

SEC Modification Proposal, SECMP0122, multiple Change Requests

Operational Metrics

Preliminary Impact Assessment (PIA), "August 2021 Release"

Version:	0.3
Date:	4th September, 2020
Author:	DCC
Classification:	DCC Public

Contents

1	Document History	3
1.1	Revision History	3
1.2	Associated Documents	3
2	About this Document	4
3	Impact on DCC Systems, Processes and People, PIA	5
3.1	Changes Requests for External Data and Contractual Change.....	5
3.2	Solution Notes	7
4	Impact on DCC Systems, Processes and People	10
4.1	DCC Technical Operations Centre Development and Testing.....	10
4.2	DCC Application Support.....	10
4.3	DCC Contractual Negotiation.....	10
4.4	Security Impact	10
4.5	Technical Specifications	10
4.6	Infrastructure Impact.....	10
4.7	DCC Development and Testing Costs.....	11
4.8	Service Provider Application Support.....	11
4.9	Contractual Change and Data Provision.....	11
5	Implementation Approach and Timescales.....	12
6	Costs and Charges.....	12
	Appendix A: Glossary	14
	Appendix B: Supporting Information	15

1 Document History

1.1 Revision History

Revision Date	Revision	Summary of Changes
04/09/2020	0.3	Initial draft version, internal DCC review

1.2 Associated Documents

This document is associated with the following documents:

Ref	Title and Originator's Reference	Source	Issue Date
1	MP122 Business Requirements v1.2 (draft6)	SECAS	24/07/2020
2	MP122 Preliminary Assessment Request	SECAS	14/05/2020
3	OPSG OMR Report Final	OPSG	12/05/2020`
4	MP122 DCC Preliminary Assessment v0.5	DCC	25/06/2020
5	SECMP0122 FIA February 2021 Release	DCC	03/09/2020

References are shown in this format, [1].

2 About this Document

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

As part of the process of developing a solution for this Modification, two tranches of work were identified:

1. Where the data is identified as being already available to the DCC Technical Operations Centre (TOC), working within the constraints of the current solution should involve no commercial change to the DCC Solution, although there will be a direct impact on support and maintenance. This is referred to as the "February 2021 Release". Document [5] contains the Full Impact Assessment for this functionality.
2. Where further "external data" has been identified, it has been separated out with individual DCC Change Requests sent to the relevant Service Providers, as identified in the solution analysis. These data requests are highlighted in this document, and are considered as PIAs with a ROM cost assessed for each requirement. If the Working Group decides it wants to go ahead with this external data and associated development, it will be sent out for a FIA.

Note that these additional external data requests will also require contractual negotiations between the DCC and the impacted Service Providers, which is expected to take at least six months to complete. These changes have been grouped into an arbitrary August 2021 release for ease of reference, although detailed planning will be required if DCC is given the go ahead to include this data.

The label "August 2021 Release" is an arbitrary one. This Modification will be implemented on the TOC Systems, and as such is totally independent of the Smart Metering System SEC Releases.

The context, Business Requirements, specific measures and indicators, and supporting material are included in document [5] to avoid duplication.

3 Impact on DCC Systems, Processes and People, PIA

As defined above, this section contains summary information about Change Requests related to this Modification where "external data" currently held by Service Providers will be required to fulfil requirements. Full details are covered in a separate document [5].

Service Providers have been asked to produce a Rough Order of Magnitude cost (ROM) to provide this data, as well as a cost to produce the FIA. The ROM describes indicative costs to implement the functional requirements as assumed above. The price is not an offer open to acceptance. It should be noted that the change has not been subject to the same level of analysis that would be performed as part of a Full Impact Assessment and as such there may be elements missing from the solution or the solution may be subject to a material change. As a result the final price is likely to result in a variation.

3.1 Changes Requests for External Data and Contractual Change

The following table shows the DCC Change Requests (CR) raised to meet based on the requirements referenced in document [5]. Where multiple Service Providers are impacted by a CR, the total are shown in brackets.

