

PUBLIC

# Technical Assurance of Performance Assurance Parties

Transfer of details for Automatic Meter Read Meters



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# TECHNICAL ASSURANCE OF PERFORMANCE ASSURANCE PARTIES

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## TRANSFER OF DETAILS FOR AUTOMATIC METER READING METERS

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This report outlines the findings from the Technical Assurance audit ELEXON undertook on the transfer of details for Automatic Meter Reading (AMR) Meters.

### 1. Background

#### What is an AMR Meter?

- 1.1 An AMR Meter is a Non-Half Hourly (NHH) Meter that is Half Hourly (HH) capable and configured for remote reading.
- 1.2 For the purposes of this Technical Assurance audit, an AMR Meter is synonymous with an 'advanced' Meter as defined in Supply Licence condition 12.19, and referenced in conditions 12.18, 12.21 and 12.24, that definition being:

*"an Electricity Meter that, either on its own or with an ancillary device, and in compliance with the requirements of any relevant Industry Code:*

*(d) provides measured electricity consumption data for multiple time periods, and is able to provide such data for at least half-hourly time periods; and*

*(e) is able to provide the licensee with remote access to such data"*

- 1.3 [BSCP514](#)<sup>1</sup> appendix 9.3 states that remotely read NHH Meters may be identified through the Meter Type contained in the D0150 'Non Half-hourly Meter Technical Details' flow. BSCP514 appendix 9.3 goes on to reference Meter Types RCAMR<sup>2</sup>, NCAMR<sup>3</sup> and RCAMY<sup>4</sup> in relation to AMR Metering Systems.

#### What details are required to utilise AMR Meter functionality?

- 1.4 BSCP514 appendix 9.3 states that where the Meter Type is RCAMR, NCAMR or RCAMY the NHH Meter Operator Agent (MOA) shall maintain a set of Auxiliary Meter Technical Details (MTDs). This will be in the form of a D0313 'Auxiliary Meter Technical Details' flow, and will be in addition to maintaining the traditional D0150 flow. Whenever a D0150 flow is required to be sent or processed by the NHH MOA in accordance with BSCP514 for the three Meter Types, with the exception of Meter removals, the D0313 flow must also be sent or processed.
- 1.5 The D0313 flow contains all relevant information required by the NHH Data Collector (DC) to retrieve data from the Metering System remotely and, where appropriate, required by the MOA to configure the Metering System remotely. This information can be summarised as communication, security and Meter channel/outstation details.
- 1.6 Use of the D0313 flow was mandated in November 2011 through Change Proposal [CP1335](#) to support commercial interoperability of remotely read NHH Metering Systems. Prior to the introduction of the D0313 flow, there was no standardised format for communicating the information required to remotely

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<sup>1</sup> SVA Operations for Metering Systems Registered in SMRS

<sup>2</sup> Remotely Configurable Automated Meter Reading

<sup>3</sup> Non-Remotely Configurable Automated Meter Reading

<sup>4</sup> Remotely Configurable Automated Meter Reading with Remote Shutdown Capability

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communicate with NHH Meters. This resulted in interoperability issues following a change of Supplier Agent, whereby the gaining Supplier Agents could not utilise the remote functionality.

- 1.7 When the D0313 was introduced, an obligation was put on MOAs to backfill data for all Metering Systems impacted by the D0313, i.e. AMR Meters installed prior to November 2011.

