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## OPSG Operational Metrics Review Project

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## 1. Executive Summary

This report 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 Performance Measurement Report (PMR).

Key findings and recommendations are summarised in Section 1.3 below.

### 1.1 Background

The motivation for this review has been the operational experience of the OPSG in using the set of metrics the DCC provides in the PMR. One of the responsibilities of the OPSG is to review the PMR each month and, in so doing, the following issues with the PMR Reporting have been identified:

- a. Instances where the reported performance is contradictory to the operational experience of Users;
- b. Instances where the reported metrics, although correct, do not appear to reflect the impact of performance issues on Users;
- c. Gaps in reporting whereby important aspects of operational performance are not being addressed by the current set of metrics.

OPSG members have therefore generally supported a review of the current metrics and the review project was approved by the SEC Panel on 11 October 2019.

### 1.2 Review Method

The project was resourced and managed by SECAS and was conducted over a period of four months. The DCC worked with the project team to provide valuable insight and subject matter expertise regarding DCC operational systems and performance monitoring. The review process was structured as two separate, but interrelated workstreams.

The first workstream focused on identifying 'Quick Win' candidate metrics which could be trialled and evaluated within the life of the project.

Concurrently, a more comprehensive review was conducted which encompassed a full review of operational experience and User requirements, and the identification of gaps and deficiencies. A survey was conducted with all SEC Parties to provide an initial assessment of User business priorities. This was followed by two workshops held with OPSG members to evaluate the responses, identify improvements and define new metrics to meet the needs of the User.

Outcomes from both workstreams were evaluated using an Evaluation Assessment Framework designed by the Project and approved by OPSG members. The Project has engaged with Ofgem throughout the review. Ofgem is currently reviewing the OPR as it is concerned it may not be reflecting customer experience or providing the right incentives to the DCC. The aim of the Ofgem review is to

ensure incentives placed on DCC are adequate and effective, and therefore the outcomes of this project will help to ensure that the most appropriate subset of SEC defined measures feed into the OPR.

### 1.3 Project Findings & Recommendations

#### 1.3.1 Reporting to reflect Business Priorities

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.

It is therefore recommended that:

- a. A SEC Modification is raised to report and measure service performance for User business processes through the use of Service Request Variants (SRV), to measure actual performance each month per business process. This would replace the current approach which takes an average performance across several Service Provider touchpoints, cutting across a number of business processes. Further detail on this recommended approach is contained in Section 3.3 of this report.
- i. An option for consideration would be to carry out a trial of the SRV metric approach to understand its effectiveness prior to instigating a formal Modification.

Through review and analysis of the PMR Code Performance Measure (CPM) 1 and CPM 3, an issue has arisen over the use of Test messages versus actual SRV to measure performance. It is unclear whether CPM1 and CPM3 are being measured correctly, and whether the use of Test messages per the Performance Measurement Methodology is delivering the original intent of the SEC. The Project recommends the following actions are undertaken to reach a definitive conclusion;

- b. Clarify the Target Response Time defined for the DSP Relevant Service Measures and assess whether the measure is fit for purpose.
- c. Undertake further investigation into the test messages used to measure CSP Round Trip Times (RTT) to understand whether they are a true and fair test measure of performance.

Users told the Project they wanted to see an appropriate measure of DCC Service Availability that reflects the impacts of the DCC failure to deliver Services. The current Metrics do not reflect this.

It is recommended that:

- d. A SEC Modification is raised, to measure end to end Service Availability across the DCC environment and Services, taking into account dependencies between each interface and its supporting sub-systems. Additionally, it is recommended that this is reported by Communication Service Provider region. This would replace the current approach of measuring each element of the different services and Service providers in isolation. Further detail on this recommended approach is contained in Section 3.5 of this report.
- i. A variant of this proposal would be to carry out a trial of the end to end Service Availability metric approach, to understand its effectiveness prior to instigating a formal Modification;
- e. A SEC Modification is raised to improve the timeliness of production of the PMR. This is to ensure the PMR remains operationally relevant to Users. The recommendation is that the

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deadline to produce the report should be reduced to within 10 Working Days of the end of the measurement reporting period. The current SEC requirement is within 25 Working Days;

- f. Changes / additions to SMETS2 for the PMR are, where appropriate, taken forward for SMETS1. This would ensure consistency across SMETS device types and make sure that reports are focussed on outcomes, reflective of the experience of Users at an industry reported level.
- g. A SEC Modification is raised to introduce a change to CPM5 to report resolution time of Incidents (Category 3,4, and 5) Individually per Reporting Period. The Project further recommends that the DCC supplements CMP5 with Indicators detailing
  1. The number of Incidents per Category 3, 4 and 5 raised in the reporting period
  2. Incidents per Category 3, 4 and 5 that met the Initial Target Response Time; and
  3. Incidents per Category 3, 4 and 5 that met the Target Resolution Time

As a result of the Ofgem review of its OPR, occurring simultaneously with the Project, the Project, Ofgem and SECAS, have determined that the most appropriate step was to raise a Draft Modification Proposal ahead of the Panel meeting. This ensures that the recommended changes required for the SEC can progress at the pace required to meet Ofgem's aim to publish its OPR direction in November 2020. This results in the newly revised OPR coming into effect in the 2021/2022 Regulatory Year. Draft Proposal DP122 for the modification of the SEC has therefore been raised.

The OPSG met on the 7 March 2020 and unanimously endorsed the findings and approach of the Project. The Project requests that the SEC Panel approves the recommendations as endorsed by the OPSG.

### 1.3.2 Other Project Recommendations

The Project has investigated how the current PMR measures are being applied to understand whether they are fit for purpose and being reported correctly, and how measurement and reporting exceptions are being applied. The following recommendations address these issues.

Further detail on these areas and recommendations can be found in Section 4 of this report.

- a. DCC Actions:
  - i. The Project has recommended that the DCC incorporates SMETS1 Services and Code Performance Measure (CPM) 9 into its proposed March 2020 consultation of the Performance Measurement Methodology (PMM) (both SMETS1 & CPM9 are missing from the current published version of the PMM v2.2. June 2018).
  - ii. The DCC undertakes a review and consultation of the Reported List of Service Provider Performance Measures (per SEC H13.2). The review should include a Service Provider Contract Management Assessment, to ensure that the right performance indicators are in place and being monitored effectively.

- iii. The DCC amends the layout of the PMR to reflect the outcome-based nature of the reporting recommendations made by the Project. Further proposals as to the potential layout are contained in Section 4.11 of this report.
  - iv. In addition to the amended PMR layout, the DCC should provide some insight into individual User performance. The Project recommends that a version of the DCC “12 pager” could be included for the key business process measures to highlight “best in class” via an anonymised league table. DCC Service Managers could then share with Users information pertaining to the individual User position, on a bilateral basis.
  - v. The Project recommends that the DCC Performance Measurement Exception List (PMEL) Governance Forum undertakes a review and provides an understanding to the OPSG of how the CSP are determining Exceptions in relation to DCC Communication Hub deliveries.
  - vi. The Project recommends that the DCC present the end-to-end PMEL governance process to OPSG to define the approach for the addition and removal of exceptions. The DCC should also provide a report to the OPSG on any ongoing PMEL governance forum discussions.
- b. OPSG Actions:
- i. The Panel approves that the OPSG and DCC establish a trial of data collected via the DCC Technical Operations Centre (TOC) to be used as a proxy to establish User Impacts from a Major Incident service outage based on historical installation transactional data. It is recommended that the output from the trial is reviewed within six to nine months of the start, to establish; a) its effectiveness and value, plus, b) if there are potentially new developments that could better inform the impacts of Incidents.

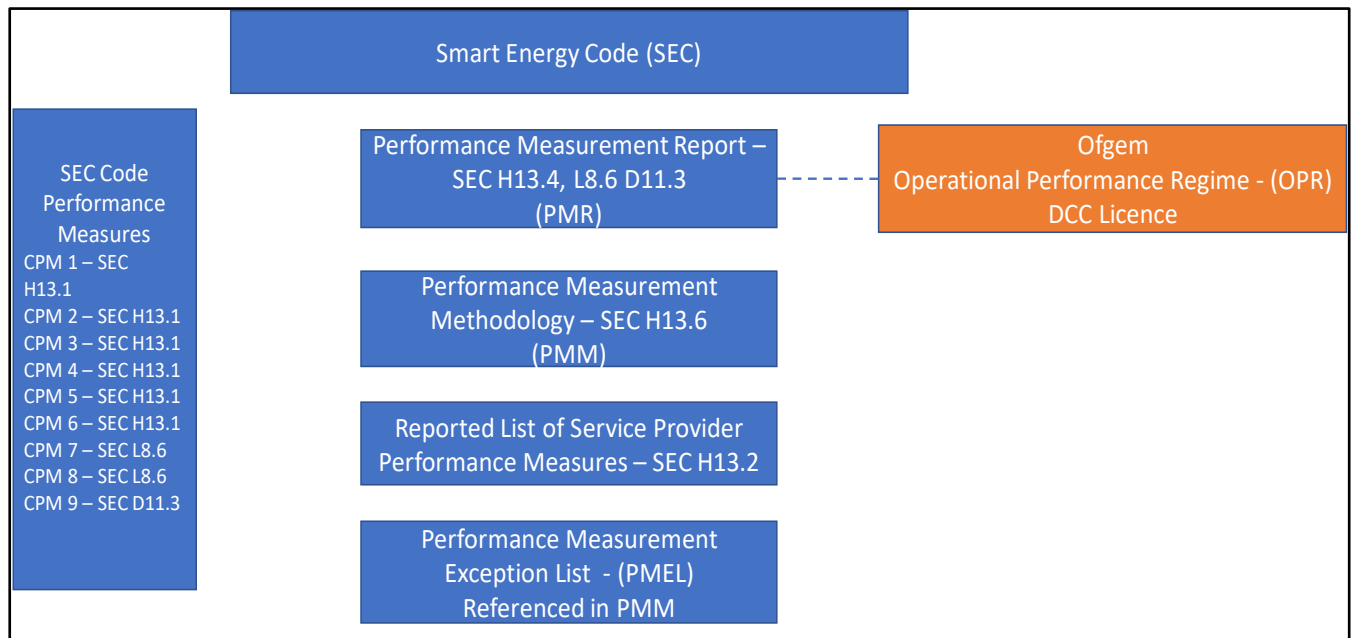
The Project requests that the Panel approves the actions set out above for the DCC and OPSG.

## 2. Project Approach

The motivation for this review has been the operational experience of the OPSG in using the set of metrics the DCC provides in the PMR. The PMR comprises a set of Code Performance Measures (CPMs) and lower level Service Provider Performance Measures (SPMs). Target and Minimum performance levels are defined for each measure.

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 specified in the Reported List of Service Provider Performance Measures document.

The diagram below provides a pictorial view of the performance reporting documents, provided and maintained by the DCC in accordance with the SEC and utilised by Ofgem as part of their annual Operational Performance Regime (OPR) review.



**Figure 1**

One of the responsibilities of the OPSG is to review the PMR each month, challenge any instances of performance apparently falling short of the requirement, and query the likely impact of any such shortfalls. The OPSG may also request a remediation plan from the DCC to focus attention on achieving the required level of performance.

The OPSG has encountered several difficulties in this review process. For example, OPSG members observed:

- Instances where the reported performance was apparently in contradiction to the operational experience of Users. In a number of cases, it became clear that this was due to the counter intuitive definition of certain metrics.
- Instances where the reported metrics, although reported correctly, did not appear to usefully reflect the impact of performance issues on Users.
- That, apparently, important aspects of operational performance were not being effectively addressed by the current set of metrics.

OPSG members have therefore generally supported a review of the current metrics. It has been recognised that an important input into such a review would be a period of real operational experience. Some such experience has now been gained, although it must be kept in mind that currently there is focus on installation and commissioning, rather than the routine operation of a full population of meters.

A project brief outlining the aims and objectives for an Operational Metrics review was endorsed at the OPSG meeting on 1 October 2019 and approved by the SEC Panel on 11 October 2019. The Project



Initiation Document was subsequently drafted during the initial stage of the project and approved by OPSG on 3 December 2019.

## 2.1 Project Purpose, Objectives and Deliverables

The purpose of the Project as defined within the project brief is:

*To identify improvements in the set of operational metrics defined in the SEC for the measurement of the delivery of DCC Services. The improvements shall reflect User requirements and priorities.*

The objectives of the project are set out in the table below.

Ref.	Objective	Success Factor
1	To agree the purpose of Operational Metrics and agree a set of Guiding Principles. It is envisaged that User business requirements will be a principal driver	Agreed purpose and Guiding Principles
2	To identify requirements for Operational Metrics, using information from OPSG Members and the broader Smart Metering community	Agreed Operational Metrics requirements
3	To analyse the PMR Issues Log, rationalise entries where appropriate and prioritise the resulting list	Agreed set of Operational Metrics issues
4	To identify new Key Metrics and improvements to existing metrics, including those that can be implemented quickly	Agreed set of key metrics (new and improved) and “quick wins”
5	To specify Operational Reports and agree with DCC	Operational Reports agreed with DCC
6	To agree a plan with the DCC to trial a subset of the new metrics	Agreed trial plan
7	To trial a defined set of improved metrics	Evaluation report
8	To produce an Operational Metrics report to Panel with recommendations and a plan for next steps	Agreed report
9	To ensure OPSG is fully engaged with the project work	Regular (monthly) reports agreed at OPSG; workshops, and information gathering from OPSG members

**Table 1**

Details of the deliverables formally documenting the outcomes of the project are provided below:

**Agreed Trialling Plan** – This project deliverable is a culmination of the preliminary work undertaken to review the operational metrics, identify obvious candidates, gain insight from Users (through one-to-one sessions, surveys and an initial workshop) and engagement with the DCC. The plan set out the resource schedule for the trialling tasks, the approach for implementing the improved metrics and the criteria for evaluation of the results. The plan was approved by the OPSG on 7 January 2020.

**PMR Issue Log Summary Report** - A summary of issues recorded in the log and identification of overarching themes. Issues concerning both code performance and service provider performance are included with special attention given to high impact issues and those with multiple occurrences.

**Final Report** – This document. A final report produced marking the culmination of the project. The report draws upon the PMR and issue log reviews, user inputs, and evaluation of trialling metrics to recommend improvements to operational metrics.

## 2.2 Project Scope

The following aspects of identifying an appropriate set of metrics were defined as being in scope and were considered by the Project:

- a. Identification of User business requirements and mapping to DCC Services
- b. Identification of suitable measures to support User business requirements
- c. Detailed design of proposed new metrics or improvements to existing metrics
- d. Trialling (where possible) of identified metrics and evaluation of outcomes
- e. Possible initial commentary on suitable standards of performance for the improved metrics.

The following aspects were defined as being out of scope and were not considered by the Project:

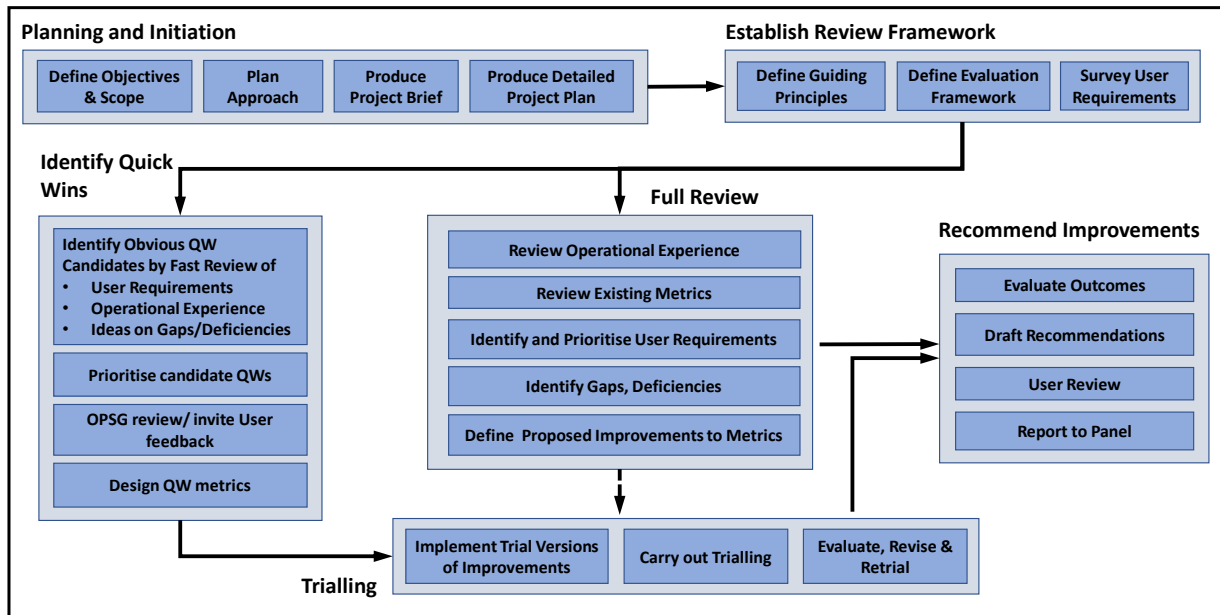
- f. Finalisation of performance standards
- g. Use of improved metrics and associated standards for incentivisation of performance.

The performance standards for the recommended measures will be defined subsequently, during the SEC modification process.

## 2.3 Project Review Framework

An initial task for the project was to create a detailed project plan based on the project roadmap and the tasks set out within the project brief. The Project road map can be found in **Figure 2** below and includes the following work packages:

- a. Planning and Initiation
- b. Establish Review Framework
- c. Identify Quick Wins and Trialling
- d. Full Review
- e. Recommended Improvements



**Figure 2**

During the establishment of the review framework phase, the Project designed an analysis framework and defined a set of guiding principles for the identification of improved metrics. An initial set of guiding principles was provided within the project brief. These were reviewed and expanded upon to ensure that consideration was given to all stakeholders including the DCC, Users, Ofgem and Consumers. The full set of guiding principles can be found below:

- f. The measures should principally be outcome based
  - i. Measures should principally be driven by User business requirements.
  - ii. Some metrics may reflect requirements for the management of service providers and DCC's own requirements.
  - iii. The metrics should deliver a clear, unambiguous, and comprehensive view of the service delivered within the period measured.
  - iv. The metrics should be reviewed to ensure they remain relevant and may be adjusted dependent on results.
- g. The measurement should be related to the User view of Services
  - i. The measure should reflect the operational experience and impact on Users in the measurement period.
  - ii. The metrics should be readily recognisable and traceable to a User operational process.
- h. The measures should cover the full operations lifecycle, as supported by DCC Services.
  - i. The Performance Measurement Report should provide a full view of the DCC Services for Users e.g. from ordering of devices, to installation of devices, through to decommissioning, and operational use services in the intervening period.

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- ii. Metrics should, where appropriate, be end-to-end through the service architecture, from a User perspective.
- i. The Measures should encourage outcomes as defined in SEC Obligations
  - i. The metrics should encourage both the DCC and Users to be compliant with the SEC.
- j. Metrics may have different lifespans
  - i. The overall framework should allow for flexibility in both the business needs and the reporting standards.
  - ii. The metrics and reports should be developed so that emerging priorities can be addressed and highlighted accordingly.
- k. Setting targets and standards
  - i. In setting the targets, the broader commercial framework, which the DCC manages with its Service Providers, should be kept in mind.
  - ii. The metrics will take account of the Ofgem Operational Performance Regime (OPR).
  - iii. In setting targets / standards, a view of the practicality of the reporting, and cost of implementation, for the DCC and SEC Parties, will be undertaken.
- l. Review and Representation
  - i. The metrics review should ensure input is received from a wide number of market participants.
  - ii. All Users should be afforded an opportunity to provide views, with the aim of wide representation to avoid potential bias.
- m. Consider the Consumer
  - i. The metrics should be cognisant of the potential impacts to consumers.

For the analysis framework the Project worked with the DCC to map high level business processes against Service Request Variants (SRVs), to establish which SRVs commonly sit against each Process. This framework was designed to be populated with User feedback, requirements and priorities, captured through surveys and workshops, that would lead to the identification and definition of improved metrics.

An initial survey designed to ascertain User's business priorities, views and requirements was devised and sent to all SEC Parties during this first stage of the project. The results of the survey are provided in Appendix 7 of this document.

## 2.4 Quick Wins and Trialling Approach

The Quick Wins workstream comprises the collection and review of what the Project perceived to be valuable improvements to the PMR that can be quickly implemented, trialled, and reviewed. These are linked to the identification of gaps and deficiencies within the existing metrics reported in the PMR, and to the identification of User requirements.

