Data Communications Company

# Communications Hub Order Policy

## (CHOP)

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# Document control heading

Revision history

| Revision date | Summary of changes | Changes marked | Version number |
|---|---|---|---|
| 05/02/17 | Updated references to WAN or Mesh Communications Hubs to single band Communications Hubs or relevant Communications Hub reference. Removed elements that are not accurate now, specifically within section 1.2 bullet 15. Added version control | | 0.2.1 |
| November 2021 | Clarifications to where an order may be considered for amendments. | | 0.2.1 |
| November 2022 | Clarification that any reference to F5.10 may be superseded by TCHODR | | |

Reviews

| Name | Title / Responsibility | Release Date | Version number |
|---|---|---|---|
| Leigh Hill<br>Sam Manson<br>David Rollason | Senior Logistics Manager<br>Logistics Manager<br>Regulatory Business Partner | Nov 2021 | 0.2.1 |
| Leigh Hill<br>Sam Manson<br>David Rollason | Senior Logistics Manager<br>Logistics Manager<br>Regulatory Business Partner | Nov 2022 | 2.0 |

Approvals

| Name | Title / Responsibility | Release Date | Version number |
|---|---|---|---|
| Gav Parrott | Director of Product & Logistics | Nov 2022 | 2.0 |

# Table of Contents

# 1. Context and background

The Smart Energy Code (SEC) and associated Communications Hub Handover Support Materials (CHHSM) documents govern the supply of Communications Hubs to SEC Parties. They describe how monthly forecast and order quantities must be submitted by SEC Parties to ensure sufficient levels of accuracy are achieved to provide efficient control of resources within the Communications Hub supply chain.

In accordance with Section F5.17 of the SEC, DCC is required to take all reasonable steps to accommodate a CH Order but may reject or partially accept an order, specifically with regard to a Parties breach of Section F5. DCC will make all reasonable efforts, including a review of supply chain capability and flexibility with the CSPs that will provide Communications Hubs, to meet requests for Communications Hubs Order quantities that are made without compliant forecasting or are outside tolerance ranges set out in Section F5.10 of the SEC.

This Communications Hub Orders Policy provides an example of the calculations used to amend Communications Hub Orders where the aggregate order quantity falls outside the tolerances defined in the CSP Contracts.

The objective of the Communications Hub Orders Policy is to apply a fair and unambiguous set of rules to determine amendments to non-compliant Communications Hub Orders across all Parties.

If you have any queries about this policy you can contact the DCC Logistics Team by emailing opsch@smartdcc.co.uk.

## 1.1. Definitions

| Term | Description |
|---|---|
| Cellular Communications Hub | 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 |
| Communications Hub Variant | means the unique identifier/name of Communications Hub by which a combination of HAN Variant and WAN Variant can be identified |
| CSP Contract | means the DCC Service Provider Contract for the Communications Services Provider, as published on the DCC Web Site |
| DCC Aggregate Order Quantity | means the aggregated order quantity of all Communications Hub Orders applicable to a particular Delivery Month and Region |
| 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) |
| F5.10 | That section of the SEC that describes the allowable variances of CH volume from forecast to final order, which may be overridden by TCHODR |
| Maximum DCC Aggregate Order Quantity | means the maximum aggregated monthly order quantity acceptable to the CSP |
| Minimum DCC Aggregate Order Quantity | means the minimum aggregated monthly order quantity acceptable to the CSP |

| | |
|---|---|
| Party Order Variance | means the amount by which a non-compliant order quantity varies from the tolerance limit |
| Single Band Communications Hub | means a HAN Variant which is capable of using 2.4GHz frequency for communication on the Home Area Network (HAN) |
| Standard Minimum Adjustment | means a set number that will be the minimum number of Communications Hubs by which an order shall be adjusted |
| Temporary Communications Hub Ordering and Delivery Rules (TCHODR) | A document in place and approved by SEC Panel, overriding standard SEC rules on CH forecasting and ordering |
| Total Allowable Variance | means the amount by which the aggregated quantity of non-compliant orders is to be adjusted |

## 1.2. Clarifications and assumptions

This policy will be applied to all CH variants individually, where Mesh CH are calculated as percentage of SB/DB variants

As defined the DCC Aggregate Order Quantity refers to an aggregate of Communications Hub Orders for a Region. In all cases the calculations defined within this document apply to a Region.

The four values listed below will be amended where necessary to accord with the provisions of the CH Handover Support Materials clause 3.14 regarding minimum order quantities and the requirement to order complete pallet layers (rounded to nearest pallet layer volume).