CR	Service Providers (#)	Description	Req. Ref	Requirement Details
1418	DSP (1)	Throughput of Alerts	2.1.2, 2.2.8	DCC require the following requirement is to be assessed to enrich TOC data and a PIA produced: [A] - DSP shall identify the throughput of all Alerts at the following points: Received by Comms Hub/Devices (where this can be logged), Received by CSP/S1SP/ DCO, Passed to the DSP, Received by the DSP, Passed to Service User and the Service User handshake received confirming receipt (inline with the current work on Power Outage alerts). [B] - Pursuant to Requirement A, the DSP shall provide data to TOC at intervals of 15 minutes.
1420	All SPs (13)	Incident reporting to support revised PMR	2.5	DCC require the following requirement is to be assessed to support the revised Performance Measurement Reporting (PMR) and a PIA produced: [A] All Incidents logged in Remedy shall be reported by Category, with statistics identifying number of Incidents per Category, the number that met the Target Initial Response Time and the number that met the Target Resolution Time, broken down by Resolver Group where the resolver is DCC, DSP, CSP, S1SP, DCO or other Service Providers. [B] Pursuant to [A], the reporting shall be provided to support the revised PMR within 1, 2, 3, 5 Working Day of Month End (rather than current 5 Working Days).
1421	DSP, CSP North (2)	SRV 11.1 (Update Firmware)	2.1.1, 2.2.6	Service Request Variant (SRV) 11.1 is used to send Firmware updates to meters. This SRV can be sent to set up the schedule on multiple meters. DCC need to track the success of this SRV through all components. DCC require the following requirements is to be assessed and a PIA produced: [A] (SMETS2+) - DCC require data to be able to link SRV 11.1 to the component messages and targeted Device responses sent and received within CSP systems to identify whether the Firmware Image has been successfully applied to the Device(s). [B] Pursuant to [A], the Service Providers shall provide data to the TOC on a daily basis identifying throughput.

1423	DSP, CSPs	Comms Hub Firmware Image Data	2.1.1, 2.2.7	DCC require the following requirement be assessed to enrich TOC data and a PIA produced: Messages to upgrade Comms Hub Firmware Images are invisible to DCC as they are sent directly on CSP and S1SP networks. DCC need to report on attempts and success of the download of Comms Hub Firmware Images. The Service Provider shall provide data to the Technical Operations Centre (TOC) on a daily basis identifying throughput.
1429	CSPs (2)	Additional CSP Reporting to validate 90 Day No SMWAN Incidents	2.2.2	As a result of the changes being made to support SEC Mod 122 (see attached Business Requirements - specifically 2.2.2 Install and Commission: "Measure daily total volume of Install and Commission versus Install and Leave"), DCC are required to measure the daily total volume of Install and Commission versus Install and Leave. This shall include a category for any Comms Hubs awaiting a decision that are still within the 90 Day investigation period for Install and Leave. DCC can report on Communications Hub Status Update – No WAN SRV 8.14.2's seen in the system and can then compare this to Remedy Data to link to Incidents raised by DSP as a result of 8.14.2's. DCC's process for this will rely on matching data from 2 different data sources so that DCC can use this to validate our own reporting. [A] The Service Provider shall provide data relating to 90 Day Install No SMWAN Incidents that they have received (including but not limited to Incident ID, Category, submit date, GUID, MPxN and Diagnostics Results, Exception/Exclusion Information). [B] The Service Provider shall provide data relating to 90 Day Install No SMWAN Incidents that have been closed (including but not limited to Incident ID, Category, submit date, GUID, MPxN and Diagnostics Results, Exception/Exclusion Information). [C] Pursuant to [A] and [B], the Service Providers shall provide data to the TOC on a daily basis.
1430	All SPs (13)	PMR reduced timescales	2.4	DCC require the following requirement is to be assessed to support the revised PMR timelines and a PIA produced: [A] All existing reports provided to support the DCC Performance Measures Report which include ESI-101, ESI-102 and the Service Provider Monthly Performance Measurements Report are to be provided to DCC on Working Day 2 following Month End. For clarity, this is to be the initial submission. [B] If a final submission is applicable, the Service Provider shall provide DCC with an uplifted set of reports which include ESI-101, ESI-102 and the Service Provider Monthly Performance Measurements Report by Working Day 5 following Month End. [C] Relevant to ESI-101, ESI-102 and the Service Provider Monthly Performance Measurements Report, on request from the DCC the Service Provider shall provide DCC with supporting commentary for any events that impact meeting the SLAs contained within these reports as events occur and are investigated throughout the month on request from the DCC within 2 Working Days. [D] Relevant to the reports identified in this CR, the Service Provider shall provide commentary as events occur and are investigated throughout the month on request from the DCC within 2 Working Days.
1438	CSP N and S1SPs (11)	Throughput of Alerts	2.1.2, 2.2.8	DCC require the following requirement to be assessed to enrich TOC data and a PIA produced: [A] The Service Provider shall identify the throughput of all Alerts at the following points: Received by Comms Hub/Devices (where this can be logged), Received by CSP/S1SP/ DCO, Passed to the DSP [B] The Service Provider shall provide reporting to DCC identifying receipt of an alert from HAN Devices, the Communications Hub (where this is available) shall record the date and time [C] Pursuant to [A], the Service Provider shall provide data to the TOC at intervals of 15 minutes.

