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MP162 'SEC changes required to deliver MHHS'

Annex C

Design principles and assumptions – version 1.0

About this document

This document contains the Data Communications Company's (DCC) design principles and assumptions that it will use as part of its Impact Assessment of the complete solution.

Refinement Consultation respondents are invited to offer their views on the assumptions set out in this document by responding to the corresponding questions in the consultation response form.

1. Background

Following on from the DCC's Preliminary Assessment, the DCC highlighted the importance of gaining a greater understanding and better definition of how Users will use the Service Requests defined within the MP162 business requirements to support the new market-wide half-hourly settlement (MHHS) service. This will be used to define the non-functional requirements for inclusion as part of the DCC Impact Assessment.

The DCC recognised that Parties cannot answer all its questions at this time, and the User behaviours and additional requirements for a new service are difficult for Parties to define. On this basis, the DCC has documented a set of assumptions and changes for comment and agreement as part of the Refinement Consultation.

The DCC anticipates that updates may be made to these set of assumptions, as required, through the consultation process. It will use the final agreed set of assumptions as inputs to inform the proposed solution.

2. DCC design principles

This section re-confirms the design principles associated with this modification that were used for the Preliminary Assessment and will continue to be used for the Impact Assessment. If there are any disagreements to any of these, then please let DCC know, so it can update its design principles ahead of the Impact Assessment.

DCC design principles	
Ref.	**Design principle**
DP-1	The implementation of the MHHS solution should not negatively impact the wider existing smart metering arrangements.
DP-2	The DCC solution for MHHS will be applied to both Smart Metering Equipment Technical Specifications (SMETS) 1 and SMETS2 Devices and supporting systems, and wherever possible, offer the same service irrespective of SMETS1 or SMETS2 meters.
DP-3	Re-use existing DCC User Interface Specification (DUIS) Service Requests to limit impacts on SEC Parties. No new DUIS Service Request Variants (SRVs) will be added to support the introduction of the new MHHS service. The MHHS service will re-use or make updates (as required) to existing SRVs.
DP-4	Consumption and generation data sets will remain available to multiple different authorised Users, but these data sets are not stored long-term on the DCC Total System.
DP-5	Wherever possible, futureproof the data retrieval service for consumption and generation data sets for any other authorised Users to create operational efficiencies and minimise any future impacts for demand or capacity issues.

3. General scope and service assumptions

This section re-confirms the general scope and service assumptions that were used for the Preliminary Assessment and will continue to be used for the Impact Assessment. If there are any disagreements to any of these, then please let DCC know, so it can update its scope and assumptions ahead of the Impact Assessment.

DCC assumptions	
Ref.	**Assumption description**
A1	The DCC Total System changes associated with the introduction of the new MHHS Service is targeted for implementation as part of the November 2023 SEC Release, with the MHHS service currently expected to start operating from early 2024. • For volumetrics calculations, the DCC has further assumed that the MHHS service use begins for all Smart Meters from the implementation date.
A2	The data collected by Users to support the new MHHS service needs to be presented wherever possible/available to the (Elexon) Central Service for use in the Initial Settlement (SF) run, which is proposed to take place five working days after the settlement date. The Final Reconciliation (RF) run for **all** data is proposed to take place four months after the settlement date. • This provides indicative timescales for how long Users and the DCC must collect import consumption and export generation data, including retries and re-requests.
A3	There will be no changes to any Smart Metering Devices (meters or Communications Hubs) to support the introduction of the new MHHS service, including no changes to the Great Britain Companion Specification (GBCS), the SMETS or the Communications Hub Technical Specification (CHTS) or any new GBCS commands or Device Alerts being introduced in support of the MHHS service.
A4	The MHHS service will operate for both **import consumption data** and **export generation data** sets. Both sets of data will need to be retrieved from Electricity Smart Metering Equipment (ESME) as part of the MHHS service.
A5	The design approach to the collection of the required import consumption data and export generation data sets from ESMEs will be based on a Request / Response pattern and not on Devices pushing data back to the DCC using Device functionality. DCC scheduled services, rather than Device schedulable services, are expected to align to the 'no changes to Smart Metering Devices' assumption i.e., the data will be "pulled" from the ESME by the DCC upon request from Users instead of the smart meter data being "pushed" to the DCC via Device functionality.
A6	Service Requests sent by Users to retrieve import consumption and export generation data as part of the MHHS service will be expected to be scheduled, wherever possible and practical, to provide flexibility and mitigate capacity impacts. The DCC solution shall control these times and schedule in least impact times to smooth overall traffic. The DCC expects this to be regulated by the SEC and, where possible and practical to do so, technically enforced within the DCC Systems.
A7	Half-hourly profile data can be collected by the Meter Data Retrieval (MDR) User Role irrespective of whether the Supplier has already collected the same data sets from the same ESME.

