1.   External Costs

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Summary

- DCC has incurred external costs from its inception. We rely heavily on our Fundamental Service Providers (FSPs) to support all our core activities, from SMETS1 to SMETS2 and more recently, Faster Switching and ECoS.
- Our FSPs were either appointed by Government or adopted by DCC. But that does not mean that we take anything less than a rigorous approach to managing them. In RY2023 our External Costs were £430m, in line with our plans and slightly lower than in our Charging Statement.
- One of the key areas of spend in this RY was price support for VMO2 caused by a combination of covid and other restrictions. We recognised, as did DESNZ, that price support was necessary to protect the SMART meter rollout. Nonetheless that meant nothing less a careful and considered approach to the level and extent of support to ensure the best VfM for our customers and the UK economy.

External Costs form part of DCC's allowed revenue. They are the costs incurred by our Fundamental Service Providers (FSPs), including those that support our core SMETS2 activities as well as the provision of additional services under the SMETS1 and Switching Programmes. All FSPs that support the delivery of our core data and communication services for smart metering were either appointed by government or have been "adopted" by DCC. They comprise the services to support the SMETS2[1], SMETS1[2] and Faster Switching Programmes. Most recently, DCC has procured services to deliver the ECoS Programme.

DCC delivers its services by procuring and contracting with external service providers. Generally, these services include technology solutions, consultancy, recruitment, and auditing. For the avoidance of doubt, the sections below cover external costs incurred by our FSPs. Over the course of RY22/23, the costs associated with the delivery of these services accounted for approximately three quarters of our total costs. The addition of SMETS1, Faster Switching's Centralised Registration Service and ECoS has seen our supply chain network grow significantly, with DCC continuing to carefully manage its supply chain to deliver high performance and efficient costs. This year, we have also seen the signature of Net Evo CH&N programme contracts, as well as the temporary running of aspects of the services previously provided by UK Cloud for the DCO. We are also planning for a significant improvement to the monolith SMETS2 contracts, disaggregating services where it will deliver benefits to customers through reducing the costs of change, improving services and ensuring enduring contestability.

As part of the process of delivering services in an environment that is subject to change, DCC has to agree contractual variations with its providers – change requests (CRs) and project requests (PRs). These are typically the result of changes required to the mandatory services envisaged in the Smart Energy Code (SEC) or Retail Energy Code (REC), or other obligations relating to the safety and security of the network.

In RY22/23, DCC completed or progressed fewer CRs but saw a small increase in the number of PRs when compared to the prior reporting year, as shown in the table below. Recognising the complexity of the changes and the engagement required with our external service providers across each of the DCC Commercial functions, DCC requires expertise from across the business to ensure an effective negotiation and assessment of Value for Money.

	RY21/22 complete/progressed	RY22/23 complete/progressed	Year-on-year change
Change Requests	209	166	-21%
Project Requests	152	159	+5%

Table 1: comparison of change request and project request volumes

DCC knows that the costs we incur to develop, test and run the smart metering system are borne by our customers. We focus closely on identifying and realising efficiencies across all parts of the business on a continuing basis whilst simultaneously maintaining steady progress against our programmes and quality of service requirements.

Over the years, DCC has built up an extensive level of knowledge and expertise around the management of external service providers. The experience that we have built has already allowed us to realise significant cost savings through long-term efficiencies across several areas, ranging from consolidating test facilities to the re-financing of external set-up costs, as well as through continuously introducing improvements to our internal systems and processes. As we have grown and matured over the years, improvements have been made to support and realise efficiencies and savings across the business.

The following sections cover some of the developments and changes that have affected the cost of the external service providers together with a more detailed justification of the RY22/23 CRs/PRs.

1.1   VMO2 Price Support

As we set out in last year's submission, due to unprecedented challenges from COVID-19 restrictions and global silicon chip shortages, there was a rapid deterioration to the Communications Hub (CH) supply chain end 2021, and CH manufacturers advised that the position was no longer sustainable. Price Support was proposed to enable vendors to compete for components and to ensure there was a continuity of supply.

Following negotiations with VMO2, engagement with customers and BEIS (now DESNZ), DCC board approval was given for Price Support of ▓▓▓ per CH, up to a maximum of 2.6m devices between March 2022 and March 2023. The total cost would be up to ▓▓▓ but was reduced by ▓▓▓ with a negotiated deferral of indexation being applied until after Price Support ended. Overall, 1.97m single band CH were supplied during the Price Support period. This amounted to ▓▓▓ of relief to the Supply Chain, however considering indexation deferral was ▓▓▓ of incurred costs to VMO2 over the period above contract.

Overall component costs have risen further since Price Support was implemented in Q1 2022 and DCC has maintained the level of Price Support through the term to March 2023, because of the continued pressures on the Supply Chain.

CH vendors are manufacturing at a loss, heavily driven by 2G/3G modem chips costs following announced shutdown of 2G/3G networks. Without a change to current commercial arrangements, continued supply comes with significant risk of interruption or cessation.

The announced shutdown in UK and globally of 2G/3G networks has caused a severe impact to the demand for 2G/3G modem chips, and as a result manufacturers are shifting capacity to newer technologies. This presents a serious risk to the CH supply chain. Costs of components have continued to rise over the past 18 months, and this is further exacerbated due to certain sourced components now becoming end-of-life, notably the 2/3G modems.

In April 2022, ▮▮▮▮ modem supplier ▮▮ announced they will cease production of the 2G/3G modem, and a last time buy (LTB) was announced. ▮▮▮▮ will make their last deliveries of 2G/3G variants in March 2024.

▮▮▮ becomes single supplier of 2G/3G CH until transition to 4G in H2 2025. Their 2G/3G modem supplier ▮▮▮▮▮, announced LTB in March 2022, however DCC worked closely with VMO2 and its supply chain on a position to maintain 2G/3G supply until transition to 4G mass supply.

▮▮▮ have since informed VMO2 that they cannot provide necessary commitments to support the continuity and transition plans whilst continuing to manufacture at a loss.

DCC's view is that any resolution to the chain supply challenges is not the exclusive responsibility of DCC and we have asked VMO2 to justify any incremental costs to DCC/customers following a request for support.

It is estimated between a minimum of 2.2m to 4m more 2G/3G CH need to be manufactured to support the smooth transition to 4G and DCC has investigated potential means of support to the supply chain, if deemed necessary to ensure continuity of supply.

DCC's Board have been notified of the risk that if production was to cease it may not be feasible to restart production of the 2G/3G CH and there may be a need to contribute to the cost challenge to secure supply through to transition to 4G.

1.1.1   Commercial Approach

DCC is exploring different commercial options, should support be needed. This includes two contractual mechanisms that have exacerbated the pricing of the CH:

- High levels of inflation over the last few years have magnified a discrepancy between when the rate of indexation is measured (April) to when it is contractually applied (November), with a 6-month lag between measure and application.
    - This exposes vendors to significant increases in cost particularly when inflationary pressures are high, reducing their ability to compete and secure components.
- The contract has price step downs based on date rather than volume. Delays to Smart Meter rollout have meant high volumes of CH that would have been supplied at a higher price point did not materialise and are now sold at much lower prices – whilst manufacturing costs are significantly higher.
    - The current purchase price of a CH is nearly ▮▮▮ cheaper since the start of the contract and the material cost to the supply chain is c. ▮▮▮ in terms of revenue (to end 2022). Higher manufacturing and logistic costs magnify the impact further.

DCC is in continued discussions with VMO2 to ensure continuity of supply and agree transition arrangements up to 4G mass supply.

DCC understands that a failure to secure supply will place Smart Meter rollout at significant risk as no other supply options are available.

1.1.2 Cost justification

Price Support was implemented after an extensive assessment of all the options set against the associated risks and after engagement with customers and BEIS. DCC concluded that a failure to provide Price Support would cause CH deliveries to be significantly impacted and would hinder customers' ability to meet SMART meter rollout targets. DCC also considered the reputational damage that may be incurred from delays to the SMART meter rollout as well as the risk of DCC not meeting its Smart Meter Communication Licence obligations.

VMO2's supply chain formally requested support of over ▇ per CH. Following negotiations, an amount of ▇▇▇ was proposed, noting that ▇▇▇ had been absorbed to that point by VMO2 and its supply chain on component increases and air freight.

In addition to negotiating a deferral of indexation, a contractual price step down went ahead in June 2022, reducing the net price increase for a CH to ▇▇▇ from June 2022 and was capped until the end of Price Support. The full ▇▇▇ was still passed to the CH manufacturers whilst VMO2 absorbed the delta (*with indexation treated as deferred).

