

■ MP293 'Provision of an DCC enhanced availability service to DCC users during DCC Service disruption/adverse weather'

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HIGH

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This MP293 deck covers:

- An overview of the modification
- A view of the DCC's Full Impact Assessment.

The modification has previously undergone a DCC Preliminary Impact Assessment & Refinement Consultation, and the DCC Full Impact Assessment has just been returned.

REVIEW the Proposed Solution and PROVIDE FEEDBACK on the Implementation Route.

■ MP293: Overview

- The DCC periodically undertakes Planned Maintenance, during which Smart Metering Systems (SMS) cannot be communicated with.
- During adverse weather, Network Parties communicate with SMSs to check whether they have power.
- Where these two events coincide, Network Parties cannot remotely confirm the status of their portfolio via SMS comms.

Issue



- Network Parties must expend additional resources to confirm supply status in person without remote confirmation.
- Network Party operatives deployed into sites affected by storms also face additional risk.
- Where the DCC defer a Planned Maintenance, system impacts may arise and other Planned Maintenances may be affected

Impact



- “Enhanced Availability”: The DCC will make a limited number of SRVs/Alerts available to Network Parties during a system outage.
- Parties will be able to use these SRVs/Alerts even when the DCC system is down.
- The solution will cover: DCC Planned Maintenance, DCC Unplanned Maintenance, BCDR Testing

Potential Solution



■ MP293 Solution

Scope

The Proposer asked the SEC Change Team & the DCC to explore delivering the Proposed Solution DSP1.

Implementation

The Proposer would like the SEC Change Team to work towards a November 26 release into DSP1 in order to get as much value from the proposed solution as possible prior to DSP2 go-live.

■ MP293 – COST COMPARISON

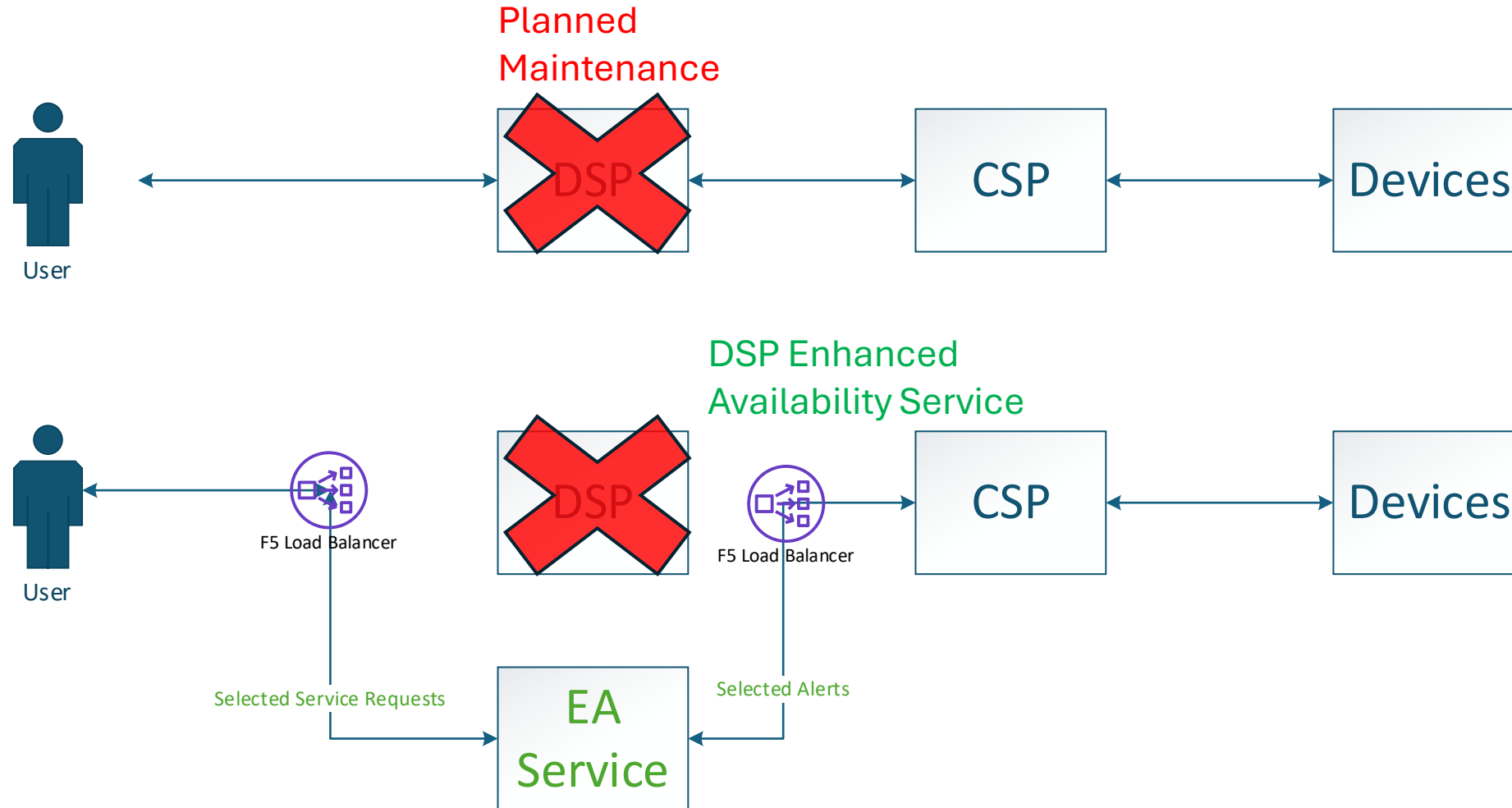
Cost Item	PIA		FIA
	Lower Bound	Upper Bound	
Annual Running Costs	£300,000	£300,000	£340,000
Core Solution (Must & Should)	£680,000	£900,000	£1,314,489

