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SVA Qualification

Storyboards and Test Guidelines

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Purpose of Document

The purpose of this document is to provide guidelines for the storyboards and other tests that may be used by Party Agents as a basis of a test programme to meet the SVA Qualification requirements under the BSC.

[1] ELEXON Ltd is the Balancing and Settlement Code Company ('BSCCo'), pursuant to Annex X-1 of the Balancing and Settlement Code (BSC).

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1. INTRODUCTION

1.1. Background

As part of the Supplier Volume Allocation (SVA) Qualification Process under the Balancing and Settlement Code (BSC), Qualification Applicants are expected to design and execute their own testing to satisfy BSC requirements. ELEXON may either witness the execution of tests or review the results as appropriate as part of the Self Assessment Document (SAD) review process and in order to verify an applicants' responses to the SAD.

These guidelines provide a set of storyboards and other aids that can be used by applicants when designing a test programme to satisfy the Qualification Requirements.

Applicants wishing to become Qualified in the role(s) of Party Agents are recommended to use the Storyboards as much as possible in support of their responses to the Testing Requirements on business processes and data flows.

Applicants wishing to become Qualified in the role(s) of Half-Hourly (HH) or Non Half-Hourly (NHH) Data Collector (DC) or Data Aggregator (DA) are recommended to perform arithmetic tests at the start and end of their business process tests.

Applicants wishing to become Qualified in the roles of DCs, DAs or Supplier Meter Registration Agents (SMRAs) are recommended to demonstrate that their business processes and systems can operate:

- Consistently and robustly, and
- At the volumes they intend to operate at in the live market, ensuring that daily timescales can be achieved.

Applicants are required to provide a proposal of how they wish to undertake the appropriate testing and how they will meet each of the requirements.

These guidelines are to advise applicants on some of the ways that they can demonstrate compliance with the SAD requirements.

1.2. Applicability of the Storyboards

ELEXON has developed these storyboards to make the Qualification (and Re-Qualification) process easier to follow. The storyboards do not represent a definitive list of activities or a prescribed sequence to follow. Rather they clarify the objectives of the various scenarios as an aid for each applicant to produce its own business process tests. It is not obligatory to use them when going through the Qualification process.

As well as exercising the business processes relevant to the particular storyboards, your organisation will need to demonstrate its ability to send and receive all flows (e.g. Market Domain Data) and scheduled reports that are appropriate to its roles.

Applicants should also have processes to receive and respond to rejection messages for flows sent to other participants, i.e. they should be able to correct and re-send rejected flows.

Sections 2 and 3 cover the Non Half Hourly (NHH) and Half Hourly (HH) sectors of the market respectively. A Party Agent can operate in one or both sectors, so you should test the scenarios that are appropriate to your organisation.

If any information in this document conflicts with the BSC, the BSC takes precedence.

1.3. Structure of the Storyboards

Each storyboard has the following structure:

- Title: This starts with the storyboard reference (e.g. AGS401) and contains a descriptive title for the scenario. The reference is coded within the following meanings:
    - AGS4xx – Agent Storyboard: NHH.
    - AGS5xx – Agent Storyboard: HH.
- Applicant Role: Denotes the roles to be performed in the scenario. You take the market role(s) appropriate to you. Other market roles don't need to be performed but you need to simulate inputs from other roles.
- Associated Joint Storyboards: These refer to storyboards developed jointly by ELEXON and MRASCo for business scenarios from the perspective of Suppliers and Licensed Distribution System Operators (LDSOs). The reference is coded within the following meanings:
    - JSS0xx – Joint Storyboard for Supplier role; NHH.
    - JSS1xx – Joint Storyboard for Supplier role; HH.
    - JSD2xx – Joint Storyboard for LDSO role; NHH.
    - JSD3xx – Joint Storyboard for LDSO role; HH.
- Initial Conditions: Sets out the conditions needed before the scenario can begin. In some cases this involves significant preparation for the organisation under test.
- The Story: Gives a step-by-step description of events that occur in the scenario. The events are described in business terms and you will need to interpret these into technical activities. Normal business processes should be used for the completion of these key events.

  Some events are described that will not involve you. These don't need to be actioned by you but you may need to simulate their effects.
- Final Conditions: Sets out the conditions that should prevail when the scenario has been completed. The scenario isn't complete until all of the final conditions are met that are appropriate to you.
- Variations: Indicate optional variations to the scenario. Some of these are additional or alternative business events; others replace or modify elements of the initial conditions. A re-interpretation of the final conditions may be needed. The assessment body concerned may request that a particular variation is invoked.

1.4. Completion of the Storyboards

When using the storyboards, you should create all flows that would be sent by you while performing the market role covered by the scenario. In addition, you need to simulate flows that would normally be received during completion of the scenarios. This includes manual as well as automated information flows.

It is not mandatory to follow normal operational timings when carrying out the scenarios.

Most of the storyboards describe 'normal' business processes. Some scenarios and variations focus on exceptional situations, giving you the opportunity to demonstrate your ability to respond to unusual circumstances.

1.5. Arithmetic Accuracy Testing

Applicants are expected to create a test strategy that verifies the arithmetic accuracy of their organisation's systems.

This test strategy should comprise a number of elements, relating to the input of logical pre-requisite data, inputs (meter readings) and corresponding expected results.

Tests should be completed based on the roles for which you are seeking Qualification - Half Hourly (HH) and Non Half Hourly (NHH) market sectors, or both.

Section 4 contains guidelines on the scope of arithmetic testing.

1.6. Performance, Capacity and Resilience Testing

Applicants are expected to create a test strategy that defines the actions necessary to facilitate their organisation's performance, capacity and resilience testing.

This test strategy should comprise a number of discrete elements, relating to:

- Processing meter readings
- Aggregation of data
- Variation activities
- Resilience tests

If you prefer to use an alternative way of verifying the performance and resilience of your systems, then that is permissible as long as the scope and thoroughness of your testing is equivalent.

Tests should be completed based on the roles for which you are seeking Qualification - Half Hourly (HH) and Non Half Hourly (NHH) market sectors, or both.

Section 5 contains guidelines on the scope of performance, capacity and resilience tests.

2. NON HALF-HOURLY STORYBOARDS

2.1. AGS401: NHH Change of Supplier, MO, DC and DA (concurrent)

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: JSS001, JSS002, JSD201

1. Initial Conditions:

    1.1. The Metering System (MS) is registered to the old Supplier with the LDSO's Supplier Metering Registration Agent (SMRA).

    1.2. Appointments are in place with all of the appropriate (old) agents.

    1.3. Previous valid meter readings, Estimated Annual Consumption (EAC) and Annualised Advance (AA) are held at the old Non Half Hourly Data Collector (NHHDC) and Non Half Hourly Data Aggregator (NHHDA) as appropriate.

    1.4. The MS is energised.

    1.5. The old Supplier, its agents and the SMRA have retained evidence of the above.

    1.6. The customer has received a quotation for supply and has agreed terms with the new Supplier.

2. The Story:

    2.1. The new Supplier registers liability for the metering system with the SMRA and receives back confirmation and details of the old Supplier's registration details. It also notifies the SMRA of the new agents' details.

    2.2. The new Supplier notifies all its agents (which are different from the old Supplier's) of the start of their appointments, which are all accepted.

    2.3. The SMRA notifies the old Supplier of its loss of liability. There is no objection from the old Supplier.

    2.4. The old NHHDA is notified by the SMRA of the end of its appointment.

    2.5. The new NHHDA is notified by the SMRA of the start of its appointment and that of the NHHDC.

    2.6. All appropriate customer and MS information is exchanged between agents, including Customer Own Reading (COR).

    2.7. The old Supplier notifies its agents of the end of their appointments.

    2.8. The new NHHDC requests and receives MS history and EAC/AA data from the old NHHDC.

    2.9. The new NHHMO notifies the Supplier, the other agents and the LDSO of relevant Meter Technical Details (MTD) and mapping details.

    2.10. The new NHHDC requests and receives settlement details for the MS from the new Supplier.

    2.11. The new NHHDC sends the new Supplier and the LDSO confirmation of the inclusion of the MS in the reading schedules.

2.12. The new NHHDC notifies the new Supplier, LDSO and old NHHDC of valid readings.

2.13. The old NHHDC provides validated readings to the old Supplier.

2.14. The old and new NHHDCs calculate EAC/AAs and send them to the old and new Suppliers and NHHDAs as appropriate.

2.15. The old and new NHHDAs aggregate data for the day before the change and the day of the change, as appropriate.

3. Final Conditions:

3.1. The SMRA has recorded all of the changes to registration details, terminated the old Supplier, advised the new Supplier of the old Supplier's agents and settlement configuration, and notified the old and new NHHDAs accordingly.

3.2. The new NHHMO has received notice of its appointment and identified the Grid Supply point (GSP) Group. It has confirmed its appointment to the new Supplier. It has obtained MTD from the old NHHMO and responded to the new NHHDC's request for MTD.

3.3. The old NHHMO has received notice of its loss of appointment and responded to the new NHHMO's request for MTD.

3.4. The new NHHDC has received notice of its appointment and identified the GSP Group. It has requested and received MTD and reading history. It has obtained a COR reading and forwarded it to the appropriate parties.