To ascertain User views and priorities, the Project conducted a User survey that was circulated to OPSG members and SEC Parties. The results from the survey, which can be found in Appendix 7.1, were used to prioritise candidate quick wins for the trialling phase.

A trial plan was published and approved by the OPSG. The plan laid out trialling guiding principles, roles and responsibilities, an overview of the process, and the trials timeline. These are summarised below:

- a. The Project defined a number of guiding principles for the trials, addressing the format of the trial report, its frequency and availability, User engagement, and evaluation.
- b. The Project collaborated with the DCC throughout the trialling phase and sourced the measured values of the identified metrics trialled from the DCC Technical Operations Centre (TOC). Additionally, given the scope of the quick wins was to identify improvements that could be implemented quickly, the Project agreed with the DCC, and informed the OPSG, that the trial would be limited to the data readily available from the TOC.
- c. The Project initially planned for three trial reports to be issued to Users, however, it was agreed in the second workshop with OPSG members to limit the trial to two reports, given resourcing and availability constraints.
- d. Each trial followed a process organised in three phases, namely, the identification of candidates, the collection of User feedback, and the revision of results and retrieval.
- e. Users were asked to provide feedback on each trial report within two weeks. After the collection of feedback, the Project held a teleconference open to all OPSG members to discuss and consolidate the feedback received.

Results from the trial have been extremely valuable and used to inform the next steps of the project, including the full review, and the recommended improvements. Section 3.1 reports on the findings and recommendations resulting from the trialling.

## 2.5 Full Review Approach

A more comprehensive review was carried out concurrently with the Quick Wins work. This encompassed a full review of the operational experience and user requirement, and systematic identification of gaps and deficiencies. The method for achieving this was to:

- a. Review the SEC requirements
- b. Review and evaluate the results of the User survey
- c. Conduct a workshop with OPSG members to gain a deeper understanding of operational experience and requirements
- d. Review the Performance Measurement Methodology (PMM) to identify gaps
- e. Conduct a second workshop with OPSG members to propose and prioritise improved metrics
- f. Evaluate and refine the proposed metrics to produce a set of recommended improvements

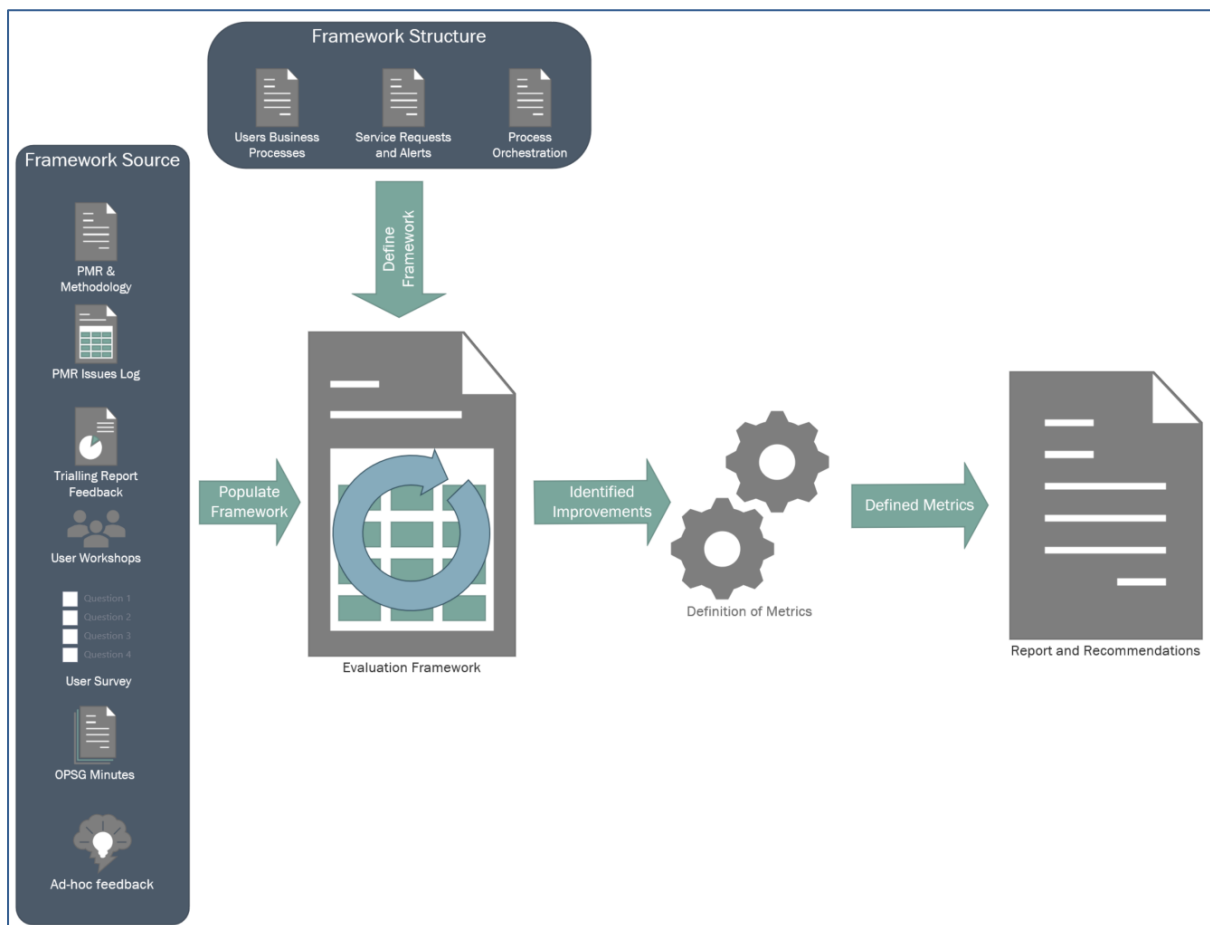
The Project worked with the DCC and Users to identify and recommend metrics for business processes using actual SRVs to measure performance. This aim was to ensure that the metrics reported within

the PMR were representative of actual performance and were also going to reflect the User's experience of using the service during the reporting period.

The evaluation framework structure set out in Appendix 7.3 was first populated with User priorities and requirements, against each of the business process areas. The Project then worked with the DCC and the SECAS Community of Experts (CoE) to define a set of new measures meeting the User requirements, that would provide the appropriate metric for the reporting of the DCC service levels.

The Project also captured requirements from User feedback that did not directly correlate to business processes including, for example, PMR format and layout, Incident Management and Contract Management. These requirements were recorded, assessed, workshopped and evaluated to make a recommendation for their inclusion within the PMR.

The diagram in Figure 3 below illustrates the evaluation process followed by the Project. The structure of the evaluation framework is built from the User business processes and the SRVs mapped to those processes. The source information for populating the framework is taken from the PMR and PMM review, the PMR Issues Log, User surveys and workshops, OPSG meeting minutes, trialling results and feedback, and ad-hoc feedback received during the project.



**Figure 3**

Evaluation of the source information provided a set of User requirements for assessment from which the improved metrics could be defined. The process involved working with the DCC and SECAS Community of Experts (CoE) to align the User requirements with the mapped business processes and Service Requests, to identify and define measures that would meet the requirement with an appropriate metric. Requirements that did not align with a particular business process, were analysed separately and the Project worked with the DCC and SECAS CoE to define appropriate measures to meet the requirements. These findings and recommendations are provided within the following sections.

### 3. Findings and Recommendations

The following section contains the findings and recommendations of the Project made during the ‘Quick Wins and Trialling’ and ‘Full Review’ phases of the review.

Details of the Quick Wins and Trialling findings can be found in subsection 3.1. Details of findings from the Full Review can be found in subsections 3.2, 3.3, 3.4 and 3.5. The Full Review subsections include a review of the PMM, Generic Outcome Based Measures, Specific Outcome Based Measures and Service Availability.

Where definitions of metrics are made within the following sections, they will be referred to as either Measures or Indicators with the following meaning:

- a. A “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.
- b. An “Indicator” is something the DCC is not accountable for but that provides a KPI that may be of value or use to the industry but cannot have a target attributed to it.

In line with User requirements, the Project recommends a number of service measures for reporting the delivery of DCC services. The Project also notes that Service Provider metrics also have their uses and values, both for Service Provider management and for transparency of Service Provider performance. The Project therefore recommends that the Service Provider metrics continue to be reported within the PMR.

#### 3.1 Quick Wins and Trialling

The Project issued two trial reports. The metrics trialled within each report were based on a prioritised list of User business requirements (informed by the DCC User survey) and on the identified gaps and deficiencies within the PMR. At a high-level, the reports focused on the following areas (for a more detailed breakdown, please refer to the table in Appendix 7.2):

- a. Trial report 1: Pre-Payment and Change of Supplier metrics.
- b. Trial report 2: Meter Installation Volumes metrics.

From the feedback received, the Project identified additional User priorities and requirements, which were used to inform the evaluation framework and the definition of new and improved metrics. These are summarised below.



### 3.1.1 Overall Requirements

These requirements have been identified by the Project as common across both trial reports. They are not specific to any metric trialled and relate purely to the level of information needed by Users to provide context for existing and/or new metrics.

- a. Users highlighted the importance of focussing more on failures and failure reasons behind the performance achieved by a metric. In the context of reporting, Users noted that focussing on failures would be beneficial for enabling operational improvement across the industry.
- b. Users noted that a split by region would allow better visibility of performance issues across the DCC Total System, and better correlation between reported measures and experienced operational performance.

### 3.1.2 Metric-specific Requirements

These requirements fall mainly within two categories;

- a. Enrichment of data provided: Users provided suggestions for improvements to the visualisation of the trialled metrics. For instance, Users highlighted the benefit in plotting Category 1 and Category 2 Incidents over the figures for meter installation volumes, and the use of line graphs to better represent deviation from the target performance levels.
- b. Inclusion of additional measures: Users expressed interest in expanding on the metrics provided in the trial reports and suggested a number of additional measures for the Project to explore further. For instance, with regard to Pre-Payment metrics, Users highlighted the benefit of including the measurement of alert 810E ('credit added locally') alongside SRV2.2 to understand if the top-up service is actually meeting end consumer needs successfully and in a timely way.

### 3.1.3 Request for Reporting for Individual Users

These requirements relate to suggestions and feedback provided by Users throughout the trialling period which fall outside the scope of the project, as they focus primarily on the provision of near real time monitoring capabilities to Users.

For details on the User-specific requirements discovered during trialling please refer to Section 4.9.

## 3.2 Full Review

### 3.2.1 Performance Measurement Methodology (PMM) Review

The measures within the Performance Measurement Report (PMR) are reported monthly and calculated in accordance with the PMM.

The PMM is a document that is developed and maintained by the DCC in compliance with SEC section H13.6. The PMM was last published in June 2018 at v2.2. It should be noted however, that the PMM is subject to an ongoing consultation by the DCC that began on 20 December 2019 and closed on 31 January. Responses are being considered by the DCC. The OPSG responded to the consultation, advising that the proposed changes in the consultation would suppress visibility of issues, and that any

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changes should await the outcome of the work of the Operational Metrics Project. In addition, the OPSG raised concerns in its response to the DCC Consultation that the OPSG was expecting the consultation to address the addition of SMETS1 services to the PMM. An OPSG member observed that, whilst the proposed changes in the DCC PMM consultation issued 20 December 2019, seek to address one aspect of the measurement of Power Outage Alerts, broader issues remain regarding the DCC ability to meet Distribution Network Operator requirements. These are being considered via SEC Modification 96.

The Project undertook a review of the PMM. The review was not a forensic examination of the calculations. The Project has, instead, tried to understand if the PMR metrics and supporting methodology remain appropriate, and to make recommendations for potential amendments and changes. It has not been possible to review the underlying Service Provider Contract Key Performance Indicators and Service Levels which the DCC manages and which feed the PMR. The Project has made requests to the DCC to gain further insight, but details have not been provided.

The Table below sets out details of the review and observations against the Code Performance Measures. Further details of the issues and proposed recommended action are contained further within the report in Sections 3 and 4.

Performance Measure ID	Description per SEC	Summary of Measurement Methodology	Observation
CPM1 Section H DCC Services H13.1	Percentage of On-Demand Service Responses delivered within the applicable Target Response Time.	Calculation of aggregate performance across a number of On Demand Services and Service Provider contract Service Levels. Uses Round Trip Test HAN Interface Commands.	Does not measure actual performance, rather a set of averages across a range of Service Provider Service Measures. Test messages used rather than actual Service Requests
CPM2 Section H DCC Services H13.1	Percentage of Future-Dated Service Responses delivered within the applicable Target Response Time.	Calculation of aggregate performance across a number of future dated Service Requests, across Service Provider contract Service Levels. Uses varying Round Trip Time Test HAN Interface Commands.	Does not measure actual performance. A set of averages are used to determine performance, across a range of Service Provider Measures. Test messages used rather than actual Service Requests
CPM3 Section H DCC Services H13.1	Percentage of Alerts delivered within the applicable Target Response Time.	Calculation of aggregate performance of % of DSP Alerts within Target Response Time and CSP Alerts delivered across DCC gateway within the Target Response Time.	Measures average rather than actual volume performance against Service Provider Service Levels.

CPM4 Section H DCC Services H13.1	Percentage of Incidents which the DCC is responsible for resolving and which fall within Incident Category 1 or 2 that are resolved in accordance with the Incident Management Policy within the Target Resolution Time.	Calculation of Category 1 & 2 Incidents (for which the DCC is responsible for resolving), closed within the month (Performance Measurement Period). In accordance with Incident Management Policy.	Measures resolution times of Incidents per the measure rather than impact of outage to Users. Does not directly measure the number of incidents occurring in a month
CPM5 Section H DCC Services H13.1	Percentage of Incidents which the DCC is responsible for resolving and which fall within Incident Category 3, 4 or 5 that are resolved in accordance with the Incident Management Policy within the Target Resolution Time.	Calculation of number of Category 3,4,5 Incidents for which the DCC is responsible for resolving, closed within the month that meet the Target Resolution Period divided by number of Category 3,4,5 Incidents for which the DCC is responsible for resolving closed within the Month.	Given the length of time to resolve, further transparency required to be sure that resolution is being reported against the correct month. Category 3, 4 and 5 resolution times calculated as an average.
CPM6 Section H DCC Services H13.1	Percentage of time (in minutes) when the Self-Service Interface is available to be accessed by all Users during the Target Availability Period.	Calculation is total time SSI available for the month.	This is measure only of SSI availability not wider Service availability.
CPM7 Section L Smart Metering Key Infrastructure & DCC Key Infrastructure L8.6	Percentage of Certificates delivered within the applicable Target Response Time for the SMKI Services.	Calculation of average weighted service level, of signing requests over Individual SMKI Service Interface reported in the month. Where demand is > 375k requests a manual adjustment is made.	Using weighted service levels, believe this is measuring averages and not time of actual communications of Certificates over the SMKI Service Interface.
CPM8 Section L SMKI Metering Key Infrastructure & DCC Key Infrastructure L8.6	Percentage of documents stored on the SMKI Repository delivered within the applicable Target Response Time for the SMKI Repository Service.	Calculates the number of SMKI Repository Requests where the SMKI Repository Response Time is less than or equal to the relevant Target Response Time over the number of SMKI Repository Requests received.	SMKI measure, the SMKI Repository Response Time calculated as the time at which the response to the SMKI Repository Request is sent minus the time at which the SMKI Repository Request is received.
CPM9 Section D Modification Process D11.1	Out of the DCC Assessments required to be completed during the Performance Measurement Period, how many were completed within the required timescales.	Needs to be added to PMM.	Needs to be added to PMM.

**Table 2**

Additionally, the Reported List of Service Provider Performance Measures which the DCC may modify through consultation with SEC Parties (per SEC Section H13.2), remains unchanged, since these were first designated by the Department of Energy and Climate Change (DECC) in 2015.

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The key findings from the review of the PMM are:

- a. PMM not updated since 2018 / SMETS1 & Code Performance Measure 9 missing from published PMM at time of review;
- b. Measures are calculated using average performance statistics / values; and
- c. Use of test messages instead of actual Users SRV to determine performance.

### 3.2.2 Performance Measurement Exceptions List (PMEL)

Within the PMR, reference is made to Performance Measurement Exceptions. These have grown exponentially over recent months, both the categories of exceptions and the number of Exceptions reported. The Exceptions are excluded from the monthly performance calculations, effectively providing the DCC Service Providers with a “let” against the Service Provider Measures in the PMR. For example, Communication Service Provider (CSP) North Performance Measure 1.4; Smart Meter Wide Area Network Connectivity Level, the CSP reports that Users have not followed the correct procedure when installing a Communications Hub.

Some of the Exceptions listed in the PMR are self-explanatory, however many refer to requirements in the DCC Service Provider contracts with the DCC. Recipients of the PMR are not party to the detail of the DCC Service Provider contracts. It has not been possible to get further understanding from the DCC during the period of the Project.

On investigation, Exceptions are being added or removed from the PMEL without any due consideration or apparent checks as to the impacts to Users or the PMR metrics. It is not clear whether the addition of items to the PMEL and their application within the monthly PMR, has been subject to any robust management controls. These issues have been the subject of discussion at the OPSG reporting meetings. The OPSG have determined that if an Exception is referenced in the monthly PMR but is not listed in the PMEL, the OPSG would reject the Exception, as its inclusion is not valid.

#### Proposed Action

The DCC is putting in place a PMEL Governance Forum to commence in March 2020. The PMEL Governance Forum is composed of members from the DCC internal Service Management, Regulation and Commercial teams. This will monitor and govern any new additions to, and removals from, the PMEL. In addition, the PMEL Governance Forum will provide a regular update to the OPSG.

The objective of the PMEL Governance Forum is to review the contents and application of the Performance Measurement Exclusion List (PMEL) and to discuss additions to and retirement of specific exclusions or exceptions.

The overarching purpose is to ensure that the PMEL is fit for purpose, and definitions are clear and understood. It is also to ensure that each entry, its associated business rules and logic remain valid and that the process is being applied consistently across Service Providers.

The PMEL Governance Forum will recommend changes to the PMEL where required which would then be fed back to the Service Providers for agreed implementation.

The PMEL Governance Forum will formally answer PMEL questions from OPSG, BEIS, OFGEM or wider DCC.

The Project notes that the OPSG has asked that the DCC apply an appropriate challenge to proposed additions to the list of Exceptions, this being seen as part of the contract management role of the DCC. The Project recommends that this is addressed by the DCC either through the proposed Governance Forum or separately. The Project further recommends that the DCC define within the process a mechanism whereby the OPSG has oversight of proposed changes to exceptions within PMEL and the provision of a suitable report to the OPSG on forum discussions.

#### Recommendation [1]

The Project recommends that the DCC present the end-to-end PMEL governance process to OPSG to define the approach for the addition and removal of exceptions. The DCC should also provide a report to the OPSG on any ongoing PMEL governance forum discussions.

#### Recommendation [2]

The Project recommends that in order that appropriate challenge is applied to additions and/or removal of items on the PMEL, that this is addressed by the DCC either through the PMEL Governance Forum or separately via Service Management contract performance activity.

### 3.2.3 PMM not updated since 2018; SMETS1 Missing from PMM

SMETS1 devices have been migrating to the DCC since August 2019 and services through the DCC have commenced. The DCC has been including measures in recent PMR reports but has not maintained the PMM in line with SEC obligation H13.6. These updates to the PMM would be made in accordance with SEC 13.6. The Project notes that the OPSG had previously requested that the DCC undertake the PMM review and consultation with regards to SMETS1 at its meeting 5 November 2019.

#### Proposed Action

The Numbers of migrated installations are steadily increasing, and it is important that the appropriate measures are developed, consulted upon and included in the PMM.

The Project recommends that the DCC incorporates within its planned consultation for March 2020, proposals for SMETS1 performance metrics.

#### Recommendation [3]

The Project recommends that the DCC incorporates within its planned consultation for March 2020, proposals for SMETS1 performance metrics.

### 3.2.4 PMM not updated since 2018: Code Performance Measure (CPM) 9 missing from published PMM

The SEC November 2019 release includes a new CPM: CPM9. This has yet to be included in the PMM.

CPM9 measures the time taken for the DCC to return its Impact Assessments as part of the SEC Modification process.

The New CPM9, as per SEC D11.3, is set out below.

No.	Code Performance Measure	Performance Measurement Period	Target Level Service	Minimum Level Service
9	Out of the DCC Assessments required to be completed within the Performance Measurement Period, how many were completed within the required timescales.	Monthly	100%	100%

**Table 3**

Ideally both this issue and the SMETS1 update to the PMM discussed in 3.2.3, should have been included in the 20 December 2019 consultation or earlier.

