ELEXON Industry Test Strategy
Wider Access and TERRE (P344)

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Version 2.0

Industry Test Lead

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INDUSTRY TEST STRATEGY – WIDER ACCESS AND TERRE (P344)

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1. INTRODUCTION

1.1 BSC Release for Wider Access and TERRE

ELEXON is planning a standalone BSC Release (currently expected to be in December 2019) to complete the implementation of market arrangements for Wider Market Access and TERRE. As specified in BSC Section H, section 2.5, the exact date is subject to the receipt of a 'P344 Final Implementation Date Notice' from National Grid ESO (NGESO).

NGESO has submitted a derogation request with Ofgem, proposing a delay to GB joining the TERRE market. ELEXON and NGESO are working closely together to ensure that Wider Market Access can be implemented in December 2019, even if GB participation in TERRE is deferred to 2020.

This Industry Test Strategy document focuses on the changes that will go ahead in December 2019 regardless of the derogation.

There is also a standalone BSC Release in December 2019 to implement two changes to BMRS (P384 and CP1516). These changes are *not* in scope for this document.

1.2 Purpose of this document

The purpose of this document is to set out ELEXON's strategy for testing Wider Access arrangements with industry participants. For the purposes of this document the term 'industry participant' includes ELEXON, NGESO, and any of the following who wish to participate in testing:

- Existing BSC Parties
- New or prospective Virtual Lead Parties (VLPs)
- Half-Hourly Data Aggregators (HHDAs)
- Third party service providers who maintain software that is used by Parties to manage their interfaces with ELEXON.

1.3 Contacts

For any queries about industry testing, please email TERRE.testing@elexon.co.uk .

2. SUMMARY OF THE BSC RELEASE

2.1 Functional scope of the release

The standalone BSC Release in December 2019 completes the implementation of modification P344 'Project TERRE implementation into GB market arrangements', some elements of which were implemented in the February 2019 BSC Release[1]. It will also implement the related change proposal CP1517 'Changes to BSC configurable items for the TERRE Final Implementation Date'. If NGESO's derogation request is granted, then TERRE functionality will not be fully exercised until 2020.

The scope of testing includes the main functionality affected by these BSC changes. It excludes functionality relating to TERRE, except where otherwise stated below. The key functional areas to be tested are:

- New interfaces with participants associated with the provision of MSID data, the calculation of SBMU delivered volumes and the resulting adjustments to Supplier volumes

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[1] There were also two modifications to the legal text for TERRE: P380 (implemented in June 2019) and P386 (to be implemented in November 2019).

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- Interfaces with HHDAs to request and receive half-hourly metered volumes for the affected MSIDs
- Inclusion of new data and calculation results in the settlement report SAA-I014, including SBMU trades and Supplier adjustments, and showing zero/blank/null data items for TERRE market data
- Change to the format of the existing Bid-Offer Acceptance Level Flagged File (BOALF), received from NGESO as part of the BMRA-I002 interface, and published by the Balancing Mechanism Reporting Service (BMRS).

2.2 Relevant documentation

The following BSC documentation may be helpful to participants in designing their own systems and interfaces. See section 6.2 for full references.

- 'Wider Access – Impact on New & Existing BSC Parties', a new summary which will be published in a Release Circular on 30 October 2019.
- P344 Business Requirements
- Summary of P344 impact on BSC configurable items
- BSCP503 Half Hourly Data Aggregation for SVA Metering Systems
- BSCP602 SVA Metering System Balancing Services Register
- NETA Interface Definition and Design Part 1 (document and spreadsheet)
- NETA Interface Definition and Design Part 2 (relevant to NGESO and other users of SAA-I014 subflow 2)
- SVA Data Catalogue Part 1: Data Interfaces
- SVA Data Catalogue Part 2: Data Items
- BMRS API Data Push User Guide
- Data Transfer Catalogue, maintained by the Meter Registration Agreement Service Company (MRASCO).