A total of 1,869,280 single band CHs were supplied during the Price Support period. This amounted to ▇▇▇ of relief to the Supply Chain, however considering indexation deferral was ▇▇▇ of extra funding to VMO2 over the period above contract.

Justification for the eventual endpoint of the price support arrangement

Price Support was agreed to cover March 2022 to March 2023 inclusive but limited to 2.6m CH in total. This was subject to commercial reviews to assess the effectiveness and ongoing need. The ongoing assessment has been that because of further increases to input component costs, along with wider manufacturing costs, it was necessary to continue support until March 2023. DCC presented this evidence to Ofgem on 6 July 2023.

Controls and reviews in place for the duration of the price support

Throughout the period of Price Support, we ensured that appropriate controls are in place, including:

- DCC held weekly Supply Chain reviews with VMO2 throughout the Price Support period and continues to do so.
- VMO2 provided weekly updates to DCC on the supply chain position and regularly shared impacts on component prices.
- VMO2 Price Support Breakdown clearly presents the specific financial contribution by DCC and VMO2 per CH and relation to its vendors. This was shared with Ofgem on 6 July 2023
- Throughout the period DCC engaged customers via multiple forums including Supply Chain Working Group and SEC Operations Group.
- DCC continued to assess market conditions independently through Gartner.
- DCC held regular engagement with DESNZ to understand the wider SMART metering position and that similar increases were being made by meter manufacturers, along with the health of their supply chains. We have also engaged extensively with customers on the issue, including through SEC Ops (13 September 2022 and others).

1.2 Change Request and Project Request Costs

The following sections lay out a summary of all the external costs that were incurred together with a detailed view of all material external Change Request (CR) and Project Request (PR) costs that were incurred in RY22/23. These costs are grouped by the activity or programme that the CR/PR is linked to. It should be noted that all external costs in relation to DCC's Programmes are set out in their respective cost centre narratives. This includes Project Stones/Civet in the SMETS1 narrative. These sections provide a consolidated view and justification of all costs that were incurred against the respective Programmes.

Over the course of RY22/23, DCC has incurred a total of **£429.8m** in external costs excluding the Switching programme. Including Switching, the number is **£445.9m**. The costs are broken down as follows:

Programme	Incurred Cost (£m)	Change vs RY21/22 (£m)
SMETS2	322.2	+23.4
SMETS1	101.0	+23.8
ECoS	6.6	+4.8
Switching	16.0	-4.0

Table 2: Cost Breakdown of Programmes

The reasons for the above change in costs for the programmes are set out in their respective cost centres, with this document describing SMETS2 only.

The materiality threshold for external core activity costs is the same as in previous years i.e., £1m. We have consolidated the timeline information for the CRs and PRs in the supplementary finance schedules, which are attached to this submission.

A breakdown of the costs of each CR/PR and how they are being financed across different RYs is set out in the supplementary schedules of the RIGs.

The table below gives an overview of the material CRs and PRs in RY22/23. Please note that a number of the CRs and PRs below are enabling changes relating to accommodating DCC's programmes, rather than costs for the programmes themselves.

CR Ref #	Description	Programme / Activity	Service Providers Affected
CR4101	ECoS - SIT/UIT Prep and Execution	Enterprise Change	CGI
CR4106	ECoS Gamma Connectivity	Enterprise Change	CGI

CR4117	Part 2 of SECMP0007 - Firmware updates to mandated HAN devices (Follow Up to CR1408)	System Release	VirginMediaO2
CR4188	Dispensation for Meter RF Interference at 900MHz	FOC Uplift	VirginMediaO2
CR4412	June 2022 SEC release - Post-PIT Activities	System Release	CGI / Arqiva
PR7272	Production Support Testing: April 22 – March 25	Testing Services	Arqiva / CGI
PR7295	GBCS 4.1 - CGI SIT and UIT Cover	System Release	CGI
PR7360	Transition from the incumbent legacy ProMon solution to a new threat-led solution provided by ATI	Security	CGI
PR7381	ECoS Programme SI Services	SI Release Management	CGI
PR7383	SI, SI Environment & Release Management Services for CH&N	SI Release Management	CGI
PR7404	PR cover to enable work on CR4452 to be progressed in parallel with commercial activity, extension to PR7339	System Release	VirginMediaO2
PR7449	Support for ECoS SIT (PR7231 part 2)	Enterprise Change	VirginMediaO2
PR7463	CGI SI Release Management (Nov22-Oct 23) - Follows PR7230	SI Release Management	CGI

1.2.1 CGI – Support for CR4101 ECoS SIT/UIT Prep and Execution

Drivers and Scope

Scope of ECoS - System Integration Testing (SIT)

SIT will bring all the Service Providers (DSP, CoS Party), Central Switching Service, interface infrastructures and DCC together to confirm that the different service providers and DCC backend systems work effectively together to meet the requirements of the SEC and operate as a working system for DCC customers. Testing of Communications Service Providers' (CSPs') systems is out of scope as there is no change to their infrastructure or current process, this does not however mean we will not require the CSP for SIT & UIT throughout E2E testing. SIT will include:

- Solution Testing by the Service Providers.
- Service Provider User Acceptance Testing (SP UAT) by the Systems Integrator (SI) and witnessed by DCC, which is undertaken to provide additional assurance. It allows DCC to witness an agreed subset of the tests carried out in Solution Test. The subset of tests will be described in a SP UAT Test Plan. SP UAT will be carried out using meters as end points.
- Regression Testing to ensure associated processes that have not been altered or introduced still function correctly. This will be carried out as part of Solution Testing and SP UAT as well as any test cycles to retest fixes.

On the completion of SIT, the TCR will be reviewed and approved by DCC's TAB, presented to the Test Advisory Group (TAG) for a recommendation for approval, and finally on TAG's recommendation taken to SEC Panel for approval. The baseline ECoS delivery plan envisaged commencement of SIT in November 2022 and completion in March 2023.

Scope of ECoS - User Integration Testing (UIT).

UIT will provide energy suppliers with the opportunity to test the new functionality delivered by the ECoS programme. The attached document outlines the revised requirements for reference by respective parties.

DCC will breach SEC under its LC13A licence condition to deliver a replacement for TCoS Licence. As there is a procurement in progress to contract with a new Service Provider there will be multiple Contract Schedule Impacts e.g., Schedule 2.1 (DCC Requirements), Schedule 4.1 (Contractor Solution)

Securing Value for Money

CR4101 was impacted by the change in ECOS Go-live date and the rebaselining of the programme delivery plan. As such the first FIA and price submitted in 2021 had to be revisited and negotiations restarted from v2.0 of the FIA with revised delivery model and scope.

Both the Preliminary Assessment and the Final Impact Assessment (FIA) were rigorously reviewed and challenged, evidenced by the feedback forms, containing the comments and questions to CGI by all DCC functional SME's.

The FIA comments were discussed multiple times with CGI, resulting in 4 FIA resubmissions and a 16% reduction in final price, compared to v2.0 as well as risk mitigation through better definition of assumptions, scope, deliverables, and dependencies.

Commercial have obtained clear rationalisation with effort estimation and pricing models for PIT support, SIT and UIT testing. SIT and UIT pricing models have been benchmarked against a Cost Per Test baseline, based on pricing data from previous testing CR's as well as actual costs for the SIT and UIT teams in the Open Book reports from CGI.

The payment has been set in 6 milestones, to ensure optimum Value for Money incentivising on-time delivery while keeping the Working Capital Charge at acceptable level (1.7% of total cost).

All DSP changes have also benefited from the consolidation of CGI leadership and PMO support resources in one central funding under CR4470 starting from November 2021. By doing so DCC have removed the risk of double charging for these resources when their cost was quoted in individual changes and have also secured 20% overall reduction in the rate of these resources.

The impact of removal of CR4470 consolidation on CR4101 was reflected in v2.0, where the price dropped by ███m despite the increased scope. A big portion of this decrease was from the removal of resources consolidated under CR4470. The other reduction came from the reduction of the expenses rate, which in version 1.0 was at pre-COVID rates.

Overall reduction from v1.0 to the final v5.0 was 37% or ████

 A breakdown of the costs is provided in the tables below.

Detail	Price initial (£)	Price final (£)
Setup Labour Costs		
Expenses		
ALM Licenses		
Working Capital Charges		
Total Charges		

Table 3: Price Breakdown CR4101

Initial SoW price (£)	Final SoW Price (£)	Difference (%)
		(37)

Table 4: Initial vs Final Price CR4101

1.2.2   CGI – CR4106 (ECoS Gamma Connectivity)

Drivers of change:

This change was to allow DCC to fulfil its licence conditions granted under LC13A, approved by the Secretary of State, and designated to procure, design, Build, Host and Manage a new Enduring Change of Supplier Service to replace the Transitional Change of Supplier Service in place today.