### Proposed Action

The Project recommends to the DCC that its planned consultation incorporates CPM9 metrics. These updates to the PMM would be made in accordance with SEC 13.6.

In addition, the Project recommends that the DCC also reviews and updates the Reported List of Service Provider Performance Measures (SEC 13.2).

#### Recommendation [4]

The Project recommends that the DCC incorporates into its planned PMM consultation in March 2020, its proposed metrics for CPM9 (per SEC H13.6).

#### Recommendation [5]

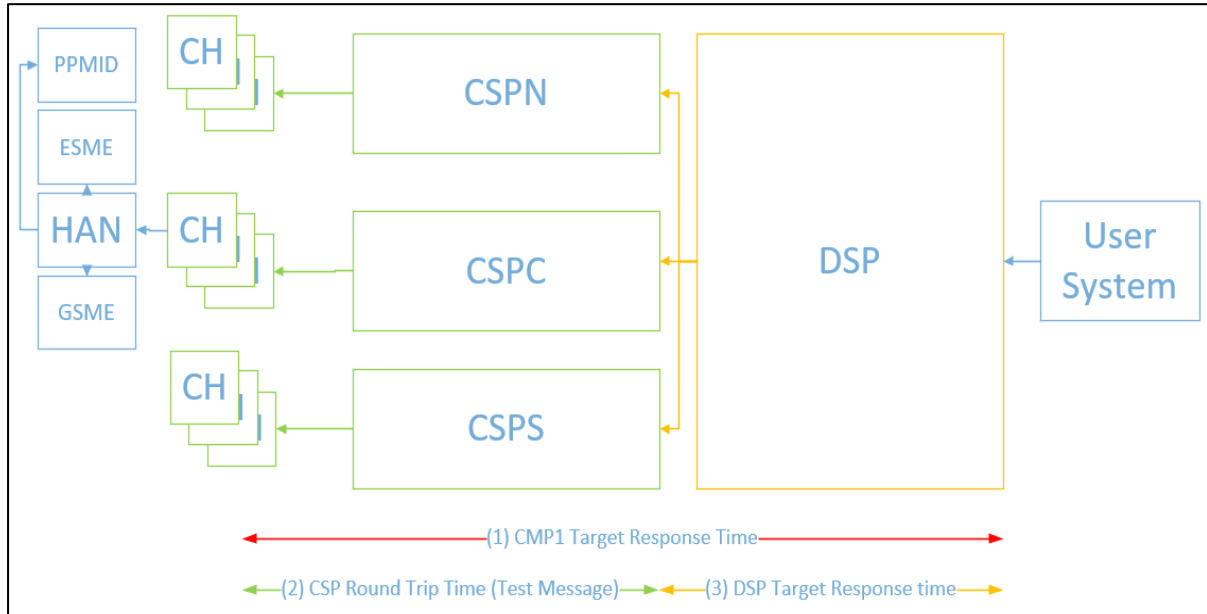
The Project recommends that the DCC reviews and updates the Reported List of Service Provider Performance Measures (per SEC 13.2).

### 3.2.5 Measures are calculated using average performance and use of test messages.

Section H3.14 of the SEC sets out the obligations of the DCC to Transform Critical Service Requests, send a User a Service Response and send a User an Alert within a Target Response Time. As set out in Section H3.15 of the SEC, the time taken by the Communications Hub Function in communicating with the other Devices forming part of the Smart Metering System, shall be disregarded.

The Project has concerns relating to the calculation of the Service Response time and the Relevant Service Measure defined within the PMM, particularly for on-demand Service Requests for CPM1 and Alerts for CPM3.

Figure 4 below shows the key components within the system for which these measures apply. In this example, CPM1 measures the Target Response Time (TRT) for an on-demand service request and is depicted as a red arrow (1) below. TRT is measured from receipts of the User request to sending the User a response. The measure is made up of a CSP Round Trip Time (RTT) shown as a green arrow (2) and a DSP Target Response Time shown as an amber arrow (3).



**Figure 4**

Within the PMM the DSP measure is referred to as the DSP Relevant Service Measure, and the Project noted the following relating to the calculation of Code Performance Measures:

- The DSP Relevant Service Measure measures "On-Demand Service Requests requiring a message to be sent to the Communication Hub". It is not clear if this is excluding SRVs sent to devices, in which case, this measure is not reflective of all On-Demand requests.
- The PMM defines the DSP Target Response Time (amber arrow (3) in Figure 4 above) measured as "the number of Service Request, Service Response, Acknowledgement and Alerts, as appropriate to the Relevant Service Measure, processed by the DSP that met the Target Response Time". The Project could not find an alternative definition for the Target Response Time to the one defined within Section H3.14(b) of the SEC. This definition for CPM1 is "sending a User a Service Response in respect of a Non-Critical Service Request for an On-Demand Service that is not a Sequenced Service, within the applicable time period set out in the DCC User Interface Services Schedule measured from receipt of the Service Request from the User". The definition for CPM3 is "sending a User an Alert, within 60 seconds measured from the Alert being communicated to (Device Alerts) or generated by (Non-Device Alerts) the Communications Hub Function". If these definitions of Target Response Time are used to measure DSP response time, then it is not an appropriate measure as the TRT applies to the overall DCC service as a whole (red arrow (1) above), not just the DSP.



The Project also noted the following relating to CSP Round Trip Times (RTT):

- c. The RTT is measured using test messages. The size of these messages is not defined, and it is therefore unknown whether they are representative of messages sent by Users.
- d. The processing overhead of using test messages is less than that required for live messages. The measure is therefore not representative of the CSP processing, packaging and unpackaging time for messages sent by the Users. The average processing time should be calculated from historic data and factored into the measure.
- e. Test messages are equally distributed throughout the day and therefore not reflective of typical User behaviour and use of the Service.
- f. The PMM states that “Test HAN Interface Commands shall be distributed equally, within a margin of error agreed with the DCC”. This margin of error is not defined within the SEC or PMM and therefore the impact of the margin of error is unknown.
- g. Responses not received within an upper limit agreed between the DCC and the DCC Service Provider are excluded from measure. This upper limit is not defined within the SEC or PMM.
- h. Within the PMM there are three CSP targets for “Test HAN Interface Commands” measuring Round Trip Times. Target RTTs are twenty-five seconds, two hours and twenty-two hours. An average of all three measures is used to calculate the CSP service level for successful delivery within the RTT. This target has no explicit correlation with TRTs defined within the DUIS Schedule.

### Proposed Action

In regard to the issues noted above, the Project believes that CPM1 and CPM3 Target Response Times are not being measured in a way that meets the intent of the DCC obligation, defined within section H3.14 of the SEC. The CSP measure must have suitable definitions of test messages, and the DSP response time target must be defined as part of the overall SEC defined Target Response Time. This can be achieved:

- i. When the TRT for an SRV is 30 seconds and the CSP TRT is 25 seconds, then the DSP Target Response Time should be 5 seconds. Therefore, the Project recommends that the DCC updates the PMM to clarify the DSP Target Response Time definition as being a part of the overall Target Response Time. *The Project has recently asked the DCC to clarify the Target Response Time definition and will take their response into consideration for the final report.*
- j. Use of test messages that are representative of the average size of SRVs. Average message size should be calculated based on the messages received and processed by the DCC within the last 3 to 6 months. *The Project has recently asked the DCC to clarify the size of test messages and will take their response into consideration for the final report.*

There are technical challenges with measuring the Target Response Time of SRVs that are destined for devices rather than just the Communications Hub. In particular, it is not currently technically possible to obtain timestamps for messages that exclude time spent within the HAN. However, by ensuring the DSP TRT is measured correctly and the CSP test measure is representative of live messages, improvements will be made to the current reported measure.

Further proposed actions and recommendations to improve measures, by addressing test messages and average performance statistics, are included in Section 3.3 and 3.4 of this report.

#### Recommendation [6]

The Project recommends that the DCC updates the PMM to clarify the DSP Target Response Time definition as being a defined as part of the overall Target Response Time.

#### Recommendation [7]

The Project recommends that the DCC provides clarification to OPSG on the size of test messages by the CSP. It is further recommended that where these are found not to be representative of User messages, a test message size is used that is based on the average message size processed by the DCC within the last 3 to 6 months.

### 3.3 Full Review - Generic Outcome based Measure - RSVP

In line with the project brief and the guiding principles, this review considered the Users' business requirements as a principle driver for identifying and recommending operational metrics for the measurement of the delivery of DCC Services.

These requirements were evaluated using the Evaluation Framework which identified a common theme. Users wanted to know the performance of the DCC service in terms of the success or failure of completing a business process, how long the process was taking to complete, and the impact of outages on the process. It also became clear that a high-level monthly measure of performance did not always provide the granular view of the DCC service performance that Users required.

The required performance measures align very closely to those currently implemented by the DCC TOC for the daily measurement and monitoring of SRVs transiting through the DCC User Interface. The TOC monitoring methodology measures the Rate, Speed, Volume and Payload of SRV and refer to this set of measures as RSVP.

The recommendation of the Project is that RSVP is used as an indicator of performance for identified key User business processes. The RSVP metric will measure the relevant SRVs, service responses, acknowledgements and alerts processing times within the DCC Total Systems.

A business process may be made up of several SRVs and the same SRV may be used across multiple business processes. Therefore, the response time of a single SRV may impact several business processes and this will be reflected within this set of measures. The Project has identified a number of the common SRVs that form part of a business process orchestration and will be used for the purpose of measuring performance. These common SRVs are ones that are typically required in order to perform the required outcome. These business processes and associated SRVs are shown in Table 4.

The performance of a business process will depend on whether the request relates to a SMETS1 or SMETS2+ device and should therefore be reported on separately. Not all SRVs are applicable for SMETS1 and these are shown within the table as n/a.

Business Process	Common Service Request Variants
Install and Commission	SR8.11 Update HAN Device Log

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ESME GSME CH	SR6.21 Request Handover of DCC Controlled Device (Update Supplier Certificates) (n/a) SR8.1.1 Commission Device SR <i>SR8.7.2. Join Service (Join GPF with GSME)</i> SR6.20.1 Set Device Configuration (Import MPxN) (n/a) SR1.1.1 Update Import Tariff (Primary Element) SR6.8 Update Device Configuration (Billing Calendar) SR8.14.1 Communications Hub Status Update Install Success (n/a)
<b>Change of Supplier (Gain)</b>	SR6.23 Updated Supplier Security Certificate Credentials Supplier Certificates SR1.1.1 Updated Import Tariff (Primary Element) SR6.8 Update Device Configuration (Billing Calendar)
<b>Change of Tenancy</b>	SR3.2. Restrict Access for Change of Tenancy SR3.5. Disable Privacy PIN SR1.1.1. Update Import Tariff (Primary Element) – Update Tariff & Price SR1.6. Update Payment Mode
<b>Tariff Updates</b> ESME GSME	SR1.1.1 Update Import Tariff (Primary Element)
<b>Pre-Payment</b> Top Up Device Remotely	SR2.2. Top Up Device (Update Balance with positive value)
<b>Security and Key Management</b> Device Certificate Update	SR6.15.2 Update Security Credential (Device) - Credential Type = Digital Signature (n/a) SR6.15.2 Update Security Credential (Device) – Credential Type = Key Agreement Key (n/a)
<b>In Life Device Management</b> Update Device Change of Mode CR – PP  Update Firmware  Activate Firmware	SR2.1 Update Prepay Configuration SR1.6 Update Payment Mode (Payment Mode = Prepayment) SR1.1.1 Update Import Tariff (Primary Element)  SR11.1 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 5 days of receipt of the Service Request."  SR11.3 Activate Firmware (Individual SR for each GUID for firmware activation). Note SMETS1 5day TRT.
<b>Logistics CH Ordering and Returns</b>	SR8.14.3. - Communications Hub Status Update. – Fault Return (n/a) SR8.14.4. - Communications Hub Status Update – No Fault Return
<b>Distribution Networks Post I&amp;C Activity</b>	SR6.15.1 Update Security Credentials (Update Network Operator Certificates) SR 6.5 Update Device Configuration (Voltage) SR6.22 – Configure Alert Behaviour (Update ENO Alter Configuration) (n/a)
<b>Alerts Management</b>	AD1 Power Outage Event 8F35 Supply Outage Restored 8F36 Supply Outage Restored – Outage >= 3 minutes

**Table 4**

For the purpose of measuring and reporting within the PMR, each measure is defined as follows:

**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 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 Project 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 particular 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 being addressed.

**Volume** – The total number of Service Requests or group of Service Requests Variants (SRVs) processed by the DCC Total System within the period.

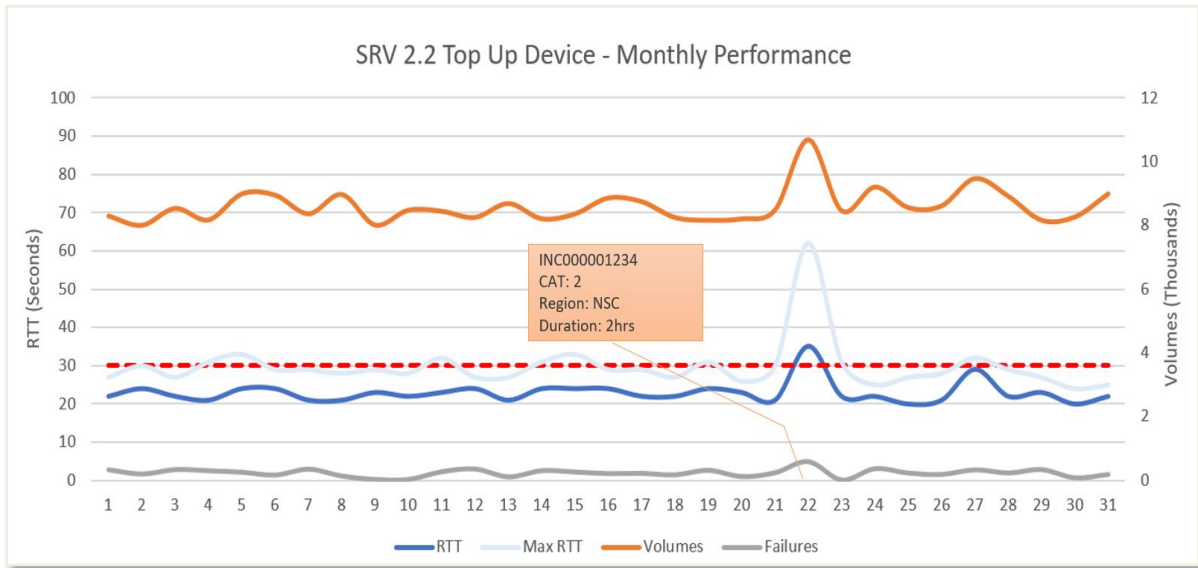
**Payload** – The success or failure of the Service Request within the period. A failure is recorded when a Service Response contains an Error Response Code relating to a communications failure or timeout (E20 or E21), or a subsequent failure alert code (N12 or N13).

In order to provide a visual representation of SRV performance over the month, the Project recommends the RSVP metric is reported within the PMR and 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. This is shown as a dotted red line on the example provided below.

As incidents and outages can impact performance and User experience, incidents impacting the metric are added to show the incident ID, category, region affected and duration of the system outage. Outages will also be reflected in the message volume metric and within the failure metric for partial service availability. Overall system availability impacting the whole system will be reflected within service availability metrics detailed in Section 3.5. Maximum RTT is also plotted to show the daily maximum range of SRV response times.

An example graph is shown in Figure 5. In this illustration, RTT for the SRV is consistent for the month except for the 22<sup>nd</sup> and 27<sup>th</sup>. On the 22<sup>nd</sup> there was an increase in volume of SRVs, an increase in the RTT and a higher number of failures than normal. The change in performance also coincided with an incident which could indicate a reason for the service degradation.



**Figure 5**

The Project also recommends that the key SRVs identified in Table 4 are also reported at a monthly level to provide a summary of performance over the period. The summary will calculate performance of identified SRV's to provide a representative metric for the service for the business process. The summary will include both Indicators and Measures as defined below. The measures are to be reported for SMETS1 and by region for SMETS2+ devices.

It is recommended that the following monthly metrics are recorded and reported within the PMR.

- An Indicator of the Monthly Average (Mean) and Median RTT *including* time spent within the 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 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 ESME devices. In the case of Install and Commission, the TRT target should also be provided for GSME devices. The TRT has the meaning given to that expression in Section H3.14 (Target Response Times) of the SEC. Targets are those defined in SEC Appendix E: DCC User Interface Services Schedule.
- An indicator of the total number (volume) of SRV requests recorded for the period.
- An Indicator of the percentage of SRVs that failed to be delivered due to a communications failure or timeout (E20 or E21) or a subsequent failure alert code (N12 or N13).

An illustrative example of these measures is shown in Table 5 below;

PrePayment - Top Up Device Remotely				
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%

Table 5

#### Recommendation [8]

The Project recommends that the PMR reports service performance for User business processes through reference to Service Request Variants (SRV), to measure actual performance each month for each of a defined set of User business processes. This would replace the current approach which takes an average performance across several Service Provider touchpoints, cutting across several business processes.

### 3.4 Full Review - Specific Outcome based Measures

The following section defines a set of measures and KPIs for each of the identified business processes designed to meet the Users' requirements. It is recommended that these metrics are made available to Users in addition to the RSVP metrics defined within the previous section. The column labelled "M/I" indicates whether the definition is for a Measure or an Indicator.

#### 3.4.1 Install and Commission

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: 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 CH/ESME/GSME and Region.
		I	Provide information on the total number of installs for the period against the predicted number of installs. The predicted installations will be based on historic DCC recorded installation volumes data and therefore may only be used for informational purposes.
		I	Provide information on the number of Install and Commission verses Install and Leave.
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 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.

**Table 6**

### 3.4.2 Change of Supplier

ID	Requirement	M/I	Definition
CoS1	Provide a measure of the success of the Change of Supplier Process.	M	Measure the percentage of successful SRV6.23 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.
		I	Provide the 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.

**Table 7**

### 3.4.3 Billing

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 percentage of successful SRV5.1 SRVs successfully delivered.
		M	Measure success of DSP to deliver read (or failure response) within 24hrs of start of execution time.
B2	Provide a measure of the success of on demand meter reads.	M	Measure the percentage of successful SRV4.6.1 SRVs successfully delivered.

**Table 8**

### 3.4.4 Pre-Payment

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	Use non-communicating devices identified during the meter read process as a proxy for gauging estate health.
		I	Provide a table showing the percentage attempts to top up before success. Provide metric for the 1 <sup>st</sup> and 2 <sup>nd</sup> attempts and the percentage of failures.  Where failure is above 5%, provide further details on the reason for the failure.

**Table 9**

### 3.4.5 Update 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 percentage of successful SRV11.1 SRVs firmware payload images successfully delivered to the CH.
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

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			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.

Table 10

### 3.4.6 Update CH Firmware

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

Table 11

### 3.4.7 Alerts

ID	Requirement	M/I	Definition
A1	Provide a measure of the success of delivering alerts.	M	Measure % of alerts successfully delivered within required SLA time (60 seconds). For alerts impacted by throttling, i.e. during an alert storm, this will measure all alerts sent to the User.
		I	Measure the individual alerts that fail to be delivered within the SLA time to identify the type of alert impacting overall performance.

Table 12

#### Recommendation [9]

The project recommends that specific outcome-based measures are added to the PMR to address the needs of the user and provide a Measure of performance as well as Indicators on the success of the key business processes.