DCC assumptions	
Ref.	**Assumption description**
	The MHHS service solution must allow for this and there is no regulation design to prevent multiple requests for the same data from different Users. It is expected there may be efficiencies created by industry to reduce costs, but it cannot be guaranteed.
A8	The DCC will be notified of the Meter Data Retrieval Agent (MDRA) appointed to each Meter Point Administration Number (MPAN) by each Supplier and hence which maps to which ESME DeviceId. The DCC assumes that the Data Service Provider (DSP) would receive this information via the Central Switching service (CSS) interface and the CSS interface definition will be extended to add new additional data items to support the transfer of this information from industry registration systems to the DCC. The additional data items that will be added to the CSS interface will be defined by Elexon's MHHS programme. These include: • The identity of the Registered Supplier's appointed MDR User (using the Meter Point Identifier (MPID)) • The Effective From Date associated with the appointment of the MDR User • The Effective To Date associated with the appointment of the MDR User
A9	The User requesting either import consumption data or export generation data sets for the MHHS service will be responsible for ensuring that it has the relevant consumer permissions to do so and that the Service Requests sent to the DCC are in line with the consumer's agreed consent granularity. The DCC Total System will not validate any consumer consent as part of the DCC solution.
A10	Half-hourly data granularity opt-out • Domestic consumers have the choice to "opt-out" of providing half-hourly granularity data for their import consumption data for MHHS service purposes and instead inform their Supplier of their required consent granularity of either "Daily" or "Monthly". • Domestic customers **do not** have the choice to "opt-out" of providing half-hourly granularity data for their **export** generation data for MHHS service purposes and consent granularity must be "Half-Hourly". • Non-domestic customers cannot opt out of sharing half-hourly profile data for import consumption data or export generation data for MHHS service purposes.

4. Key non-functional requirement assumptions

The table below represents the DCC's current set of key assumptions with respect to the non-functional requirements associated with MP162. These will be formalised as detailed business requirements prior to the Impact Assessment.

These non-functional requirements will form the basis of the DCCs determination of:

- What size solution the DCC is being asked to build and support;

- How the DCC quantifies the potential additional User demand for SRV processing for MP162; and
- How changes to User behaviours and demand over time is to be managed.

If you have any concerns with the following assumptions, please indicate your justification for disagreeing with the proposals.

DCC solution assumptions		
Ref.	**Category**	**DCC solution assumption**
NFR-1	**DCC User set-up** Who will send Service Requests to the DCC?	**75%** of SRV demand for MHHS data is expected from the *Registered Energy Supplier* User Role **25%** of SRV demand for MHHS data is expected from the new *Meter Data Reteieval* User Role
NFR-2	**Supplier User behaviour** How is User SRV demand to be modelled?	Where consumption and generation data is requested by the Registered Supplier for MHHS purposes, the data set shall **only be requested once** from the DCC and this data set will be used internally by the Supplier for all business purposes.
NFR-3	**Supplier User behaviour** How is User SRV demand to be modelled?	Any SRV demand sent by MDR Users will be **in addition to** the existing consumption and generation data currently requested for existing business-as-usual purposes by the Registered Supplier and **not instead of**. • Suppliers will continue to use existing scheduled data requests for non-MHHS purposes.
NFR-4	**User Behaviours** Which SRVs are to be sent and how often? Main/majority use case scenario	Users will carry out **daily** scheduled retrieval of ***48 half-hourly intervals*** of import consumption data and, where configured, ***48 half-hourly intervals*** of export generation data. • This is in preference to a *weekly* or *monthly* scheduled retrieval activity. Users will carry out **daily s**cheduled retrieval of a set of register read data for ***import consumption*** and, where configured, register read data for ***each day within the month's export generation*** for reconciliation to the half-hourly interval data to act as a check process. • This is in preference to a *weekly* or *monthly* scheduled retrieval activity
NFR-5	**User / DCC behaviours** How is data to be requested from Users and retrieved by DCC?	All Users requesting data for MHHS purposes shall ensure that all first attempts to retrieve a new data set from each target ESME device shall be made **using the DCC's scheduled services**. • The number of on-demand SRVs sent for MHHS purposes is low and is for exception management purposes only.
NFR-6	**User / DCC behaviours** Data retrieval User request behaviours	Where an Eligible User wishes to retrieve ***import consumption data*** or ***export generation data*** sets from an ESME for the purposes of supporting MHHS, the User shall ensure that all first attempts to retrieve a new data set from each target ESME device shall be made using scheduled services.