### **How many AMR Meters are installed in the market?**

- 1.8 The number of AMR Meters in the market has been influenced by 'advanced' Meter installation Supply Licence directives.
- 1.9 The introduction of Supply Licence conditions 12.17 and 12.18 required Suppliers to install 'advanced' Meters (as defined in section 1.2 above) for all new Meter installations in Profile Classes 5-8 commencing from 6 April 2009. Profile Classes 5-8 encompass the larger non-domestic NHH sites whose average maximum demand does not exceed 100kW for mandatory HH Settlement in Measurement Class C. Supply Licence condition 12.21 further required Suppliers to take all reasonable steps to install 'advanced' Meters for all Profile Class 5-8 sites by 6 April 2014. This directive was referred to as the 'advanced' Meter roll-out. The number of energised Profile Class 5-8 Metering Systems registered in the Supplier Meter Registration Service (SMRS) as of 31 March 2014 was approximately 170,000. Following the roll-out deadline passing, 'advanced' Meters had been installed on approximately 75% of Profile Class 5-8 sites.<sup>5</sup>
- 1.10 In addition to the 'advanced' Meter roll-out directive, Supply Licence conditions 12.23 and 12.24 required Suppliers to install 'advanced' Meters for all new Current Transformer (CT) Meter installations at any designated premises commencing from 6 April 2014. Designated premises are defined as non-domestic premises in Profile Classes 1-4.
- 1.11 Aside from Supply Licence obligations, AMR Meters could also be installed in Profile Classes 1-4 at non-designated premises at the request of the Supplier or end consumer. Such optional AMR installations could be for billing or energy management purposes.
- 1.12 We do not know the exact number of AMR Meters installed in Profile Classes 1-4. However, based on D0150 flows sent over the Data Transfer Network (DTN), ELEXON has identified in excess of 600,000 Profile Class 1-4 sites that have Metering Systems referencing AMR Meter Types. Please note that we only hold D0150s sent over the DTN from March 2013, so it does not reflect a complete dataset.

### **What is the future of AMR Meters and the obligation to maintain Auxiliary MTDs?**

- 1.13 In regards to the AMR Meters installed in Profile Classes 5-8, during the later stages of the 'advanced' Meter roll-out, Modification P272<sup>6</sup> was raised and subsequently approved. Modification P272 mandated all Profile Class 5-8 sites with 'advanced' Meters to be settled on a HH basis by 1 April 2017. Measurement Classes E, F and G are used for these sub-100kW HH sites.
- 1.14 During the Change of Measurement Class (CoMC) process to meet P272 requirements, the Metering Systems will be configured to HH and the NHH MTDs (encompassing Auxiliary MTDs) will be converted into the D0268 'Half Hourly Meter Technical Details' flow. Following completion of the CoMC, the Metering Systems will be

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<sup>5</sup> [https://www.ofgem.gov.uk/system/files/docs/2016/06/suppliers\\_amr\\_performance\\_open\\_letter.pdf](https://www.ofgem.gov.uk/system/files/docs/2016/06/suppliers_amr_performance_open_letter.pdf)

<sup>6</sup> [P272 'Mandatory Half Hourly Settlement for Profile Classes 5-8'](#)

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considered as HH and it will no longer be a requirement to maintain a set of Auxiliary MTDs, i.e. the D0268 flow provides communication, security and Meter channel/outstation details.

- 1.15 In regards to the AMR Meters installed in Profile Classes 1-4, Supply Licence condition 39 requires that Suppliers must take all reasonable steps to ensure that a smart Metering System is installed at all domestic and designated premises on or before 31 December 2020. This directive is referred to as the smart Meter roll-out.
- 1.16 Supply Licence conditions 39.3 and 39.4 exempt 'advanced' Meters already installed at CT operated domestic and all designated premises (i.e. non-domestic premises in Profile Classes 1-4) from the smart Meter roll-out. This will be until such 'advanced' Meters are, for whatever reason, replaced. At the latest, these replacements will occur following the expiry of each Meter's certification. This presents the possibility for the Meters to remain as AMR for the next 10 to 15 years, or until such a time that they are mandated to be settled on a HH basis. During this unknown timeframe, these sites should be commercially interoperable.

## 2. Issues with transfer of details for AMR Meters

- 2.1 At the May 2016 Performance Assurance Board (PAB) meeting, ELEXON presented analysis on the transfer and completeness of MTDs for AMR Metering Systems ([PAB184/04](#)). The analysis was based on a set of data flows sent over the DTN to which ELEXON has access, and sought to quantify concerns raised by industry in regards to missing and incomplete D0313 flows. Such data quality issues can result in participants being unable to utilise the remote functionality of AMR Meters.
- 2.2 ELEXON's analysis identified two compliance issues related to the provision and content of D0313 flows. Further analysis on the actions taken following non-receipt of D0313 flows identified a number of different behaviours adopted by new MOAs.
- 2.3 A summary of the two compliance issues and pursuant behaviours is as follows:

### Missing D0313 flows

- 2.4 Initially we looked at the provision of MTDs from an old to new MOA upon a Change of MOA (CoMOA) event for an AMR Metering System. We identified AMR sites where the old MOA provided a D0150 referencing a Meter Type of RCAMR, NCAMR or RCAMY. When MTDs are received with such a Meter Type, a supporting D0313 is expected. The below table provides an overview of the findings:

Total AMR CoMOA	No. of missing D0313	% Missing
295,305	60,239	20.40

- 2.5 This confirmed that for one in five CoMOA events relating to an AMR Metering System, the old MOA is not providing a supporting D0313 to the new MOA.
- 2.6 This is a failure on the old MOA to act in accordance with BSCP514 appendix 9.3 which provides that:

*"Where the Meter Type is any one of the following:*

- *'RCAMR' (Remotely Configurable Automated Meter Reading);*
- *'NCAMR' (Non-Remotely Configurable Automated Meter Reading); or*
- *'RCAMY' (Remotely Configurable Automated Meter Reading with Remote Shutdown Capability)*

*the NHHMOA shall maintain a set of Auxiliary Meter Technical Details and shall ensure that whenever a D0150 is required to be sent or processed by the NHHMOA in accordance with this BSCP, but with the*

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*exception of Meter removals, the D0313 Auxiliary Meter Technical Details flow is also sent or processed successfully for that Metering System."*

### Completeness of D0313 flows

- 2.7 Aside from the concerns raised regarding missing D0313s, both industry participants and PAB have raised concerns regarding the quality of information provided. One concern raised by MOAs was the old MOA not providing the 'Outstation Password Level 3' to the new MOA. Withholding the level 3 password results in the new MOA not being able to reconfigure the Meter whether remotely or whilst onsite.
- 2.8 We analysed the content of D0313 flows sent over the DTN from old to new MOA on a CoMOA event. The analysis highlighted circumstances where the level 3 password was hidden in the D0313 submission, i.e. the D0313 referencing a generic password of '\*\*\*\*\*'. The below table provides an overview of the findings:

Total D0313s	L3 PW provided	L3 PW not provided	% not provided
235,066	180,163	54,903	23.36

- 2.9 This confirmed that on a CoMOA event the old MOA is not providing the new MOA with the level 3 password for almost one in four D0313 submissions.

- 2.10 This is a failure on the old MOA to act in accordance with BSCP514 section 1.1 which provides that:

*"For any D0313 sent from one Meter Operator Agent to another Meter Operator Agent this must include, but is not limited to, all communications, security and password details required to fully access all remote functions of the Metering System."*

### Actions taken following non-receipt of AMR details

- 2.11 To understand the impact caused by the compliance issues noted above, we analysed the actions taken by new MOAs following non-receipt of a D0313. We noted a number of different behaviours which can be summarised as follows:
- D0150 referencing an AMR Meter Type sent to Supplier/DC **with no** supporting D0313 flow, i.e. the new MOA forwarded MTDs as received;
  - D0150 referencing an AMR Meter Type sent to Supplier/DC **with** supporting D0313 flow despite it never being received from the old MOA. i.e. the D0313 was retrieved by a means other than the old MOA;
  - D0150 sent to Supplier/DC with the Meter Type changed to dumb (i.e. 'N'); and
  - D0150 sent to Supplier/DC referencing a Meter exchange had occurred.
- 2.12 We acknowledge that the BSC does not outline the process that should be taken in this situation, as it envisages full MTDs being received. This has resulted in MOAs determining the most appropriate course of action to take, of which we noted varied approaches.

## 3. Scope of Technical Assurance audit

- 3.1 The aim of the Technical Assurance audit was to fully understand the root cause of the compliance issues and provide support in their resolution. We also wanted to understand the different behaviours following non-receipt of the required information and assess any impacts on Settlement as a result.
- 3.2 As the compliance issues were more prevalent at certain MOAs, PAB gave its approval for ELEXON to undertake a targeted Technical Assurance of Performance Assurance Parties (TAPAP) audit on six participants who act as MOAs. We selected the six participants based on their degree of compliance displayed for either (or both) of the processes analysed.

