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DP217

‘Obtaining Timestamps to allow Target Response Time Measurements’

Modification Report

Version 0.2

11 October 2022



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About this document

This document is a draft Modification Report. It currently sets out the background, issue, and progression timetable for this modification, along with any relevant discussions, views and conclusions. This document will be updated as this modification progresses.

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1. Summary

This proposal has been raised by Andy Norman on behalf of the Data Communications Company (DCC).

Target Response Times (TRTs) measure the time it takes for a Service Request (SR) to travel across the DCC Systems whereas Round Trip Times (RTTs) include time for a message to be sent across the DCC Systems but also time spent on the Home Area Network (HAN).

Smart Energy Code (SEC) Modification [MP122A 'Operational Metrics'](#) introduced several reporting requirements for the DCC to report on RTTs. The MP122A legal text has resulted in RTTs being categorised as TRTs, which is incorrect.

2. Issue

What are the current arrangements?

SEC Modification [MP122A 'Operational Metrics'](#) introduced several reporting requirements for the DCC to report on RTTs. Whilst the design facilitated the Working Group request to measure RTTs, what was implemented within SEC Section H13 were requirements to report on TRTs. Therefore, the legal text doesn't reflect the actual DCC design for MP122A. This has resulted in the DCC seeking derogations which are largely linked to Code Performance Measure 6A:

6A	Percentage of each of the Business Processes described in Section H13.1A which is delivered within the applicable Target Response Time. There shall be a separate Code Performance Measure for each combination of Business Processes and either Region (for SMETS2) or SMETS1.
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Round Trip Times

An RTT is measured as the time taken from a request being accepted by the Data Service Provider (DSP) and then subsequently sent back to the customer, i.e., the round trip time of the message. This time includes not only the time for processing and sending messages across and between the DSP and Communications Service Providers (CSPs), but also includes process time for the Communications Hub and Devices, as well as transfer time across the HAN.

Target Response Times

TRTs are the target performance measures defined in SEC Appendix E 'DCC User Interface Services Schedule'. The TRTs are defined differently for Smart Metering Equipment Technical Specifications (SMETS) 1 Devices and SMETS2+ Devices:

- **SMETS1 Devices** – starting from the DCC User Gateway and ending on provision of the Service Response to the User, but only counting the processing time between the DCC User Interface to the DCC SMETS1 Processing Systems (inclusive); and/or the DCC SMETS1 Processing Systems to the DCC User Interface (inclusive).
- **SMETS2+ Devices** – starting from the DCC User Gateway and ending on provision of the Service Response to the User, but only counting the processing time between the DCC User

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Interface to the Communications Hub (inclusive); and/or the Communications Hub to the DCC User Interface (inclusive).

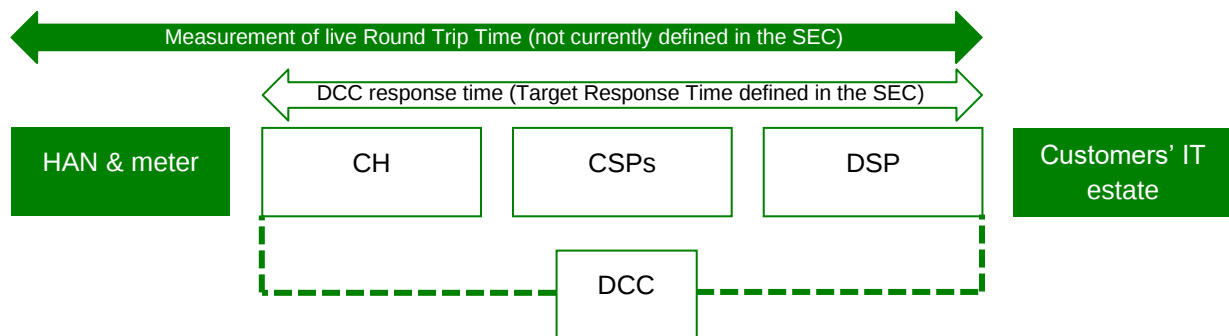
What is the issue?

The implementation of MP122A led to a revised suite of reports and dashboards that are measuring the RTT of a request or transaction, and not the TRT. This is due to the MP122A legal text referring to RTTs as TRTs.

TRTs set the expected performance for messages transiting the DCC networks and systems. They only measure performance within the DCC environment (DCC User Gateway to Communications Hub and reverse). They do not provide a holistic view of a message journey, as they do not measure the time spent on the HAN.

The DCC does not currently have the capability to measure TRTs at an individual SRV level and in real-time, as required by the MP122A legal text in Sections H13.1 and H13.1A. At present, the TRT reporting requirements are met using test messages.

This diagram sets out the difference between RTTs and TRTs:



CH – Communications Hub, CSP – Communications Service Provider, DSP – Data Service Provider, IT – Information Technology

While RTTs are an excellent measure for true customer experience, they do not measure performance that is solely within the DCC's control. Furthermore, RTTs are not currently defined within the SEC.

Complexities such as message size, HAN performance, Device performance and orchestration may be having an impact on the overall performance of the service for DCC customers, as currently seen in RTT measurements. Where RTTs are measured in the absence of TRTs, it is not possible to ascertain where service-impacting issues are. Consequently the DCC cannot advise its customers, or effectively manage its Service Providers to assist in improving service.

What is the impact this is having?

Customers and Suppliers are unable to manage services and issues effectively as it is not clear if performance issues are due to the DSP, the CSP, the HAN, or Device performance, message size or orchestration.

