mesh Communications Hub in accordance with the process set out in Annex A of this document, in which case:
 - (i) the DCC shall remove all aerials and other equipment installed in accordance with 6.8(b);
 - (ii) the Supplier Party shall return the Special Installation Mesh Communications Hub to the DCC in accordance with clause 10.1 and in accordance with Section F7.4A;
 - (iii) the Supplier Party shall update the existing Incident with details of the steps that have been undertaken within three (3) Working Days; and
 - (iv) a notification shall be deemed not to have occurred for the purposes of Section F7.18.
- 6.11 Where a successful connection to the SM WAN is not achieved, following installation of a T3 Aerial Type and any additional required equipment, and where the DCC has decided not to require the Supplier to install a Special Installation Mesh Communications Hub, the Supplier Party may either:
- (a) follow the fault handling procedure in accordance with clauses 8.3 to 8.6;
 - (b) leave the Communications Hub installed and connected to the T3 Aerial Type without establishing a connection to the SM WAN by following the CH No SM WAN Installation Procedure; or

- (c) in accordance with any instruction from DCC, restore the Communications Hub aerial to its previous state, in which case:
 - (i) the DCC shall remove the T3 Type Aerial and other equipment installed in accordance with 6.8(b);
 - (ii) the Supplier Party shall update the existing Incident with details of the steps that have been undertaken within three (3) Working Days; and
 - (iii) a notification shall be deemed not to have occurred for the purposes of Section F7.18.

6.12 No Party other than the DCC may install, repair or remove T3 Type Aerials and/or M1 / M2 Type Aerials and other equipment installed in accordance with clause 6.8(b), without first seeking permission from DCC (save that such a Party may take action in accordance with Good Industry Practice to protect the health and safety of persons or to prevent imminent damage to property).

7. DCC REQUEST TO ATTEND A PREMISES

- 7.1 Where, in accordance with Section F7.13, DCC wishes to request permission to attend a premises at which a Communications Hub is installed, the DCC shall notify the Supplier Party from whom access is being requested. Such notification shall include:
 - (a) details of any premises which the DCC wishes to attend, and the nature of the activity or inspection that the DCC intends to conduct; and
 - (b) DCC email and telephone contact details for the Party to use in relation to the process of arranging attendance at the premises.
- 7.2 Where the Supplier Party agrees to a request from DCC in accordance Section F7.14, or is required to take all reasonable steps to obtain Energy Consumer consent in accordance with Section F7.15, the Party shall notify the DCC, using the contact details provided pursuant to clause 7.1(b), of the following:
 - (a) confirmation that consent for the work to be carried out has been obtained or notification that consent has not been obtained;
 - (b) where consent has been obtained, the date and time at which the DCC should attend the relevant premises where:
 - (i) the Supplier Party shall ensure that the date is a Working Day, and the time shall be between 09:00 and 17:00;
 - (ii) the Supplier Party shall ensure that the date is no less than thirty (30) Days after the DCC notification was issued in accordance with clause 7.1 or the Panel determination was made pursuant to Section F7.15; and
 - (c) contact details that the DCC should use to confirm attendance prior to the agreed date and time or in the event that further liaison with the Supplier Party is required.
- 7.3 Following notification to the DCC pursuant to clause 7.2, the DCC shall, using the contact details provided, inform the Supplier Party of contact details for their personnel at least one full Working Day prior to the date and time set for attendance at the relevant premises.

- 7.4 The DCC shall attend the relevant premises at the specified date and time and shall immediately notify the Supplier Party, using the contact details provided, where a delay to arrival is likely.

8. ON-SITE FAULT RESOLUTION AND COMMUNICATIONS HUB REPLACEMENT

Site Visit - Environment Check Procedure

- 8.1 Where a Supplier Party is at a premises and prior to undertaking any Communications Hub Fault Handling Procedures, or replacing a previously installed Communications Hub, a Supplier Party shall take all reasonable steps to verify that:
- (a) the ICHIS compliant host is providing power to the Communications Hub; and
 - (b) that the prerequisites for installation of a Communications Hub set out in clauses 3.5 to 3.6 of this document are met.
- 8.2 Where the Supplier Party reasonably determines that the conditions in clause 8.1 are met the Supplier Party shall:
- (a) where physical damage that is more than cosmetic is identified, remove the Communications Hub in accordance with clauses 9.1 to 9.9 of this document; and
 - (b) undertake the relevant Communications Hub Fault Handling Procedures.