1. Communications Hub Forecasts
2. Communications Hub Order quantities
3. Maximum DCC Aggregate Order Quantity
4. Minimum DCC Aggregate Order Quantity

All quantities used within the calculations defined in this document will be the quantities as amended.

DCC has included a Standard Minimum Adjustment in its calculations, to ensure that Parties ordering small quantities are not disproportionately affected. All Parties will have their orders amended to meet their requirement for additional or reduced numbers of Communications Hubs by at least this value.

In defining the algorithms described in this document the DCC assumes that:

A. Communications Hub Orders will be submitted independently by each Party without reference to orders placed by other Parties;

B. Parties will submit Communications Hub Orders and Communications Hub Forecasts that accurately reflect their genuine requirements; and

C. all orders will meet the minimum order quantities as specified in the CH Handover Support Materials, and in particular order quantities will be at least a full pallet and thereafter in pallet layer increments (CHHSM 3.14).

DCC notes that this Policy has to account for the fact that the CH Handover Support Materials contains different packaging information for the Single Band Cellular Communications Hubs for the Central Region and South Region and the other Communications Hub Variants supplied in the South Region and Central Region.

DCC notes that as cartons cannot contain a mixture of Communications Hub Variants, and there are different numbers of Communications Hubs per carton for Single Band Cellular Communications Hubs (14) and all other variants (10), orders must be round up or down to the nearest full carton.

DCC has included worked examples within this document at section 5 which are calculated for a mixed pallet – i.e. a pallet containing various Communications Hub Variants (DCC notes the algorithms remain the same for single variant and mixed variant pallets).

DCC notes that in the worked example 6.25% of mesh variant Communications Hubs has been assumed as this figure which is within the range of the estimated requirement and provides a rounded number of mesh variant cartons.

DCC notes that as pallet layers cannot contain a mixture of Communications Hub Variants, the number of cartons for each Communications Hub Variant must round up or down to the nearest full pallet layer. This is in accordance with the CHHSM clause 3.14.

DCC notes that it is potentially possible that the Communications Hub Orders Policy will need to be applied in the situation where a particular Communications Hub Variant is subject to over or under ordering as compared to forecasts. In this circumstance DCC shall apply the same process and formulas exclusively to one or more Communications Hub Variant quantities individually, whilst fulfilling the full ordered quantities for other Communications Hub Variants.

DCC is required to take all reasonable steps to accommodate an order which has been placed, where the forecasting and ordering has not followed the conditions described in SEC Section F5. Where these conditions have not been met, DCC may reject an order in it's entirety, accept or partially accept the order.

This policy describes scenarios where Communications Hub Orders will be amended so that the Aggregate order volume complies with the tolerances set out in SEC F5.10. In addition to that described below, DCC may consider amending individual order where an individual order has not been made in compliance with SEC F5, including, but not limited to, forecasting, and ordering requirements.

# 2. Orders above and below thresholds

It may reasonably be expected that some Parties will submit orders that are above or below the thresholds specified in Section F5.10 of the SEC, in any month. Therefore, without compromising its commercial obligations under the CSP Contracts, DCC will be able to either:

A. wholly accept all non-compliant orders where the DCC Aggregate Order Quantity falls within the tolerance range; or

B. wholly or partially accept non-complaint orders where the DCC Aggregate Order Quantity falls outside the tolerance range.

Where, under (b) overall variance against tolerance is too great to accommodate all non-compliant orders, DCC will amend Communications Hub Orders according to the Policy described below.

# 3. Compliant DCC Aggregate Order Quantities

Where the overall DCC Aggregate Order Quantity is compliant with the constraints of the CSP Contracts, all non-compliant Communications Hub Order submissions placed by Parties will be accepted without further amendment to the quantities of Communications Hubs in each Communications Hub Order.

# 4. Non-compliant DCC Aggregate Order Quantities

Where the overall DCC Aggregate Order Quantity is not compliant with the constraints of the CSP Contracts, the DCC will firstly establish if the CSP is prepared to accept a non-compliant DCC Aggregate Order Quantity. Where the CSP is prepared to accept such an aggregate order, in whole or in part, the Maximum DCC Aggregate Order Quantity or the Minimum DCC Aggregate Order Quantity will be adjusted to reflect the agreement reached with the DCC. Where the CSP cannot accept a non-compliant DCC Aggregate Order Quantity, the Maximum DCC Aggregate Order Quantity and the Minimum DCC Aggregate Order Quantity will remain unchanged and will reflect the contracted tolerance thresholds described above.