RTT timings in the current MP122A reporting have indicators which can determine where performance issues may lie. However, these are not true measures of performance.

An additional impact is the inability to include TRTs for key business processes in the Operational Performance Regime (OPR), which is an Ofgem objective.

Impact on consumers

SEC Party metrics (in terms of HAN processing time) cannot be improved without a shared responsibility between the DCC and SEC Parties to collaborate to improve the end-to-end performance. Therefore, if these SEC Party metrics are incorporated into the SEC, along with appropriate targets, it is hoped that end consumers will see the benefits of any improvement in performance.

Relationship with other active modifications

This modification seeks to address the need for renewing the derogations linked to Code Performance Measure 6A. It proposes to obtain timestamps from the CSPs when SRs have been successfully delivered to and from the Communications Hubs. This would allow the DCC, its customers and Service Providers to see potential issues much more clearly than previously and allow for better management of performance issues.

Additional timestamps from Communications Hubs for when they pass messages onto and receive messages from HAN Devices would also be sought as part of this change. This will allow the DCC to better monitor and report on Communications Hub performance.

Without the addition of timestamps to support the measurement of Target Response Times, the DCC is unable to comply with Code Performance Measure 6A in Section H13.1. The DCC will need to address this non-compliance.

As part of this Modification Proposal, the DCC also proposes that the targets associated with TRTs are reviewed. The current technology was chosen (and subsequently developed) to meet the 30-second TRTs at an aggregate level across all SRVs and across all regions. The introduction of Code Performance Measure 6A in the SEC changed the requirements but the systems were not uplifted to reflect the change. This needs to be addressed by either (a) uplifting the systems to support the new requirements (outside of the SEC Modification Process), or (b) amending the targets in the SEC to reflect the current system capability.

This differs from [MP187 'Incorporation of Target Round Trip Times and Target Success Rates into the SEC'](#), which seeks to add definitions for 'Round Trip Time' and 'Success', and to provide indicative values for successful RTTs. MP187 will focus on the targets and reporting, once this proposal introduces timestamps for SRs (Alerts will not be included).

[MP122B 'Operational Metrics – Part 2'](#) is also linked to this proposal, however the MP122B Proposed Solution will obtain timestamps from Alerts (not SRs), from the point where Alerts leave the Communications Hub and when Alerts enter the Service User gateway.

3. Assessment of the proposal

Areas for assessment

Sub-Committee input

SECAS has engaged the Chairs from the Operations Group (OPSG), the Technical Architecture and Business Architecture Sub-Committee (TABASC), the Security Sub-Committee (SSC) and the Smart Metering Key Infrastructure Policy Management Authority (SMKI PMA) 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	Advise on any operational/reporting element of the Proposed Solution.
SMKI PMA	Modification unlikely to impact the SMKI requirements.
SSC	Modification unlikely to impact the security framework.
TABASC	Advise on how the Proposed Solution may impact the technical or business architecture.

Observations on the issue

SEC Sub-Committee Chair input

The OPSG Chair commented that it would seem logical to incorporate this proposal's solution into the MP122B Proposed Solution. SECAS however stated that there is a material difference as Alerts contain a timestamp within their payload, whereas SRs do not. This proposal will have to introduce new functionality in terms of obtaining SR timestamps.

SECAS also noted that obtaining the SR timestamp from the Communications Hub may cause additional complexity that may lead to increased processing time and potential issues. This will need to be investigated during the DCC Preliminary Assessment.

How will this modification impact Next Generation Communications Hubs?

The OPSG Chair has highlighted that the functionality delivered under this modification will need to be incorporated into the next generation Communications Hub specification. This is to avoid developing a Proposed Solution that has a reduced benefits case. The DCC will consider this when developing the Proposed Solution.

Appendix 1: Progression timetable

SECAS has presented this proposal to the SEC Sub-Committees for initial comment and will return this to the Change Sub-Committee on 18 October 2022 under the recommendation that it proceeds to the Refinement Process. SECAS will then present the business requirements to the Working Group, the TABASC and the OPSG.

Timetable	
Event/Action	Date
Draft Proposal raised	9 Sep 2022
Presented to CSC for initial comment	20 Sep 2022
Business requirements developed with the Proposer	Oct 2022
Business requirements workshop	17 Oct 2022
CSC converts Draft Proposal to Modification Proposal	18 Oct 2022
<i>Modification discussed with Working Group</i>	<i>2 Nov 2022</i>
<i>Business requirements discussed with TABASC</i>	<i>1 Dec 2022</i>
<i>Business requirements discussed with OPSG</i>	<i>13 Dec 2022</i>
<i>Preliminary Assessment requested</i>	<i>14 Dec 2022</i>
<i>Preliminary Assessment returned</i>	<i>25 Jan 2023</i>
<i>Update provided to CSC</i>	<i>21 Feb 2023</i>

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
4G	Fourth Generation
CH	Communications Hub
CSC	Change Sub-Committee
CSP	Communications Service Provider
DCC	Data Communications Company
DSP	Data Service Provider
HAN	Home Area Network
OPR	Operational Performance Regime
OPSG	Operations Group
RTT	Round Trip Time
SEC	Smart Energy Code

Glossary	
Acronym	Full term
4G	Fourth Generation
CH	Communications Hub
CSC	Change Sub-Committee
CSP	Communications Service Provider
SECAS	The Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specifications
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SR	Service Request
SRV	Service Reference Variant
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee
TRT	Target Response Time