3.5. The old NHHDC has received notice of its loss of appointment. It has responded to requests for meter reading history and MTD and forwarded them as required.

3.6. The new NHHDA has received notice of its appointment from the SMRA and received and aggregated the EAC from the new NHHDC.

3.7. The old NHHDA has received notice of its loss of appointment from the SMRA and received and aggregated the final AA from the old NHHDC.

3.8. For the day prior to the change Initial Supplier Volume Allocation was on the basis of the AA which is calculated using the CoS reading. The consumption was attributed to the old Supplier by the old NHHDC and aggregated by the old NHHDA.

3.9. For the effective day of the change Initial Supplier Volume Allocation was on the basis of the EAC which is calculated with the above AA. The estimated consumption was attributed to the new Supplier by the new NHHDC and aggregated by the new NHHDA.

3.10. Throughout the scenario notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.11. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The Customer has recently been registered as a special needs person by the local authority.

2. The Supplier may use a full or skeleton registration that will impact on the content and quantities of appointment flows. A full registration is one where the initial registration contains all the required information without the need for any subsequent registration updates. A skeleton registration may imply use of the old agents by default, if no details of new ones are subsequently provided (in which case the final conditions will be appropriately different).
3. The old NHHDC does not provide valid EAC/AA history.
4. The new Supplier disputes the CoS reading prior to first reconciliation. A new COR is agreed with the old Supplier. The original reading is withdrawn and the new NHHDC calculates a deemed reading for the CoS date. New EAC/AA values are calculated and used in the next aggregation.
5. The new Supplier does not inform the new NHHMO who the new NHHDC is. The new NHHMO must identify the missing information and obtain it from the Supplier.
6. The meter reading does not have to be COR. Alternative reading types may be used by making arrangements with the appropriate agents.
7. There may be no change of Supplier, just a change of agents; or there may be only a change of one or some of the agents.

2.2. AGS402: NHH Change of Supplier, MO, DC, DA, and M.S.

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: JSS001, JSS002, JSS012, JSD207

1. Initial Conditions:

   1.1. The Metering System (MS) is registered to the old Supplier with the LDSO's Supplier Metering Registration Agent (SMRA).

   1.2. Appointments are in place with all of the appropriate (old) agents.

   1.3. Previous valid meter readings, EAC and AA are held at the old NHHDC and NHHDA as appropriate.

   1.4. The MS is energised.

   1.5. The old Supplier, its agents and the SMRA have retained evidence of the above.

   1.6. The customer has received a quotation for supply and has agreed terms with the new Supplier.

2. The Story:

   2.1. The new Supplier registers liability for the metering system with the SMRA and receives back confirmation of change of liability and the Supply Start Date (SSD) and details of the old Supplier's registration details. It also notifies the SMRA of the new agents' details.

   2.2. The new Supplier notifies all its agents (which are different from the old Supplier's) of the start of their appointments, which are all accepted.

   2.3. The SMRA notifies the old Supplier of its loss of liability for the MS. There is no objection from the old Supplier.

   2.4. The old Non Half Hourly Data Aggregator (NHHDA) is notified by the SMRA of the end of its appointment.

   2.5. The new NHHDA is notified by the SMRA of the start of its appointment and that of the Non Half Hourly Data Collector (NHHDC).

   2.6. All appropriate customer and MS information is exchanged between agents, including Customer Own Reading (COR).

   2.7. The old Supplier notifies its agents of the end of their appointments.

   2.8. The new NHHDC requests and receives MS history and EAC/AA data from the old NHHDC.

   2.9. The new NHHMO notifies the Supplier, the new NHHDC and the LDSO of relevant MTD and mapping details as appropriate.

   2.10. The new NHHDC requests and receives settlement details for the MS from the new Supplier.

   2.11. The new NHHDC sends the new Supplier and the LDSO confirmation of the inclusion of the MS in the reading schedules.

   2.12. The new Supplier requests the new NHHMO to replace the meter, which it does.

2.13. The new NHHMO then notifies the Supplier, LDSO and new NHHDC of the mapping and MTD. It also informs the new NHHDC of the final meter reading of the old meter and the initial reading of the new one.

2.14. The new NHHDC notifies the new Supplier, LDSO and old NHHDC of valid readings.

2.15. The old NHHDC provides validated readings to the old Supplier.

2.16. The old and new NHHDCs calculate EAC/AAs and send them to the old and new Suppliers and NHHDAs as appropriate.

2.17. The old and new NHHDAs aggregate data for the day before the change and the day of the change, as appropriate.

3. Final Conditions:

3.1. The SMRA has recorded all of the changes to registration details, terminated the old Supplier, advised the new Supplier of the old Supplier's agents and settlement configuration, and notified the old and new NHHDAs accordingly.

3.2. The new NHHMO has received notice of its appointment and identified the GSP Group. It has confirmed its appointment to the new Supplier. It has obtained MTD from the old NHHMO and responded to the new NHHDC's request for MTD. It has responded to the request to change the meter and advised the other parties appropriately.

3.3. The old NHHMO has received notice of its loss of appointment and responded to the new NHHMO's request for MTD.

3.4. The new NHHDC has received notice of its appointment and identified the GSP Group. It has requested and received MTD and reading history. It has received final readings for the old meter and initial readings for the new one and forwarded them to the appropriate parties.

3.5. The old NHHDC has received notice of its loss of appointment. It has responded to requests for meter reading history and MTD and forwarded them as required. It has received the final reading for the old meter.

3.6. The new NHHDA has received notice of its appointment from the SMRA and received and aggregated the EAC from the new NHHDC.

3.7. The old NHHDA has received notice of its loss of appointment from the SMRA and received and aggregated the final AA from the old NHHDC.

3.8. For the day prior to the change Initial Supplier Volume Allocation was on the basis of the AA which is calculated using the CoS reading. The consumption was attributed to the old Supplier by the old NHHDC and aggregated by the old NHHDA.

3.9. For the effective day of the change Initial Supplier Volume Allocation was on the basis of the EAC which is calculated with the above AA. The estimated consumption was attributed to the new Supplier by the new NHHDC and aggregated by the new NHHDA.

3.10. Throughout the scenario notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.11. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The Supplier may use a full or skeleton registration that will impact on the content and quantities of appointment flows. A full registration is one where the initial registration contains all the required information without the need for any subsequent registration updates. A skeleton registration may imply use of the old agents by default, if no details of new ones are subsequently provided (in which case the final conditions will be appropriately different).
2. There may be no change of Supplier, just a change of agents; or there may be only a change of one or some of the agents.

2.3. AGS403: NHH Change of Supplier, MO, DC, DA, Invalid Meter Reading from DC

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: JSS004, JSD202

1. Initial Conditions:

    1.1. The Metering System (MS) is registered to the old Supplier with the SMRA.

    1.2. Appointments are in place with all of the appropriate (old) agents.

    1.3. Previous valid meter readings, EAC and AA are held at old NHHDC and NHHDA as appropriate.

    1.4. The MS is energised.

    1.5. The old Supplier, its agents and the SMRA have retained evidence of the above.

    1.6. The customer has received a quotation for supply and has agreed terms with the new Supplier.

2. The Story:

    2.1. The new Supplier registers liability for the metering system with the SMRA and receives back confirmation and details of the old Supplier's registration details. It also notifies the SMRA of the new agents' details.

    2.2. The new Supplier notifies all its agents (which are different from the old Supplier's) of the start of their appointments, which are all accepted.

    2.3. The SMRA notifies the old Supplier of its loss of liability. There is no objection from the old Supplier.

    2.4. The old Non Half Hourly Data Aggregator (NHHDA) is notified by the SMRA of the end of its appointment.

    2.5. The new NHHDA is notified by the SMRA of the start of its appointment and that of the Non Half Hourly Data Collector (NHHDC).

    2.6. All appropriate customer and MS information is exchanged between agents, including Customer Own Reading (COR).

    2.7. The old Supplier notifies its agents of the end of their appointments.

    2.8. The new NHHDC requests and receives MS history and EAC/AA data from the old NHHDC.

    2.9. The new NHHMO notifies the Supplier, the other agents and the LDSO of relevant MTD and mapping details.

    2.10. The new NHHDC processes an invalid meter reading, and sends an invalid data report to the LDSO, new Supplier and old NHHDC.

    2.11. The new Supplier requests the new NHHDC to provide a meter reading to replace the COR previously obtained.

    2.12. The new NHHDC notifies the new Supplier, LDSO and old NHHDC of valid CoS readings.

2.13. The new NHHDC requests and receives settlement details for the MS from the new Supplier.

2.14. The new NHHDC sends the new Supplier and the LDSO confirmation of the inclusion of the MS in the reading schedules.

2.15. The old NHHDC provides validated readings to the old Supplier.

2.16. The old and new NHHDCs calculate EAC/AAs and send them to the old and new Suppliers and NHHDAs as appropriate.

2.17. The old and new NHHDAs aggregate data for the day before the change and the day of the change, as appropriate.

3. Final Conditions:

3.1. The SMRA has recorded all of the changes to registration details, terminated the old Supplier, advised the new Supplier of the old Supplier's agents and settlement configuration, and notified the old and new NHHDAs accordingly.