3. SCOPE OF ELEXON'S INDUSTRY TESTING

3.1 Participation in industry testing

Industry testing is designed to assist participants with testing how their own systems work with settlement system interfaces. (Participant systems should have been proven to work in isolation first). For any individual Party (or prospective new Party) it is not compulsory to take part in industry testing.

New market entrants should note that ELEXON's industry testing phases are separate from the compulsory BSC CVA and SVA Qualification checks that they must go through before they can complete the registration of their BM Units or Secondary BM Units.

In summary the following principles apply to participation in industry testing:

- NGESO and ELEXON **will test their key interfaces** with each other and with the EMFIP platform.
- Existing Parties (or their service providers) are **welcome to participate** in the industry tests that are relevant to them, **but it is not compulsory to do so**.
- VLPs are **welcome to participate** in the industry tests that are relevant to them, **but it is not compulsory to do so**.
- Prospective VLPs **do not need to complete BSC Qualification and Registration before industry testing**; the processes can run in parallel.
- **VLPs do not need to involve their customers** in industry testing of ELEXON's settlement processes.

- Participants in industry testing should **ensure that their systems have been proven to work in isolation** before they take part in testing with ELEXON.
- **ELEXON will seek to involve a number of participants** in industry testing to ensure that any issues with the new or amended interfaces are identified and resolved.

3.2 Objectives

The objectives of ELEXON's industry testing are to:

- Validate new and amended interfaces between NGESO and ELEXON
- Validate new and amended interfaces between ELEXON (BMRS) and ENTSO-E's EMFIP platform
- Enable market participants to validate changes to their interfaces with ELEXON
- Enable VLPs to validate their role in new processes for registering SBMUs and MSIDs, and settling SBMU balancing actions

3.3 Phases of testing for Wider Access

ELEXON will carry out industry testing for the December release in two main phases, as follows:

Interface testing   Manual exchange of sample files between Industry Participants and ELEXON to prove the interface file formats. Enables participants to confirm their understanding of the expected format, and allows recipients of files to test their data load routines.

Integration testing   Integrated testing of key parts of the balancing and settlement process, where files are exchanged in a realistic manner.

3.4 Functional areas to be included

Some of the functional changes will affect all or most participants, as illustrated in Figure 1. These are the changes to the BMRS data flow and to the settlement report SAA-I014. Testing also provides an opportunity to demonstrate reports from the Central Registration Agent (CRA) with VLP and SBMU data included.
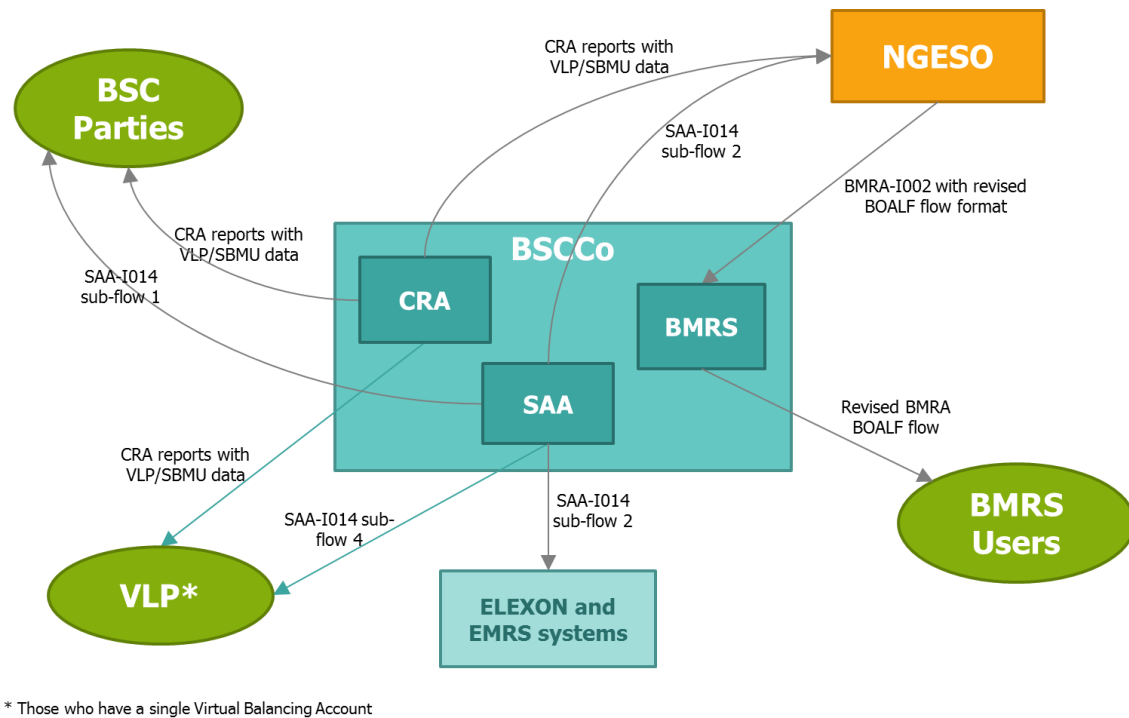
Figure 1: Interfaces affecting all Parties

