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| --- | --- | --- | --- | --- | --- |
| Issue 73 ‘Review of fault management and resolution timescales’  |  | | --- | |  | | **Contact** | | **Matthew Woolliscroft**  020 7380 4165  [BSC.change@elexon.co.uk](mailto:BSC.change@elexon.co.uk) | |  | |  | |

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About This Document

This document is the Issue 73 Group’s Report to the BSC Panel. ELEXON will table this report at the Panel’s meeting on 14 November 2019.

There are two parts to this document:

* This is the main document. It provides details of the Issue Group’s discussions and proposed solutions to the highlighted issue and contains details of the Workgroup’s membership.
* Attachment A contains the Issue 73 Proposal Form.

1. Summary

#### Conclusions

The Issue 73 Group proposed that three Change Proposals be raised to carry forward its recommendations. During its discussions, the Group supported development of processes and redlining to enact these changes. A high-level process diagram is in Appendix 1.

##### Improve the communication process

The Issue Group recommends that a new suite of flows is created to be used in the rectification of faults on Half Hourly (HH) Metering System Identifiers (MSIDs). The process should be supportive of sites that will move out of the Non Half Hourly (NHH) market with the implementation of Market Wide Half Hourly Settlement. The introduction of a Unique Fault Reference, will improve the end to end tracking of faults. The proposed Change Proposals will also emphasise how fault details are passed between parties upon a Change of Agent or Change of Supplier.

##### Define Service Level Agreements

The Issue Group recommends that work undertaken by the Meter Operator Agent (MOA) should be completed within 25 Working Days (WD) and work done by Licensed Distribution System Operators (LDSOs) within 40 WD.

##### Clarify LDSO responsibilities

The Issue Group recommends clarifying that LDSOs are responsible for addressing faults on their equipment, and introducing a process for the MOA to escalate faults with the relevant LDSO, via the Supplier. The fault will remain open with the MOA, but it will have no obligations until the LDSO has completed its work.

#### Overview

This issue was raised to review the processes around fault resolution for MOAs, Suppliers and LDSOs to ensure that the BSC is enabling efficient rectification.

Following a [Technical Assurance of Performance Assurance Parties audit conducted by ELEXON in 2013](https://www.elexon.co.uk/wp-content/uploads/2012/03/Fault-Investigation-Process-Findings-TAPAP-Report-May-2013-v1-02.pdf), it was found that the fault investigation process described in the Balancing and Settlement Code (BSC) was not enabling the effective resolution of faults and could be improved to be more efficient. A group of industry experts came together as the Fault Investigation Review Group (FIRG) to review the faults process and propose changes. The FIRG met throughout 2015 and produced a list of recommendations for improvements to the faults process. The [BSC Audit report for the audit year 2016/17](https://www.elexon.co.uk/wp-content/uploads/2016/08/BSC-Audit-Report-31-March-2017-FINAL-Public.pdf) identified unresolved Metering System faults as a significant issue. The BSC Auditor continued to highlight Metering System faults as a key issue in the [2017/18 audit report](https://www.elexon.co.uk/documents/performance-assurance/techniques/bsc-audit/bsc-auditors-report-2017-18-public-signed/).

This Issue Group reviewed the recommendations of the FIRG to ensure that they are still reflective of industry processes and are best practice. This involves consideration of how data flows are used for communication and whether they continue to be fit for purpose. The Issue Group considered amendments that could be made to the communication process to ensure effectiveness and how such a process could be mirrored for better Distributor involvement in the process.

1. Background

Following a [Technical Assurance of Performance Assurance Parties audit conducted by ELEXON in 2013](https://www.elexon.co.uk/wp-content/uploads/2012/03/Fault-Investigation-Process-Findings-TAPAP-Report-May-2013-v1-02.pdf), it was found that the fault investigation process described in the BSC documentation was not enabling the effective resolution of identified faults and could be improved to be more efficient. The report found that the timescales for fixing faults were unclear; and insufficient guidance was provided on which party involved in the faults process was responsible for each step.

