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<b>Action:</b>	<b>For Decision</b>

## SMETS1 Services Testing Approach Document Update

### 1. Purpose

This paper provides details of the Testing Advisory Group's (TAG) considerations and, where relevant, associated recommendations regarding the SMETS1 System Integration Testing (SIT) Approach Document and User Testing Services (UTS) Approach Document for Panel consideration. The TAG views are provided to inform any associated Panel recommendation to the Secretary of State on the approval of the exit and/or entry criteria and other matters the Panel may wish to include alongside its recommendation.

### 2. Role of the Panel and TAG in the SMETS1 Testing Approach Documents

It has previously been noted that the Panel, with supporting input from the TAG, have been requested by BEIS to recommend the approval of the exit and entry criteria (as applicable) for the SMETS1 Services<sup>1</sup> Testing Approach Documents.

As with previous release testing approach document discussion, the focus on making a recommendation on the entry and/or exit criteria does not prevent other observations and comments from being raised by the TAG and then subsequently reiterated or expanded by the Panel in the formal recommendation or correspondence it provides to the Secretary of State.

As outlined in the subsequent sections, feedback has been provided and discussions have taken place on the entry and exit criteria for SMETS1 SIT and for the SMETS1 Interface Testing (IT), which forms part of the SMETS1 UTS Approach Document. It will, however, be the Secretary of State's decision whether these observations should or can be addressed.

Section 4 summarises the TAG's discussions on the SIT entry and exit criteria from the TAG meeting on 21<sup>st</sup> February 2018, which has informed the subsequent recommendations on the document. The SIT entry and exit criteria is available at Appendix A. The regularity version of the SMETS1 Services SEC Variation Testing Approach Document (SVTAD), which includes the SIT exit criteria is provided in Appendix B.

Section 5 summarises the TAG's discussion on the SMETS1 IT and the associated entry and exit criteria. The full set of comments raised in relation to the SMETS1 UTS Approach Document<sup>2</sup>, which

<sup>1</sup> Also referred to as either Release 3.0 or SMETS1 Enrolment and Adoption

<sup>2</sup> Which were against the non-regulatory, narrative, version of the document.

contains the SMETS1 IT entry and exit criteria are provided in supporting Appendix C to this paper. These have been provided to the Panel to be noted and subsequently highlighted to the Secretary of State, if the Panel agrees.

### 3. SMETS1 Services Testing Approach Documentation as regulatory SEC Subsidiary Documents

Unlike Release 2.0<sup>3</sup>, the SIT Approach Document and UTS Approach Document will be formally designated as part of the SEC, as Subsidiary Documents alongside the SVTAD. As part of the preparation of making these documents ready for designation, they are being converted or drafted into regulatory documents. Unlike previous releases, these regulatory documents will not contain supporting and supplementary narrative and instead, purely focus on the requirements and obligations on the DCC and/or Users associated with SMETS1 Services testing.

The SMETS1 SVTAD previously issued for consultation, was a narrative document and has now been converted into a regulatory document, by the DCC and BEIS in advance of designation. Similarly, the UTS Approach Document is being converted into a regulatory document.

In the case of the test approach documentation for SIT, the key sections in the form of the entry and exit criteria were shared with the TAG for discussion at its meeting on 21<sup>st</sup> February 2018. However, DCC is proposing that no separate SIT Approach Document is produced and that the content is absorbed within an expanded SVTAD.

## 4. Consideration on the SIT Approach Document

### 4.1 SIT exit criteria

As noted above, the TAG was not provided with a SIT Approach Document for discussion on 21<sup>st</sup> February 2018, as it is still being drafted and developed by the DCC and BEIS. Instead, the DCC talked through the entry and exit criteria, with the specific aim to form a recommendation to the Panel that the exit criteria should be approved by the Secretary of State.

It was, however, noted that the SIT exit criteria had been included in the earlier narrative version of the SVTAD and the current draft of the regulatory version of the SMETS1 Services SVTAD (which had been circulated for information and reference on 16<sup>th</sup> February 2018).

The entry and exit criteria that was provided to the TAG is included in Appendix A. Following the walkthrough of the proposed criteria, the TAG did not have any concerns and did not indicate any reasons why they should not recommend the approval. While the recommendation being sought was specifically on the exit criteria, the TAG did not have any concerns on the entry criteria either.

#### 4.1.1 TAG recommendation on SIT exit (and entry criteria)

The TAG recommends that the Panel makes a recommendation to the Secretary of State that the SMETS1 Services SIT exit criteria should be **approved**.