For the Wider Access features of P344, there are two main areas of testing to cover. The first concerns the maintenance of the SVA Metering System Balancing Services Register (as described in BSCP602) which involves registering the MSIDs that are associated with Secondary BM Units. It also covers requesting half-hourly metered data from the responsible Half-hourly Data Aggregators (HHDAs), which is described in BSCP503. The interfaces involved are illustrated in Figure 2.
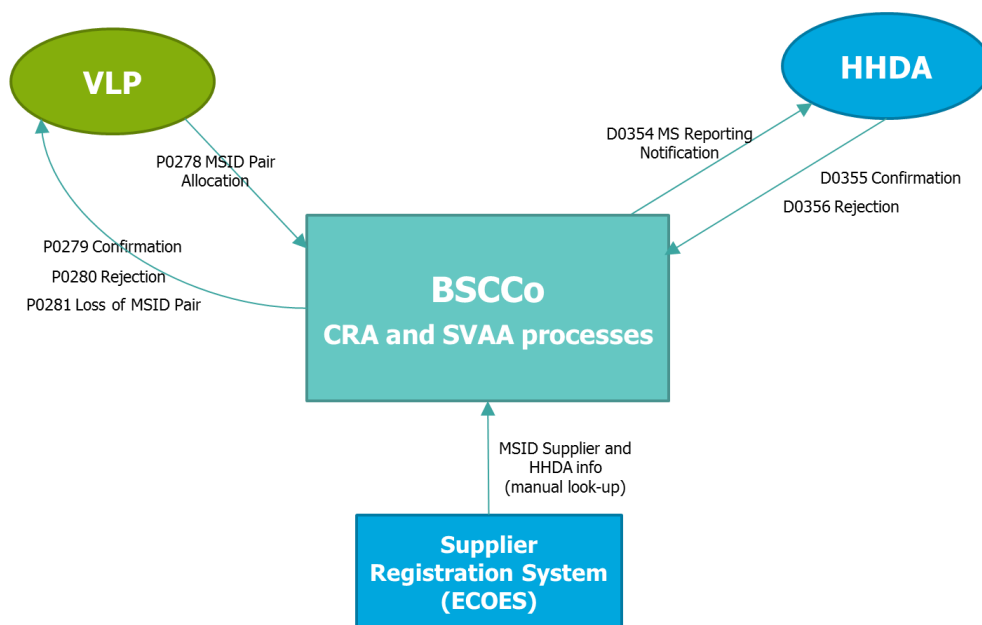
Figure 2: MSID registration interfaces

