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MP274

‘Requirement for DCC Users to set TPS configurations’

Modification Report

Version 1.1

18 December 2024

Corporate member of
Plain English Campaign
Committed to clearer
communication

592



About this document

This document is a Modification Report. It sets out the background, issue, solution, impacts, costs, implementation approach and progression timetable for this modification, along with any relevant discussions, views and conclusions.

Contents

1. Summary	3
2. Issue	3
3. Solution	4
4. Impacts	4
5. Costs	6
6. Implementation approach	6
7. Assessment of the proposal	6
Appendix 1: Progression timetable	10
Appendix 2: Glossary	10

This document also has one annex:

- **Annex A** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.

Contact

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1. Summary

This proposal has been raised by Joey Manners from Octopus.

Transactions Per Second (TPS) limits are currently not a requirement within the SEC for Parties that become Data Communications Company (DCC) Users. This can cause User Systems to be unable to process the number of responses that are coming from the DCC, which would – in turn – impact the DCC Service as it is not able to queue Southbound requests.

The Proposed Solution would look to introduce a requirement for DCC Users to set these TPS limits as part of User Entry Process Testing. DCC Users would then periodically review these with the DCC, to ensure the information remains accurate.

The impact on Parties associated with this modification is minimal, but an improvement to current arrangements. The costs would be limited to Smart Energy Code Administrator and Secretariat (SECAS) time and effort. This is a Self-Governance Modification, and, if approved, will be implemented in the February 2025 SEC Release.

2. Issue

What are the current arrangements?

TPS, or Transactions Per Second, is a metric that quantifies the rate at which a system or network can handle individual transactions within a one-second timeframe.

DCC Users will generally utilise this with regards to processing the number of responses coming from the DCC and should be set in accordance with the DCC User System's capacity.

User Entry Process Requirements

In line with SEC Section H1 'User Entry Process', a User has to comply with certain requirements in order to become a DCC User. Once a User has been approved, they would be able to access the Services provided over the DCC User Interface.

SEC Section H14 'User Entry Process Tests' details the requirements for a DCC User's Systems to interoperate with the DCC and the DCC System.

Following SEC Sections H1 and H14, a DCC User wishing to undertake User Entry Process Testing (UEPT) will comply with the criteria set out in Section 5 of Appendix R 'Common Test Scenarios Document'.

The Party wishing to become a DCC User is currently not required to provide TPS limits at any stage throughout the User Entry Process.

What is the issue?

Currently, there is no requirement within the SEC for DCC Users to set TPS configurations and this would have a knock-on impact on the DCC Systems. Without TPS rates, the DSP would try to deliver traffic immediately as opposed to a sustained flow over a period of time.

The lack of TPS configurations had repercussions on the DCC System in the form of a Major Incident, reported and resolved by the DCC earlier in the year. The issue was due to the User not having TPS

configurations, which could have minimised the impact on the DCC System or avoided the Incident in the first place.

What is the impact this is having?

Major Incidents created as a result of a User not having TPS limits could affect Installation and Commission, Prepayment and Power Outage activities if the DCC is unable to perform the relevant actions associated with each of these activities. This would come at a cost to SEC Parties and the industry as a whole.

Impact on consumers

This modification will not impact consumers directly; however, the solution would prevent potential outages that would impact Prepayment consumers.

3. Solution

Proposed Solution

The solution put forward by the Proposer relates to adding a requirement in the User Entry Process Testing document for new DCC Users to set TPS limits when becoming a DCC User. The DCC User would then periodically review this with the DCC and amend, if needed.

The solution would not look at dictating the TPS limits a User should set. It is a requirement for the potential DCC User to ensure these are set, making this a legal-text change only.

Though some Parties will set these limits as good practice, adding an additional requirement in the User Entry Process Testing criteria in Appendix R would futureproof this good practice and ensure it is adopted by all DCC Users going forward.

The legal text to implement these changes can be found in Annex A.

4. Impacts

This section summarises the impacts that would arise from the implementation of this modification.