#### The Fault Investigation Review Group

Following the audit finding, a group of industry experts came together as the FIRG to review the faults process and propose changes. The FIRG met throughout 2015 and produced a list of recommendations for improvements to the faults process. However, at the time, due to the amount of ongoing change (particularly the large scale Commissioning changes that used much of the same resource) these recommendations were not immediately progressed. The areas of improvement identified by the FIRG included:

* The sending of the [D0005 ‘Instruction on Action’ Data Flow](https://dtc.mrasco.com/) to update on the fault status is not well defined. [BSCP514 ‘SVA Meter Operations for Meters registered in SMRS’](https://www.elexon.co.uk/csd/bscp514-sva-meter-operations-for-metering-systems-registered-in-smrs/) prescribes an initial [D0005 ‘ Instruction on Action’](https://dtc.mrasco.com/ListDataFlows.aspx) being sent by the MOA to the Half Hourly Data Collector (HHDC) or Supplier (depending on who raised the fault) five WD after the fault was raised to provide an update on the resolution of the fault. If the fault remains unresolved, a second D0005 is sent 10WD later to provide a further update. Following this, the MOA is required to update the HHDC (or Supplier) of the status of the fault ‘as appropriate’ and on a ‘regular basis’. These timescales are not defined and so it is unclear how often an update should be given after the initial 15WD.
* The D0005 is used in different processes and so there is not a specific data flow for updating on faults. The flow is sometimes used by Suppliers, to request a site investigation by an MOA. While this is not incorrect process, it can be confusing to have one flow with multiple purposes.
* Where multiple faults are identified and multiple [D0001 ‘Request Metering System Investigation’](https://dtc.mrasco.com/)s are raised on a single Metering System Identifier, the sending of a [D0002 ‘Fault Resolution Report or Request for Decision on Further Action’](https://dtc.mrasco.com/) to close a fault can be confusing as to which fault has been rectified. Many MOAs have informed ELEXON that some systems will close the oldest open fault on a site and some will close the latest by default. This requires some manual intervention to ensure the right fault is closed, and can lead to new D0001s needing to be raised, which starts the defined timescales again.
* Data Item [J0024 ‘Site Visit Check Code’](https://dtc.mrasco.com/) is included in both of the D0001 and D0002 Data Flows and can be used to provide a description of the fault. However as this Data Item is used in multiple flows there are 89 different codes, of which not all apply to faults. This makes it difficult to categorise faults, which can lead to a delay in processing and rectifying them.
* Some faults cannot be rectified through the faults process and may be required to undergo a change of communication type which can be time consuming (Permanent handheld reads/BT Lines for instance). The FIRG argued that in these cases the faults should be closed as there is no more action the MOA can take.
* The FIRG argued that Service Line Agreements (SLAs) for fault rectification should be based on the type of fault. For instance, it takes much longer to rectify a technical issue with measurement transformers than it would to rectify a standard communication fault.
* BSCP514 states that the HHDC or Supplier must respond to a D0005 notification with another D0005. In practice, this does not happen and is confusing the process, particularly for new entrants.
* BSCP514 does not differentiate timescales for fixing faults by Measurement Class.

#### Role of the LDSO in fault rectification

In addition to the areas of improvement identified by the FIRG, the Issue 73 Proposer believes that the fault resolution process is unclear on the role of the LDSO in the fault rectification process. In particular, BSCP514 does not specify which parties are responsible for resolving faults. This can be problematic when the party attempting to resolve the fault is not the equipment owner. The implementation of [P283 ‘Reinforcing the Commissioning of Metering Equipment Processes’](https://www.elexon.co.uk/mod-proposal/p283), clearly defined the responsibilities of Commissioning of certain Metering Equipment, placing the obligation on the equipment owner. This principle could be extended to the rectification of faults as where the fault is with equipment owned by the LDSO then the MOA is rarely able to take rectification actions.

#### Objectives of the Issue Group

The Issue Group was established to review the recommendations of the FIRG, and determine whether any amendments should be made to the proposed solutions. In addition to this, the Issue Group was tasked to consider when it is reasonable for the LDSO to take responsibility for resolving faults to ensure the process is clear for all involved. In doing so, it will define a process that ensures there is a clear method for all parties involved in the fault resolution process to be appropriately informed. The Issue Group should consider what SLAs parties can be reasonably expected to achieve and whether there are any other changes that could make the fault rectification process more efficient.