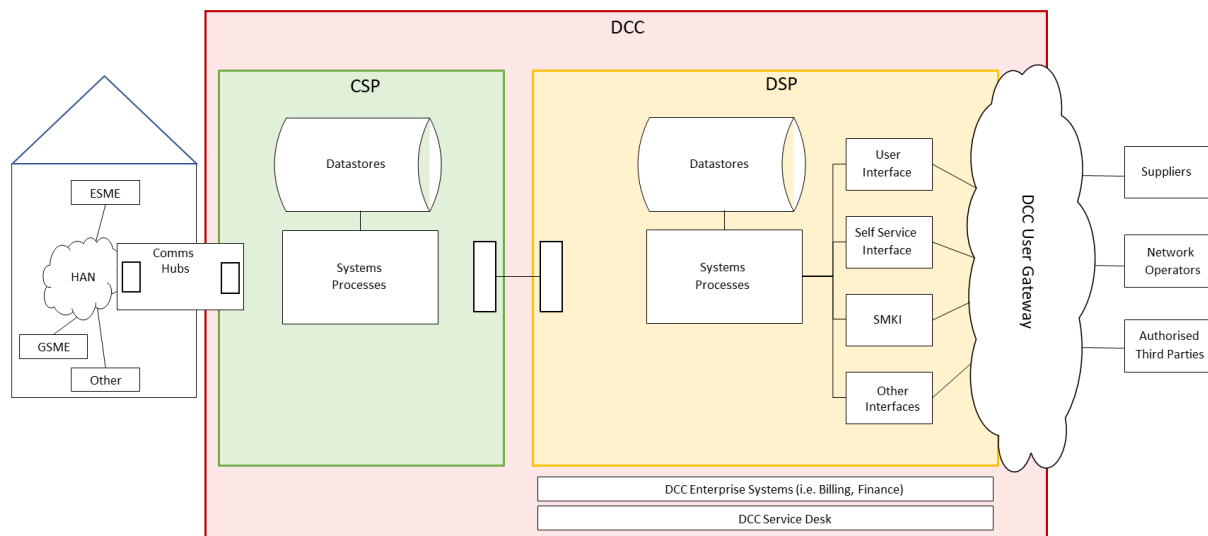
### 3.5 Full Review - Service Availability

The lack of appropriate measures of DCC Service availability has been one of the major complaints about the current PMR metric set. This has been an ongoing issue at OPSG meetings. Users have also voiced concerns at the Project workshops and through the additional feedback received.

Users need to see appropriate measures of DCC service availability reported within the PMR. Additionally, they expect a key measure on the DCC provision of services, to encompass Service availability across the various DCC Service Providers, and to be reflective of the impact of the DCC failure to deliver services. The current Metrics do not reflect this. The Project defines availability as the ability of services (in this case DCC services) to be accessible as needed, whenever and wherever they are required. However, in some circumstances, a particular service, or part of the system, may become unavailable whilst others may not be affected. This is in the case of partial service availability, which is addressed in this section, alongside considerations for measuring overall availability.

Figure 6 depicts the high-level end-to-end architecture of the smart metering infrastructure. The DCC is the body responsible for enabling communication between Devices and Users, as well as maintaining and providing additional services and capabilities, such as access to data (i.e. Registration Data), security, and monitoring and reporting.

Additionally, the DCC is responsible for the quality and availability of services provided to Users across the entirety of the DCC environment, which is highlighted in red in the Figure. For clarity, considerations and recommendations provided in this Section are specific to the DCC environment.



**Figure 6**

The End to End (E2E) services provided by the DCC span many different Service Providers, Service Provider Systems, and Processes. However, as far as Users are concerned, the managed services they are purchasing from the DCC is, in effect, a “black box”. Energy Suppliers, Network Operators, and Authorised Third Parties are not so much concerned as to how the DCC Total System works, but



are concerned that it is available as expected, and meeting, as a minimum, the Smart Energy Code (SEC) Section H.

The Project undertook a review of current PMR service availability measures, and noted that:

- a. Among the eight Code Performance Measures, there is currently only one (CPM6) reporting on availability, and it's specific to the Self-Service Interface (SSI). In addition, CPM6 is calculated exclusively from DSP metric 2.4 'Service Availability – Self Service Interface'.
- b. Among the Service Provider Performance Measures, DSP reports on six different service availability metrics, related to availability of a number of DCC interfaces and services (i.e. DCC User Interface, DCC Data Service).
- c. Among the Service Provider Performance Measures, CSP North, Central and South only report on the availability of DCC WAN Gateway Interface.

From these observations, it became apparent that service availability is only calculated independently on a Service Provider basis. This approach, however, does not consider dependencies between Service Provider systems within the DCC Total System, and how they could affect User operations. To this end, the Project took a User-centric view of the DCC services and identified several recommendations for improving the reporting of service availability within the PMR.

### Proposed Action

Note. For the avoidance of doubt, and to simplify the discussion presented in this section, the Project will refer to the combination of each DCC interface and supporting sub-systems as a 'Service'. Thus, it can be said that the DCC provides a number of Services to Users, which are dependent on the availability of a particular interface and its supporting sub-systems (i.e. servers, databases).

The Project identified the following interfaces, through which the DCC provides their Services, as main 'points of interaction' between Users and the DCC infrastructure:

- d. the DCC User Interface – allows end-to-end communication between Users and Devices
- e. the Registration Data Interface – allows communications between the DCC and Registration Data Providers
- f. the SMKI Repository Interface – allows communications to be sent from and received by the SMKI Repository
- g. the SMKI Services Interfaces – four separate interfaces that ensure SMKI services are made available at all times, subject to planned maintenance
- h. the Self-Service Interface (SSI) – allows access to, for instance, the SMI, the incident management log, and the CH OMS, among other services

As shown at a high level in Figure 6, each interface connects to a number of sub-systems (i.e. databases, servers, communication networks) to support a particular Service. Users are not concerned with how these dependencies are configured, but are concerned that the Service provided by each interface and its supporting sub-systems is available as expected.

As highlighted in Figure 6, due to the separation between each DCC Service, during an incident some Services might be unavailable or degraded, while others might not be affected at all. For instance, Users may experience a degraded service, or no service, through the Registration Data Interface, when the

Registration Data database is compromised due to an outage. However, this would not impact the ability of Users to communicate with Devices via the DCC User Interface.

To this end, the Project recommends that service availability is measured as a percentage for all the above Services. The Project believes this approach to be more reflective of the performance of the DCC and its Service Providers, as it would account for the availability of the overall Service provided to Users through each interface and supporting sub-systems.

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. As previously mentioned, it is possible that, in the case of partial availability, some Services provided by the DCC through a single interface (i.e. DCC User Interface) may be affected, whilst others may not. For instance, specific SRVs might experience a high failure rate thus impacting Users when carrying out a specific key business process, whilst other key business processes may be available and undisrupted.

The Project acknowledges the importance of reporting on partial availability, and believes RSVP measures, discussed in Section 3.3, to be able to record and reflect the impact of a degraded service on the key business processes defined in Table 4, through the 'Payload' metric in particular, which reports on the success or failure of the Service Request (or group of SRVs).

Furthermore, the Project recommends that those key business processes impacted by partial availability, are reported alongside the metrics and indicators for service availability of a particular Service. For example, alongside the percentage of availability for the User Interface, Users would be able to quickly reference business processes that experienced an impact during the reporting period. An illustrative example of this is provided in Table 13. 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 report. For instance, if SR8.11's could be successfully processed by the DCC User Interface, but could not be delivered to the Device due to an outage affecting part of the CSP infrastructure, then the business process associated with the particular Service Request (in this example Install and Commission), would be reported as having been unavailable during the reporting period. This method does not rely on the DCC actually processing service requests, but rather this is a measure that the DCC has the potential capability to process any request successfully and fully.

In addition to the considerations above, The Project further recommends that:

- i. 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, to 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.
- j. The view for service availability, where relevant, is split by CSP regions, for better correlation with Users operational experience.
- k. 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. The Project 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). With regards to weekends, the Project 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. The Project believes that reporting service availability by time of day and providing a clear distinction between hours of operational activity versus hours of operational inactivity, better reflects User typical behaviour and use of the system. In addition, it would be better to show the correlation between service unavailability or partial availability and User's experienced operational impact during the reporting period.

- l. Service downtime for each interface and its supporting system components is measured in minutes, and then expressed in hours over the reporting period (i.e. 235 minutes of unavailability in a month would equate to a total of 3.91 hours).
- m. The Project recommends that from the total time of service unavailability (expressed in the formula as the Unplanned Downtime), the percentage of overall availability for a particular Service is calculated as follows:

$$\text{Service Availability} = \frac{\text{Uptime} - \text{Unplanned Downtime}}{\text{Uptime}} [\%],$$

where  $\text{Uptime} = \text{Planned Uptime (total time in the month)} - \text{Planned Maintenance}$

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.

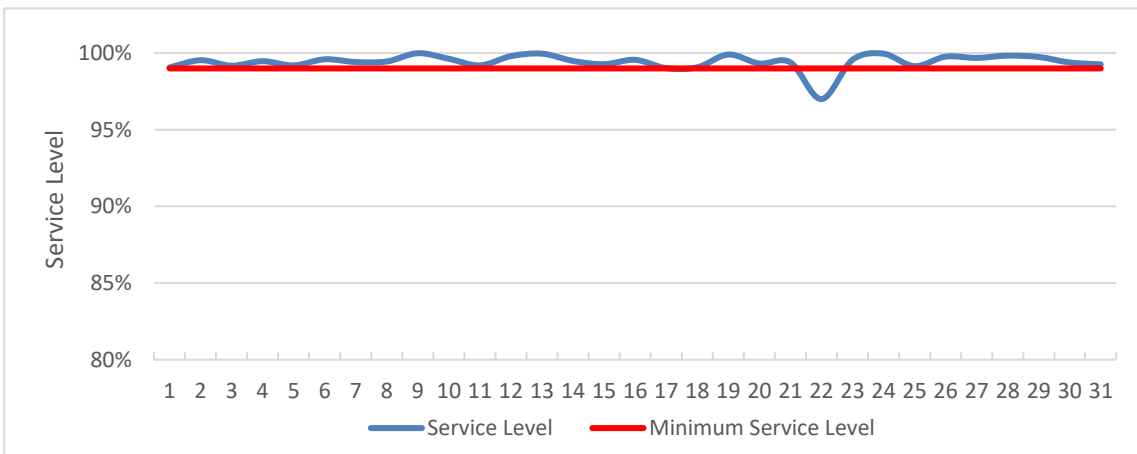
*Note.* In accordance with SEC Section H8, the DCC “shall (insofar as is reasonably practicable) undertake Maintenance of the DCC Systems in such a way as to avoid any disruption to the provision of the Services (or any part of them).” Additionally, the DCC shall limit Planned Maintenance of the DCC Systems generally to not more than six hours in any month (including maintenance of the SSI). Given this allowance, the Project 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.

- n. In addition to defining a basis for measuring service availability across the DCC environment, the Project focussed on measures to describe the reliability of the Service, which the Project believed to be important for producing a clearer picture of the Service performance. Reliability is a measure that quantifies the likelihood of a service to operate as intended and can be seen as the probability of success and ability of a system to remain operational, without failures, for a defined period of time. The Project recommends that reliability measures are produced 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:
  - i. Total Number of Incidents (category 1 to 5) across the reporting period. Additional Indicators to inform Users on the reliability of the DCC services would include the overall number of Category 1 and 2 incidents per Reporting Period (the Project notes that the DCC already provides summary information about Category 1 & 2 Major Incidents to Users voluntarily, which is very helpful). The Project 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.

- ii. Average amount of downtime per event (related to the Mean Time To Repair (MTTR) measure, which is defined as total maintenance time over the total number of repairs).
- iii. Mean Time Between Failures (MTBF), calculated across the reporting period, as operating time (hours) over the total number of failures.

An illustrative example of the recommended Measures (M) and Indicators (I) proposed by the Project for the reporting of service availability and reliability of each interface is provided in Table 13 below:

Service Availability DCC User Interface – Service Level					M/I
Monthly Performance Measure	Previous Service Level	Service Level	Target Service Level	Minimum Service Level	
Service Availability – DCC User Interface	99.95%	99.40%	99.95%	99.00%	M
Service Availability DCC User Interface – Monthly View					
<div></div>					I
Service Availability DCC User Interface – Time of Day Breakdown					
Monthly Performance Measure	Hours of Operational Activity		Hours of Operational Inactivity		
Service Availability – DCC User Interface	98.80%		100.00%		I
Service Availability DCC User Interface – Service Availability by Region*					
*N/A, regional split not applicable for this interface					
Monthly Performance Measure	Region A		Region B	Region C	
Service Availability – DCC User Interface	99.00%		99.80%	99.40%	I

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Service Availability DCC User Interface – Reliability				
Total Number of Incidents (of which cat. 1,2) (of which cat. 3,4,5)		4 (1) (3)		I
Mean Time To Repair (MTTR)		3.02 hours		I
Mean Time Between Failures (MTBF)		8.09 days		I
Service Availability DCC User Interface – Business Processes View				
Monthly Performance Indicator	Previous Service Level	Service Level	Status	
Install and Commission (ESME)	99.80%	99.40%	Degraded	I
Install and Commission (GSME)	98.20%	99.90%	Available	I
Change of Supplier (Gain)	XX.XX%	XX.XX%	Available	I
Change of Tenancy	XX.XX%	XX.XX%	Available	I
Tariff Updates	XX.XX%	XX.XX%	Available	I
Billing (Scheduled)	XX.XX%	XX.XX%	Available	I
Billing (Unscheduled)	XX.XX%	XX.XX%	Available	I
Pre-Payment	XX.XX%	XX.XX%	Available	I
Security and Key Management	XX.XX%	XX.XX%	Available	I
In-Life Device Management	XX.XX%	XX.XX%	Degraded	I
Logistics CH Ordering and Returns	XX.XX%	XX.XX%	Available	I
Distribution Networks Post I&C Activity	XX.XX%	XX.XX%	Available	I
Alerts Management	XX.XX%	XX.XX%	Available	I

**Table 13**

#### Recommendation [10]

As a measure for overall availability of DCC Services, the Project recommends that service availability is measured as a percentage of all the Services, thus taking into account the dependencies between each interface and its supporting sub-systems (i.e. servers, databases).

#### Recommendation [11]

As a measure for partial availability, the Project recommends the use of RSVP metrics (described in Section 3.3) to report on the impact of degraded service on a particular key business process.

Additionally, the Project recommends that key business processes impacted by partial availability are reported alongside the metrics for service availability of a particular Service.

#### Recommendation [12]

The Project recommends that a monthly view of end-to-end service availability for each of the Services is reported on as a single percentage figure, as well as depicted as a line graph across the days of the month.

#### Recommendation [13]

The Project recommends that the view for service availability, where relevant, is split by CSP regions, for better correlation with Users operational experience.

#### Recommendation [14]

The Project recommends that service availability is reported by time of day. The Project believes that providing a clear distinction between service availability during hours of operational activity versus hours of operational inactivity, better reflects User typical behaviour and use of the system.

#### Recommendation [15]

The Project recommends indicators for measuring the reliability of the Service, in addition to its availability. The measures proposed are: Number of downtime events across the reporting period, Mean Time To Repair (MTTR), and Mean Time Between Failures (MTBF).

## 4. Additional Areas of Review

### 4.1 OPSG PMR Issues Log

Review and analysis have been undertaken of the OPSG PMR Issues Log, containing issues noted by the OPSG for the period April 2018 to July 2019. The types of issues that have been recorded on the PMR Issues Log are wide ranging. These include basic errors such as data within reporting tables not adding up, and more substantive issues such as downtime from Major Incidents not reflecting the impact to User business operations.

At the time of the review there were 74 items on the PMR Issues Log. From analysis undertaken of the issues, and the responses provided by the DCC, the Project considers that 62 of these items can be closed. The Project has not yet received definitive responses to the remaining 12 items from the DCC. These are detailed in Appendix 7.4.

The Project has been in discussion with the DCC regarding updates to close the remaining 12 open items. These require a confirmation that the action has been completed e.g. internal investigation by DCC with confirmation of what and when, so that agreement to close or some further action can be agreed.

The table below provides a breakdown of open and closed issues.



Volume	Status	Rationale
32	Closed	Information received from DCC has enabled closure. *
6	Closed	General comments from SECAS PMR review - No further action needed to resolve.
18	Closed	Live issue on OPSG Issues Log e.g. Firmware Updates, Alerts.
5	Closed	Project and DCC have agreed a definition of No Data/No Events.
1	Closed	Issue overseen via BEIS Governance - Meter noise.
12	Open	Awaiting DCC update e.g. query re problem record still outstanding. Annex 1 contains further detail of open Issues.

**Table 14**

\* Examples of PMR issues closed as a result of DCC information provided include:

- a. PMR issues resulting from Major Incidents where part of DCC service experienced an outage but not reflected in overall report.
  - i. DCC has reported according to PMR methodology. The Project has a wider objective to review and propose an ongoing metric for service availability, and Major Incident impacts to Users to remedy for future reports.
- b. Report Data Tables not adding up correctly.
  - ii. DCC has confirmed the values in tables were incorrect and or confirmed as errors in older reports (April 2018). The Project is assured additional checks are now in place within DCC to avoid these errors reoccurring.
- c. RDP Data issues – 2018.
  - iii. PMR reports for April/May 2018 reported issues with RDP Data. The DCC implemented a refresh, which has corrected original issues.

The Project has not looked at the root cause of issues on the OPSG PMR log, for example, ongoing issues with delivery of Firmware payloads and Alerts to Users. Work continues under the OPSG Issues log to resolve issues contributing to failures to meet the PMR metrics. The review has sought to establish resolution of issues where possible, and to make recommendation to mitigate the impact of key themes and issues, that have been noted as occurring regularly.

The key issues noted within the OPSG PMR Issues log are listed below, two of these overlap with investigative work undertaken by the Project. Where this has occurred, references are signposted.

- d. PMR Exceptions:
  - i. There is an issue re the use of PMR Exceptions applications and reporting consistency.
  - ii. The DCC is putting in place a PMEL Governance Forum to commence in March 2020. The Governance Forum is composed of members from the DCC internal Service Management, Regulation and Commercial teams. This will monitor and govern any new additions to, and removals from, the PMEL, and will provide a regular update to the OPSG each month.

- iii. Further detail on this issue is discussed in section 3.2.2 in this report. The Project recommendation (recommendation 1 in this report) is that a member of the OPSG has a seat at the DCC PMEL Governance Forum to monitor the PMEL Governance Forum activities.
- e. Definitions within measure reports:
  - i. Several Code Performance Measures are reported as “No Data No Events”, however the comments in the PMR Issues Log suggests that the rationale for the use of this terminology is not consistent.
  - ii. The Project has agreed a working definition with the DCC to get a common understanding and application of these terms:
    - i. The term “no data” will no longer be used;
    - ii. “No Events” will only be used where “a Service Level entry of “No Events” indicates that, although the Performance Measure is applicable, no relevant events occurred during the Measurement Period and there is therefore no data to report upon”.
- f. Incidents and Availability Measures:
  - i. The Project has worked with the DCC to understand how availability may be expressed to reflect DCC User business process impacts resulting from a Major Incident occurrence.
  - ii. Further detail resulting from this investigation is in section 4.2 along with recommendations to mitigate and address issues. These form recommendations 14 and 15.

A general observation, from the analysis of the OPSG PMR Issues Log, is that, given the age of the issues, it would be useful for SECAS to be concise about the detail when adding issues to the log. A considerable amount of time has been spent trying to understand the original problem that arose at the time. As the PMR Issues Log continues to be populated and managed by the OPSG, the Project recommends that more concise and comprehensive issues are detailed, to facilitate the DCC and OPSG in resolution and ongoing monitoring.

## 4.2 Incident Management

Feedback in workshops from energy Suppliers highlighted concerns with the reporting of Major Incidents (Category 1 & Category 2) by the DCC.

These are reported in the PMR, under a measure that determines if the DCC has resolved the Incidents within the Target Resolution Time. These are set out in SEC Appendix AG Incident Management Policy. There are differing Target Resolution Times for SMETS1 & SMETS2 related Incidents.

The issue raised by Users in relation to the reporting of Incidents, particularly Category 1 & Category 2 which are reviewed by the OPSG, is that the PMR only measures the Target Resolution Time and, not the wider impact to Users.



For example, a Major Incident may be declared at 08:15 and last for only half an hour until it is resolved within the DCC environment. However, if the incident impacts SMETS2 meter installations, energy Suppliers can be impacted by the loss of up to half a day's work. The reporting in the PMR does not reflect this.

Steps have been taken by the DCC to provide both the Incident resolution time and actual outage times in the PMR reports for Category 1 and Category 2 Incidents. However, some energy Suppliers may suggest that the actual outage time of itself is not always reflective of the impact to them.

The Project recommends that data collated by the DCC Technical Operations Centre (TOC), including the Incident resolution time and outage times, can be used as a proxy for the scale of the issues caused by an individual incident, when combined with historical installation transactional data. The Project recognises this may not be a wholly accurate method, as resolution and outage time can be impacted by several factors. These include, but are not limited to, User activity impacted by weather events, User system issues and device combinations, but the Project believe this will deliver a degree of confidence to Users that the impact of DCC service outages is being highlighted in future PMRs.

The Project further recommends that if the action noted above is taken forward, it is reviewed in six to nine months' time to understand; a) its effectiveness and value, plus, b) if there are potentially new developments that could better inform Users of the impacts of Incidents.

