
Training
Technical Assurance of Metering (TAM) Education Day
06 February 2018
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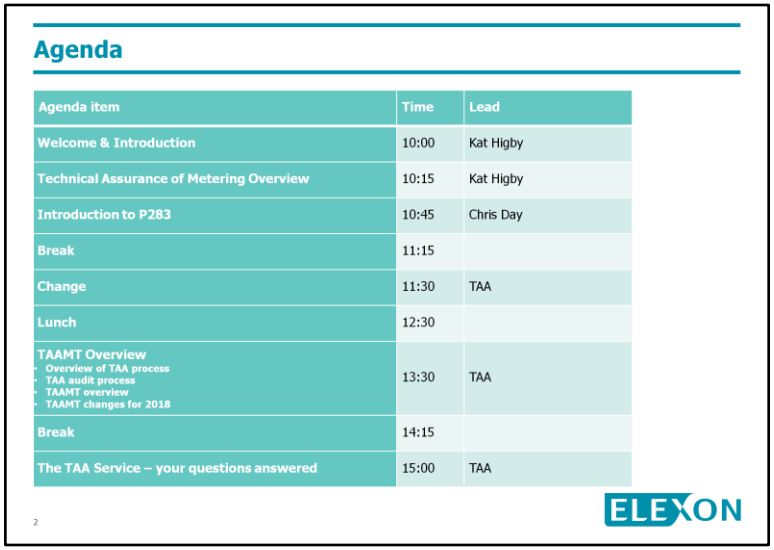
Agenda
Agenda item
Time
Lead
Welcome & Introduction
10:00
Kat Higby
Technical Assurance of Metering Overview
10:15
Kat Higby
Introduction to P283
10:45
Chris Day
Break
11:15
Change
11:30
TAA
Lunch
12:30
TAAMT Overview
Overview of TAA process
TAA audit process
TAAMT overview
TAAMT changes for 2018
13:30
TAA
Break
14:15
The TAA Service – your questions answered
15:00
TAA
2
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Technical
Assurance of
Metering Overview
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Performance
Assurance
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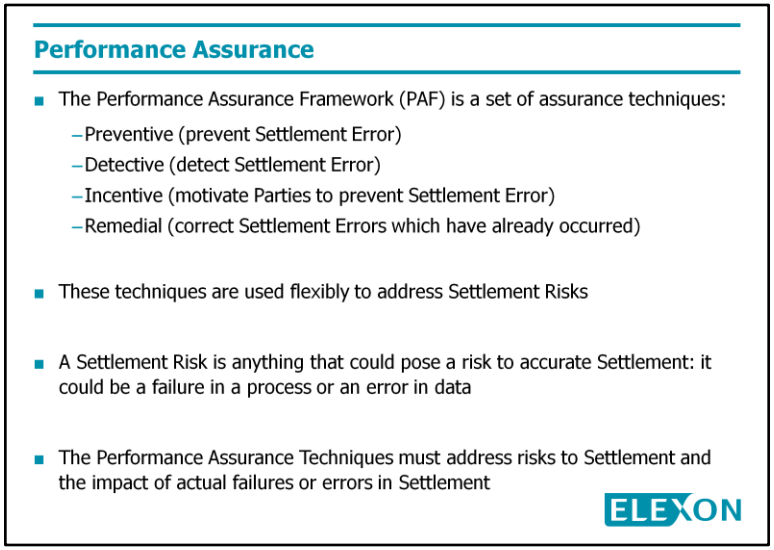
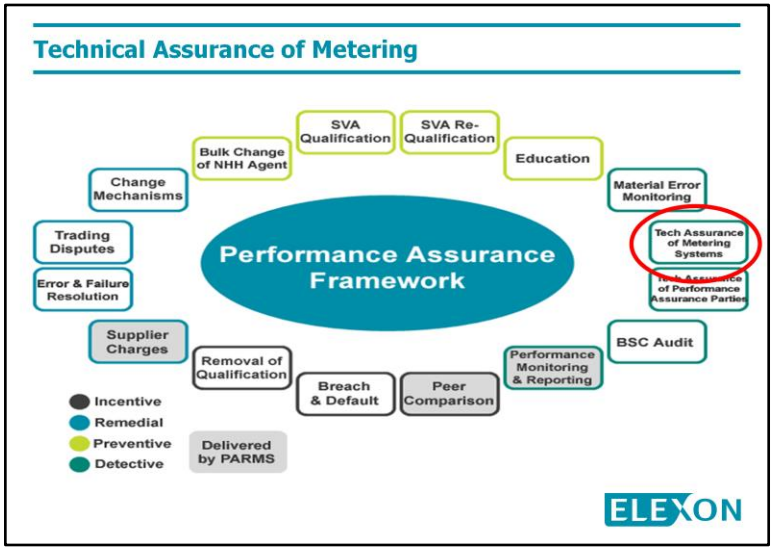


The Performance Assurance Framework (PAF) is a complementary set of preventive, detective, incentive and remedial assurance techniques. These techniques are used flexibly to address Settlement Risks.

A Settlement Risk is anything that could pose a risk to accurate Settlement: it could be a failure in a process or an error in data.

The Performance Assurance Techniques must address risks to Settlement and the impact of actual failures or errors in Settlement



You can see where the TAM technique fits into the PAF here
CLICK
Which illustrates that the technique is used to detect errors in Settlement and trends of these errors.


Technical
Assurance of
Metering
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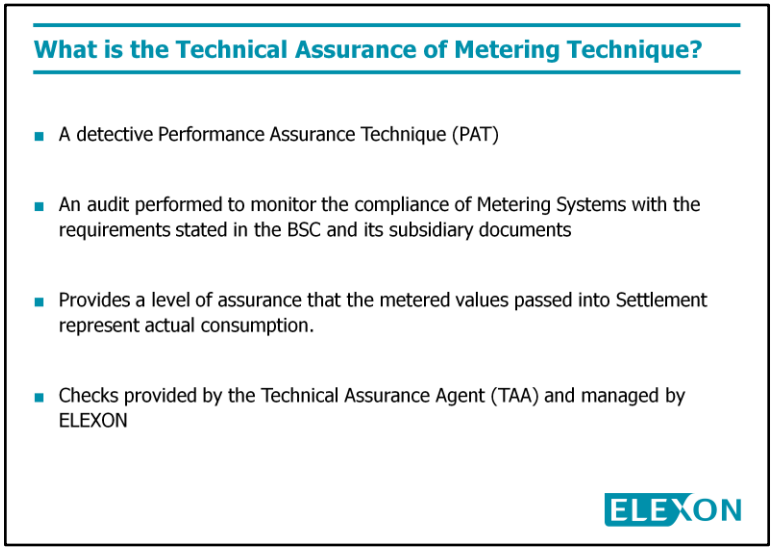
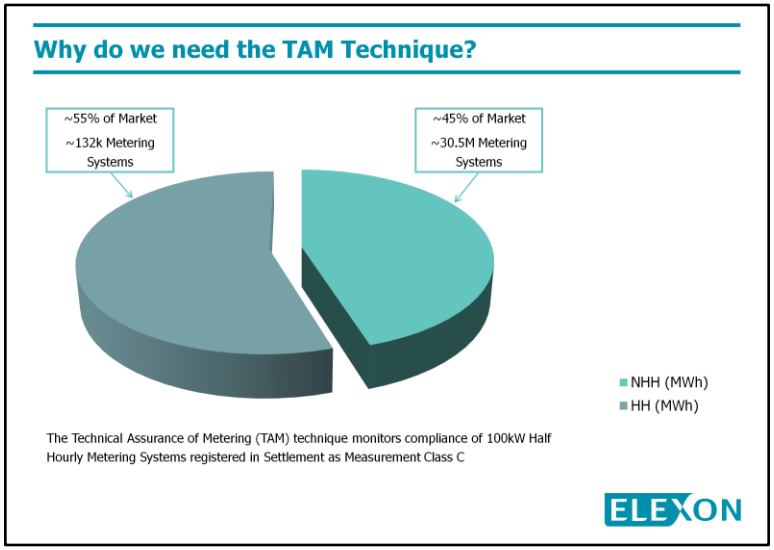


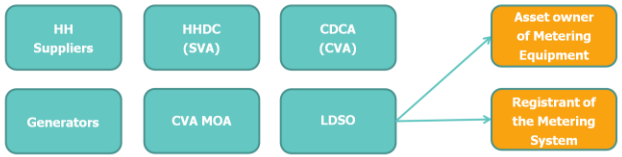
First of all, what is the technique?
It is a detective technique which forms a part of the Performance Assurance Framework
It is essentially made up of an audit which monitors compliance of Metering Systems against the regulations set out in the BSC and its subsidiary documents including BSCPs and Codes of Practice
It provides a level of assurance that the metered values passed into Settlement represent actual consumption.
The audit itself is outsources to the Technical Assurance Agent (currently C&C Group) and is managed by ELEXON.



This slide illustrates why we need the technique and why it covers the area of the market that it does.
You can see from the pie chart that the HH meters cover 55% of the market even though there are only 132k Metering Systems compared to 30.5M NHH metering systems which only make up 45% of the market.
The Technical Assurance of Metering (TAM) technique monitors compliance of 100kW Half Hourly Metering Systems registered in Settlement as Measurement Class C as they are the ones with the most associated risk.
In other words, if there is an error on a HH meter, it is likely to be much bigger than if there was an error on a NHH meter.

The Technical Assurance of Metering Service

- The TAA is a BSC Agent procured and managed by ELEXON. The TAA is currently C&C Group Plc
- The TAA will use their own auditing procedures taking into account any relevant guidance issued by ELEXON or the PAB
- The following HH Parties are subject to TAM checks:



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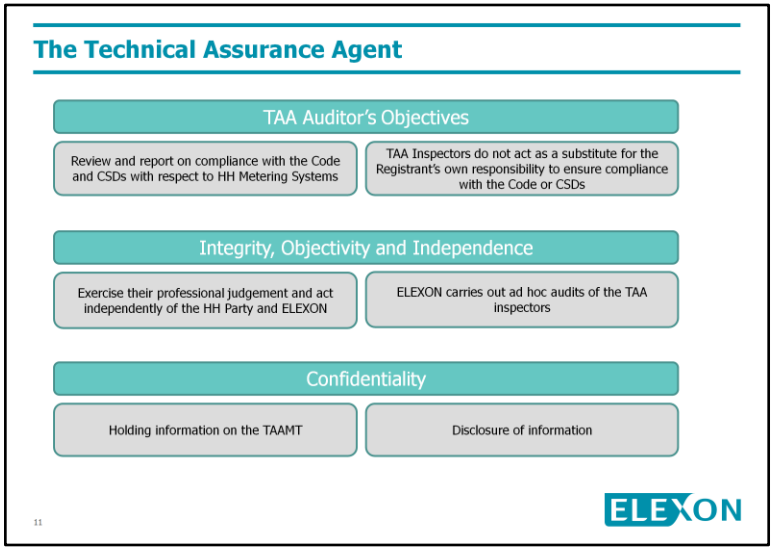


TAA Auditor's Objectives

The TAA auditors' objective is to review and report on compliance with the Code and Code Subsidiary Documents (CSDs) with respect to HH Metering Systems. TAA Inspectors do not act as a substitute for the Registrant's own responsibility for putting in place proper arrangements to ensure compliance with the Code or CSDs.