SEC Parties

SEC Party Categories impacted			
✓	Large Suppliers	✓	Small Suppliers
✓	Electricity Network Operators	✓	Gas Network Operators
✓	Other SEC Parties	✓	DCC

Breakdown of Other SEC Party types impacted			
	Shared Resource Providers		Meter Installers
	Device Manufacturers		Flexibility Providers

Managed by

Breakdown of Other SEC Party types impacted		
✓	DCC Other Users	MAPs/ MAMs

There will be a small amount of effort required of Parties that are already a DCC User but have not set TPS limits to do so. There will also be a small amount of effort required for Parties who wish to become DCC Users to set TPS limits as part of the UEPT Entry Criteria. DCC Users who have set TPS configurations would also review this periodically with the DCC, and as such, a minimal rolling effort would be required going forward. The DCC would be engaging with DCC Users during their review period, requiring a small amount of effort.

DCC Systems

DCC System changes

There will be no System changes from the modification.

DCC System traffic

This modification will not impact DCC System traffic but will ensure that the DCC System has additional protection from an outage.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section A 'Definitions and Interpretations'
- Appendix R 'Common Test Scenarios Document'

The changes to the SEC required to deliver the proposed solution can be found in Annex A.

Devices

This modification will not impact Devices.

Consumers

This modification will not directly impact Consumers.

Other industry Codes

This modification will not impact other industry Codes.

Greenhouse gas emissions

This modification will not impact greenhouse gas emissions.

5. Costs

DCC costs

There are no DCC costs associated with this modification.

SECAS costs

The estimated SECAS implementation cost to implement this as a stand-alone modification is one day of effort, amounting to approximately £600. This cost will be reassessed when combining this modification in a scheduled SEC Release. The activities needed to be undertaken for this are:

- Updating the SEC and releasing the updated version to the industry.

SEC Party costs

There is a minimal amount of effort required of Parties (who are either DCC Users already or in the process of becoming DCC Users) to set TPS limits and that may come at a 'time and effort' cost to Parties, however this should be minimal.

6. Implementation approach

Agreed implementation approach

The Change Sub-Committee agreed an implementation date of:

- **27 February 2025** (February 2025 SEC Release) if a decision to approve is received on or before 13 February 2024; or
- **26 June 2025** (June 2025 SEC Release) if a decision to approve is received after 13 February 2024 but on or before 12 June 2024.

It is recommended that the modification is targeted for the February 2024 SEC Release as there are no System impacts on the DCC – though there is a small improvement in the form of queuing Southbound requests. There are minimal costs associated with this modification for SEC Parties linked to time and effort to implement TPS limits (though this should be minimal) as well as SECAS implementation costs.

7. Assessment of the proposal

Sub-Committee input

SECAS will engage with the Chairs from the Operations Group (OPSG), the Smart Metering Device Assurance Sub-Committee (SMDASC) the Technical Architecture and Business Architecture Sub-Committee (TABASC), the Security Sub-Committee (SSC), the Smart Metering Key Infrastructure Policy Management Authority (SMKI PMA) and Testing Advisory Group (TAG) to confirm what input is

required from these forums. SECAS believes the following Sub-Committees will need to provide the following input to this modification:

Sub-Committee input	
Sub-Committee	Input sought
OPSG	No input required
SMDASC	No input required
SMKI PMA	No input required
SSC	No input required
TABASC	Input on legal text required to deliver the solution
TAG	No input required

Observations on the issue

Views of the Issues Group

The issue described within the modification was presented to the SEC Issues Group in September 2024, to gain input from attending members.

An Issues Group member highlighted that this modification will not necessarily address the reasons for the DCC Incident that was cited as an example but agreed that this modification is about establishing the requirement for TPS configuration, as there is material impact on DCC Users if they do not do so. DCC Users set commands that exceed what they can reasonably process, which results in retries that impact the DCC System.

The DCC would not be able to set TPS limits for DCC Users as they do not have the governance to do so. The DCC would be able to stop the DCC User, however this is reactive (after the fact) whilst TPS is trying to be proactive.

It was questioned whether the Proposed Solution will be a part of UEPT, and it was confirmed that the changes for this modification would be made to the UEPT criteria.

