

SEC Modification Proposal, SECMP0122

Operational Metrics

Full Impact Assessment (FIA), "February Release"

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1 Document History

1.1 Revision History

Revision Date	Revision	Summary of Changes
30/07/2020	0.1	Initial draft version, internal DCC review
05/08/2020	0.5	Completed internal DCC review, release as draft version
18/08/2020	0.6	Updated with Working Group feedback, PIA for external CRs split out into separate document
25/08/2020	0.8	Further reviews with SECAS and Working Group. PIAs for August 21 broken out into separate document.

1.2 Associated Documents

This document is associated with the following documents:

Ref	Title and Originator's Reference	Source	Issue Date
1	MP122 Business Requirements v1.2 (draft6)	SECAS	24/07/2020
2	MP122 Preliminary Assessment Request	SECAS	14/05/2020
3	OPSG OMR Report Final	OPSG	12/05/2020`
4	MP122 DCC Preliminary Assessment v0.5	DCC	25/06/2020
5	SECMP0122 PIA August 2021 Release	DCC	04/09/2020

References are shown in this format, [1].

1.3 Document Information

The Proposer for this Modification is Gemma Slaney from Western Power Distribution. The original proposal was submitted on 24th March 2020.

The first Preliminary Impact Assessment (PIA) for this Modification was requested of DCC on 18th May 2020 and was submitted on 28th May 2020.

It should be noted that the Preliminary Impact Assessment was written against an earlier version of the Business Requirements. In the interests of expediency, SECAS and the DCC agreed to go straight to the Full Impact Assessment once the Change Board gave approval, and the final versions of the Business Requirements were delivered on 16th July, 2020.

Both the Business Requirements and specific measures and indicators are included from document [1] to allow a direct comparison with the proposed solution.

The Full Impact Assessment was requested on 16th July, 2020. An initial version was supplied on 5th August, 2020. Information relating to external data sources requiring contractual negotiation has been separated out into a separate document.

2 Context and Requirements

In this section, the context of the Modification, assumptions, and the requirements are stated.

The context, and issue statement, and requirements following have been provided by SECAS and the Proposer.

2.1 Context

Issues with transparency of reporting and relevance of the measures contained within the Data Communications Company (DCC) Performance Measurement Report (PMR) have arisen. In its monthly review of the PMR, the Operations Group has found it increasingly difficult to report to the Smart Energy Code (SEC) Panel on the issues within the report.

As a result of the issues encountered by the Operations Group, the Operational Metrics Review (OMR) was undertaken to better understand the PMR measures, consider amendments and recommendations of new performance indicators.

Through workshops and surveys of Users, it is clear that Users want to see reporting that reflects the business processes that the DCC supports, for example, Installation and Commissioning, Billing, and Prepayment top up.

2.2 Operational Metrics Review

**The OPSG OMR Report [3]
which is included in**

Appendix B: Supporting Information, outlines the findings of the Operational Metrics Review, commissioned by the Operations Sub-Group (OPSG), to identify improvements in the metrics used to measure the DCC service. The need for the review was identified following issues raised by the OPSG in relation to the monthly PMR. In October 2019, work commenced on the Operations Group's Operational Metrics Review project to identify improvements in the metrics used to measure the DCC service. The need for the review was identified following issues raised by the Operations Group in relation to the monthly PMR produced by the DCC.

The PMR provides details of the Code Performance Service Levels achieved as set out in SEC Sections H13.1, L8.6 and D11.3 and the Service Provider Performance Measures.

The review of the Operational Performance Regime (OPR) has been carried out due to concern that the current metrics may not be providing the best DCC incentives. Ofgem proposed to replace them with more outcome-based measures.

2.3 Business Requirements for this Modification

This section contains the definitions, considerations and assumptions for each business requirement as provided by the Proposer and SECAS.

Term	Definition
Measure	Is something that the DCC is responsible for providing a level of service for, and against which targets for DCC performance can be set.
Indicator	Is something the DCC is not accountable for but that provides a KPI that may be of value or use to the industry. It cannot have a target attributed to it.
Device Type	In respect of a Device, a generic description of the category of Devices into which the Device falls.
Region	Means each of the regions of Great Britain that are subject to different DCC Service Provider Contracts
SMETS 1 Device	Means one of the following: <ul style="list-style-type: none"> • a SMETS1 ESME • a SMETS1 GSME • a SMETS1 CHF • a SMETS1 GPF • a SMETS1 PPMID • a SMETS1 IHD • any other device operating on a Home Area Network created by a SMETS1 CHF
SMETS 2+ Device	a Device which is not a SMETS1 Device

Table 1: General Terms and Definitions Used in the Business Requirements and Document

2.4 General Notes

The metrics defined in this document are expected to be reported within the DCC's PMR as required by the Code.

The DCC is expected to highlight any changes to the metrics which would impact the contracts with its Service Providers and therefore impact its ability to fulfil Requirement 4 of this document.

2.5 Business Requirements

This section which contains the functional business requirements and is taken almost verbatim from document [1]. The section numbering following has been organised to match the information in the headings in [1].

Based on the following high-level requirements a full solution will be developed.

Req.	High Level Business Requirement
1	The DCC will report and measure monthly service performance for Service Reference Variants (SRVs) used in User business processes
2	The DCC shall add specific outcome-based measures to the Performance Measurement Report (PMR) to provide a Measure of performance as well as Indicators on the success of the key business processes where they have end to end visibility.
3	The DCC will measure end to end service availability across the DCC environment and report this by Communication Services Provider (CSP) Region
4	The DCC shall reduce the time it takes to create the PMR to within 10 Working Days from the end of the measurement reporting period
5	In relation to Code Performance Measure (CPM) 5, the DCC will improve transparency in the reporting provided for incident Categories 3, 4 and 5

Table 2: Business Requirements for SECMP0122

Based on the OMR, as described in section 2.2, outcome-based measures have been drawn from the OMR and consist of updated metrics for the OPR to target four areas specifically:

- Install and Commission
- Prepayment
- Firmware management (covered by sections 2.2.5 'In Life Device Management' and 2.2.6 'Update CH Firmware' below)
- Service Availability

Where relevant performance will be broken down by meter type and Region.

2.1 Requirement 1: Report and measure monthly service performance for SRVs used in User business processes

The Operations Sub-Group (OPSG) requested changes to the PMR to enable it to more accurately measure DCC performance of SRVs and associated Service Responses against their business processes.

2.1.1 Measuring SRVs

The following list of SRVs will be included in the monthly PMR with Rate, Speed, Volume, and Payload (RSVP) metrics.

DCC Note: Rate, Speed, Volume and Payload (RSVP) as described in this section and following, will be used as an indicator of performance for identified key User business processes. The RSVP metric will measure the relevant SRVs, service responses, acknowledgements and Alert processing times within the DCC Total Systems. Each element of RSVP is defined as follows.

Term	Definition
Rate	The sample period over which the performance is measured. For the purposes of the PMR the rate will be either daily or monthly. A daily measure provides the level of granularity required to capture service degradation or outages that impact a User's business process. A monthly measure will provide a higher-level executive view of service performance.
Speed	A measure of the Round Trip Time (RTT) for an SRV or group of SRVs measured within the rate period. The RTT is measured from receipt of the SRV from the User, to sending a Service Response to the User, and includes time spent within the Home Area Network (HAN). Speed should be measured as an average (mean) as well as a median, as an average can be skewed by extremely large or small values. The OMR acknowledges that measuring RTT excluding the HAN would provide a more useful measure of DCC performance but introduces a number of challenges as this is not currently a technical capability of the system. However, an interim solution would be to calculate a response time using the CSP test message average response time, added to the DSP measured response time for the SRV. This time should be reported and plotted alongside the RTT. This solution is dependent on the CSP test message issues raised in section 3.2.5 of the OMR being addressed.
Volume	The total number of Service Requests or group of SRVs processed by the DCC Total System within the period.
Payload	The success or failure of the Service Request within the period. A failure is recorded when a Service Response contains an Error Response Code relating to a communications failure or timeout (E20 ¹ or E21 ²), or a subsequent failure alert code (N12 ³ or N13 ⁴).

Table 3: Rate, Speed, Volume, Payload Definitions

The start point will be the Service User sending the SRV and the end point will be the Service User receiving or not receiving the associated Service Response (success or failure response).

Note that success of an SRV would be if Users received a response to it, irrespective of what the response is. If Users don't receive a response, this would count as a failure against the SRV.

¹ Communications Failure – Unable to Communicate with Device

² Communications Failure – No Response Received from Device

³ Failure to deliver Command to Device

⁴ Failure to receive Response from Device

The performance of a business process will depend on whether the SRV relates to a Smart Metering Equipment Specifications (SMETS)1 or SMETS2+ Device and should therefore be reported with SMETS1 and SMETS2 metrics separated and clearly identified. This is due to the different SLAs for each Device type as stated in the SEC.