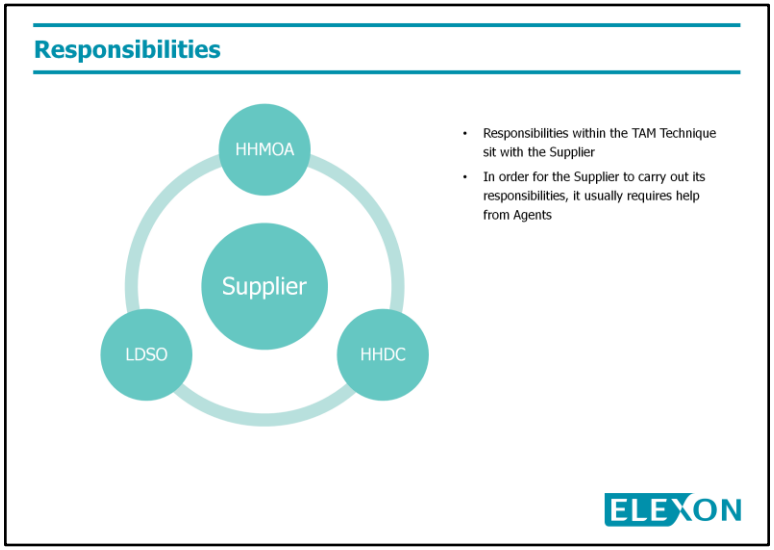
Integrity, Objectivity and Independence

TAA Inspectors should exercise their professional judgement and act independently of the HH PAP and act independently of ELEXON, too.

The TAA Inspectors should not carry out work for a HH PAP outside of their TAA Inspectors' functions, if it would impair their independence, or might give rise to a reasonable perception that their independence could be impaired.
The ELEXON Metering Experts will carry out ad hoc audits of the TAA inspectors to ensure that the audits are carried out in this way appropriately.

Confidentiality

The TAA and ELEXON should take all reasonable steps to ensure that they comply with relevant statutory and Code requirements relating to the holding and disclosure of information received or obtained during the check.



You'll see from the following slides that the obligations within TAM all sit with the Supplier/registrant of a metering system, however the supplier needs help from the DC, the MOA and the LDSO to arrange access for the TAA to attend sites and also to clear identified non-compliances.

Obligations for TAM

- Section L sets out the requirements for TAM
- BSCP27 contains the process in detail
- The Codes of Practice contain installation requirements
- Guidance - website

Timescales

BSCP27 Section 3

Notification

- *TAA – Registrant & agents: at least 20 wds*

Provision of Information

- *Registrant & agents – TAA: 10 wds prior to inspection*
- *(MOA can provide MTDs on inspection date)*

Rectifying non-compliance

- *Registrant & agents – TAA: evidence or plan within 10 wds*

Required information

BSCP27 Section 1.13 & BSC Section L 7.2

MTDs must be those used by the DC to obtain metered volumes

Meter Technical Details

- MOA
- DC
- Supplier (optional)

- ***Commissioning Records***

- ***Metering Equipment Certificates***

- ***Via TAAMT***

Technical Assurance Agent Management Tool

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Sample Types

- **Main Sample** – a random sample of SVA (1% of all MSIDs in the market) and CVA Metering Systems (17% of all MSIDs in the market)
- **Specific Sample** – Focuses on high risk SVA Metering Systems/areas. Accounts for no more than 20% of the total number of SVA TAA visits per year
- **Targeted Inspections** – where a non-compliance is suspected on SVA or CVA Metering Systems
- **Re-inspection Audits** – a percentage of re-inspections on sites where Category 1 non-compliance was found to assure that it has been rectified as reported

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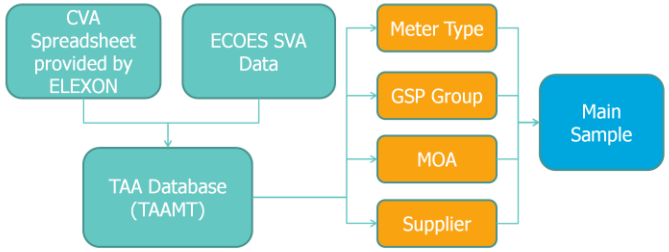
How is the Main Sample Selected?



- The sample shall not be biased towards any one Registrant, Meter Operator Agent, GSP Group or type of Metering Equipment
- When completing the main sample, consideration is given to geographical location

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Outcomes of a Successful Site Visit

Providing the TAA can gain access to the site, there are 4 possible outcomes:

- **Compliant** – No non-compliances identified at site
- **Category 1 Non-Compliant** – Non-compliance identified which is currently affecting the quality of data for Settlement purposes
- **Category 2 Non-Compliant** – Not directly affecting Settlement but has the potential to
- **Observation** – Not affecting Settlement and does not have the potential to

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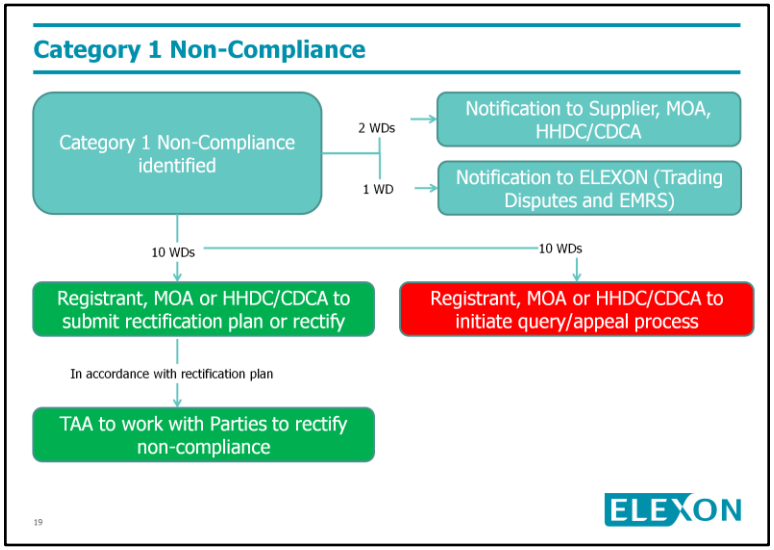
Category 1 Non-Compliance
Category 1 Non-Compliance identified
2 WDs
1 WD
Notification to Supplier, MOA, HHDC/CDCA
Notification to ELEXON (Trading Disputes and EMRS)
10 WDs
10 WDs
Registrant, MOA or HHDC/CDCA to submit rectification plan or rectify
Registrant, MOA or HHDC/CDCA to initiate query/appeal process
In accordance with rectification plan
TAA to work with Parties to rectify non-compliance
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Category 1 Non-Compliances

- 1.01 - Inaccuracy of Standing Data (Key MTD fields) held by Data Collector
  - Outstation serial number, Meter ID (serial number), Outstation number of channels, Measurement Quantity ID, Pulse multiplier, Channel configuration, Outstation multiplier/Outstation channel multiplier, Complex Site Supplementary Information Form (SVA only)
- 1.02 - Metering Equipment Incorrect or Unsatisfactory
  - Metering Equipment not functioning correctly, Metering Equipment not programmed correctly, Overall accuracy of Metering System not maintained, Summation CTs used, Correct Energy Measurement Check indicates error in metered volume
- 1.03 - Timing Error (Major)
  - Outstation clock outside agreed tolerance
- 1.04 - Measurement Transformer Ratios Physically Incorrect
  - Measurement transformer rations different from those set up in Meter
- 1.05 - Compensation Calculations Incorrect
  - Meter compensation for Measurement Transformers Incorrectly applied or not applied
  - Meter compensation for Power Transformers incorrectly applied or not applied
- 1.06 - Miscellaneous
  - Other non-compliance not covered elsewhere

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Category 2 Non-Compliances

2.01 - Inaccuracy of Standing Data held by Meter Operator Agent

2.02 - Inaccuracy of Standing Data (non-Key MTD fields) held by Data Collector

2.03 - Non-provision of Standing Data

★ 2.06 - Metering Equipment Incorrect or Unsatisfactory

2.07 - Measurement Transformer and/or Meter Certificates

2.08 - Unsuitable Environment

2.09 - Inadequate Over-current Protection

2.10 - Separate Phase Failure Alarms not Installed or Inadequate/Failed – Local and Remote

2.11 - Inadequate Metering Equipment Integrity

2.12 - Metering Equipment Test Facilities

2.13 - Miscellaneous

★ 2.14 - Timing Error (Minor)

