

SMART METER TECHNICAL DETAIL REPORT

MEETING NAME	Performance Assurance Board
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Purpose of paper	For information
Classification	Public
Summary	This paper provides details on the final draft of the smart Meter Technical Detail (MTD) report, monitoring processes and initial thresholds.

1. Background

- 1.1 At the November 2017 PAB meeting ([PAB202/12](#)), ELEXON presented its findings on the Settlement Risks associated with the mass roll-out of smart Meters, in particular Smart Metering Equipment Technical Specifications (SMETS) v2.0 Meters serviced by the Data Communications Company (DCC).
- 1.2 With support of the Issue 69 workgroup, the highest risk area associated with the mass roll-out was considered to be the Supplier-agent interfaces; in particular, the risk that Metered Data is inaccurate or missing as a result of problems with the Supplier interface with its Non-Half Hourly (NHH) Meter Operator Agent (MOA) and NHH Data Collector (DC). This is due to Suppliers playing a new and key role in the production and submission of MTDs for DCC serviced smart Meters.
- 1.3 At the November meeting, the PAB requested that ELEXON develops a report, using existing datasets, to provide insights into market performance for this risk area. This report builds on the prototype presented to the PAB at its November and December meetings.

2. Supplier-agent interface

- 2.1 Traditionally MOAs have been responsible for installing and configuring Meters, and following those activities the production and submission of MTDs. However, for DCC serviced smart Meters, the Supplier will configure the switching times (tariff) of the Meter through its interface with the DCC. The Supplier will confirm the tariff details to the MOAs through the D0367 'Smart Meter Configuration Details' data flow (or use an alternative method of notification by agreement). The MOA translates the D0367 into the traditional D0149 'Notification of Mapping Details' and D0150 'Non Half-Hourly Meter Technical Details' data flows and provides them to the Supplier, DC and distributor. This process facilitates the DC correctly interpreting and validating reads from the Meter.
- 2.2 It was considered that Suppliers may be unprepared for their new, more active role or delegate responsibilities to service providers who fall outside the Performance Assurance Framework (PAF). There will be a steep learning curve for Suppliers, exacerbated by high numbers of Meter exchanges and, potentially, increases in the numbers of tariffs. Due to these reasons, the Issue 69 workgroup believed this process to present the biggest risk to Settlement over the mass roll-out.
- 2.3 There are two dimensions to the Supplier-agent interface risk area:
 - MTDs are provided but they are not provided within the required BSC timescales, i.e. late MTDs; and
 - MTDs are provided but they are not an accurate reflection of the Meter's configuration, i.e. incorrect MTDs.

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- 2.4 For both dimensions of this risk area, should the risk materialise, actual Metered Data could be prevented from entering Settlement resulting in the use of estimated data, and, in the case of incorrect MTDs, Meter readings could be misinterpreted resulting in erroneous consumption data entering Settlement.

3. Smart MTD report

- 3.1 The smart MTD report provides insights into performance regarding sending late and back dated corrections to MTDs following a smart Meter exchange, at a market level rather than by participant. This includes an aggregated view of the proportion of late and corrected MTDs for SMETS v1.0 and v2.0 Meter exchanges by Settlement Run. Also, a separated SMETS v1.0 and v2.0 breakdown provides a cumulative view of performance at each of the last nine monthly reporting periods. This seeks to outline the trend in late and incorrect MTDs as we progress through the roll-out.
- 3.2 The report also provides supporting information for related activities such as the approximate smart rollout progress (as with the entire report, for electricity Meters only), Meter exchange volume trends for smart and non-smart Meters, and NHH Settlement performance at early Reconciliation Settlement Runs (R1/R2) using Supplier Volume Allocation Agent (SVAA) data.
- 3.3 As noted within the report, the majority of the contents are based on analysis of NHH MTDs sent over the Data Transfer Network (DTN). As there are some circumstances where participants do not use the DTN for their data flow communications, this dataset does not provide a complete view of the market. The report seeks to provide insights into performance as an indicator as to how the market is performing. We estimate our coverage of NHH MTDs to be approximately 91.5%. We plan to reconcile our reporting with independent data sources to confirm our coverage is as expected over the roll-out. For example, at the beginning of December 2017 we reconciled our figures against the quarter 3 2017 [smart roll-out report](#) published by the Department for Business, Energy & Industrial Strategy (BEIS) and the numbers were within the expected tolerance.
- 3.4 We are using our DTN dataset to provide insights into market performance for this risk area as an interim measure until the wider PAF review activities have assessed the options for an enduring approach to provisioning data to support the PAF.
- 3.5 Please see Attachment A for the final draft of the smart MTD report.