Note, not all SRVs are applicable for SMETS1 and these are marked in Table 4 below.

Business Process	SRV	Description	SMETS1 Applicable
Install and Commission⁵	8.11	Update HAN Device Log	Yes
	6.21	Request Handover of DCC Controlled Device (Update Supplier Certificates)	No
	8.1.1	Commission Device	Yes
	8.7.2	Join Service (Join GPF with GSME)	Yes
	6.20.1	Set Device Configuration' (Import MPxN)	No
	1.1.1	Update Import Tariff (Primary Element)	Yes
	6.8	Update Device Configuration (Billing Calendar)	Yes
	8.14.1	Communications Hub Status Update Install Success	No
Change of Supplier (Gain)	6.23	Update Security Credentials (CoS)	Yes
	1.1.1	Update Import Tariff (Primary Element)	Yes
	6.8	Update Device Configuration (Billing Calendar)	Yes
Change of Tenancy	3.2	Restrict Access for Change of Tenancy	Yes
Tariff Updates	1.1.1	Update Import Tariff (Primary Element)	Yes
Pre-Payment	1.6	Update Payment Mode (Payment Mode = Prepayment)	Yes
	2.1	Update Prepay Configuration	Yes
	2.2	Top Up Device (Update Balance with positive value)	Yes
Security and Key Management	6.15.2	Update Security Credential (Device) – Credential Type = Digital Signature	No
	6.15.2	Update Security Credential (Device) – Credential Type = Key Agreement	No
	6.17	Issue Security Credentials – Credential Type = Digital Signature	No
	6.17	Issue Security Credentials – Credential Type = Key Agreement	No
Update Device Firmware	11.1	Update Firmware Note: In respect of SMETS2+ Devices the DCC must ensure that the associated firmware update has been delivered to all relevant Communications Hub Functions within five days of receipt of the Service Request.	Yes
	11.3	Activate Firmware (Individual SR for each GUID for firmware activation) Note: SMETS1 five-day Target Response Time.	Yes
Logistics CH Ordering and Returns	8.14.3	Communications Hub Status Update – Fault Return	No
	8.14.4	Communications Hub Status Update – No Fault Return	No
Distribution Networks Post I&C Activity	6.15.1	Update Security Credentials (Update Network Operator Certificates)	Yes
	6.5	Update Device Configuration (Voltage)	Yes
	6.22	Configure Alert Behaviour (Update ENO Alter Configuration)	No
Meter Reads	4.6.1	Retrieve Import Daily Read Log	Yes
	4.6.2	Retrieve Export Daily Read Log	No
	4.8.1	Read Active Import Profile Data	Yes
	4.8.2	Read Reactive Import Profile Data	Yes
	4.8.3	Read Export Profile Data	Yes
	4.10	Read Network Data	Yes
	4.17	Retrieve Daily Consumption Log	No

Table 4: Business Process Applicability Table

⁵ Note, although some of the SRVs listed under Install and Commission are applicable to SMETS1, the rollout of SMETS1 Devices has ended and therefore the overall Install and Commission business process is not applicable to SMETS1.

RSVP metrics will be used as an indicator of performance for identified key User business processes as defined in Table 4. The RSVP metrics will measure the relevant SRVs, service responses, acknowledgements and Alerts processing times within the DCC Total Systems.

2.1.2 Measuring Alerts

Code Performance Measure 3 of the SEC requires that the DCC measures the percentage of Alerts delivered within the applicable Target Response Time. Therefore, SECAS acknowledge that this requirement is not making any changes to the Code and the DCC should already be providing reporting against all Alerts. However, it is understood that the DCC only reports on a subset of Alerts.

The DCC is to include in its assessment the requirement to measure all Alerts (DCC Alerts and Device Alerts) using the current method for determining how long they took to be delivered.

In addition to the above, the DCC is asked to include in its assessment the requirement to measure for all Alerts the time it takes from when it reaches the Communications Hub to when it enters the Service User's gateway. The DCC does not currently include this phase in its measure.

2.1.3 Data Representation

The RSVP metrics shall be reported within the PMR.

Daily RSVP metrics

The OMR recommended that the daily RSVP metrics be plotted using a line graph representation with daily data points:

- The x-axis will indicate the day of the month and the y-axis shows response time and volumes.
- Data points are plotted for the SRV daily average RTT, volume of daily requests and daily request failures.
- The average monthly RTT for the SRV or group of SRVs is provided to give a reference point and indicate whether daily response times are above or below the monthly average.

The average monthly RTT is shown as a dotted red line on the example provided below.

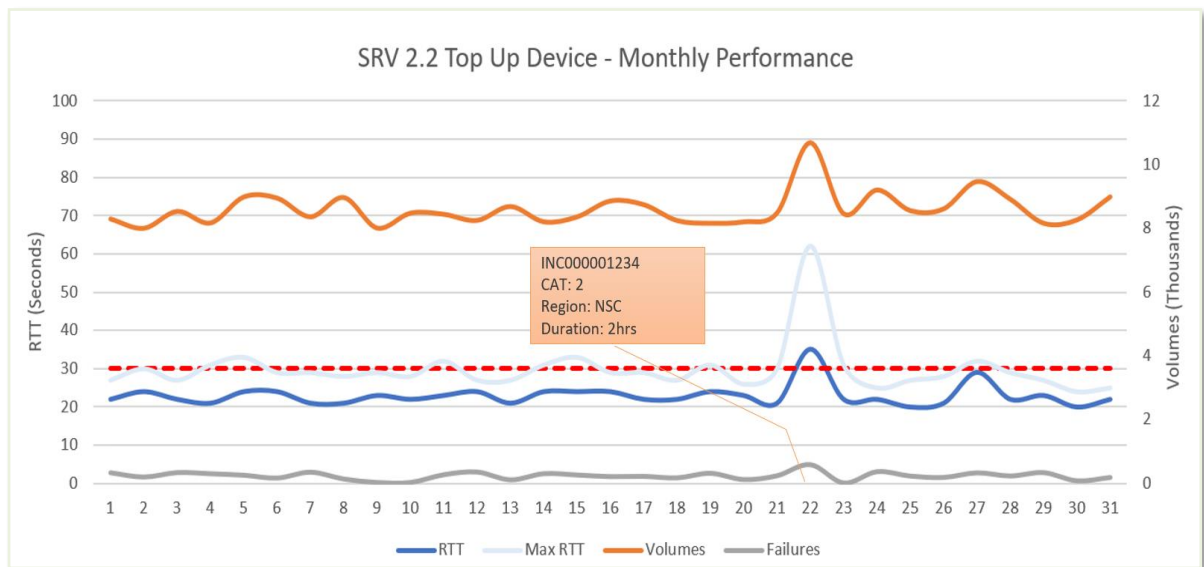


Figure 1: Monthly Performance with Daily Data Points

Note, although not shown in the above figure, minimum RTT will also be displayed in the graph. As noted in the Modification Report, the presentation of this graph as well as any other graphs in the PMR will be agreed between the DCC, the Proposer and the Working Group pre-implementation of this Modification.

The SRVs in Table 4 above shall also be reported at a monthly level to provide a summary of performance over the period. The summary will include both Indicators and Measures as defined below. The measures are to be reported for all Regions combined for SMETS1 (excluding Install and Commission) and separated by Region for SMETS2+ Devices.

The following monthly metrics are to be recorded and reported within the PMR:

- An Indicator of the Monthly Average (Mean) and Median RTT including time spent within the Home Area Network (HAN). The Median is recommended because, when compared to the average/mean, this measure is less likely to be skewed by extremely large or small numbers and therefore provides a better idea of the typical response time.
- An Indicator of the range of RTT values measured within the month to show the longest and slowest response time recorded.
- A Measure of the percentage of responses delivered within the Target Response Time (TRT) is calculated by including the response time for all Service Requests that compose a business process. For example, the Install and Commission process will be represented by the seven common SRVs that make up the SMETS2 Install and Commission process for Electricity Smart Metering Equipment (ESME) Devices. In the case of Install and Commission, the TRT target should also be provided for Gas Smart Metering Equipment (GSME) Devices. The TRT has the meaning given to that expression in SEC Section H3.14 'Target Response Times'. Targets are those defined in SEC Appendix E 'DCC User Interface Services Schedule'.
- An indicator of the total number (volume) of SRV requests listed in Table 4 recorded for the period.

- An Indicator of the percentage of SRVs that failed to be delivered due to a communications failure or timeout (E20⁶ or E21⁷) or a subsequent failure alert code (N12⁸ or N13⁹).

An illustrative example of these measures is shown below.