1. Issue Group’s Discussions

#### Scope of the solution

Asked whether the process should be bespoke to the HH market (as proposed by the FIRG) or also be used for NHH Meters, the Issue Group thought that initially a HH process should be developed, noting that the roll of smart Meters would likely decrease the size of the NHH market in the future. It believed that any processes should be tailored to the HH market, but should not be restrictive to use in the NHH market where all involved parties agreed.

#### Review of FIRG recommendations

The Issue Group noted that the introduction of an ‘intended action date’ in the new data flow would improve the flexibility of the faults process while maintaining accountability, but emphasised the need for controls to ensure any date was not years in the future. Some members questioned the value of mandating this field, believing that in some cases a date will be automatically populated, reducing its value. ELEXON commented that it would expect the date provided to support ongoing conversations between relevant parties.

It noted that including the Supplier as a recipient would increase transparency and help the Supplier manage its agents. The Issue Group agreed that the MOA should always be able to provide an initial update after 5WD. The Group commented that the process should also prevent a cyclical process of extensions being used to avoid resolving the fault. This would be done through the introduction of SLAs.

Some Workgroup members believed that where faults were resolved by the MOA remotely, the proposed new flow would not be used as a D0002 would be sent to close the flow straight away, but ELEXON advised that as additional information would be communicated through the new flow, there would still be value in sending it.

The Issue Group noted that while the DC would have an indication of the reason for the fault, this would need to be confirmed by the MOA. It therefore recommended that the new data flow differentiated between faults categories identified by DCs and MOAs.

The Issue Group considered that improving the communication process used in fault rectification would improve accountability in the process.

#### Responsibility of LDSOs

The Issue Group considered whether the [D0135 ‘Asset Condition Report’](https://dtc.mrasco.com/) process could be used to support LDSO involvement in the fault rectification process. It noted that the process focussed on safety rather than Settlement accuracy, and that it sat outside of the BSC. As such the Issue Group recommended prescribing a similar BSC process.

There were contrasting opinions on whether the fault should remain open and be reassigned to the LDSO to resolve, or whether the MOA fault should be closed and a new fault opened against the LDSO. Some MOAs were concerned that having an open fault while the LDSO carried out its work would negatively affect their performance indicators. Others commented that if LDSO issues were raised as a separate fault, then the MOA would be able to continue work on any subsequent issues that arose while the LDSO addressed its equipment.

The Issue Group decided that as the Supplier had overall responsibility for Metering Systems, it would be in the best position to determine when a fault should be escalated to the Distributor.

Two processes for enhancing the involvement of LDSOs in the fault rectification process were considered: where the fault remains open and is reassigned, and where the fault is closed and a new one raised. Some Members commented that from a MOA perspective, it was preferable to close the fault so that it could be removed from their systems. They noted that the process would allow LDSO to request assistance from MOAs. Other members believed that maintaining the same open fault would improve the end to end visibility, though it was suggested that using the same fault reference on a separate LDSO fault would also provide this.

The Workgroup concluded that raising a new fault with the LDSO would allow MOAs to close faults from their system while maintaining the end to end visibility. It determined that the MOA and DC would only need to know when the fault was raised with the Distributor and resolved, with the Supplier managing ongoing communications, which would have similar timescales as those for MOA communications.

##### Third Party Involvement

The Issue Group noted that in some cases, equipment will be installed and maintained by non-BSC Parties. [Issue 72’ Ensuring measurement transformer assets installed by a Non-BSC Party are successfully Commissioned within BSC timescales’](https://www.elexon.co.uk/smg-issue/issue-72/), was raised to investigate how Measurement Transformers installed by non-BSC Parties should be handled for the Commissioning process, and the Issue Group agreed that these principles should be mirrored in the fault rectification process. Issue 72 concluded that where a BSC Party would adopt equipment, it would have responsibility for said equipment. Issue 72 was unable to reach a conclusion on equipment owned by Building Network Operators, who are not parties to the BSC.