Special Installation Mesh Communications Hub Fault Handling Procedures

- 8.3 Where following a remote fault diagnosis a Supplier Party reasonably assumes that a fault is attributable to a Special Installation Mesh Communications Hub or T3 Aerial Type or M1 / M2 Aerial Type, the Supplier Party shall raise or update an Incident in accordance with clause 6.2 to request that the DCC attends the Installation Location to resolve the Incident other than where DCC has indicated that that a site visit is not required to resolve the matter.
- 8.4 Where a Supplier Party is at a premises and a Special Installation Mesh Communications Hub, based on the CH Status Information, indicates an error state, and the Supplier Party reasonably determines that the either or both of the T3 Aerial Type or M1 / M2 Aerial Types (if installed) is at fault:
- (a) where the DCC is in attendance, the DCC shall remove and replace either or both of the aerials immediately; or
 - (b) where the DCC is in not in attendance, the Supplier Party shall raise an Incident to request that the DCC undertakes such work at the premises and update the Incident with further information when it is available in accordance with clause 6.2.
- 8.5 Where a Supplier Party is at a premises and a Special Installation Mesh Communications Hub, based on the CH Status Information, indicates an error state, and the Supplier Party reasonably determines that the Special Installation Mesh Communications Hub is at fault, the Supplier Party shall:
- (a) where the Supplier Party reasonably determines that the Special Installation Mesh Communications Hub can be removed and re-installed without disturbing either the installed T3 Aerial Type and/or M1 / M2 Aerial Types, take the following steps to remove and re-install the Communications Hub:

- (i) disconnect the installed T3 Aerial Type and/or M1 / M2 Aerial Type;
 - (ii) remove the Communications Hub in accordance with clause 9 of this document;
 - (iii) following a period of no less than three (3) minutes, during which there is no physical connection to the host, re-install the same Communications Hub using the fitting and activation procedures as set out in A.1 and B.2 of this document, including the re-connection of the existing aerials;
- (b) where having undertaken the activities set out in 8.5(a), the Special Installation Mesh Communications Hub, based on the CH Status Information, continues to indicate an error state; raise or update an Incident in accordance with clause 6.2 to request that the DCC attends the Installation Location to resolve the Incident
- (c) where having undertaken the activities set out in 8.5(a), the Special Installation Mesh Communications Hub, based on the CH Status Information indicates a normal operating state: update any existing Incident with details of the steps that have been undertaken to resolve the Incident within three (3) Working Days.
- 8.6 Where the activities in clause 8.5(a) have been followed and the DCC is in attendance at the Installation Location, the Party shall then return the Special Installation Mesh Communications Hub in accordance with Section 10 of this document; and
- (a) where the Party wishes to hand back the Special Installation Mesh Communications Hub the DCC shall accept the removed Communications Hub; and
 - (b) the DCC shall provide a replacement Special Installation Mesh Communications Hub immediately.

General Fault Handling Procedures

- 8.7 Where the Communications Hub (other than a Special Installation Mesh Communications Hub) based on the CH Status Information, indicates an error state, the Supplier Party shall ensure that:
- (a) the Communications Hub is removed in accordance with clause 9 of this document; and
 - (b) following a period of no less than ten (10) seconds in the North Region and three (3) minutes in the Central Region and South Region, during which there is no physical connection to the host, the same Communications Hub is re-installed using the fitting and activation procedures as set out in Annex A and Annex B of this document.
- 8.8 Where, having undertaken the activities set out in clause 8.7, the Communications Hub (other than a Special Installation Mesh Communications Hub), based on the CH Status Information, continues to indicate an error state, and the Supplier Party wishes to resolve the fault, the Supplier Party shall ensure that:
- (a) the Communications Hub is removed in accordance with clause 9; and
 - (b) a replacement Communications Hub is installed in accordance with the fitting and activation procedures set out in Annex A and Annex B of this document.
- 8.9 Where, having undertaken the activities set out in clause 8.7, the Communications Hub (other than a Special Installation Mesh Communications Hub), based on the CH Status Information indicates a normal operating state:

- (a) update any existing Incident with details of the steps that have been undertaken to resolve the Incident within three (3) Working Days.

8.10 Where the Communications Hub is located within the Central Region or South Region and the Communications Hub, based on the CH Status Information, indicates an 'Attempting connect to the SM WAN' state for the maximum duration set out in the Communications Hub Supporting Information and the Communications Hub is a Cellular Communications Hub, the Supplier Party shall ensure that the following steps are undertaken when attempting to resolve the fault:

- (a) the Communications Hub is removed in accordance with clause 9 of this document; and
- (b) the fitting and activation procedures relevant to a Mesh Communications Hub are undertaken as set out in Annex A and Annex B of this document.

8.11 Where a Mesh Communications Hub (other than a Special Installation Mesh Communications Hub) is located within the Central Region or South Region and the Communications Hub, based on the CH Status Information, indicates an 'Attempting connect to the SM WAN' state for the maximum duration set out in the Communications Hub Supporting Information, the Supplier Party shall ensure that an aerial is fitted in accordance with the procedures set out in A.2 of this document.

SM WAN Connectivity

8.12 Where a Supplier Party determines that, having undertaken the relevant Communications Hub Fault Handling Procedure, no fault exists with a Communications Hub, but no SM WAN connection is achieved, that Supplier Party shall raise or update an Incident in accordance with the Incident Management Policy to inform DCC of a local SM WAN connectivity issue, subject to clause 8.13.

8.13 Prior to informing DCC of a local SM WAN connectivity issue a Supplier Party shall:

- (a) ensure that the power supply to the Communications Hub is maintained following the completion of the fault handling procedure;
- (b) verify that the Communications Hub Status Information does not indicate any fault other than failure to connect to the SM WAN; and
- (c) ensure that the Communications Hub is fitted with a security seal.