The impact of not progressing this CR would be that DCC would breach SEC under its LC13A licence condition to deliver a replacement for TCoS Licence.

 Scope of Change:

The change is broadly defined as follows:

- Design of all the secure communications interfaces for each of the required test and production environments. Producing secure Interface Connections documentation to support integration and white-listing of IPs between ECoS and all other connected parties into the UIT-A, UIT-B,

SIT-A and SIT-B, including Production/Disaster Recovery (DR) environments for at least the following interfaces, subject to the availability of systems in those environments:

- ECoS to/from DSP/SMKI/DCCKI Repository; - DSP/SI
- ECoS to/from CSS via Azure peering (refer to footnote 1A & 1B) - Landmark.
- ECoS to/from DCC(E) for TOC/EDAM; - Enterprise IT / Capita
- ADT/SoLR File to ECoS Party - Enterprise IT
- MCC (Migration) to DSP - Enterprise IT
- ECoS to/from SI ALM; - DSP/SI
- ECoS to/from DSMS - DSP/SI

- DSP to support DCC in delivery of the Cross Functional Design Authority (CFDA) Gate 3 assurance process by DCC, including review and input to required documentation and artefacts.

- Build and test of the required connectivity into all environments and procurement of Access Control Lists (ACLs) and any other infra / services required to deliver the end-to-end connectivity (including monitoring)

- To be compliant with all Codes of Connections (CoCos) for each connection.

- Capacity monitoring and capacity/incident management covering the implementation period only. Note: ongoing support will be covered in the ECoS enduring service CR

- Expectation to work with Accenture to ensure full end to end working of the connectivity solution.

Securing Value for Money

The key for assuring Value for Money was to ensure that the requirements and scope of the CR was well defined and correctly understood by the Contractor. The programme facilitated several workshops between Accenture, Landmark and CGI to clarify the requirements and deliverables, that resulted in additional changes to the original CR description in Contract Management System (CMS), ensuring that CGI (in its SI role) performed impact assessments of Accenture and Landmark responses to ensure that CGI's scope and deliverables were fully aligned to the other parties' solution requirements.

Both the Preliminary Assessment (PA) and the Final Impact Assessment (FIA) were rigorously reviewed and challenged, evidenced by the feedback forms, containing the comments and questions to CGI by all DCC functional SME's.

The Final Impact Assessment (FIA) comments were discussed 4 times with CGI, resulting in 26% reduction in final price as well as risk mitigation through better definition of assumptions, scope, deliverables, and dependencies.

The payment has been set in 6 milestones, to ensure optimum Value for Money incentivising on-time delivery while keeping the Working Capital Charge at acceptable level (1.5% of total cost).

All DSP changes have also benefited from the consolidation of CGI leadership and Project Management Office (PMO) support resources in one central funding under CR4470 starting from November 2021. By doing so DCC have removed the risk of double charging for these resources when their cost was quoted in individual changes and have also secured 20% overall reduction in the rate of these resources

A breakdown of the costs is provided in the tables below.

Detail	Price initial (£)	Price final (£)

Table 5: Price Breakdown CR4106

Initial IA price (£)	Final IA Price (£)	Difference (%)
		(26)

Table 6: Initial vs Final Price CR4106

1.2.3 VirginMediaO2 – CR4117 Part 2 of SECMP0007 - Firmware updates to mandated HAN devices (Follow Up to CR1408)

Drivers of change:

DCC is obliged via "SEC SECTION D – MODIFICATION PROCESS" to support the Modification process and perform Impact Assessments as and when requested to by a Working Group. Failure to do so would result in a breach of the DCCs obligation sunder SEC.

Scope of change:

CR4117 covers work in addition to CR1408 (that covers Part 1 of TEF delivery for SECMP0007). Please note CR1408 was covered within the RY21/22 Price Control Submission.

Part 2 of the delivery is a much larger piece of work, separated out, to enable Part 1 to commence, whilst part 2 was still under discussion/negotiation.

Part 2 is the Firmware Distribution to PPMIDs and HCALCS. Outline scope is as follows:

- DSP to support new and updated DUIS Service Requests (11.1, 11.2, 11.3, 11.4) to support Firmware Distribution to PPMIDs and HCALCS
- Firmware Distribution Progress Tracking extended to cover PPMIDs and HCALCS.
- New Device Alerts from Comms Hubs to provide notification of success/failure of HAN transfer.

- Comms Hub firmware changes to support PPMID and HCALC firmware distribution and activation.
- CSP to support updates to existing *Firmware Distribution API to* receive & process additional "Device Type" & "Too Busy" status attributes.
- New DCC Alerts to notify Service User of Comms Hub Device Alerts and PPMID Device Alerts

Securing Value for Money

The assessment of the Value for Money process in association with CR4117 was outlined within the RY21/22 Price Control submission under the original change request, CR4108, which provided a breakdown and justification for the increased costs as part of the change assessment for Part 2 of CR4108.

Initial IA price (£)	Final IA Price (£)	Difference (%)
		+23

Table 7: Final Price CR4117

1.2.4   VirginMedia O2 – CR4188 - Dispensation for Meter RF Interference at 900MHz

Drivers of change:

This CR originates from BEIS / SMDG to expand the range of meter products that may be installed in CSP Central & South whilst development to reduce meter RF interference was in progress.

If this CR had not been progressed, Energy Suppliers' rollout in CSP Central & South would have been hampered by constraining which meter products can be installed.

Scope of change:

To extend the meter derogation agreement that expired in March 2020 out to March 2022 and manage the existing derogated Meters on the network, until the end of the 2028 contract.

Key conditions of the Request:

- Meters that Service Users have declared they have in stock and are compliant to the derogation agreement can be installed on to the network up to March 2022 – approx. 12K units.
- Meters (Honeywell) held by SMS, which under the original agreement could be installed, can continued to be installed onto Central & South Region under the extended derogation agreement – approx. 24K units.
- New derogated installs, if non-performant will be excluded from the appropriate measures, as per the existing noisy meter estate, but CSP will continue to fulfil the diagnostic triage process for the incident.
- Where a noisy meter is requested to be removed from the network, full evidence of impact will be provided by the CSP supporting the removal request.

- Aside from the Honeywell held by SMS, there will be no allowance for further 'non-compliant' meters onto the network.
- The coverage checker will be the tool of choice to determine where there shouldn't be an install of derogated meters due to the coverage being on the outer limits.
- There must be no derogated meters installs where the coverage checker identifies the need for a SKU2 (Mesh or GW)
- DCC will initially track the installation per Service User via a monthly manual tracker (tactical) this will be followed by an enduring automated process.
- Any additional volumes installed on the network, either not declared by the Service User or outside the derogation agreement, Service User will be instructed to remove from the network within 90 days.
- Where a noisy meter is requested to be removed from the network, evidence of impact will be provided by the CSP supporting the removal request.

Securing Value for Money

The Change Request was raised on 8/2/21. The scope was subsequently amended as part of CR4188 to allow for an extension to the derogation period until March 2022. This was effectively an extension to the previous proposed period of derogation, requested under CR1062. It was needed as the COVID pandemic slowed installations meaning stocks of 'noisy' meters would be held for a longer period.

Much of the commercial principle was debated prior to the CR being raised. This involved agreeing the impact of making changes to the Coverage Databases and managing the in-life consequences of having a mixed population of compliant and 'derogation permitted' devices in the field. There was, however, a lengthy legal debate about the specific wording of the Change Authorisation Note to capture the change in responsibilities of the parties accurately. This was effectively an avoidance of a cost that might have been incurred if the clarification had not been achieved.

The following timeline applied:

- PA submitted 23 April 2021
- PA approved 30 June 2021
- IA submitted 2 July 2021
- IA fully approved 16 August 2021
- V4 of CAN 23 Feb 2022
- Extensive DCC legal review
  TEFCAN101 signed 12 November 2022

A breakdown of the cost is provided below, recognising this was a continuation of CR1062 with no re-negotiation on price.

Detail	Price (£)
Setup charge including Retrospective support	
Future support (cumulative FOC)	
Total Charges	

Table 8: Price Breakdown CR4188

1.2.5 CR4412 - June 2022 SEC release - Post-PIT Activities

1.2.5.1 Arqiva

Drivers of CR

This CR was raised to cover the work need for 'Post PIT' testing and completion of the SEC June 2022 release, with outputs that informed the TAD and TAG approvals to ensure all testing activities could proceed as planned.