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The second area concerns the provision by VLPs of the delivered volumes provided at each MSID, and the use of the volumes in settlement calculations, as illustrated in Figure 3.
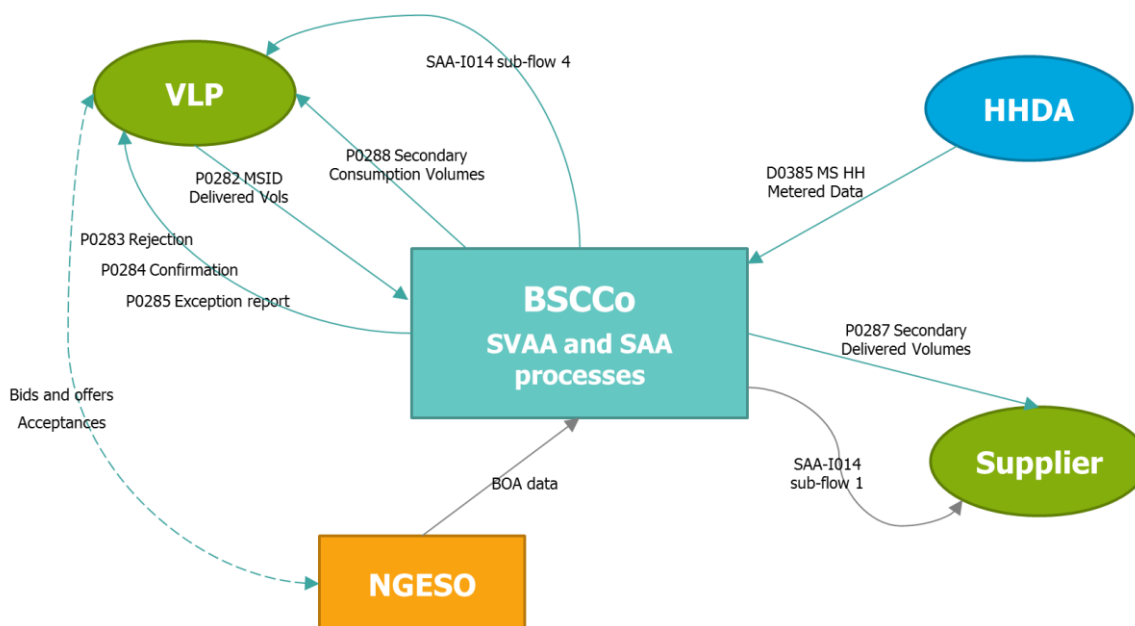

Figure 3: SBMU settlement interfaces

3.5   Settlement interfaces included

The following table lists the incoming and outgoing interfaces (to/from ELEXON's settlement systems) that are in scope for industry testing. The table also highlights whether the flow is new or changed.

Direction	From	To	Data flow name	Flow description	Summary of change
Incoming	NGESO	BMRA	BMRA-I002	BOALF - RR Activation flag added	New items added for TERRE
Outgoing	SVAA	HHDA	D0354	Metering System Reporting Notification	New for Wider Access
Incoming	HHDA	SVAA	D0355	Metering System Reporting Confirmation	New for Wider Access
Incoming	HHDA	SVAA	D0356	Metering System Reporting Rejection	New for Wider Access
Incoming	HHDA	SVAA	D0385	Metering System Half Hourly Metered Data	New for Wider Access
Incoming	VLP	SVAA	P0278	MSID Pair Allocation	New for Wider Access
Outgoing	SVAA	VLP	P0279	Confirmation of MSID Pair Allocation	New for Wider Access
Outgoing	SVAA	VLP	P0280	Rejection of MSID Pair Allocation	New for Wider Access
Outgoing	SVAA	VLP	P0281	Loss of MSID Pair Allocation	New for Wider Access
Incoming	VLP	SVAA	P0282	MSID Pair Delivered Volume Notification	New for Wider Access