DCC will take all reasonable steps to meet orders that are non-complaint with SEC F5, including tolerances described in SEC F5.10. Where non-complainant aggregate orders cannot be met DCC will apply the policy and calculations described below to either reduce or increase orders within tolerance (or CH availability).

## 4.1. Low order quantity

Where the DCC Aggregate Order Quantity is non-compliant due to low order quantity but is now greater than or equal to the updated agreed Minimum DCC Aggregate Order Quantity then non-compliant Communications Hub Orders will be accepted without amendment.

Where the DCC Aggregate Order Quantity is non-compliant due to low order quantity and is still less than the agreed Minimum DCC Aggregate Order Quantity then noncompliant Communications Hub Orders will be subject to amendment.

The calculations DCC shall employ in the event of 4.1 are as follows:

All Communications Hub Orders that are above or equal to the minimum forecast order quantity threshold set out in Section F5.10 shall be accepted by the DCC without amendment (this will include any that are above the maximum forecast order quantity).

The remaining non-compliant Communications Hub Orders shall be subject to amendment as follows:

1. DCC shall define a Standard Minimum Adjustment which shall by default be a complete pallet layer of Communications Hubs.

2. DCC shall calculate the total quantity of Communications Hubs available to Parties which have submitted Communications Hub Orders that are below the minimum forecast order quantity threshold set out in Section F5.10. This is referred to as the 'Total Allowable Variance' and it is calculated thus:

**Total Allowable Variance**

agreed Minimum Aggregate Order Quantity = MinAQ

total quantity of Communications Hubs in all Orders accepted by DCC = $\sum AO$

sum of minimum forecast order quantity for all Orders subject to amendment = $\sum PF$Q

total Standard Minimum Adjustment values for Orders to be amended = $\sum SM$A

Total Allowable Variance = AV

$$\text{AV} = \text{MinAQ} - \sum AO - \sum PFQ - \sum SMA$$

3. DCC shall then calculate, for each Communications Hub Order to be subject to amendment, the quantity the order is below the minimum forecast order quantity threshold according to Section F5.10 (the Party Order Variance). Each order that is subject to amendment will subsequently be modified to increase the order quantity.

4. The amended Party order quantity shall be equal to the Party's minimum forecast order quantity, minus a Standard Minimum Adjustment, minus a proportion of the Total Allowable Variance that is equivalent to the proportion of the total of all Party Order Variances to the relevant Party Order Variance. Where necessary the value will be rounded to the pallet layer.

5. The DCC shall evaluate the Party Order Variance and amended Party order quantity as follows:

**Party Order Variance**

Party Order Variance = $POV$

unamended Party order quantity = $UOQ$

Party's minimum forecast order quantity = $PFQ$

$$POV = PFQ - UOQ$$

Amended Party order quantity

Standard Minimum Adjustment = $SMA$

amended Party order quantity = $POQ$

$$POQ = PFQ - SMA - POV \,/\, \sum POV\ (\text{AV})$$

## 4.2. Higher order quantity

Where the DCC Aggregate order submission is non-compliant due to high order quantity but is now less than or equal to the updated agreed Maximum DCC Aggregate Order Quantity then non-compliant Communications Hub Orders will be accepted without amendment;

Where the DCC Aggregate order submission is non-compliant due to high order quantity and is still greater than the updated agreed Maximum DCC Aggregate Order Quantity then non-compliant Communications Hub Orders will be subject to amendment.

The calculations DCC shall employ in the event of 4.2 are as follows:

All Communications Hub Orders that are below or equal to the maximum forecast order quantity threshold set out in Section F5.10 shall be accepted by the DCC without amendment (this will include any that are below the minimum forecast order quantity).

The remaining non-compliant Communications Hub Orders shall be subject to amendment as follows:

1. DCC shall define a Standard Minimum Adjustment which shall by default be a complete pallet layer of Communications Hubs.

2. DCC shall calculate the total quantity of Communications Hubs available to Parties which have submitted Communications Hub Orders that are above the maximum forecast order quantity threshold set out in Section F5.10 – the Total Allowable Variance:

**Total Allowable Variance**

agreed Maximum Aggregate Order Quantity = MaxAQ

total quantity of Communications Hubs in all orders accepted by DCC = $\sum AO$

sum of maximum forecast order quantity for all orders subject to amendment = $\sum PFQ$

total Standard Minimum Adjustment values for orders to be amended = $\sum SMA$

Total Allowable Variance = AV

$$\text{AV} = \text{MaxAQ} - \sum AO - \sum PFQ - \sum SMA$$

DCC shall then calculate, for each Communications Hub Order to be subject to amendment, the quantity the Order is above the maximum forecast order quantity threshold according to Section F5.10 (the Party Order Variance). Each order that is subject to amendment will subsequently be modified to decrease the order quantity.