★ 2.15 - Commissioning Records

★ 2.16 - Measurement Transformer Certificates not provided or incorrect

★ 2.17 - Meter Certificates not provided or incorrect

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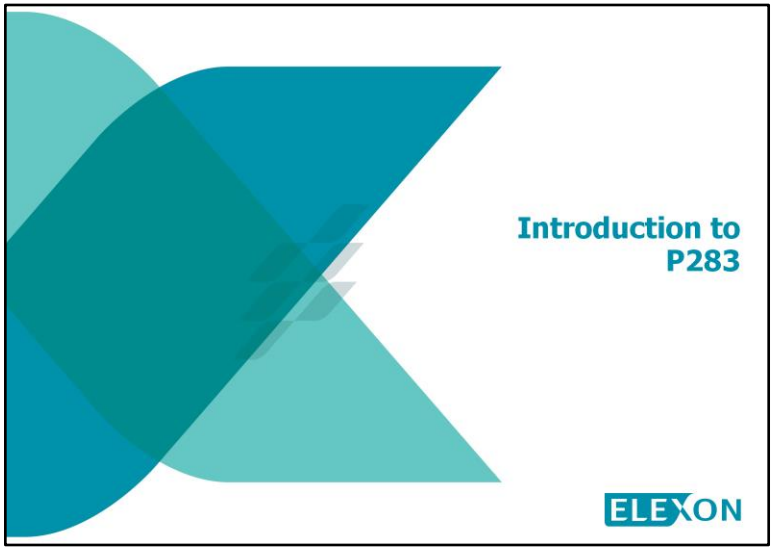
Introduction to
P283
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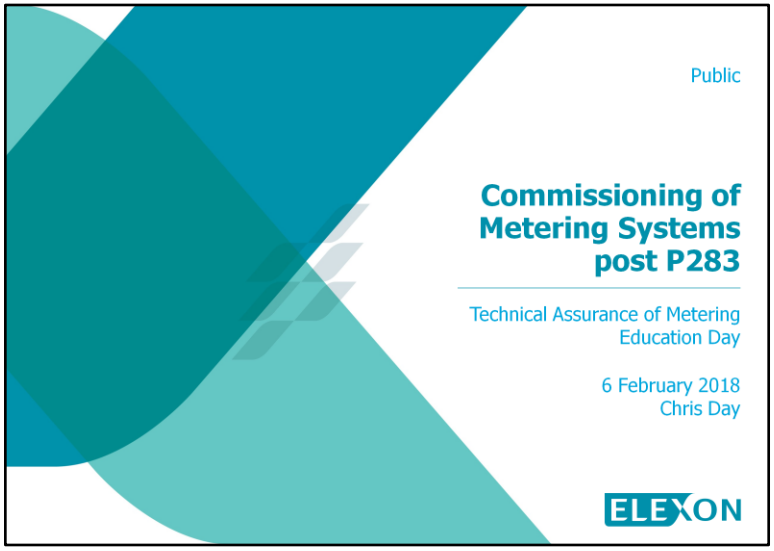
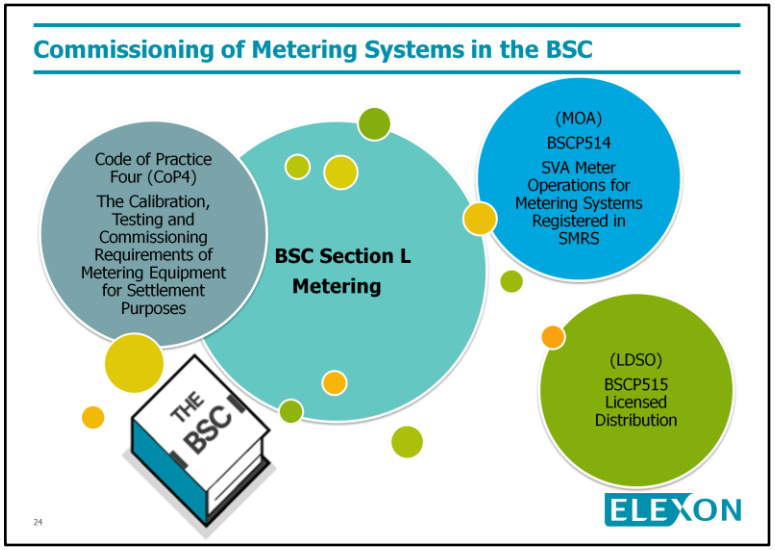

Public
Commissioning of Metering Systems post P283
Technical Assurance of Metering Education Day
6 February 2018
Chris Day
ELEXON



Commissioning is to be performed on all new metering equipment which is to be used in Settlement.

BSC Section L 'Metering' sets the obligations and

CoP4 sets out what has to be commissioned, requirements for calibration and commissioning of equipment

BSCPs state how and in what timescale this should be done

BSCP514 Meter Operator Agent

BSCP515 for Licenced Distribution Network Operators

It does detail Supplier actions as well as MOA and LDSO.

Commissioning of Metering Systems in the BSC

- The Registrant of each Metering System shall ensure that Metering Equipment is: "(a)" installed and commissioned (if not already installed and commissioned) … (Section L 2.1.1)
- The Registrant of each Metering System shall ensure (a) in the case of Half Hourly Metering Systems, that the Metering Equipment shall be commissioned (including, where any issues are identified during the commissioning of that Metering Equipment, notifying and consulting with the Distribution System Operator and/or the Transmission Company, as applicable) in accordance with the relevant issue of Code of Practice Four … (Section L 3.6.1)
- In the case of Half Hourly Metering Equipment it shall be the responsibility of the MOA to notify its Registrant, via an auditable, electronic method, that either:
  - All items of Metering Equipment have been fully and successfully Commissioned in accordance with this CoP4; or
  - There are defects or omissions in the completion of the processes set out in this CoP4 which have the potential to affect Settlement. Such notification shall include details of any defects or omissions identified and an assessment of the potential implications for the Registrant, customer and network operator. Where such notification is provided and the Registrant believes that there is a risk to Settlement it shall, in accordance with Section L3.6 of the BSC, consult with the relevant network operator and agree the appropriate steps to be taken to minimise the risks to Settlement. Such agreements shall be recorded and be made available on request to the BSC Panel. (CoP4 Scope)
- Commissioning of Metering Systems that include measurement transformers (BSCP514 Section 5.2.2.A), (BSCP515 Section 3.3.A)

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Commissioning of Metering Systems in the BSC

- Where measurement transformers are owned by a BSC Party that Party shall be responsible for ensuring the requirements of 5.5 (Commissioning), are performed on its Metering Equipment up to and including the Testing Facilities. In addition that Party shall prepare, and make available to the appointed MOA, complete and accurate commissioning records in relation to these obligations. Where measurement transformers are not owned by a BSC Party the Registrant, via its appointed MOA, shall be responsible for the Commissioning of all Metering Equipment. (CoP4 5.5)
- CoP4 Section 5.5.2 details what elements of accuracy a Commissioning Test should confirm.
- Where individual items of Metering Equipment are to be replaced then only those items are required to be Commissioned. For clarification, Metering Systems in their entirety need not be re-Commissioned when items are replaced within that system. (CoP4 5.5.2)
- The MOA shall provide such evidence, as BSCCo may require, to confirm that, following its Commissioning, Metering Equipment shall meet the requirements of the Code and relevant Codes of Practice. This evidence must be Traceable and dated. (CoP4 Section 5.5.4)

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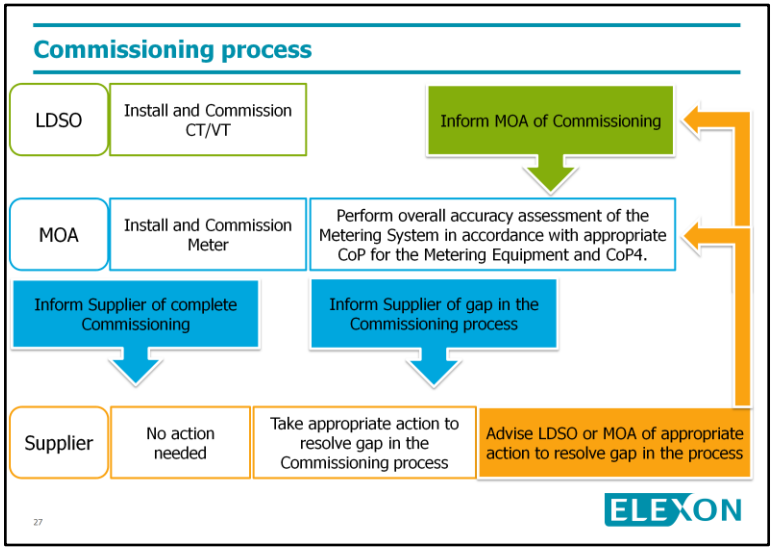
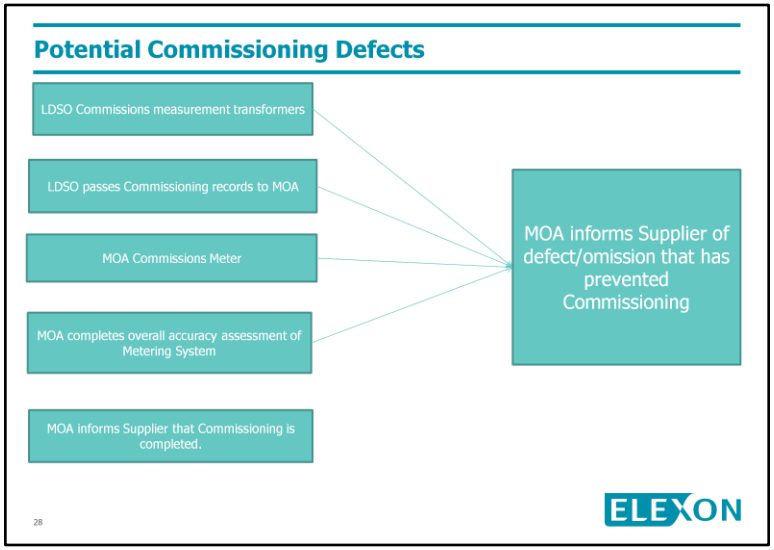
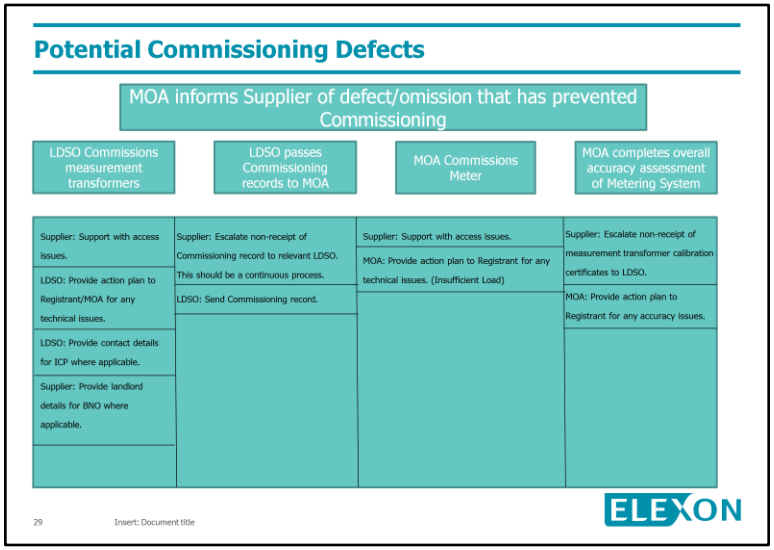


Describe what happens during the process

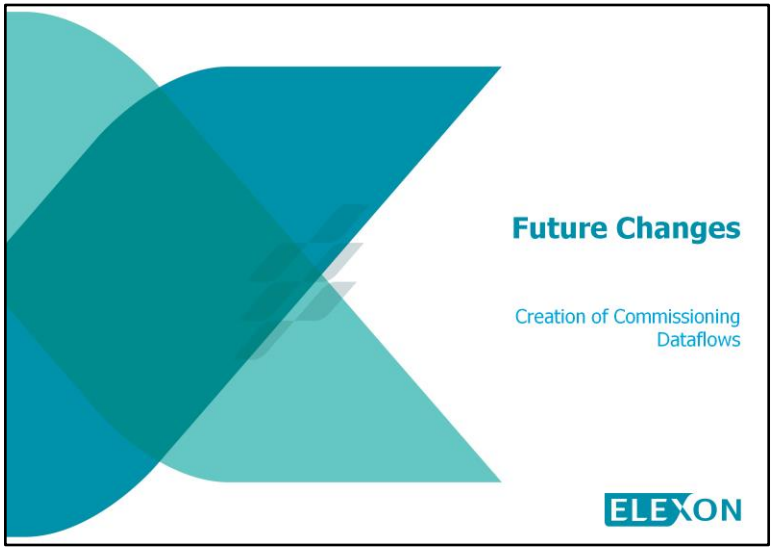
This is the process that the work streams we will be talking about will look to improve



Talk through the process.
Highlight that the process can fall down at any point and a MOA may pass a defect/omission to Supplier for anyone.