4. Smart MTD monitoring processes

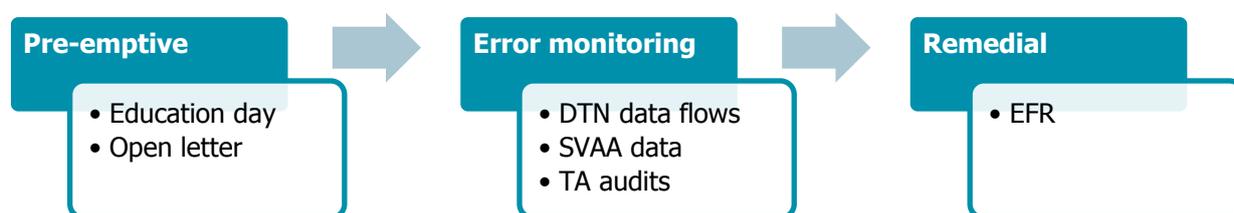
- 4.1 As agreed at the November PAB meeting, the smart MTD report will provide the first stage of monitoring smart MTD processes over the smart roll-out. This market level view of performance will be presented to the PAB on a monthly basis providing smart Meter exchange activity up to and including the previous month.
- 4.2 If the first stage of monitoring suggests cause for concern, we will proceed to stage two where drill down analysis will be performed to identify individual participant contributions (where possible).
- 4.3 For late smart MTDs, in acknowledgement that it is a more straight forward activity to monitor, drill down analysis will be performed on the late smart MTDs as per the report to identify participant contributions relative to peers. This analysis will be supported with drill down data from PARMS Serial NM11¹ for activity our DTN dataset does not cover. Following an assessment of individual participant contribution, a proposal for a targeted Technical Assurance (TA) audit will be presented to PAB.
- 4.4 Whilst reporting on back dated corrections to MTDs provides useful insights into accuracy of MTDs at a market level, we acknowledge that it does not provide a robust method for assessing individual participant

¹ Timely Sending of NHH MTDs to NHHDCs

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performance, i.e. it is arguable that displaying no back dated corrections could be as a result of either poor quality controls (causing incorrect MTDs to remain unidentified) or robust quality controls (causing no MTD corrections to be required). In addition, we need to be mindful that we do not provide a disincentive for participants to correct MTD errors upon identification. These are some of the lessons learned from monitoring quality of Half Hourly (HH) MTDs through the PARMS Serial HM13². Therefore, if the market report suggests cause for concern, we will analyse the key fields within MTDs which are undergoing correction, and based on the findings, we will bring a proposal to PAB for a TA audit on accuracy of NHH MTDs. It is anticipated that such a TA audit would cover a representative proportion of the NHH market and would focus on quality control processes.

- 4.5 The TA auditing technique aims to confirm material non-compliance and identify root causes. We plan to deploy the Error and Failure Resolution (EFR) technique to resolve non-compliance.
- 4.6 The below diagram outlines the mitigating actions we are taking for this risk area.



5. Thresholds to proceed to stage two

- 5.1 This section sets out some initial thresholds to provide guiding principles as to when we propose to proceed to stage two.

Provision of MTDs

- 5.2 BSCP514 6.2.2 & 6.3.4 sets out the processes for installation and/or reconfiguration of a DCC serviced smart Meter. These processes state that if the Metering System is configured remotely by the Supplier, it will provide the configuration details through the D0367 (or an alternative method bilaterally agreed) to the NHH MOA in time to allow the NHH MOA to distribute MTDs within 10 working days of the Meter install/reconfigure date.