The impact of not completing this CR would be that the June 2022 SEC Release could not be delivered and DCC would be in breach of the SEC Release Management Policy.

Scope of CR

In accordance with SEC Release management policy, this change request asked Service Providers to identify post PIT activities, for example SIT/Regression/PEN/Performance/UAT/Implementation, as well as any ongoing op/run costs after the design, build and pre integration testing linked to this SEC release had been completed.

A high-level scope of post PIT work associated with this CR is as follows:

- SECMP0024 (CR4032) Communication Hub Firmware Management
- SECMP0104 (CR4112) Security Improvements
- SECMP0015 (CR4391) GPF timestamp for reading instant Gas values (this is a DUIS/MMC document only change – there are no system changes for June 2022)
- SEC Mod 7, part 2 (CR1408/4117) Firmware Updates (CSP System Changes for June 2022, ARQ firmware changes in parallel with June 2022 and continuing beyond June 2022 Go-Live)

Securing Value for Money

The work was progressively authorised under PRs, so the CAN value was a balancing amount net of the PR payments made. The total value of ▮▮▮▮▮▮▮ benefitted from the rate card reduction agreed in the Contract Reset as outlined under ARQCAN111, which provided a reduction of ▮▮▮▮▮▮ in the labour costs prior to the CR impact assessment. This is an example of the Value for Money management across the wider Arqiva Contract providing an on-going benefit to future change requests.

There was a further small reduction within the fixed costs of ▮▮▮▮▮, as a result of transferring the allowance for 'Out of Hours' working to a catalogue item. This has been illustrated below and in working practice this was not incurred.

A breakdown of the costs is provided in the tables below.

Detail	Price initial (£)	Price final (£)
(CHM/BSS) PIT- - Deployment + Test + CRB Total		
Jun 22 SIT-A - Support Total		
Jun 22 SIT-B - Support Total		
Extended Hours / Weekend Working Total		

(CHM/BSS) - SeAT Total	
SIT-B - Post Execution support Total	
Jun 22 UIT- Support Total	
PM and other	
Contingency	
Total Charges	

Table 9: Price Breakdown Arqiva - CR4412

Initial IA price (£)	Final IA Price (£)	Difference (%)
		(1)

Table 10: Initial vs Final Price Arqiva - CR4412

1.2.5.2 CGI

Drivers of CR

This CR was raised to cover the work need for 'Post PIT' testing and completion of the SEC June 2022 release, with outputs that informed the TAD and TAG approvals to ensure all testing activities could proceed as planned.

The impact of not completing this CR would be that the June 2022 SEC Release could not be delivered and DCC would be in breach of the SEC Release Management Policy.

Scope of CR

In accordance with SEC Release management policy, this change request asked Service Providers to identify post PIT activities e.g., SIT/Regression/PEN/Performance/UAT/Implementation, as well as any ongoing op/run costs after the design, build and pre integration testing linked to this SEC release had been completed.

A high-level scope of post PIT work associated with this CR is as follows:

- SECMP0024 (CR4032) Communication Hub Firmware Management
- SECMP0104 (CR4112) Security Improvements
- SECMP0015 (CR4391) GPF timestamp for reading instant Gas values (this is a DUIS/MMC document only change – there are no system changes for June 2022)
- SEC Mod 7, part 2 (CR1408/4117) Firmware Updates (CSP System Changes for June 2022, ARQ firmware changes in parallel with June 2022 and continuing beyond June 2022 Go-Live)

Securing Value for Money

The initial price for CR4412 (June 2022 Post-PIT Activities) was calculated to be £3,284,746 by CGI DSP. This activity was partitioned into two elements, (i) the core June-2022 post-PIT activities and (ii) GBCS v4.1 activities. The activity covered a 9-month period between December 2021 and August 2022.

The core work offering covering June-2022 post-PIT activities, as described in this Final Impact Assessment (FIA) v1.0, included 3,040.5 days of labour at a cost of ███████, expense charges of ██████ and 115 ALM licenses over the 9-month period at a cost of ██████. The Working Capital Charges across the 3 proposed milestones total ██████. Finally, ongoing Application Management Support charges over a 28-month period from July 2022 (post go-live) were expected to be ██████, which equated to ████████ per month.

The activities covering GBCS v4.1 as described in this Final Impact Assessment (FIA) v1.0 included 1,550.5 days of labour at a cost of ████████, expense charges of ███████ and 87 ALM licenses over the 9-month period at a cost of ███████. The Working Capital Charges across the 4 proposed milestones total ██████. There were no related ongoing Application Management Support Charges.

The travel restrictions imposed by UK Government in March 2020 saved an agreed ██████ per day in Expenses charges from the start of this work in December 2021. At the time of this FIA v1.0 submission, the conclusion of the travel restrictions was expected to be 30 June 2022. As such, a ████████ saving was factored into the expense charges.

After several meetings, review and feedback sessions, CGI DSP provided an updated Price Breakdown v2.0. This version had a total cost of ████████, delivering a ████████ or 41.2% saving against the Price Breakdown v1.0. In summary, the changes made to this FIA version 2.0 for CR4412 included:

- Savings:
    1) Removal of Systems Integration Testing (SIT) of GBCS v4.1
    2) Removal of SIT work-off related activity
    3) Removal of UIT work-off related activity
- Increases:
    1) Request for additional effort to design, implement, demonstrate, and test the changes associated with configuration updates made to the DCC Service Management System in support of this June 2022 release.
    2) Volume uplift of SIT testing leading to an increase in test execution effort.

The major savings came from removal of SIT of GBCS v4.1 which totalled ████████, representing 79.9% of the total savings achieved. Despite the two increases in effort detailed above, there was still a net benefit from savings achieved in the other areas which contributed to 20.1% of the remaining total savings achieved.

The following comparisons are calculated against the core June-22 post-PIT activities only, demonstrating the remaining 20.1% detailed above:

- The labour charges in this Price Breakdown v2.0 reduced by ███████ to ████████ (down 13.0%).
- Expenses reduced by ██████ to ███████ (down 17.0%) following an extension of the agreed travel charge reductions to the end of June 2022.
- The volume of ALM licenses reduced by 8 from 115 to 107 (down 5.0%).
- Working Capital Charges increased by ██████ (up 29.3%) from ███████ to ███████ due to adjustments in the milestones and dates as well as the introduction of a new milestone, 'TAG approval of SIT exit'.
- Application Management Support Charges reduced by ██████ from ███████ to ███████ by significantly reducing the Apps Management Lead resource requirement by 41.4%.

The total reductions achieved for the core June-22 post-PIT activities was ██████ (down 12.5%) with the total charges having reduced from ████████ to ████████.

A breakdown of the costs is provided in the tables below.

Detail	Price initial (£)	Price final (£)
Setup labour cost		
Core DSP Team Setup Expenses		
HP ALM licences		
Working Capital Charges		
Application Management Support		
Total Charges		

Table 11: Price Breakdown CGI - CR4412

Initial IA price (£)	Final IA Price (£)	Difference (%)
		(41.2)

Table 12: Initial vs Final Price CGI - CR4412

1.2.6 PR7272 – Production Support Testing: April 22 – March 25

1.2.6.1 Arqiva

Drivers and Scope

This PR was raised to provision Service Provider support for the Production Support Testing service for the period 01/04/2022 - 31/03/2025.

The provision of Production Support Testing (PST) support from Service Providers (SPs) to conduct and / or support PST activities, including the testing of maintenance releases and other PST activities in SIT-A for the period 01/04/2022 - 31/03/2025.

This PR, which is a continuation of PR7069, covers the DSP Systems Integrator (SI) who will be responsible for conducting PST, and all other SPs who will be required to support the SI in conducting PST.

Production Support Testing comprises of multiple activities occurring exclusively on the SIT-A environment which support the maintenance of DCC production systems.

Production Support Testing (PST) provides a service by which maintenance content is tested on the SIT-A environment on the route to Production. Monthly high impact maintenance releases and associated regression testing are a major consumer of PST services and are tested and assured on SIT-A before release to DCC Users in UIT and subsequent deployment on the production environment. Low impact maintenance content, expedited fixes, triage support and minor operational changes can

also be included in the monthly scope of PST as required, again exclusive to SIT-A. The scope of PST therefore generally encompasses remediation of defects and production incidents via maintenance releases, triage of production incidents, delivery of discrete functionality via Operational Change Requests and activities to support regression testing of change in SIT-A on the route to live.

The scope of Production Support Testing, which is co-ordinated and executed by the DSP Systems Integrator and involves integration testing with all Service Providers, therefore varies monthly depending on release content and other activities delivered via SIT-A for that month. All PST execution (SI) and support requirements (SPs) are limited to activities on the SIT-A environment only.