1440	DSP & S1SPs (5)	SRV 11.1 (Update Firmware)	2.1.1, 2.2.6	<p>Service Request Variant (SRV) 11.1 is used to send Firmware updates to meters. This SRV can be sent to set up the schedule on multiple meters. DCC need to track the success of this SRV through all components. DCC require the following requirements is to be assessed and a PIA produced:</p> <p>[A] (SMETS1) DCC require data to be able to link SRV 11.1 to targeted Devices (including Comms Hubs) within the SMETS1 estate.</p> <p>[B] The SMETS1 Service Provider shall report the success or failure and round trip time of the upload of Firmware Image to individual Devices (including Comms Hubs) .</p> <p>[C] The SMETS1 Service Provider shall report the success or failure and round trip time of the activation of a Firmware Image to individual Devices (including Comms Hubs).</p> <p>[D] Pursuant to [A], [B], and [C], the Service Providers shall provide data to the TOC on a daily basis identifying throughput.</p>
------	-----------------	----------------------------	--------------	--

3.2 Solution Notes

It should be noted that as part of their PIAs, most Service Providers distribute solution notes, as well as a comprehensive RAID in some cases, but these have not been included for simplicity at this stage.

The following highlights, points and concerns have been raised by Service Providers and DCC regarding these requirements. Investigation of these is ongoing, or will be covered in the FIA phase.

CR	Notes
All	It should be noted that one Service Provider, DXC, is fully committed to the SMETS1 rollout, and could only produce a ROM and FIA production cost estimates at this time. They do not believe they would be available to start any further work or complete a FIA until their SMETS1 commitments are complete.
1418	Identified impacts on internal DSP components, including the CSP SMWAN gateways, SMETS1 SMWAN gateway, transforms, and ESI reporting. Will require DSP SIT testing.
1420	As DCC is using data already in the TOC, the impact is limited to reducing the delivery timescales from 25 to 10 days and manual workarounds from the Service providers.
1421, 1423, 1440	All these CRs are Smart Metering System dependent, and will have system changes associated with them. This will entail PIT, SIT, and UIT, with the latter two testing phases not included in this PIA. In addition, planning for this work would be required to align with SEC Releases. The solution for CR1421 forms the basis for CR1423 and CR1440. There is a significant overlap with SECMP0007 with these CRs, and if that SEC Modification was progressed, these changes would be redundant. Whether SECMP0007 or these Change Requests are used for progressing the requirements, TOC development and reporting requirements would be covered by the DCC estimates stated following.
1430	Two Service Providers have indicated that draft performance monitoring reporting for 'ESI-101', and 'ESI-102' can only be provided on the 7th Working Day following measurement period end. Although the CR requests a timescale reduction, these