#### Introduction of Service Level Agreements

The Issue Group thought that categorising faults would allow different SLAs to be tailored to the type of fault or Code of Practice, as this would influence the level of action required and impact on Settlement. The Issue Group questioned how SLAs should be applied and whether using the fault category as an indicator would be appropriate. Some Members commented that where third party assistance (such as LDSO involvement) was required, this would extend the time taken to resolve a fault.

ELEXON conducted some analysis into the average time taken to resolve faults, split by fault type. As ELEXON’s analysis was based on limited data, the Issue Group suggested that it would be sensible to include some based on the available data, which could subsequently be reviewed. The Issue Group concluded that as not much variation was shown between fault types, that an overall average of 25WD for the MOA to complete its work was reasonable. The Issue Group also proposed 40WD as an SLA for LDSOs, mirroring the timeframes permitted in the Distribution Connection Use of System Agreement. On this basis, faults should be resolved no later than the R2 reconciliation run.

The Issue Group commented that it was unrealistic to resolve 100% of faults, making it hard to be fully complaint with the current process. One suggestions for how this could be improved was a new status of ‘suspended’ would allow some sites be handled differently. The Workgroup considered whether it was right for the non-compliance to remain with the MOA if the action was beyond its control, or whether the non-compliance could be on the Supplier. The Workgroup noted the need to consider real world situations rather than a total compliance based approach, as such it concluded that a target of 90% of faults being resolved within the prescribed SLAs would provide incentive to ensure timely rectification while recognising that exceptions would occur.

#### Impacts of a Change of Agent or Supplier

The Workgroup questioned how the faults process would work on a Change of Agent or Supplier to prevent existing faults being duplicated by the new Supplier. It was suggested that a similar process to that of Commissioning could be adopted, requiring the old MOA to send records to the new MOA and from old Supplier to new Supplier. This risk could also be mitigated by giving Suppliers ownership of the faults process, ensuring continuity and allowing the Supplier to take informed decisions. The Issue Group commented that a solution should be proportionate to the scale of the problem and that on a Change of Agent, the fault should be closed and a new one opened. Passing the last instance of the DAXYZ flow to the incoming Agent would ensure that all parties were kept informed.

The Issue Group considered the situation where there was no commercial contract for the appointed MOA, but concluded that the BSC did not consider commercial arrangements and that if a MOA was appointed then it had an obligation to resolve faults with the Metering System. Ultimately, it would be the Supplier’s responsibility, as Registrant, to ensure faults were resolved, though agents performance would continue to be monitored through the BSC Audit with rectification techniques applied where necessary.

1. Recommendations of the IREG

#### Proposed amendments

Following the Issue 73 discussions, ELEXON provided an update to the Issue Resolution Expert Group (IREG) at [its meeting on 14 August 2019](https://www.mrasco.com/latest-news/ireg-update-august-2019/).

At its meeting the IREG proposed some changes the solutions proposed by the Issue Group. It believed that the Unique Fault reference could be split across multiple fields rather than creating a long reference. This would reduce duplication, as items such as Metering System Identifier were already included in the flow.

The IREG believed that the original proposal to remove appointment details from the D0001 would have consequential impacts for the NHH market. However it suggested that as the flow was primarily used by NHH participants to book appointments, this could be replaced with the [D0142 ‘Request for Installation or Change to a Metering System Functionality or the Removal of All Meters’](https://dtc.mrasco.com/) to mitigate any unintended consequence.

The IREG was unanimous in its support of the option for LDSO involvement considered by the Issue Group where the fault remains open and responsibility is transferred, rather than a new fault being opened against the LDSO.

#### Recommended solution

The Issue Group held a teleconference on 27 September 2019 for Members to put forth their rationale and clarify their position on preferred solutions, taking into consideration the IREG discussions.

##### Changes to the process

The Issue Group did not believe that the D0142 flow would be the most appropriate to use for NHH faults, as doing so would mean redefining the purpose of the flow. Some members suggested that the D0005 would better suit this purpose, and other members thought that the appointment date could be left in the D0001 but made optional, for use in the NHH market.