Typical activities that are required include:

- Providing support, triage and/or executing tests for releases deployed to the SIT-A environment (via SI Release Management) that require the DSP to send/receive data across the system interfaces.
- Provision & maintenance of, and support for devices required to support the SI in the execution of tests for releases deployed to the SIT-A environment (via SI Release Management) that require the DSP to send/receive data across the system interfaces, including both functional and regression testing.
- Carrying out and/or supporting the SI in performing targeted testing and/or triage support on SIT-A for Production incidents and observations raised by Customers in the Production environment, including assistance in their analysis.
- Supporting functional and regression testing of ecosystems changes in SIT-A, which may contain:
    - Fixes for issues found during testing in SIT-A and/or UIT-A.
    - Change requests and small changes requiring deployment before the next formal release.
    - SIT-A regression testing of releases resolved via B-stream activities, and continuous regression tests.
- Assistance in resolving Test Assurance observations or Assurance failures.
- Supporting the regression testing in SIT-A of non-code changes, e.g., configuration, environment or infrastructure changes as required.
- Supporting the reporting of PST triage, defect, status, and completion as required by the SI.
- Carry out and / or support the SI in performing non-functional pre and post checks / tests to ensure SIT-A deployments have been successful.
- CSPs to provide device sets for use by SI for PST and daily regression testing in SIT-A stream (CSP N 3 sets (to include SB, DB and Fylingdales, CSP C&S 4 sets to include SB and DB for Tosh and WNC). Sets must use real devices; however, an emulator can be used in exceptional circumstances so must be supported. DCC can confirm exact set configuration requirement on request.
- SI to include a small monthly contingency cost allocation (to be agreed with DCC) to be drawn upon with explicit written consent of DCC monthly.
- SMSO support will be required until requesting party closure per SMSO contracts.

Securing Value for Money

Arqiva's initial SoW under PR7272, submitted 18/3/2022, came to ▮▮▮▮, Time and Materials (T&M) over three years.

This SoW was reviewed within DCC, our challenges being:

- The SoW assumed that testing teams would be stood up in anticipation of demand but without specific forecast. This was mitigated by DCC's proposal to improve the engagement process around PST to give Arqiva better notice of forthcoming activity, said engagement being

facilitated by the newly appointed PST manager. Test resources would thus only be engaged when expressly required as opposed to standing by.

- The specific resource profile was also challenged (how many managers were really needed for PST testing)?
- The "Worst case" T&M estimated didn't accord with the experience of work carried out under PR7069. PR7069 charges were already considered excessive (and these were higher) and were subject to dispute as there was very little supporting evidence of work carried out.
- The SoW included additional charging for real (as opposed to emulated) devices, on an ad-hoc basis, whereas in fact we were moving away from emulators for PR7272, and no ongoing setup work would be required of Arqiva.
- The number of days testing was overstated at 13 days per release, the SIT window is 10 days.

These were discussed in a meeting 13:30 on 23/3/22 by DCC TA and Commercial. During this period there were also daily TA catchups around progress on all PR7272 SP submissions.

A review meeting was held 11:30 on 28/3/22 between DCC TA, Commercial and Arqiva to review the above comments, with a follow up meeting held 29/3/22 10:30 with DCC TA, Commercial and Arqiva.

The meeting output was confirmed by Arqiva email 20:58 29/3/22. DCC's challenged were accepted, and Arqiva undertook to deliver the final SoW, accepting al of the challenges listed above.

The final SoW was submitted on 30/3, laying out a ▮▮▮▮ (T&M) forecast, based on previous DCC challenges.

Summary

This service was originally quoted on a Fixed price basis over three years of service at ▮▮▮▮▮▮

Following negotiation and assessment of options DCC opted to contract this work on a Time and Materials basis.

The revised price, in which DCC inherently takes the risk of overrun, was ▮▮▮▮▮▮. This lower price includes the benefit of the rate card reduction agreed in ARQCAN111 (Contract Reset) which gave a benefit of ▮▮▮▮▮ to the later price.

A breakdown of the costs is provided in the tables below.

Detail	Price initial (£)	Price final (£)
SIT Cycle 1		
Project Management		
Team Management		
Total Charges		

Table 13: Price Breakdown PR7272

Initial SoW price (£)	Final SoW Price (£)	Difference (%)
▮▮▮▮▮	▮▮▮▮▮	(46.6)

Table 14: Initial vs Final Price PR7272

1.2.6.2 CGI

Drivers and Scope

This PR was to provision Service Provider support for the Production Support Testing service between 01/04/2023 - 31/03/2024.

Please note whilst this PR was originally issued in 2022 to cover the period until March 2025, it has been reviewed and revised annually to ensure that the right scope and pricing is applied. The version of the PR reported in this cycle is for the Regulatory Year April 2023 to March 2024.

The provision of Production Support Testing (PST) support from Service Providers (SPs) to conduct and / or support PST activities, including the testing of maintenance releases and other PST activities in SIT-A for the period 01/04/2023 - 31/03/2024.

This PR, which is a continuation of PR7069, will cover the DSP Systems Integrator (SI) who will be responsible for conducting PST, and all other SPs who will be required to support the SI in conducting PST.

Production Support Testing comprises of multiple activities occurring exclusively on the SIT-A environment which support the maintenance of DCC production systems.

Production Support Testing (PST) provides a service by which maintenance content is tested on the SIT-A environment on the route to Production. Monthly high impact maintenance releases and associated regression testing are a major consumer of PST services and are tested and assured on SIT-A before release to DCC Users in UIT and subsequent deployment on the production environment. Low impact maintenance content, expedited fixes, triage support and minor operational changes can also be included in the monthly scope of PST as required, again exclusive to SIT-A. The scope of PST therefore generally encompasses remediation of defects and production incidents via maintenance releases, triage of production incidents, delivery of discrete functionality via Operational Change Requests and activities to support regression testing of change in SIT-A on the route to live.

The scope of Production Support Testing, which is co-ordinated and executed by the DSP Systems Integrator and involves integration testing with all Service Providers, therefore varies monthly depending on release content and other activities delivered via SIT-A for that month. All PST execution (SI) and support requirements (SPs) are limited to activities on the SIT-A environment only.

Typical activities which will be required include:

- Providing support, triage and/or executing tests for releases deployed to the SIT-A environment (via SI Release Management) that require the DSP to send/receive data across the system interfaces.
- Provision & maintenance of, and support for devices required to support the SI in the execution of tests for releases deployed to the SIT-A environment (via SI Release Management) that require the DSP to send/receive data across the system interfaces, including both functional and regression testing.

- Carrying out and/or supporting the SI in performing targeted testing and/or triage support on SIT-A for Production incidents and observations raised by Customers in the Production environment, including assistance in their analysis.
- Supporting functional and regression testing of ecosystems changes in SIT-A, which may contain:
    - fixes for issues found during testing in SIT-A and/or UIT-A.
    - change requests and small changes requiring deployment before the next formal release.
    - SIT-A regression testing of releases resolved via B-stream activities, and continuous regression tests.
- Assistance in resolving Test Assurance observations or Assurance failures.
- Supporting the regression testing in SIT-A of non-code changes, e.g., configuration, environment or infrastructure changes as required.
- Supporting the reporting of PST triage, defect, status, and completion as required by the SI.
- Carry out and / or support the SI in performing non-functional pre and post checks / tests to ensure SIT-A deployments have been successful.
- CSPs to provide device sets for use by SI for PST and daily regression testing in SIT-A stream (CSP N 3 sets (to include SB, DB and Fylingdales, CSP C&S 4 sets to include SB and DB for Tosh and WNC). Sets must use real devices; however, an emulator can be used in exceptional circumstances so must be supported. DCC can confirm exact set configuration requirement on request.
- SI to include a small monthly contingency cost allocation (to be agreed with DCC) to be drawn upon with explicit written consent of DCC monthly.
- SMSO support will be required until requesting party closure per SMSO contracts.

Securing Value for Money

As PR7272 was a continuation of PR7069, the latter PR was used as a benchmark for the pricing of PR7272.

Although PR7272 was initially issued for the period from April 2022 up to December 2022 only, and subsequently re-calculated and reissued as v2.0 to cover 3 additional months up to March 2023, for convenience, the Value for Money analysis is performed on the v2.0 of the PR, comparing the price in the price breakdown and the actual billed costs of PR7272, against the actual costs of the previous period PR7069, adjusted for the rate card indexation uplift of 6.33% from November 2023.