NB – The costs given in the Preliminary Impact Assessment were not inclusive of SIT and UIT costs, which was indicated by the DCC. Additionally, the DCC indicated that FIA costs are likely to differ from PIA costs due to the different level of analysis between a PIA and an FIA.

What is the Enhanced Availability Service?

- As part of SECMP0293, an Enhanced Availability Service is proposed for the As Is DSP to allow the passing of selected Service Requests, their Responses, and Alerts from Users to Devices and Devices to Users respectively
- Solution on the As Is DSP would help Users with key messages during outages
- The EA Service would be started and run during DSP Planned Maintenance, Unplanned Maintenance, BCDR exercises, and Outages. This partially mitigates customer and consumer impacts as a result of outage
- Network Parties and Suppliers are keen on this to avoid the impacts of DSP outages, particularly if a named storm is affecting their region during a period of a planned DSP outage
- (As Is DSP-only) EA Service targeted for implementation December 2026 A-Stream; how and when is to be agreed

High Level Architecture



Enhanced Availability Service, More Details (1)

- **EA Service will direct selected SRVs, Responses, and Alerts to their respective destinations:**
 - SRs and Responses: 2.2, 4.3, 7.4
 - Alerts: AD1, N56, 8F35, 8F36. N12 (cannot deliver to CSP or S1SP) and N13 (no device response) provided as part of the existing behaviour
- **Applications interacting with the Smart Metering Inventory (SMI) removed or significantly reduced. Applications not interacting with the SMI unchanged.**
- **The proposed EA Service includes and excludes:**

Message Gateway South	✓	CSP Gateway North Vodafone	✓
Request Management South	✓	Comms Handler North	✓
Anomaly Detection	✓	Request Management North	✓
COS ACB	✗	Message Gateway North	✓
Comms Handler South	✓	Data Management Web Service	✓
CSP Gateway South	✓	Feature Toggle Web Service	✓
CSP Gateway South Vodafone	✓	Log Monitor	✓
CSP Gateway SMETS1	✓	File Processing Web Service	✗
CSP Gateway North Arqiva	✓	ECOS Gateway	✗
CSP Gateway North VMO2	✓	CSS Gateway	✗
		Master Key Store Web Service	✗
		DSP Access Layer	✗