3.2. The new NHHMO has received notice of its appointment and identified the GSP Group. It has confirmed its appointment to the new Supplier. It has obtained MTD from the old NHHMO and responded to the new NHHDC's request for MTD.

3.3. The old NHHMO has received notice of its loss of appointment and responded to the new NHHMO's request for MTD.

3.4. The new NHHDC has received notice of its appointment and identified the GSP Group. It has requested and received MTD and reading history. It has sent an invalid data report, then obtained a valid COS reading and forwarded it to the appropriate parties.

3.5. The old NHHDC has received notice of its loss of appointment, also an invalid data report for the COR. It has responded to requests for meter reading history and MTD and forwarded them as required.

3.6. The new NHHDA has received notice of its appointment from the SMRA and received and aggregated the EAC from the new NHHDC.

3.7. The old NHHDA has received notice of its loss of appointment from the SMRA and received and aggregated the final AA from the old NHHDC.

3.8. For the day prior to the change Initial Supplier Volume Allocation was on the basis of the AA which is calculated. The consumption was attributed to the old Supplier by the old NHHDC and aggregated by the old NHHDA.

3.9. For the effective day of the change Initial Supplier Volume Allocation was on the basis of the EAC which is calculated with the above AA. The estimated consumption was attributed to the new Supplier by the new NHHDC and aggregated by the new NHHDA.

3.10. Throughout the scenario notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.11. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The Supplier may use a full or skeleton registration that will impact on the content and quantities of appointment flows. A full registration is one where the initial registration contains all the required information without the need for any subsequent registration updates. A skeleton registration may imply use of the old agents by default, if no details of new ones are subsequently provided (in which case the final conditions will be appropriately different).
2. The new NHHMO does not receive the MTD and mapping details from the old NHHMO and has to request them.

2.4. AGS404: NHH Change of SSC and TPR

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: JSS007, JSD208

1. Initial Conditions:

    1.1. The Metering System (MS) is registered to the Supplier with the LDSO's Supplier Metering Registration Agent (SMRA).

    1.2. Appointments are in place with all of the appropriate agents

    1.3. Previous valid meter readings, EAC and AA are held at the NHHDC and NHHDA as appropriate

    1.4. The MS is energised.

    1.5. The Supplier, its agents and the SMRA have retained evidence of the above.

2. The Story:

    2.1. The Supplier requests the NHHMO to reprogram the meter registers. The required change to the meter will require changes to the Standard Settlement Class (SSC) and Time Pattern Regime (TPR)).

    2.2. The NHHMO determines if the proposed combination of SSC/TPR/MTC is valid in the GSP Group and notifies the Supplier, NHHDC and LDSO of the new Meter Technical Details (MTD) and the new mapping of physical registers to TPRs.

    2.3. The SMRA is notified of the changes by the Supplier and in turn notifies the NHHDA.

    2.4. The NHHDC is notified of the initial class average EAC for each Settlement Register associated with the new SSC by the Supplier.

    2.5. The NHHMO passes the final meter reading(s) for the old register configuration and the initial reading(s) for the new one to the NHHDC for validation.

    2.6. The NHHDC sends validated readings to the Supplier and LDSO.

    2.7. The NHHDCs calculates EAC/AAs and sends them to the Supplier and NHHDA.

    2.8. The NHHDA aggregates data for the day before the change and the day of the change, as appropriate.

3. Final Conditions:

    3.1. The SMRA has confirmed the changes of SSC and MTC and notified the NHHDA.

    3.2. The NHHMO has received a request to re-program the meter registers and notified the Supplier, LDSO and NHHDC of the changes.

    3.3. The NHHDC has been notified of the changes and forwarded readings to the appropriate parties. Appropriate consumption was attributed to the Supplier.

    3.4. The NHHDA has been notified of the changes to SSC and received and aggregated the EAC/AA from the NHHDC.

3.5. For the day prior to the change Initial Supplier Volume Allocation would be on the basis of the AA which is calculated using the final reading from the old meter. For the effective day of the change Initial Supplier Volume Allocation would be on the basis of the EAC information provided by the Supplier.

3.6. Throughout the scenario notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.7. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The Supplier instructs the NHHDC to change the Profile Class of the metering point where no physical change of meter is required.
2. The SMRA fails to receive the registration updates for the new metering details. As a result, exception reports are sent to the Supplier and corrective actions taken.
3. The NHHDC is unable to obtain the required initial readings, so informs the Supplier and acts on its instructions.
4. The reprogramming may not require all of the suggested changes to be effected.

2.5. AGS405: NHH Credit Meter Replaced with Prepayment Meter

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: JSS013, JSD208

1. Initial Conditions:

    1.1. The Metering System (MS) is registered to the Supplier with the LDSO's Supplier Metering Registration Agent (SMRA).

    1.2. Appointments are in place with all of the appropriate agents

    1.3. Previous valid meter readings, EAC and AA are held at the NHHDC and NHHDA as appropriate

    1.4. The MS is energised.

    1.5. The Supplier, its agents and the SMRA have retained evidence of the above.

    1.6. The Supplier has decided to replace the credit meter with a prepayment meter (PPM) that is appropriate for the LDSO or geographical area. The required change will require changes to the Standard Settlement Class (SSC).

2. The Story:

    2.1. The Supplier requests the NHHMO to replace a meter with the appropriate type of PPM.

    2.2. The NHHMO replaces the meter, advises the Supplier of the successful installation and the NHHDC of the final readings for the credit meter and initial readings for the new PPM.

    2.3. The NHHMO notifies the Supplier, LDSO and NHHDC of the Meter Technical Details (MTD) and mapping of physical registers to TPRs for the PPM.

    2.4. The SMRA is notified by the Supplier of the change to the SSC and notifies the LDSO and NHHDA accordingly.

    2.5. The NHHDC is informed by the Supplier of the changed SSC and the Initial EAC.

    2.6. The NHHDC sends validated readings to the Supplier and LDSO.

    2.7. The NHHDC calculates EAC/AA values and sends them to the Supplier and NHHDA.

    2.8. The NHHDA aggregates data for the day before the change and the day of the change, as appropriate.

3. Final Conditions:

    3.1. The credit meter has been replaced with a PPM.

    3.2. The SMRA has confirmed the changes of SSC and notified the LDSO and NHHDA.

    3.3. The NHHMO has received a request to change the meter and notified the Supplier, LDSO and NHHDC of the changes.

    3.4. The NHHDC has been notified of the changes and forwarded readings to the appropriate parties. Appropriate consumption has been attributed to the Supplier.

3.5. The NHHDA has been notified of the changes to SSC and received and aggregated the EAC/AA from the NHHDC.

3.6. For the day prior to the change Initial Supplier Volume Allocation would be on the basis of the AA which is calculated using the final reading from the old meter. For the effective day of the change Initial Supplier Volume Allocation would be on the basis of the EAC information provided by the Supplier.

3.7. Throughout the scenario notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.8. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. Replacement with various types of PPM (key, token or smart).
2. For the type of PPM chosen, the new meter configuration may not require a change of SSC.
3. For Smartcard meters or any variants of Token or Key meters where the PPM Infrastructure Provider (PPMIP) obtains meter readings, the story may be extended as follows:

   Remotely collected meter readings are forwarded by the Supplier to the NHHDC, who validates the readings and forwards them to the NHHDA for inclusion in the next allocation run (i.e. 1st reconciliation).

2.6. AGS406: NHH Withdrawal of Meter Reading

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: N/A

1. Initial Conditions:

    1.1. The Metering System (MS) is registered to the Supplier with the LDSO's Supplier Metering Registration Agent (SMRA).

    1.2. Appointments are in place with all of the appropriate agents

    1.3. Previous valid meter readings, EAC and AA are held at the NHHDC and NHHDA as appropriate

    1.4. The MS is energised.

    1.5. The NHHDC has calculated AA/EACs based on the valid meter data for the day before and the day of the last reading, and sent them to the NHHDA.

    1.6. The NHHDA has carried out an Initial Settlement (SF) aggregation run for both days.

    1.7. The Supplier, its agents and the SMRA have retained evidence of the above.

2. The Story:

    2.1. The NHHMO notifies the NHHDC and Supplier of an invalid reading and the associated metering faults. After the fault is corrected, the NHHMO sends an initial meter reading to the NHHDC.

    2.2. The NHHDC withdraws the invalid meter reading (back to the last valid meter reading) and the AA/EACs relating to the period at fault. It informs the Supplier and LDSO of the invalid meter reading.

    2.3. NHHDC produces a Valid Data Report for the initial meter reading and sends it to the Supplier.

    2.4. The NHHDC sends a revised AA and EAC to the NHHDA and Supplier based on the last valid meter reading. The NHHDC assigns last valid EAC to AA from the last valid reading to the day prior to the NHHMO visit and calculates a new EAC.

    2.5. The NHHDC sends validated readings to the Supplier and LDSO.

    2.6. The NHHDA carries out the Reconciliation aggregation runs for the day before the last (invalid) reading and the day of the reading.