9. COMMUNICATIONS HUB REMOVAL AND NOTIFICATION OF RETURNS

Communications Hub removal

9.1 A Supplier Party may remove a Communications Hub from an ICHIS compliant host that is powered.

9.2 Where a Supplier Party removes a Communications Hub and any associated Communications Hub Auxiliary Equipment, the Supplier Party shall do so in accordance with the procedures set out in Annex A of this document.

Notification of returns

- 9.3 Following the removal of a Communications Hub, as a result of a suspected or actual fault in the Communications Hub the Supplier Party shall notify the DCC of its removal by submitting a Service Request in accordance with clauses 9.4 or 9.5 as applicable within five (5) Working Days of the date of removal.
- 9.4 Where the Communications Hub has been removed due to physical damage, the Supplier Party shall submit a Service Request 8.14.3 (Communications Hub Status Update – Fault Return) indicating the appropriate fault return type and reason as specified in the DCC User Interface Specification (DUIS).
- 9.5 Where a Communications Hub is removed in accordance with clause 8.8, the Supplier Party shall submit a Service Request 8.14.3 (Communications Hub Status Update – Fault Return) indicating the appropriate fault return type as specified in the DUIS.
- 9.6 Where a Communications Hub is removed and clauses 9.4 and 9.5 do not apply, the Supplier Party shall submit a Service Request 8.14.4 (Communications Hub Status Update – No Fault Return) indicating the appropriate return type as specified in Section F9, within five (5) Working Days of the date of removal.
- 9.7 Where either:
- (a) a Communications Hub is to be returned prior to installation pursuant to clause 3.4; or
 - (b) the DCC has requested the return of a Communications Hub in accordance with Section F8.1(b) of the Code or the Supplier Party is required to return pursuant to Section F8.6 of the Code;
- the Party shall submit a Service Request 8.14.3 (Communications Hub Status Update – Fault Return).
- 9.8 Where a Communications Hub is to be returned prior to installation pursuant to Section F8.7(a) of the Code, the responsible Party shall submit a Service Request 8.14.4 (Communications Hub Status Update – No Fault Return).
- 9.9 In the event that a Party is not able to submit a Service Request in accordance with clauses 9.4, 9.5, 9.6, 9.7 or 9.8 that Party shall contact the Service Desk.

10. COMMUNICATIONS HUB RETURNS

- 10.1 Where a Supplier Party has handed back a Special Installation Mesh Communications Hub to the DCC whilst in attendance at the relevant premises and where the Special Installation Mesh Communications Hub had been installed at a previous installation visit, the Party shall submit Service Request 8.14.3 (Communications Hub Status Update – Fault Return) or Service Request 8.14.4 (Communications Hub Status Update – No Fault Return) in respect of the Communications Hub returned in accordance with DUIS within three (3) Working Days.
- 10.2 In all circumstances other than those specified in clause 10.1, including where a Party wishes to return a Special Installation Mesh Communications Hub or T3 Aerial Type and/or M1 / M2 Aerial Types when the DCC is not in attendance at the relevant premises in accordance with Section 6 of this document, the Party shall follow the procedure in clauses 10.3 - 10.20 of this document to return the Special Installation Mesh Communications Hub, and return the T3 Aerial Type and/or M1 / M2 Aerial Types within this process.

- 10.3 Following the acceptance of Communications Hubs, where a Party wishes to return Communications Hubs to the DCC, that Party shall do so in accordance with the procedures set out in clauses 10.1 to 10.20 of this document.
- 10.4 The DCC shall make available to all OMS account profiles, the following information for any DCC Returns Location:
- (a) the full delivery address;
 - (b) operating hours; and
 - (c) the name, email address, and telephone number for a nominated contact in relation to Communications Hub returns.

Return Materials Authorisation

- 10.5 To return a Communications Hub a Party shall request a Returns Material Authorisation (RMA) once that Party has notified the DCC by either having:
- (a) submitted Service Request 8.14.3 or Service Request 8.14.4 in respect of the Communications Hub to be returned; or
 - (b) contacted the Service Desk.
- 10.6 The requesting Party shall ensure that the request for an RMA is:
- (a) made via the CH Ordering System; and
 - (b) includes:
 - (i) the CHF Identifier for each Communications Hub to be returned under that RMA, as previously notified to the DCC in accordance with clause 10.5
 - (ii) the contact name, email address, and telephone number to be used by the DCC to contact the Party in relation to that RMA;
 - (iii) the preferred DCC Returns Location; and
 - (iv) a preferred Return Date, which shall be on a Working Day at least five (5) Working Days following the date that the request for the RMA is submitted.
- 10.7 Following acceptance of an RMA request, the DCC shall:
- (a) confirm authorisation to the submitting Party using the contact details provided;
 - (b) provide the Party with the following information via the Order Management System using either the 'CH Ordering' or 'CH Delivery and Returns' OMS profiles or via notification to the contact details provided:
 - (i) a unique booking reference;
 - (ii) confirmed timeslot for delivery;

- (iii) RMA reference; and
- (iv) any changes to the DCC contact details for the purposes of the return; and
- (c) request any additional information as may be reasonably required to facilitate the logistics of the return in accordance with good industry practice.