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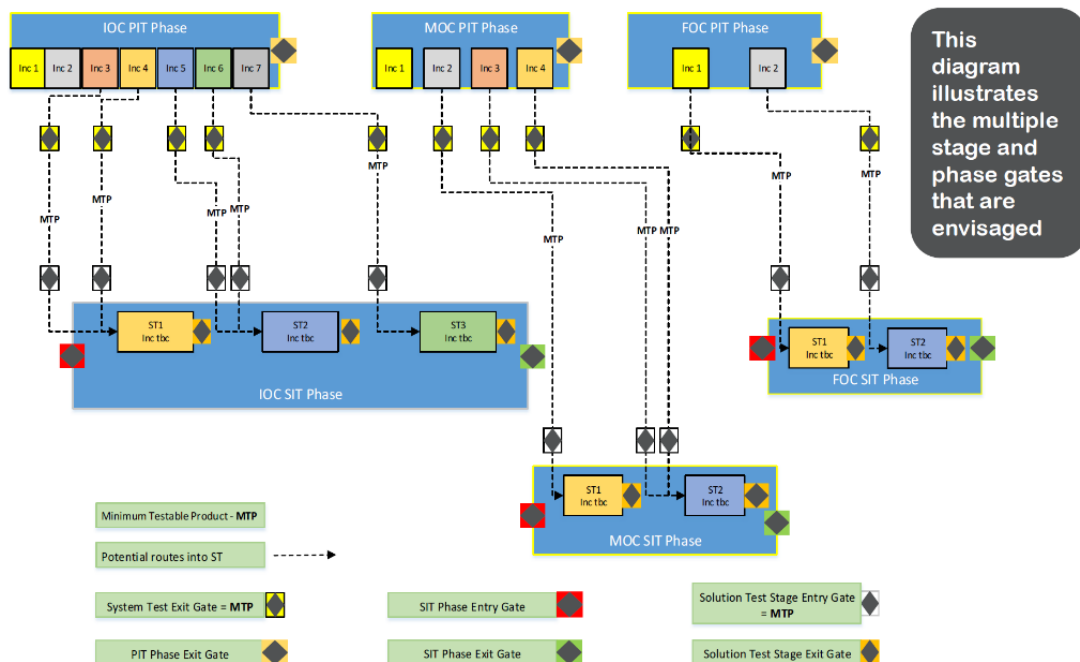
<sup>3</sup>The only Testing Approach Document that has been formally designated as a SEC Subsidiary Document for Release 2.0 is the Release 2.0 SEC Variation Testing Approach Document (SVTAD).

## 4.2 Overlapping of the SIT and Pre-Integration Testing (PIT) phases across each of the three iterations of Operational Capability phases

When discussing the SIT entry and exit criteria, the DCC noted as part of its planning for undertaking PIT and SIT, for each of the three iterations of operating capability phases<sup>4</sup>, that it would need to overlap PIT and SIT activities for each.

For example, the start of PIT for MOC could overlap with the end of SIT for IOC. Doing so would maximise the efficiency of completing DCC testing activities. The diagram below aims to explain the incremental nature of the delivery and testing. The DCC noted that it was seeking support and agreement from the TAG and the Panel to do this as they wanted confirmation of support for taking this approach.

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The TAG did not express any major concerns with the principle of the DCC overlapping SIT and PIT activities. This is on the basis that the activities are internal DCC testing activities and therefore, would not impact User testing activities. In addition, the TAG expects that any issues or defects encountered during PIT and SIT would be resolved prior to SMETS1 IT and the wider SMETS1 User Eligibility Testing commencing and evidence to that effect would be documented and provided as part of the review and recommendations on the SMETS1 SIT exit evidence and associated decisions.

As the DCC is building code in increments the TAG expressed the need for clarification on the code management plan to identify and fix defects, especially those identified in User Eligibility Testing. For example, the TAG questioned the traceability of the code if a defect is found in IOC User Eligibility Testing on code that was developed as part of IOC 'increment 7', because by this time, the code base in SIT/PIT could be at MOC 'increment 3'. The TAG recommended that the DCC raises a risk to this effect.

<sup>4</sup> IOC – Initial Operating capability, MOC – Middle Operating Capability and FOC – Final Operating Capability  
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#### 4.2.1 TAG recommendation on the overlapping of SMETS1 PIT and SIT

The TAG recommends to the Panel that it should **agree** that the DCC should be able to, if required, overlap PIT and SIT activities across the three iterations of operating capability releases, on the condition that these DCC testing activities do not overlap with User Eligibility Testing activities and clarification on the code management plan and the potential impact to User Eligibility Testing is provided.