Supplier – Support. Contact Details?, Education.


Future Changes
Creation of Commissioning Dataflows
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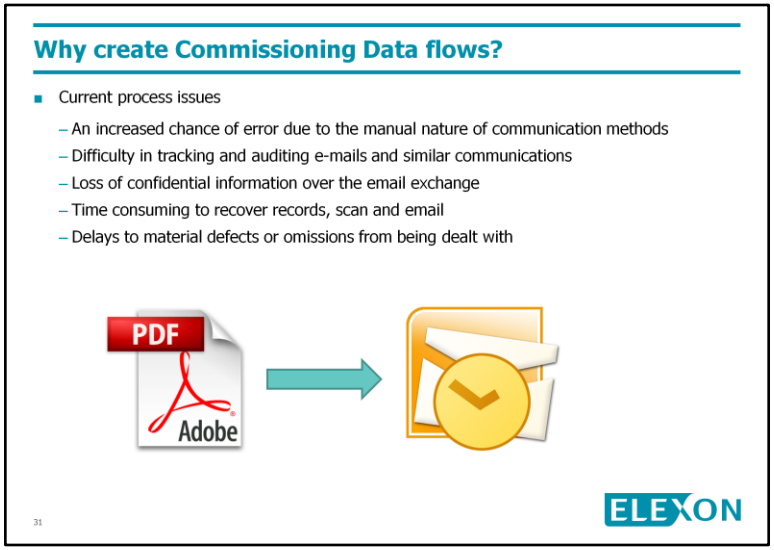


P283 TAPAP completed 2016 showed that

LDSOs email Commissioning records as PDF attachments to the MOAs

MOAs will then email their Registrant (Supplier) to notify them of the Commissioning status

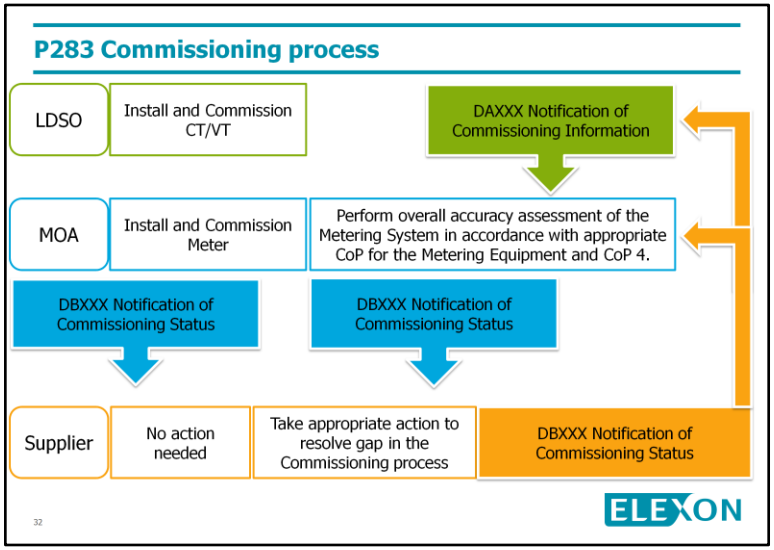
Any follow up communication is all done by email

During the check Commissioning evidence not available which presents a potential risk to Settlement as no assurance Commissioning completed and within CoP4 limits
No evidence the communications obligations were fulfilled

Feedback from industry was that data flows required to make this process easier to complete

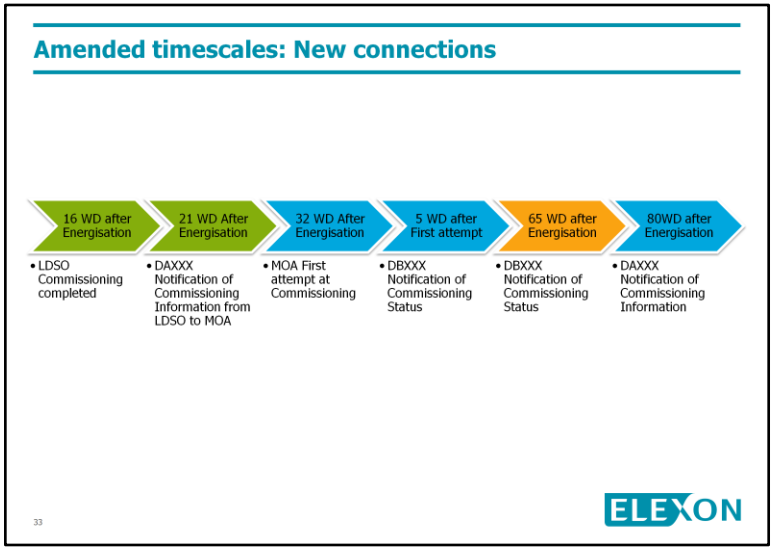
Current process issues

- An increased chance of error due to the manual nature of communication methods
- Difficulty in tracking and auditing e-mails and similar communications
- Loss of confidential information over the email exchange
- Time consuming to recover records, scan and email
- Delays to material defects or omissions from being dealt with



What are the dataflows and what do they do -

Describe how the dataflow will work in the process



New timescales have been applied to the process;

LDSO Commissioning: 16 (16) WD after Energisation
LDSO Pass Commissioning information to MOA: 21(22) WD after Energisation
MOA First attempt at Commissioning: 32(16) WD after Energisation
MOA Advise Supplier of defect/omission: 5(5) WD after first attempt
MOA Advise Supplier of defect/omission: 5(5) WD after Commissioning complete
Supplier resolution of any defect or omission: 65 WD after Energisation
(no timescales – this is a new step to make existing obligations clearer)
Final deadline for MOA to complete Commissioning: 80 WD after Energisation

(no timescales – this is a new step to make existing obligations clearer)

Code of Practice 4 Changes

- Where measurement transformers are owned by a BSC Party that Party shall be responsible for ensuring the requirements of 5.5, are performed on its Metering Equipment up to and including the Testing Facilities. In addition that Party shall prepare, and make available upon request ~~to the appointed MOA~~, complete and accurate commissioning records in relation to these obligations.
- Where measurement transformers are owned by a BSC Party that Party ~~The MOA~~ shall provide such evidence, as BSCCo may require, to confirm that, following its Commissioning, Metering Equipment (up to and including the Testing Facilities) shall meet the requirements of the Code and relevant Codes of Practice. Where measurement transformers are not owned by a BSC Party the Registrant, via its appointed MOA, shall be responsible for these requirements.

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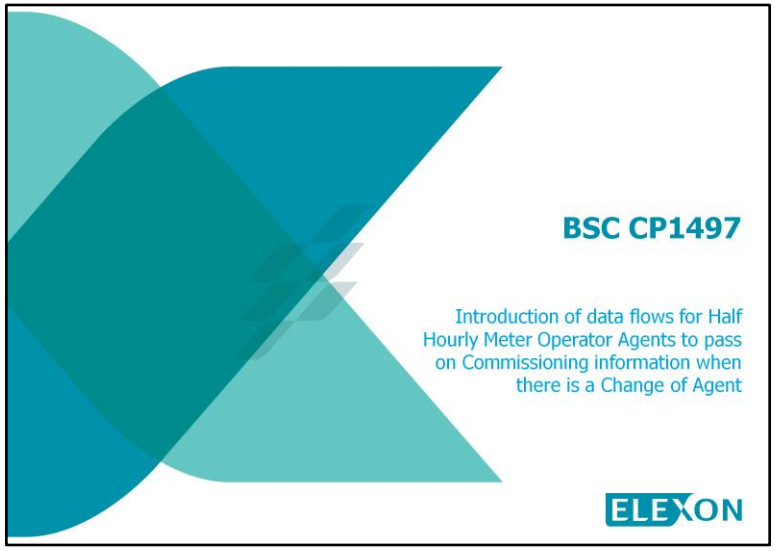
BSC CP1497
Introduction of data flows for Half Hourly Meter Operator Agents to pass on Commissioning information when there is a Change of Agent
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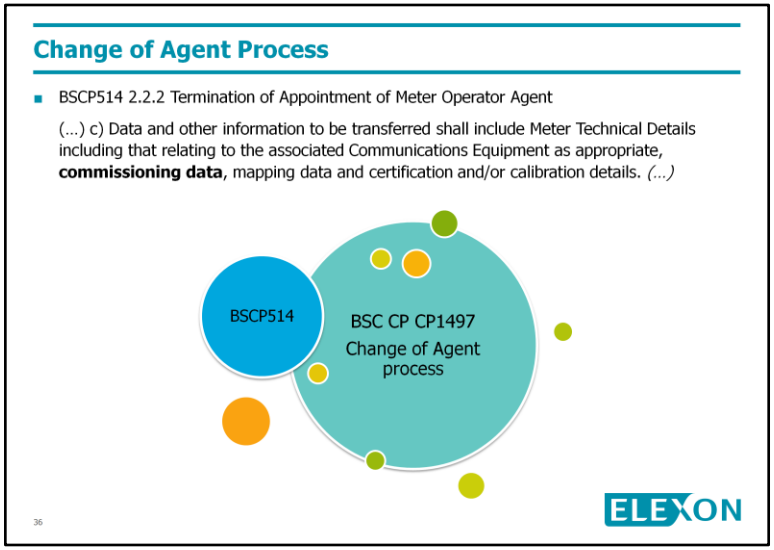
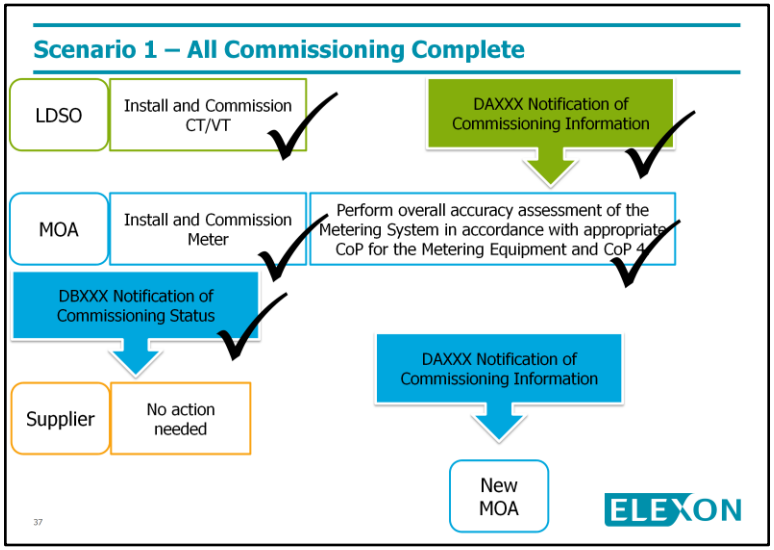
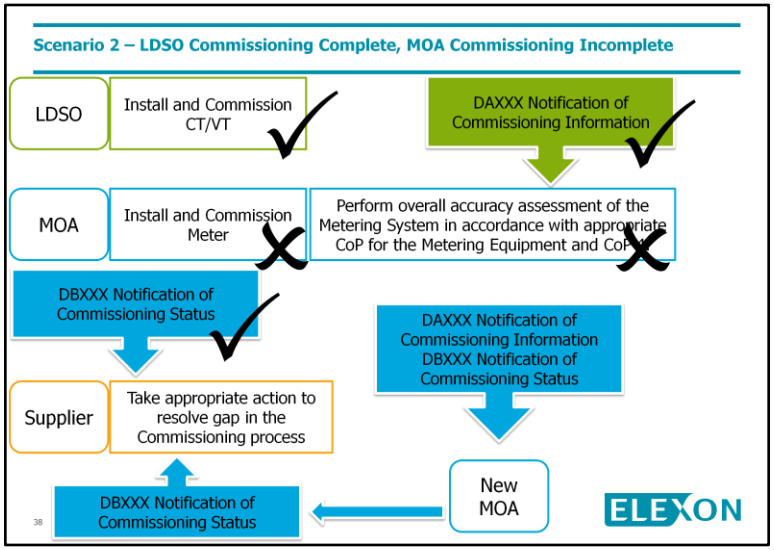