The initial PR7272 Price Breakdown was 7% higher than the actual costs under PR7069, adjusted for indexation. This was initially accepted with the anticipation of additional PST activities due to FOC going into production and CSS going live.

Subsequently, with the formalisation of the FOC Stabilisation Programme, which covered the production testing of FOC maintenance releases, and no significant additional activities due to CSS, the actual costs in PR7272 are forecasted to be 38% below the estimated price in the Price Breakdown, or 34% below the actuals of PR7069, adjusted for the indexation.

These savings are the result of robust planning of each maintenance release cost aligned with the scope of the release, agreed through the Shopping List process every month, and tracked monthly, with in-depth PST reviews in addition to the PR Tracker process.

A breakdown of the costs is provided in the tables below.

Detail	Actual Cost PR7069 for Apr-21-Mar22 (£)	Extrapolated Price for Apr22-Mar23 (£)	PR7272 Price Breakdown v2.0 (£)	PR7272 Actuals (£)
Setup Labour Cost				
Setup Expenses				
ALM Licenses				
Sch 7.1 Rate Card Discount @				
Total Charges				

Table 15: Price Breakdown PR7272

Extrapolated total price from PR7069 actuals (£)	PR7272 Actuals (£)	Difference (%)
		(34)

Table 16: Initial vs Final Price PR7272

1.2.7   CGI – PR7295 - GBCS 4.1 - SIT and UIT Cover

Drivers and Scope

SIT Testing

To facilitate deployment of Great Britain Companion Specification (GBCS) 4.1 CH Firmware SI is requested to support testing of GBCS 4.1 CH Firmware in B stream in parallel to Nov'22 SEC release testing. These are SEC mandated security changes which must be implemented within the Comms Hub Firmware delivery.

The reason for the CGI System Integration Testing (SIT) is to provide the necessary governance and quality assurance of the product prior to Operational Acceptance.

This PR was designed to cover:

- Testing of Tosh Single Banded Comms Hub (SBCH), Tosh Dual Banded Comms Hub (DBCH), Wistron NeWeb Corporation (WNC) SBCH, WNC DBCH, EDMI SBCH, EDMI DBCH & EDMI DBCH-F variants for GBCS 4.1 SEC Release (CRP649, CRP613 & SECMOD7). Producing Heat map was within scope.
- Testing of additional defect fixes fixed in the Comms Hub (CH) Firmware.
- Testing for functional regression covering what was agreed in PR7181 across SBCH & DBCH for each CH supplier. In case of EDMI, including DBCH-F (using principles from GBCS 3.2 SIT). In case of EDMI, both debug & non-Debug variant used. This included Over the Air (OTA) from previous CH Firmware, checking integrity of Gas Proxy Function (GPF)/ Pre-Payment Interface

Device (PPMID) display after OTA and soak testing 2 sets of SBCH and DBCH for the duration of testing.

- Providing Test traceability Matrix.
- Providing Program Governance to track defect status with Communication Service Provider (CSP) & helping to close defect with impact status. Providing support for Test Advisory Group (TAG) governance.
- Test approach shall involve 2 phases for each CH supplier. After phase-1, CH will provide updated firmware with any relevant fixes found in phase-1.
    - Phase-1: Covers functional testing of GBCS 4.1 CRP & SECMOD. Covers Functional regression along with soak testing. Covers additional defect fixes resolved in CH Firmware.
    - Phase-2: Covers Defect retest & closure, covers new function regression run at least twice in different sets, covers proportion of functional regression taking into consideration changes coming in CH Firmware.
- Should have provision to do confidence testing of 2 PPMID that supports OTA against at least one CH covering key SECMOD7 functionality before CH new functional testing starts.

The deliverables from the Test Assurance activity included:

1. SBCH and DBCH variant (plus Fylingdales for CSP North (Arqiva) (CSPN) requiring at least 7 variants in total going through SIT.
2. Requirement for early Heat Map (HM) and Rough Order Magnitude (ROM) slides for comms out to CSP for Scoping
3. Other continuing Preparation activities included:
    a. Solution Test Plan
    b. Heatmap
    c. Test Scripts
    d. Test Execution readiness – devices and automation
    e. Glidepaths etc for test execution progress
    f. SIT Entry Gate

UIT Testing

The reason for this PR was to enable the release end-to-end testing & planning to be completed. The outputs were included within the TAG and TAD approvals and testing activity prior to proceeding with the planned CGI delivery of GBCS 4.1 elements.

The outcome of the PR7295 was included in the consideration of CR4412.

Securing Value for Money

Considering the uncertainties in the volume of activities, this Change has been contracted as T&M. Actual costs are reviewed monthly to ensure Value for Money.

The pricing was based on detailed labour effort per role and activity and is benchmarked against Cost Per Test (CPT) models for SIT and UIT, which have been developed using the data from prior Changes. CPT model has Forecast Baseline, determined as an average from the Price Breakdowns of previous Changes and an Actual Baseline, determined as an average from the actual effort and cost for the same Changes taken from the Open Book reporting.

PR7295 CPT was in the tolerance between Forecast and Actual Baselines, and closer to the Actuals for SIT and below Actual Baseline for UIT:

SIT CPT Benchmarking:

Cost per Test Categorisation	Forecast baseline	Actuals Baseline	This CR	Commentary
Preparation				CPT within Tolerance.
Execution				CPT within Tolerance.
Regression				CPT within Tolerance.

UIT CPT Benchmarking:

Cost per Test Breakdown	Forecast Baseline (ALL projects)	Actuals Baseline (ALL Projects)	PR7295	Commentary
Test Preparation				Below Actuals Baseline. Primarily the running of 12 Regression Test Packs.
Test Execution				Below Actuals Baseline. Primarily the running of 12 Regression Test Packs.
Preparation & Execution				Below Actuals Baseline. Primarily the running of 12 Regression Test Packs.

The Statement of Work has been through thorough review by all functional SME's and feedback with 47 comments submitted to and discussed with CGI, leading to second submission of the SOW and Price Breakdown.

The CPT benchmarking helped to get clarity on the pricing rationale and as such, the price did not vary significantly between the first and second submissions.

The actual costs have been and continue to be tracked monthly. Although the monthly profile varied due to fluctuations in the programme, the forecast is to complete the work on budget. Considering that the estimated daily rates for the contract year 22/23(applicable from November 22 to October 23) have been uplifted only by 4% in the Price Breakdown, whilst the actual inflation index applied for that period is 6.33%, we expect an additional 2.33% cost avoidance to be achieved.

A breakdown of the costs is provided in the tables below.

Detail	Price initial (£)	Price final (£)
Setup Labour Charges		
Setup Expenses		
ALM Licenses		
Sch.7.1 Labour Discount ▮% for projects > 6 months' duration)		
Total Charges		

Table 17: Price Breakdown PR7295

Initial SoW price (£)	Final SoW Price (£)	Difference (%)
		(1.5)

Table 18: Initial vs Final Price PR7295

1.2.8 CGI – PR7360 - Transition from the incumbent legacy ProMon solution to a new threat-led solution provided by ATI

DCC raised CR4625 in March 2022 with the objective to move towards a threat-led framework.

The legacy protective monitoring solution was provided by the Contractor's Key Sub-contractor, ███████████ (referred to as ██████), under a subcontract between the Contractor and ██████, which was due to expire on 31st October 2022. The ██████ solution was based on the historical GPG13 framework. Following discussions between CGI and DCC, it was proposed that the extant protective monitoring solution was to be replaced by a new CGI-provided solution. The Contractor had to serve notice on ██████ by 29th April 2022 in the event that further extension is required beyond the 31 October 2022.

Due to the urgent need to commence implementation of the replacement protective monitoring solution before the due date of the notice from CGI to ██████ the build phase for of the baseline new solution was ordered with PR7360, with the understanding that the ongoing enduring service requirements and costs will be formalised with CR4625.

The requirements set out in PR7360 are:

1. Develop a Threat-Led Protective Monitoring (ProMon) approach supported by the MITRE ATT&CK Framework:
   a. Develop a threat model.
   b. Review the initial output from the threat model.
   c. Perform preliminary risk assessment to identify gaps.

2. Implement a Threat-Led Protective Monitoring solution:
   a. Implement a MITRE ATT&CK aligned solution to replace the existing ██████ solution on the Production and UIT-A environments.
   b. This will cover new Protective Monitoring technical design, infrastructure procurement, build, test, preparation for service and decommission of the incumbent solution.
   c. Deploy Use Cases supporting a core set of MITRE ATT&CK scenarios, based on existing threat profiles and log sources.
   d. Develop a test strategy that includes regularly testing the detection capability.
3. Provide near real time access to all raw security logs, via secure channels, based on a design agreed with DCC.