Returns Equipment and Packaging

- 10.8 A Party shall ensure that all Communications Hubs returned to the DCC are in packaging of equivalent standard to that in which a Communications Hub of that Device Model was originally packaged, not exceeding the maximum number of Communications Hubs per carton and cartons per pallet set out in the CH Handover Support Materials.
- 10.9 A Party may return aerials or other equipment to DCC within a Communications Hub return delivery and must ensure that any aerials or other equipment returned to the DCC are in packaging of equivalent standard to that in which the aerials or other equipment was originally packaged.
- 10.10 Where a Communications Hub has been subject to environmental or biological contamination, the Party shall:
 - (a) where it is safe to do so, place the Communications Hub in appropriately sealed packaging such that DCC can clearly identify the nature of the contamination without removing or unsealing such packaging; or
 - (b) where safe return of a contaminated Communications Hub is not possible, safely and securely dispose of the Communications Hub.

Delivery of Returns

- 10.11 Where the Party does not return a Communications Hub within 90 days pursuant to Section F8.6 of the Code, the Communications Hub shall be deemed to be lost or stolen and the DCC shall prevent that Communications Hub from connecting to the SM WAN.
- 10.12 The Party shall ensure that the Communications Hub delivery is accompanied with a Return Delivery Note that contains, as a minimum, the following information:
 - (a) booking reference for the return delivery as supplied by DCC pursuant to clause 10.7;
 - (b) return date and return delivery time;
 - (c) Party Signifier;
 - (d) DCC Returns Location;
 - (e) list of all CHF Identifiers being returned; and
 - (f) (where one or more pallets are to be returned), the pallet identifiers for each pallet being returned.
- 10.13 The DCC shall provide the Party with a printable RMA label for each return delivery via the OMS (using the CH Ordering or CH Delivery and Returns profile) immediately following authorisation. The Party shall securely attach the corresponding RMA label on each pallet and each carton (where a carton is not part of a

pallet) and each Communications Hub (where a Communications Hub is not part of a pallet or carton) for each return delivery.

- 10.14 The Party shall notify the DCC if there are any known issues that mean the delivery will be late, stating the reason for the delay and the expected time of arrival. The Party shall take all reasonable steps to make such notification a minimum of 5 Working Hours prior to the return delivery booking time. The DCC shall take all reasonable steps to accommodate a revised return delivery booking time and shall confirm to the Party that the DCC is either:
- (a) able to accept the late return delivery; or
 - (b) unable to accept the return delivery.
- 10.15 Where the DCC is unable to accept the return delivery the DCC shall notify the returning Party as soon as reasonably practicable and shall notify the Party of the full range of available delivery dates and times within the following 90 days and the Party shall notify the DCC of an acceptable revised date and clauses 10.13 and 10.14 shall apply in relation to the revised date.

Delivery Acceptance

- 10.16 Prior to signing the Return Delivery Note, the DCC may carry out the following;
- (a) assessment of pallets delivered against those recorded under the RMA request;
 - (b) checks between CHF Identifiers received against those listed under the RMA request; and
 - (c) checks that the number of Communications Hubs returned match the number of CHF Identifiers listed in the RMA request.
- 10.17 The DCC may reject any returned Communications Hubs where unloading them would present a health and safety risk. Where the DCC rejects the return delivery, the Party shall be required to request a new RMA and rearrange the return delivery following the relevant procedures set out in clauses 10.5 to 10.15 of this document.
- 10.18 Following the checks performed pursuant to clause 10.16, the DCC shall record any discrepancies between the return delivery and the Return Delivery Note.
- 10.19 Where requested to do so the DCC shall sign and retain a copy of the Return Delivery Note.
- 10.20 Where the Party fails to provide the DCC with a fault reason for each CHF Identifier in accordance with the requirements set out in this document, the Communications Hub shall be deemed to be a return pursuant to Section F9.5 (e) of the Code and the Communications Hub Fault shall be a CH User Responsibility in accordance with Section F9.6 (a) of the Code.

11. CH FAULT DIAGNOSIS BY DCC

Receipt of Communications Hubs

- 11.1 The DCC shall create an individual record for each returned Communications Hub on receipt of Service Request 8.14.3, 8.14.4 or any return notified through the Service Desk. For each returned Communications Hub this record shall contain all details received by DCC from the Party within the Service Request or provided via the Service Desk and other supporting information as set out in Annex D, and shall be made

available by the DCC to the Party that returned the Communications Hub within seven (7) days after the return of the Communications Hubs via the CH Ordering System.

Notification

- 11.2 Where the DCC intends to undertake any CH Fault Diagnosis, the DCC shall update the relevant record, as described in Annex D of this document, indicating that further analysis is required, in accordance with Section F9.9 of the Code. The DCC shall make this information available and notify the Party that returned the Communications Hub within ten (10) days after the return of the Communications Hubs or notification of its loss or destruction pursuant to Section F9.9, of this revision.
- 11.3 In the event that a Party is not able to access the record created in accordance with clause 11.1, that Party may contact the Service Desk in order to access the record, which the DCC shall enable.

