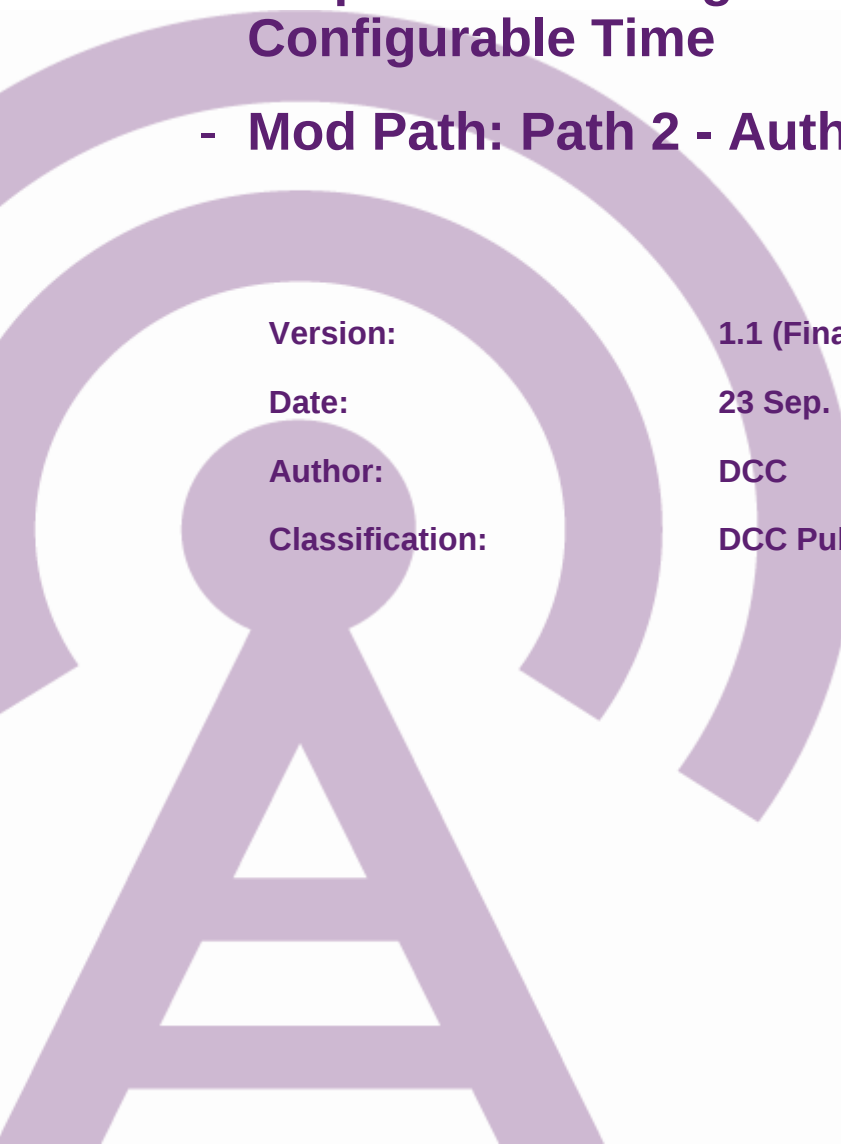


SEC Modifications

- **DCC Preliminary Assessment (PA)**
- **Mod Proposal Ref: SECMP 0003**
- **Mod Proposal Title: Deficiencies in the Service Request for setting Maximum Demand Configurable Time**
- **Mod Path: Path 2 - Authority determination**



Version:	1.1 (Final)
Date:	23 Sep. 16
Author:	DCC
Classification:	DCC Public

1 Document purpose

The purpose of this DCC Preliminary Assessment is to provide an outline design and provisional pricing for the development of the necessary system changes and any ongoing changes to support or service management costs expected to result from the proposed modification.

Please note, this Preliminary Assessment v1.1 is being provided to the Working Group as a 'final' PA. The following assessment provides an updated "final" version to the "interim" PA previously provided to the Working Group and represents an overview of DCC's integrated solution, projected costs and delivery timescales for this Modification Proposal. Any text in RED indicates changes made between the Interim and Final PA versions.

2 Revision History

Revision Date	Version Number	Summary of Changes
12/09/16	0.1	Initial version – template created
14/09/16	0.2	Updated with details received from Service Provider PA Responses
16/09/16	1.0 Interim	Post review – submitted to WG
23/09/16	1.1 Final	Updated with additional details received from Service Provider PA responses – submitted to WG

3 Overview

3.1 Modification description

Amendments to the DCC User Interface Specification (DUIS) service request 6.18.1 to align with the Great Britain Companion Specification (GBCS). This will enable the Electricity Network Operator (ENO) to use one service request per year to specify the date range, time range and days of the week, during which the Maximum Demand Configurable Time Period Value should be recorded.