After consideration, the Issue Group determined that the existing flows used in fault rectification (D0001, D0002, D0005) should remain and a new bespoke suite of flows could be created to replace the D0001, D0002 and D0005 for the HH fault rectification process. The new flows and associated process should also be supportive of sites that were moved out of the NHH market by Market Wide Half Hourly Settlement. The updated process should be clear on when and how MOAs should provide actin updates, and give the Supplier the ability to challenge an expected action date if it disagreed with the MOA. This would help ensure that updates are meaningful and empowered the Supplier to manage its agents. It would also include details of how a fault is escalated to the LDSO where needed.

The Group noted that there would be a transitional period, with any faults opened under the old process continuing to be addressed through the existing mechanisms.

##### Architecture of Unique Fault Reference.

The Issue Group considered the IREG’s proposal to split the Unique Fault Reference across multiple fields. In principle, it had no objection to this amendment, but wondered whether this would present challenges for DC systems. Some Members believed that it would be easier to keep the reference as one field, as the link would only need to be created once rather than cross-referencing at each stage of the process, which could introduce errors. The Issue Group noted that the architecture of the flows would not affect the BSC solution, which focusses on process, and agreed that the associated Data Transfer Catalogue changes needed to facilitate the solution could consult on how the Unique Fault reference should be presented.

##### Faults on LDSO owned equipment

The Issue Group discussed the amendment proposed by the IREG. Some Members disagreed that the MOA should keep the fault open in its systems while the LDSO completed work, believing that there would be a risk that this would lead people to believe that the MOA should be responsible for action taken. Other Members agreed that the MOA was not responsible for the fault while the LDSO carried out its investigations, but suggested that the fault should only be closed once it had been fully resolved. A Member commented that sites that required LDSO investigation were usually large sites that would have the potential to have a significant impact on Settlement accuracy, and that this would pose a risk if the audit trail was broken. A Member responded that as the Unique Fault Reference would prevail throughout the life of the fault and so the audit trail would be maintained.

Some Members were concerned that the BSC Audit may inaccurately raise non-compliances against MOAs where they were not actually responsible for taking action. ELEXON reassured the group that processes could be written in such a way to make it clear that the MOA had no responsibilities while an LDSO was carrying out work on its equipment.

A Member noted that the proposed SLA for LDSOs to complete its work was 40WD, and questioned whether there should be a requirement for the MOA to chase any faults that hasn’t been given updates during this time to ensure that faults were not left open unnecessarily. Other members expected that the Supplier should hold its agents to account and commented that to do so was in the best interest of the Supplier.

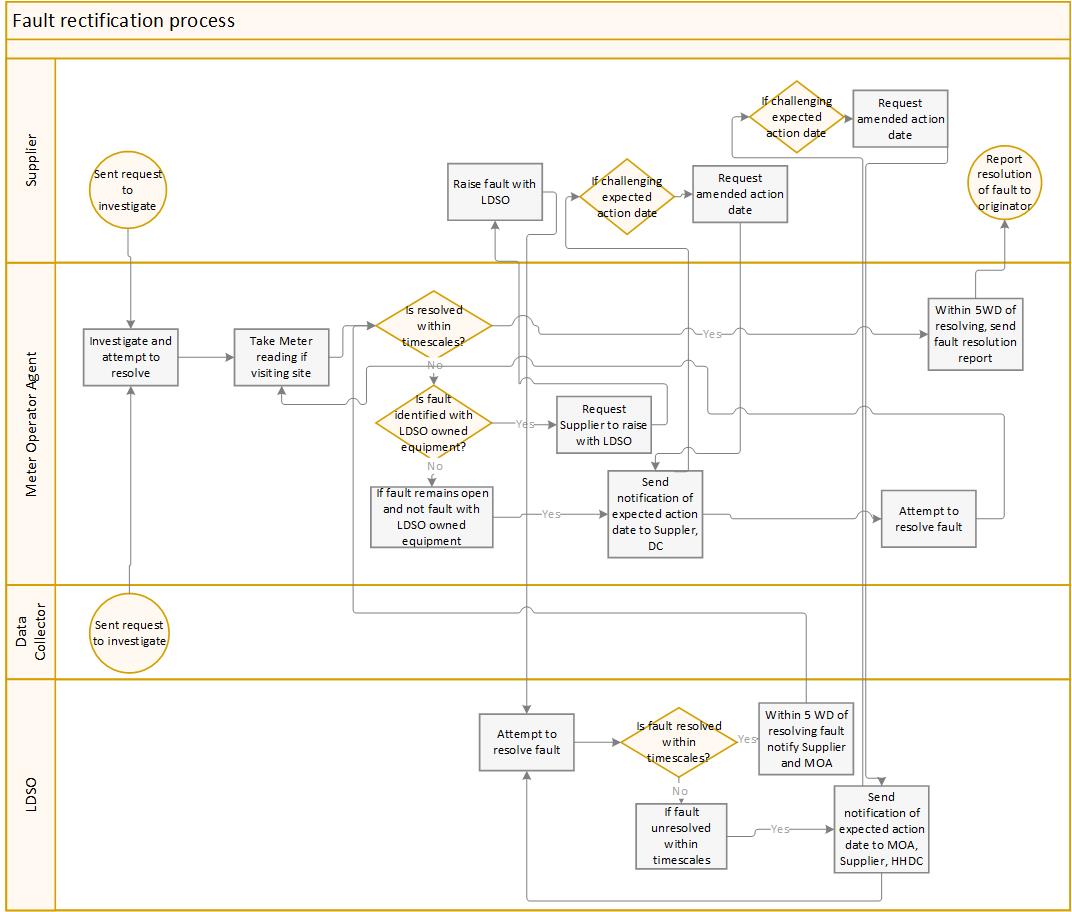
An Issue Group Member believed that the key question was whether a fault shouldn’t be closed off until the fault was rectified, or whether a fault shouldn’t be open with a party that was unable to take action. Members believed that the option proposed by IREG left scope for the MOA to request a fault to be closed, thus removing the event of D0001s being left open indefinitely with the MOA.