Monthly Performance Measure	Region A	Region B	Region C	SMETS1
Average RTT	29	15	33	12
Median RTT	26	15	35	11
Range (Shortest)(Longest)	(4)(200)	(1)(20)	(20)(49)	(10)(20)
Percentage of Service Responses delivered within the Target Response Time	97%	99%	95%	99%
Volumes	100K	90K	110K	5K
Percentage of Service Requests that failed to be delivered	2%	9%	4%	10%
Percentage of Service Requests that generated N12 or N13 Alerts	-	-	-	-

Table 5: Prepayment – Top Up Device Remotely

2.2 Requirement 2: Add specific outcome-based measures to provide a Measure of performance as well as Indicators on the success of the key business processes where they have end to end visibility

The purpose of this Requirement is to provide metrics for the overall success of a subset of key business processes.

The measure of success will look at the overall outcome of the business process and will be irrespective of the success/failure of each individual common SRV within that process.

The following outcome-based metrics are to be broken down by Device type (not including Install and Commission) and Region.

These metrics have been categorised into Measures and Indicators and are labelled in column “M/I” below.

2.2.1 Measuring success of key business processes

For each business process referenced in Table 4 above, the DCC shall measure the combination of SRVs attempted by a Service User for an iteration of that process and report the percentage of those iterations across all Users that returned at least one failure Alert or no response. This metric would be defined as an Indicator.

The DCC shall also use non-communicating Devices identified during each business process as a proxy for gauging estate health.

⁶ Communications Failure – Unable to Communicate with Device.

⁷ Communications Failure – No Response Received from Device

⁸ Failure to deliver Command to Device

⁹ Failure to receive Response from Device

The DCC is asked to provide a list of error codes for each Service Reference Variant in Table 4, to facilitate the Working Group determining if a business process has been completed successfully if such error codes are received by the User.

2.2.2 Install and Commission

Note, although some of the common SRVs listed in Table 4 for Install and Commission are applicable to SMETS1, the overall measure of success for the outcome of this business process shall not be applicable to SMETS1.

This is because the installation of SMETS1 Devices is prohibited under the Code.

ID	Requirement	M/I	Definition
IC1	Provide a greater level of visibility for the time taken for the DCC Total System for the Install and Commission process	M	Measure the Response Times of the common Service Requests and report the percentage that failed to meet the Target Response Times. Note, this Measure will be provided by the RSVP metrics for the common SRVs listed in Table 4 above
	Note: Install and Commission is a complex process and is orchestrated differently by each User making measurement of the end-to-end process challenging.	I	Measure daily total volume of successful and failed meter installations broken down by Comms Hub (CH)/ESME/GSME and Region.
		I	Measure daily total volume of installs for the period against the predicted number of installs. This will be broken down by SEC Party and anonymised as a failure to meet historic install volumes could be due to issues outside DCC control. The predicted installations will be based on historic DCC recorded installation volumes data and therefore may only be used for informational purposes.
		I	Measure daily total volume of Install and Commission versus Install and Leave. The reporting is to include a category for any Communications Hubs awaiting a decision that are still within the 90 -day investigation period for Install and Leave. ¹⁰
IC2	Provide information on the impact of service degradation and outage on the User.	I	The DCC uses predictive modelling techniques to record and predict behaviour of meter installations in near

¹⁰ The Working Group agreed that for the purpose of this modification, Install and Leave shall include both Proactive Install and Leave and Reactive Install and Leave as defined under the Supply Standard License Conditions.

			real-time. The deviation from the norm provides a good indicator of degradation in service and the volume of messages provides a proxy measure of impact on Users. In addition, Sev1 and Sev2 incident data can be combined to provide a more accurate reflection of the User's experience.
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Table 6: Install and Commission Metrics

2.2.3 Change of Supplier (CoS)

The following Change of Supplier metrics could be provided in the form of an anonymised league table of Service Users

ID	Requirement	M/I	Definition
CoS1	Provide a measure of the success of the Change of Supplier (CoS) Process.	M	Measure the percentage of successful SRV6.23 'Update Security Credentials (CoS)' SRVs delivered. Where the response erroneously reports a failure, the presence of subsequent critical and non-critical SRs sent by the gaining supplier will be used as an indicator of success. Include a measure above by device type and Region.
		M	Measure daily total percentage of successful SRVs 1.1.1 'Update Import Tariff (Primary Element)' and 6.8 'Update Device Configuration (Billing Calendar)' delivered. Include a measure above by Device type and Region.
		I	Provide information on the reason for failure e.g. where a CoS database becomes unavailable or other Service Provider issue materialises.
		I	Measure the overall success of SRV 6.23 on a daily basis aggregated by each Supplier Party.

2.2.4 Meter Reads

ID	Requirement	M/I	Definition
B1	Provide a measure of the success of the scheduling of meter reads and delivery of meter reads.	M	Measure the combination of SRVs listed for this business process in Table 4 and advise the overall percentage that

			returned a failure response or no response.
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2.2.5 Prepayment

The following Prepayment metrics could be provided in the form of an anonymised league table of Service Users.

The DCC is also requested to provide commentary to recognise any DCC outages or Category 1/2 Incidents.

ID	Requirement	M/I	Definition
PP1	Provide a measure of the success of topping up a device remotely.	M	Measure the percentage of successful SRV2.2 SRVs successfully delivered to the devices. Include a measure by device type and Region.
		I	Provide information on the volumes of success and failures within the period.
		I	Provide a table showing the percentage attempts to top up before success. Provide metric for the first and second attempts and the percentage of failures. Where failure is above 5%, provide further details on the reason for the failure.
PP2	Provide a measure of the success for Update Device Change of Mode on Devices.	M	Measure the percentage of successful SRVs 1.6 'Update Payment Mode' and SRV 2.1 'Update Prepay Configuration' successfully delivered to the Devices. Include a measure by Device type and Region.

2.2.6 Update Device Firmware

The outcome-based measures for this business process are a subset of the those defined for 'In Life Device Management' in Table 4 above. Specifically, these are aimed at providing a measure of success for the process of updating Device firmware.

ID	Requirement	M/I	Definition
DF1	Provide a measure of the success of delivering the device image to the Communications Hub.	M	Measure the number of target Devices listed in SRV 11.1 'Update Firmware' and how many HANs pertaining to those Devices successfully received an Image
DF2	Provide information of the success of transferring the device images from CH to the Device.	I	Measure device image verification success (0x8F72) and verification failures (0x8F1c) to provide information on the percentage of images that are

			successfully transferred from the CH to the device. Record devices that did not issue an alert after the SLA has elapsed to identify failure to transfer from CH to the device.
DF3	Provide information on successful activation of device firmware image.	I	Measure the percentage of success and failure responses to the SRV11.3 Activate Firmware request.

2.2.7 Update Comms Hub Firmware Metrics

This business process is not listed in Table 4 above as the DCC is not responsible for managing the Communications Hub firmware. Therefore, there are no SRVs for Service Users to use relating to this business process.

ID	Requirement	M/I	Definition
CHF1	Provide a measure of the success of delivering CH firmware image to the Communications Hub.	M	Measure the percentage of successful CH firmware payload images successfully delivered to the CH
CHF2	Provide a measure of the successful activation of the CH firmware image.	M	Measure the percentage of successful CH firmware image activations.

SECAS note that the functionality for CHF1 could be delivered under SECMP0007 'Firmware updates to IHDs and PPMIDs. However, SECMP0007 would not directly provide the reporting sought by Parties for this measure.

The Proposer and the Working Group have agreed that they would like the DCC to include the measure of CHF1 in its Impact Assessment, irrespective of the progression of SECMP0007. Therefore, the DCC shall assess this requirement against both of the following scenarios:

- CHF1 is implemented as a separate modification separate to SECMP0007; and
- CHF1 is implemented as a change to the reporting only after SECMP0007 is implemented.

2.2.8 Alert Management

ID	Requirement	M/I	Definition
A1	Provide a measure of the success of delivering alerts.	M	Measure the percentage of alerts successfully delivered within required SLA time. For alerts impacted by throttling, i.e. during an alert storm, this will measure all alerts sent to the User.
		I	Measure the total number of Alerts that fail to be delivered within the SLA time and a breakdown of the number of

			failures by Alert code to identify the type of Alert impacting overall performance.
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Please see section 2.1.2 Measuring Alerts of this document above for detail on what the Proposer and the Working Group are seeking from this business process.

2.3 Requirement 3: Measure end to end Service Availability across the DCC environment and report this by CSP Region

2.3.1 Defined DCC Services

This requirement refers to the combination of each of the following DCC interface and supporting sub-systems as a 'DCC Service':

- the DCC User Interface
- the Registration Data Interface
- the Smart Metering Key Infrastructure (SMKI) Repository Interface
- the SMKI Services Interfaces
- the Self-Service Interface (SSI)

Service availability shall be measured as a percentage for all the above Services.

Whilst this approach accounts for overall service availability of each Service, it would not be reflective of instances in which the Service is partially unavailable.