DCC solution assumptions		
Ref.	**Category**	**DCC solution assumption**
		In cases where either: • the use of scheduled services fails to return the required data to the requesting Eligible User; or • scheduled services are not possible to retrieve the required data, then an Eligible User may use on-demand services to request (or re-request) the required consumption data or generation data to ensure that the required data is successfully retrieved from each target ESME.
NFR-7	**DCC behaviours to meet requirements** What response times are expected to SRVs?	The TRTs as defined in the MP162 business requirements for SRVs sent to support the MHHS service will remain and **will not change**. • **24 hour TRT** for all DCC scheduled and on-demand Service Requests for **all** Users for requests for MHHS service data.
NFR-8	**DCC behaviours to meet requirements** -How will DCC scheduling operate for MHHS?	**The DCC will schedule MHHS SRVs across the day** (in line with the TRTs' 24-hour definition) outside the existing read window in order to reduce and smooth any demand peaks for DCC infrastructure and maximising capacity re-use wherever possible. This aligns with Assumption A6.
NFR-9	**DCC behaviours to meet requirements** -How will DCC scheduling operate for MHHS?	The DCC is not constrained in defining "scheduling time periods" that can be used by the MHHS solution for either existing business-as-usual scheduling windows or any potential newly proposed separate MHHS scheduling windows • These DCC-defined scheduling windows (and shared with Users) may be different time periods for each Communications Service Provider (CSP) and SMETS1 Service Provider (S1SP) to maximise capacity efficiencies.
NFR-10	**DCC behaviours to meet requirements** How will DCC scheduling operate for MHHS?	DCC scheduling time periods for **MHHS SRVs** would apply to **all** scheduled SRVs from Suppliers and **all** MDR SRVs (on-demand, future-dated and scheduled) in line with the TRTs, but would not impinge on existing business-as-usual scheduling time periods.
NFR-11	**DCC Behaviours to meet non-functional requirements** How are changes to User behaviours and associated SRV demand over time to be managed?	Due to the uncertainty of anticipated User behaviours associated with the new MHHS service, there is a risk for the DCC and the industry of potentially under- or over-building system capacity to meet what may be a variable and volatile demand level from Users. **In line with Customer feedback, the DCC shall take a conservative risk-based approach to estimating the volumetrics and User demand levels associated with the proposed MP162 solution.** This creates a **risk** that any significant changes from anticipated User behaviours as increased demand and capacity requirements are not included within the initial design for MP162.

DCC solution assumptions		
Ref.	**Category**	**DCC solution assumption**
		New Design principle: • **The DCC shall take a cautious approach to the implementation of any additional infrastructure to deliver increased SRV processing capacity associated with MHHS service changes** • **The DCC shall initially only deploy a limited amount of additional infrastructure to deliver increased SRV processing capacity directly based upon the defined non-functional requirements associated with MP162. It will increase these capacity levels over time to reflect the variable User behaviours over time based on experience gained from monitoring actual MHHS service usage as and when they occur.** This potential risk could be further mitigated by the following: • MP162 is due to be implemented as part of the November 2023 SEC Release. This is prior to the start of the MHHS programme migration activity to implement the new service, which is expected to start early in Q1 2024 and take up to a year to migrate all sites. This allows an implementation window where the volumes of MPANs using the MHHS services will steadily increase and means that all of the new MHHS User demand will not occur from the point of the DCCs implementation of the MHHS solution associated with MP162.

5. Requirement clarifications

Based on the Working Group discussions, the DCC believes that there are some refinement clarifications required to the existing business requirements. The DCC has outlined below the anticipated position on these existing business requirements and the expected position to be used as inputs to the Impact Assessment.

If you have any concerns with the following, please indicate your justification for disagreeing with the proposals.

DCC requirement clarifications		
Ref.	**Business requirement**	**Requirement clarification**
REQ-1	**Requirement 3: There shall be Access Control for MDR Users** Use of SRV 4.1.1 for MDR Users	The business requirement should be updated to reflect the following position: • SRV 4.1.1 'Read Instantaneous Import Registers' shall only be available to MDR Users for SMETS1 Devices.

DCC requirement clarifications		
Ref.	**Business requirement**	**Requirement clarification**
		• The MDR User will not be able to request this SRV for SMETS2 Devices • Suppliers may continue to use SRV 4.1.1 for both SMETS1 and SMETS2 Devices as currently, and extend its use for MHHS purposes, if required. Without this requirement update, an associated GBCS change would be required to allow MDR Users to use SRV 4.1.1
REQ-2	**New requirement** Suggested by DCC to improve DCC solution efficiencies	The existing SEC definitions for scheduled services should be updated to reflect the following position, • SRV 4.2 'Read Instantaneous Export Register Values' shall be added to the list of available scheduled services for all smart meters (SMETS1 and SMETS2).
REQ-3	**New requirement** Identification of purpose for sending SRV	In order for DCC to implement a solution to meet NFR-8 to MFR-11 above, a new functional business requirement should be added as follows: *"Each User shall inform the DCC of the intended reason for sending the Service Request to the DCC so that the DCC may be able to differentiate between SRVs being sent to support existing business-as-usual purposes and the new MHHS purposes and therefore be able to schedule the SRV for processing in the appropriate scheduling time period."* Without this new business requirement, the DCC would: • not be able to differentiate the reason for Suppliers' requests, could not operate different scheduling windows for different business purposes, and could not smooth out demand peaks. • be restricted to the continuation of an existing single scheduling period, including all MHHS SRVs, to the existing TRT. This would mean the DCC would have to add capacity for the existing 00:00 - 06:00 read window to cover all SRV requests.