

TBDG Design Note	
Document Title:	Re-use of Communications Hubs

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Purpose of Paper*	Whilst the content of design notes were subject to peer review and considered to be accurate at the time of their publication, changes may have since taken place that mean this is no longer the case. In any event, design notes should be considered to contain non-binding clarifications on the topic identified. In the event of any conflict or inconsistency between any design note and any relevant licence conditions, the SEC or any other relevant regulation, the relevant licence conditions, SEC and/or other relevant regulation shall take precedence over the design note.		
Summary of Document Purpose	To provide clarity around the circumstances under which a Communications Hub may either be re-used or must be returned to the DCC.		
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*Delete as appropriate

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1. Introduction

1.1 Summary of action required from TBDG

1. TBDG is invited to note this paper and that some minor drafting changes may be required to SEC (sections F8.6, K7.5 and H5.23). These changes include: removing the obligation on users to return all Communications Hubs that have been removed from a premises to DCC within 90 days; allowing Communications Hubs to be re-used elsewhere, and revised billing arrangements. These changes will be accommodated within current SEC timelines.

1.2 Identification of the issue

2. It is recommended that this document is read in conjunction with:
 - Install and Commission Design Note
 - Communications Hub Exchange Design note
3. Suppliers have identified that the current arrangements in the SEC that require the return of Communications Hubs, to the DCC, when removed from a premise do not take account of all the scenarios in which this may occur. As currently drafted the requirement to do this is, in some cases, overly onerous and likely to result in additional and unnecessary costs.
4. This Design Note describes the circumstances under which a Supplier (or their agents) may remove a Communications Hub from service in a premises and then re-use that Communications Hub in another premise, along with the steps they must take and the circumstances under which the Communications Hub must be returned to the DCC. This is achieved by considering a number of scenarios for Communications Hub removal that Suppliers have identified.

2. Background and Context

5. Smart meters are designed to be operated in conjunction with a Wide Area Network (WAN) which will transfer information between the DCC and equipment in the home, for onward communication to DCC Users (suppliers, network operators and other users). The WAN relies on a Communications Hub to establish end to end communications with all devices, including meters that exist on the Home Area Network (HAN).
6. Communications Hubs are procured by and are the responsibility of Communications Service Providers (CSPs) who form part of the DCC. Suppliers place orders for Communications Hubs which are subsequently shipped to them for deployment (via the Install and Commission process) by Suppliers' field forces.
7. Current SEC provisions state that Communications Hubs that are taken out of service are required to be returned to the DCC (within 90 days) following which they are assessed by DCC. Where the assessment shows that the Communications Hub fault was caused by the DCC (i.e. there is a fault with the hardware or software) and the Type fault threshold is breached Suppliers may claim a contribution towards the cost of the site visit that replaced the Communications Hub
8. . Where the fault is shown to be the Supplier's (e.g. consumer damage or poor installation practice) the liability for the cost of the device and site visit is borne by the Supplier. Where analysis of the Communications Hub shows "No Fault Found" (i.e. the Communications Hub works as expected) the Communications Hub is refurbished and becomes available for shipping.

In this case the Responsible Supplier (that returned the Communications Hub) is liable for the lower of the refurbishment cost or the remaining asset cost of that Communications Hub

9. Some Suppliers' experiences of Foundation arrangements are that they are required to try a number of Communications Hubs at a single site in order to establish a communications connection. Their concern is that conditions under DCC arrangements will be similar and as a consequence, and under current rules, they will be required to return significant numbers of Communications Hubs that may subsequently determined to be "No Fault Found" with resultant financial costs and operational inefficiencies.
10. It should be noted that data protection rules require that where data that could be considered as personal has been stored on the Communications Hub (e.g. consumption data on the Gas Proxy Function) that data must be handled accordingly and must not be permitted to be available to others who have no rights of access to it. Removing the GSME Device ID from the Communications Hub Function Device Log has the effect of clearing the consumption data logs on the Gas Proxy Function (GPF)¹ and thus resolving this issue.
11. Clearly where a fault has been reported or is suspected on a Communications Hub, it must be returned to DCC.
12. A concern has been that once a Communications Hub has been commissioned, it may not subsequently establish connection with the CSP at a different site. DCC have confirmed that, provided that Communications Hubs are not intended to be re-used in a different CSP area, this is not the case and that it is possible to re-connect Communications Hubs that have been commissioned elsewhere.

3. Conditions and Requirements of Reuse

12. This section describes the circumstances under which Communications Hubs may be removed and re-used and the conditions that apply to each.
13. Key considerations that determine whether a Communications Hub can be re-used revolve around whether:
 - a. Whether the Device Log has been populated (as when the Service Request to achieve this completes DCC updates the Smart Metering Inventory to associate the Communications Hub and the devices in its Device Log).
 - b. Whether the Gas Proxy Function has been populated with the relevant Network Operator credentials (as this in effect, ties the Gas Proxy Function part of the Communications Hub to that Network Operator)²
14. Other issues that have been dealt with include:

¹ In CHTS 1.46 this is incorrectly attributed to the GPF Device Log (4.5.4.7) – an issue resolution proposal is being progressed to align this to the CHF Device Log.

² It is possible that a Network Operator could be asked to replace their certificates in this scenario but there is no obligation to do so and it is not possible once WAN comms have ceased.