The Project assessment is that in a steady business as usual state, the DCC should not be experiencing regular monthly Major Incidents. Having reviewed with the OPSG at its reporting meeting on 23 March 2020, it was noted that the current volume of Major Incidents is running at six per month. The volume per month is based on the current run rate reported by the DCC to the OPSG and SMDG across SMETS1 & 2, and Category 1 & 2 Major Incidents. The Project recognises that issues will continue to arise in the short to medium term as SMETS1 meters complete their migration, and stability of SMETS2 operations occurs. OPSG members have expressed a desire for the DCC to provide Indicators within the PMR on the number of Category 1 & 2 Major Incidents raised during the reporting period.

Feedback from DNO members highlighted a lack of transparency in the reporting of Incident Category 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. The Project recommends that in order to improve transparency and confidence in the reporting provided for incident Category 3, 4 and 5 that CPM 5 is amended to show individual incident resolution times for each incident category. This would be supplemented by further Indicators detailing;

1. the number of Incidents per Category 3, 4 and 5 raised in the reporting period,
2. those that met the Initial Target Response Time; and
3. those that met the Target Resolution Time

#### Recommendation [16]

The Project recommends that data collected by the DCC TOC, for Incident resolution and outage times combined with historical SRV transaction data, is trialled as a proxy to provide a view of the impact of outages on Users. The Project recommends that this is reviewed in six to nine months to check a) effectiveness, and b) any potential new developments that may better inform Users of the impacts of Incidents.

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#### Recommendation [17]

The Project recommends that the DCC provides Indicators within the PMR on the number of Category 1 & 2 Major Incidents raised during the reporting period.

#### Recommendation [18]

The Project recommends a Modification is raised to introduce a change to CPM5 to report resolution times of Incidents (Category 3, 4 and 5) Individually per Reporting Period. The Project further recommends the DCC supplements CPM5 with Indicators detailing;

1. the number of Incidents per Category 3, 4 and 5 raised in the reporting period,
2. Incidents per Category 3, 4 and 5 that met the Initial Target Response Time; and
3. Incidents per Category 3, 4 and 5 that met the Target Resolution Time

### 4.3 Release and Defects Management

The DCC is responsible for implementing system changes either as a result of a SEC Modification, or through a need to update the DCC Internal System or the Parse and Correlate Software. For the implementation of an approved Modification Proposal, the DCC are obliged to co-operate with the Panel in planning and implementing SEC Releases in accordance with the SEC Release Management Policy (SEC Section D10.10). In respect of the DCC Internal Systems and the Parse and Correlate Software, the DCC has a SEC obligation to develop a DCC Release Management Policy (SEC Section H8.10) for the management of such a release.

The OPSG have raised concerns that system changes are being released into live with a number of known defects which impact Users of the system. The OPSG have also noted that, following a system release, further defects are identified that impacts the Users of the DCC systems and services.

The Project notes that the current available version of the DCC Release Management Policy is dated March 2016 and, through enquiry with the DCC, the Project has become aware that the policy is currently in the process of being updated. The DCC are obliged to consult with Parties, RDPs and the Technical Architecture and Business Architecture Sub-Committee before making any changes to the DCC Release Management Policy (SEC Section H8.11), and the Project sees this as an ideal opportunity to bolster the policy by introducing defect prevention processes within the release management model. Defect prevention during the early development phase is a far more efficient and cost-effective method of eliminating defects than finding them later in the release cycle or once the system has gone live.

To monitor the ongoing effectiveness of the DCC released system changes, the Project recommends that the DCC measure and report within the PMR the number of known defects that are released into the live system during the reporting period. The number of defects should be grouped by the severity level of each defect.

In addition, the project recommends that the DCC report a monthly metric for the number of known and accepted defects within the live system. Again, the number of defects should be grouped by severity level.

#### Recommendation [19]

The Project recommends that the DCC measure and report within the PMR the number of known defects that are released into the live system during the reporting period. The number of defects should be grouped by the severity level of each defect.

The project recommends that the DCC report a monthly metric for the number of known and accepted defects within the live system. Again, the number of defects should be grouped by severity level.

## 4.4 SEC Modifications – Current and Future

The Project identified four SEC Modifications that manage the traffic that travels both in and out of the DCC system. This is managed by throttling the flow of traffic and therefore has the potential to impact performance measurements of the DCC service. The following identifies each of the SEC modifications, their current status, and a summary of the modification relating to reporting and a recommendation.

### 4.4.1 SECMP62 – Northbound Traffic Management (Alert Storm Protection)

Status: Pending Implementation

Due to the DCC system having a finite capacity for how many requests and alerts it can handle, if this system becomes overloaded, it will affect the stability and performance of the system. This system is also vulnerable to Alert Storms, a state where individual Devices will encounter a scenario where they frequently generate the same Alert and send it through the DCC Systems. This adds needless traffic to the DCC Systems and, as a result, slows down the response time for other Alerts and Service Requests that have to use the same system as a means of communication. Alert Storms therefore need to be avoided as much as possible, or alternatively, traffic management needs to be in place to prevent repeated Alerts from a faulty device entering the system.

The agreed traffic management solution will protect against the scenario in which a specific Alert is generated repeatedly and rapidly by individual Devices. However, it is noted that it will not, and is not intended to, protect the DCC Systems against a large quantity of Devices that generate a small number of alerts which enter the DCC Systems (e.g. due to a power outage over a large area).

To provide visibility of system activity, a dashboard will be provided in the SSI (Self Service Interface) and SSMI (Self Service Management Interface). When the protection mechanism is activated for a specific device/alert code combination, an anomaly event will be recorded and will result in the creation of a DSMS (DCC Service Management System) Incident.

The requirements for the solution specify that the DCC will report on how often the mechanism introduced is used. This will cover the number of incidents raised and the number of Device/Alert combinations that are classed as overloaded within a given reporting period. As part of this report, DCC will provide a full updated list of Alert parameter values and any exempted Alerts, so that DCC Users know which restrictions are placed against each type of Alert.

The Project recommends that the DCC reports the throttling metrics within the PMR for the total number of incidents that occurred, total number of forwarded and dropped alerts, and the total number of exempted alerts during the reporting period.

#### Recommendation [20]

The Project recommends that, when SECMP62 is implemented, the DCC reports the north bound throttling metrics within the PMR for the total number of incidents that occurred, total number of forwarded and dropped alerts, and the total number of exempted alerts during the reporting period.

The Project notes that Draft Proposal 119 has been raised by the DCC, to also address immediate issues with Alert Storms to the Communication Service Provider North (CSPN). This is at a very early stage and is expected to make changes to Communications Hubs to initially mitigate issues, isolating the Alerts at a local level, whilst the longer-term solution under SECMP062 is determined.

#### 4.4.2 SECMP67 – Service Request Traffic Management

Status: Refinement Process

The DCC Systems are limited by a finite capacity. As numbers of Smart Meters and Devices increase in the Smart Metering Implementation Programme (SMIP), this will increase the traffic of Service Requests in the DCC Systems. In exceptional instances this traffic, if left unchecked, could result in an overload of the DCC Systems and cause an outage, resulting in no Service Requests being sent. Management of the DCC System has been recommended in order to prevent this outcome, without the expense of expanding the DCC infrastructure.

The Proposed Solution is therefore to introduce a mechanism to throttle Service Requests when the DCC System is experiencing heavy traffic. This mechanism will only be active once the capacity threshold in the DCC Systems is in danger of being breached. This way, the Service Request throttling will only take place in exceptional circumstances and not be a day to day activity. Service Users will be allocated their own capacity thresholds, proportional to their portfolio, and be forced to operate within that allocation once the mechanism is active.

The requirement is for the solution to report on a monthly basis to inform Service Users on when throttling has been used by DCC Systems and which Service Users have regularly exceeded their determined capacity allocation. This report including Service Users, will not be made public, instead being brought to Panel and/or subcommittee confidentially and will be subject to independent audit, if necessary. This report will also specify how many seconds of throttling in a day is required, along with an explanation for any trends or particular events. The report will include the service allocation formula, what the variable elements are set to, and state what changes have been made, if any.

The Project understands that the intention of the throttling is to only take effect during exceptional circumstances and would last for a fraction of a second, and therefore have minimal impact on Users. However, in addition to the reporting provided to Users, the Project recommends that the DCC report an industry metric, for information, on the number of throttling event during the monthly reporting period, together with the total amount of time for which throttling was applied.

#### **Recommendation [21]**

The Project recommends that the DCC report an industry metric, for information purposes, on the number of throttling events during the monthly reporting period, together with the total duration (in seconds) for which throttling was active for the period. Should the modification proposal be rejected, then a suitable industry indicator reporting service capacity against service usage should be provided.

#### **4.4.3 SECMP096 – DNO Power Outage Alerts (POA) & Power Restoration Alerts (PRA)**

Status – Development Stage

In the case of a power outage lasting more than three minutes, the DCC (Data Communications Company) are obliged under the SEC to provide POAs to Distribution Network Operators (DNO) within a given timeframe. The SEC states that the timeframe POA must be sent within, is 60 seconds, after the initial three minutes of the outage (to allow time for power to be potentially restored automatically). Once power has been restored, a PRA is sent to the DNO via the Data Service Provider (DSP). This must also be sent within 60 seconds.

The DCC is currently unable to meet this SEC obligation H3.14 (g). A SEC transitional variation was approved by BEIS to compensate for the difference between the SEC obligation and the DCC's current capability. This exception expired on 31 October 2018 and BEIS cannot offer an extension.

Following meetings between the DCC and the DNO, the DNOs have gained an understanding of the DCC issues and constraints. As a result, the DNO are willing to compromise in order to reach an agreement on the final arrangements for POAs and PRAs.

As this Modification is at an early stage, the Project recommends that the SEC Modification Working Group consider and discuss implications to the PMR and bring this to OPSG for further consideration.

#### **Recommendation [22]**

The Project recommends that the SEC Modification Working Group consider and discuss the implications of Modification 096 to the PMR and bring this to OPSG for further consultation with OPSG members.

#### **4.4.4 SECMP100 – Service Response Traffic Management**

Status: Development Stage

Service Responses are received by Users after a Service Request is sent by that User. There are currently no proposals offering management when the DCC Systems have suffered an outage or restriction and are then restored. In these scenarios Service Responses will be queued while the DCC Systems are restricted, and then be sent to the Users when DCC systems come back online. Users' adapter systems will receive all of these Service Response messages at once, irrespective of priority.

The SEC does not currently specify how Service Response should be released after an outage/restriction. This means User systems may receive all messages at once and the priority messages will have to wait to undergo processing rather than being treated as priority. Changing the

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SEC so that the DCC have a clear and transparent means of providing prioritisation and traffic management for Service Responses can help.

The Modification is still at the development stage and business requirements have not yet been defined, and therefore reportable output from the implementation of this modification is unknown. However, the Project believes that where outbound message throttling has been activated due to an outage of the User's system, then there should be a relaxation or exemption for measuring response times during the period of throttling. The Project recommends that the SEC Modification Working Group consider and discuss implications to the PMR and brings this to OPSG for further consideration.

#### Recommendation [23]

The Project recommends that the SEC Modification Working Group consider and discuss the implications of Modification 100 to the PMR and brings this to OPSG for further consultation with OPSG members.

### 4.5 OMS and Logistics

Measures within the PMR do not reflect the issues that energy Suppliers have with the ordering and returning of DCC Communication Hubs.

Since the DCC commenced provision of Services, Suppliers have been unable to use a fit for purpose Order Management System (OMS). This has resulted in workarounds for both the DCC and energy Suppliers. Whilst this worked to an extent in the earlier part of the rollout, it is recognised that this is not sustainable. The DCC has a project to develop a complete OMS which is due to deliver in Q4 2020.

The PMR does measure timeliness of CH deliveries and acceptance by energy Suppliers. However, the Project notes that these are subject to a significant number of exceptions and does not include any deliveries rejected by Users, suggesting it may provide an artificial view of the success rate. Several exceptions relate to Users' compliance with SEC Subsidiary documents. It is unclear how the DCC Communication Service Providers (CSP) can determine non-compliance with SEC Subsidiary documents such as Communication Hub Handover Support Materials and Communication Hub Installation Maintenance Support Materials. Clarity on how these are used and applied has been sought from the DCC. To date, the issues with the PMEL have prevented this moving further forward, as discussed in Section 3.2 of this paper.

The Project recommends that, as part of the initial steps of the PMEL Governance Forum, work is undertaken to understand how the CSP are applying the exceptions such that the reporting can be truly validated.

#### Recommendation [24]

The Project recommends that the PMEL Governance Forum undertakes a review and provides an understanding to the OPSG of how the CSP are determining exceptions in relation to DCC Communication Hub deliveries, and report its findings to the OPSG.

### 4.6 SMETS1 (Focus on measure of number of meters within the operational environment)

Recent PMR include measures for SMETS1 services of migrated meters. These are similar measures as reported for SMETS2. However, the Performance Measurement Methodology (PMM) has not been

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updated with the detail as to what, and how, the SMETS1 measures are calculated. There has been no information made available to DCC Users to aid understanding.

As per the recommendation number [2], the Project recommends that the PMM is updated immediately to provide the detail of how the measures are being calculated, and to bring this in compliance with SEC Obligation H13.2.

The Project also recommends that the same changes / additions to SMETS2 meters for the PMR are, where appropriate, taken forward for SMETS1. This would ensure consistency across SMETS device types, and make sure the reports are focussed on outcomes, as far as possible, ensuring that these are reflective of the experience of Users at an industry level.

#### **Recommendation [25]**

The Project recommends that the same changes / additions to SMETS2 meters for the PMR are, where appropriate, taken forward for SMETS1.

### **4.7 Timeliness of PMR**

An issue with the PMR noted by Users, is that the time it takes the DCC and its Service Providers to develop, produce and publish the PMR, is too long.

This has the effect of devaluing the information at an operational performance level. Users find that issues have moved on following publication of the PMR, as c. two – three months have elapsed by the time the report is reviewed.

The SEC currently requires the PMR to be published within 25 Working Days from the end of the measurement reporting period (SEC H13.4).

For the PMR to remain operationally relevant and meaningful for Users, the PMR needs to be made available at the earliest point following month end. In previous discussions with the DCC, there have been indications that it may be possible for the DCC Service Providers to assimilate the necessary information and provide this to DCC sooner, to enable an earlier publication date.

Whilst the DCC may be considering an offer to the OPSG to provide the report at an earlier point in the monthly cycle, the Project recommends that a SEC Modification is raised to formally consider this aspect and draw out any issues with the costs of doing so versus the benefits to the report recipients. The Project recommends that, if possible, the time the DCC has to create the report should be reduced to within 10 Working Days from the end of the measurement reporting period. The effect would be that, depending on bank holidays and month end falling on Working Days, the report could be reviewed by the OPSG 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 OPSG report review meeting. This does, however, raise challenges with having suitable time to review and comment on the report prior to the OPSG report review meeting.

#### **Recommendation [26]**

The Project recommends that a SEC Modification is raised to reduce the time the DCC takes to produce the PMR to within 10 Working Days of the end of the measurement reporting period.



#### 4.8 Estate Health

Whilst the PMR demonstrates the performance of the DCC services, it doesn't necessarily reflect the overall health of the estate. In addition, devices that are not communicating or performing correctly can have a negative impact on the system and other metrics (i.e. sending 10,000 requests to a non-functioning Device, Devices sending out high volumes of alerts). By highlighting these Devices, the industry can work towards improving the overall health of the system. The Project recognises that “noisy” devices have been considered in several Forums recently. Including these in formal metric reporting may highlight the scale of issues and drive these to conclusion.

The Project investigated a number of ‘proxy measures’ from which the status of a Device could be inferred (i.e. functioning and responding, versus non communicating or not performing correctly). For instance, at a high-level:

- a. Firmware version. A measurement reporting the number of Devices that are on the latest version of firmware (or one or two versions below).
- b. Meter readings and N13 Alerts. A measurement reporting the number of Devices responding to meter read service requests would indicate the percentage of devices responding, versus not responding. In addition to this, a measurement of N13 alerts (‘Failure to receive Response from Device’) should also contribute to the identification of non-responding Devices.

The DCC confirmed to the Project that, as part of the TOC monitoring capabilities, they are working to develop a proxy measure that would indicate estate health, by using a combination of alerts from the billing cycle and meter readings.

##### Recommendation [27]

The Project recommends that a formal metric, highlighting the overall health of the estate, is included as part of the PMR. This will provide an indicator of the number of Devices that are not communicating or not performing correctly, that have a negative impact on the system and other metrics. Including these in formal metric reporting will highlight the scale of issues across the estate and drive these to conclusion.

#### 4.9 Users Realtime System View

Throughout the project, Users expressed an interest in gaining access to individual User data for the purpose of monitoring their specific operational performance. Users were particularly interested in replicating certain metrics on a User by User basis, which would enable them to further contextualise the information provided within the PMR.

Although these requirements fall outside the project scope, as they are not related to the overall measurement of the performance of DCC services, the Project recognises the desire of Users to gain access to a higher degree of granularity within the measurements.

A breakdown by User was requested for the following measures:

- a. Pre-payment. Users highlighted a number of pre-payment measures, including success and failure of SRV 2.2's as a percentage figure, as well as an overall volume figure, would be useful at both an individual User level and an overall PMR measure.

- b. Change of Supplier. Interest in a view of age of CoS failures (i.e. how many are one week versus one month old), interest in volumes of retry per unique end point.
- c. Meter Installation Volumes. Interest in daily installations per CSP.

The Project is aware that the DCC has previously circulated a “12 pager” report via its Service Managers to provide some insight into individual User performance. It was recognised within the Project workshops that Users would find an individual report extremely useful, however the level of work needed to be undertaken by the DCC and consideration of how the costs of providing a report to individual Users would require further consideration. The Project, however, recommends that a version of the “12 pager” could be included for some of the key business process measures within the PMR at an industry level, that would highlight who is achieving best in class via an anonymised league table. DCC Service Managers could then share with Users, on a bilateral basis, information pertaining to the individual User position within such a table.

#### **Recommendation [28]**

The Project recommends that a version of the “12 pager” report is included, as part of the PMR, for some of the key business processes (i.e. Install and Commission), to provide insight into User performance via anonymised league tables.

### **4.10 Capacity Management**

A User raised a question at the second Project workshop regarding capacity of the DCC systems and their ability to support current demand and future requirements.

The Project’s position is that the DCC is responsible for ensuring the system has sufficient capacity to meet the planned need and, in line with best practice, should be monitoring network, process and storage usage to ensure this.

The Project is aware that the DCC produces a quarterly capacity management report covering an overview of system health, capacity and key metrics and problem areas, as well as a review of key initiatives.

The project view is that capacity planning and management should be managed through review of the DCC quarterly capacity management report by the OPSG and TABASC, with any outputs provided to SEC Panel. Poor capacity planning that impacts the DCC services will be reflected within the availability and outcome-based measures recommended within this report for inclusion within the PMR.

### **4.11 PMR Format and Layout**

Several suggestions were made by Users on how the PMR format and layout may be improved. The Project recommends that the layout is changed to reflect the outcome-based nature of the reporting recommendations made by the Project. In summary, the Project recommends the following:

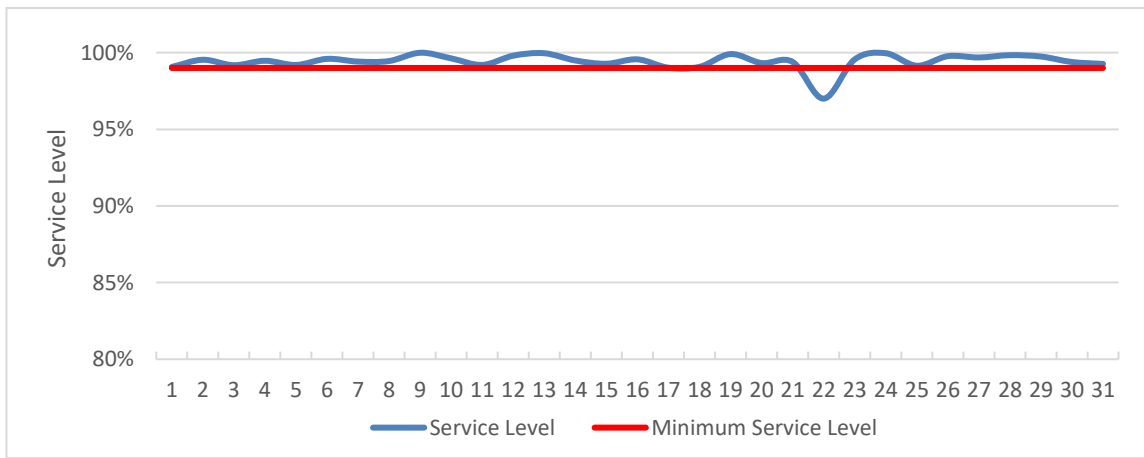
- a. The executive summary should be improved to provide a more visual summary of performance including:
  - i. Provision of an Overall Service Availability Measure

- ii. Identification of key processes / SRV that failed to meet performance targets
- b. Structure the report by User business process and outcome to make it relevant to Users and easier to find information
- c. Provide appropriate representation of data (graphical, table, heat map etc.) to make it easier for Users to consume the information
- d. Provide additional commentary when a measure fails to meet its target
- e. Provide 'extended' information containing an industry view of performance
- f. Provide a glossary of acronyms

An example template for the report layout is shown below.