Those key business processes impacted by partial availability shall be reported alongside the metrics and indicators for service availability of a particular Service. An illustrative example of this is provided in Figure 2 below. Note that the Service Level percentages reported for each key business process are an indicator, and would quantify the time, during the reporting period, in which the DCC has the capability to successfully process and deliver a particular Service Request that makes up a particular business process, as defined in Table 4 of this document.

2.3.2 Service Availability Metrics

In addition to the considerations above, the DCC is asked to report on how much cost and effort will be required to include these elements in the solution.

Monthly view of end-to-end Service availability	A monthly view of end-to-end service availability for each of the Services described above is reported on as a single percentage figure, as well as depicted as a line graph across the days of the month. This will enable a higher level of granularity and easier identification of potential issues that might have impacted Users throughout the reported period. As stated before, this measure for end-to-end availability should include sub-systems linked to each individual interface. If a particular sub-system (i.e. server) is responsible for supporting multiple interfaces, and this sub-system experiences an outage, then the availability measure for each of the affected Services should be impacted and reflected in the monthly measure.
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End-to-end Service availability by CSP Region	The view for service availability, where relevant ¹¹ , is split by CSP Regions, for better correlation with User's operational experience.
Reporting Service availability by time of day	<p>Time of day is considered when measuring and reporting on service availability for any particular Service, as this can have a direct impact on User's operations.</p> <p>The OMR suggests a split (Monday to Friday) between hours where installations are more prominent (08:00-20:00) and hours where other business processes (i.e. CoS) take place (20:00-08:00).</p> <p>With regards to weekends, the OMR recommends Saturdays to be split between 08:00-12:00 (on-site activities are still performed, i.e. installations) and 12:00 to 08:00, and Sundays are generally considered as days of on-site operations inactivity.</p>
Measuring Service downtime	<p>The DCC shall record the overall downtime for each DCC Interface separately, including a breakdown of Planned Maintenance and Unplanned Maintenance.</p> <p>Additionally, as each Service provided by the DCC is made up of an interface and multiple supporting sub-systems, a particular Service is to be considered available (therefore contributing to the argument 'Uptime' in the formula) only when all of its supporting sub-systems are available, and is to be considered unavailable (and therefore contributing to the argument 'Unplanned Downtime' in the formula) otherwise.</p>
Planned Maintenance	<p>Note: In accordance with SEC Section H8, the DCC "<i>shall (insofar as is reasonably practicable) undertake Maintenance of the DCC Systems in such a way as to avoid any disruption to the provision of the Services (or any part of them).</i>" Additionally, the DCC shall limit Planned Maintenance of the DCC Systems generally to not more than six hours in any month (including maintenance of the SSI). Given this allowance, the OMR acknowledges that Planned Maintenance, complying with Section H8.4 of the SEC, should be excluded from, and not impact, the calculation for Service Availability defined in the formula above.</p> <p>However, the Proposer and the Working Group request the DCC provide an Indicator for planned downtime as this would show what actual availability is for Users. It is acknowledged that the DCC is permitted to carry out planned maintenance and so it is an Indicator rather than a Measure.</p>
Measuring Service Reliability	<p>The DCC shall produce reliability measures for each of the interfaces described above and reported alongside the figures for service availability. Recommended measures for reliability of a system are reported below:</p> <ul style="list-style-type: none"> • Total Number of Incidents (category 1 to 5) across the reporting period. Additional Indicators to inform Users on the reliability of the

¹¹ Service availability contains some services that are not regionally based, for example SSI availability has no reliance on CSP Region and so would not need to be split by regional availability. SMETS1 is not broken down by Region.

	<p>DCC services would include the overall number of Category 1 & 2 incidents per Reporting Period (the OMR notes that the DCC already provides summary information about Category 1 & 2 Major Incidents to Users voluntarily). The OMR also believes the PMR should include the total volume of Category 3, 4 & 5 Incidents in the Reporting Period, where the Incident resolution is attributed to the DCC as the Responsible Party.</p> <ul style="list-style-type: none"> • Average amount of downtime per event (related to the Mean Time To Repair (MTTR) measure, which is defined as total maintenance time divided by the total number of repairs). • Mean Time Between Failures (MTBF), calculated across the reporting period, as operating time (hours) divided by the total number of failures. <p>An illustrative example of the recommended Measures (M) and Indicators (I) proposed by the OMR for the reporting of service availability and reliability of some of the interfaces is provided below:</p>
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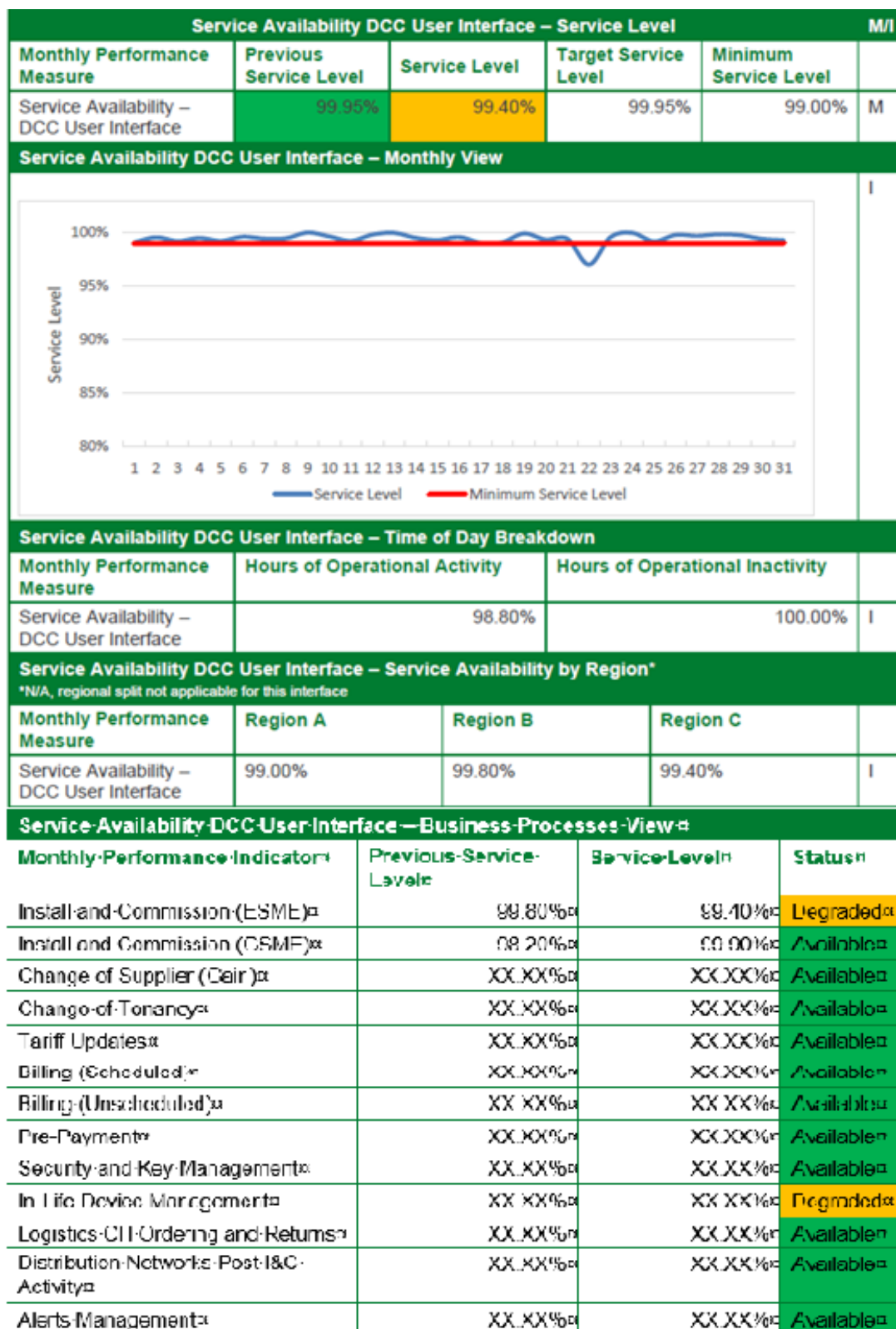


Figure 2: Service Availability Table

DCC notes that the table supplied by SECAS does not match the Business Processes identified in Table 4 above. The text has been deliberately blurred to highlight this.

2.4 Requirement 4: Reduce the time it takes to create the PMR to within 10 Working Days from the end of the measurement reporting period

The SEC states that the DCC must create the PMR within 25 Working Days. However, the DCC shall reduce the time it takes to create the PMR to within 10 Working Days from the end of the measurement reporting period. This is to ensure the PMR remains operationally relevant to Users.

The effect would be that, depending on Bank Holidays and month end falling on Working Days, the report could be reviewed by the Operations Group the month following the end of the reporting period. For example, a report for the month of February could be reviewed at the end of March at the Operations Group report review meeting.