Enhanced Availability Service, More Details (2)

- **Services not available in EA Service:**
 - Service Management incident creation
 - Anomaly Detection Threshold (ADT) **quarantine** services (note ADT limits in place, excess messages discarded)
 - Response buffering
 - Switching (CSS) message processing, install and commission, plus Enduring Change of Supplier (ECoS) functions
- **EA Service inactive during normal operational use (i.e., it will not be processing Service Request, Response, or Alert Traffic)**
- **Switching to the EA Service requires instruction from DCC and a *scripted* configuration change in the F5 Load Balancer by the DSP team to redirect motorway traffic to the EA Service**
- **Reversion to core DSP deployment requires instruction from DCC and a *scripted* reverse configuration change**
- **Build EA Service in Microsoft Azure Cloud**
 - Azure Tenancy, built using the Microsoft Enterprise Landing Zone
 - Hub VNET hosting an ExpressRoute circuit for connectivity back to on-premises
 - Separate VNETs for the Production Environment, SIT-A, and UIT-A environments
 - No DR, single Availability Zone, no active-passive or failover

Enhanced Availability Service, More Details (3)

- Access controlled by new filtering components deployed at the boundaries of the EA Service. At the Message Gateway, SRVs shall be filtered based on only permitted SRVs delivered to CSPs. At the CSP North Gateway, functions will be restricted based on the GBCS Messages Code of received responses and alerts.
- Attempts to access functions not allowed in the EA Service will result in an error response being returned to the SRV sender in exactly the same way as during a DSP service outage.
- Deployment of motorway cache services specific to EA Service provided by VoltDB, with a separate cache. To maintain appropriate segregation between the core DSP and EA DSP deployments, the EA Service requires a dedicated instance of the VoltDB cache. Synchronisation between these VoltDB instances provided by a new application streaming required data from core DSP to the EA Service.
- If common DSP components fail, e.g.: F5s, DataPower, Firewalls, HSMs, Network switches, EA Service will be inoperable.
- Anti-Replay in place for SRV2.2, Counters synchronised when switching Core ↔ EA Service.

Testing, PIT

PIT; focus of the PIT System Testing

- will be to demonstrate when the DSP is switched into “Enhanced Mode”, only messages in the allowed set are processed, others are rejected
- will also validate the deployment of modified DSP components and switching between “Normal” and “Enhanced” mode in the System Test environment
- Performance testing, assess and identify any expected degradation in achievable processing rates or response times, plus Northbound

Testing, SIT (1)

SIT; “It is expected that by the time of the December 2026 MR, the Contractor’s SIT team will be operating using its Continuous Integration Test Layer (CITL).”

- **“CGI proposes that the EA service is made available in the SIT-A environment during the period between the November 2026 MR and the December 2026 MR.”**
- **Test sets; CGI proposed:**
 - one (1) SMETS2+ Toshiba Comms Hub with ESME, GSME and PPMID
 - one (1) SMETS2+ EDM I Comms Hub with ESME, GSME and PPMID
 - one (1) SMETS2+ 4G Toshiba Comms Hub with ESME, GSME and PPMID
 - one (1) SMETS1 IOC Itron Comms Hub with ESME, GSME and PPMID
 - one (1) SMETS1 MOC Secure Comms Hub with ESME, GSME and PPMID
 - one (1) SMETS1 FOC Trilliant Comms Hub with ESME, GSME and PPMID

DCC will challenge this

Scope; while the core DSP service is available:

validating SRV 2.2, SRV 7.4 and SRV 4.3 can be executed successfully;
 validating N56 (SMETS1) and Power Outage (AD1) alerts are generated and received successfully;
 validating successful receipt of 0x8F35 and 0x8F36 after Power Outage; and
 validating successful receipt of N12 and N13 when DSP fails to deliver a request to a device or fails to receive a response from a device.