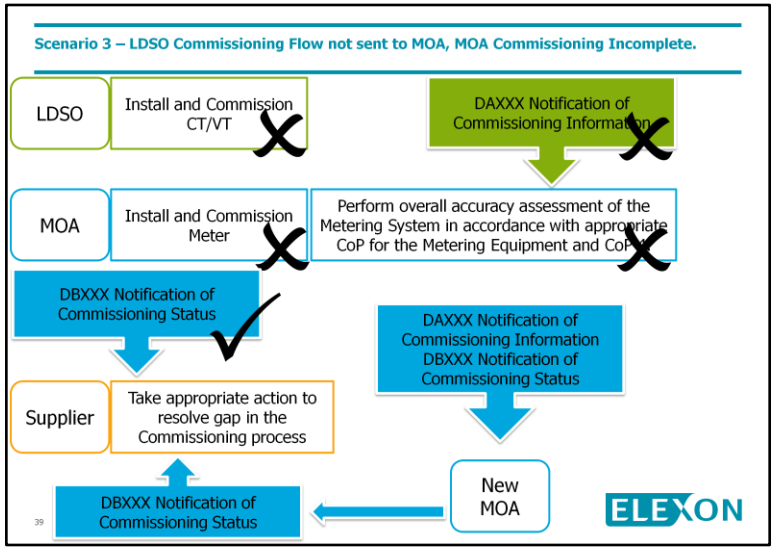
There is no formal process within the BSCPs for the passing of commissioning information when there is a change of agent.
It only states that it shall be transferred
The two data flows will be introduced into the COA process to facilitate the passing of information
Both DAxxx and DBxxx flows will be used in this process



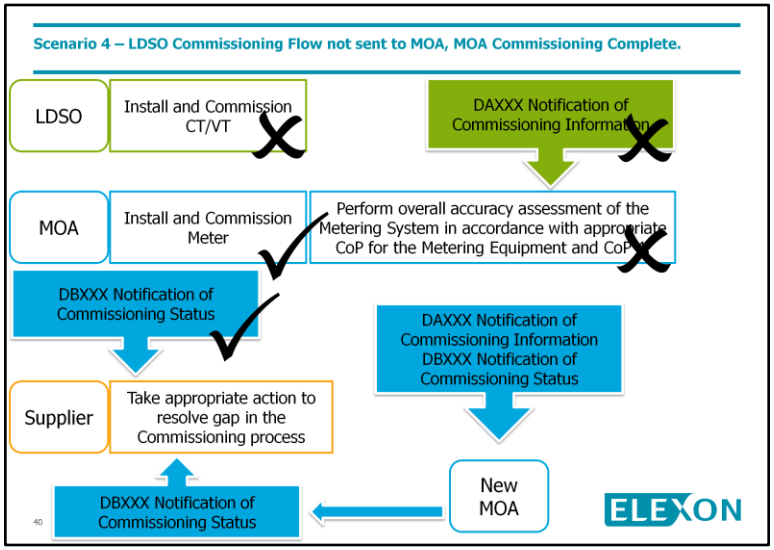
Scenario 1: All Commissioning completed and all information available for when there is a CoA.
At same time as D0268



Scenario 2: Measurement transformer Commissioning information is available but the MOA was not able to complete the Commissioning process before the CoA took place. Information will be sent from the old MOA to the new MOA and from the new MOA to the Supplier.
At same time as D0268



Scenario 3: Measurement transformer Commissioning information is not available because it had not been received by the old MOA before the CoA took place. The MOA work has also not been completed in this scenario. Information will be sent from the old MOA to the new MOA and from the new MOA to the Supplier.
At same time as D0268



Scenario 4: Measurement transformer Commissioning information is not available because it had not been received by the old MOA before the CoA took place. The MOA Meter Commissioning has been done (but overall accuracy has not because the measurement transformer information has not been received. Information will be sent from the old MOA to the new MOA and from the new MOA to the Supplier.

At same time as D0268


Change
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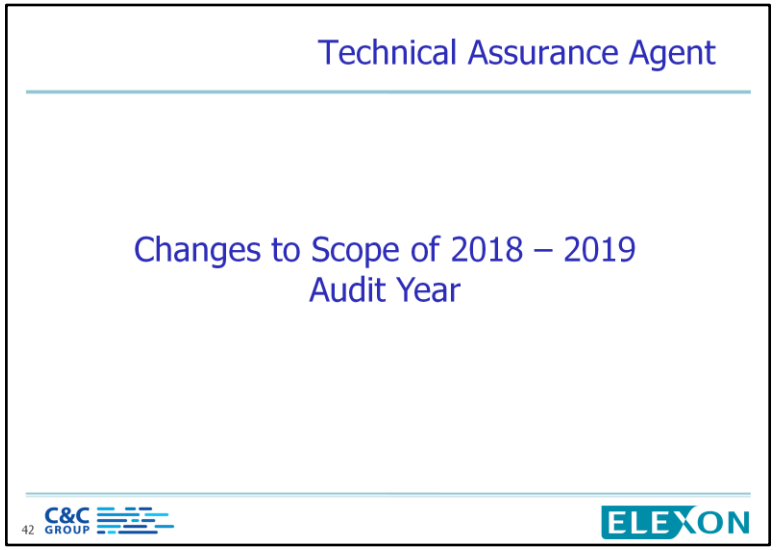
Technical Assurance Agent
Changes to Scope of 2018 – 2019
Audit Year
42
C&C GROUP
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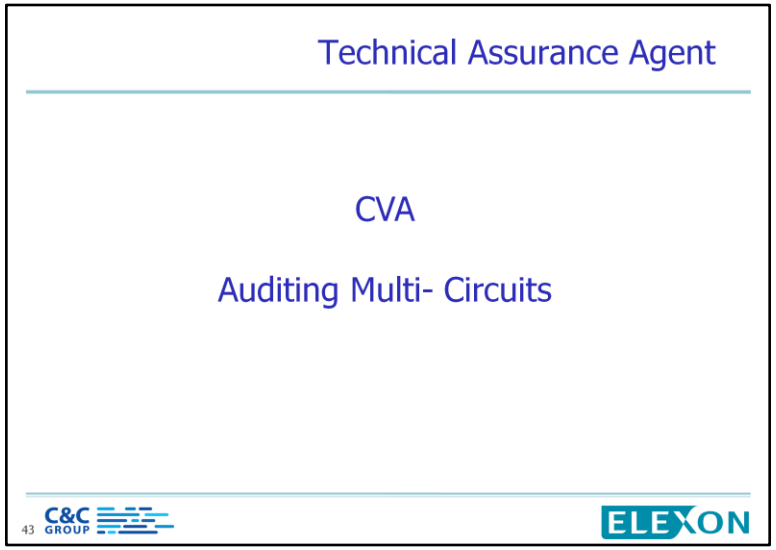
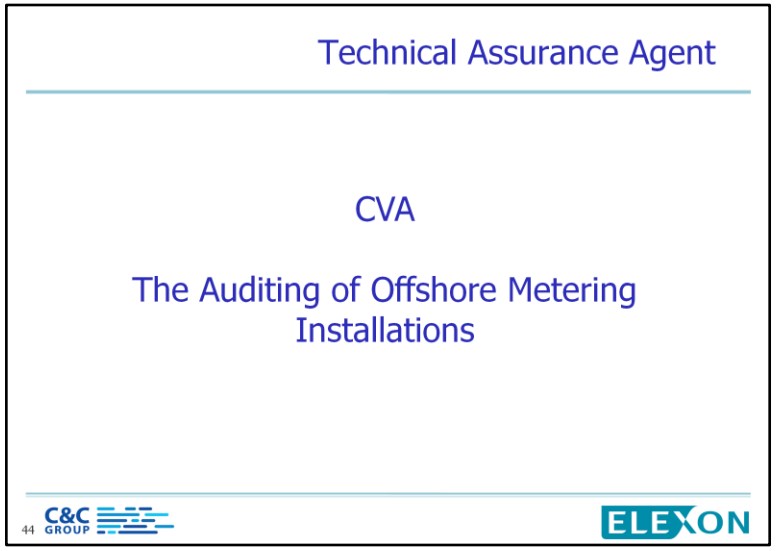
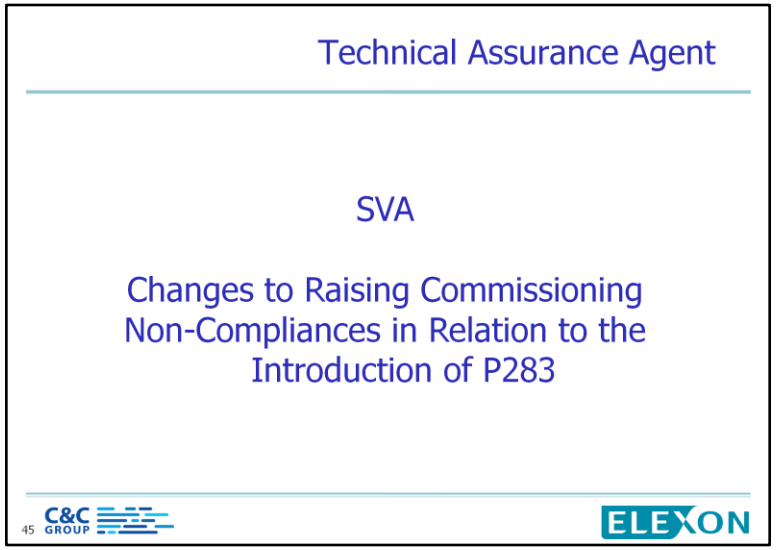
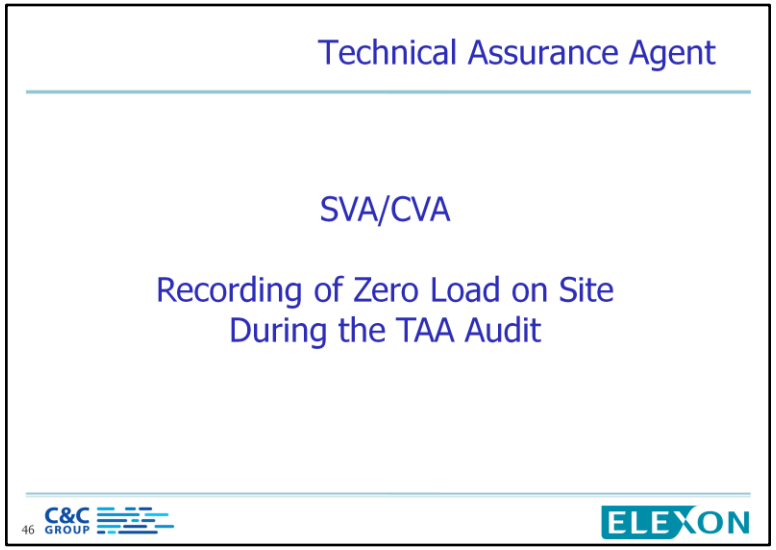