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- 3.3 Appendix A provides an anonymised peer comparison of MOA performance at sending D0313s for AMR Metering Systems. The six MOA participants targeted through the audit account for 73% of total missing D0313s reported.
- 3.4 Appendix B provides anonymised peer comparison of MOA performance at sending level 3 passwords in D0313 submissions. The six MOA participants targeted through the audit account for 69% of withheld level 3 passwords reported.
- 3.5 In addition to MOA participants, the PAB approved the audit of three participants who act as Suppliers. This is because Suppliers hold ultimate responsibility under the BSC to maintain true, complete and accurate MTDs. The audit sought to understand the processes operated by Suppliers to address the compliance issues noted.
- 3.6 To understand the potential impact on Settlement as a result of missing or incomplete data, we also undertook site work at three participants that act as DCs. This encompassed two HH and two NHH DCs.

## Audit approach

- 3.7 Prior to our site work, ELEXON provided each MOA with a targeted sample from the two compliance issues noted (i.e. missing D0313s and withheld level 3 passwords). We also provided a smaller targeted sample for the pursuant behaviours: D0313 retrieved by other means, Meter Types amended to dumb and Meter exchanges. The targeted sample encompassed 60 CoMOA events in total.
- 3.8 Each MOA investigated the sample and provided a comment against each prior to our site visit. During our testing onsite, we discussed the comments returned by the audited participants and requested additional evidence where appropriate.
- 3.9 For the Supplier audits, we took a similar but smaller sample to that of the MOA audits.
- 3.10 For the DC audits, we took a sample of NHH to NHH CoMOA events and CoMOA events concurrent with a CoMC.

## 4. Audit findings

- 4.1 The primary focus of the Technical Assurance audit was the participants who undertake the processes where the compliance issues were noted, i.e. MOAs. Our site work confirmed the compliance issues and we raised associated non-compliances at all six MOA participants audited. We made a number of observations where processes could be re-enforced or non-compliances were as a result of the actions of another participant.
- 4.2 Below is a summary of non-compliances and observations made.

### Missing D0313s

- 4.3 All six MOA participants received non-compliances for failures to send D0313 flows as old MOAs. The non-compliances identified were caused by system defects or process limitations.
- 4.4 The audit at MOA 8 highlighted a system defect related to incoming D0313 flows failing validation. This resulted in the MOA system being unable to send the D0313 upon de-appointment. We confirmed that the incoming D0313 flows adhered to the required Data Transfer Catalogue (DTC) format and were therefore capable of being successfully processed. We confirmed that the failed D0313 submissions are captured by an exception report to be worked manually. However, the volume of missing D0313s reported against the MOA confirms a significant backlog in the manual process.

Old MOA	Total AMR CoMOA	No. of missing D0313	% Missing
MOA 8	100,742	15,134	15.02

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- 4.5 A single participant operates MOA 16 and MOA 20. This participant uses two systems for processing and maintaining MTDs. The audit confirmed that it will only commit D0313 details to both systems if the AMR Meter is owned by the participant. For any appointments where it inherits an AMR Meter it does not own, the MOA will not commit D0313 flows to its second system resulting in no D0313 flow being sent following de-appointment.

Old MOA	Total AMR CoMOA	No. of missing D0313	% Missing
MOA 16	15,113	11,486	76.00
MOA 20	2,107	1,579	74.94

- 4.6 A single participant operates MOA 1 and MOA 11. The audit highlighted that its system was not configured to automatically send D0313s upon de-appointment as MOA. The MOA noted that it will only send a D0313 to other MOAs following receipt of a request by email. We note that this process does not align with BSCP514 which states that D0313s should be sent for all D0150s referencing an AMR Meter Type. The MOA has confirmed that it has implemented a system change in September whereby D0313s are automatically sent upon de-appointment.

Old MOA	Total AMR CoMOA	No. of missing D0313	% Missing
MOA 1	5,040	4,892	97.06
MOA 11	4,065	3,821	94.00

- 4.7 The audit at MOA 21 highlighted two system defects resulting in missing D0313s. Both system defects related to incoming D0313 flows failing validation. This resulted in the MOA system being unable to send the D0313 upon de-appointment. We confirmed that the incoming D0313 flows adhered to the required DTC format and were therefore capable of being successfully processed. We were not made aware of any exception reporting for failed D0313 submissions. The MOA had previously identified one of the system defects and it is currently in the process of fully identifying the cause of the other defect. The MOA has noted it will be working with its systems provider to have these issues corrected. The MOA noted that it is operating a manual process following requests from other MOAs to correct instances where D0313s have not been sent due to originally failing validation upon receipt.