2.5 Requirement 5: In relation to CPM 5, the DCC will improve transparency in the reporting provided for incident Categories 3, 4 and 5

Feedback from Distribution Network Operators (DNO) highlighted a lack of transparency in the reporting of Incident Categories 3, 4 & 5 where the DCC is the responsible Party for the resolution of the incident in accordance with the SEC Appendix AG 'Incident Management Policy'.

CPM5 does not split out the resolution of these per Incident Category. Therefore, in order to improve transparency and confidence in the reporting provided for incident Categories 3, 4 and 5, CPM5 is to be amended to show individual incident resolution times for each incident category.

Data will be provided in the form of statistics for each Incident Category. The DCC is not expected to provide detail pertaining to each individual Incident raised.

This would be broken down by SMETS1 and SMETS2 and be supplemented by further Indicators detailing:

- the number of Incidents per Category 3, 4 and 5 raised in the reporting period
- those that met the Initial Target Response Time¹²
- those that met the Target Resolution Time

The Categorisation Matrix within SEC Appendix AG 'Incident Management Policy' states the SLAs for each Incident Category.

The Proposer and the Working Group agree to the DCC's recommendation to report the Incidents closed in period instead of opened, as this ensures that all Incidents raised are reported on. Otherwise, if an Incident is raised and not closed in period, it would not appear in a future report. It also means that Incidents raised towards the end of the reporting period that are not resolved but still within SLA are accurately reported on.

¹² Target Initial Response Time is defined in SEC Appendix AG 'Incident Management Policy' as the time period within which an Incident within each Category should be recorded on the Incident Management Log and assigned to a resolver.

3 Description of Solution Components and Methodology

3.1 The DCC Technical Operations Centre

The DCC Technical Operations Centre is a 24x7x365 capability with an in-depth technical understanding of the DCC systems, process and technology to ensure the DCC service “lights stay on”. This is done by Assuring, Controlling, Monitoring and Informing the DCC network.

The TOC is staffed 24 x 7 x 365 by dedicated DCC sourced system experts and a core network monitoring team and is located at the DCC Brabazon site. The TOC staff are technical experts that understand the DCC systems, processes and technology in sufficient level of detail to be able to provide a 3rd level support capability.

The TOC solution has four key objectives:

1. Service Visualisation of data sources in near real time to provide an adaptable and configurable Operations Management dashboard.
2. Operations Analytics and/ or intelligence allowing highly accurate monitoring of key DCC KPI's across all data sources, identify anomalies and generate intelligent insights through correlation/ trend analysis – and other statistical analysis models - of data sources to automate root cause identification and provide other useful insights to facilitate DCC in their operational objectives.
3. Capability for proactive alerting of operational metrics, using appropriate algorithms/ logic, that can be triggered through use of configurable thresholds and detection of anomalous behaviour, allowing DCC to pre-emptively address possible incidents.
4. Summary of key infrastructure availability across DCC supply base to provide a high-level view of service availability, subject to appropriate security constraints.

The DCC TOC will be responsible for the design, development, implementation and Business-As-Usual maintenance of the solution for this Modification.

3.2 Solution Constraints and Changes

As described in the following sections, DCC have reviewed and separated the requirements and parts of requirements into categories that can be delivered using existing data available in the TOC, and those needing further data that needs to be supplied by a range of Service Providers.

1. Where the data is identified as being already available to the TOC, working within the constraints of the current solution should involve no commercial change to the DCC Solution, although there will be a direct impact on support and maintenance. This is referred to as the "February 2021 Release".
2. Where further "external data" has been identified, it has been separated out with individual DCC Change Requests sent to the relevant Service Providers, as identified in the solution analysis in section 4 following. These data requests are highlighted in this document, but will be considered as PIAs in a separate document [5], with a ROM cost assessed for each requirement. If the Working Group decides it wants to go ahead with this external data and associated development, it will be sent out for a FIA. Note that these additional external data requests will also require contractual negotiations between the DCC and the impacted Service Providers, which is expected to take at least six months to complete. These changes have been grouped

into an arbitrary August 2021 release for ease of reference, although detailed planning will be required if DCC is given the go ahead to include this data.

For both data types, the TOC will need to create data structures and processes to enable the efficient, consistent and reliable reporting of the metrics requested. Some metrics are readily available, although not necessarily in the correct format, while some metrics will need to be derived.

3.3 Working Methodology

During the requirement gathering and refinement, the DCC and SECAS hosted workshops with the Working Group. These workshops aimed to validate the proposals in the OMR in terms of the viability of implementing the recommendations, to refine the requirements further, and to enable fast delivery of new requirements and improvements. It should be noted that the requirements have evolved significantly since the development and delivery of the initial Preliminary Impact Assessment [2], and the versions in section 2 and onwards above should be used as the basis of this document.

DCC would use the mockups of reports provided in the OMR [3] as a starting point representing how users want reports presented, and these would form the basis for wireframes of the reports. These will be developed during the development of the solution(s), and will be shared with the Working Group for review and approval.

3.4 Data Delivery, Testing, and User Acceptance

It is assumed that the changes using internal data already available to the TOC will be implemented and tested as a separate release, and will include testing iteratively during development. The development and testing will not follow the PIT, SIT, and UIT pattern associated with a "conventional" SEC Release, and will not require the testing services of the System Integrator or Communication Services Provider (CSP) beyond potential changes to CSP internal systems.

Any new external data provided by the Service Providers will require a limited technical change to reflect the provision of the data to the DCC. In some cases, mostly relating to the SMETS1 Service Providers (S1SPs), there is no current data provision, so a data transfer mechanism will have to be developed.

4 Requirements Review and Solution Overview

The DCC have reviewed the requirements and details including report mockups as provided in documents [1] and [3]. The Solution will attempt to implement the proposals in two separate phases based on whether the required data is already available to the TOC, or whether new "external" data will need to be provisioned from the Service Providers.

DCC have noted responses for each requirement, as summarised following using the numbering referenced in section 2.3. In the following sections, DCC's exceptions or concerns are noted against specific requirements; where there is no commentary against a section, DCC believes the requirement is achievable without significant issue.

4.1 General Design Approach

The following design principles have been applied while evaluating the business requirements and determining a solution.

- DCC will use data already held in TOC Data Warehouse and other DCC data sources wherever possible. If further "external" data is required, it will be noted and a Change Request (CR) and PIA will be raised against the relevant Service Provider. The detailed responses in document [5] will include a ROM and time estimate for that change. Any such changes will result in contractual changes beyond producing this report, and will impact the timelines.
- Any changes to Performance Measurement Reporting will automatically trigger a change to Performance Measurement Methodology (PMM) which will require a formal consultation with SECAS.
- Any contracted Performance Measurement changes will require the Service Providers to deliver an updated Performance Methodology Approach (PMA), which will require contractual change.
- Any contract changes must automatically trigger a review of all Service Credits and Service Debits.
- To provide commentary wherever there is a failure to achieve a Service Level to a level of granularity and timescales required by this Modification, DCC will need to invest in additional resource outside of the Reporting space to investigate points of identified deterioration in performance with DSP, CSPs, S1SPs, DCC Incident and Problem teams, and SEC Parties.
- The contents of this Modification will be added to the existing PMR.
- The concept of an Exclusion List which is already part of the PMR, will be maintained in this Modification. The Exclusion List will be implemented where circumstances identify that an Indicator is impacted by actions that fall outside DCC's control (i.e. User action/error). This list will be configurable and will be agreed with the Working Group during development, and managed by Operations Group after Go Live.¹³ SECAS have

¹³ As examples, E21 and E30 errors could be result of issues caused by DCC, Service Users or End Consumers; E4 errors could be caused by Service Users attempting to communicate with devices that they don't own or as a result of DCC failing to load a Registration Data Provider file.

noted the aim of the OMR wasn't necessarily to address the DCC's performance alone, but to measure key business processes as a whole, considering User impacts.

- Non-communicating Devices identified during the meter read process will be a standard filter or exclusion applied to all SRVs and Business Processes.

4.2 Requirement 1

For all the metrics identified, it should be possible to provide RSVP metrics. Grouping of SRVs add complexity that comes with a computational and storage overhead.

The payload category will look for a successful Service Request, but it must be noted that there are different types of failures, many of which are valid failures for the DCC, such as authentication errors. This is one area where further detailed requirements will need to be established.

For both the RSVP Data representation of SRVs and the Monthly PMR metrics, DCC believes this is achievable within the limitations of what the DCC can currently report.

Requirement 2.1.1, Measuring SRVs

Using current data, the DCC can measure from the point the DSP receives the SRV from the Service User to the point where it is sent back by the DSP.

As the revised criteria stated in the requirement is to monitor from the point where the SEC Party sent the SRV to when they receive the response back it will need a contractual change with DSP. A CR and PIA have been raised to cover this requirement. As an interim measure to meet the OPR timescales, DCC can report using current data Round Trip Time from the point that SRV is processed by DSP to the point that its Response has completed processing by DSP. The following table identifies all current Report Status IDs with an additional column indicating whether an SRV with this Report Status would be considered for reporting.