## 5. Consideration of the UTS Approach Document

### 5.1 TAG Review of the UTS Approach Document and Subsequent DCC Actions

On 20<sup>th</sup> December 2017, the TAG was first provided with a draft of the SMETS1 UTS Approach Document. This version was in narrative format (i.e. not in the regulatory format that will ultimately be designated as part of the SEC) and was provided for initial discussion and feedback. The discussions in December 2017 prompted a TAG workshop on 9<sup>th</sup> January 2018, where the TAG discussed testing principles that should be applied at a minimum to the SMETS1 Services release and covered a set of minimum expectations for testing participants as part of the test phase.

At the meeting on the 23<sup>rd</sup> January 2018, discussions focused on the key themes and concerns raised following the December 2017 meeting and the subsequent actions that were taken. One area that prompted further action was the defect mask that should be applied to the SMETS1 IT exit criteria. A defect mask proposal was subsequently provided to the TAG for consideration in advance of the 21<sup>st</sup> February 2018 meeting where the feedback provided, ex-committee, was discussed.

### 5.2 TAG discussions on the SMETS1 IT exit criteria

As noted above, the role of the Panel, with support from the TAG, is to form a recommendation on whether the entry and exit criteria for SMETS1 IT should be approved. The IT exit criteria forms part of the wider UTS Approach Document, which covers eligibility testing which users will be obligated to complete before they can utilise SMETS1 Services via the DCC.

While the engagement to date from the DCC on the SMETS1 IT entry and exit criteria (and wider UTS Approach Document) was appreciated, a lot of the TAG discussion centred on how the appropriateness of the criteria was affected by a number of unknowns with regards to the direction of travel of the SMETS1 Services solutions as a whole.

Section 6 highlights more general observations on the development of the SMETS Testing Approach Documents to date.

### 5.3 Subsequent version

As noted previously, the SMETS1 UTS Approach Document is currently being converted by the DCC and BEIS into a regulatory document so that it can be formally designated as a SEC Subsidiary Document and form part of a suite of requirements and obligations alongside the SMETS1 Services SVTAD and other Approach Documents. The regulatory version has not been shared with the TAG.

It is understood that, as the SMETS1 UTS Approach Document contains requirements on Users, a consultation will be issued to enable SEC Parties to comment on the content of the documentation. It is assumed that, if required, the Panel (with support from TAG) could respond to this consultation, particularly, if outstanding concerns have not been addressed. The timing of this consultation is still unknown; however, expectations are that it needs to be soon to enable the associated designation activities to occur six months in advance of SMETS1 IT commencing.

#### 5.4 TAG recommendation to the Panel

Due to the issues and concerns highlighted in, section 5.2, the TAG could not reach a recommendation on the approval of the exit criteria for SMETS1 IT at this time. Without greater confidence and stability of the final solution (including the supporting SEC drafting) an informed recommendation could not be provided.

The TAG raised concerns that the need to meet delivery timescales for the release as part of a wider regulatory plan was driving the need for recommendations and decisions on testing approaches rather than following a more structured approach of basing the testing on what is contained in the final drafting and solution.

The Panel is asked to **consider** highlighting these concerns to the Secretary of State alongside the recommendations on the SMETS1 SIT exit and entry criteria.

### 6. General TAG observations on the development of the Testing Approach Documents for SMETS1 Services

In addition to the matters outlined above, some general observations were made by the TAG on the process and timing of the development of the Testing Approach Documents for the SMETS1 Services releases. Some of these observations have been previously raised to the Panel to note and have been provided again for completeness below.

- The TAG is having to review and recommend the approval of testing exit criteria close to or in parallel with the planned start of execution of certain testing activities, e.g. the SIT commencement date for IOC was 28<sup>th</sup> February 2018.

In addition, this concern has prevented the TAG from forming a recommendation to approve the SMETS1 IT Exit Criteria.

- The final SMETS1 Services solution is still not known, which has made it difficult for the TAG as it is only able to consider Testing Approach Documents from a policy or good practice perspective. Specific requirements are challenging to conclude on, without knowing the details and content of associated solution documentation.
- Part of the TAG role, in support of the Panel is reviewing and making recommendations on the Testing Approach Documentation for the SMETS1 Services release. The TAG is not directly involved in the solution development and SEC change development, which is being undertaken by the SMETS1 Service Technical Business Design Group (TBDG) sub-group, that reports into TBDG.

Not knowing the progress with the solution documentation and when the content is stabilised makes it difficult for the TAG to formulate its views and recommendations to the Panel. It would be helpful if there was more input from those involved in leading on the technical solution development to aid the TAG considerations on the appropriateness of the Testing Approach Documentation, to ensure no gaps in the process are missed. This could be achieved through DCC and/or BEIS representation on the TBDG sub-group attending and informing relevant TAG discussions.