while the core DSP service is unavailable and the EA is available:

validating SRV 2.2, SRV 7.4 and SRV 4.3 are executed successfully;
 validating N56 (SMETS1) and Power Outage (AD1) alerts are generated and received successfully;
 validating successful receipt of 0x8F35 and 0x8F36 after Power Outage; and
 validating successful receipt of N12 and N13 when DSP fails to deliver a request to a device or fails to receive a response from a device.

once the testing with the EA Service is complete, core DSP service will be made available again and with regression and validation of SRV processing carried out to ensure behaviour remains as expected

Testing, SIT (2) Volumes

I&C SMETS2 device SIT A	Automated	192	26/10/2026	06/11/2026	10	85%	9	1.1	211	24.8
I&C SMETS2 device SIT A	Manual	18	26/10/2026	06/11/2026	10	85%	9	1.1	20	2.4
Functional in Core DSP	Automated	168	26/10/2026	06/11/2026	10	85%	9	1.1	185	21.8
Functional in Core DSP	Manual	18	26/10/2026	06/11/2026	10	85%	9	1.1	20	2.4
Functional in EAS DSP	Automated	64	26/10/2026	06/11/2026	10	85%	9	1.1	70	8.2
Functional in EAS DSP	Manual	25	26/10/2026	06/11/2026	10	85%	9	1.1	28	3.3
Totals/Averages		485							534	

Supporting Party	Required	Activities
DCC Service Providers		
DSP	Y	Support defect resolution
CSP-N	Y	Support defect resolution; Support device readiness
CSP-C/S	Y	Support defect resolution
S1SP IE	Y	Support defect resolution
S1SP Secure	Y	Support defect resolution
S1SP Trilliant	Y	Support defect resolution
S1SP FOC ANSO (DXC)	N	
S1SP FOC ANSO (CGI)	Y	Support defect resolution
DCO	Y	Support defect resolution
ECoS Party	N	
TSP	N	
4G CH Manufacturer	N	
4G Device Manager	N	
4G NEWAN	Y	Support defect resolution
FSM Provider	N	
CSS	N	
DS&A	N	
Test Lab Operator (TLO)	Y	Support device readiness

Not sure all
these SPs and
Devices
required -
Challenge

Testing, UIT

Pre-UTS; “run the Service Requests and generate the alerts on one (1) existing SMETS1 and one (1) existing SMETS2 meter set:

- **SR7.4 - Read Supply Status**
- **SR2.2 - Prepay Top-up device**
- **SR4.3 - Read Instantaneous Prepay Values**
- **AD1 - Power Outage Alert**

UIT test numbers and categorisations in Pre-UTS

CR5807 - Deferment of DCC Planned Maintenance during Adverse Weather						
Test Type	Cost per Test Categorisation	Type	Number of Tests	Re-Test Factor	Total Tests	Notes
Functional (SMETS1)	Complex	Manual	0	1.4	0	
Functional (SMETS1)	Medium	Manual	0	1.4	0	
Functional (SMETS1)	Simple - SRs	Manual	4	1.1	4	SR7.4 / SR2.2 / SR4.3 / AD1 - Power Outage Alert
SMETS1 Regression	Regression Test Packs - SRs	Automated	100	1.1	110	1 x SMETS1 Test Pack (CR and PP suites to the ESME and GSME)
Functional (SMETS2)	Complex	Manual	0	1.4	0	
Functional (SMETS2)	Medium	Manual	0	1.4	0	
Functional (SMETS2)	Simple - SRs	Manual	4	1.1	4	SR7.4 / SR2.2 / SR4.3 / AD1 - Power Outage Alert
SMETS2 Regression	Regression Test Packs - SRs	Automated	100	1.1	110	1 x SMETS2 Test Pack (CR and PP suites to the ESME and GSME)
			208		229	

- **DCC strongly supporting requirement for User Testing in UIT**
- **Testing regime to be established in conjunction with, and approval of, TAG**
- **Believe out of hours testing an option**
- **Same supporting Parties as SIT**

■ Questions for the TAG

Do you have any comments on the Proposed Solution?



Do you have any comments on the Full Impact Assessment?



Is there anything else that should be considered?



■ Next steps