Report Status ID	Description	Included in Reporting
1	On Demand Southbound Pending Completion	No
2	On Demand Northbound Complete	Yes
3	DCC Only/Transform Complete	Yes
4	Device Alert/Meter Scheduled Complete	Yes
5	DSP Scheduled Southbound Pending Completion	No
6	DSP Scheduled Northbound Complete	Yes
7	DCC Alert Complete	Yes
8	Rejected Southbound	Yes
9	Quarantine Hold Southbound	No
10	Quarantine Release Southbound	No
11	Sequence Hold Southbound	No
12	Sequence Release Southbound	No
13	Re-queue Southbound	No
14	Not Fulfilled Southbound	No
15	No longer used	N/A
16	No longer used	N/A

Report Status ID	Description	Included in Reporting
17	Re-queue Northbound	No
18	Not Fulfilled Northbound at DCC Service User Gateway	Yes
19	Not Fulfilled Northbound at SMWAN Gateway	Yes
20	Pre-installation Hold Southbound	No
21	Pre-installation Release Southbound	No
22	CSP Notification Complete	Yes
23	Arqiva Firmware Distribution Southbound Complete	Yes
24	Telefonica Firmware Distribution Southbound Pending Completion	No
25	Telefonica Firmware Distribution Northbound Complete (Firmware Validation Report processed)	Yes
26	Firmware Distribution Exception	Yes
27	Device Future Dated Cancelled	Yes
28	Device Future Dated Northbound Complete	Yes
29	DSP Future Dated Cancelled	Yes
30	Device Level Firmware Distribution Southbound	No
31	Quarantine Reject	No
32	Local Delivery Request Complete	Yes
33	Local Delivery Response Complete	Yes
34	No Response Received	Yes
35	S1SP alert	Yes
36	Copy Service Request sent to S1SP	No
37	Unsolicited Response	No

For Requirement 2.1.1, DCC propose excluding the time SRVs have been quarantined by the ADT or ADA processes. Responses will not be received for ADA failures. Where there is an ADT quarantine, the SEC Party can release at up to 30 days later. If a SEC Party chooses to release data from quarantine this will skew reported Round Trip Times unless this time is stripped out.

In this requirement, reporting has been requested for each Service Request, which also requires breaking down by Region (CSP), S1SP and device type. Some commands can be sent to Comms Hub, ESME, GSME, GPF and other devices. DCC have calculated this may require one page per SRV for Graphical and Tabular visualisation, and as commentary may be required, this will significantly increase the reporting output.

DCC note that there are different Service Level Agreements dependent upon Mode of Operation (e.g., a 1.1.1 that is Device Future dated (Mode of Operation 4) for instance has a 24hr SLA). Reporting separately for each SLA dependent on Mode of Operation (MoO) would significantly increase the reporting output as outlined below:

MoO	SLA (seconds)	Service Reference Variant
2	30	1.1.1
4	86400	1.1.1
10	86400	1.1.1
2	30	1.6
4	86400	1.6
3	30	11.1
2	30	11.3
4	86400	11.3
2	30	2.1
4	86400	2.1
2	30	2.2
3	30	2.2
2	30	3.2
10	86400	3.2
2	30	4.1
2	30	4.17
6	86400	4.17
2	30	4.6.1
6	86400	4.6.1
10	86400	4.6.1
2	30	4.6.2
6	86400	4.6.2
2	30	4.8.1
6	86400	4.8.1
2	30	4.8.2
6	86400	4.8.2
2	30	4.8.3
6	86400	4.8.3
2	30	6.15.1
2	30	6.15.2
2	86400	6.17
2	30	6.20.1
2	30	6.21
2	30	6.22
2	30	6.23
4	86400	6.23
10	86400	6.23
2	30	6.5
2	30	6.8

2	30	8.1.1
2	30	8.11
3	30	8.14.1
3	30	8.14.3
3	30	8.14.4
2	30	8.7.2

The SRV and combinations that result in a 24hr Service Level Agreement (SLA) will not give a good indication of the performance of SRVs as they traverse the DCC system so it is suggested the measurement is limited to SRVs with a 30 second SLA. However if a view of DSP Schedules is also part of the overall picture, for example, meter reads, an additional breakdown by SLA / Mode of Operation will be needed.

As the DCC TOC do not have access to the contents of the SRVs, determining exactly which business process an SRV relates to will not be possible. Instead, rules will be applied to apportion with a reasonable level of certainty, the SRV to the associated business process. This is predominantly relevant to SRV 1.1.1.

There are other SRVs where DCC are only able to report on the presence of the SRV, not on the specific purpose of the SRV. This is relevant, but not limited to SRV 8.11 (Update HAN Device Log), 1.6 (Update Payment Mode: credit / prepayment), 6.15.2 and 6.17 (Credential Type for both). Regarding these SRVs, DCC will attempt to use business logic to estimate the function being carried out.

Note that success of an SRV would be if Users received a response to it, irrespective of what the response is. If Users don't receive a response, this would count as a failure against the SRV. DCC propose reporting against this metric in the following categories:

- No Response received (successful response code)
- No Response received (unsuccessful response code)
- Responses Received (successful response code i.e. "I/O")
- Response Received (unsuccessful response code i.e. response code other than "I/O")

Requirement 2.1.1 Table 4 Notes

For Business processes and applicable SRVs, it should be noted that there is no guaranteed way to, for example, to separate SR1.1.1 Service Requests into those used in the Install and Commission (I&C) process and those used in Change of Supply or Change of Tenancy. It is simpler to report all SR1.1.1s and use the same metric across all business processes. This holds for all the business processes listed following.

Install and Commission	Using current DCC TOC data, DCC can provide a report that shows the response time of the Install and Commission SRVs based upon all SRVs being sent on the commissioned date. Any SRVs sent after the commissioned date will be excluded from the report.
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Change of Supplier (Gain)	CoS SRVs seen on the same day as the SRV 6.23 will be considered to be part of the business process SRVs. This is significant for SRV 1.1.1 which spans multiple business processes.
Change of Tenancy	This has a single SRV associated with this process and can be reported atomically.
Tariff Updates	DCC propose reporting all 1.1.1's not identified as being included in other Business Processes (i.e. Install and Commission and Change of Supply).
Security and Key Management	These SRVs should be seen in pairs so reporting will be based on this.
Update Device Firmware	DCC will audit the firmware request, and audit corresponding alerts to create a proxy for the firmware to be downloaded to the CH. It should be noted that meter issues may cause alerts to be sent, so this measurement is only a proxy of the DCC service.
Distribution Networks Post I & C Activity	These SRVs aren't specific to Distribution Network Operators but there are markers within DCC data that will allow DCC to provide a reliable proxy for this business process.

Requirement 2.1.2, Measuring Alerts

There are seven Service Providers and approximately 60 alert types. Depending on how this will be represented, this will require additional reporting pages. An example output table as shown in **Error! Reference source not found.** above would equate to approximately 140 pages. Contractual changes are required as this is currently only reported as a total number of alerts. A CR and PIA have been raised. As an interim measure to meet the February deadline, the DCC can report on the volume of alerts and when they have been sent to the Service User.

The DCC TOC currently does not receive any data from the CSP containing measurements from when the alert reaches the Comms Hub. The DCC also cannot currently identify when an alert enters the Service User's gateway, only when the DSP tried to send it to them. Both of these changes will require further data supply and contractual change. Change requests and PIAs have been raised. As an interim measure to meet the February deadline, DCC can report on the volume of alerts received.

Requirement 2.1.3, Monthly RSVP Metrics

For each E20 / E21 / E30 / E31 response code, there should be a corresponding DCC Alert (N12, N13). However DCC cannot directly associate an SRV with an E response code to the corresponding DCC Alert other than by time / device id / DCC Service User. The two numbers should be approximately the same though so it's not clear what the driver is for reporting these two measures separately. DCC propose reporting only Response Code rather than Alert.

For the E20 / E21 / E30 / E31 response code, a failure to communicate with device can be as a result of issues within DCC control (failure/ poor performance of WAN), SEC Party control (site visit required, failure to resolve persistent non-communication, orchestration, device issue etc.) or End Consumer control (comms hub tampered with, ironing board placed against Comms Hub, van

parked outside etc.). DCC will be unable to identify what is the cause of the comms failure where this does not relate to a WAN failure.

DCC will add an element to the graph shown in Figure 1 to indicate the RTT Minimum time.

4.3 Requirement 2

Requirement 2.2.1, Monthly RSVP Metrics

DCC estimate that delivering requirement as requested will create approximately 10-15 pages of additional reporting and can deliver as requested.