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Direction	From	To	Data flow name	Flow description	Summary of change
Outgoing	SVAA	VLP	P0283	Rejection of MSID Pair Delivered Volume	New for Wider Access
Outgoing	SVAA	VLP	P0284	Confirmation of MSID Pair Delivered Volume	New for Wider Access
Outgoing	SVAA	VLP	P0285	MSID Pair Delivered Volume Exception Report	New for Wider Access
N/A	VLP	VLP	P0286	Disputed MSID Pair Allocation	New for Wider Access
Outgoing	SVAA	Supplier	P0287	Secondary half Hourly Delivered Volumes	New for Wider Access
Outgoing	SVAA	VLP	P0288	Secondary Half Hourly Consumption Volumes	New for Wider Access
Outgoing	SAA	Party	SAA-I014 subflow 1	Settlement Report for a Party	New items added for Wider Access and TERRE
Outgoing	SAA	NGESO	SAA-I014 subflow 2	Settlement Report for NGESO, also used by BSCCo, EMRS and others	New items added for Wider Access and TERRE
Outgoing	SAA	VLP	SAA-I014 subflow 4	Settlement Report for a VLP	New for Wider Access

Note: Flows P0278-P0281 are already live; they were implemented in February 2019. Industry testing provides an opportunity to exercise them in conjunction with other flows relating to MSIDs: metered volumes and delivered volumes.

3.6   BMRS data flows

The testing will include the changes to the BOALF flow, as sent by NGESO to BMRS, and published on the website, and via TIBCO, data push and API.

3.7   Out of scope

The following functional areas of P344 are out of scope for industry testing:

- Receipt and publication of the daily GBP-EUR exchange rate
- New BMRS flows to publish TERRE trading data and auction results
- Changes to FAA systems to include new cashflows for Wider Access
- Changes to ECVAA system to include SBMU trading in the calculation of energy indebtedness

As noted in 1.1, the December 2019 BSC Standalone Release is also not in scope for the industry testing described in this document.

4.   TESTING APPROACH FOR EACH PHASE

4.1   Interface testing

4.1.1   Testing arrangements for interface testing

Interface testing provides an opportunity to confirm that ELEXON and participants have the same interpretation of the interface definitions. This will be done by sharing sample files for the most significant data flows, to give early

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visibility of the expected format and content. Samples will be generated from various stages of ELEXON's internal testing.

Files will *not* be sent via the normal settlement network channels; they will be shared with participants via email or a web page. However, if the content is confidential suitable protection will be applied (e.g. a password).

Any comments or queries about the content of the samples can be submitted to ELEXON by email to TERRE.testing@elexon.co.uk. ELEXON will investigate any issues raised, and publish a summary of issues and their resolution. (Participants will not be identified by name in the summary).

ELEXON cannot provide any support with investigating the participant's own systems.

There are four functional areas included in interface testing, as described in the following subsections.

4.1.2 Bilateral interfaces with NGESO

NGESO will provide ELEXON with samples of the amended BOALF data flow, which is one of the record types included in the BMRA-I002 interface. The flow has been amended to include an RR Activation Flag, which will be set to 'FALSE' for Balancing Mechanism trades

ELEXON will provide NGESO with sample files of SAA-I014 version 9, sub-flow 2. Files with dummy data (illustrating the format) have already been provided. Additional files with realistic data will be provided in late October. These files will reflect a copy of production data plus constructed test data to illustrate Wider Access trading.

For the realistic data scenarios ELEXON will also provide examples of CRA reports CRA-I020 and CRA-I028, to illustrate the reference data used in producing the SAA files. (For example, the test VLP and SBMU identifiers).

4.1.3 SAA settlement reports

ELEXON will provide sample files of version 9 of SAA-I014: the amended sub-flow 1 for BSC Parties and the new sub-flow 4 for VLPs. Sample files with dummy data have already been provided, and are available on request from TERRE.testing@elexon.co.uk.

During October and November ELEXON will provide sample files which illustrate the formats with more realistic data, in a similar way to the sub-flow 2 files for NGESO. The data will be based on a copy of production data (anonymised where appropriate), with additional data constructed to test new features. These will be produced from later stages of ELEXON's internal testing. Calculation results should be consistent, subject to the caveat that the systems will still be under test, so there could be some outstanding defects.

Some BSC Parties also subscribe to the SAA-I014 sub-flow 2, and ELEXON will share sample files with them as well.