Old MOA	Total AMR CoMOA	No. of missing D0313	% Missing
MOA 21	12,199	3,929	32.21

- 4.8 A single participant operates MOA 13 and MOA 4. The audit highlighted two issues resulting in missing D0313s. One was that the participant is not sending D0313s for AMR Meters in Profile Classes 1-4. The MOA confirmed that when it originally developed its processes, it only envisaged AMR Meters in Profile Classes 5-8. Therefore, it implemented a process whereby D0313s are prevented from submission if the site is identified as Profile Class 1-4. Under this process the Meter Type within the D0150 is also changed from AMR to dumb in the external submission. The other issue related to the MOA failing to backfill D0313 information for AMR Meters it installed prior to flow being mandated. This resulted in it not sending the required D0313 following de-appointment.

Old MOA	Total AMR CoMOA	No. of missing D0313	% Missing
MOA 13	7,271	2,547	35.03



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Old MOA	Total AMR CoMOA	No. of missing D0313	% Missing
MOA 4	2,572	792	30.79

- 4.9 The audit at MOA 17 highlighted a system defect related to the MOA system populating an erroneous negative Pulse Multiplier value in the D0313 causing the flow submission to fail. The system defect was known to the MOA, and it is currently awaiting a fix. This fix has been given a low priority as the number of impacted Metering Systems was identified as small, i.e. ELEXON were advised that the defect is known to have impacted 36 Metering Systems over a period of five years. Our independent analysis of missing D0313s reported against this MOA aligns with this assertion.

Old MOA	Total AMR CoMOA	No. of missing D0313	% Missing
MOA 17	24,924	12	0.05

- 4.10 For all non-compliances raised related to missing D0313s, we recommended that systems and processes are amended to send D0313 flows for all AMR Metering Systems.

### Withheld level 3 passwords

- 4.11 Of the six MOA participants audited, four received non-compliances for failures to provide level 3 passwords in D0313 submissions. The non-compliances identified were as a result of security concerns or failure to backfill AMR details.
- 4.12 The audit at MOA 17 confirmed that upon receipt of a request for MTDs if the MOA has not received a de-appointment flow or its de-appointment date has not been reached its MOA system will withhold the level 3 password. The MOA adopted this process after it completed analysis, which identified that for 44% of MTD requests it is never de-appointed as MOA. The MOA noted concerns that sharing level 3 passwords with MOAs that do not become the appointed agent could present a security risk. Whilst we acknowledge the MOA's concerns, the process it operates does not align with BSCP514 section 6.2.1.9 and 6.2.4.9 which states that such details should be provided regardless of whether a de-appointment flow has been received. Furthermore, ELEXON notes that the agent appointment process should occur prior to the effective from date of the new agent, to facilitate transfer of data items for the start of the appointment. Therefore, the process operated by the MOA will result in a withheld level 3 password in the majority of circumstances.

Old MOA	Total D0313s	Count PW not hidden	Count PW hidden	% hidden
MOA 17	24,912	65	24,847	99.74

- 4.13 A single participant operates MOA 13 and MOA 4. The MOA confirmed that it has not been sharing its level 3 passwords due to security concerns. However, the MOA advised that it implemented a system change on 7 July 2016 to align with the BSC obligation to include level 3 passwords in all D0313 submissions to other MOAs.

Old MOA	Total D0313s	Count PW not hidden	Count PW hidden	% hidden
MOA 13	4,724	77	4,647	98.37
MOA 4	1,780	67	1,713	96.24

- 4.14 A single participant operates MOA 16 and MOA 20. The MOA confirmed that it has not been sharing its level 3 passwords due to security concerns. The MOA noted that it will provide the level 3 password for a Metering

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System following receipt of a request by email. Following such an email request, it will re-programme the level 3 password within the Meter before providing it. This process does not align with BSCP514 which states that full password details should be provided in all D0313s sent from one MOA to another.