Drivers and Scope

Due to complexities related to requirement 3, it was decided to descope this from the initial Statement of Work to enable the implementation of the baseline solution and move the service from ██████ to ATI before the end of CGI's contract with ██████.

At a high level, the scope of supply under this PR was:

- Threat model development and initial workshops associated with Requirement 1.
- Procurement of the infrastructure required for the baseline solution.
- Implementation of the baseline solution associated with Requirement 2.

Securing Value for Money

To ensure value for money commercial applied Time and Materials approach to this Change, tracking infrastructure procurement with a Procurement Tracker.

CGI were required to provide third party quotes for approval before procuring these and proof of payment before billing. The price of third-party elements of the solution was calculated transparently applying the agreed markup over third party vendor price.

Thanks to the vigorous tracking of actual costs, the work was completed with 13% savings, despite the additional work required due to encountered challenges during implementation.

Detail	Price initial (£)	Price final (Actual) (£)
Setup Labour costs		
Third Party Costs		
Total Charges		

Table 19: Price Breakdown PR7360

Initial SoW price (£)	Final SoW Price (£)	Difference (%)
██████	██████	**(13)**

Table 20: Initial vs Final Price PR7360

1.2.9   CGI – PR7381 - ECoS Programme SI Services

Drivers and Scope

As the ECoS solution is being delivered by multiple Service Providers as a BEIS mandated programme, the programme needed the services of the System Integrator (SI) function provided by CGI, mitigating an increased likelihood that issues will be found during testing and in production, imposing additional costs and delays.

The SI were requested to deliver the following outcomes from 30th June 2022 until 30th June 2023:

- Effectively run SI Operations Board with DCC and Service Providers
- Effective integration of ECoS solution components
- Coordination of the testing across Service Providers
- Management of Design Issues/Changes for Service Provider components
- Reporting and monitoring of Service Provider build and test progress.
- Maintained E2E integrated plan.
- Management of RAID items impacting successful delivery
- Management of the detailed Service Provider transition to Operations plan
- Execution of the detailed approach and plan for TCoS to ECoS Migration
- Demonstration of continuous improvement
- Support execution of connectivity onboarding checklist
- Coordination of evidence gathering to support DCC Live Service Criteria submission.

The charging mechanism for the PR was based on time and materials (T&M) as DCC considered this would be more cost effective than a fixed price with contingency.

Securing Value for Money

The benchmark for this PR was the price in the previous PR7195, covering the SI Services in the period from November 2021 to July 2022. Considering the variable nature of the activities in the scope, this was contracted on T&M basis, which in our experience from previous programmes, delivers the best Value for Money and avoids the risk of high contingency in a fixed price Change.

The average monthly cost run rate in PR7195 was ███████. As this cost was based on day rates applicable for Contract Year starting from November 2021 to October 2022, however there was a 6.33% uplift to the day rates from November 2022 raising the estimated monthly run rate to ███████, in line with our expectations for a run rate of ███████ following PR7381.

Considering the lessons learnt from the previous PR7195, the new SOW underwent rigorous reviews by ECOS Programme and Contract Management, and the feedback was discussed in several calls with CGI, leading to resubmission of the SOW with strengthened control measures, well-defined roles and deliverables per role and clarified deliverables. The second submission included an option for 50% reduced programme support resource, which the programme decided not to take but to review the resource requirements through the activity planning and review process.

To improve the level of control over the deliverables and cost tracking, PR7381 included a process for 3-monthly rolling forecast of planned activities and effort/costs profile, and monthly review of the actuals from the PR Tracker vs planned activities and costs.

This 3-monthly rolling activity planning and monthly actuals review process has been very successful in managing deliverables and currently the updated forecast is to complete the work 4% below the total estimated price.

A breakdown of the costs is provided in the tables below.

Detail	Price initial (£)	Price Current Forecast to Complete (£)
Setup Labour Cost		
Setup Expenses		
Schedule 7.1 PR Labour Rate Card Discount @ ██		
Total Charges		

Table 21: Price Breakdown PR7381

Initial SoW price (£)	Current SoW Forecast (£)	Difference (%)
██████	██████	(4.3)

Table 22: Initial vs Final Price PR7381

1.2.10 CGI – PR7383 - SI, SI Environment & Release Management Services for CH&N

Drivers and Scope

DCC's Comms Hub and Network programme will deliver the next generation of Dual Band Comms Hubs using 4G technology. This PR captured the requirements and activities of the SI, SI Environment and Release Management as detailed within CR4583 on a Time & Materials (T&M) basis. The requirements excluded the need for SI Release Management to implement a CRB light process for EIT. SI resources also need to account for participating in collaborative workshops with other vendors for design/architecture or requirement purposes.

The SOW detailed the assumptions and rationale for the effort estimations in the scope of the PR.

This PR was specified to be cost neutral and within the same cost envelope as CR4583.

Securing Value for Money

Considering the variable nature of the activities in the scope, these services have been contracted on a time and materials basis, which in our experience from previous programmes, delivers the best value for money.

The SOW included the same Activity Planning Review process as PR7381 for the ECoS programme, to ensure tight control and tracking of deliverables and costs by agreeing the plan of activities and deliverables for 3-months rolling period and reviewing monthly the actual effort booked in Open Book vs the planned effort and the actual delivered activities vs planned.

The initial price for PR7383, submitted in June 2022 was over ▮▮▮▮. The negotiations of this and other CH&N programme changes continued for several months, while the programme start date and schedule were changing and resource requirements were being refined, aligned with the final programme schedule. The final SOW was agreed in October 2022, at the price of ▮▮▮▮.

The savings were achieved through challenging the assumptions and effort estimations in CGI's first submission. This continues throughout the delivery via the monthly reviews, which in February 2023 led to re-profiling of the Forecast to Complete to reflect the changes in the resource requirements for SI Environments and Release Management team, following significant underspend in the first months in comparison to the spend profile in the original Price Breakdown.

Considering the critical importance of the SI Programme Planning and Release Management Services for the success of the CH&N Programme, payment retention mechanism has been introduced for this PR7383 as a means of additional incentivisation for CGI to prevent delays to the programme caused by SI services delays.

The retention mechanism includes a sliding scale of payment retentions as below:

- Months 1- 6: 10% of monthly actuals
- Months 6-12: 30% of monthly actuals
- Months 13-14: 35% of monthly actuals

The retention amounts are released after successful Go-Live has been achieved.

This mechanism created ██k of Working Capital Charge (WCC), which was negligible against the risk this mechanism aims to mitigate.

A breakdown of the costs is provided in the tables below.

Detail	Price initial (£)	Price final (£)
Setup Labour Cost		
Setup Expenses (reduced in final version)		
Schedule 7.1 PR Labour Rate Card Discount @ ██		
Working Capital Charge (WCC)		
Total Charges		

Table 23: Price Breakdown PR7383

Initial SoW price (£)	Final SoW Price (£)	Difference (%)
██████	██████	(24.5)

Table 24: Initial vs Final Price PR7383

1.2.11 VirginMedia O2 – PR7404 – GBCS4.1

Drivers and Scope

These PR's and CR 4452 were raised to cover enhancing the original SECMOD007 project to include the functionality to align to GBCS 4.1

PR cover enabled work on CR4452 to be progressed in parallel with commercial activity, so the total value was the sum of the PRs plus the CR4452. Summary below

The scope for PR7404 was as follows:

1. Continuation of Telefónica Communication Hub (CH) delivery activities for GBCS 4.1, CHTS 1.5, including continuation of firmware releases being available for PIT (in-line with the CR4452 delivery plan until PIT reference {R2}):
2. Uplift of the existing Telefónica PIT devices test team, to ensure Telefónica can test with multiple Communication Hub (CH) variants in PIT.
3. Continuation of the PIT test execution activities with GBCS 4.1 CH Firmware releases available during the PR cover period.
4. Telefónica Communication Hub (CH) vendors PIT support, during validation of GBCS 4.1, CHTS 1.5 firmware in PIT.
5. Telefónica Networks, IT test support during End-to-end PIT testing with GBCS 4.1, CHTS 1.5 firmware in PIT.

6. Attendance at regular governance sessions (GBCS 4.1 PRBs) including provision of regular progress reports.

7. Telefónica participation in the GBCS 4.1 SIT, UIT planning sessions.

8. Programme Management and governance support for GBCS 4.1 delivery.

9. Timeboxed Telefónica support, should the PPMID manufacturers require any further inputs as part of the PIT defects raised.