4 Timescales to implement change

The current proposed implementation date of June 2017 is not achievable for this SEC modification.

From the DCC preliminary impact assessments received DCC considers that an **approximate lead time of 12 months is required** from any Authority Decision being made to implement the changes proposed by this SEC Modification.

DCC recommends that this change is included within a Release with other “GBCS changes” to gain Release efficiencies as part of the implementation approach for this modification.

5 Preliminary ROM cost range

The table below details the interim Rough Order of Magnitude costs associated with the changes required to facilitate this change.

	Lower	Upper
Base Option Cost	Circa £450,000	Circa £725,000
Ongoing annual service costs	n/a	n/a
Fixed price for Full Impact Assessment	Circa £40,000	

Please note, all ROM information provided above may change, subject to detailed Impact Assessments (IA) being carried out, ongoing refinement of the SEC modification’s requirements, the allocation of a SEC modification into a Release and DCC’s commercial negotiation process with its Service Providers.

<i>Estimated costs are exclusive of VAT.</i>

6 Proposed High Level Service/Solution Impacts

The following provides a high level description of the Services and Systems that would be impacted as a result of the solution proposed from this modification. The impacts are focused on the changes to industry parties' interfaces to DCC Systems and their interactions with DCC.

DCC confirm that the changes requested are technically feasible and the changes are expected to have an impact to Users of the following Services:

- **DCC User Interface:** update 1 and introduce 2 new Service Request Variants;
- **Message Mapping Catalogue :** 3 new Parses
- **Parse and Correlate Software:** new version required; and
- **Anomaly Detection:** update to Anomaly Detection Service to support new SRVs.

The subsections below describe, in greater detail, this Modification Proposal's impact on DCC's Services and Systems.

6.1 DCC User Interface Specification (DUIS)

- DCC recommend that instead of creating a new SRV for reading the maximum demand register operational data, use of the existing SRV4.12.1 should be retained for reading operational data only, to be implemented by the new GBCS 2.x message code. This means that DUIS & MMC 2.x will support SRV4.12.1 for both GBCS 1.0 and GBCS 2.x devices, but will use a different message code and return different data according to the GBCS version of the target device. SRV 4.12.1 used with pre-GBCS 2.x firmware would continue to return both operational and configuration data as at present;
- The DUIS shall be updated to modify the details of the following existing SRV:
 - 4.12.1 Read Maximum Demand Registers;
- The DUIS shall be updated to include the details of the following new SRVs:
 - 4.12.3 Read Maximum Demand Configurable Time Period;
 - 6.18.3 Set Maximum Demand Configurable Time Period including days and dates;
- Please note that DCC recommends that the SRV that replaces the existing SRV 6.18.1 has been assigned as SRV 6.18.3 (instead of 6.26) in order to keep the numbering approach consistent with the approach

adopted for other SRVs. Similarly, the one new SRV in the 4.12.x set is numbered 4.12.3 (instead of needing both 4.12.3 and 4.12.4);

- All changes to SRVs will be included in a new version of the DUIS and associated DUIS XML schema which will support the new and updated SRVs;
- The new DUIS version will support the new SRVs for GBCS 2.x devices only, the superseded SRV 6.18.1 for pre-GBCS 2.x versions only, and alternate versions of SRV4.12.1 with different behaviour according to the GBCS version of the target device;
- The general attributes of the SR/SRVs are summarised in the table below:

Service Reference	Service Reference Variant	Name	Critical	Sensitive Response	Protection Against Replay	On Demand	Future Dated	DSP Scheduled	DCC Only	Eligible User Role
6.18	6.18.3	Set Maximum Demand Configurable Time Period including days and dates	No	No	Yes	Yes	DSP	No	No	ENO
4.12	4.12.3	Read Maximum Demand Configurable Time Period	No	No	No	Yes	DSP	No	No	EIS ENO

6.2 Anomaly Detection Service

- The ability to support volume-based anomaly detection thresholds will be added for the new SRVs;
- As the new SRVs are all defined as Non Critical though, they will need to be included and supported in the list of SRVs requiring optional volume-based Threshold Anomaly Detection values as defined in TADP (Threshold Anomaly Detection Procedures);
- Users may optionally choose to include threshold values for the new SRVs within Anomaly Detection Thresholds files (ADTs) submitted to the DCC; and
- DCC may optionally choose to include threshold values for the new SRVs within Anomaly Detection Thresholds files (ADTs) submitted.