Old MOA	Total D0313s	Count PW not hidden	Count PW hidden	% hidden
MOA 16	3,627	39	3,588	98.92
MOA 20	528	7	521	98.67

- 4.15 The audit at MOA 21 confirmed that the withheld level 3 passwords were due the MOA needing to backfill the information. D0313 data flows intended for the Supplier were sent to newly appointed MOAs as an interim measure while the data was backfilled, i.e. there is no requirement to send level 3 password details to the Supplier. The audit confirmed that the MOA did follow up all D0313 submissions within the sample with a later submission containing the level 3 password. However, it took on average 223 working days for the MOA to provide complete D0313s after the initial request. This is outside the timeframes required by BSCP514.

Old MOA	Total D0313s	Count PW not hidden	Count PW hidden	% hidden
MOA 21	8,270	7,550	720	8.71

- 4.16 We have considered the security concerns raised in our findings. Regardless of these considerations, we recommended MOAs ensure they provide level 3 passwords on all CoMOA events.

### Actions taken following non-receipt of AMR details

- 4.17 We noted a number of different behaviours adopted by new MOAs following non-receipt of a supporting D0313.
- 4.18 One behaviour we noted was new MOAs sending a D0313 to Supplier/DC despite it never being received from the old MOA. This suggested the new MOA retrieved D0313 details by a means other than the previously appointed MOA. The audit confirmed that new MOAs are either reverting to previously held MTDs (i.e. if they were the installer of the AMR Meter or they previously held the MOA appointment) or bi-laterally approaching MOAs other than the old MOA to source the details. ELEXON notes that whilst the BSC does not envisage such (i.e. D0313s should be received from the previously appointed MOA), they can present a positive impact on Settlement as remotely reading Meters will result in more regular actual data for use in earlier Settlement Runs. However, there are some risks presented by such processes. Therefore, ELEXON raised observations on MOAs who operate these processes requesting they consider whether they have effective quality controls in place to identify the use of out-dated or incorrect data within MTDs.
- 4.19 Another behaviour we noted was new MOAs amending Meter Types from AMR to dumb between receipt from the old MOA and distribution to the Supplier/DC. The audit confirmed, in all but two cases, that the amendment of Meter Types to dumb was as a result of non-receipt of a D0313 from the old MOA. We did not raise non-compliances in these situations as the Technical Assurance audit sought to address the root cause of the issue, i.e. other participants failing to provide D0313s. We did however raise observations noting that BSCP514 appendix 9.3 states that a MOA shall "maintain a set of Auxiliary Meter Technical Details" for Metering Systems that are configured for remote reading, and a Meter Type of RCAMR, NCAMR, or RCAMY should be used to identify such Metering Systems. We recommended the associated MOAs review their controls around amending Meter Types to dumb, and ensure that all reasonable endeavours are made to source the details required to maintain Auxiliary MTDs for remotely read NHH Meters.
- 4.20 For two MOAs, the audit identified processes whereby Meter Types are amended to dumb despite receiving all the required details. We confirmed that these processes were undertaken for AMR Meters installed in

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Profile Classes 1-4. We raised non-compliances as these processes do not align with BSCP514 appendix 9.3 in regards to maintaining Auxiliary MTDs. Whether an AMR Meter's remote functionality is utilised is a commercial decision by the appointed participants. Regardless of such a commercial decision, the BSC provides that MOAs are to maintain and submit the D0313 Auxiliary MTD flow for all AMR Meter Types. This process is to ensure all participants (current and future) are able to use the remote functions of such Meters if desired. Amending Meter Types to dumb and forwarding them on as such will result in appointed participants being unaware that an AMR Meter is onsite. The removes any trigger for newly appointed participants to identify the AMR Meter and use its functionality.

- 4.21 The final behaviour we noted was when the CoMOA event resulting in a missing D0313s was concurrent with a Meter exchange. Our audit confirmed a proportion of the Meter exchanges were as a result of MOA contracts with the Supplier or end consumer to undertake such replacements. However, a proportion of the Meter exchanges were confirmed as being caused by non-receipt of D0313s. The audit highlighted occurrences of AMR Meters being installed for less than two years before being replaced due to non-receipt of D0313s.

## Other non-compliances identified

- 4.22 During the audit, a second system defect was identified at MOA 8. One of the samples highlighted situations where D0313s were issued referencing an incorrect Meter. The D0313 related to an old Meter whilst the D0150 referenced the correct Meter. The MOA participant is in the process of identifying the cause of the system defect.