4.1.4 New flows related to SBMU settlement

There are several new flows relating to requesting MSID data from HHDAs and providing the data needed for SBMU settlement calculations. In the interface testing phase ELEXON will provide sample files for the most significant data flows, to help participants with developing their own systems.

ELEXON will provide samples of the following outgoing data flows:

- P0287 Secondary Half Hourly Delivered Volumes (from SVAA to Suppliers)
- P0288 Secondary Half Hourly Consumption Volumes (from SVAA to VLPs)

ELEXON will provide samples of the content expected in the following *incoming* data flows:

- D0385 Metering System Half Hourly Metered Data (from HHDAs to SVAA)
- P0282 MSID Pair Delivered Volume Notification (from VLPs to SVAA)

Participants will be able to test sending their own versions of these data flows during integration testing, which will also provide the opportunity to exercise other flows such as confirmation/rejection of data.

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4.1.5   Samples of changed BMRS data flows for industry

ELEXON will provide examples of the revised BOALF data flow from BMRS. This includes the new RR Activation Flag received from NGESO, and an RR Schedule Flag which is derived. Both will always be set to FALSE until GB participation in TERRE begins.

4.2   Industry integration testing

4.2.1   Testing arrangements for integration testing

For integration testing, ELEXON will use a test environment with the following features:

- Connectivity to exchange files with industry via the routes used for the production CVA and SVA arrangements
- Test data based on a copy of production data (anonymised where necessary)
- Additional test data constructed to support Wider Access test scenarios
- Sample data for the amended BOALF flow
- Latest versions of all settlement software, following system testing.

ELEXON will draft test plans and scenarios and give participants the opportunity to review and comment before plans are finalised.

We will provide a web-based tool for logging issues and publishing how they have been resolved.

There are three functional areas for integration testing, as described in the following subsections.

4.2.2   Bilateral testing with NGESO

Bilateral testing with NGESO will cover:

- Amended BOALF flows sent from NGESO's systems to BMRS;
- Samples of Balancing Mechanism Data (BMRA-I002) to mimic SBMU trading;
- New version of SAA-I014 sub-flow 2 sent to NGESO, along with CRA reports showing the test data used.

Scenarios for testing will be agreed between ELEXON and NGESO.

4.2.3   Testing of SBMU processes

For SBMU-related processing there are two areas to be considered, as described in BSCP602.

The first area concerns maintaining the SVA Metering System Balancing Services Register, which records the MSID Pairs that are allocated to each SBMU. The processes involve notifying HHDAs when the Register changes, to ensure that they can send metered volumes, and notifying VLPs when an MSID Pair Allocation is lost.

The second area concerns the data that HHDAs and VLPs need to provide to SVAA for each settlement day. VLPs provide delivered volumes for each MSID Pair in their SBMUs, and HHDAs provide the metered volumes, as requested through the notification process. These values are used by SVAA to calculate the energy volumes that will be used in settlement for each SBMU, and the resulting adjustments to Supplier volumes. Reports are sent to VLPs and to affected Suppliers.

Standard scenarios for testing will be produced by ELEXON. We will then work with participants to tailor scenarios, by agreeing on sample VLP and SBMU information to be used in the tests.

4.2.4   With all participants for BMRS

Industry testing will include an opportunity for participants to test receiving the new format of BOALF messages that will be available from BMRS.

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5. NEXT STEPS

5.1 Engaging with industry testing participants

ELEXON is engaging with NGESO in weekly meetings to coordinate interface testing and bilateral testing.

Several industry participants have already indicated their interest in interface testing and/or integration testing. We will engage with them during October and November to coordinate test plans and scenarios, test preparation, and test execution.

If you have not yet expressed an interest but would like to do so, please contact TERRE.testing@elexon.co.uk by 8 November 2019.