As indicated in section 2.1.1 on page 25 above, DCC propose reporting against this and other metrics in the following categories:

- No Response received (successful response code)
- No Response received (unsuccessful response code)
- Responses Received (successful response code i.e. "I/O")
- Response Received (unsuccessful response code i.e. response code other than "I/O")

Relating to Security and Key Management, for 6.15.2 DCC see two SRVs – the first updates Device Digital Signing and a second updates Key Agreement Public Security Credentials. For 6.17 DCC sees Digital Signature and Key Agreement. For 6.17 DCC cannot see payload, so DCC can only see when they go as a pair. DCC will use business logic to create the pairing; if DCC see both, DCC will assume successful, but if only one, assume failure.

The DCC will produce error code mapping applicable to each of the SRVs noted in the business requirements as part of the development process, and this will be reviewed by the Working Group.

Requirement 2.2.2, Install and Commission

For the first Indicator, each Supplier has a different orchestration for their Install and Commission process. DCC propose a successful Install and Commission is marked as where the Device achieves "Commissioned" status. With regards to the CHs, DCC will report as Successful cases where there is at least one Meter attached. DCC recommends the following metric: As long as the Comms Hub has birthed (Status – Commissioned) the DCC will report on the successful completion of the SRV (Response Code I0) being sent to the Comms Hub or meters respectively.

For the second Indicator, DCC propose using the previous week's installation data to give an indicator of expected installation activity.

For the third Indicator, DCC will report as requested the number of successful 8.14.1's against 8.14.2's. DCC will also include a third category which identifies the installations that haven't received either SRV at the point of report creation. DCC additionally recommends specific to Install and Leave due to the 90 day resolution period that DCC either report only on closed Incidents or additionally provide reporting on the previous three months.

For the third indicator, in order to report accurately on Incident Resolution Timescales for Install and Leave, DCC will need to raise a contractual change with the CSPs. A CR and PIA have been raised. As an interim measure to meet the February deadline, DCC will attempt to match Incidents raised automatically as a result of 8.14.2 only.

Requirement 2.2.3, Change of Supplier (CoS)

For the first Measure, SEC Party activity can have an impact on the “Success” of a 6.23. If a Service User sends the 6.23 too early for instance it will result in an E4. As discussed in the Working Group, but not requested in the Business Requirements, DCC will produce a list of Service Responses that identify failure to deliver the command with volumes.

For the second Measure, DCC do not believe this can be reported accurately as Service Requests are not linked but can be inferred. Based on the TOC data, DCC will identify devices that have had a 6.23 in the month and then analyse subsequent 1.1.1 and 6.8 SRVs also sent to the device on the same day.

For the first Indicator, “Provide information on the reason for failure”, DCC are unable to provide information for the failure of every individual failure of a 6.23 as many failure reasons are outside DCC control and are invisible to DCC (e.g. end consumer removes Comms Hub). DCC will provide a list of failure Response Codes and volumes. DCC propose to provide a Commentary for any failures of SRV 6.23 that relate to Incidents for multiple premises. Where possible DCC will identify Service User error as a category.

For the second Indicator, DCC will provide an anonymised league table of successful 6.23 by Device Type by Region by SEC Party as requested. This table will show a bar chart with no annotation along the x-axis showing the source, and a y-axis showing percentages or absolute values.

Requirement 2.2.4, Meter Reads

For B1, DCC data currently allows a report that matches the requirement. In a similar fashion to Requirement 2.1.1 DCC propose the following measures:

- No Response received (successful response code)
- No Response received (unsuccessful response code)
- Responses Received (successful response code i.e. "I/O")
- Response Received (unsuccessful response code i.e. response code other than "I/O")

Also for B1, situations where a device has become long term (60 days) non-communicative, but attempts are still being made to read the device should be excluded from the measure but reported separately. This long term parameter should be checked with the Working Group, but is currently set to 60 days.

DCC believe requirement 2.2.4 should include on demand meter read SRVs also.

Requirement 2.2.5, Prepayment

Per request DCC will provide an anonymised league table of successful SR 2.2 by Device Type by Region by SEC Party.

Requirement 2.2.6, Update Device Firmware

For DF1, note that based on the current TOC data, DCC can provide the success of SRV 11.1, but the successful response to that message is merely an acknowledgement of the command and doesn't indicate that the success or failure to deliver the firmware, as the SRV11.1 is a special case of a DCC Only command. Failure responses are more of an indication of a validation failure of some kind and nothing to do with the ability to deliver the firmware to the device. It is possible

for DCC to identify the devices targeted by SRV 11.1 and report on the successful update of the image to the devices targeted, but this will need a new external data supply, as well as a contractual change with the DSP, CSPs, and S1SPs. Change Requests and PIAs have been raised. As an interim measure, DCC will report only the successful activation of the image per DF1.

For DF2, DCC can report on meters included in SRV 11.1 with a response code of I99 that then had a subsequent 0x8F72 or 0x8F1C. As there is a 5 day SLA response to this SRV, in order to hit the 10 day report production SLA (2.4 Requirement 4) there will need to be a category where the report has been run and firmware update is in progress but there is still time within SLA to receive a response. It should also be noted that where an Alert doesn't exist it could be a device issue that is responsible as opposed to an issue with the network.

For DF2 and DF3, DCC cannot currently report against the metrics for SMETS 1. This will need a contractual change with S1SPs. Change Requests and PIAs have been raised. As an interim measure to meet the February deadline, DCC will report on SMETS 2 only.

Requirement 2.2.7, Update Comms Hub Firmware

DCC cannot report the success of firmware updates to PPMIDs until the delivery of SECMP0007 (at least November 2021) or with the development of additional functionality as part of a SEC Release. The Proposer and the Working Group have agreed that they would like the DCC to include the measure of CHF1 in its Impact Assessment, irrespective of the progression of SECMP0007.

For CHF 1, DCC is currently unable to report on this measure as the sending of the firmware image to a Comms Hub happens entirely in CSP systems and DCC and DSP have no visibility. This will need a new external data supply, as well as a contractual change with the DSP, CSPs, and S1SPs. Change Requests and PIAs have been raised. As an interim measure, DCC will report only the successful activation of the image per CHF 2.

As noted in the requirements above, the delivery of SECMP0007 will enable the required reporting for this requirement. However this Modification has not been approved yet, and the earliest potential delivery of the required DSP functionality is November 2021. Once implemented, the required reporting change would be relatively low impact to implement.

Requirement 2.2.8, Alert Management

Note that the DCC response notes in Requirement 2.1.2, Measuring Alerts apply to this requirement as well. A new data supply and contractual changes are required as this is currently only reported as a total number of alerts. A CR and PIA have been raised. As an interim measure, the DCC can report on the volume of alerts and when they have been sent to the Service User.

For the A1 Measure, any Alerts that are suppressed, e.g., as a result of Alert Storm regulating the Alerts sent, will be excluded from the report.

4.4 Requirement 3

By completing a solution for Requirements 1 and 2, which include the ability to measure RSVP performance, the DCC can split availability data by CSP.

An alternative approach to measuring availability would be to send "dummy" Service Requests across the networks, would both add load to the network, and require constant monitoring, while not helping to localize or diagnose any potential network outages. Note that the OMR report also expressed a preference to move away from using Test messages to measure performance. This approach has been rejected.

Requirement 2.3.1, Defined DCC Services

DCC can currently measure the Service Availability for the following services on a monthly basis:

- the DCC User Interface
- the Registration Data Interface
- the Smart Metering Key Infrastructure (SMKI) Repository Interface
- the Self-Service Interface (SSI)

Changes will be implemented to alter this to an hourly reporting scheme.

To measure the availability of the SMKI Services Interfaces at the level of granularity requested, contract changes are required with the SMKI Service Service Provider. A Change Request and PIA have been raised. As an interim measure, DCC will continue to report per the current Performance Measurement Reporting.

Requirement 2.3.2, Service Availability Metrics

For the Business Process Views in Figure 2: Service Availability Table, please refer to the notes provided against Requirement 2.1.1 on page 25 and following.

4.5 Requirement 4

DCC have contractual relations in place with Service Providers for them to provide data within 10 Working Days for the production of the existing Performance Measurement Reporting and commentary within 5 Working days of subsequent request. In order to meet a requested timescale of 10 Working Days, DCC will need to either massively collapse these timescales or move to more real-time reporting to avoid a rush and resource failure at month end. This will require contractual changes with all Service Providers. A CR and PIA have been raised. As an interim measure, DCC will continue to report 25 Working days from month end.

4.6 Requirement 5

The current monthly Performance Measurement Report fulfils the request to provide the breakdown of the number of Category 3, 4 and 5 incidents closed in the period, and the number that achieve the SLA (Target Resolution Time).

DCC considers it appropriate to report the Incidents closed in period instead of opened, as this ensures that all Incidents raised are reported on. Otherwise, if an Incident is raised and not closed in period, it would not appear in a future report. It also means that Incidents raised towards the end of the reporting period and are not resolved but still within SLA are accurately reported on.