6.3 Message Mapping Catalogue (MMC)

- Three (3) new Service Response definitions are required to be added to a new updated MMC and associated MMC XML Schema to include the new GBCS Command response definitions and made available to Users to match to the new DUIS Service Request Variants (SRVs).

7 Impacted Systems

The summary list below provides a summary of the main components of the DCC Systems that are likely to be impacted by this modification.

7.1 DSP Systems

- **DCC User Interface** – Changes to support the introduction of the additional 2 new SRVs definitions and updates to one of the current SRVs definitions; and
- **Multiple additional DCC Systems Components** – Changes to support the introduction of the additional and updated SRV definitions and associated validation and transformation into new GBCS Commands.

7.2 Parse and Correlate Software

- **Parse component only** – As new SRVs and updates to other SRV have been introduced in to the DCC Service (User Gateway Service Schedule and DUIS), additional response definitions are required to decode the GBCS payload included in the response into XML format as defined by MMC. **3 additional new Parses**. Support for new GBCS use cases (ECS18c, ECS18d, ECS37);
- **New test case and use case classes and documentation updates.**

7.3 CSP Systems

- **SMWAN** - The addition of the new Service Requests is not anticipated to have any direct impact on the SMWAN. However for transaction billing purposes CSPs are required to map Service Requests to Capability Transactions and to report on the same. This mapping will require to be updated;
- **Comms Hub** – the Communications Hub shall **generally** simply pass through the new use cases to the target device, therefore **Comms Hub does require some testing of the new message types.**; and
- **Business Support Systems (BSS)** - BSS provides the billing on the message volume and charge bands. BSS extracts SMWAN logs. The log is used for billing by grouping the successful messages by Date and Hour, CommandType, Priority and StatusCode. As part of this CR, BSS will ensure that the new Command and its type and priority is extracted and then it is used for billing.

7.4 Service Management:

- **Anomaly Detection Service** - Additions required to support additional SRVs within Threshold Anomaly Detection Procedures (TADP); and
- **Internal DCC systems** and processes for Managing Demand for DCC User Interface Services - User Forecasting will need to be updated to reflect the additional 2 SRVs

8 Options

- None identified

9 Clarifications, Issues and Risks

The detail below provides a summary of the clarifications necessary prior to the production of a DCC Impact Assessment and any material issues and risks that have been identified during this Preliminary Assessment phase.

9.1 Clarifications Required

1. **Requirement clarification** - As part of this modification is the DCC requested to update the GFI test tool and RDTs (Reference Test Data Set) to support enduring Industry testing? The Business Requirements for this SEC modification do not explicitly state this so this has not currently been included within the scope of this preliminary impact assessment. Although this is not part of the core DCC Service, industry has generally instructed DCC to update these test tool sets for all previous GBCS changes to ensure that these reflect the latest GBCS version. This can be added into the scope of this modification if required for inclusion as part of the full impact assessment subject to confirmation from the SECAS working group.
2. **Requirement clarification required.** As part of this modification is the DCC requested to update the DCCs Meter Emulators that have been used as part of the current SIT and UIT test phases due to the absence of meters for these testing phases? The assumption in this PA is that these are not required to be maintained in line with technical specification changes as there will be new meters available to the DCC to test against in time to support testing. This assumption needs testing both internally within DCC and with wider industry. Costs and time for updating meter emulator functionality to reflect these changes is not currently within scope of this PA and these costs would need to be added if this assumption changes.
3. **Requirement clarification required.** Which party is responsible for managing and tracking HAN interoperability for these proposed changes? An understanding of how this will be managed is required prior to full IA to support further iterations of GBCS within a Communications Hub and take into account the likelihood (or not) that already deployed HAN devices and Communication Hubs will be operating with differing levels of support for new messages (as firmware is not necessarily instantly deployed to all devices on a HAN or coordinated between organisations);
4. **Requirement clarification required.** Confirmation of whether the updated CH will be required to support old and new behaviour for GBCS commands in order to account for differing levels of support for any attached HAN devices; What are the HAN interoperability requirements and where are these documented for all parties to refer to for clarity and consistency of approach?

9.2 Issues

1. **Testing scope post PIT** - The Timescales to implement change and Preliminary ROM cost range detailed in sections 4 and 5 above respectively only considers the design, build and testing of this modification implementation up to and including the Pre-Integration Testing phase (PIT).

It is assumed that further additional System Integration Testing and User Interface Testing as a minimum will be required for the changes proposed as part of this modification, but the expected timelines and costs associated with these additional testing phases cannot be estimated at this preliminary stage as these will be directly effect by the release that this modification is included within. Details of what release this modification might be included within are not known at this point in time hence why no assessment has been carried out for these activities. These time and costs will be added to the time and costs estimates provided as part of this PA in order to obtain the “true” full costs of this modification.