	<p>timelines cannot be reduced from 7 Business Days following measurement period end because TRT's of some of the transactions itself takes up to 48 hours. This coupled with further reporting server processing and authored report generation will take at least this much time.</p> <p>One Service Provider has indicated the following reports must remain at 10th Business Day following measurement period end:</p> <ul style="list-style-type: none"> a) SLMR reporting b) Operational effective report: Capacity and availability report c) Service failure report d) Quarterly summary report e) Annual summary report <p>Multiple Service Providers indicated for Requirement-C, reverting any requests or questions or commentary on the service performance measurement package across the month can be attempted to be closed within 2 Working Days, but the time taken will be dependent on nature of queries raised, and the level of analysis required, and this delivery time cannot be guaranteed.</p>
CR1438	<p>This will require minor changes to the SMETS1 system, with consequential PIT, SIT, and UIT.</p> <p>Secure will provide S1SP's service audit trail (SAT) to TOC periodically over with the following time-points:</p> <ul style="list-style-type: none"> • T1 When alert condition was triggered in device • T2 When alert was sent by CH and received by SMSO • T4 When alert condition was notified to IP5B • T5 When alert was delivered by IP5B to DSP <p>One SP believes they cannot provide data for alerts received by CHF.</p> <p>Data for CSP South and Central is already visible to the DSP.</p>

CR1440	<p>The following design notes based on DSP interactions have been provided.</p> <p>For the S1SPs to provide Firmware Tracking for Firmware Distribution to ESME/GSME/PPMID and Comms Hubs, the proposed solution will align very closely to the CR1421 (SECMP0007) solution described above (differences in red):</p> <ul style="list-style-type: none"> o DSP tracking and notification to Service Users (new DCC Alerts at various stages of distribution: CSP -> Comms Hub -> ESME/GSME/PPMID) o New S1SP to DSP API or S1SP Alert for S1SPs to notify success/failure of distribution to the Comms Hub o New S1SP to DSP API or S1SP Alerts from the S1SP to notify success/failure of distribution over the HAN to the end device (if relevant and available) o Existing Activation Responses/Alerts complete the tracking process o All of the above to be logged by DSP and sent to TOC on a regular basis as part of the Service Audit Trail (SAT). <p>This CR relies on CR1421 (or the implementation of SECMP0007), so the DSP change is a delta increment on top of CR1421. For S1SPs however, this is a completely new, standalone change. There is a dependency on firmware distribution statuses provided by the S1SPs and three new S1SP alerts, and design work will be required to ensure S1SP systems or new status values are provided to convey the statuses accurately. It should be noted that even if SECMP0007 goes ahead, the S1SP elements of this CR will still be required.</p> <p>Note that one SMETS1 Service Provider recommended 11.3 tracking, but this would not match the required solution. This would be reviewed in the FIA stage.</p> <p>There are instances where the reporting mechanism will only be available where those devices actually provide those alerts, i.e. they have the necessary functionality, are configured accordingly and communicating successfully. For example, IOC/MDS PPMID devices do not support the capability of returning an acknowledgement upon receipt of a firmware image during the distribution and/or activation of a new image; as a result, for PPMIDs the proposed reporting mechanism will only report the distribution status to the Comms Hub. Any similar exclusions will be determined during the design phase.</p>
--------	--

4 Impact on DCC Systems, Processes and People

As defined the changes included in this document are confined to changing the DCC TOC systems and the provision of external data with changes impacting both the SMETS1 and SMETS2 Service Providers.

4.1 DCC Technical Operations Centre Development and Testing

The full range of activities required to implement the August 2021 external data elements of the SECMP0122 requirements including design, development, testing, and implementation would be performed by DCC in-house contractors and permanent staff.

The DCC Technical Operations Centre development costs for this release:

- Deliver Data Model algorithms, build report, test, document, update database, update interfaces. and document solution

It is expected that the same team used to deliver the February 2021 release will move on to this development work.

4.2 DCC Application Support

There will be a considerable increase in the number of Full Time Equivalents (FTE) required to support, maintain, and deliver the reporting on a monthly basis. Is not part of the PIA, but will be expanded upon if approval for any of the CRs is given.

4.3 DCC Contractual Negotiation

If the go ahead is given to proceed to FIA for any of the external data changes, DCC staff will need to carry out contractual negotiations with the impacted Service Providers part of the process

4.4 Security Impact

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

4.5 Technical Specifications

No change to DUIS, GBCS, or any other Technical Specification is expected for changes limited to the TOC. However Change Requests such as CR1421, 1423, and 1440 will require changes to the Smart Metering System, and consequent changes to DUIS, DUGIDS, GBCS, and potentially other Technical Specifications are anticipated.