- a. Concerns about the Communications Hub being recognised on the Network – DCC have confirmed that this is not an impediment (see item 12. above)
 - b. Removal of personal data from the Gas Proxy Function – this can be achieved through the DUGIS Service Request 8.11 Update HAN Device Log (which has the effect described in item 10. above.)
15. Operational scenarios that have been considered (as probable occurrences that cover the range of issues that could prevent Communications Hub re-use) include:
- a. Where a Communications Hub has been installed, but communications have not been established with DCC and the Device Log has not been populated with the Device IDs of HAN devices
 - b. Where communications between the Communications Hub and the DCC have been established and the Device Log has been populated with Device IDs of HAN devices
 - c. Where the Communications Hub, Electricity Meter and Gas Meter have all been commissioned and as a result the Network Operator Organisational Certificates have been updated on the GPF

Additionally, consideration has been given to how the Smart Metering Inventory is affected by the re-use of Communications Hubs.

16. Where a Communications Hub has been installed and the CHF Device Log has not been populated, and WAN communications have not been established, the Supplier may remove the device and install it in a different premise (without first returning it to DCC). At this point in its life cycle the Communications Hub is still considered to have a Smart Metering Inventory status of “pending” and as such no relationships have been established with other devices and there are no impediments to re-using the Communications Hub.
17. Where a Communications Hub has been installed and communication over the WAN has been established, the Communications Hub will be considered to have a Smart Metering Inventory Status of “Commissioned”, whether or not the Device Log has been populated (i.e. whether or not any relationships to other devices have been established). This is not an impediment to its re-use.
18. Where the Communications Hub Function Device Log has been populated a relationship is created in the Smart Metering Inventory between the Communications Hub and those Device IDs that have been added to the Communications Hub Function Device Log. Where those devices are Electricity or Gas Smart meters, a Smart Metering System is created in the Smart Metering Inventory. In order that the Communications Hub may be re-used, the Device IDs that have been added to the Device Log must be removed. This may be achieved by use of Service Request 8.11 Update Han Device Log.
19. In cases where devices have been commissioned that rely on that Communications Hub Functions (e.g. ESME, GSME, GPF, IHD, PPMID) the way in which Smart Metering Inventory issues are managed by the Supplier will depend on the business process in operation at the time:

- a. Communications Hub Exchange (Hardware fault)- where a new Communications Hub is to be installed and commissioned the Communications Hub Exchange process³ should be followed – this process will then remake the appropriate Smart Meter Inventory relationships between devices on the HAN (and with the new GPF). NB in these scenarios it is envisaged that the Communications Hub itself will be faulty and thus will be returned
- b. Communications Hub Exchange (WAN issue) – for instance where a single band Communications Hub is replaced by a Dual Band Communications Hub (for some gas installs) or where a CSP South or CSP Central cellular Communications Hub is replaced with a cellular and mesh communications hub) a where a new Communications Hub is to be installed and commissioned the Communications Hub Exchange process should be followed– this process will then remake the appropriate Smart Meter Inventory relationships between devices on the HAN (and with the new GPF). NB in these scenarios it is envisaged that the Communications Hub may (subject to paragraph 20, below) be re-used.
- c. Site defunct - where no new Communications Hub is to be installed (i.e. the site is defunct) any Device IDs on the Communications Hub Function Device Log should be removed (using SR8.11 Update Han Device Log) and subsequently decommissioned (using SR 8.3 Decommission Device)⁴ as appropriate, after which it will be capable of being re-used

20. Where a GSME has been commissioned and the Network Operator Security Credentials on the GPF have been updated to those of the Registered Network Operator, the only party able to change those Credentials is the Registered Network Operator, however the Registered Network Operator is not obliged to do so. In cases where the Network Operator Security Credentials cannot be updated, the Communications Hub may only be used within that Network Operator’s operational area.

4. Charging Issues

21. A change to K7.5 (I) is required in order that Communications Hubs that have been deployed but are subsequently returned to stock attract only ‘CH stock level charge’ (as if it has just been delivered by the DCC) until subsequent re-installation.

5. Summary View of CH re-use Scenarios

22. The table below provides a summary view of the detail of Section 4 above:

Ref	Scenario	Conditions	Re-use considerations
1	Attempt install but no WAN detected – try new Comms Hub	CHF not commissioned CHF Device Log not populated	Can reuse with no further impediment

³ Please see the Communications Hub Exchange Design Note.

⁴ NB – it is not clear from DCC Inventory processes whether devices that have been Decommissioned can be subsequently put into a status where they can be re-used

2	Comms Hub Installed not Commissioned (No WAN)	CHF Device Log populated	Device Log will need to be updated (i.e. Device IDs removed via SR 8.11)
3	Comms Hub Installed and Commissioned	CHF Device Log not populated	Charges will accrue as CH Commissioned
4	Comms Hub Installed and Commissioned with ESME	CHF Device Log populated and ESME and other devices commissioned or installed not commissioned (but no GSME – and hence GPF not Commissioned)	Charges will accrue as CHF Commissioned Either follow the Comms Hub Swap Out process (in which case Comms Hub is to be returned to DCC) or; Device Log will need to be updated (i.e. Device IDs removed via SR 8.11) and Devices with these IDs decommissioned
5	Comms Hub Installed and Commissioned with ESME, GSME and GPF	CH Device Log populated and ESME, GSME and other devices commissioned or installed not commissioned	Charges will accrue as CHF Commissioned Either follow the Comms Hub Swap Out process (in which case Comms Hub is to be returned to DCC) or; CHF Device Log will need to be updated (i.e. Device IDs removed via SR 8.11) and Devices associated with these IDs decommissioned GPF will have been populated with NO Security Credentials and can only be used in same NO area.