### Template for future Performance Measurement Reporting

1. Introduction / Purpose
  - a. Short statement covers regulatory requirement for the report
2. Executive Summary
  - a. Short description of key events / issues that have occurred within the reporting period.
  - b. View of overall system availability for the reporting period

Service Availability DCC User Interface – Service Level					M/I
Monthly Performance Measure	Previous Service Level	Service Level	Target Service Level	Minimum Service Level	
Service Availability – DCC User Interface	99.95%	99.40%	99.95%	99.00%	M
Service Availability DCC User Interface – Monthly View					
 <p>The graph displays the Service Level (blue line) and Minimum Service Level (red line) over a 31-day period. The Y-axis represents the Service Level percentage, ranging from 80% to 100%. The X-axis represents the days of the month, from 1 to 31. The Service Level fluctuates between approximately 97.5% and 99.5%, with a significant dip around day 22. The Minimum Service Level is a constant red line at 99.00%.</p>					I
Service Availability DCC User Interface – Time of Day Breakdown					

Monthly Performance Measure	Hours of Operational Activity		Hours of Operational Inactivity	
Service Availability – DCC User Interface	98.80%		100.00%	I
Service Availability DCC User Interface – Service Availability by Region*				
*N/A, regional split not applicable for this interface				
Monthly Performance Measure	Region A	Region B	Region C	
Service Availability – DCC User Interface	99.00%	99.80%	99.40%	I
Service Availability DCC User Interface – Reliability				
Total Number of Incidents (of which cat. 1,2) (of which cat. 3,4,5)			4 (1) (3)	I
Mean Time To Repair (MTTR)			3.02 hours	I
Mean Time Between Failures (MTBF)			8.09 days	I
Service Availability DCC User Interface – Business Processes View				
Monthly Performance Indicator	Previous Service Level	Service Level	Status	
Install and Commission (ESME)	99.80%	99.40%	Degraded	I
Install and Commission (GSME)	98.20%	99.90%	Available	I
Change of Supplier (Gain)	XX.XX%	XX.XX%	Available	I
Change of Tenancy	XX.XX%	XX.XX%	Available	I
Tariff Updates	XX.XX%	XX.XX%	Available	I
Billing (Scheduled)	XX.XX%	XX.XX%	Available	I
Billing (Unscheduled)	XX.XX%	XX.XX%	Available	I
Pre-Payment	XX.XX%	XX.XX%	Available	I
Security and Key Management	XX.XX%	XX.XX%	Available	I
In-Life Device Management	XX.XX%	XX.XX%	Degraded	I
Logistics CH Ordering and Returns	XX.XX%	XX.XX%	Available	I
Distribution Networks Post I&C Activity	XX.XX%	XX.XX%	Available	I
Alerts Management	XX.XX%	XX.XX%	Available	I

### 3. Measures

- a. The Project proposes in this section that a set of tables is included here for each business process identified, to incorporate the Measure and the Indicator. An example of Table for Measure and Indicators is set out below for information.

#### b. Code Performance Measures Reported by Business Process

- i. Install and Commission
- ii. Change of Supply
- iii. Change of Tenancy
- iv. Tariff Update
- v. Prepayment Top Up
- vi. Security Key Management
- vii. In Life Device Management
- viii. Logistics Communications Hubs Ordering and Returns

- c. Measures by Business Process are based on actual SRV performance data for common SRV applicable to the Business Process with additional information provided for context. For example

Region	I.D.	Measure	Target Service Level	Minimum Service Level	Actual Service Level achieved
CSPN	XX.XX	SMETS2 measure of remote Top Up of Prepayment device within the Target Response Time. Percentage Successful delivery of SRV2.2	99%	97%	98.7%
CSPC	XX.XX	SMETS2 measure of remote Top Up of Prepayment device within the Target Response Time. Percentage Successful delivery of SRV2.2	99%	97%	99.7%
CSPS	XX.XX	SMETS2 measure of remote Top Up of Prepayment device within the Target Response Time. Percentage Successful delivery of SRV2.2	99%	97%	98.5%

- d. Additional Information and commentary shall be provided here to provide further context for the outcome achieved in the Reporting Period. For example, "in CSP region X the service measures were not achieved due to Y reason"

4. Further supplementary Indicators supporting the Business Process measure is provided in this section.

- a. For example; Volume of Successful and Unsuccessful SRV2.2

Region	I.D.	Volume of SRV within Period	Successful	Unsuccessful
CSPN	XX.XX	5,432,780	4,976,213	456,547

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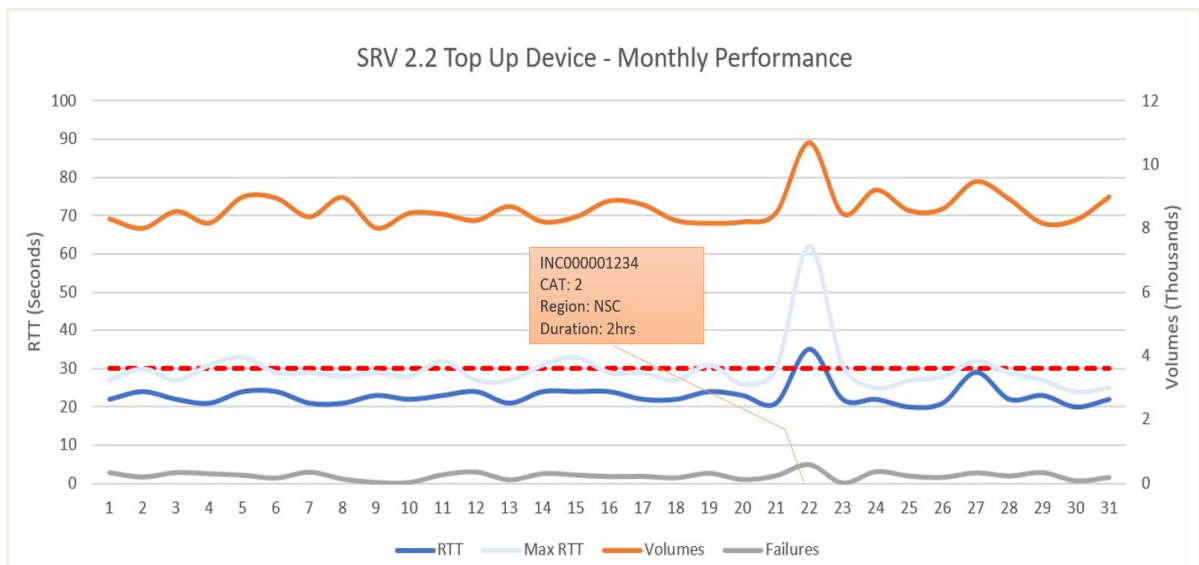
CSPC	XX.XX	2,376,549	2,217,843	158,706
CSPS	XX.XX	5,634,761	4,783,128	851,633

- b. Further context and Information; Percentage 1<sup>st</sup> and 2<sup>nd</sup> Time Remote Top Up Success

Region	I.D.	1 <sup>st</sup> Time Success SRV2.2	2 <sup>nd</sup> Time Success SRV2.2
CSPN	XX.XX	98.3%	99.3%
CSPC	XX.XX	97.6%	99.2%
CSPS	XX.XX	97.8%	99.4%

## 5. Section for Additional commentary;

- a. To explain success / failures against measure in the Reporting Period. To be included here additional information relating to Major Incidents within the Reporting Period that may have impacted the Business Process service measures. For example, a view of within day activity for the Reporting Period with an explanation of how the Incident impacted the specific Business Process as shown below.



6. A league table relevant to the SRV (e.g. for SRV 2.2 Remote Prepayment Top Up). An anonymised table of Supplier performance for the Business Process to provide a view of best / worst performance across the industry. Individual data to be shared by DCC Service Managers.

Supplier	% Success	% Failure
Supplier A		

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Supplier B		
Supplier C		
Etc...		

## 7. Existing CPM measures and Service Provider Performance Measures

- For example, this would follow the existing reporting approach, detailing performance against current CPM and Service Provider Measures.

4 Reported List of Service Provider Performance Measures DSP							
4.1 Service Levels Attained							
Performance Area	Performance Measure Number	Performance Measure Name	Measurement Period	Previous Service Level	Service Level	Target Service Level	Minimum Service Level
Availability	2.1	Service availability – DCC Data Service	Monthly	100.00%	100.00%	99.95%	99.00%
	2.2	Service availability – DCC User Interface	Monthly	100.00%	99.95%	99.95%	99.00%
	2.3	Service availability – DCC Service Management	Monthly	100.00%	100.00%	99.50%	98.00%
	2.4	Service availability – Self Service Interface	Monthly	100.00%	100.00%	99.50%	98.00%
	2.5	Service availability – Average Interface (DCC Internal availability)	Monthly	100.00%	100.00%	95.00%	90.00%
	2.7	Service availability – Test services	Monthly	100.00%	100.00%	99.00%	98.00%
Application Management	3	Category 1 or 2 Incidents directly related to a change release within 30 days of release <sup>2</sup>	Monthly	0	0	0	5
Anomaly Detection	11	Anomalous Service Requests	Monthly	100.00%	100.00%	99.00%	96.00%
Performance Area	Performance Measure Number	Performance Measure Name	Measurement Period	Previous Qtr. Service Level 2019 Q3	Latest Qtr. Service Level 2020 Q1	Target Service Level	Minimum Service Level
Service Management	7	Notification of Planned Maintenance events <sup>3</sup>	Quarterly	92.31%	93.33%	100.00%	90.00%

Figure 7

## 8. Service Credits

- This section lists out any specific Service Credits due, as a result of Service Level performance during the Reporting Period.

### Recommendation [29]

The project recommends the following changes to the PMR format and layout:

- The executive summary should be improved to provide a more visual summary of performance including:
  - Provision of an Overall Service Availability Measure
  - Identification of key processes / SRV that failed to meet performance targets with Measures and Indicators
- Structure the report by business process and outcome to make it relevant to Users and easier to find information



- c. Provide appropriate representation of data (graphical, table, heat map etc.) to make it easier for Users to consume the information
- d. Provide additional commentary when a measure fails to meet its target
- e. Provide 'extended' information containing an industry view of performance

## 4.12 Management of the PMR

In discussion with Ofgem and SECAS, the Project has determined that the most appropriate step was to draft a Modification proposal ahead of the Panel meeting, to enable the proposed changes to move as quickly as possible, thus facilitating a joined-up approach with the Ofgem OPR review process.

Included in the draft Modification proposal (DP122) is an option to be investigated further, to move the Performance Measures outside of the SEC into a defined document that is controlled by the SEC Panel Operations Group Sub- Group. Such an arrangement would provide future flexibility to enable measures to be trialled and introduced and/ or removed, without the need for a formal SEC Modification process. This would require suitable governance and oversight from the OPSG reporting to the SEC Panel to ensure due diligence is applied. This approach will facilitate a swifter introduction of new metric proposals, to the benefit of both User and DCC requirements, ensuring the measures remain fit for purpose.

## 5. Implementation Approach

The following section sets out how the recommendations within this report are to be taken forward to implementation. The aim of this approach is to provide Users with the benefit of the improved metrics, as well as meeting the Ofgem requirement of publishing their direction in November 2020 following the OPR review.

As a result, the Project, Ofgem and SECAS determined that the most appropriate step was to raise a Draft Modification Proposal ahead of the Panel meeting. This ensures that the recommended changes required for the SEC can progress at the pace required to meet Ofgem's aim to publish its OPR direction in November 2020, with the result that the newly revised OPR comes into effect in the 2021-22 Regulatory Year. Draft Proposal DP122 for SEC modification has therefore been raised.

The table below provides the indicative timeline for DP122 to be processed through the change process to meet the 5 November SEC release. It is proposed that the new metrics are trialled, reviewed and refined over a three- month period by the DCC, to ensure they are fit for purpose prior to implementation of the SEC release.

Date	Action	Notes
23 Mar	Raise Draft Proposal	Draft Proposal 122 raised.
31 Mar	Decision at Change Sub-Committee	
17 Apr	Modification Report to SEC Panel (to go to Refinement)	Legal text will need to be drafted by Thursday 9 April
1 May – 31 Jul	Trial period to commence	OPSG members to review and feedback on trial report.

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3 Jun	Working Group discussion	The mod will continue to be progressed during the trial period
8 Jun – 29 Jun	15 Working Day Refinement Consultation	Request input on the solution, implementation timescales and costs.
17 Jul	Mod Report to SEC Panel	
20 Jul – 10 Aug	15 Working Day Modification Report Consultation	Request industry to approve or reject the mod.
26 Aug	Change Board Vote	
31 Aug - 2 Oct	Authority Determination	
5 Nov	SEC Release and Implementation	

## 6. Summary of Recommendations

### 6.1.1 Summary of proposed changes to PMR

The Project has identified several new metrics and improvements to the PMR that are summarised within this section. The Project has not identified any metrics to be removed from the PMR and, when improvements are made to the PMM, believes these existing metrics will provide value for Users and the OPSG in its review of the DCC monthly performance. The Project believes that the recommended formatting of the report, exemplified in section 4.11, will provide an improved structure to the PMR that reflect the outcome based nature of the recommendations made by the Project. The following provides a summary of the proposed changes to the PMR:

- a. Add the Service Availability metrics (Section 3.5) to include:
  - i. Graphical representation of Service Availability
  - ii. Breakdown by Time of Day and Region
  - iii. Service Availability of key business processes
  - iv. Service Reliability
- b. Add code performance measures reported by business processes to include:
  - i. A daily view of Speed, Volume, Payload (RSVP) for each process (Section 3.3)
  - ii. A monthly summary of RSVP for each process (Section 3.3)
  - iii. Additional measures and indicators for each process (Section 3.4)
  - iv. Additional Information and commentary to provide further context for the outcome achieved
- c. Add an anonymised league table for each business process (Section 4.9)
- d. Additional commentary relating to major incidents that may impact business processes
- e. Add reporting of known and accepted defects within the live system (Section 4.3)
- f. Add reporting of identified modifications (Section 4.4)

- g. Add a metric highlighting overall estate health (Section 4.8)
- h. Continue to report existing CPM measures and Service Provider Performance measures.

### 6.1.2 Reporting to reflect Business Priorities

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.

It is therefore recommended that:

- a. A SEC modification is raised to report and measure service performance for User business processes through the use of Service Request Variants (SRV), to measure actual performance each month per business process. This would replace the current approach which takes an average performance across several Service Provider touchpoints, cutting across a number of business processes. Further detail on this recommended approach is contained in Section 3.3 of this report.
  - i. An option for consideration would be to carry out a trial of the SRV metric approach to understand its effectiveness prior to instigating a formal Modification.

Through review and analysis of the PMR Code Performance Measure (CPM) 1 and CPM 3, an issue has arisen over the use of Test messages versus actual SRV to measure performance. It is unclear whether CPM1 and CPM 3 are being measured correctly, and whether the use of Test messages per the Performance Measurement Methodology, is delivering the original intent of the SEC. The Project recommends the following actions are undertaken to reach a definitive conclusion:

- b. Clarify the Target Response Time defined for the DSP Relevant Service Measures, and assess whether the measure is fit for purpose; and
- c. Undertake further investigation into the test messages used to measure CSP Round Trip Times (TRT) to understand whether they are a true and fair test measure of performance.

Users told the Project they wanted to see an appropriate measure of DCC Service Availability that reflects the impacts of the DCC failure to deliver Services. The current Metrics do not reflect this.

It is therefore recommended that:

- d. A SEC Modification is raised, to measure end to end Service Availability across the DCC environment and Services, taking into account dependencies between each interface and its supporting sub-systems. Additionally, it is recommended that this is reported by Communication Service Provider region. This would replace the current approach of measuring each element of the different services and Service providers in isolation. Further detail on this recommended approach is contained in Section 3.5 of this report.
  - i. A variant of this proposal would be to carry out a trial of the end to end Service Availability metric approach, to understand its effectiveness prior to instigating a formal Modification;
- e. A SEC Modification is raised to improve the timeliness of production of the PMR. This is to ensure the PMR remains operationally relevant to Users. The recommendation is that the

deadline to produce the report should be reduced to within 10 Working Days of the end of the measurement reporting period. The current SEC requirement is within 25 Working Days;

- f. Changes / additions to SMETS2 for the PMR are, where appropriate, taken forward for SMETS1. This would ensure consistency across SMETS device types and make sure that reports are focussed on outcomes, reflective of the experience of Users at an industry reported level.
- g. A SEC Modification is raised to introduce a change to the PMR, to include a measure that the number of Major Incidents (Category 1 & Category 2) is no more than one Category 1 Major Incident per annum and one Category 2 Major Incidents per month, including detail of the total amount of related outage time.

As a result of the Ofgem review of its OPR, occurring simultaneously with the Project, the Project, Ofgem and SECAS, determined that the most appropriate step was to raise a Draft Modification Proposal ahead of the Panel meeting. This ensures that the recommended changes required for the SEC can progress at the pace required to meet Ofgem's aim to publish its OPR direction in November 2020. This results in the newly revised OPR coming into effect in the 2021/2022 Regulatory Year. Draft Proposal DP122 for the modification of the SEC has therefore been raised.

*The OPSG met on the 7 March 2020 and unanimously endorsed the findings and approach of the Project. The Project requests that the SEC Panel approves the recommendations as endorsed by the OPSG.*

### 6.1.3 Other Project Recommendations

The Project has investigated how the current PMR measures are being applied to understand whether they are fit for purpose and being reported correctly, and how measurement and reporting exceptions are being applied. The following recommendations address these issues.

Further detail on these areas and recommendations can be found in Section 4 of this report.

- a. DCC Actions:
  - i. The Project has recommended that the DCC incorporates SMETS1 Services and Code Performance Measure (CPM) 9 into its proposed March 2020 consultation of the Performance Measurement Methodology (PMM) (both SMETS1 & CPM9 are missing from the current published version of the PMM v2.2. June 2018).
  - ii. The DCC undertakes a review and consultation of Reported List of Service Provider Performance Measures (per SEC H13.2). The review should include a Service Provider Contract Management Assessment, to ensure that the right performance indicators are in place and being monitored effectively.
  - iii. The DCC amends the layout of the PMR to reflect the outcome-based nature of the reporting recommendations made by the Project. Further proposals as to the potential layout are contained in Section 4.11 of this report.
  - iv. In addition to the amended PMR layout, the DCC should provide some insight into individual User performance. The Project recommends that a version of the DCC "12 pager" could be included for the key business process measures to highlight "best in

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class” via an anonymised league table. DCC Service Managers could then share with Users information pertaining to the individual User position, on a bilateral basis.

- v. The Project recommends that the DCC Performance Measurement Exception List (PMEL) Governance Forum undertakes a review and provides an understanding to the OPSG of how the CSP are determining Exceptions in relation to DCC Communication Hub deliveries.
  - vi. The Project recommends that the DCC present the end-to-end PMEL governance process to OPSG to define the approach for the addition and removal of exceptions. The DCC should also provide a report to the OPSG on any ongoing PMEL governance forum discussions.
- b. OPSG Actions:
- i. The Panel approves that the OPSG and DCC establish a trial of data collected via the DCC Technical Operations Centre (TOC) to be used as a proxy to establish User Impacts from a Major Incident service outage, based on historical installation transactional data. It is recommended that the output from the trial is reviewed within six to nine months of the start, to establish; a) its effectiveness and value, plus, b) if there are potentially new developments that could better inform the impacts of Incidents.

The project requests that the Panel approves the actions set out above for the DCC and OPSG.

#### 6.1.4 Table of Recommendations

The table below is a collection of recommendations made throughout the report. These are reported alongside their respective Section number for ease of reference.