3. Final Conditions:

    3.1. The NHHMO has notified the NHHDC of the invalid reading and the metering faults, and has also sent an initial meter reading, taken after the fault has been corrected, to the NHHDC.

    3.2. The NHHDC has been notified of the changes and forwarded readings to the appropriate parties. Appropriate consumption has been attributed to the Supplier.

    3.3. The NHHDA has been notified of the changes to SSC and received and aggregated the EAC/AA from the NHHDC.

    3.4. The Reconciliation Volume Allocation run has demonstrated the successful withdrawal of the AAs and EACs.

3.5. Throughout the scenario notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.6. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The NHHMO, Supplier or LDSO could all potentially notify the Data Collector of an invalid reading.

2.7. AGS407: NHH De-Energisation

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: JSS009, JSD205

1. Initial Conditions:

    1.1. The Metering System (MS) is registered to the Supplier with the LDSO's Supplier Metering Registration Agent (SMRA) with all Registration Data items set.

    1.2. Appointments are in place with all of the appropriate agents.

    1.3. Previous valid meter readings, EAC and AA are held at the NHHDC and NHHDA as appropriate.

    1.4. The MS is energised.

    1.5. The customer has approached the Supplier to request temporary de-energisation of the meter.

    1.6. The Supplier, its agents and the SMRA have retained evidence of the above.

2. The Story:

    2.1. The NHHMO receives a request from the Supplier to de-energise the meter.

    2.2. After de-energising the meter, the NHHMO advises the Supplier, the NHHDC and the LDSO of the changed energisation status and the final meter reading.

    2.3. The SMRA is advised of the changed energisation status by the Supplier, and notifies the NHHDA of the changes.

    2.4. The NHHDC calculates EAC/AA values for the Meter Advance Period and sends them to the NHHDA and Supplier.

    2.5. The NHHDC sends validated readings to the Supplier and LDSO.

    2.6. The NHHDA carries out the aggregation runs for the day before and the day of the de-energisation.

3. Final Conditions:

    3.1. The NHHMO has received and confirmed a request from the Supplier to de-energise the meter. It has confirmed the change of energisation status with the LDSO and sent the final meter readings.

    3.2. The NHHDC has been notified of the changes and forwarded readings to the appropriate parties. The appropriate consumption has been attributed to the Supplier for the day before and the day of the de-energisation.

    3.3. The NHHDA has been notified of the energisation changes by the SMRA and received and aggregated the EAC/AA from the NHHDC.

    3.4. Throughout the scenario notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

    3.5. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

   The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

   1. (None currently suggested.)

2.8. AGS408: NHH De-Energisation & Disconnection

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: JSS010, JSD206

1. Initial Conditions:

    1.1. The Metering System (MS) is registered to the Supplier with the LDSO's Supplier Metering Registration Agent (SMRA) with all Registration Data items set.

    1.2. Appointments are in place with all of the appropriate agents

    1.3. Previous valid meter readings, EAC and AA are held at the NHHDC and NHHDA as appropriate

    1.4. The MS is energised.

    1.5. The customer has approached the Supplier to request disconnection of the meter.

    1.6. The Supplier has requested disconnection from the LDSO.

    1.7. The Supplier, its agents and the SMRA have retained evidence of the above.

2. The Story:

    2.1. The NHHMO receives a request from the Supplier to de-energise and remove the meter.

    2.2. The NHHDC, NHHDA and NHHMO all receive notice from the Supplier that their appointments are to be terminated.

    2.3. After de-energising and disconnecting the meter, the NHHMO advises the Supplier, the NHHDC and the LDSO of the changed energisation status and the final meter reading.

    2.4. The SMRA is advised of the changed energisation status by the Supplier, and notifies the NHHDA accordingly. When advised by the LDSO, it confirms the disconnection to the Supplier.

    2.5. The NHHMO advises the Supplier, LDSO and NHHDC that the meter has been disconnected and sends Meter Technical Details (MTD).

    2.6. The NHHDC calculates AA values for the Meter Advance Period and sends them to the NHHDA and Supplier.

    2.7. The NHHDC sends validated readings to the Supplier and LDSO.

    2.8. The NHHDA carries out the aggregation runs for the day before and the day of the de-energisation.

3. Final Conditions:

    3.1. The NHHMO has received notice of its de-appointment and confirmed a request from the Supplier to de-energise and removed the disconnected meter. It has sent the final reading. It has confirmed the disconnection with the LDSO, Supplier and NHHDC and sent the final meter readings.

    3.2. The NHHDC has been notified of the changes and forwarded readings to the appropriate parties. The appropriate consumption has been attributed to the Supplier for the day before and the day of the de-energisation.

3.3. The NHHDA has been notified of its de-appointment and the disconnection by the SMRA and received and aggregated the AA from the NHHDC.

3.4. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.5. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. (None currently suggested.)

2.9. AGS409: NHH Re-Energisation

Applicant Role: Party Agents (SMRA, NHHMO, NHHDC, NHHDA)

Associated Joint Storyboards: JSS011

1. Initial Conditions:

    1.1. The Metering System (MS) is registered to the Supplier with the SMRA with all Registration Data items set.

    1.2. Appointments are in place with all of the appropriate agents.

    1.3. Previous valid meter readings, EAC and AA are held at the NHHDC and NHHDA as appropriate.

    1.4. The MS is de-energised.

    1.5. The customer has approached the Supplier to request re-energisation of the meter.

    1.6. The Supplier, its agents and the SMRA have retained evidence of the above.

2. The Story:

    2.1. The NHHMO receives a request from the Supplier to re-energise the meter.

    2.2. After re-energising the meter, the NHHMO advises the Supplier, the NHHDC and the LDSO of the changed energisation status and the initial meter reading.

    2.3. The SMRA is advised of the changed energisation status by the Supplier, and notifies the NHHDA accordingly. When advised by the LDSO, it confirms the energisation to the Supplier.

    2.4. The NHHDC calculates EAC values for the Meter Advance Period and sends them to the NHHDA and Supplier. The NHHDC sends initial readings to the Supplier and LDSO.

    2.5. The NHHDA carries out the aggregation runs for the day before and the day of the re-energisation.

3. Final Conditions:

    3.1. The NHHMO has received and confirmed a request from the Supplier to re-energise the meter. It has confirmed the re-energisation with the LDSO, Supplier and NHHDC and sent the initial meter reading.

    3.2. The NHHDC has been notified of the changes and forwarded readings to the appropriate parties. The appropriate consumption has been attributed to the Supplier for the day before and the day of the re-energisation.

    3.3. The NHHDA has been notified of the re-energisation by the SMRA and received and aggregated the EAC from the NHHDC.

    3.4. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

    3.5. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The Supplier does not notify the SMRA of the re-energisation so the SMRA does not notify the NHHDA. For the day of re-energisation, the NHHDA attributes zero consumption instead of using the new EAC supplied by the NHHDC, as the Metering System is de-energised according to the SMRA. An exception is identified from an Exception Report during the Initial Supplier Volume Allocation processing.

   Resolution: The NHHDA requests a comparison of NHHDC and SMRA data and the Supplier is notified of the discrepancy in the Energisation Status. The Supplier notifies the SMRA, who in turn notifies the NHHDA. In the next aggregation run for the day of re-energisation, the NHHDA will use the new EAC supplied by the NHHDC.

2. The Meter Operator goes on site but cannot energise the Metering System due to a damaged supply cable. The Supplier is informed of this and tasks the Distributor with the energisation. The Distributor successfully energises the meter, takes an initial meter reading and notifies the Supplier of the successful re-energisation.

2.10. AGS410: NHH to HH - Change of Measurement Class

Applicant Role: Party Agents (SMRA, NHHMO, HHMO, NHHDC, HHDC, NHHDA, HHDA)

Associated Joint Storyboards: JSS111, JSD318

1. Initial Conditions:

    1.1. The NHH Metering System (MS) is registered to the Supplier with the SMRA with all Registration Data items set.

    1.2. Appointments are in place with all of the appropriate NHH agents.

    1.3. Previous valid meter readings, EAC and AA are held at the NHHDC and NHHDA as appropriate

    1.4. The NHH MS is energised.

    1.5. The Customer has approached the Supplier with a view to changing the metering to Half Hourly, has accepted the contractual terms offered by the Supplier and has instructed that the change of metering should proceed.

    1.6. The Supplier, its agents and the SMRA have retained evidence of the above.

2. The Story:

    2.1. The HH agents receive their appointments to the HH metering system from the Supplier, they confirm their acceptance and receive details of the other agents, Customer details, the NHH Metering System and the required settlement configuration.

    2.2. The Supplier terminates the NHHMO, NHHDC and NHHDA appointments and notifies the SMRA of the change of Measurement Class and the HH agent appointments.

    2.3. The Supplier requests the new HHMO to install an HH meter.

    2.4. The HHMO requests Site Technical Details from the LDSO.

    2.5. The NHHMO provides the HHMO with technical and mapping details of the old NHH meter.

    2.6. After replacing the meter, the NHHMO sends a final meter reading for the removed MS to the NHHDC.

    2.7. The HHMO confirms the installation of the HH meter to the Supplier, LDSO and HHDC, and provides initial meter register readings as necessary.