The amended Party order quantity shall be equal to the Party's maximum forecast order quantity, plus a Standard Minimum Adjustment, plus a proportion of the Total Allowable Variance that is equivalent to the proportion of the total of all Party Order Variances to the relevant Party Order Variance.

Where necessary the value will be rounded to the pallet layer and may be adjusted to ensure the minimum order quantity.

The DCC shall evaluate the Party Order Variance and amended Party order quantity as follows:

**Party Order Variance**

Party Order Variance = $POV$

unamended Party order quantity = $UOQ$

Party's maximum forecast order quantity = $PFQ$

$$POV = UOQ - PFQ$$

**Amended Party order quantity**

Standard Minimum Adjustment = $SMA$

amended Party order quantity = $POQ$

$$POQ = PFQ + SMA + POV \,/\, \sum POV\ (AV)$$

# 5. Worked examples

DCC produces two worked examples below: one covering a low aggregate order quantity (4.1) and one covering a high order quantity (4.2).

In order to simplify the worked examples it is assumed that the month 10 forecast is the same as the month seven forecast and therefore only the 20% tolerance applies in the examples. Were

both the month 10 and month seven tolerances to be breached the threshold which is most at variance to the order quantity will be used in the calculations.

## 5.1. Lower order quantity

The calculation sheet below shows an example of the calculations described in this policy, where the DCC is obliged to amend order quantities due to the total order volume being below the minimum monthly value as defined by the CSP Contract.

The calculation sheet presents the calculation in three sections:

1. Thresholds. This section shows the calculation of the 'minimum forecast order quantity', which is the limit the CSP can oblige the DCC to fulfil in the overall order.

2. Orders. This section shows the calculation of the order quantities against the 'minimum forecast order quantity' giving the Party Order Variance as the difference.

3. Managing non-compliant orders. This section shows any revised Minimum DCC Aggregate Order Quantity that the DCC has agreed with the CSP and calculates the Allowable Variance based on the formula defined in the policy. This in turn provides the amended order quantity.

| | Supplier 1 | Supplier 2 | Supplier 3 | Supplier 4 | Supplier 5 | Supplier 6 | Supplier 7 | Total |
|---|---|---|---|---|---|---|---|---|
| **Month 7 forecast** | 143,584 | 79,968 | 186,368 | 85,344 | 38,080 | 1,792 | 92,064 | 627,200 |
| **Thresholds** | | | | | | | | |
| **Minimum forecast order quantity (rounded)** | 114,840 | 64,020 | 149,160 | 68,200 | 30,360 | 1,540 | 73,700 | 501,820 |
| Minimum forecast order quantity (layers) | 522 | 291 | 678 | 310 | 138 | 7 | 335 | 2,281 |
| **Orders** | | | | | | | | |
| **Order quantities** | 98,300 | 86,000 | 127,220 | 65,000 | 28,000 | 1,600 | 75,000 | 481,120 |
| Order quantities (layers) | 446.8 | 390.9 | 578.3 | 295.5 | 127.3 | 7.3 | 340.9 | |
| Threshold check | | | | | | | | |
| **Party Order Variance** | 16,500 | 0 | 22,000 | 3,300 | 2,420 | 0 | 0 | 44,220 |
| Party Order Variance (layers) | 75 | 0 | 100 | 15 | 11 | 0 | 0 | 201 |
| **Managing Non compliant orders** | | | | | | | | |
| **CSP obligated quantity** | 114,840 | 86,020 | 149,160 | 68,200 | 30,360 | 1,540 | 75,020 | 525,140 |
| CSP obligated quntity (layers) | 522 | 391 | 678 | 310 | 138 | 7 | 341 | 2,387 |
| **Minimum DCC Aggregate Order Quantity** | | | | | | | | 501,820 |
| Maximum DCC Aggregate Order Quantity (layers) | | | | | | | | 2,281 |
| **CSP adjustment (layers)** | | | | | | | | 106 |
| **Standard Minimum Adjustment** | 220 | 0 | 220 | 220 | 220 | 0 | 0 | 880 |
| Standard Minimum Adjestment (layers) | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 4 |
| Party Order Variance | 74 | 0 | 99 | 14 | 10 | 0 | 0 | 197 |
| **% Party Order Variance (weighted average)** | 37.6% | 0.0% | 50.3% | 7.1% | 5.1% | 0.0% | 0.0% | |
| Balance to be allocated in layers | | | | | | | | 102 |
| Balance allocated across Supplier - pro rated | 39 | 0 | 51 | 7 | 5 | 0 | 0 | |
| **Allowable Variance** | 8,580 | 0 | 11,220 | 1,540 | 1,100 | 0 | 0 | 22,440 |
| **Amended Order Quantity** | 106,040 | 86,020 | 137,720 | 66,440 | 29,040 | 1,540 | 75,020 | 501,820 |