9.3 Dependencies

1. **GBCS** - There is a dependency on the provision of a new version of GBCS in order to implement the new SRVs.
2. **GBCS version** – There is a dependency on the changes proposed as part of this SEC modification on the DCC implementation of GBCS v2.0 (implemented via BEIS RFC-052) as there are a set of wider changes required to the DCC Systems to support multiple versions of GBCS. It is therefore assumed that the GBCS changes referenced as part of this change will be included on top of the existing GBCS v2.0 baseline currently published via the BEIS TBDG transitional governance group.

9.4 Assumptions

Prior to progressing to an Impact Assessment for this modification, DCC requests that the Working Group confirm the validity of the assumptions listed below. Any changes to the assumptions will be reflected in the full impact assessment.

1. **Dual Band Comms Hub** - This preliminary assessment response excludes any potential impact on DCC CR184 (Dual Band Comms Hub). DCC would like to confirm prior to Full Impact Assessment the relationship between the changes specified to GBCS as part of this modification and the changes specified to GBCS as part of the DBCH changes currently out for impact assessment form BEIS. The two are currently not linked so assumptions need to be made regarding the relationship and how these two separate impact assessments will eventually be aligned and when. DCC would like to actively confirm assumptions to be made.
2. **Dual Band Comms Hub – Point to note** - The current DCC response to BEIS for CR184 (Dual Band Comms Hub) submitted in

early September 2016 excludes any impact of this modification proposal so currently DBCH will not support the changes proposed within this modification.

3. **Testing** - DCC have assumed that this change will be included as part of a larger package of changes (Release) which will be tested together for implementation in later releases, and analysis of those later phases of implementation and testing should be performed as and when the contents of Releases is finalised. Furthermore, DCC would expect the changes associated with this modification included within a Release to share the cost of that release testing.
4. **Testing phases** – The changes included as part of this modification will in the opinion of the DCC require a full integration test cycle with multiple Service Provider solutions within the DCC Systems and a subsequent User integration test phase.
5. **Threshold Anomaly Detection** - Given that the new Use Cases would be “Non Critical”, it is assumed that any new SRVs would not fall within the SEC mandated scope of the list of mandatory SRVs for Threshold Anomaly Detection Procedures (TADP).
6. **Attribute Anomaly Detection** - It is assumed that there will be no requirement for attribute limit checking in any of the new SRVs.
7. **DUIS SRV definition** - It is assumed that ‘DSP Scheduled’ mode of operation will not be supported for the SRV 4.12.3 as it deals only with the configuration data.
8. **DUIS SRV definition** - SRV 4.12.1 will continue to be DSP Scheduled as at present, so no modification will be required to the scheduling SRVs ‘5.1 Create Schedule’ and ‘5.2 Read Schedule’
9. **GBCS definitions** - There is an assumption that the new version of GBCS which will be defined for the release of this modification will support the message codes corresponding to the new SRVs and will not support the message codes corresponding to the superseded SRVs (e.g. SRV6.18.1).
10. **Additional DSP validation** - DSP validation of incoming Service Request messages includes validating that the firmware version on the requested device is appropriate for the requested SRV. Within the DSP, SRV reference data will map the new SRVs to GBCS use cases.
11. **Reference Data** - DSP reference data will ensure that the new SRVs will be rejected if directed at a device running firmware which supports an older version of GBCS, and conversely the superseded SRV 6.18.1 would be rejected if directed at a device running firmware which supports an updated version of GBCS. It is expected that the validation error which indicates these cases will be the device compatibility mismatch error E11.

- 12. Maximum demand for export registers functionality** - There is an assumption that there is no impact on the functionality of maximum demand for export registers, which will continue to be provided by a combination of SRV 4.12.2 to read maximum demand export registers and SRV 6.18.2 to reset the counter, since there is no configurable time functionality associated with export registers.
- 13. Responses** - The Responses from devices (Northbound) are not expected to contain any information that triggers changes such as DCC Alerts generation or data management changes within the DSP system.
- 14. SRV usage / demand volumes** - There are no explicit business requirements stated for usage / demand of these new additional or updated Service Requests and/or the expected usage patterns. Therefore making any assessment on volumes of SRs to be sent by User to the DCC as part of this Preliminary Assessment is not possible. An assumption has therefore been made that there has been no direct additional costs added for any extra capacity within the DCC solutions to support this set of changes and that all usage will fall within the existing capacity profile model.
- 15. Testing Environments** - The DCC release approach to implement this Modification will use the existing DCC test environments to deliver these changes
- 16. HAN Interoperability** – All Devices installed must be compliant with a single version of a technical specification as no HAN interoperability requirements have been documented.