## Observations from Supplier audits

- 4.23 All three Supplier participants audited displayed processes for monitoring missing AMR details. However, all processes were initiated following non-receipt of remote reads, rather than missing D0313 flows. The assumption made by the Suppliers is that if remote reads are being successfully received, all agents will hold the required details. We raised observations at each Supplier noting their obligation to maintain true, complete and accurate MTDs. Without the Supplier holding a full set of MTDs, it is unable to perform an assessment on the completeness.
- 4.24 We noted one Supplier operating an elaborate process whereby it will identify and appoint the installing MOA for any AMR Meters it inherits. This is due to its experience with the remote functionality of AMR Meters working more regularly if the installing MOA is appointed. We observed the process providing the intended outcome, i.e. remote readings being received. However, we note that commercial interoperability issues with AMR Meters cause the necessity of such a process. If the transfer of details was undertaken as required under the BSC, Suppliers could appoint preferred agents as opposed to needing to default to installing agents.

## Observations from DC audits

- 4.25 The DC audits were conducted to confirm any impacts on Settlement as a result of missing/incomplete data. In addition to missing/incomplete data, we sampled CoMOA events where all data transfer appeared to occur as required. This was to determine if DCs were able to access data remotely where attempted.
- 4.26 The DC audit of NHH to NHH CoMOA events confirmed that missing/incomplete data is causing NHH DC to be unable to remotely retrieve reads. We observed NHH DCs reverting to traditional physical reads of Meters to obtain actual data. Furthermore, at one NHH DC audited, for half the sites where the data transfer appeared to occur as required, it could not access data remotely when attempted. Such failures may be caused other data quality issues not covered through the audit (i.e. not related to passwords).

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4.27 The DC audit of CoMOA events concurrent with a CoMC confirmed delays in the HH DC receiving the information required to access data remotely. At one HH DC audited, for half of the sample, the HH DC did not receive the required details prior to the Initial (SF) Settlement Run and in some cases the First Reconciliation (R1) Settlement Run. When we compared the estimated data to pursuant actuals for eight of the sites where it was possible to do so, the estimates overstated consumption by a total of 330,563 KWh. This was due to a Supplier provided or default Estimated Annual Consumption (EAC) being the only information available for estimation purposes.

## 5. Recommendations

- 5.1 To provide the appropriate framework to support resolution of the non-compliances raised, we propose to initiate the Error and Failure Resolution (EFR) technique for the six MOAs audited.
- 5.2 We acknowledge that the resolution of the compliance issues through EFR will help with missing/incomplete data going forward. However, the issues identified could have impacted CoMOA events as far back as when the D0313 flow was mandated in November 2011. This means that legacy CoMOA activities will be subject to data quality issues. One of the negative impacts of such data quality issues could be Metering Systems being unable to undergo a CoMC as may be required under P272. To consider what options are available to assist with the legacy data quality issues, we propose to engage with the impacted participants (MOAs and DCs) and gauge their appetite for a meeting of the Supplier Agent Forum (SAF) to discuss D0313 issues. If there is sufficient appetite, ELEXON will coordinate the meeting and report the outcome to PAB as appropriate. We note that at this point we are significantly into P272 migration activities. However, for any sites that are unable to undergo a CoMC due to interoperability issues and/or have been converted to dumb<sup>7</sup>, there is the possibility that they may remain NHH past the implementation deadline. Such discussions may assist in the movement of these sites to HH Settlement.
- 5.3 During our site work, a MOA noted a workgroup formed by a Meter Asset Provider (MAP) to discuss commercial interoperability issues that are resulting in AMR Meters being exchanged unnecessarily. The MOA noted that following the workgroup a contact list was created to help participants resolve issues. Whilst the MOA found the contact list helpful, it noted that it was incomplete as not all impacted participants attended the workgroup. To facilitate a complete contact list, we propose the PAB requests all participants impacted by the process (MOAs and DCs) provide contact details for a central contact list. This contact list would be used to resolve any commercial interoperability issues with AMR Metering Systems, including but not limited to missing D0313s, withheld level 3 passwords and novation of Subscriber Identity Module (SIM) contracts. The list would be available on the ELEXON portal, similar to other central contact lists.
- 5.4 Finally, ELEXON has noted a wide variance in how MOA's deliver secure level 3 password frameworks. We note that there was a previous obligation on MOAs to change the level 3 password used following 100 Meter installations. However, this obligation was removed to allow MOAs to determine how best to deliver a secure password framework. Lack of clarity around such a framework has resulted in varied approaches. ELEXON