The Issue Group noted that the two solutions being considered benefitted different party types and that the disagreement between the Issue Group and the IREG could be because there were many Supplier Agents represented on the Issue Group, while the IREG was mostly attended by Suppliers. Members acknowledged this and noted that processes to ensure MOAs were not wrongly assigned non-compliances would be included in either solution. They also proposed that a ‘with LDSO’ code could be added to assist MOAs with managing faults that they were not responsible for.

The Issue Group voted by majority to recommend that the option whereby the fault remains open with the MOA, but is reassigned to the LDSO for investigation is progressed as a Change Proposal.

Appendix 1: High level process diagram

As part of its discussions, the Issue Group developed changed to the fault rectification communication process and reviewed redlined changes to the BSCPs to realise the changes. The below high level process diagram provides an overview of the HH fault rectification process proposed by Issue 73.



Appendix 2: Issue Group Membership

#### Issue Group membership and attendance

| Issue 73 Group Attendance | | | | | |
| --- | --- | --- | --- | --- | --- |
| Name | Organisation | 21/11/18 | 07/02/19 | 16/06/19 | 27/09/19 |
| Elliott Harper | ELEXON *(Chair)* | ✓ | 🗶 | 🗶 | ✓ |
| Douglas Alexander | ELEXON *(Chair)* | 🗶 | ✓ | ✓ | 🗶 |
| Matthew Woolliscroft | ELEXON *(Lead Analyst)* | ✓ | ✓ | ✓ | ✓ |
| Matt McKeon | ELEXON *(Design Authority)* | ✓ | ✓ | ✓ | 🗶 |
| Chris Day | ELEXON *(Metering Expert)* | ✓ | ✓ | ✓ | ✓ |
| Colin Gentleman | SSE *(Proposer)* | ✓ | ✓ | ✓ |  |
| Aaron Cumper | SMS | 🗶 |  |  |  |
| Alex Owen | WPD Smart Metering | ✓ | 🗶 | 🗶 | 🗶 |
| Andrea Duignan | WPD Smart Metering | ✓ | ✓ | ✓ |  |
| Andy Bevin | E.ON | 🗶 | ✓ | 🗶 | 🗶 |
| Carrie Anne Lewis | SMS |  |  |  |  |
| Colin Frier | Siemens | ✓ | 🗶 | 🗶 | 🗶 |
| Dan Rynne | IMServ | ✓ | ✓ | ✓ |  |
| Danielle Wilson | siemens | 🗶 | 🗶 | ✓ | 🗶 |
| David Tetley | Siemens | ✓ | 🗶 | ✓ |  |
| Donna Townsend | ESP | 🗶 |  | 🗶 | 🗶 |
| Ed Leech | IMServ | 🗶 | 🗶 | ✓ |  |
| Emma Edwards | E.ON | ✓ | ✓ | 🗶 | 🗶 |
| Gavin Beale | IMServ | 🗶 | ✓ | 🗶 | 🗶 |
| Hardeep Kaur | E.ON | ✓ | ✓ | 🗶 | 🗶 |
| Harpreet Ramchelawon | e.on | 🗶 | 🗶 | ✓ | 🗶 |
| Helen Cloud | SMS | 🗶 | 🗶 |  | 🗶 |
| Iain Parker | Siemens | ✓ | 🗶 | ✓ | 🗶 |
| Jaqui Barton | WPD | 🗶 | 🗶 | 🗶 |  |
| John Greene | SSE | ✓ | ✓ | ✓ | 🗶 |