    2.8. The NHHMO notifies the Supplier, NHHDC and LDSO of Meter Technical Details (MTD) for the removed MS.

    2.9. The HHMO requests a proving test from the HHDC and confirms the final NHH readings with the NHHMO.

    2.10. The HHDC provides the HHMO with initial HH advances.

    2.11. The HHMO reports the successful proving test to the HHDC, Supplier and LDSO.

2.12. The SMRA confirms the changes of Measurement Class and Data Collector appointment to the LDSO and Supplier, informs the NHHDA of the termination of its appointment and the HHDA of the start of its appointment.

2.13. The HHDC confirms the reading schedule to the Supplier and LDSO. It collects meter data for the day of the change and sends it to the Supplier, LDSO and HHDA.

2.14. The NHHDC sends the final meter readings to the Supplier and LDSO. It calculates the AA and revised EAC and notifies the Supplier and NHHDA.

2.15. The NHHDA and HHDA carry out the appropriate aggregation runs.

2.16. For the day before the change, consumption is attributed to the Supplier via the NHHDA but none is attributed via the HHDA.

2.17. For the day on which the HH meter is installed, consumption is attributed to the Supplier via the HHDA but not via the NHHDA.

3. Final Conditions:

3.1. Appointments are in place with all of the appropriate HH agents.

3.2. The SMRA has received notice of the change in measurement class along with the de-appointment of the old agents and the appointment of the new agents, which is acknowledged and passed to the NHHDA and HHDA.

3.3. The NHHMO has received notification of the termination of its appointment from the Supplier. It has sent a final meter reading for the removed MS to the NHHDC and notified the Supplier and NHHDC of the MTD.

3.4. The NHHDC has received notification of the termination of its appointment from the Supplier. It has received a final meter reading and MTD from the NHHMO. It has processed and validated the final meter reading and produced a Valid Data Report and sent it to the Supplier and LDSO. The AA and revised EAC have been calculated and sent to the Supplier and the NHHDA.

3.5. The NHHDA has received notifications of its termination of appointment from the Supplier and the SMRA. It has received AA data from the NHHDC and carried out the appropriate aggregation runs.

3.6. The HHMO has received notice of its appointment to the HH metering system, confirmed acceptance and received details of the other agents, Customer details, NHH Metering System and required settlement configuration. It has requested and obtained site details from the LDSO, provided MTD to the Supplier, LDSO and HHDC and initial register readings to the HHDC. It has provided final NHH readings to the NHHMO. It has requested and received proving data from the HHDC, proved the metering system and notified the success to the LDSO, Supplier and HHDC.

3.7. The HHDC has received notice of its appointment to the HH metering system, confirmed acceptance and received details of the other agents, Customer details and the required settlement configuration. It has received MTD from the HHMO along with initial register readings and forwarded initial register readings to the LDSO and Supplier. It has received a request to prove test data and forwarded it to the HHMO, then received confirmation of the successful proving test. It has confirmed the inclusion of the meter in the reading schedule to the LDSO and Supplier and collected HH period data, and forwarded it to the Supplier, LDSO and HHDA. For the day prior to the change consumption is attributed to the Supplier on the basis of the AA calculated using the final NHH meter reading.

3.8. The HHDA has received notice of its appointment to the HH metering system and confirmed acceptance. It has been appointed by the SMRA to the metering system and notified of the start date and energisation status. It has received HH advances from the HHDC and aggregated it accordingly.

3.9. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.10. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The Customer has chosen a new Meter Operator who is qualified in both Non-Half Hourly and Half Hourly market sectors.
2. The day of energisation may be a BST (British Summer Time) day. Consequently the initial reading and the HH period readings will be extracted in UTC and converted as appropriate to settlement time (BST) by the HHDC.
3. The proving test may fails, in which case the HHMO must initiate a re-test by arrangement with the HHDC.

3. HALF-HOURLY STORYBOARDS

3.1. AGS501: HH Change of Supplier, MOA, DC and DA

Applicant Role: Party Agents (SMRA, HHMO, HHDC, HHDA)

Associated Joint Storyboards: JSS102, JSS103, JSD314

1. Initial Conditions:

    1.1. The HH Metering System (MS) is registered to the old Supplier with the SMRA with all registration data items set.

    1.2. Appointments are in place with all of the appropriate HH agents.

    1.3. Previous valid meter readings are held at the old HHDC and old HHDA as appropriate

    1.4. The HH MS is energised.

    1.5. The Customer has entered into a contract with the new Supplier.

    1.6. The old and new Supplier, their agents and the SMRA have retained evidence, as appropriate, of the above.

2. The Story:

    2.1. The new Supplier registers liability for the MS with the SMRA and receives back confirmation and details of the old Supplier's registration details. It also notifies the SMRA of the new agents' details.

    2.2. The SMRA notifies the old Supplier of its loss of liability. There is no objection from the old Supplier, who terminates the old HHMO, HHDC and HHDA appointments. The old HHDA is notified by the SMRA of the end of its appointment.

    2.3. The HH agents receive their appointments to the MS from the Supplier, they confirm their acceptance and receive details of the other agents, customer details, the HH MS and the required settlement configuration. The new HHDA is informed of its appointment and details of the HHDC by the SMRA.

    2.4. The new HHMO requests and receives Meter Technical Data from the old HHMO, and forwards it to the Supplier, HHDC and LDSO.

    2.5. The new HHDC confirms the reading schedule to the new Supplier and LDSO. It requests and receives historic meter data from the old HHDC.

    2.6. The old and new HHDCs collect metering data for the day before and the day of the change, as appropriate, and send the HH advances to the relevant Suppliers, HHDAs and LDSO.

    2.7. The HHDAs carry out the appropriate aggregation runs.

    2.8. For the day before the change, consumption is attributed to the old Supplier via the old HHDA.

    2.9. For the day of the change, consumption is attributed to the new Supplier via the new HHDA.

3. Final Conditions:

3.1. Appointments are in place with all of the appropriate HH agents.

3.2. The SMRA has received notice of the de-appointment of the old agents and the appointment of the new agents, which is acknowledged and passed to the HHDAs.

3.3. The old HHMO has received notification of the termination of its appointment. It has notified the new HHMO of the MTD.

3.4. The old HHDC has received notification of the termination of its appointment from the Supplier. It has processed and validated the final meter reading and produced a Valid Data Report and sent it to the old Supplier, old HHDA and LDSO.

3.5. The old HHDA has received notifications of its termination of appointment from the Supplier and the SMRA. It has received meter readings from the old HHDC and carried out the appropriate aggregation runs.

3.6. The new HHMO has received notice of its appointment, confirmed acceptance and received details of the other agents, customer details, Metering System and required settlement configuration. It has provided MTD to the Supplier, LDSO and HHDC and initial register readings to the HHDC.

3.7. The new HHDC has received notice of its appointment, confirmed acceptance and received details of the other agents, customer details and the required settlement configuration. It has received MTD from the HHMO along with initial register readings and forwarded initial register readings to the LDSO and Supplier. It has received a request to prove test data and forwarded it to the HHMO, then received confirmation of the successful proving test. It has confirmed the inclusion of the meter in the reading schedule to the LDSO and Supplier and collected HH period data, and forwarded it to the Supplier, LDSO and HHDA. For the day prior to the change consumption is attributed to the Supplier on the basis of the AA calculated using the final NHH meter reading.

3.8. The new HHDA has received notice of its appointment and confirmed acceptance. It has been appointed by the SMRA to the metering system and notified of the start date and energisation status. It has received HH advances from the HHDC and carried out the appropriate aggregation runs.

3.9. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.10. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions, unless otherwise stated.

1. There may be no change of agents involved. The old and new Supplier have appointed the same HH agents for the MS. This will mean that some of the above final conditions do not apply.

3.2. AGS502: HH Change of LLF Class

Applicant Role: Party Agents (SMRA, HHDA)

Associated Joint Storyboards: JSS106

1. Initial Conditions:

   1.1. The HH Metering System (MS) is registered to the Supplier with the SMRA with all registration data items set.

   1.2. Appointments are in place with all of the appropriate HH agents.

   1.3. Previous valid meter readings are held at the HHDA as appropriate

   1.4. The HH MS is energised.

   1.5. The Supplier's agents and the SMRA have retained evidence, as appropriate, of the above.

   1.6. The LDSO has assigned a different Line Loss Factor (LLF) Class for the Metering System (MS).

2. The Story:

   2.1. The SMRA notifies the Supplier and HHDA of the change of LLF Class.

   2.2. The HHDA makes the appropriate system updates for the change.

   2.3. Meter data is received from the HHDC for the day before and the day of the change.

   2.4. The HHDA carries out the appropriate aggregation runs. For the day before the change, consumption is attributed to the Supplier for the old LLF Class. For the day of the change, consumption is attributed for the new LLF Class.