This was incremental work to TEFCAN097 for CR4117, which covered the requirements under SECMOD007 to provide firmware download functionality to PPMID. The industry conclusion was that SECMOD007 could not be released without the additional functionality to uplift the system to GBCS v4.1, which is why PR7404 was raised..

Securing Value for Money

TEFCAN104 as part of PR7404, signed 21 Jan 2023 consolidated the PRs and CR4452 as part of a fixed price agreement supporting the implementation.

PR7404 scope items	Cover period	Total Provisioned in PR7404
Telefónica delivery cover for GBCS 4.1 from July'22 to November'2022 - Setup	1st July'2022 – 30th November'2022	
Telefónica PIT test team to test with multiple(three) CH variants in parallel - Setup	1st August'2022 – 31st October'2022	
Total Setup		
Telefónica PIT test team to test with multiple(three) CH variants in parallel - FOC	*1st November'2022* *31st October'2023*	
Total (Setup + FOC)		

Table 25: Scope of PR7404

Detail	Price final (£)
PR7404 – 1st July'2022 to 30th November'2022, with ongoing support available for the new PIT test team until October'2023.	
VMO2 - Central	
VMO2 - South	
Total Charges	

Table 26: Price Breakdown PR7404

Final SoW Price (£)	Difference (%)
	0

Table 27: Initial vs Final Price PR7404

1.2.12 Virgin Media O2 – PR7449 - Support for ECoS SIT (PR7231 part 2)

Drivers and Scope

This requirement was one of a series driven by the need for the ECoS solution to be tested with CSP's in the System Integration Test environments. The scope was specified as follows:

CSP support requirements for SIT are as follows:
- Support for providing CH logs and Zigbee logs where defects are found.
- Support defect/daily hot spot calls.
- Confirm space requirement in the lab.

Provide support for SIT in CSP Lab:
- Support the rotation activities of device sets in the on premise.
- Provide Support where a set of devices and/or emulators need to be reset to factory settings where devices need to be reutilised during TCoS to ECoS and/or ECoS to ECoS certificate swaps.
- Attend SIOB fortnightly with a progress report of activities including device availability/readiness.
- Ensure timesheets are submitted in a timely manner per month in support of the activities related to this PR.

Securing Value for Money

DCC defined the scope of the testing and then negotiated the amount of time and resource that would be needed.

This PR is therefore based on time and effort. This was specified in the Project Request, so the response was compliant, and the cost is based on contract rates, which were approved by the business owners in the CMS system so in fact there was no need for any iteration of the SoW price.

A breakdown of the costs is provided in the tables below.

Detail	Price final (£)
Stage 1 SIT Support (Prep, Execution, EOC, Workoff)	████
Stage 2 SIT Decommissioning	████
Programme Mgmt/Design Consultancy	████
Total Charges	████

Table 28: Price Breakdown PR7449

Final SoW Price (£)	Difference (%)
████	0

1.2.13 CGI – PR7463 - CGI SI Release Management (Nov22-Oct 23) – Follow up to PR7230

Drivers and Scope

This PR was required for the provision of SI Release Management Services for RY22/23 (01/11/22-31/10/23) and followed PR7230. SI Release Management Services previously formed part of CR279 Testing Services. It was combined under this CR1287/CR279 with Testing Services and Production Support Testing (PST).

The SI Release Management Team were asked to provide System Integration (SI) Release Management Services for environments provided to DCC which covers 'UIT-A; UIT-B, SIT-A, SIT-B' and Production environments. The PR covers the following SI Release Management Services for End-to-End System Integration:

- Monitor whether the Change Release Board (CRB) Board agreed planned and emergency deployments to UIT-A, UIT-B, SIT-A and SIT-B Environments could be carried out as set out in the CRB Process
- Issue to the CRB Board Members the following:
  - Daily authorised CRB Board Minutes of the daily CRB Board
  - Daily Configuration Management Report (Release Baseline Documentation)
  - the Release and Deployment Schedule
  - DCC Service Provider progress updates on UIT-A, UIT-B, SIT-A and SIT-B deployment status.
- Maintain CRB Process documentation and update as required, including IT.0014 Release Management Policy
- Coordinate DCC Service Providers, SIT Testing and SIT Triage during the planned and emergency deployment windows.
- Confirm that all DCC Service Provider Patching has been completed.
- Ensure ALM Process is fully governed and managed as per IT.0100 SI Defect Management process.
- Approve and record the UIT-A, UIT-B, SIT-A and SIT-B Release Notes submitted by DCC Service Providers for weekly and emergency deployment windows.
- Check defect fix status reflecting feedback from DCC Test Assurance on the DCC Service Providers' Release Notes, including PIT Exit Test Reports and SIT Exit Test Report
- Smoke Testing during the agreed maintenance slot by all DCC Service Providers
- Facilitate and co-ordinate the Release implementation and deployment plans in UIT-A, UIT-B, SIT-A and SIT-B Environments between the DCC Service Providers including but not limited to pre and post testing for the deployments.
- Ensure all maintenance releases are merged to the appropriate B stream environments post deployment in Production.
- Inform DCC Operations Team (UIT-A) and DCC Testing Services Team (UIT-B) about notifications required following the outcome of the Change Release Board (CRB) and inform these teams in sufficient time for the relevant notice to be given by DCC to Test Participants in the UIT Environments
- Publish the Forward Schedule of Change (FSC) for each of the UIT-A Environment and UIT-B Environments
- Produce a consolidated Forward Schedule of Change (FSC) for UIT-A, UIT-B, SIT-A and SIT-B Environments on a weekly basis (based on the daily updates from DCC Service Providers) for review at the weekly Release Baseline and Deployment Schedule Review meeting.
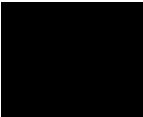
- Maintain, update, and retain the Release Baseline Documentation for all applications and devices for the DCC Service Providers' Environments
- Review and discuss future release candidates for UIT-A, SIT-A Environments with DCC, DCC Service Providers and the Production Support Team (PST).
- Liaise with the SI Environments team for technical support as required, such as DCCKI or IP issues.
- Manage SMETS1 and SMETS2 Releases into the environments from all DCC Service Providers including:
    - The management of out-of-hours uplifts (in general after 8pm) using the consolidated run books.
    - The pre- and post-uplift testing to real devices.
    - The co-ordination with the DCC Service Centre for the DCC Service Centre to maintain communications with DCC Service Users.
    - The allocation SEC planned maintenance allowances or derogations thereof for service interruptions, working together with DCC Operations Team
- Provide a monthly report on activities and resource utilisation for review with DCC Commercial and DCC Operations in the monthly meeting attended by the SI Release Management Team
- SI Release Management of Major Releases and Programme Releases may be/ Are outside the scope of this PR and will be funded through the relevant Major Release and/or Programme Release CR/PRs.

Securing Value for Money

The SI Release Management services are contracted on time and materials basis to ensure Value for Money by tracking cost in line with the volume of activities. As this is a continuation of the services covered under the previous PR7230 until end of October 2022, the price of PR7230 has been used as a benchmark for this PR7463.

The comparison of the new price in PR7463 vs PR7230, recalculated with the rates, applicable for the Contract Year November 2022 – October 2023, showed that the price of the new PR7463 was only 3% higher than the recalculated price of the PR7230. The 3% uplift was accepted considering the estimated increase in the volume of release activities in the period the PR7463 covers as the DCC ecosystem continues to expand. Over the past year new Service Providers have commenced production services (e.g., CSS) and there is potential for further Service Providers being added (e.g., ECOS) in the period the PR covers.

As the actual effort and costs are tracked monthly through the PR Tracker process, the actuals to date show that the anticipated increase in activity due to CSS going live has not materialised so far, and the actual costs up to and inclusive of February 2023 are 25% lower than in the Price Breakdown.

Total Labour in Price Breakdown up to end of February 2023	
Total Labour Actuals up to end of February 2023	
Total Actual Savings up to end of February 2023	**25%**

Assuming expenditure continues at the same rate, the expectation is that the final actual total costs will be lower than the Price Breakdown.

A breakdown of the costs is provided in the tables below.

Detail	Price Previous Period (PR7230) (£)	PR7230 Repriced with uplifted rates. (Benchmark Price) (£)	Price PR7463 final (£)	Estimated Most Likely Final Actual Price (£)
Setup Labour Cost				
Setup Expenses				
Schedule 7.1 PR Lab Rate Discount @ ▮				
Total Charges				

Table 30: Price Breakdown PR7463

Initial SoW price (£)	Final SoW Price (£)	Difference (%)	Estimated Final Actual Cost (£)	Difference (%)
▮▮▮	▮▮▮	+3	▮▮▮	(19)

Table 31: Initial vs Final Price PR7463