With regards to providing an indicator on whether Incidents are meeting the Target Response Time, this would require configuration of reporting tools. This would be complex, as the way Incidents are raised and responded to depends on where the Incident is allocated for action. It would require business process changes for the DCC, and integration with the Service Provider systems. DCC note that this is only one point in the incident lifecycle that is used to ensure incidents are progressing within a multi-Service Provider function.

5 Impact on DCC Systems, Processes and People, FIA

As defined the FIA change included in this document is confined to data already within the DCC TOC, with no expected changes impacting SMETS1 or SMETS2 Service Providers.

5.1 DCC Technical Operations Centre Development and Testing

The full range of activities required to implement the February 2021 parts of these requirements including design, development, testing, and implementation would be performed by DCC in-house contractors and permanent staff.

The DCC Technical Operations Centre development costs for the first release (February 2021) solution to include requirements which only require existing data held in the DCC TOC and no Service Provider Contract changes required include:

- Deliver Data Model algorithms, build report, test, document, update database, update interfaces. and document solution
- Add additional monitoring to support live 'spike' monitoring¹⁴

5.2 DCC Application Support

There will be a considerable increase in the number of Application Support Full Time Equivalents (FTE) required to support, maintain, and deliver the reporting on a monthly basis. These services will include:

DCC TOC Proactive Monitoring with TOC 24/7 staff	Additional 24/7 monitoring will be used to help with the real time annotation of reports – essentially these staff reduce the FTEs needed to turn around such a large report.
DCC TOC Reporting Staff	Required to support and maintain the TOC system as Business as Usual, building DCC data throughout month and packaging report in 10 day production cycle
DCC TOC Third Line Support	For report requirements; support and query answering, plus maintenance and optimisation
Operations Support	Covers both Service and Incident Management and is centred on the requirement to provide commentary. Investigation will be required to identify whether the performance deterioration is as a result of issues with system, Comms Hubs, Meters, Orchestration or areas entirely outside DCC visibility (actions taken by SEC Parties e.g. Staff being taken off work due to training, system issues with customers etc.)

It should be noted that the current Service Operations team provide and populate the required inputs, and the additional DCC TOC ongoing costs are to produce the report 10 Working Days after month end. This will require additional FTE for proactive monitoring as it is not feasible to produce the report within 10 Working Days unless there is *continual*

¹⁴ Spike monitoring is used where there is something on the system (a spike) which identifies an event that has affected service for one or more users. This is a way to flag that there is a system issue.

reporting monitoring throughout the month. The additional roles are related to the creation of the report due to the large amount of additional reporting required and additional staff to chase internal DCC teams, Service Providers and SEC Parties for commentary where performance has deviated from desired performance levels.

5.3 Security Impact

The solution will be security assured during the implementation phase. This includes reviewing designs, test artefacts and providing consultancy to the implementation and test teams.

5.4 Technical Specifications

No change to DUIS, GBCS, or any other Technical Specification is expected.

5.5 Infrastructure Impact

To meet the requirements stated above will require additional infrastructure, potentially building a new database, while allowing for a new innovative monitoring and alerting solution. These costs will be facilitated by economies of scale, and will be absorbed into TOC running costs.

It should be noted that the solution as proposed should not add noticeable traffic or processing to the Smart Metering System or network.

5.6 Altering Working Practices

In order to release the Current BAU team working on providing the current version of the PMR and thus reduce the requirement to recruit extra Full Time Equivalents (FTE), DCC propose a discussion with the Operations Group on the moving of the publishing deadlines for other Regulatory Reports. This may reduce the requirement for hiring support staff.

5.7 Application Support

Impacts to Service Design, Service Management and other Application Support functions are anticipated, and included in this document.

6 Implementation Approach and Timescales

A key factor in planning and delivering this Modification's implementation and release is that the changes are neither part of the Smart Metering System, nor do they impact any Technical Specifications, such that they can be implemented separate from the now-standard SEC Release dates.

6.1 Modification Development Timescales

The original plan for the Modification development and implementation was agreed with SECAS at the start of the Modification process. The key dates and activities are as shown following.

Task Name	Duration	Start	Finish	Predecessors	Resource Names
Full Impact Assessment, Draft	15 days	Thu 16/07/20	Wed 05/08/20		DCC
Full Impact Assessment, Full	9 days	Thu 06/08/20	Tue 18/08/20	9	DCC
Panel Review Modification Report	0 days	Fri 14/08/20	Fri 14/08/20		SECAS
Modification Report Consultation	16 days	Mon 17/08/20	Tue 08/09/20	11	SECAS
Change Board	0 days	Wed 23/09/20	Wed 23/09/20		SECAS
Authority Decision	26 days	Thu 24/09/20	Thu 29/10/20	13	Ofgem
Implementation	80 days	Fri 30/10/20	Fri 26/02/21		DCC

Figure 3: Current Timelines for Modification, Including FIA Delivery

Once the FIA has been completed, DCC will sit down with SECAS to consult and plan out an approval, development and implementation timeline to achieve a February release. It is understood that Ofgem will use the outputs from April as part of the Price Control Review.

DCC note the significant risk associated with hiring new staff, and the Christmas-New Year period when contract staff are typically furloughed has pushed the potential Implementation period to 80 days.

DCC has not included the CR and PIA timelines in this section.

7 Costs and Charges

This section indicates the total quote for the application development stage for this Modification. Note these costs assume a standalone release of just this SEC Modification without any other Modifications or Change Requests, which is, in this case, truly reflective of what the test costs or programme duration will look like.

7.1 Design, Build, and Testing Cost Impact

The development and testing will not follow the PIT, SIT, and UIT pattern associated with a "conventional" SEC Release, and will not require the testing services of the System Integrator or Communication Services Provider (CSP). Changes will be confined to the DCC TOC environment, but will be fully tested as part of a DCC TOC release cycle.

7.2 Infrastructure and Software

The requirements will require additional licences for the DCC Reporting platform at £27,500 per year.

7.3 Applications Support

This refers to keeping the application maintained and running. It is quoted as a one year cost for the first year only.

7.4 February 2021 Solution Delivery Activities and Costs

£	Design, Test and Implement	App. Support (One Year)	Total
Phase Total, (25 Working days)	210,000	725,500	935,500
Phase Total, (10 Working days)	210,000	845,500	1,055,500

Note Design, Test and Implement are unchanged for all the Working Day delivery options.

The Application Support FTE totals are as follows.

Requirement 4	Application Support FTE
10 Working Day	10
20 Working Day	9
25 Working Day	8

Note that not all FTEs are at the same annual rate.

7.5 Potential August 2021 Solution Delivery Activities and Costs

Costs for the subsequent release correctly considered as being released in August 2021 will be provided as the Change Requests and PIAs are returned by Service Providers. There will also be an element of DCC TOC development and test costs, as well as further application impacts. These will be covered in the separate PIA document [5].

Appendix A: Glossary

The table below provides definitions of the terms used in this document.

Acronym	Definition		
CH, Comms Hub	Communication Hub	PIA	Preliminary Impact Assessment
CHF	Communications Hub Function	PIT	Pre-Integration Testing
CoS	Change of Supplier	PMA	Performance Methodology Approach
CPM	Code Performance Measure	PMM	Performance Measurement Methodology
CSP	Communications Service Provider	PMR	Performance Measurement Report
DCC	Data Communications Company	PPMID	PrePayment Meter user Interface Device
DSP	Data Service Provider	ROM	Rough Order of Magnitude (cost)
DUIS	DCC User Interface Specification	RSVP	Rate, Speed, Volume, Payload, a measure of performance of SRVs
ESME	Electricity Smart Metering Equipment	RTT	Round Trip Time
FIA	Full Impact Assessment	SEC	Smart Energy Code
FTE	Full Time Equivalent (Employee)	SECAS	Smart Energy Code Administrator and Secretariat
GBCS	Great Britain Companion Specification	SIT	Systems Integration Testing
GPF	Gas Proxy Function	SLA	Service Level Agreement
GSME	Gas Smart Metering Equipment	SMETS	Smart Metering Equipment Technical Specification
HAN	Home Area Network	SMKI	Smart Metering Key Infrastructure
IHD	In Home Display	SP	Service Provider
I&C	Installation and Configuration	SR	Service Request
KPI	Key Performance Indicators	SRV	Service Request Variant
MoO	Mode of Operation	SSI	Self Service Interface
MTBF	Mean Time Between Failures	S1SP	SMETS1 Service Provider
MTTR	Mean Time To Repair	TOC	Technical Operations Centre
OMR	Operational Metrics Review	TRT	Target Response Time
OPSG	Operations Sub-Group	TTO	Transition to Operations
		UIT	User Integration Testing

Appendix B: Supporting Information



OPSG OMR Report
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