Fault Diagnosis Approach

- 11.4 The DCC shall undertake CH Fault Diagnosis using visual and electronic analysis of returned Communications Hubs, as set out in clauses 11.5 and 11.6.

Visual analysis

- 11.5 The DCC may undertake the following visual inspections of a returned Communications Hub and shall subsequently update the information in the record created pursuant to 11.1 to include the results from this analysis:
- (a) check for any physical damage to any part of the Communication Hub including, but not limited to, the outer casing, external interfaces and connectors;
 - (b) check to identify any loose internal components and for evidence that such components were previously connected correctly;
 - (c) check for any evidence of tampering; and
 - (d) check for any evidence of exposure to adverse environmental conditions including, but not limited to, water, condensation, smoke, chemicals, pests, etc.

Electronic analysis

- 11.6 Where the Communications Hub is not deemed to be physically damaged in accordance with clause 11.5, the DCC may undertake the electronic diagnostic tests described in Annex C of this document and shall subsequently update the information in the record created pursuant to 11.1 to include the results from this analysis.

Fault Analysis Report

- 11.7 Pursuant to Section F9.11, where the DCC disputes the reason given by a Party for the return of a Communications Hub, the DCC shall provide the Party which returned the Communications Hub with a report. The DCC shall provide this report by updating the relevant Fault Analysis Report record maintained for each returned Communications Hub, as set out in Annex D of this document, with the results of the Fault Analysis and make this available via the CH Ordering System and notify the Party that returned the Communications Hub.

Acceptance

- 11.8 Where the DCC provides a Fault Analysis Report and the Party does not object in accordance with Section F9.13 of the Code, no further action is required by the Party and the DCC shall update the 'Returns Record Status' field to "Closed".

Objections

- 11.9 Where the Party wishes to notify the DCC of their objection pursuant to Section F9.14 of the Code it shall do so via the Service Desk.

Annex A. CH Fitting and removal procedures

A.1. Fitting procedure

- A.1.1 A Party shall ensure that all reasonable precautions are taken to avoid electrostatic discharge whilst handling the Communications Hub.
- A.1.2 A Supplier Party shall ensure that all reasonable precautions are taken to avoid electrostatic discharge when installing any Communications Hub and Communications Hub Auxiliary Equipment.
- A.1.3 The Communications Hub shall be mounted vertically above the ICHIS compliant host, ensuring that the Communications Hub Variant labelling text on the front face is horizontal.
- A.1.4 A Party may mount a Communications Hub on an ICHIS compliant host that is powered.
- A.1.5 A Supplier Party shall fit a Communications Hub in accordance with the steps set out below:
 - (a) **Step 1** - Align Communications Hub guide rails with the U-channel of the ICHIS compliant host;
 - (b) **Step 2** - Slide the Communications Hub on to the ICHIS compliant host, ensuring that the Communications Hub guide rails remain within the U-Channel of the ICHIS compliant host;
 - (c) **Step 3** - Press the front faceplate in order to connect the Communications Hub to the interface of the ICHIS compliant host, applying hand pressure only; and
 - (d) **Step 4** - Screw in the M4 retaining screw located on the front faceplate of the Communications Hub to fasten it to the ICHIS compliant host.

A.2. Installation of Communications Hub aerials - Central Region and South Region

- A.2.1 For the South Region or Central Region, where a Communications Hub (as indicated by the Coverage Database) requires an aerial (T1 Aerial Type or T2 Aerial Type), or where an aerial is required as a result of a failure as described in B.2.4 of this document, the Supplier Party shall ensure that a Mesh Communications Hub is installed and that when installing an aerial:
 - (a) all reasonable steps are taken to ensure any aerial (T1 Aerial Type or T2 Aerial Type) is positioned vertically and avoiding any Significant Metallic Obstruction;
 - (b) all reasonable steps to minimise risk of damage to the aerial lead during installation are undertaken and that the environmental conditions for the Communications Hub as defined in Annex C of the CH Handover Support Materials are not exceeded;

- (c) stub aerials (i.e. with no cable attached) are not used to connect the aerial directly onto the Communications Hub, the cable must always be used as supplied.

A.2.2 For the South Region or Central Region, a Supplier Party shall:

- (a) first attempt to install a standard Communications Hub T1 Aerial Type in accordance with the installation steps set out in A.2.3; and
- (b) where, in step 6 (A.2.3(f)), the minimum signal strength required as indicated by the Visual Information set out in the CH Supporting Information is not obtained, the Party shall remove the T1 Aerial Type and install a T2 Aerial Type in accordance with the installation steps set out in A.2.3.