Technical Assurance Agent
CVA
Auditing Multi- Circuits
43
C&C GROUP
ELEXON


Technical Assurance Agent
CVA
The Auditing of Offshore Metering Installations
44
C&C GROUP
ELEXON


Technical Assurance Agent
SVA
Changes to Raising Commissioning Non-Compliances in Relation to the Introduction of P283
45
C&C GROUP
ELEXON


Technical Assurance Agent
SVA/CVA
Recording of Zero Load on Site
During the TAA Audit
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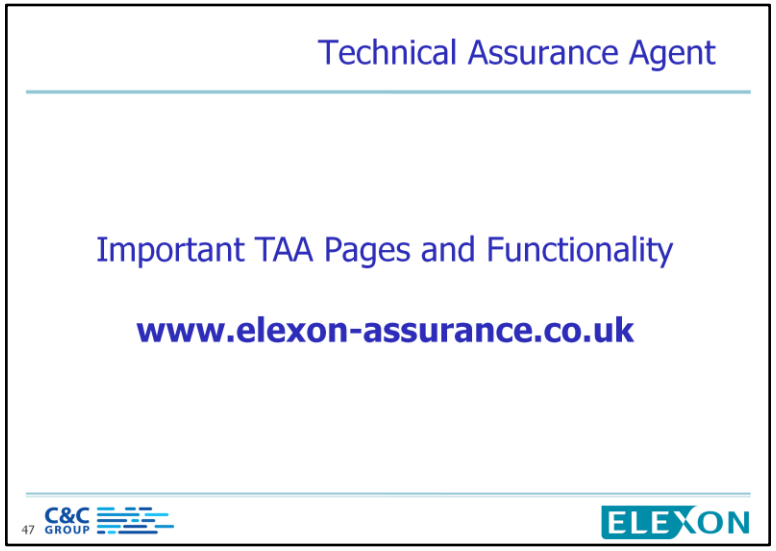
C&C GROUP
ELEXON


Technical Assurance Agent
Important TAA Pages and Functionality
www.elexon-assurance.co.uk
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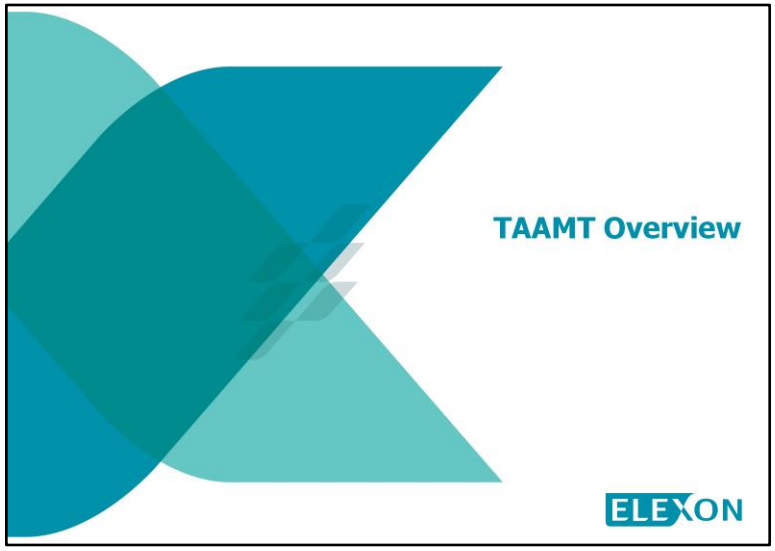
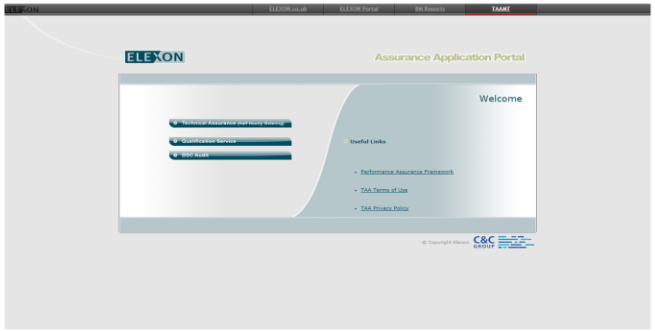
C&C GROUP
ELEXON

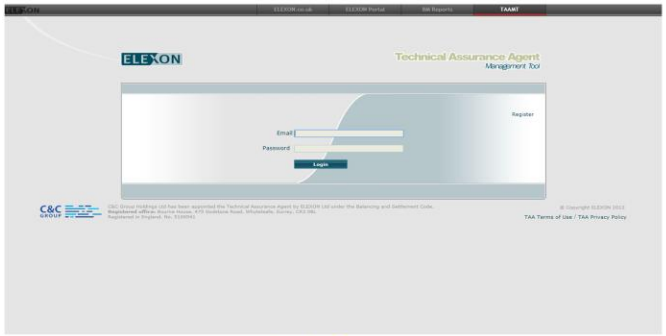

TAAMT Overview
ELEXON

Technical Assurance Agent



www.elexon-assurance.co.uk

Technical Assurance Agent



Login Page

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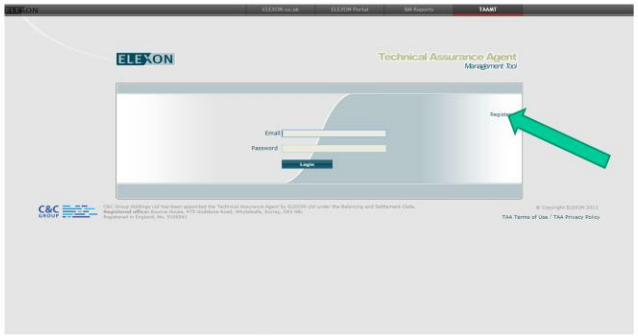
Technical Assurance Agent



Registration

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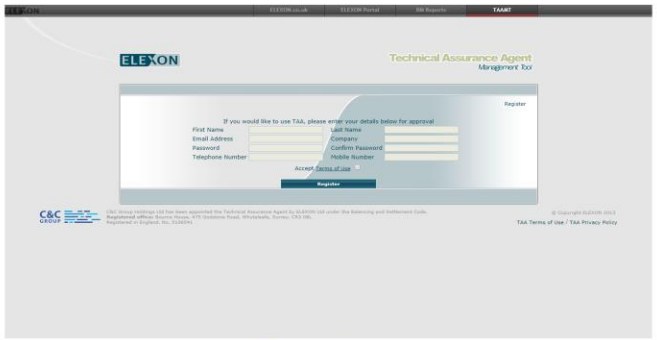
Technical Assurance Agent



Registration

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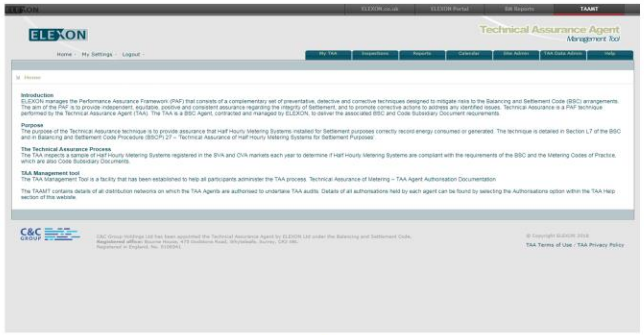
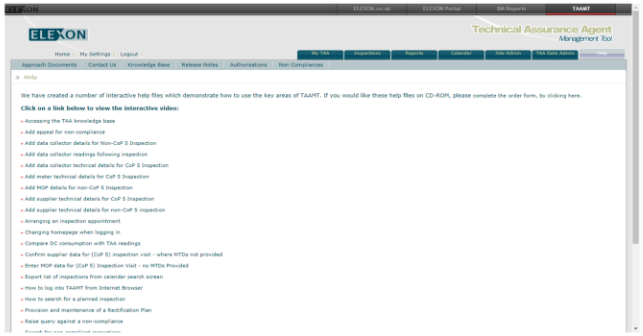
Technical Assurance Agent