Number	Section Reference	Recommendation
1	3.2.2	The Project recommends that the DCC present the end-to-end PMEL governance process to OPSG to define the approach for the addition and removal of exceptions. The DCC should also provide a report to the OPSG on any ongoing PMEL governance forum discussions.
2	3.2.2	The Project recommends that in order that appropriate challenge is applied additions and/ or removal of items on the PMEL, that this is addressed by DCC either through the PMEL Governance Forum or separately via Service Management contract performance activity.
3	3.2.3	The Project recommends that the DCC incorporates within its planned consultation for March 2020, proposals for SMETS1 performance metrics.
4	3.2.4	The Project recommends that the DCC incorporates into its planned PMM consultation in March 2020, its proposed metrics for CPM9 (per SEC H13.6).
5	3.2.4	The Project recommends that the DCC reviews and updates the Reported List of Service Provider Performance Measures (per SEC 13.2).

6	3.2.5	The Project recommends that the DCC updates the PMM to clarify the DSP Target Response Time definition, as being a defined part of the overall Target Response Time.
7	3.2.5	The Project recommends that the DCC provides clarification to OPSG on the size of test messages by the CSP. It is further recommended that where these are found not to be representative of User messages, a test message size is used that is based on the average message size processed by the DCC within the last 3 to 6 months.
8	3.3	The Project recommends that the PMR reports service performance for User business processes through reference to Service Request Variants (SRV), to measure actual performance each month for each of a defined set of User business processes. This would replace the current approach which takes an average performance across several Service Provider touchpoints, cutting across several business processes.
9	3.4	The project recommends that specific outcome-based measures are added to the PMR to address the needs of the user and provide a Measure of performance as well as Indicators on the success of the key business processes.
10	3.5	As a measure for overall availability of DCC Services, the Project recommends that service availability is measured as a percentage of all the Services, thus taking into account the dependencies between each interface and its supporting sub-systems (i.e. servers, databases).
11	3.5	As a measure for partial availability, the Project recommends the use of RSVP metrics (described in Section 3.3) to report on the impact of degraded service on a particular key business process.  Additionally, the Project recommends that key business processes impacted by partial availability are reported alongside the metrics for service availability of a particular Service.
12	3.5	The Project recommends that a monthly view of end-to-end service availability for each of the Services is reported on as a single percentage figure as well as depicted as a line graph across the days of the month.
13	3.5	The Project recommends that the view for service availability, where relevant, is split by CSP regions, for better correlation with Users' operational experience.
14	3.5	The Project recommends that service availability is reported by time of day. The Project believes that providing a clear distinction between service availability during hours of operational activity versus hours of operational inactivity, better reflects User typical behaviour and use of the system.
15	3.5	The Project recommends indicators for measuring the reliability of the Service, in addition to its availability. The measures proposed are: Number of downtime events across the reporting period, Mean Time To Repair (MTTR), and Mean Time Between Failures (MTBF).



16	4.2	The Project recommends that data collected by the DCC TOC, for Incident resolution and outage times, combined with historical SRV transaction data, is trialled as a proxy to provide a view of the impact of outages on Users. The Project recommends that this is reviewed in six to nine months to check a) effectiveness, and b) any potential new developments that may better inform Users of the impacts of Incidents.
17	4.2	The Project recommends that the DCC to provide Indicators within the PMR on the number of Category 1 & 2 Major Incidents raised during the reporting period.
18	4.2	A SEC Modification is raised to introduce a change to CPM5 to report resolution time of Incidents (Category 3,4, and 5) Individually per Reporting Period. The Project further recommends that the DCC supplements CMP5 with Indicators detailing; <ol style="list-style-type: none"> <li>1. The number of Incidents per Category 3, 4 and 5 raised in the reporting period</li> <li>2. Incidents per Category 3, 4 and 5 that met the Initial Target Response Time; and</li> <li>3. Incidents per Category 3, 4 and 5 that met the Target Resolution Time</li> </ol>
19	4.3	The Project recommends that the DCC measure and report within the PMR the number of known defects that are released into the live system during the reporting period. The number of defects should be grouped by the severity level of each defect.  The project recommends that the DCC report a monthly metric for the number of known and accepted defects within the live system. Again, the number of defects should be grouped by severity level.
20	4.4.1	The Project recommends that, when SECMP62 is implemented, the DCC reports the north bound throttling metrics within the PMR for the total number of incidents that occurred, total number of forwarded and dropped alerts, and the total number of exempted alerts during the reporting period.
21	4.4.2	The Project recommends that the DCC report an industry metric for information purposes, on the number of throttling events during the monthly reporting period, together with the total duration (in seconds) for which throttling was active for the period. Should the modification proposal be rejected then a suitable industry indicator, reporting service capacity against service usage, should be provided.
22	4.4.3	The Project recommends that the SEC Modification Working Group consider and discuss the implications of Modification 096 to the PMR and brings this to OPSG for further consultation with OPSG members.
23	4.4.4	The Project recommends that the SEC Modification Working Group consider and discuss the implications of Modification 100 to the PMR and brings this to OPSG for further consultation with OPSG members.



24	4.5	The Project recommends that the PMEL Governance Forum undertakes a review and provides an understanding to the OPSG of how the CSP are determining exceptions in relation to DCC Communication Hub deliveries and report its findings to the OPSG.
25	4.6	The Project recommends that the same changes / additions to SMETS2 meters for the PMR are, where appropriate, taken forward for SMETS1.
26	4.7	The Project recommends that a SEC Modification is raised to reduce the time the DCC takes to produce the PMR to within 10 Working Days of the end of the reporting period.
27	4.8	The Project recommends that a formal metric highlighting the overall health of the estate, is included as part of the PMR. This will provide an indicator of the number of Devices that are not communicating or not performing correctly, that have a negative impact on the system and other metrics. Including these in formal metric reporting will highlight the scale of issues across the estate and drive these to conclusion.
28	4.9	The Project recommends that a version of the “12 pager” report is included as part of the PMR, for some of the key business processes (i.e. Install and Commission) to provide insight into User performance via anonymised league tables.
29	4.11	<p>The project recommends the following changes to the PMR format and layout:</p> <ul style="list-style-type: none"> <li>a. The executive summary should be improved to provide a more visual summary of performance including: <ul style="list-style-type: none"> <li>i. Provision of an Overall Service Availability Measure</li> <li>ii. Identification of key processes / SRV that failed to meet performance targets with Measures and Indicators</li> </ul> </li> <li>b. Structure the report by business process and outcome to make it relevant to Users and easier to find information</li> <li>c. Provide appropriate representation of data (graphical, table, heat map etc.) to make it easier for Users to consume the information</li> <li>d. Provide additional commentary when a measure fails to meet its target</li> <li>e. Provide ‘extended’ information containing an industry view of performance</li> </ul>

## 7. Appendix

## 7.1 Survey Results

This section provides additional information on the results from the User survey, which was designed to assess User requirements and priorities.

The survey was issued to OPSG Members and all SEC Parties on the 25<sup>th</sup> November 2019. It remained open for a total of three weeks, closing on the 13<sup>th</sup> December 2019.

The Project received a total of fifteen responses, from Large Suppliers (six), Small Suppliers (five), Electricity Distributors (two), and Meter Asset Providers (two).

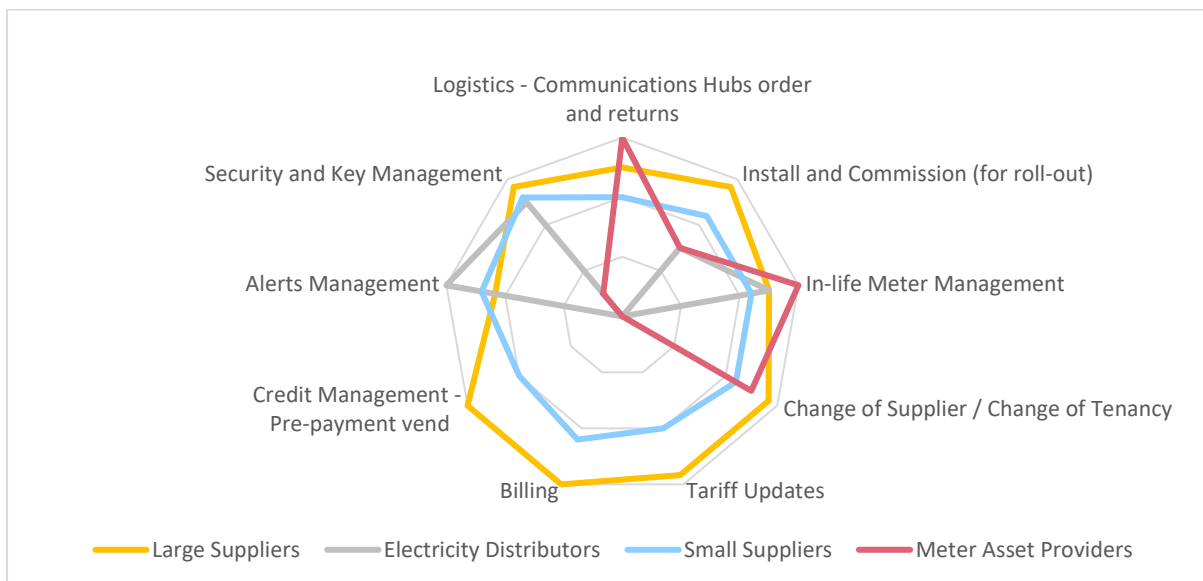
The survey was composed of 11 questions, covering three main areas, namely, Users business processes, User views on current PMR, and potential 'Quick Wins' measurements for inclusion in future PMRs.

Below are the results to 4 questions (Question 2, 3, 7 and 9). These were selected to give a concise, yet comprehensive overview of the results. A brief explanation of the context for the questions is provided below:

- User Business Processes:** Question 2 was aimed at understanding which business processes are most important to Users, and question 3 was then used to assess which of these are not currently reflected in the PMR.
- User views on current PMR:** Question 7 was used by the Project to gain a better understanding of the importance to Users of each performance area reported within the PMR, with the aim to prioritise content within the report and additional areas of investigation.
- Potential 'Quick Wins':** Question 9 surveyed Users on areas they would like the PMR to report on. These areas included business processes as well as operational requirements.

### Question 2

The following have been identified as key User business processes. How would you rate each one in regard to their importance to your business?

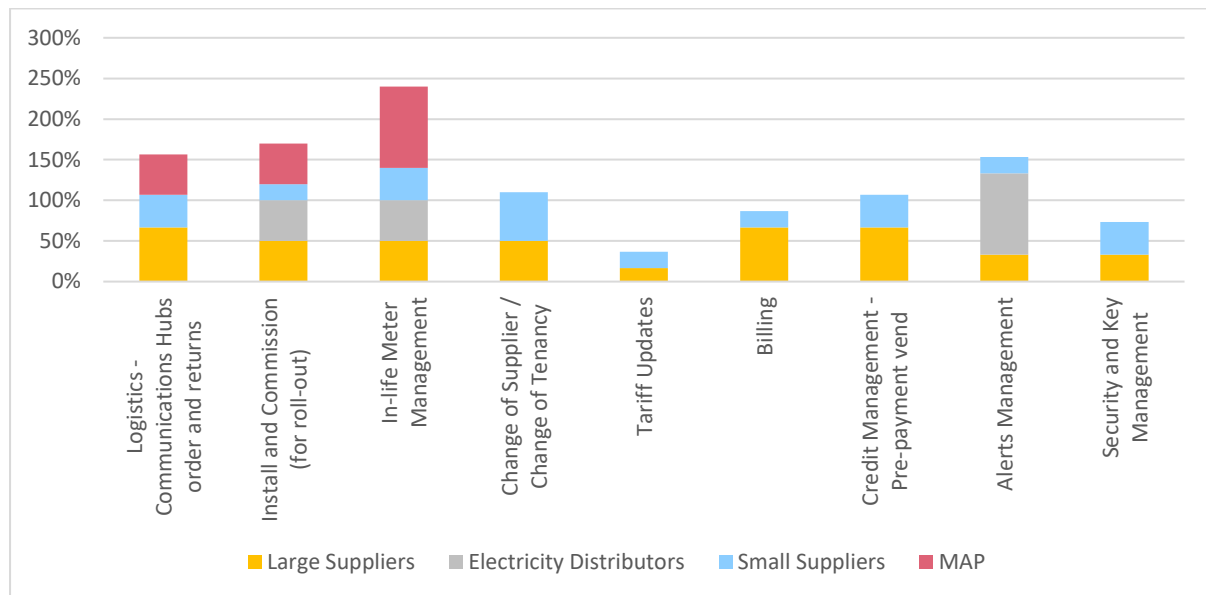


**Figure 8**

### Question 3

In your opinion, which of the above key business processes are not appropriately reflected in the current PMR?

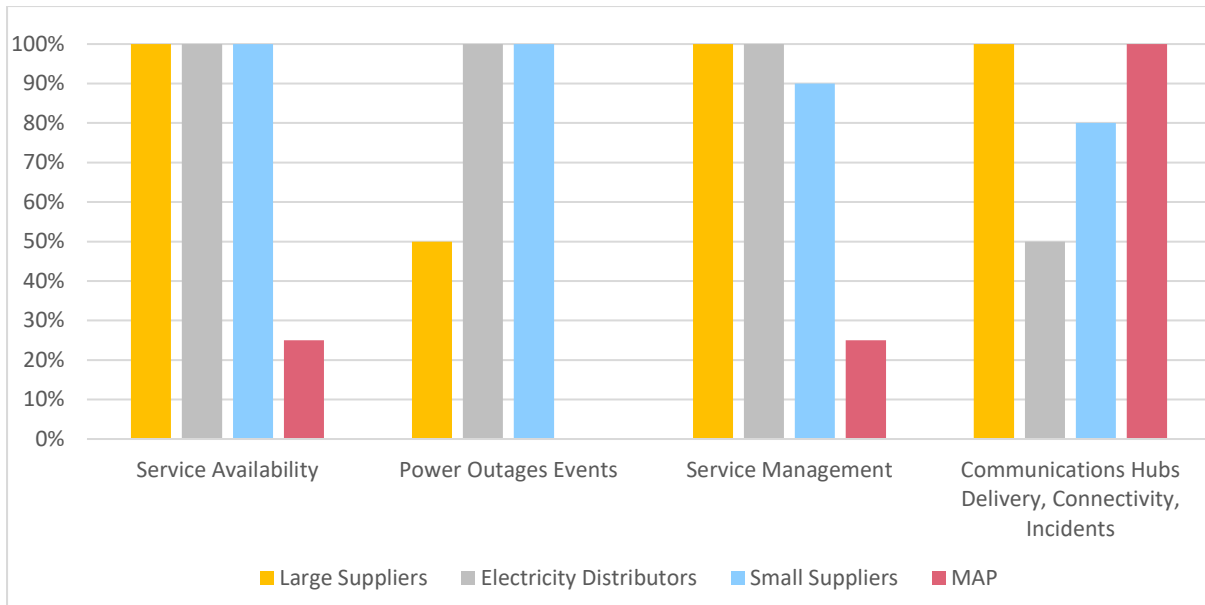
*Note.* Percentages on the y-axis are an aggregate of all respondents, hence the maximum value would be 100% \* four (respondent types) = 400%.



**Figure 9**

### Question 7

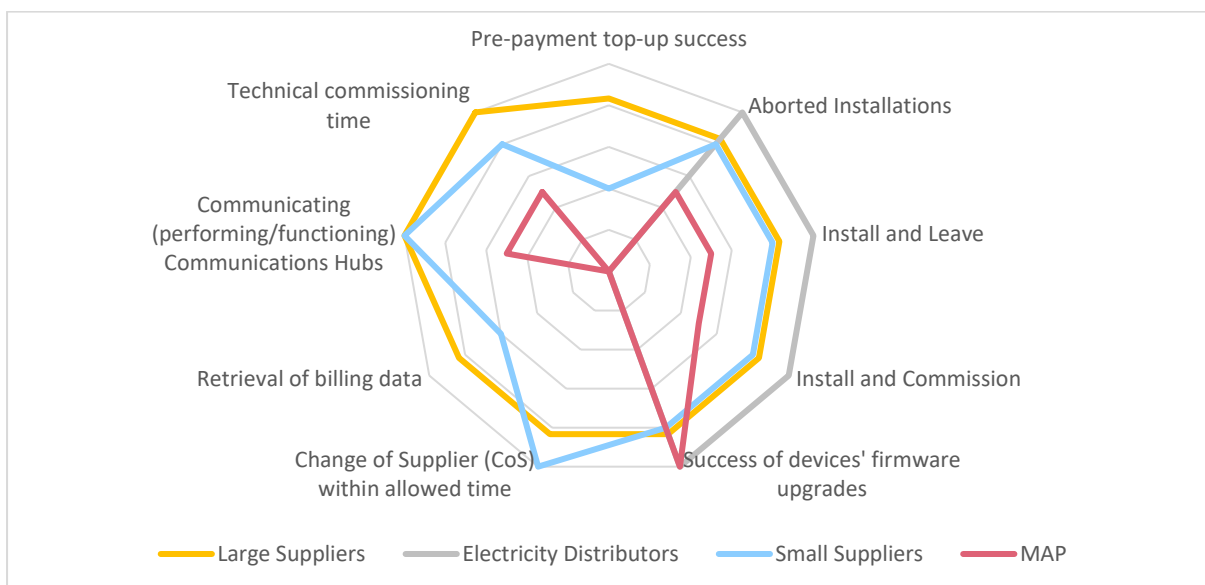
In the PMR, the Service Provider Performance Measures currently report on the following Performance Areas. How would you rate each one in regard to their importance to you?



**Figure 10**

## Question 9

PMR metrics should be outcome-based and driven by User business requirements. Which of the following areas would you like to see measured?



**Figure 11**

The Project received additional feedback from the respondents. This was helpful as it expanded on areas of interest that Parties highlighted in their responses and provided additional detail around their concerns and pain points. The feedback is reported by SEC Party type below:

- a. Large Suppliers
  - i. Performance for managing CH Returns in the PMR
  - ii. CSP Timescale to resolve coverage issues needs reviewing
  - iii. Need to move to a set of metrics that define operational readiness (fully functional, up-to-date firmware) and stability (firmware success track records, meter read consistency, HAN up-time etc)
  - iv. Comms Hubs that haven't successfully been firmware upgraded
  - v. Devices installed in error such as a meter that is non ICHIS compliant or cellular installed but should be Mesh, dependent on location
  - vi. Over the Air Firmware upgrades volumes and timings E&A performance of IOC to date
  - vii. Success of comms hub firmware upgrade
  - viii. Reporting needs to show CH successfully birthed vs. those not successfully birthed.
  - ix. Meter balance adjustments change of modes and debt.
- b. Small Suppliers
  - i. CoS Gains vs Supplier Start Date (SSD) i.e. is the customer's smart meter functioning correctly on their SSD? What issues were seen along with volumes?
  - ii. All metrics split between S1 and S2 metering
  - iii. Number of S1 CoS gains split by how many dormant meters regained smart functionality vs non dormant meters joining the DCC network
  - iv. Very interested in Prepayment metrics (i.e. top ups not being applied to meters through the network because of outages or no WAN issues)
- c. Electricity Distributors
  - i. Outage Alerts "time to deliver" broken down into timeframes
  - ii. Proper metric regarding Power Outage Alerts and their delivery
  - iii. Power Restoration Alerts delivery
  - iv. Total incidents over 90 days old broken down by type
  - v. Communicating (performing/functioning) ESME's
  - vi. Sending Configuration information including voltage and alert configuration
- d. Other Party
  - i. "As a meter asset provider, we have no access to the information the DCC holds on the assets we own. Whilst a meter remains with the installing supplier, we can usually

source information on things like current FW version, but once a meter has churned to another supplier, we can no longer access the data we need to manage our assets”.

Following a visual analysis of the results, the Project compiled the table below to facilitate the comparison between User responses. Each column reports the responses received to the questions reported above, namely, questions 2, 3, 7, and 9. As the Project did not receive responses from Gas Transporters, the analysis provided below is relevant to the following SEC Party types: Large Suppliers, Small Suppliers, Electricity Distributors and Other Parties (more specifically, Meter Asset Providers).

*Note.* Numbers in parenthesis show how the responses ranked (where there are multiple items with the same number, it means the options ranked equally).