A.2.3 A Supplier Party shall install a Communications Hub aerial in accordance with the steps below:

- (a) **Step 1** - unpack the aerial and inspect for damage;
- (b) **Step 2** - attach the aerial to the cable SMA connector, if the cable is not supplied already integrated with the aerial;
- (c) **Step 3** - ensure the Communications Hub is powered up and fully initialised when connecting the aerial and cable to the SMA connector on the Communications Hub;
- (d) **Step 4** - fasten all SMA connectors to finger-tightness;
- (e) **Step 5** - secure the Communications Hub hinged plastic cover over the connector, ensuring that the aerial cable routes through the provided aperture on the base of the cover and remains free to allow aerial positioning once fitted;
- (f) **Step 6** - for connection of a T1 Aerial Type, T2 Aerial Type or T3 Aerial Type only, use the Visual Information set out in the CH Supporting Information to identify the strength of the signal at varying positions of the aerial and cable to first maximise the signal strength and second minimise the distance to the Communications Hub;
- (g) **Step 7** - if the aerial position does not require the full length of the supplied aerial cable, the spare aerial cable shall be loosely coiled and fastened using a fabric hook- and-loop cable tie ensuring not to crush or kink the aerial cable;
- (h) **Step 8** - for connection of a T1 Aerial Type, T2 Aerial Type or T3 Aerial Type only, once the optimum location for the aerial has been confirmed the aerial shall be positioned vertically with the cable connector at the base then either:
 - (i) fasten the aerial in place using the appropriate fasteners provided in the assembly kit: or
 - (ii) depending on the type of aerial used, connect to a wall using self-adhesive.
- (i) **Step 9** - following installation of the aerial as set out in steps 1-8 above, the installer should wait for a minimum of two (2) minutes, and then undertake the activation processes set out in Annex B of this document.

A.2.4 For the South Region or Central Region, where a Special Installation Mesh Communications Hub is to be installed and requires an aerial (T1 Aerial Type or T2 Aerial Type and M1 Aerial Type), or where an aerial

is required as a result of a failure as described in B.2.4 of this document, the Supplier Party shall ensure that a Special Installation Mesh Communications Hub is installed and that when installing an aerial:

- (a) all reasonable steps are taken to ensure any aerial (T1 Aerial Type, T2 Aerial Type or M1 Aerial Type) is positioned vertically and avoiding any Significant Metallic Obstruction;
- (b) all reasonable steps to minimise risk of damage to the aerial lead during installation are undertaken and that the environmental conditions for the Communications Hub as defined in Annex C of the CH Handover Support Materials are not exceeded;
- (c) stub aerials (i.e. with no cable attached) are not used to connect the aerial directly onto the Communications Hub, the cable must always be used as supplied;

A.2.5 For the South Region or Central Region, where a Special Installation Mesh Communications Hub is to be installed and requires an external aerial (T3 Aerial Type or M1 / M2 Aerial Types), or where an aerial is required as a result of a failure as described in B.2.4 of this document, the Supplier Party shall ensure that a Special Installation Mesh Communications Hub is installed and that when installing an external aerial, the manufacturer's instructions for selecting the installation position and mounting the aerials are followed, particularly with reference to the following:

- (a) The aerial must be mounted in a vertical plane with the cable exiting from the bottom,
- (b) The aerial should be located such that the distance to any nearby device or metal structure should exceed the stated minimum distance. The aerial must not be installed on or close to a metal panel,
- (c) The aerial should be mounted in such a way that no person is likely to be within the RF exclusion zone while the aerial is in use,
- (d) If both the T3 Aerial Type and M2 Aerial Types are specified for installation on the external wall of a property, the T3 Aerial Type should be mounted vertically above the M1 / M2 Aerial Types such that the minimum vertical separation between them is met or exceeded,
- (e) Only those brackets and fittings supplied by the manufacturers should be used for installing the T3 Aerial Type or M1 / M2 Aerial Types.

A.3. Communications Hub removal procedure

A.3.1 Where a Supplier Party removes a Communications Hub, the Supplier Party shall:

- (a) **Step 1** - Remove or break the security seal;
- (b) **Step 2** - Remove the M4 retaining screw located on the front faceplate of the Communications Hub to enable its removal from the ICHIS compliant host; and
- (c) **Step 3** - Slide the Communications Hub from the ICHIS compliant host, ensuring that the Communications Hub guide rails remain within the U-Channel of the Electricity Smart Meter, Cradle or Hot Shoe.

Annex B. Activation Procedure

B.1. Communications Hub Activation Procedure - North Region

B.1.1. For the North Region, following the fitting of a Communications Hub, the Supplier Party shall verify the successful activation of the Communications Hub by monitoring that the CH Status Information indicates the following Communications Hub states as set out in the CH Supporting Information, in the sequence:

- (a) 'SM WAN initialising';
- (b) 'Attempting to connect to the SM WAN'; and
- (c) 'SM WAN connected'.

B.1.2. For the North Region, where the Communications Hub activation fails to complete, the Supplier Party shall ensure that:

- (a) where the CH Status Information indicates that the Communications Hub is in an error state, the Communications Hub Fault Handling Procedures are followed; or
- (b) where the Communications Hub fails to transition from the 'Attempting connect to the SM WAN' state to the 'SM WAN connected' state within the maximum time set out in the CH Supporting Information, but no fault is indicated, the Supplier Party may wish to undertake the CH No SM WAN Installation Procedure.