Home Screen

Technical Assurance Agent



Help Screen

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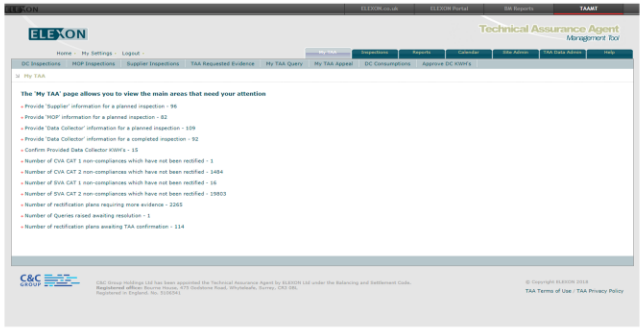
Technical Assurance Agent



My TAA Screen

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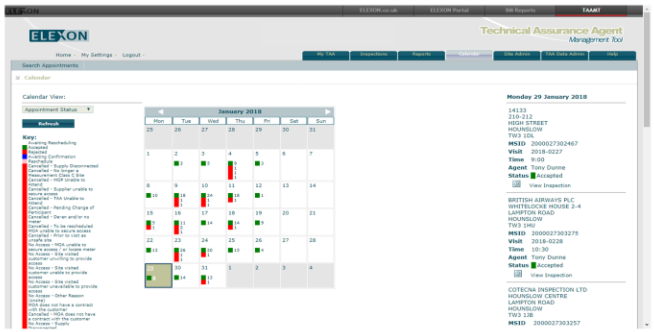
Technical Assurance Agent



Calendar Screen

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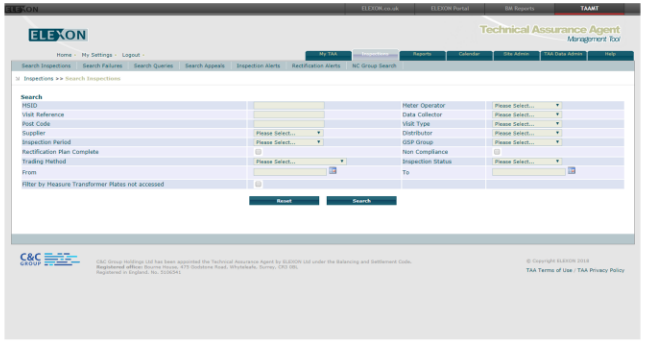
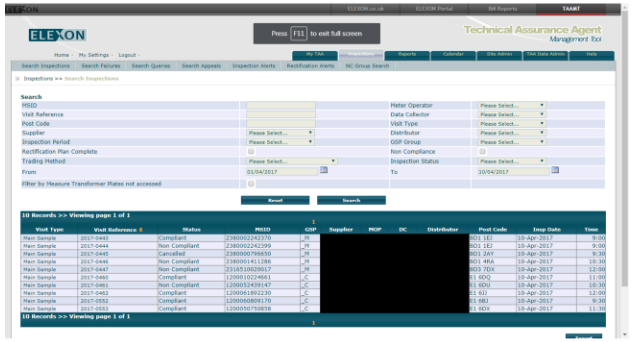
Technical Assurance Agent



Search Appointments Screen

Technical Assurance Agent



Search Appointments Results Screen

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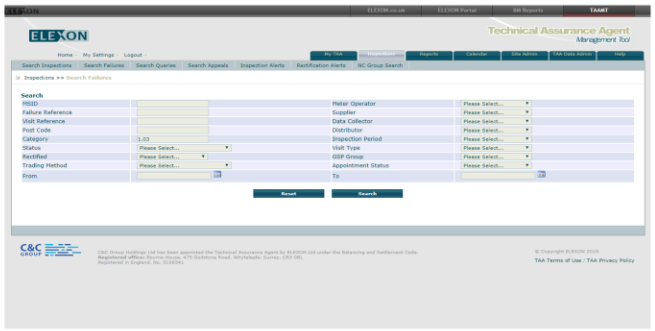
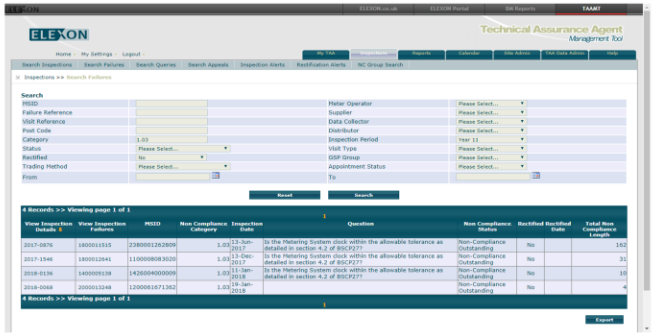
Technical Assurance Agent

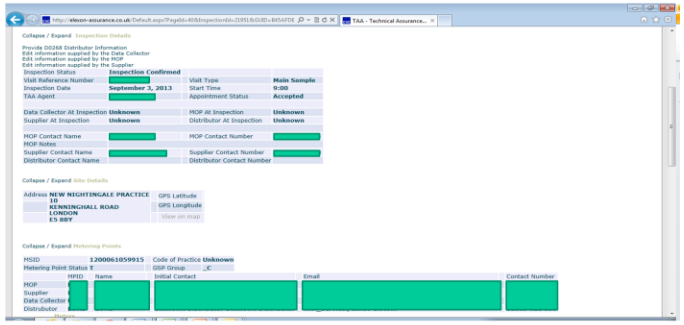


Search Failures Screen

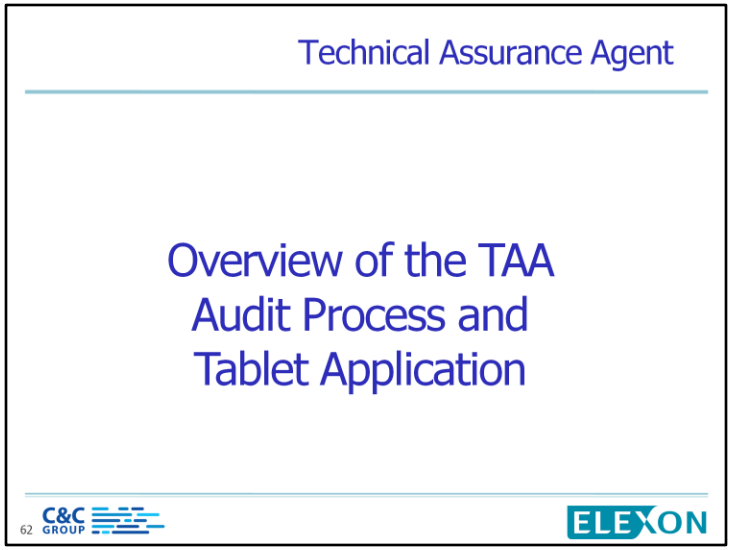
Technical Assurance Agent



Technical Assurance Agent



Inspection Details Screen


Technical Assurance Agent
Overview of the TAA
Audit Process and
Tablet Application
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C&C GROUP
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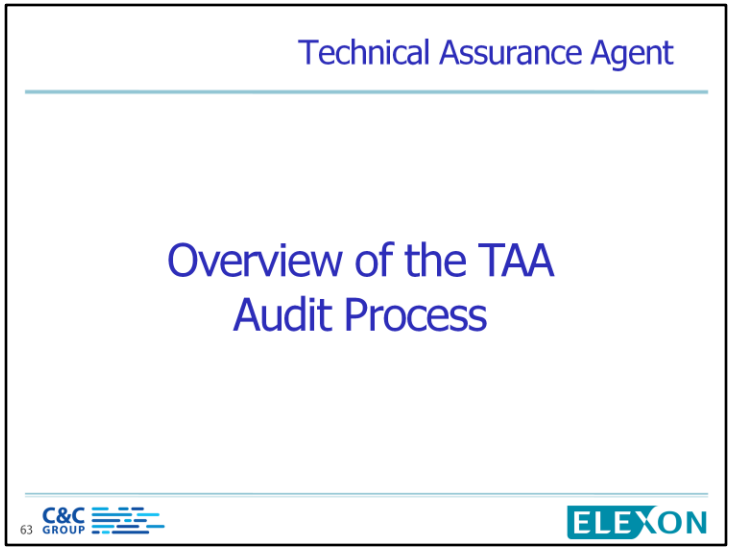
Technical Assurance Agent
Overview of the TAA
Audit Process
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C&C GROUP
ELEXON


Technical Assurance Agent
Overview of a TAA Visit
Tablet Application
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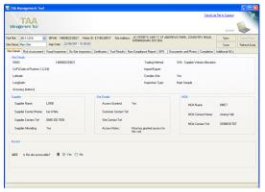
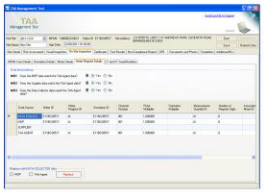
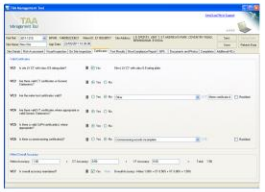
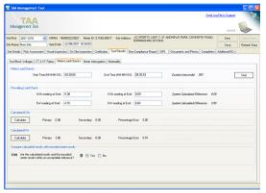
Technical Assurance Agent