User Type	Key Business Processes (Q2)	Not Appropriately Reflected (Q3)	Important Performance Areas (Q7)	Areas to Measure (Q9)
<b>Large Suppliers</b>	<b>(1) Billing</b> <b>(1) Credit Management – pre-pay</b> (2) Install and commission (2) Security and key management (2) CoS (2) Tariff Updates (3) Logistics (CHs order and returns) (3) In-life meter management (4) Alerts Management	<b>(1) Billing</b> <b>(1) Credit Management – pre-pay</b> <b>(1) Logistics (CHs order and returns)</b> (2) Install and commission (2) In-life meter management (2) CoS (3) Security and key management (3) Alerts Management (4) Tariff Updates	<b>(1) Service Availability</b> <b>(1) Service Management</b> <b>(1) CHs Delivery, Connectivity, Incidents</b> (2) Power Outages Events	<b>(1) Performing/Functioning CHs</b> <b>(1) Technical commissioning time</b> (2) Pre-payment top-up (2) Installation (aborted, leave, commission) (2) Success of devices' firmware upgrade (2) CoS (2) Retrieval of billing data (3) Other: OTA upgrades (meters/CHs) (3) Other: Successful birth events
<b>Small Suppliers</b>	<b>(1) Security and Key Management</b> (2) Alerts Management (3) Install and Commission (3) In-life Meter Management (3) CoS (3) Billing (4) Credit Management – pre-pay (4) Logistics (CHs order and returns) (4) Tariff Updates	<b>(1) CoS</b> (2) Security and Key Management (2) Logistics (CHs order and returns) (2) Credit Management – pre-pay (2) In-life Meter Management (3) Install and Commission (3) Billing (3) Alerts Management (3) Tariff Updates	<b>(1) Service Availability</b> <b>(1) Power Outages Events</b> (2) Service Management (3) CHs Delivery, Connectivity, Incidents	<b>(1) CoS</b> <b>(1) Performing/Functioning CHs</b> (2) Installation (aborted, leave, commission) (2) Success of devices' firmware upgrade (2) Technical commissioning time (3) Retrieval of billing data (4) Pre-payment top-up (5) Other: CoS gains vs SSD
<b>Electricity Distributors</b>	<b>(1) Alerts Management</b> (2) In-life meter management (2) Security and Key management	<b>(1) Alerts Management</b> (2) In-life meter management (2) Install and commission	<b>(1) Service Availability</b> <b>(1) Power Outages Events</b> <b>(1) Service Management</b>	<b>(1) Installation (aborted, leave, commission)</b> <b>(1) Success of devices' firmware upgrade</b> (2) Other: power outage alerts and their delivery

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	(3) Install and commission		(2) CHs Delivery, Connectivity, Incidents	(2) Other: power restoration alerts delivery
<b>Other Parties (MAPs)</b>	<b>(1) Logistics (CHs order and returns)</b> <b>(1) In-life meter management</b> (2) Change of Supplier (3) Install and Commission (4) Security and Key Management	<b>(1) In-life meter management</b> (2) Logistics (CHs order and returns) (2) Install and Commission	<b>(1) CHs Delivery, Connectivity, Incidents</b> (2) Service Availability (2) Service Management	<b>(1) Success of devices' firmware upgrade</b> (2) Installation (aborted, leave, commission) (2) Performing/Functioning CHs (2) Technical commissioning time (3) Other: enrolment of S1 devices

**Table 15**

From this analysis, the Project made the following observations:

- e. Large suppliers are mainly focused on the monitoring of processes related to 'customer management', such as pre-pay and billing
- f. MAPs are mainly interested in 'asset management' metrics and in-life meter management metrics (i.e. Meter life)
- g. Service availability is rated as the most important area in the PMR across the board, with Power Outage Events and CHs-related metrics ranking just below it
- h. Success of devices' firmware upgrades (and CHs firmware upgrades) is a measurement area of interest across all respondents
- i. Electricity distributors expressed interest in metrics related to power outages and restoration alerts delivery. Similarly, Small Suppliers also highlighted interest in power outages event metrics, and rated Alerts Management as a high importance business process, ranking just below Security and Key Management.

## 7.2 Trialling – Additional Information

This section provides additional information regarding the trialling that was conducted as part of the Quick Wins workstream.

### Feedback received:

- a. Trial Report 1:
  - i. Six responses from Large Suppliers (four), Small Suppliers (one) and DNOs (one)
- b. Trial Report 2:
  - i. Eight responses from: Large Suppliers (three), Small Suppliers (two), DNOs (two), Other Party (one)

### Timeline and relevant dates:

- c. Trial Report 1:
  - i. Dec 16th, 2019: Report issued to DCC Users

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- ii. Jan 10th, 2019: Feedback teleconference held and conclusion of trial
- d. Trial Report 2:
  - i. Jan 7th, 2019: Report issued
  - ii. Jan 20th, 2019: Feedback teleconference held and conclusion of trial

The Table below provides an overview of the metrics trialled within each trial report:

Trial Iterations	Prioritised Areas	Metrics Description
Trial Report 1	Pre-Payment	Volume of unique Service Request Variant 2.2's and success volume
		Success and Failure of SRV 2.2's and success percentage
		Regional split reporting on successful and failed SRV 2.2's
		Unique device split reporting on successful and failed SRV 2.2's
		Success of SRV 2.2's ('Success on which attempt?' view)
	Change of Supplier	View of volume of industry CoS, Industry CoS (DCC Users), Attempted CoS, and Successful CoS
		Percentage view of success rate (successful CoS) against the overall population of attempts (attempted CoS)
Trial Report 2	Meter Installation Volumes	Monthly view of the volume of installations plotted on a daily basis
		Split by supplier view plotted against the daily view of installation volumes
		Weekly view of installation volumes stacked by day of the week
		Distribution of installation by day of the week
		Percentage of installations split by region
		Volume of installations by device type
		Total number of installations for the month, aggregated by day of the week

**Table 16**

### 7.3 Evaluation Framework

The evaluation framework structure set out below was first populated with User priorities and requirements against each of the business process areas. The Project then worked with the DCC and

the SECAS Community of Experts (CoE) to define a set of new measures meeting the User requirements, that would provide the appropriate metric for the reporting of the DCC service levels.

Users Business Processes	Service Requests Used / Flow	Importance of Business Process to DCC Users (in relation to Measurement via PMR) (RAG status)	User Requirement (based on user feedback from survey, workshop and other ad-hoc sources)	Is metric published in PMR (and if so, where)?  Does the current metric meet the requirement?	Is this a Measure (that can have associated targets) or is it a KPI for User information purposes only?	Definition of Metric to meet requirement
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## 7.4 PMR Open Issues

Reporting Period (Month)	PMR Section (CPM, PM etc)	Issue Noted by OPSG	DCC response	Next action DCC	Notes	Status
Jul-18	Service Provider Performance Measures DSP	<p>All DSP measures are reported as above Target Service Level except for DSP 2.7 Service Availability Test Services. DSP measure 2.17 is below Target Service Level but above Minimum Service Level at 98.42%. This was due to an outage to the User Interface Test (UIT) -B environment on the 6th July following a planned change. Investigation has established the root cause was a product defect. An enduring fix is being pursued. Interim measures have been taken to mitigate reoccurrence (<b>INC285583</b>)</p> <p>PM2.1 reported as 100% but core comms were down on 31 July 2018 (INC ending 289437) PM2.4 shows 100% availability, but SSI was down for a period on 2 July 2018 (INC ending 275989)</p> <p>PM7 planned maintenance events showing as 100% but two additional unapproved maintenance windows occurred on 3 July and 31 July 2018)</p>	<p><b>INC285583</b> is related to <b>PBI109401</b> which is currently in Pending Status. Target completion date of 30/06/19 ROOT CAUSE: Root Cause was confirmed as the implementation of a change. SOLUTION: To mitigate a reoccurrence of this issue, a longer time frame is to be allocated for post implementation of any change work. As a further mitigating action; documentation is required to be updated to reflect the requirement to manually allocate the default gateway routing to the F5 if it has been rebooted. Investigations during the issue also identified there is a software bug with F5 accepting IPv6 traffic post reboot, which also needs to be addressed. It should be noted that to be classed as unavailable the whole environment must be down – the rest of the motorway was not affected. These are 2 unplanned maintenance changes. The specific measure is measuring the planned maintenance success rate. The timescales for notifying of planned maintenance have been reviewed since and are now more in keeping with operational requirements.</p>	<p>Propose to review and close when PBI closed.</p> <p>The Target Completion Date for this Problem Record is now 30th September 2019.</p>	DCC to update Problem Record Status	Open

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Sep-18	Code Performance Measures	<p>All CPMs except for CPM1, and CPM3 are reported as above Target Service Level.</p> <p>CPM1; percentage On Demand Service Responses delivered within applicable Target Response Time is reported below Target Service Level at 97.72%. This is above Minimum Service Level. In its explanation the DCC has provided a view across the three Communication Service Provider regions. CSP North CSP Central CSP South 96.16% 97% 98%.</p> <p>The contributing issues across all regions is Firmware updates not completing within Target Response Times. A single Communications Hub with a meter and partial firmware image was identified as the root cause for the CSP North performance. Not clear what the root cause of the failure for CSPN is? CSPCS failure due to certificate mis match? Unclear what root cause is?</p> <p>CPM3; percentage future dated Service Responses delivered within the applicable Target Response Time is reported below target at 97.09%. The DCC note that investigations continue under Problem Record ending 6201. The commentary in this report seems to be at odds with the Problem Report, which suggest a fix has been identified. Has this been successful?</p>	<p>DCC Problem team are currently investigating issue under <b>PBI000000113321</b>. Awaiting CSP Souths Comms Hub Firmware upgrade to resolve the majority of unplanned reboot issues. After the upgrade greater analysis can be completed of any Comms Hubs still suffering with unplanned Reboots as extra logging will be included in the update. The updated Firmware received go from DCC Change team 2/4/19. RCA is still ongoing.</p> <p>CPM3 - PBI6201 - Has been fixed on 28/02/19.</p>	Propose to resolve when PBI closed, issue still ongoing with no ETA as of 24/07	DCC to update Problem Record Status	Open
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Oct-18	Code Performance Measures	<p>All CPMs except for CPM1 are reported as above Target Service Level.</p> <p>CPM1 achieved a Service Level of 96.63% which is below Target but above the Minimum of 96%. The main contributory factor was Firmware Payload for Communication Service Provider (CSP) Central and CSP South. The underlying cause is a certificate mismatch issue for which a fix is reported as planned, but no target date is given.</p> <p>CMP1 (% of On-demand Service Responses delivered within TRT) below Target Service Level at 96.63%; all other CPMs above TSL 96.33% reported in tables.</p> <p>Major Incident Report INC000000337346 – 24th Oct, root cause in report does not match information provided.</p>	<p>DCC Problem team are currently investigating issue under PBI000000113321. Awaiting CSP South Comms Hub Firmware upgrade to resolve the majority of unplanned reboot issues. After the upgrade greater analysis can be completed of any Comms Hubs still suffering with unplanned Reboots as extra logging will be included in the update. The updated Firmware received go from DCC Change team 2/4/19. RCA is still ongoing.</p> <p><b>INC000000337346</b> is related to <b>PBI111817</b>, which was Closed on 10th December 2018. ROOT CAUSE: The /opt file system space usage reached 90% in the VoltDB database nodes, which resulted in the VoltDB database switching into read only mode as a failsafe. This was due to general growth of the database, snapshots and log files and was confirmed by the technical Database team at the time of the incident. Capacity monitoring of the /opt file system did not warn early enough due to inappropriate thresholds. Thresholds were set to 90% which was not breached due to VoltDB switching to read only mode. Some of the alerts received during the incidents were not acted upon appropriately. They were considered to relate to the VoltDB DR replication issue when in fact they were related to the VoltDB production issue.</p>	Propose to resolve when PBI closed, issue still ongoing with no ETA as of 29/07. Telefonica Problem Management are looking to give timescales on outcome of investigations w/e 04/08	DCC to update Problem Record Status	Open
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Oct-18	Service Provider Performance Measures CSPN	<p>CSPN has failed to meet Performance Measures 1.1 and 1.2 for delivery of Communication Hubs. The report states this was down to a hardware change by the manufacturer for the 420 variant not being ready in time for October deliveries due to issues with test equipment. The report does not detail what the hardware change is, or if previous versions of the variant communication hubs that Service Users may already have installed or hold in stock may be impacted.</p> <p>A number of CSP measures are reported as No Data but there is no explanation provided for this. For example, Performance Measures relating to Power Outage Alerts (Performance Measure 12.2).</p> <p>There are an increased number of Exceptions reported this month, various reasons are provided and as discussed at OPSG_14 we are expecting the DCC to provide further detail about how the exceptions are being applied.</p>	DCC Comms Hub Logistics team to investigate: Internal DCC Reference: REQ000000148918	DCC Comms Hub Logistics team to investigate Internal DCC Reference: REQ000000148918	Update required on DCC investigation	Open
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Dec-18	Code Performance Measures	<p>General Observation; Exec Summary; there is no explanation linking these to the sections of the report, which may have been useful for Parties. The table listed at 3.1.4. does not correspond with the number of Incidents listed in the executive summary.</p> <p>Code Performance Measures;</p> <p>CPM 1, 'Percentage of on demand service responses delivered within the applicable target response time' is below minimum target at 83.54%. This is due to a missed target for Performance Measure (PM) 2 'percentage of Category 1 Firmware Payloads completed within the relevant Target Response Time' for both Communication Service Provider Central and South (CSPC&amp;S) and CSP North. The report states the reason for this was 'Service Users submitting multiple requests for the same Global Unique Identifier (GUID) (This applies to 2363 out of the 2870 failures)'. The Report may be re-issued subject to investigation (PBI000000113503), however this Problem Record is not listed in the latest Quarterly Problem Report.</p> <p>CPM3 'Percentage of Alerts delivered within the applicable TRT' is below target at 98.24%. The report states that further review is ongoing.</p> <p>CPM4 "Percentage of Category 1 and 2 Incidents resolved within Target Resolution Time", is below target at 85.71%. This report states the reason for this is Incident ending 415468, impacting the CSPC&amp;S regions on the 6 December 2018.</p>	<p>DCC Ops Reporting Team to investigate:</p> <ul style="list-style-type: none"> <li>- The table listed at 3.1.4. does not correspond with the number of Incidents listed in the executive summary - MIM have missed 3 Incidents from their Section - Report will need to be reissued with this updated.</li> <li>- CPM1 query - This was updated in V2.0 of the report and this commentary was removed</li> <li>- CPM3 query - Service Provider Management will need to provide this response.</li> <li>- CPM4 query - Incident Report included in Executive Summary section.</li> </ul>	<p>DCC Ops Reporting Team to investigate:</p> <p>Internal DCC Reference: REQ0000001 48919</p> <p>MIM Team to update missing incidents</p> <p>INC0000003 94023,</p> <p>INC0000003 94440,</p> <p>INC0000004 15865 and remove one that wasn't closed until January</p> <p>INC0000004 19894.</p> <p>Service Provider Management to provide CPM3 response.</p>	Update required from DCC investigation	Open
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Jan-19	Code Performance Measures	<p>All Code Performance Measures are reported above Target with the exception of;</p> <p>CPM1 "Percentage of OnDemand Service Responses delivered within the applicable Target Response Time" is below Target at 98.57%. This was impacted by failure of the Communication Service Provider Central and South to complete Firmware updates. The DCC reports that actions are ongoing to improve performance. A change was implemented 7 March 2019. Benefits are expected to be seen from the March/April performance reports.</p> <p>CPM4 "Percentage of Incidents which the DCC is responsible for resolving and which fall within Incident Category 1 or 2 that are resolved in accordance with the Incident Management Policy within the Target Resolution Time" is below Minimum Service Level at 75%. The reason is cited as Major Incident 419894.</p> <p>CPM5 "Percentage of Incidents which the DCC is responsible for resolving and which fall within Incident Category 3,4, or 5 that are resolved in accordance with the Incident Management Policy within the Target Resolution Time" is below Target Service Level at 87.11%. Having queried this with the DCC, we are informed this is due to a large % of Incidents created by CSP C&amp;S remaining unresolved. The DCC Incident Management team have implemented a new process to deal with CSPC&amp;S Incidents, which will provide more data to aid triage and timely resolution.</p>	<p>DCC Ops Reporting Team to investigate:</p> <p>CPM1 - What's the question?</p> <p>CPM4 - Incident Report is included in the Executive Summary</p> <p>CPM5 - What's the question? Latest reports show the aged incidents split to SU responsibility and DCC/SP responsibility</p>	<p>SECAS to provide clarity on DCC queries Internal DCC Reference: REQ0000001 48919</p> <p>Clarity required on queries for CPM1 &amp; CPM5</p>	<p>Details provided. Update required from DCC investigation</p>	Open
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Feb-19	Code Performance Measures	<p>All Code Performance Measures are reported above Target with the exception of;</p> <p>CPM1 "Percentage of OnDemand Service Responses delivered within the applicable Target Response Time" is below Target at 98.57%. This was impacted by the failure of the Communication Service Provider Central and South to complete Firmware updates and this is the third month in a row this has missed target service level. The DCC reports that actions are ongoing to improve performance. A change was implemented 7 March 2019. Benefits are expected to be seen from March/April, therefore we hope for a more up to date explanation at OPSG_20 now the fix has been implemented.</p> <p>In Section 3.1.2, it notes 2 Incidents were excluded as they were 'Event Monitoring'. We ask the DCC to provide an explanation of What Category of Incidents are captured under Event Monitoring. We note that the number of aged Incidents is increasing month by month. The DCC raised the issue of resolution with Users at the last OPSG meeting and there is an Issues Workshop scheduled for 1 May to better understand root causes.</p>	<p>DCC Ops Reporting Team to investigate: CPM1 - Service Provider Management to update.</p> <p>There was an improved performance in May (still below minimum) and June (above minimum but below target)</p> <p>Section 3.1.2 - Incident Management/Service Provider Management to update.</p> <p>Workshop - Incident Management/Service Management to update.</p>	<p>DCC Ops Reporting Team to investigate: Internal DCC Reference: REQ0000001 48919 Incident/Service Provider/Service Management to provide necessary feedback</p>	Update required from DCC investigation	Open
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Mar-19	Code Performance Measures	CPM1 <i>"Percentage of OnDemand Service Responses delivered within the applicable Target Response Time"</i> is below Target at 98.57%. This was impacted by the failure of the CSP Central and South (CSP C&S) and CSP North (CSP N) to complete Firmware updates and this is the fourth month in a row this has missed target service level. The January PMR reported that a change would be implemented in CSP C&S on 7 March 2019 to partially address this issue. Benefits were not expected to be seen until March/April, so may not have affected the PMR measures themselves, however we note that this measure deteriorated in CSP S (92.66% in February, 89.46% in March). We would expect to see a commentary within the paper to state whether the fix has been implemented and if it is working.	DCC Ops Reporting Team to investigate: Internal DCC Reference: REQ000000148919  CPM1 - Service Provider Management to update. There was an improved performance in May (still below minimum) and June (above minimum but below target)	Propose to close based on explanation.	Update required from DCC investigation	Open
May-19	Incident	There is misalignment in key Incidents (Category 2), between the May Operational update presented by the DCC at OPSG and the Category 2 Incidents shown in the PMR. INC000000452354 (14 May) is absent from the PMR as is INC000000456123 (24 May). The PMR doesn't list the dates of the Incidents in the Incident start date/time section, this would be helpful to cross reference. INC000000447372 is in the PMR but was not in the DCC operational update. Please can you confirm the volume of Incidents for May 2019.	DCC Incident Management to investigate: Internal DCC Reference: REQ000000148822	DCC Incident Management to investigate: Internal DCC Reference: REQ000000148822	Update required from DCC investigation	Open

Jun-19	CSP South Contract	PM 12.2 is now at 227.09% (it was 174% last month). Please could you clarify in your explanation that schedule 2.2 is part of the Service Provider contract. Is this calculation different in the C&S contract? For the same PM they are reporting 100%. Or are the calculations the same in both regions but the C&S are reporting the figure as 100% even though, in reality, they are gaining a similarly high figure to the CSP N? Please could you provide clarification?	Internal DCC Reference: REQ000000149848 Supplier management to review 22_08		Update required from DCC investigation	Open
Jun-19	Exceptions CSP South	The number of instances of 'There were no, or incomplete address details provided by the Service User', is the overwhelming majority of exceptions in both CSP C&S. Our understanding is that a change to the DSP system (SCR154) is currently scheduled for release on 27 August 2019. This will enable CSPs to access location information without a modification to the SEC and will reduce/remove the instances of this exception? Is this correct?	Internal DCC Reference: REQ000000149848 Supplier management to review 22_08		Update required from DCC Investigation	Open