B.2. Communications Hub Activation Procedure - Central Region and South Region

B.2.1. Following the fitting of a Cellular Communications Hub, the Supplier Party shall ensure that a check is performed to confirm that the following Communications Hub states are achieved, based on the CH Status Information, as set out in the CH Supporting Information:

- (a) initialisation complete ('Device initialising' transition steps complete successfully);
- (b) SW LED 'Normal operating state';
- (c) WAN LED 'Attempting connect to SM WAN'; and
- (d) WAN LED 'SM WAN connected'.

B.2.2. Where the Communications Hub activation fails to complete, the Supplier Party shall ensure that:

- (a) where the CH Status Information indicates that the Communications Hub is in an error state (SW LED 'Device in error state' or WAN LED 'SM WAN error'), the fault resolution procedures set out in clauses 8.1 to 8.13 of this document are followed; or
- (b) where the WAN LED indicator fails to transition from the 'Attempting connect to SM WAN' state to the 'SM WAN connected' state within the maximum time set out in the CH Supporting Information, the Cellular Communications Hub is removed and a Mesh Communications Hub is fitted in accordance with the fitting and activation procedures set out in Annex A and Annex B of this document.

B.2.3. Where installing a Mesh Communications Hub or Special Installation Mesh Communications Hub, the Supplier Party shall ensure that the Visual Information set out in the CH Supporting Information is monitored to confirm the following Communications Hub states are achieved:

- (a) initialisation complete ('Device initialising' transitions complete successfully);
 - (b) SW LED showing 'Normal operating state';
 - (c) and either:
 - (i) SM WAN (cellular) - WAN LED showing 'Attempting connect to SM WAN';
 - (ii) SM WAN (cellular) - WAN LED showing 'SM WAN connected';
- or
- (iii) Mesh - MESH LED showing 'Attempting to connect to Mesh'; and
 - (iv) Mesh - MESH LED showing 'Mesh connected'.

B.2.4. Where the Mesh Communications Hub activation fails to complete, the Supplier Party shall ensure that:

- (a) where the CH Status Information indicates that the Mesh Communications Hub is in an error state, the fault resolution procedures set out in clauses 6.1 to 6.5 of this document are followed; and either:
 - (b) where no Communications Hub T2 Aerial Type has previously been fitted and the WAN LED indicator fails to transition from the 'Attempting connect to SM WAN' state to the 'SM WAN connected' state or from the 'Attempting to connect to Mesh' state to the 'Mesh connected' state within the maximum time set out in the CH Supporting Information, a Communications Hub T2 Aerial Type is fitted in accordance with the fitting and activation procedures set out in Annex A and Annex B of this document.
- or
- (c) where a Communications Hub T2 Aerial Type has previously been fitted and the Mesh Communications Hub fails to transition from the 'Attempting to connect to SM WAN' state to the 'SM WAN connected' state or from the 'Attempting to connect to Mesh' state to the 'Mesh connected' state within the maximum time set out in the CH Supporting Information, but no fault is indicated, the Supplier Party may wish to undertake the CH No SM WAN Installation Procedure.

Annex C. Electronic Fault Diagnosis

C.1.1. The DCC may carry out the following checks as part of the Communications Hub Fault Handling Procedure:

- a) check of hardware and firmware;
- b) check of device configuration;
- c) checks of power consumption;
- d) detection of malfunction of internal components via self-tests;

- e) connectivity test for HAN components;
- f) connectivity test for SM WAN components;
- g) functional check of visual status indicators (LEDs);
- h) verification that power outage power storage is within expected tolerance;
- i) tamper detection check;
- j) clock test (set real-time clock or read real-time clock); and
- k) review of the security and event logs.

Annex D. Fault Analysis Report – fault record data items

D.1.1. Table 1 identifies the data fields that will be provided in the Communications Hub Fault Analysis Report. Data items shall be updated in line with the progress of the fault analysis and some items may therefore be blank.

Table 1; Fault Analysis Report – fault record data field descriptions

Field name	Description
Returns record id	Unique reference for the returns Record.
Incident reference	This field displays the Incident request identifier if provided by a Party
User ref id	Unique reference for the update provided by a Party.
User id	SEC Party Signifier of the Party that submitted the Communications Hub status update
CHF return type	Category of Return, as provided by a Party and specified in DUIS
User fault diagnosis (CHF fault reason)	Initial fault diagnosis code, as provided by a Party and specified in DUIS.
CSP fault diagnosis	DCC fault diagnosis following the fault analysis process.
DCC fault diagnosis	DCC fault diagnosis following conclusion of any objection process.