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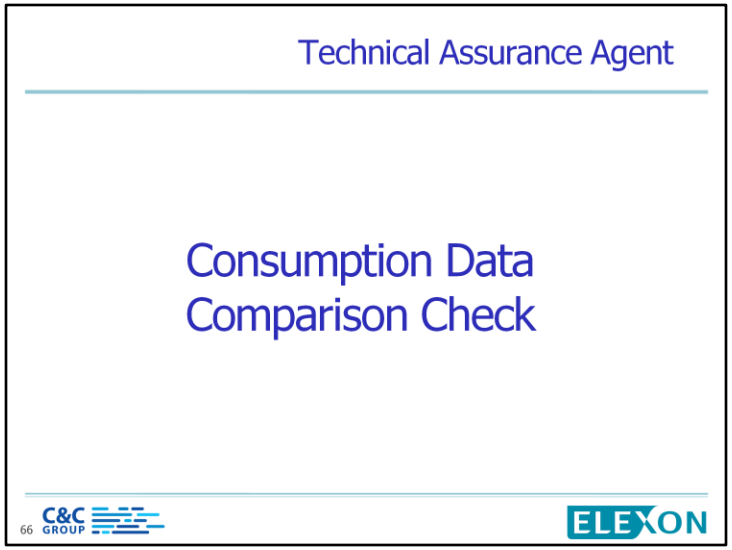
Technical Assurance Agent
Consumption Data
Comparison Check
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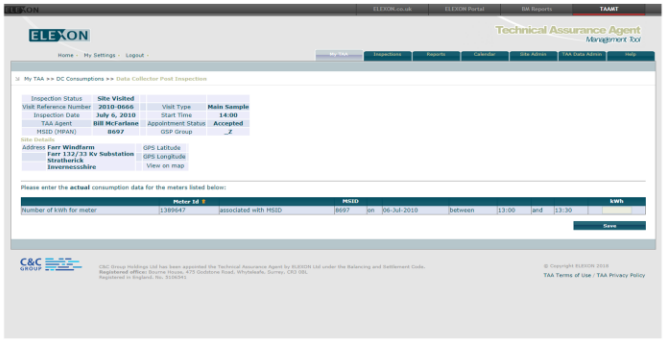
C&C GROUP
ELEXON

Technical Assurance Agent



CDC Entry Screen

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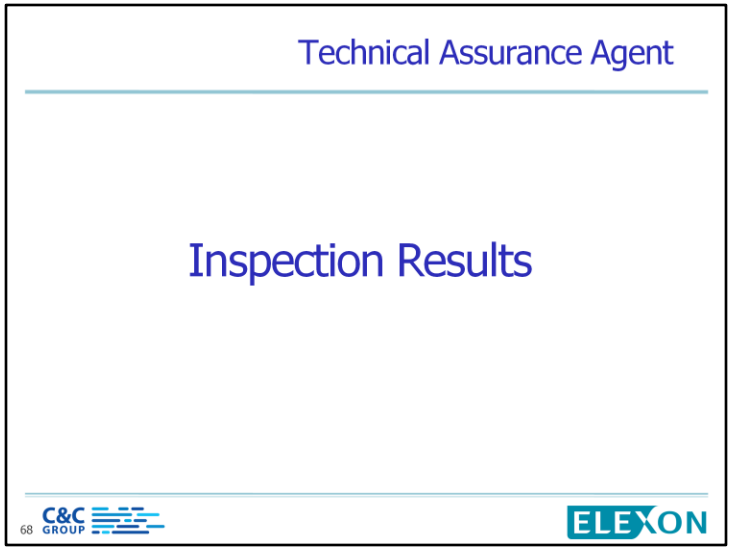
Technical Assurance Agent
Inspection Results
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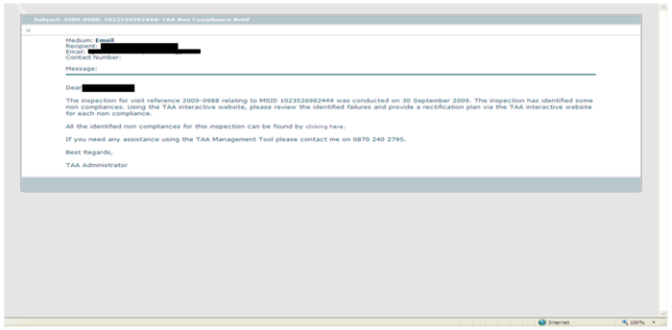
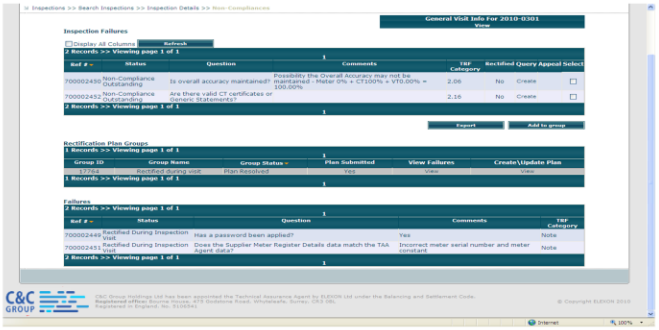
C&C GROUP
ELEXON

Technical Assurance Agent



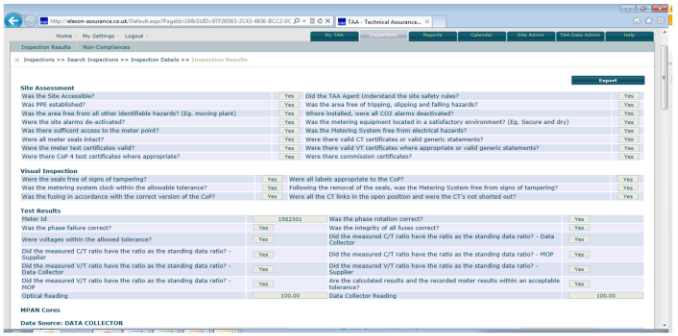
Notification Email

Technical Assurance Agent



Non-Compliance Screen

Technical Assurance Agent



Inspection Results Screen

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Technical Assurance Agent
Rectification Plans
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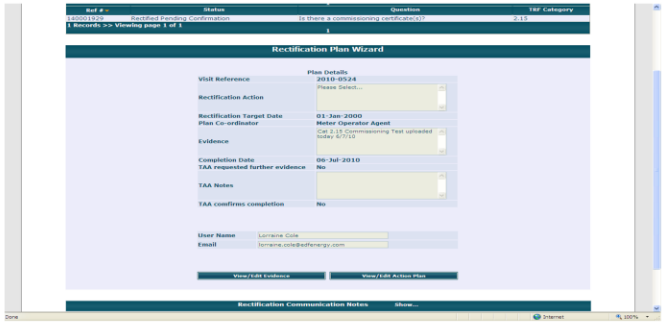
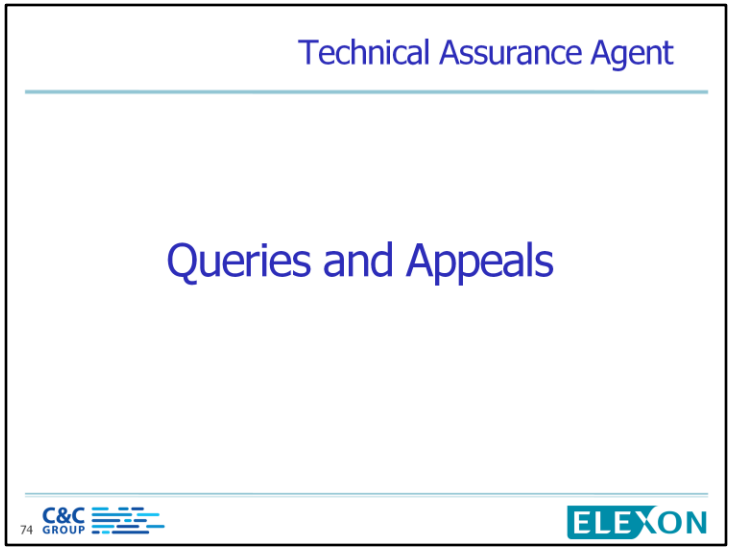
C&C GROUP
ELEXON

Technical Assurance Agent



Rectification Screen


Technical Assurance Agent
Queries and Appeals
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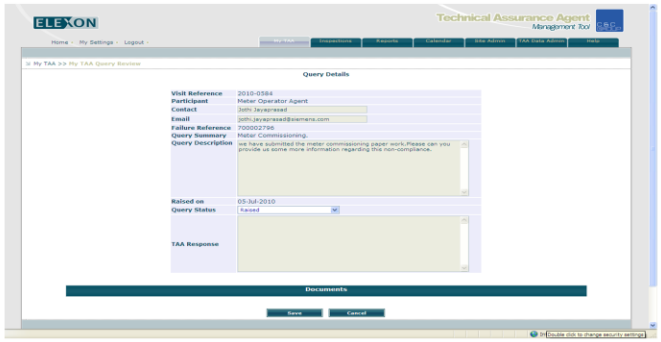
Technical Assurance Agent



Query Screen

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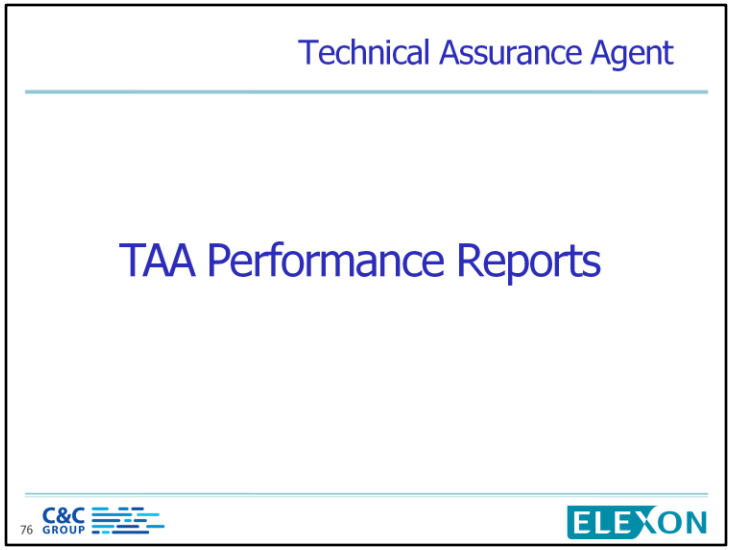
Technical Assurance Agent
TAA Performance Reports
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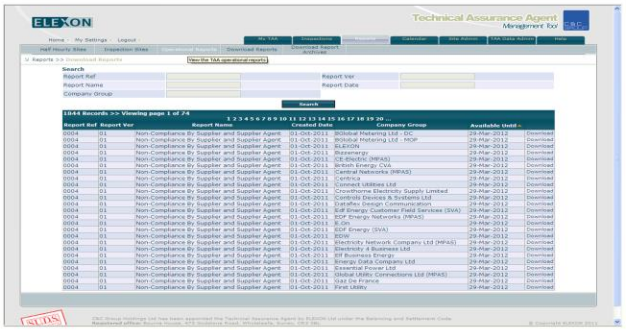
C&C GROUP
ELEXON

Technical Assurance Agent



Reports Screen