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<sup>7</sup> Based on the September 2016 ECOES data, there are 30,016 Profile Class 5-8 sites with a Meter Type of 'N' (i.e. dumb). Of the 30,016 sites, we have seen a D0150 sent over the DTN for 20,455 (68%). Of the 20,455 where we have seen a D0150, 5,640 (28%) reference an AMR Meter Type. This suggests a volume of AMR Meters currently being operated as dumb, potentially due to missing or incomplete data highlighted during this Technical Assurance audit.

## TECHNICAL ASSURANCE OF PERFORMANCE ASSURANCE PARTIES

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believes guidance and/or obligations would provide assistance to industry and ensure secure approaches are adopted. ELEXON will form an internal working group to discuss the options available and report back to PAB as appropriate.

# TECHNICAL ASSURANCE OF PERFORMANCE ASSURANCE PARTIES

## APPENDIX 1 – MISSING AUXILIARY METER TECHNICAL DETAILS

The below table references old MOAs failing to provide supporting Auxiliary MTDs (D0313) to the new MOA when it has provided a D0150 noting an AMR Meter Type.

Old MOA	Total AMR CoMOA	No. of missing D0313	% Missing
<b>Industry total</b>	<b>295,305</b>	<b>60,239</b>	<b>20.40</b>
MOA 8	100,742	15,134	15.02
MOA 16	15,113	11,486	76.00
MOA 25	16,428	6,544	39.83
MOA 1	5,040	4,892	97.06
MOA 21	12,199	3,929	32.21
MOA 11	4,065	3,821	94.00
MOA 15	38,250	2,630	6.88
MOA 13	7,271	2,547	35.03
MOA 19	10,684	2,126	19.90
MOA 7	2,519	1,705	67.69
MOA 20	2,107	1,579	74.94
MOA 14	2,106	1,355	64.34
MOA 4	2,572	792	30.79
MOA 22	787	787	100.00
MOA 12	3,340	499	14.94
MOA 2	16,481	258	1.57
MOA 9	116	71	61.21
MOA 5	3,008	37	1.23
MOA 24	6,141	23	0.37
MOA 17	24,924	12	0.05
MOA 18	8	8	100.00
MOA 10	114	3	2.63
MOA 3	13,742	1	0.01
MOA 23	5,789	0	0.00
MOA 6	1,759	0	0.00

# TECHNICAL ASSURANCE OF PERFORMANCE ASSURANCE PARTIES

## APPENDIX 2 – WITHHELD LEVEL 3 PASSWORDS

The below table references old MOAs withholding level 3 passwords when providing Auxiliary MTDs to the new MOA.

Old MOA	Total D0313s	Count PW not hidden	Count PW hidden	% hidden
<b>Industry total</b>	<b>235,066</b>	<b>180,163</b>	<b>54,903</b>	<b>23.36</b>
MOA 17	24,912	65	24,847	99.74
MOA 19	8,558	3,632	4,926	57.56
MOA 13	4,724	77	4,647	98.37
MOA 16	3,627	39	3,588	98.92
MOA 2	16,223	13,938	2,285	14.08
MOA 24	6,118	3,910	2,208	36.09
MOA 25	9,884	7,775	2,109	21.34
MOA 8	85,608	83,809	1,799	2.10
MOA 4	1,780	67	1,713	96.24
MOA 23	5,789	4,469	1,320	22.80
MOA 15	35,620	34,485	1,135	3.19
MOA 3	13,741	12,935	806	5.87
MOA 21	8,270	7,550	720	8.71
MOA 5	2,971	2,317	654	22.01
MOA 12	2,841	2,199	642	22.60
MOA 20	528	7	521	98.67
MOA 6	1,759	1,268	491	27.91
MOA 7	814	463	351	43.12
MOA 14	751	705	46	6.13
MOA 11	244	199	45	18.44
MOA 10	111	88	23	20.72
MOA 1	148	128	20	13.51
MOA 9	45	38	7	15.56