3. Final Conditions:

   3.1. The SMRA has notified the Supplier and HHDA of the change.

   3.2. The HHDA has received HH meter advances from the HHDC and carried out the appropriate aggregation runs.

   3.3. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

   3.4. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

   The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

   1. This story may be run for a variety of meter configurations to demonstrate that the relationships between Agents, GSP Groups and LDSOs can be handled correctly. E.G Maintenance of LLF Classes for multiple LDSOs within a single GSP Group.

3.3. AGS503: HH Replacement of Meter & Proving Test

Applicant Role: Party Agents (HHMO, HHDC, HHDA)

Associated Joint Storyboards: JSS109

1. Initial Conditions:

    1.1. The HH Metering System (MS) is registered to the Supplier with the SMRA with all registration data items set.

    1.2. Appointments are in place with all of the appropriate HH agents.

    1.3. Previous valid meter readings are held at the HHDA as appropriate

    1.4. The HH MS is energised.

    1.5. The Supplier's agents have retained evidence, as appropriate, of the above.

    1.6. Following a customer notification to the Supplier, an investigation has shown that there is a fault with the meter.

2. The Story:

    2.1. The Supplier requests the HHMO to replace the meter.

    2.2. The HHMO arranges with the HHDC for the final HH data to be collected.

    2.3. After changing the meter, the HHMO informs the Supplier, HHDC and LDSO of the new MTDs.

    2.4. The HHMO advises the HHDC of the final and initial meter readings and requests a proving test.

    2.5. After comparing the expected and collected data, the HHMO advises the Supplier, LDSO and HHDC of the successful proving test.

    2.6. The HHDC determines the date of the next Meter Advance Reconciliation (MAR) and collects data for the new meter.

    2.7. The HHDA carries out the appropriate aggregation runs for the day before the change and the day of the change.

3. Final Conditions:

    3.1. The HHMO has received a request to replace the meter and agreed a time for the HHDC to take final HH readings. It has taken final register readings, replaced the meter with an equivalent type and taken initial register readings. It has sent MTD to the HHDC, Supplier and LDSO and initial and final register readings to the HHDC. It has requested proving data from the HHDC, received the proving data and confirmed the successful proving to the Supplier, LDSO and HHDC.

    3.2. The HHDC has received notice of the meter change and the requirement to extract HH period data. It has agreed a date and time with the HHMO and read the HH period data at the appointed time. It has received MTD for the replacement meter along with final and initial register readings from the HHMO and forwarded the readings to the Supplier and LDSO. It has begun reading HH data and received a request from the HHMO for proving data, forwarded the proving data then received confirmation of the successful proving and has set the date for the next MAR accordingly.

The HHDC has provided an unbroken sequence of HH period data to the Supplier, LDSO and HHDA.

3.3. The HHDA has received HH meter advances from the HHDC and carried out the appropriate aggregation runs.

3.4. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.5. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The HHMO and HHDC may decide to use any of the 4 methods for proving the meter, making the appropriate changes to the story.

3.4. AGS504: HH New Metering System, Initial Registration, Energisation

Applicant Role: Party Agents (SMRA, HHMO, HHDC, HHDA)

Associated Joint Storyboards: JSS101, JSD313

1. Initial Conditions:

    1.1. The customer has approached the Supplier requesting a cable installation for the connection of a new, Half Hourly Metering System (MS) and has entered into a supply contract.

    1.2. The MS is not yet registered to the Supplier with the SMRA.

    1.3. No appointments are in place with any of the Supplier's HH agents.

    1.4. In response to the Supplier's request, the Distributor has installed cabling according to the site plans and informed the Supplier that this work has been completed, together with the Registration Data and Site Details.

    1.5. The Supplier's agents and the SMRA have retained evidence, as appropriate, of the above.

2. The Story:

    2.1. The Supplier registers the new connection (as de-energised initially) and receives confirmation of the registration from the SMRA.

    2.2. The HH agents receive their appointments to the MS from the Supplier; they confirm their acceptance and receive details of the other agents, customer details, the MS and the required settlement configuration. The HHDA is informed of its appointment and details of the HHDC by the SMRA.

    2.3. The HHMO is instructed by the Supplier to install and energise the MS at the new connection. The HHMO requests and receives Site Technical Details from the LDSO.

    2.4. The HHMO confirms to the Supplier, LDSO and HHDC that both the installation and energisation occurred and also provides the initial meter register reading and meter technical details.

    2.5. The HHMO requests a proving test from the HHDC. After comparing the expected and collected data, the HHMO advises the Supplier, LDSO and HHDC of the successful proving test.

    2.6. The HHDC confirms the reading schedule and sends initial meter readings to the Supplier and LDSO.

    2.7. After being informed by the Supplier that the meter is now installed and energised, the SMRA notifies the LDSO and Supplier agents of the change in energisation status.

    2.8. The HHDC collects metering data for the day of the energisation and sends the HH advances to the Supplier, HHDA and LDSO.

    2.9. The HHDA carries out the appropriate aggregation runs. For the day before the energisation, no consumption is attributed to the Supplier. For the day of the energisation, consumption is attributed to the Supplier.

3. Final Conditions:

3.1. The SMRA system has been updated with the new connection details, received the Supplier registration, and acknowledged and updated the HHDA accordingly. It has received notice of energisation, confirmed successful processing and advised HHDA.

3.2. The HHMO has received new connection appointment details and notification of other agents, determined the GSP Group, obtained site technical details from the LDSO, received a request to install HH metering and advised the Supplier, LDSO and HHDC of the associated MTD and sent initial register readings to the HHDC. It has conducted proving in conjunction with the HHDC.

3.3. The HHDC has received and acknowledged its appointment to the new connection and notification of other agents. It has received MTD and initial register readings from the HHMO and passed initial register readings to the Supplier and LDSO. It has begun reading the meter and conducted proving in conjunction with the HHMO. It has identified MAR requirements and passed HH periods to the HHDA, LDSO and Supplier.

3.4. The HHDA has received its appointment to the new connection and notice of the HHDC. It has received and acknowledged its Supplier appointment. It has received notice of the energisation of the MS and HH period readings. The meter readings have been aggregated as required.

3.5. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.6. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. Either skeleton or full registration details may be sent to the SMRA by the supplier. When the SMRA notifies the HHDA of its liability for the new MS; If full registration details are used, then subsequent instructions to the HHDA will only notify it of the new energisation status. If skeleton registration then subsequent instructions will notify the HHDA of their appointment, the HHDC appointment AND the energisation status.
2. If the MS cannot be installed or energised, the HHMO must inform the Supplier and act on its instructions.

3.5. AGS505: HH De-Energisation of Metering System

Applicant Role: Party Agents (SMRA, HHMO, HHDC, HHDA)

Associated Joint Storyboards: JSS107, JSD316

1. Initial Conditions:

    1.1. The Customer has written to the Supplier requesting de-energisation of the Metering System (MS) and a mailing address is agreed where notification of completion of the work can be sent to.

    1.2. The Supplier processed this request and has agreed the date and time when the work should be carried out.

    1.3. The MS is registered to the Supplier with the SMRA.

    1.4. The MS is energised.

    1.5. All appointments are in place with the Supplier's HH agents.

    1.6. The Supplier's agents and the SMRA have retained evidence, as appropriate, of the above.

2. The Story:

    2.1. The Supplier requests the HHMO to de-energise the MS.

    2.2. The HHMO arranges with the HHDC to collect final data.

    2.3. The HHDC collects metering data for the day of the de-energisation and sends the HH advances to the Supplier, HHDA and LDSO.

    2.4. After de-energising the meter, the HHMO confirms the change of status and final meter readings to the HHDC, Supplier and LDSO.

    2.5. The SMRA is notified of the change of energisation status by the Supplier and informs the HHDA and LDSO.

    2.6. The HHDA carries out the appropriate aggregation runs. For the day of the de-energisation, consumption is attributed to the Supplier only for half-hours prior to the de-energisation. For the day after, no consumption is attributed to the Supplier.

3. Final Conditions:

    3.1. The SMRA system has received notice of the de-energisation and advised the HHDA and LDSO accordingly.

    3.2. The HHMO has received a request from the Supplier to de-energise the meter and advised the Supplier, LDSO and HHDC of the status change and final register readings.

    3.3. The HHDC has received a request to read HH period data, received notice of de-energisation and final readings, converted HH period data from UTC to BST and sent HH period readings on to the Supplier, LDSO and HHDA.

    3.4. The HHDA has received notice of the de-energisation and aggregated HH advances for periods prior to the de-energisation.

3.5. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.6. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The Supplier instructs the LDSO to carry out the de-energisation. The LDSO arranges the collection of the final data with the HHDC and informs the appropriate parties when the de-energisation is completed.

3.6. AGS506: HH De-Energisation of Metering System, DC Not Notified

Applicant Role: Party Agents (SMRA, HHMO, HHDC, HHDA)

Associated Joint Storyboards: JSS107, JSD316

1. Initial Conditions:

    1.1. The Customer has written to the Supplier requesting de-energisation of the Metering System (MS) and a mailing address is agreed where notification of completion of the work can be sent to.