An Issues Group member highlighted that the solution is appropriate, and the longer-term architectural implications of addressing Major Incidents would need to be discussed through formal channels. They questioned whether this item would be presented at the Technical and Business Architecture Sub-Committee (TABASC) and SECAS confirmed it would.

Views of the Change Sub-Committee

The modification was presented at the Change Sub-Committee in October 2024.

A member of the CSC queried the section that refers to a requirement to adhere to limits. They asked what would happen if a Party did not adhere to the limits. The Proposer explained that the DCC is responsible for adhering to the limits, and the Party is not responsible for this. They advised this limit needs to be set on the DCC, because if the limit is not in place, the DCC System will continue to retry sending the message until it is processed by the User System. The DCC added that there are no DCC System changes involved.

The Proposer advised that the majority of Users have agreed this through ad hoc engagement with the DCC, but some have not. They advised that this modification will ensure that new Users need to set this requirement with the DCC.

A member of the CSC asked if there is an implied vulnerability in the DCC system if Users were forced to accede an agreed limit or business need for them to do so. They queried if there are any compensating capabilities. The Chair advised that the TPS limit is the maximum volume of messages a User can process. By providing this limit, the DCC System would queue messages that cannot be processed to avoid overloading the DCC System through retry messages. Another member advised that all Large Suppliers have TPS limits to protect their systems, but a vulnerability is caused by not all Users having this in place.

A CSC member asked if there are impacts to the DCC if messages are being queued up and cannot be received. The DCC advised that the queueing process exists to support this. They noted there is a slight risk that if lots of consumers needed coverage, they would have to increase their capacity, but the existing system works once everyone stays within the limits.

Solution development

This issue was first brought to the attention of TABASC following a Major Incident that the DCC had experienced. As part of this Major Incident, it was found that the affected User did not have a TPS limit, which limited the readiness to mitigate the Incident.

As a result of the Incident, the TABASC agreed that an appropriate action would be to include TPS limits as a requirement to User Entry Process Testing.

The modification was subsequently presented at the SSC. The solution was questioned by an SSC attendee, as the issue was not clearly defined within the Modification Report. The attendee drew attention to the wording of the Modification Report, as it did not describe the full scale of the impact. Another SSC attendee highlighted that the impact would more likely be on the User System, as opposed to the DCC. This point was clarified by another SSC attendee – the impact on the DCC would be through a Denial of Service (DoS) attack on the DCC if responses are not processed in a timely manner.

As a result of this feedback, SECAS carried out a further review of the Modification Report and the legal text to provide clear information.

8. Case for change

Business case

The modification has a minimal impact on SEC Parties, but it would benefit both DCC User Systems and the DCC Systems if TPS limits were to be put in place, as it would allow the DCC to queue Southbound requests, thus allowing for a steadier flow of information to be processed.

Views against the General SEC Objectives

Proposer's views

The Proposer believes that this modification better facilitates SEC Objective (g)¹ as DCC Users would be required to provide their TPS limits as part of User Entry Process Testing serving as some protection to the DCC Systems.

Views against the consumer areas

Improved safety and reliability

This modification will have a positive impact on this area as setting TPS limits would improve the reliability of the DCC User's Systems.

Lower bills than would otherwise be the case

This modification will have a neutral impact on this area.

Reduced environmental damage

This modification will have a neutral impact on this area.

Improved quality of service

The avoidance of incidents through setting TPS limits is a minor improvement in this area.

Benefits for society as a whole

This modification will have a neutral impact on this area.

Final conclusions

This modification was raised as a result of issues found during a Major Incident reported by the DCC. The TABASC have supported the need for a modification to include setting TPS limits as a requirement to User Entry Process Testing, to ensure DCC Users include these going forward.

The modification which has minimal impacts on Users and the DCC will be a benefit to current DCC Users as well as future DCC Users as it would eliminate the interpretation of TPS limits as good practice and include them as part of the SEC. This will ensure that Parties that are DCC Users as well as Parties that wish to become DCC Users comply with the need to have TPS configurations.