4.6 Infrastructure Impact

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

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

4.7 DCC Development and Testing Costs

Initial high level analysis suggests that the development, test, and implementation costs and durations associated with the "external" data requirements will be very similar to those based on data already held in the DCC TOC.

4.8 Service Provider Application Support

Impacts to Service Design, Service Management and other Application Support functions are anticipated, and it is expected that further Service Provider staffing will be required to support some of the PIA changes listed in this Modification. Where these costs have been identified as manual efforts to review or check data returns, they have been included in the Costs section below, unlike typical SEC Modifications.

These costs will be refined as part of the Full Impact Assessment covering external data contractual changes, and will reflect the complexity and other properties of the solution, although they aren't likely to vary greatly from the costs associated with the February 2021 release.

4.9 Contractual Change and Data Provision

At this stage it is difficult to predict the level of complexity, duration, or costs associated with any contractual change with resultant negotiations between DCC and the Service Providers. Clearly some of the requirements impact only one or two Service Providers, while others impact all the SPs.

Data provision may be a slight concern as there are some S1SPs who do not send data to the DCC in any form at this time. A ROM has been included for this figure, and these costs will be more fully evaluated as part of the FIA.

5 Implementation Approach and Timescales

A key factor in planning and delivering this Modification's implementation and release is that some of the changes are not part of the Smart Metering System, nor do they impact any Technical Specifications, such that they can be implemented by the TOC separate from the now-standard SEC Release dates.

Some requirements will require changes to Service Provider's internal systems, which may impact timescales. This will be assessed in the FIA for these changes.

6 Costs and Charges

The table below details the cost of delivering the changes and Services required to implement the CRs listed above for this Modification. The scope of supply under this PIA includes design, development (build) and testing within a selected TOC environment. Activities out of scope of this cost include Application Support, infrastructure improvements, and Service Provider contract changes. These would be defined as part of the FIA.

Changes such as CR1421, 1423, and 1440 will require changes to the Smart Metering System, and hence will require PIT, SIT and UIT integration testing if these options are selected. SIT and UIT testing is out of scope for a PIA, but PIT testing is included where appropriate.

The Rough Order of Magnitude cost (ROM) shown below describes indicative costs. These prices are not an offer open to acceptance. It should be noted that the change has not been subject to the same level of analysis that would be performed as part of a Full Impact Assessment and as such there may be elements missing from the solution or the solution may be subject to a material change. As a result the final price may result in a variation.

Also note that at the time of the release of this PIA, DCC is actively challenging several of the submissions from the Service Providers in terms of omissions, the technical content, costs for implementation, and durations for both producing the FIA and implementation. Costs are shown as a range where a single Service Provider is impacted, or where at least one SP has provided a range.

SP Costs	Cost to Produce FIA	Required Time for FIA (Max)	ROM	Implementation Duration
CR 1418	£8,702	30 days	£300,000 to £450,000	3 Months
CR 1420	£82,000	30 days	£110,000	1 Month
CR 1421	£93,000	50 days	£1,800,000-£2,500,000	12 Months
CR 1423	£135,051	50 days	£2,500,000-£3,500,000	12 Months
CR 1429	£24,965	30 days	£60,000	3 Months
CR 1430	£533,000	50 days	£1,200,000-£2,500,000	6 Months
CR 1438	£220,000	50 days	£1,330,000-£1,480,000	6 Months
CR 1440	£120,000	50 days	£1,450,000-£1,850,000	12 Months

It might be possible to run some of the FIA production and implementation activities in parallel, and to reduce the timescales, but both the costs and durations have been calculated in a standalone format.

DCC costs to support the CR design work as part of the FIA, and the ROM for implementation have been estimated on the basis that all Change Requests have been authorised to go forwards. Naturally if a limited number of CRs are approved, these costs will be reduced, and these will need to be recalculated based on the magnitude of the work required.

DCC Costs	Cost to Produce FIA	Required Time	ROM
DCC	£65,250	40 days	£642,000

Appendix A: Glossary

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

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

Appendix B: Supporting Information



OPSG OMR Report
Final.pdf