| Jonny Moore | Engie | 🗶 |  | 🗶 |  |
| Kevin Mitchell | EDF | ✓ | 🗶 | 🗶 | 🗶 |
| Kristina Leary | SMS |  | 🗶 | 🗶 | 🗶 |
| Lee Stone | E.ON | ✓ | ✓ | ✓ |  |
| Meg Wong | STARK | 🗶 | ✓ | ✓ |  |
| Megan Coventry | SSE | 🗶 | 🗶 | 🗶 |  |
| Nicholas Sawyer | Npower |  |  |  |  |
| Nik Wills | STARK | ✓ | 🗶 | 🗶 | 🗶 |
| Richard Brady | WPD | 🗶 | 🗶 | 🗶 |  |
| Steve Wright | Npower | ✓ | 🗶 | 🗶 | 🗶 |
| Vanessa Longbottom | EDF | ✓ | ✓ | ✓ |  |
| Walter Hood | SP | ✓ | 🗶 | ✓ |  |
| Warren Lacey | Northern Powergrid | 🗶 | 🗶 | ✓ |  |
| Yvonne Haran | EDF | 🗶 | ✓ | 🗶 |  |

Appendix 3: Glossary & References

#### Acronyms

Acronyms used in this document are listed in the table below.

| Acronyms | |
| --- | --- |
| Acronym | Definition |
| BSC | Balancing and Settlement Code |
| FIRG | Fault Investigation Review Group |
| HH | Half Hourly |
| HHDC | Half Hourly Data Collector |
| IREG | Issue Resolution Expert Group |
| LDSO | Licensed Distribution System Operator |
| MOA | Meter Operator Agent |
| NHH | Non Half Hourly |
| SLA | Service Level Agreement |
| WD | Working Day |

#### DTC data flows and data items

DTC [data flows and data items](https://dtc.mrasco.com/) referenced in this document are listed in the table below.

| DTC Data Flows and Data Items | |
| --- | --- |
| Number | Name |
| D0001 | Request Metering System Investigation |
| D0002 | Fault Resolution Report or Request for Decision on Further Action |
| D0005 | Instruction on action |
| D0135 | Asset Condition Report |
| D0142 | Request for Installation or Change to a Metering System Functionality or the Removal of All Meters |
| J0024 | Site Visit Check Code |

#### External links

A summary of all hyperlinks used in this document are listed in the table below.

| External Links | | |
| --- | --- | --- |
| Pg | Description | URL |
| 2,3 | 2013 Fault Investigation process report | <https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-techniques/technical-assurance-performance-assurance-parties-within-performance-assurance-framework/> |
| 2 | BSC Audit reports | <https://www.elexon.co.uk/reference/performance-assurance/performance-assurance-techniques/bsc-audit-performance-assurance-framework/bsc-audit-reports/> |
| 4 | P283 on BSCCo Website | <https://www.elexon.co.uk/mod-proposal/p283> |
| 6 | Issue 72 on BSCCo Website | <https://www.elexon.co.uk/smg-issue/issue-72> |
| 8 | August ‘19 IREG meeting | <https://www.mrasco.com/latest-news/ireg-update-august-2019/> |