**Table 1: Low order quantity worked example**

## 5.2. Higher order quantity

The calculation sheet below shows an example of the calculations described in this policy, where the DCC is obliged to amend order quantities due to the total order volume being above the maximum monthly value as defined by the CSP Contract.

The calculation sheet presents the calculation in three sections:

1. Thresholds. This section shows the calculation of the 'maximum forecast order quantity', which is the limit the DCC can oblige the CSP to fulfil in the overall order.

2. Orders. This section shows the calculation of the order quantities against the 'maximum forecast order quantity' giving the Party Order Variance as the difference.

3. Managing non-compliant orders. This section shows any revised Maximum DCC Aggregate Order Quantity that the DCC has agreed with the CSP and calculates the Allowable Variance based on the formula defined in the policy. This in turn provides the amended Order Quantity.

| | Supplier 1 | Supplier 2 | Supplier 3 | Supplier 4 | Supplier 5 | Supplier 6 | Supplier 7 | Total |
|---|---|---|---|---|---|---|---|---|
| **Month 7 forecast** | 143,584 | 79,968 | 186,368 | 85,344 | 14,784 | 2,464 | 92,064 | 604,576 |
| **Thresholds** | | | | | | | | |
| **Maximum forecast order quantity (rounded)** | 172,260 | 95,920 | 223,740 | 102,520 | 17,820 | 2,860 | 110,440 | 725,560 |
| Maximum forecast order quantity (layers) | 783 | 436 | 1,017 | 466 | 81 | 13 | 502 | 3,298 |
| **Orders** | | | | | | | | |
| **Order quantities** | 189,000 | 86,000 | 240,000 | 118,272 | 29,250 | 3,500 | 87,360 | 753,382 |
| Order quantities (layers) | 859.1 | 390.9 | 1,090.9 | 537.6 | 133.0 | 15.9 | 397.1 | |
| **Threshold check** | | | | | | | | |
| **Party Order Variance** | 16,720 | 0 | 16,280 | 15,840 | 11,440 | 660 | 0 | 60,940 |
| Party Order Variance (layers) | 76 | 0 | 74 | 72 | 52 | 3 | 0 | 277 |
| **Managing Non compliant orders** | | | | | | | | |
| **CSP obligated quantity** | 172,260 | 86,020 | 223,740 | 102,520 | 17,820 | 2,860 | 87,340 | 692,560 |
| CSP obligated quntity (layers) | 783 | 391 | 1,017 | 466 | 81 | 13 | 397 | 3,148 |
| **Maximum DCC Aggregate Order Quantity** | | | | | | | | 725,560 |
| Maximum DCC Aggregate Order Quantity (layers) | | | | | | | | 3,298 |
| **CSP adjustment (layers)** | | | | | | | | 150 |
| **Standard Minimum Adjustment** | 220 | 0 | 220 | 220 | 220 | 220 | 0 | 1100 |
| Standard Minimum Adjestment (layers) | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 5 |
| Party Order Variance | 75 | 0 | 73 | 71 | 51 | 2 | 0 | 272 |
| **% Party Order Variance (weighted average)** | 27.6% | 0.0% | 26.8% | 26.1% | 18.8% | 0.7% | 0.0% | |
| Balance to be allocated in layers | | | | | | | | 145 |
| Balance allocated across Supplier - pro rated | 40 | 0 | 39 | 38 | 27 | 1 | 0 | |
| **Allowable Variance** | 8,800 | 0 | 8,580 | 8,360 | 5,940 | 220 | 0 | 31,900 |
| **Amended Order Quantity** | 181,280 | 86,020 | 232,540 | 111,100 | 23,980 | 3,300 | 87,340 | 725,560 |

**Table 2: High order quantity worked example**