    1.2. The Supplier processed this request and has agreed the date and time when the work should be carried out.

    1.3. The MS is registered to the Supplier with the SMRA.

    1.4. The MS is energised.

    1.5. All appointments are in place with the Supplier's HH agents.

    1.6. The Supplier's agents and the SMRA have retained evidence, as appropriate, of the above.

2. The Story:

    2.1. The Supplier requests the HHMO to de-energise the MS.

    2.2. After de-energising the meter, the HHMO confirms the change of status and final meter readings to the Supplier, HHDC and LDSO, but the HHDC does not receive or process the information.

    2.3. The SMRA is notified of the change of energisation status by the Supplier and informs the HHDA and LDSO.

    2.4. The HHDC is unable to collect metering data for the day of the de-energisation and sends estimated data to the Supplier, HHDA and LDSO.

    2.5. The HHDA carries out the appropriate aggregation runs (Initial Settlement) using the estimated consumption values for the de-energised meter and reports the anomaly to the Data Collector and Supplier.

    2.6. The HHDC requests information from the HHMO, who responds by sending information about the energisation status and final register readings.

    2.7. The HHDC advises the Supplier of the result of the investigation into their exception report and sends the final meter reading data to the Supplier, HHDA and LDSO for the Reconciliation run.

    2.8. The HHDA carries out the appropriate aggregation runs (Reconciliation) for the day of de-energisation using the final readings.

    2.9. NOTE: The HHDC must NOT resolve the exception prior to Initial Settlement or the exception will not occur as required.

3. Final Conditions:

    3.1. The SMRA system has received notice of the de-energisation and advised the HHDA and LDSO accordingly.

3.2. The HHMO has received a request from the Supplier to de-energise the meter and advised the Supplier, LDSO and HHDC of the status change and final register readings.

3.3. The HHDC has received notice of the de-energisation and final readings, converted HH period data from UTC to BST and sent HH period readings on to the Supplier, LDSO and HHDA.

3.4. The HHDA has received notice of the de-energisation and aggregated HH advances for periods prior to the de-energisation for the Reconciliation run.

3.5. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.6. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. Instead of the HHDC, it may be the Supplier that requests the HHMO to notify the HHDC of the de-energisation and of the final cumulative meter reading.
2. The Supplier may instruct the LDSO to carry out the de-energisation. The LDSO arranges the collection of the final data with the HHDC and informs the appropriate parties when the de-energisation is completed.

3.7. AGS507: HH De-Energisation & Disconnection of Metering System

Applicant Role: Party Agents (SMRA, HHMO, HHDC, HHDA)

Associated Joint Storyboards: JSS108, JSD317

1. Initial Conditions:

    1.1. The Customer has written to the Supplier requesting the disconnection and de-energisation of the Metering System (MS).

    1.2. The Supplier processed this request and has agreed the date and time when the work should be carried out.

    1.3. The MS is registered to the Supplier with the SMRA.

    1.4. The MS is energised.

    1.5. All appointments are in place with the Supplier's HH agents.

    1.6. The Supplier's agents and the SMRA have retained evidence, as appropriate, of the above.

2. The Story:

    2.1. The Supplier requests the HHMO to de-energise the MS and agrees the date with the MOA for work to take place.

    2.2. Subsequently, the Supplier instructs the LDSO to physically disconnect the meter.

    2.3. The HHMO arranges with the HHDC to collect final data.

    2.4. After de-energising the meter, the HHMO confirms the change of status and final meter readings to the HHDC, Supplier and LDSO.

    2.5. The SMRA is notified of the change of energisation status by the Supplier and informs the HHDA and LDSO.

    2.6. The LDSO notifies the SMRA of the disconnection, which occurred on the date requested, and they notify the HHDA that their appointment to the MS is terminated.

    2.7. The HHDC collects metering data for the day of the de-energisation and sends the HH advances to the Supplier, HHDA and LDSO.

    2.8. The Supplier receives notification from the LDSO that the disconnection has been successful.

    2.9. The LDSO then updates their Registration Service and sends the final meter reading onto the HHDC for Validation and the SMRA in turn confirms details of the successful disconnection to the Supplier.

    2.10. The Supplier terminates the HHMO and HHDC appointments to the MS.

    2.11. The HHDA carries out the appropriate aggregation runs. For the day of the de-energisation, consumption is attributed to the Supplier only for half-hours prior to the de-energisation. For the day after, no consumption is attributed to the Supplier.

3. Final Conditions:

3.1. The SMRA system has received notice of the de-energisation and disconnection and advised the Supplier, HHDA and LDSO accordingly.

3.2. The HHMO has received a request from the Supplier to de-energise the meter and advised the Supplier, LDSO and HHDC of the status change and final register readings. It has received notice that its appointment to the MS has been terminated, and has noted the correct disconnection date.

3.3. The HHDC has received a request to read HH period data, received notice of de-energisation, disconnection and final readings, converted HH period data from UTC to BST and sent HH period readings on to the Supplier, LDSO and HHDA. It has received notice that its appointment to the MS has been terminated, and has noted the correct disconnection date.

3.4. The HHDA has received notice of the de-energisation and disconnection and aggregated HH advances for periods prior to the de-energisation. It has received notice that its appointment to the MS has been terminated, and has noted the correct disconnection date.

3.5. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.6. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The Supplier instructs the Distributor to carry out both the de-energisation and disconnection on the same day. The Distributor arranges the collection of the final data with the HHDC and informs the appropriate parties when the disconnection is completed.
2. The disconnection occurs several days after the date requested,

3.8. AGS508: HH Re-Energisation of Metering System

Applicant Role: Party Agents (SMRA, HHMO, HHDC, HHDA)

Associated Joint Storyboards: JSD320

1. Initial Conditions:

    1.1. The Customer requires a currently de-energised half hourly metering point to be re-energised.

    1.2. The HH Metering System (MS) is registered to the Supplier with the SMRA with all registration data items set.

    1.3. Appointments are in place with all of the appropriate HH agents.

    1.4. Previous valid meter readings are held at the HHDC and HHDA.

    1.5. The Supplier, its agents and the SMRA have retained evidence, as appropriate, of the above.

2. The Story:

    2.1. The Supplier requests the HHMO to energise the MS, which it accepts.

    2.2. Following the energisation, the HHMO notifies the Supplier, LDSO and HHDC of the change of status and the initial meter register reading.

    2.3. The Supplier notifies the SMRA, who then notifies the HHDA, of the change in energisation status.

    2.4. The HHMO requests a proving test from the HHDC. After comparing the expected and collected data, the HHMO advises the Supplier, LDSO and HHDC of the successful proving test.

    2.5. The HHDC collects metering data for the day of the change and sends the HH advances to the Supplier, HHDA and LDSO.

    2.6. The HHDA carries out the appropriate aggregation run.

    2.7. For the day before the change, no consumption is attributed to the Supplier for the MS.

    2.8. For the day of the change, consumption is attributed to the Supplier for the MS.

3. Final Conditions:

    3.1. The SMRA has received notice of the change in energisation status from the Supplier, acknowledged and informed the HHDA.

    3.2. The HHMO has energised the meter and informed the Supplier, LDSO and HHDC of the change in energisation status and the initial register readings. It has conducted proving in conjunction with the HHDC.

    3.3. The HHDC has received notice of the energisation and initial readings, read the meter for HH consumption, and sent HH period readings on to the Supplier, LDSO and HHDA. It has conducted proving in conjunction with the HHMO.

    3.4. The HHDA has received notice of the change in energisation status from the SMRA. It has received HH advances from the HHDC and carried out the appropriate aggregation runs.

3.5. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

3.6. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

1. The MS may be energised by the LDSO instead. In this case, the HHMO receives notice of the energisation and initial register readings from the LDSO and then informs the HHDC.

3.9. AGS509: HH New UnMetered Supply (Equivalent Metering), Initial Registration, Energisation

Applicant Role: Party Agents (SMRA, UMSO, MA, HHDC, HHDA)

Associated Joint Storyboards: JSD211

1. Initial Conditions:

    1.1. The LDSO has established a new HH unmetered supply point which will require two Photo Electric Cell Unit (PECU) arrays to provide equivalent metering.

    1.2. The UMSO has agreed that the inventory meets the criteria for HH UMS.

    1.3. There is no record of the Metering System (MS) on the Registration Service or any of the Supplier's agents' systems.

    1.4. The Suppliers' agents have retained evidence of all of the above.

2. The Story:

    2.1. The UMSO requests the SMRA to create a UMS Skeleton registration record.

    2.2. The SMRA informs the UMSO of the new MSID details and issues the UMS certificate to the customer and the Supplier.

    2.3. The UMSO is notified of the appointed Meter Administrator (MA) and they agree the type of Equivalent Metering (EM) required and the location of the PECU array.

    2.4. The UMSO confirms with the Supplier the type of EM and the location of the 2 PECU arrays. The Supplier and MA are notified of the EM technical details.