5.2 Testing timescales

The expected timescales for testing are as follows:

Late October/early November	**Interface testing**, including sample SAA-I014 files with realistic data, and examples of the new interfaces required for Wider Access.
	Integration test planning, including discussions with participants.
Late November	**Integration testing** with participants
Early December	**Test report,** summarising the results of testing, and highlighting lessons learned.

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6. DOCUMENT CONTROL

6.1 Document change history

Version	Date	Author	Summary of change
1.0	08/08/19	Isobel Squire	Initial version for publication to industry
1.1	13/08/19	Isobel Squire	Minor corrections
2.0	30/10/19	Isobel Squire	Updated in line with ELEXON's focus on implementing Wider Access in December 2019.

6.2 References

Ref	Document	Version	Date
1.	P344 Final Modification Report	1.0	19/06/18
2.	Overview of configurable item changes to deliver the P344 solution	1.0	17/10/18
3.	P380 Final Modification Report	1.0	18/03/19
4.	P386 Final Modification Report	1.0	14/06/19
5.	CP1517 Assessment Report	1.0	25/06/19
6.	CP1517 Second CP consultation	1.0	08/07/19
7.	BSCP503 Half Hourly Data Aggregation for SVA Metering Systems	21.0	28/02/19
8.	BSCP602 SVA Metering System Balancing Services Register	1.0	28/02/19
9.	NETA Interface Definition and Design Part 1 document changes for CP1517	40.2	22/08/19
10.	NETA Interface Definition and Design Part 1 spreadsheet changes for CP1517	30.4 (Draft G)	22/08/19
11.	NETA Interface Definition and Design Part 2 document changes for CP1517	41.1	22/08/19
12.	NETA Interface Definition and Design Part 2 spreadsheet changes for CP1517	29.4 (Draft G)	22/08/19
13.	SVA Data Catalogue Part 1: Data Interfaces	CP1517	03/09/19
14.	SVA Data Catalogue Part 2: Data Items	CP1517	03/09/19
15.	BMRS API and Data Push User Guide	2.2	09/07/19
16.	MRA Data Transfer Catalogue	12.4	
17.	Wider Access – Impact on New & Existing BSC Parties Published on the release page: https://www.elexon.co.uk/release/wider-market-access-and-terre-standalone-release/	1.0	30/10/19

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6.3   Glossary

List of abbreviations and technical terms used in the document.

Term	Description
API	Application Programming Interface, a way of exchanging data between systems.
BMRS	Balancing Mechanism Reporting System
BM Unit or BMU	A Balancing Mechanism Unit
CVA	Central Volume Allocation, which refers to the parts of the BSC arrangements that relate to energy production and consumption other than in Supplier BM Units.
EBGL or EB GL	Electricity Balancing Guideline – European regulations governing balancing services in the single electricity market.
ECVAA	Energy Contract Volume Allocation Agent, a BSC Agent. (May also refer to their IT systems).
EMFIP	European Market Fundamental Information Platform – ENTSO-E's market transparency data platform.
ENTSO-E	European Network of Transmission System Operators for Electricity
FAA	Funds Administration Agent, a BSC Agent. (May also refer to their IT systems).
HHDA	Half-Hourly Data Aggregator, a Supplier Agent.
LIBRA	The European market platform for RR trading.
MSID	Metering System identifier.
NGESO	National Grid Electricity System Operator
RR	Replacement Reserve – a type of balancing service that system operators can procure from Balancing Service Providers.
SAA	Settlement Administration Agent, a BSC Agent. (May also refer to their IT systems).
SBMU	Secondary BM Unit, a new type of BMU that can be used by VLPs.
SVA	Supplier Volume Allocation, which refers to the parts of the BSC arrangements that relate to energy consumption in Supplier BM Units.
SVAA	Supplier Volume Allocation Agent, a BSC Agent. (May also refer to their IT systems).
TERRE	Trans-European Replacement Reserve Exchange – a European market for trading Replacement Reserve as a balancing service.
TIBCO	A software tool for exchanging messages between systems.
VLP	Virtual Lead Party, a new BSC Party role introduced as part of the wider access arrangements.