¹ facilitate the efficient and transparent administration and implementation of this Code

Appendix 1: Progression timetable

Timetable	
Event/Action	Date
Draft Proposal raised	7 Oct 2024
CSC converts Draft Proposal to Modification Proposal	15 Oct 2024
Modification Report approved by CSC	15 Oct 2024
Modification discussed with SSC	13 Nov 2024
Modification Report Consultation	18 Dec 2024 – 13 Jan 2025
Change Board Vote	22 Jan 2025

Italics denote planned events that could be subject to change

Appendix 2: Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	Full term
CSC	Change Sub-Committee
DCC	Data Communications Company
MAM	Meter Asset Manager
MAP	Meter Asset Provider
OPSG	Operations Group
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMDASC	Smart Metering Device Assurance Sub-Committee
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee
TAG	Testing Advisory Group
TPS	Transactions Per Second
UEPT	User Entry Process Testing

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Annex A

Legal text – version 1.0

About this document

This document contains the redlined changes to the SEC that would be required to deliver this Modification Proposal.

This document contains the changes required to deliver the Proposed Solution.

Section A ‘Definitions and Interpretations’

These changes have been redlined against Section A version 38.0.

Amend Section A1 as follows:

Threshold Anomaly Detection Procedures	means the SEC Subsidiary Document of that name set out in Appendix AA, which has the purpose described in Section G6.1 (Threshold Anomaly Detection Procedures).
Transaction Per Second	<u>means the rate at which a DCC User System can handle individual transactions within a one-second timeframe.</u>
Transfer Date	has the meaning given in Section F6A.4 (Communications Hub Transfer Requests), subject to change in accordance with the CH Handover Support Materials.
Transfer Location	has the meaning given in Section F6A.4 (Communications Hub Transfer Requests).
Transform	means, in respect of a Service Request in relation to a Device, the conversion of that Service Request into one or more corresponding Commands (less any required Message Authentication Code or Digital Signatures), where such correspondence is identified in the DCC User Interface Specification in respect of particular types of Service Request and particular Device Types; and “ Transformed ” shall be interpreted accordingly.
Transition and Migration Approach Document	means the SEC Subsidiary Document set out in Appendix [TBC].
Transition Objective	has the meaning given to that expression in Section X1 (General Provisions Regarding Transition).

Appendix R 'Common Test Scenarios Document'

These changes have been redlined against Appendix R version 6.0.

Amend Section 5.8 as follows:

5.8. UEPT Entry Criteria

5.8.1 Each Party wishing to undertake UEPT must comply with (and, where specified below, provide evidence of complying with) the following criteria prior to entry into UEPT:

- a) Prior to start of test execution, the DCC must confirm with the Code Administrator that the person requesting to commence testing has acceded to the SEC;
- b) The Relevant Party must have identified the User Roles for which it wishes to undertake UEPT;
- c) All relevant test artefacts (as agreed with the DCC and set out in clause 5.6, 5.9, and 5.17) must have been produced by the Relevant Party and approved by the DCC. This includes:
 - Party Notification of Intention to Undertake Testing
 - Test Readiness Report
 - Test Plan incorporating the Test Schedule
 - Requirements Traceability Matrix
 - Test Scripts
 - Test Data Plan;
- d) The Relevant Party has provided evidence to the DCC that a test environment capable of supporting the planned testing has been established and is available;
- e) The Relevant Party has provided evidence to the DCC that an appropriate level of resources are available to support the UEPT process; ~~and~~
- ~~f)~~ The Relevant Party has provided confirmation that the Security Requirements set out in the Enduring Testing Approach Document have been met; ~~and~~
- ~~f)g)~~ The Relevant Party has set Transaction Per Second (TPS) limit in accordance with the DCC User System's capacity:

(i) DCC Users, in respect of 5.8.1(g) shall review the TPS limit with the DCC periodically, making amendments as reasonably accommodated by the DCC User System.

(ii) DCC Users, passing UEPT Entry Criteria with the exception of 5.8.1(g) shall take all reasonable steps to comply with 5.8.1(g) as soon as reasonably practicable.