Quality of MTDs

- 5.3 Section L2.4.1 states that the Registrant of each Metering System, which in the case of Supplier Volume Allocation (SVA) is the Supplier, shall ensure that the MTDs for that Metering System will be true, complete and accurate. Furthermore, BSCP514 2.3.2(e) states that for smart Meters, the Supplier is responsible for ensuring that the Meter Register Ids and/or Meter Register Descriptions in the D0367; and the MOA is responsible for ensuring that the MTDs, are reflective of the display on the Meter
- 5.4 As per the above BSC obligations, any MTDs received or corrected after the initial Settlement Run (SF) constitute a non-compliance. However, under a risk based assurance framework, we are willing to accept a volume of exceptions until the impact is deemed to have exceeded an acceptable level (as per the risk appetite).
- 5.5 Whilst accepting a volume of exceptions under a risk based approach, at its November meeting the PAB agreed that this activity represents the most significant undertaking in the coming years and therefore providing assurance over the roll-out was one of PAB's key strategic priorities. Therefore, we are expecting

² Quality of HH MTDs

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participants to make all reasonable endeavours to meet their BSC obligations over the mass roll-out, and this will be clearly communicated to participants in an open letter from the PAB as discussed at the November 2017 meeting. To that end, we are proposing initial thresholds which we will review as the smart roll-out progresses. Furthermore, we propose that these thresholds should not prevent the Performance Assurance Administrator (PAA) or PAB from further investigating any performance issues as is deemed appropriate.

- 5.6 To consider some initial thresholds, we have assessed historical performance at sending late and corrected MTDs following a Meter exchange (MEX) for each Meter group over approximately a five year period (March 2013 to December 2017). The below table provides an overview of this assessment.³

Meter Group	Total MEX	Late MTDs	Corrected MTDs
ADM ⁴	2.01m	3.44%	0.15%
AMR ⁵	446.1k	7.96%	1.86%
Legacy	3.70m	8.39%	1.07%
SMETS1	3.55m	2.73%	0.61%
Total	9.70m	5.27%	0.75%

- 5.7 As per the above, there is a clear disparity whereby the proportion of late and corrected MTDs for ADM and SMETS v1.0 is significantly lower than for AMR and legacy Meter exchanges. Appendix 1 provides the above table broken down by Settlement Run and yearly periods.
- 5.8 Whilst performance for sending late smart MTDs (SMETS v1.0 and v2.0 combined) has been 2.73%, we note that full scale mass roll-out activities are yet to commence, i.e. in quarter 4 2017 (October to December), we observed 689k SMETS v1.0 and v2.0 Meter exchanges; the highest Meter exchange volumes we have observed in the past five years. In order to meet roll-out deadlines, we could feasibly see between 1.5m and 2.0m smart Meter exchanges in future quarters (between two and three times the current exchange volumes). Furthermore, we have observed only 102 SMETS v2.0 exchanges to date, and due to the MTD process for these Meters being new and more complex, there is an element of uncertainty around the level of exceptions we may observe. Taking this into consideration, we are proposing an initial threshold of 4%, i.e. the mid-point between historical SMETS and total industry performance at sending late MTDs as referenced in the above table (2.73% and 5.27% respectively). Therefore, if market level performance exceeds 4% late smart MTDs, ELEXON will progress to stage two and start assessing individual participant performance and provide a set of recommendations to the PAB.
- 5.9 For corrected MTDs, we expect to see a level of corrections. We are proposing that if the volume of smart MTD corrections is between 1% and 2%, ELEXON would perform drill down analysis on what key fields are changing and publically communicate the findings so industry can be mindful of common errors. If the volume of corrections exceeds 2%, we would assess whether a TA audit was necessary and bring a proposal to PAB as appropriate. This 2% correction threshold aligns with the threshold we use to monitor the quality of HH MTDs through HM13.

³ We have excluded performance at sending late and corrected MTDs for SMETS v2.0 exchanges as the volumes are still too low (total of 102) for the proportions to be representative.

⁴ Advanced Domestic Meter.

⁵ Automatic Meter Reading.

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5.10 Finally, we note that the wider PAF review is looking at how we catalogue, assess and report risk in future. Therefore, the approach to how we set thresholds may be subject to change in future.

6. Next steps

6.1 Following the January 2018 PAB meeting, we will make internal preparations to include the smart MTD report in our routine PAF monitoring processes. This will include:

- Consulting on a within period revision to the Risk Evaluation Register (RER) to include the smart risk register presented to the PAB in June 2017;
- Drafting a within period revision to the Risk Operating Period (ROP) to capture this activity under the PAF;
- Publication of a guidance document providing explanations on each section of the report; and
- Producing an open letter from the PAB outlining the importance of managing robust smart MTD processes and controls to ensure BSC obligations are met and negative impacts on Settlement are minimised.