- Forcing a decision on the appropriateness of the User testing elements of the suite of SMETS1 Testing Approach Documents should not be driven by the need to meet a project plan timescale, especially if the focus of the testing is to ensure in this case that the SMETS1 Service works as expected and does not ultimately result in a worse service than currently

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provided. The current situation, where Testing Approach Documentation has been produced in parallel to the solution documents, is not an ideal situation and this has affected the ability to make a confident recommendation that meets expected levels of regulatory rigor.

## 7. Next Steps

Subject to the Panel's consideration of the TAG's recommendations and observations, the Secretary of State will be notified of the Panel's decisions and views. Subject to the Panel's agreement, the wider observations on the SMETS1 UTS Approach Document, including the SMETS1 IT entry and exit criteria will also be highlighted for consideration by the Secretary of State as part of any subsequent activities it undertakes.

## 8. Recommendations

The Panel is requested to:

- **AGREE** to recommend to the Secretary of State the approval of the SMETS1 SIT exit and entry criteria and to allow the DCC to overlap PIT and SIT phases during the three iterations of operating capability activities; and
- **AGREE** to note to the Secretary of State that it is unable to make a recommendation to approve the SMETS1 IT entry and exit criteria outlining the reasons as summarised in Section 5; and
- **AGREE** to highlight to the Secretary of State the general observations outlined in Section 6, supplemented by any additional Panel observations.

David Barber

SECAS Team

2<sup>nd</sup> March 2018



## Appendix A – SMETS1 Services SIT Exit (and Entry) Criteria

**SMETS1 SIT Exit Criteria** (extract from regulatory versions of the SMETS1 Services SVTAD v0.4, which was mirrored in information provided for discussion to the TAG and discussed on 21<sup>st</sup> February 2018).

These criteria will apply to each iteration of operating capability release, i.e. IOC, MOC and FOC.

#	Exit Criteria	Success	Evidence
1	Functional SIT Execution	Successful completion will be 100% of planned tests, as part of Functional testing, have been executed with a 90% pass rate.	Test Completion Report and Test Assurance Board Completion Certificate
2	SIT Regression Execution	Successful completion will be 100% of planned Tests, as part of Regression testing, have been executed, with a 100% pass rate	Test Completion Report and Test Assurance Board Completion Certificate
3	Testing Issues within agreed thresholds	Open Testing Issues are with the agreed Defect Mask (see Table 13.1 <sup>5</sup> )	Test Completion Report and Test Assurance Board Completion Certificate
4	Test results documented and evidence captured	Results of testing documented and evidence stored	Test Completion Report
5	Complete set of Testing Issues logs produced	Logs have been produced and stored for all Testing Issues identified in Testing	Included in SIT Exit Evidence Pack
6	Full Test traceability as proved	Test Traceability (as defined in the TTM) demonstrated and documented	Coverage Report
7	Full Test traceability to the heatmap	Test heatmap produced that shows coverage and success of testing and traceability to the TTM	Resolution Report
8	SIT Stage Completion Report approved	TAB approval of SIT Stage Completion Report	Issuing of Test Stage Completion Report by Test Assurance Board
9	SIT Stage Completion Certificate Issued	TAB issuing of SIT Test Stage Completion Certificate	Issuing of Test Stage Completion Report by Test Assurance Board

<sup>5</sup> For reference, the Defect Mask Threshold table from Section 13 of the SMETS1 SVTAD is provided as well.

**Table 13.1 Test Issue Thresholds**

Test Issue Severity	PIT	SIT	UTS (Interface Testing Exit)	TTO
1	0	0	0	0
2	0	0	0	0
3	15	15	5	15
4	30	30	10	30
5	60	60	20	60

**SMETS1 SIT Entry Criteria** (extract from information provided to TAG and discussed on 21<sup>st</sup> February 2018).

These criteria will apply to each iteration of operating capability release, i.e. IOC, MOC and FOC.

#	Exit Criteria	Success	Evidence
1	Test Approach	Test Approach for Test Phase signed off by DCC	Test Approach Document
2	Solution Test Plan	Solution Test Plan signed off by DCC	Solution Test Plan
3	Test Phase Complete Certificate	Test Phase Certificate for preceding Test Phase issued	PIT Test Phase Completion Certificate
4	Test Specification	Test Specification prepared, showing traceability to requirements/ design documents	Test Specification
5	Resources Ready	Test Labs, Devices, tools, stubs, environments and data – assured and fit for purpose	Readiness report confirm resources are in place
6	Approval to Proceed Certificate		Approval to Proceed Certificate