    2.5. The Supplier registers liability for the MS with the SMRA and appoints all its agents including the MA.

    2.6. The MA acknowledges its appointment and is notified of the HHDC.

    2.7. The MA inputs information into the EM and confirms with the UMSO that it is correct.

    2.8. The MA sends MTD to the HHDC and they liaise to ensure that the EM data can be read.

    2.9. The UMSO energises the MS and confirms the energisation date with the Supplier and MA.

    2.10. The Supplier confirms energisation with the SMRA.

    2.11. The MA notifies the HHDC of the energisation date.

    2.12. The HHDA is informed of its liability by the SMRA.

    2.13. The HHDC collects EM data from the day of energisation and sends it to the Supplier, UMSO and HHDA.

    2.14. The HHDA aggregates data for the day of the energisation.

3. Final Conditions:

   3.1. The SMRA has recorded the creation of the new UMS and the supplier registration, agent appointments and energisation and notified the HHDA accordingly.

   3.2. The UMSO has agreed the details of the UMS and communicated them with all the relevant parties. It has energised the UMS and notified the Supplier, then received HH metering data based on the equivalent metering.

   3.3. The MA has accepted its appointment to the UMS, recorded the details of the UMS and configured the PECU arrays accordingly, provided technical details to the HHDC and sent them estimated HH consumption to check that it can be processed.

   3.4. The HHDC has accepted its appointment to the new UMS and received technical details and other agents' details. It has checked that it can process EM data from the MA, received notice of energisation and submitted consumption data to the HHDA for the first day.

   3.5. The HHDA has aggregated the UMS as directed by the SMRA using the HH consumption provided by the HHDC.

   3.6. Throughout the scenario, notifications received by the agents have been processed according to their normal business processes, including the updating of any records.

   3.7. Throughout the scenario, routine confirmations and notifications have been sent to other market participants by the agents according to their normal business processes.

4. Variations:

   The following variations may, optionally, be made part of this story but should be resolved so as not to impact the above Final Conditions.

   1. (None currently suggested)

4. GUIDELINES TO ARITHMETIC ACCURACY TESTING

4.1. Background

The objective of arithmetic testing is to ensure your systems and processes accurately perform the calculations required. Testing arithmetic accuracy both before and after you complete your business process testing can provide assurance the systems and processes will remain accurate throughout business-as-usual events. Additionally this testing may be used for regression tests following any software changes.

4.2. Scope of Arithmetic Testing

The test scripts and data should be designed to test the arithmetic accuracy of systems during an SMRA full refresh of the DA's database followed by a compressed 'normal' Initial Volume Allocation Run (without profile calculation) for a particular trading day. Applicants should complete tests which are appropriate to the roles they are seeking Qualification for HH and NHH market sectors or both.

The tests should involve Supplier, Supplier Meter Registration Agent (SMRA), Data Collector and Data Aggregator actions; it is your responsibility to simulate flows from non-participating roles. An example of the scope of these tests could include:

NHH arithmetic

Testing could comprise of a wide scope, this could include 200 meters of various Line Loss Factor Classes, with different combinations of Profile Class, Standard Settlement Class and Time Pattern Regime. The scope could also include, 280 settlement registers; 80 meters with 2 settlement registers 120 with 1 settlement register. A mix of both Annualised Advances (AA) and Estimated Annual Consumption (EAC) values should be used to ensure variation in the testing. The volume tested should be reflective of the intended scale of operation.

HH arithmetic

Testing is similar to NHH and could include, 200 meters split across 2 GSP Groups and 2 LDSOs with various Profile Class values. Of the 200 meters used for testing a mixture of complete readings for the settlement day, some partial readings and none could be used to ensure variation in the testing. Estimated readings should be based on the GSP Group Average EAC for the appropriate Profile Class. The volume tested should be reflective of the intended scale of operation.

5. GUIDELINES TO PERFORMANCE, CAPACITY AND RESILIENCE TESTING

5.1. Background

Performance, Capacity and Resilience tests are designed to allow you to demonstrate that your systems and processes will cope with the maximum projected activity levels within operational timescales for the number of Metering Systems (MS) for which you are seeking approval.

It is recommended that you perform this testing after successfully demonstrating that your systems and processes are accurate and that they correctly operate your business processes (i.e. after doing any arithmetic accuracy or storyboard testing).

5.2. Scope of ELEXON Performance and Capacity Testing

Meter Readings

You will need to process a 'realistic volume' of meter readings for five traded days. The activity should be completed over three consecutive working days where the first and last represent normal daily processing volumes and the middle one a "busy day" including three normal days worth of transactions. This is to represent the processing around weekends.

The numbers of meters for each day should be based on your intended scale of operation.

To reflect the live market situation not all HH meters are settled fully on actual data, the HH readings should be 95% actual readings and 5% estimates.

For Example: If your expected daily volume is deemed to be 1000 HH readings, then one of the trading days will require 3000 readings to be processed within a 24 hour period.

Note: 1 HH reading here equals 48 period readings.

NHH readings for 2 meters should be processed on each working day and the EAC/AA data calculated and forwarded.

Data Aggregation

Data Aggregators should be able to run all five aggregation types (SF, R1, R2, R3 and RF) on each of the traded days making a total of 25 days worth of data (5 allocation runs by 5 days).

The NHHDA should be able to have adequate history for all of the NHH meters (EACs and AAs).

The HHDA should be able to have blocks of HH reading data for the appropriate traded days (i.e. up to 288 Working Days) prior to the run days.

Some exception conditions and discrepancies are expected on a small percentage of meters to reflect that the live market is not perfectly clean.

Variation Activities

You should be able to demonstrate the processing of meter registrations and exceptions in the course of normal day to day operations. While the actions may be determined from the Storyboards it may be more practical to detail the changes explicitly as follows.

NHH Example: If you are proposing to handle 1 million NHH meters the activities and volumes could be:

Activity	Volume per Traded Day (per 1 million meters)
Change of Supplier	800
Change of DC & DA, Change of SSC	160
Change of MO, DC & DA, Change of Metering System, Change of Profile Class	120
Withdrawal of Meter Reading	80
New Connection	40
Change of DC	40

HH example: If you are proposing to handle 1,000 HH meters the activities and volumes could be:

Activity	Volume per Traded Day (per 1,000 meters)
Change of Supplier	6
Meter Replacement (by equivalent type)	2
Change of MO	1
Change NHH to HH	1
Change of DC (Change of DC & DA)	1 as old 1 as new
New Meter Point, registration, energisation	1

SMRA example: If you are proposing to handle 10,000 meters (NHH and HH), the activities and volumes could be:

Activity	Volume per Traded Day (per 10,000 meters)
Change of Supplier and all NHH agents.	20
Change of NHH DC & DA, Change of SSC.	5
Change of all NHH agents, change of MS, change of PC.	5
De-energisation of an NHH M.S.	5
New Connection (NHH).	5
Change of NHHDC	5
Change of Supplier and all HH agents	40
Energisation of an HH M.S.	5
Change of HH DC and DA.	5
Change of Measurement Class (NHH to HH)	5
Change of HH MO	5
New HH Meter, Registration, Energisation	5

You should calculate the volume of activity to reflect your proposed intended scale of operation. The above figures are for normal days so, for busy days, you should adjust the volumes accordingly.

The actual number of GSP Groups, Suppliers per GSP, LDSOs etc. should be calculated to reflect your proposed market position with a 50% uplift for future growth. During testing you will be expected to support multiple suppliers, GSP Groups and LDSOs concurrently. As a minimum, the meters should be spread across at least 4 GSP Groups and 5 Suppliers.

The choice of ad-hoc tests will be partly determined by the particular role you are undertaking, and they should be chosen to simulate meaningful activity by your organisation.

5.3. Scope of ELEXON Resilience Testing

You should be able to demonstrate continuous fault-free operation for an agreed number of NHH and/or HH meters over an agreed number of working days. Every day, one or more meters should include some supplier initiated activity (e.g. change of supplier, agent or energisation status).

During the test period, you should perform three types of activity:-

- **scheduled activities**, such as Data Aggregation runs, will be run on all working days with Initial Allocation Runs (SF) and First Reconciliation Runs (R1) performed to a pre-defined schedule.
- **routine activities**, such as data collection, will be run on all working days throughout the period.
- **ad-hoc (event-driven) activities**, such as processing new connections and changes of Supplier, will be undertaken to ensure that you undertake a variety of ad-hoc updates during each working day.

The meters should ideally be split between several separate GSP Groups. If the required processing cannot be conducted on each of the working days, then the test should be restarted.

Resilience testing should normally be undertaken in parallel with Storyboard testing (if that is being done) to minimise the total elapse time of the Qualification tests. However there is a risk associated with this as resilience testing should be run on unchanged systems. If it were necessary to implement a software fix (e.g. during Storyboard testing) to resolve an error, then the resilience period would need to be extended to demonstrate resilience on the new release of the system.

Note: The above tests involve Supplier, SMRA, Meter Operator, Data Collector and Data Aggregator actions; it is your responsibility to simulate flows from market roles other than yourself.

6. CHANGE HISTORY

Version	Date	Author	Reason for Issue
0.1	06/06/07	Change Implementation Team	First Peer Review
0.2	13/06/07	Change Implementation Team	Comments incorporated. Merged with Arithmetic and Performance guidelines. Further peer review.
0.3	22/06/07	Change Implementation Team	Comments incorporated. Published to P197 web-page for industry comment.
1.0	23/07/07	Change Implementation Team	For use
2.0	30/08/11	Nirav Vyas	Amended Arithmetic testing guidelines.