6.2 We are aiming to conduct all the above activities for the smart MTD report to be operational from the February 2018 PAB meeting, however this is dependent on it being incorporated into our routine processes. Until the report is in the live operation of the PAF, we will continue to provide the draft smart MTD report at each PAB meeting.

7. Other smart assurance activities

7.1 In quarter 1 2018, we will be undertaking a smart education day that will cover the new Change of Supply process for smart Meters introduced through P302 and other key smart areas such as readiness, early issues and good practice (such as register naming standards, Standard Settlement Configuration assignment etc.). A session on the smart MTD report and monitoring processes will be provided at this education day.

7.2 Following the January 2018 PAB meeting, we will be commencing additional work on the legacy and data processing risk areas identified and assessed by the Issue 69 workgroup which were assigned a lower risk rating than the Supplier-agent interface. Part of this work seeks to provide a proof of concept on separating legacy and smart Settlement performance. The findings from this activity will be reported to PAB in quarter 2 2018.

8. Recommendations

8.1 We invite you to:

- a) **APPROVE** the finalised format of the smart MTD report;
- b) **APPROVE** the initial thresholds for proceeding to stage two of performance monitoring; and
- c) **NOTE** the initial thresholds will undergo a review once the mass roll-out is in progress.

Appendices

Appendix 1 – Late and corrected MTD drill down

Attachments

Attachment A – Final draft smart MTD report

For more information, please contact:

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APPENDIX 1 – LATE AND CORRECTED MTD DRILL DOWN

The following table provides performance at sending late and corrected MTDs per Meter group and calendar year commencing from March 2013.

Meter Group	Period	Total MEX	Late	Corrections
ADM	2013	191.2k	1.44%	0.15%
	2014	196.4k	2.67%	0.09%
	2015	383.8k	2.46%	0.08%
	2016	774.6k	5.45%	0.14%
	2017	466.4k	2.03%	0.24%
	Total	2.01m	3.44%	0.15%
AMR	2013	96.5k	3.45%	1.34%
	2014	102.4k	7.26%	1.66%
	2015	97.2k	8.35%	2.40%
	2016	76.7k	10.99%	1.91%
	2017	73.2k	11.21%	2.08%
	Total	446.1k	7.96%	1.86%
Legacy	2013	816.1k	3.55%	0.32%
	2014	975.9k	6.91%	0.72%
	2015	779.9k	10.04%	1.18%
	2016	635.3k	13.81%	1.70%
	2017	490.1k	9.76%	2.03%
	Total	3.70m	8.39%	1.07%
SMETS1	2013	57.3k	1.14%	0.09%
	2014	194.9k	1.73%	0.28%
	2015	397.8k	2.29%	0.68%
	2016	792.6k	2.87%	0.57%
	2017	2.11m	2.89%	0.66%
	Total	3.55m	2.73%	0.61%

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The following table provides late MTDs by Settlement Run.

Meter Group	Total MEX	Before SF	SF to R1	R1 to R2	R2 to R3	R3 to RF	After RF
ADM	2.01m	96.56%	2.26%	0.65%	0.29%	0.21%	0.02%
AMR	446.1k	92.04%	4.48%	2.04%	0.88%	0.46%	0.10%
Legacy	3.70m	91.61%	3.44%	2.40%	1.11%	1.06%	0.39%
SMETS1	3.55m	97.27%	1.58%	0.84%	0.21%	0.09%	0.01%

The following table provides corrected MTDs by Settlement Run:

Meter Group	Total MEX	No corr	SF to R1	R1 to R2	R2 to R3	R3 to RF	After RF
ADM	2.01m	99.82%	0.03%	0.04%	0.03%	0.02%	0.02%
AMR	446.1k	97.61%	0.47%	0.48%	0.35%	0.29%	0.28%
Legacy	3.70m	98.76%	0.14%	0.25%	0.21%	0.23%	0.24%
SMETS1	3.55m	99.20%	0.11%	0.18%	0.16%	0.11%	0.05%