User fault responsibility	Derived from user fault diagnosis
CSP fault responsibility	DCC fault responsibility derived from DCC fault diagnosis
Final agreed fault responsibility	Derived from DCC fault diagnosis
CSP id	The DCC Service Provider identified by the Region.
Device id	The unique CHF ID
Return record create date	The Date and time the returns record was created.
User job date time	Time of removal of the Communications Hub provided by a Party.
Preliminary FAR received date	The date the DCC updated the record to issue the preliminary Fault Analysis Report.
CSP FAR received date	The date the DCC issued the final Fault Analysis Report.
Return closed date	The date and time the DCC issued the final Fault Analysis Report.
Received communications hub date	The date and time the DCC receives the Communications Hub from the Party.
Dispute start date	The date and time the dispute was notified to DCC and the record status was updated to 'In Dispute'.
Other device id	UID of the ESME or GSME
CHF connection method	<p>To record whether hot-shoe or cradle CHF installation</p> <p>To record how the Communications Hub has been installed and connected to the rest of the Smart Metering System within the premises Valid set:</p> <p>Hot-shoe Cradle ESME</p>
Cause of fault	A short description of the fault cause supplied by the DCC

Additional information	Further Analysis details from the Fault Cause supplied by the DCC
Full analysis	Y/N flag indicating whether a full analysis is required. Will drive the status of the returns record
User organisation	Details of organisation associated with User ID
Premises postcode	Derived from MPAN / MPRN associated with the Communications Hub
Product name	Derived from CHF ID
Model	Derived from CHF ID
Manufacturer	Derived from CHF ID
Communications hub delivery location	The location the Communications Hub was delivered to (provided by DCC)
Communications hub installation date	From the Smart Metering Inventory, where applicable.
Incident resolved date	Manually populated by Service Desk
CSP region	The Region in which the Communications Hub was installed.
Communications hub commissioned date	From the Smart Metering Inventory
Communications hub device type	Supplied on creation by DCC
Communications hub returning supplier	Supplied on creation by DCC
Communications Hub delivery date	From the Smart Metering Inventory.

Annex E. Equipment Supplied

E.1. North Region

E.1.1. The DCC shall supply the following equipment, which can be ordered via the OMS:

- a) 'Standard 420' Communications Hub Variant with captive security screw; and

- b) 'Standard 420 DB' Communications Hub Variant with captive security screw; and
- c) 'Variant 450 DB' Communications Hub Variant with captive security screw.

E.2. Central and South Regions

E.2.1 The DCC shall supply the following equipment, which can be ordered via the OMS:

- a) 'SKU1 Cellular' Communications Hub Variant with captive security screw; and
- b) 'SKU2 Cellular + Mesh' Communication Hub Variant with captive security screw; and
- c) 'Cellular DB' Communications Hub Variant with captive security screw; and
- d) 'Cellular + Mesh DB' Communications Hub Variant with captive security screw; and
- e) Communications Hub Auxiliary Equipment, including aerials, aerial cable and fabric hook-and-loop ties, two aerial types shall be provided:
 - e)1 T1 Aerial Type; and
 - e)2 T2 Aerial Type.

E.2.2 The DCC shall supply the following equipment directly at joint visits:

- a) 'SKU3 SIMCH' (Special Installation Mesh Communications Hub) Communications Hub Variant with captive security screw; and
- b) 'SIMCH DB' Communications Hub Variant with captive security screw; and
- c) Up to three aerial types and related cables and fixings shall be provided:
 - i) T3 Aerial Type
 - ii) M1 Aerial Type
 - iii) M2 Aerial Type

E.2.3 All Communications Hub Variants, their HAN/WAN Variant attributes and CSP Regions are listed in table 2.

Table 2; Summary of all Communications Hub Variants with their HAN/WAN Variant attributes and CSP Regions

CH Variant	HAN Variant	WAN Variant	CSP Region
Standard 420	Single Band (2.4GHz only)	420	CSP North
Standard 420 DB	Dual Band (868MHz and 2.4GHz)	420	CSP North
Variant 450 DB	Dual Band (868MHz and 2.4GHz)	450	CSP North

SKU1 Cellular	Single Band (2.4GHz only)	Cellular	CSP South & Central
SKU2 Cellular + Mesh	Single Band (2.4GHz only)	Cellular+Mesh	CSP South & Central
SKU3 SIMCH	Single Band (2.4GHz only)	Special Installation Mesh	CSP South & Central
Cellular DB	Dual Band (868MHz and 2.4GHz)	Cellular	CSP South & Central
Cellular + Mesh DB	Dual Band (868MHz and 2.4GHz)	Cellular+Mesh	CSP South & Central
SIMCH DB	Dual Band (868MHz and 2.4GHz)	Special Installation Mesh	CSP South & Central

868MHz means, for the purposes of the Code, sub-GHz

E.3. Communications Hub WAN Variant Values

E.3.1 For the purpose of providing WAN Technology values for use with the 12.1 RequestWANMatrix Service Request as detailed in APPENDIX AD 'DCC User Interface Specification', Communications Hub WAN Variant values are listed in table 3

Table 3; Summary of all Communications Hub WAN Variants for use with Service Request 12.1

WAN Variant (DCC 1.3)	WAN Variant (DCC 2.0)	CSP Region
Standard 420	420	CSP North
Variant 450	450	CSP North
Cellular	Cellular	CSP South & Central
Cellular+Mesh	Cellular+Mesh	CSP South & Central
No Coverage Intended	No Coverage Intended	N/A
" " Space	" " Space	CSP South & Central

To note: on Table 3, " " Space above, CSP South & Central will respond to a SMWAN Coverage request (CSPM-S1 or CSPM-S2) with an Availability Date for coverage but without confirming the WAN Variant that

will need to be used. Upon receipt of this WAN Variant, the Service User will read “ “ Space as WAN Variant unknown.