Redlined Settlement Administration Agent User Requirements Specification text for P369 'National Grid Legal Separation changes to BSC'

This Modification proposes changes to sections 2, 5.5, 4.1, 4.3, 5.5, 5.11, 5.18, 5.21 and 6. We have redlined these changes against Version 21.0.

We have also included some additional Housekeeping changes to sections 4.6, 4.7, 5

There is no impact on any other part of this document for this Modification.

Amend section 2 as follows:

2　Introduction

This document is the User Requirements Specification (URS) for the Settlement Administration Agent role within the Balancing and Settlement Code Services. It is one of a set of documents forming the baseline for requirements of the seven BSC central system services. This document set comprises:

- BMRA URS;

- CRA URS;

- SAA URS;

- ECVAA URS;

- CDCA URS;

- FAA URS;

- SVAA URS;

- Interface Specification.

The objective of this document is to provide a complete specification of the requirements that the SAA service must meet, from the users' point of view. For this purpose, the "users" include BSCCo Ltd, Ofgem, ~~National Grid~~ the Transmission Company ~~–~~as the balancing mechanism operator, other Service Providers, BSC Parties (including Distribution companies as parties), and the SAA Service Provider's own operators.

This User Requirements Specification forms the input to the System Specification for the SAA Service. The System Specification constitutes the definition of the computer system requirements to be built in support of the SAA Services.

It should be noted that whereas this URS describes the requirements of the SAA *Service* in isolation, the computer system built to support these requirements will be a combined SAA, CRA and CDCA system.

- Process Model.

Amend section 4.1 as follows:

4.1　Summary of Business Requirements

The SAA will receive the inbound data, provided by other BSC Services, and perform calculations based on the validated data such that the financial debits and credits determined under the BSC of each BSC Party can be determined. The Funds Administration Agent will then be advised of the required financial transfers. This operation will be performed in accordance with the Settlement Timetable. The SAA service will also produce reports for distribution to BSC Parties and others, such as BSCCo Ltd and the ~~System Operator~~Transmission Company.

The information the SAA service will calculate will include:

- Balancing Mechanism accepted bid/offer volumes and prices,

- System Buy and System Sell price,

- BM Unit Transmission Loss Multipliers,

- Interconnector Error Administrator's energy volumes,

- Information Imbalance Charges,

- Credited energy volumes,

- Non-delivery volumes and charges,

- Energy imbalance charges,

- Other costs, including ~~System Operator~~Transmission Company charge, BSCCo Ltd administration charge, and SAA administration charge and Residual cash-flow reallocation.

Services will be provided to support the Disputes Process, including re-runs of the Settlement calculations as required.

In addition, the SAA service will produce and publish the Settlement Calendar.

Amend section 4.3 as follows:

4.3   Service Context

The following diagram illustrates the context of the SAA service within the wider market of the Balancing and Settlement Code. This is a simplified view for clarity; section 6 describes the interfaces from the SAA service to other parties in detail.

*'BSC Party' shown twice
for clarity of diagram
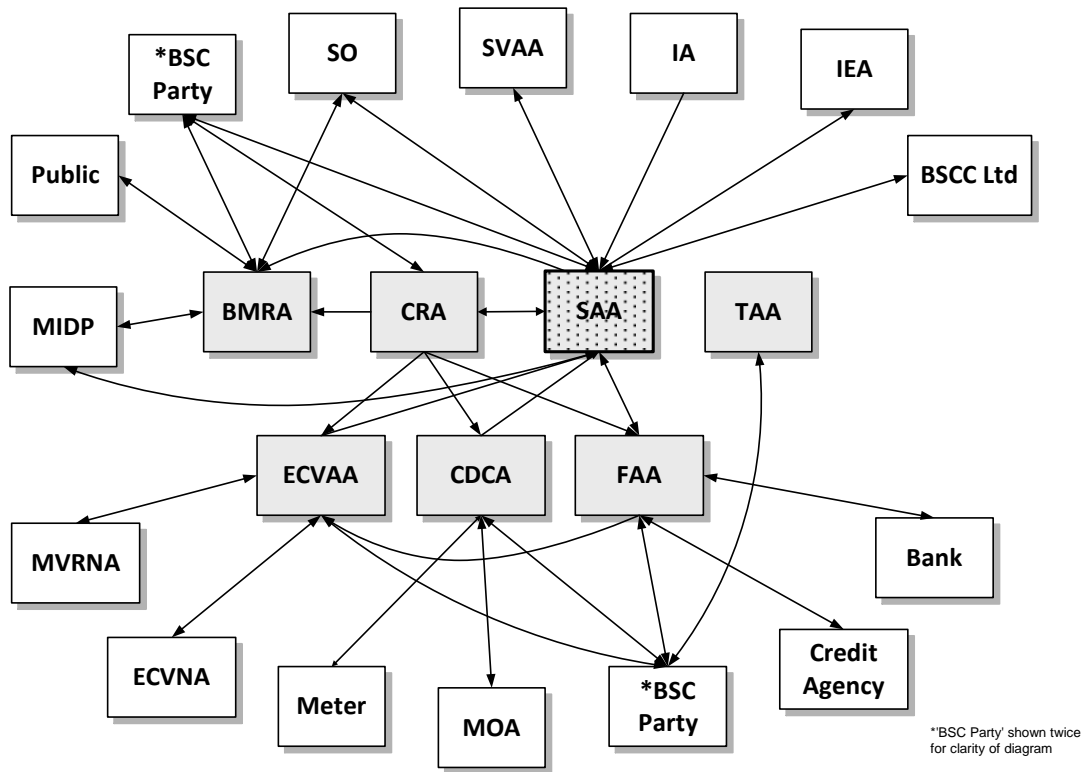
Item	Description
Bank	A bank which receives debit and credit instructions from the Funds Administration Agent.
BMRA	Balancing Mechanism Reporting Agent.
BSC Party	A signatory to the Balancing and Settlement Code
BSCCo Ltd	The Balancing and Settlement Code Company.
CDCA	Central Data Collection Agent.
CRA	Central Registration Agent
Credit Agency	A credit agency which provides credit rating data on BSC Parties.
ECVAA	Energy Contract Volume Aggregation Agent.
ECVNA	Energy Contract Volume Notification Agent.
FAA	Funds Administration Agent.
IA	Interconnector Administrator.
IEA	Interconnector Error Administrator
Meter	A physical meter registered within the Balancing and Settlement Code arrangements.
MIDP	Market Index Data Provider
MVRNA	Metered Volume Reallocation Notification Agent
MOA	Meter Operation Agent.
Public	A member of the general public.
SAA	Settlement Administration Agent.
SO	~~System Operator~~Transmission Company
SVAA	Supplier Volume Aggregation Agent, equivalent to the current Initial Settlement and Reconciliation Agent (ISRA).
TAA	Technical Assurance Agent.

Amend section 4.6 as follows:

4.~~6~~5   Numbering Scheme for Requirement Definitions

As described in section 2, the set of baseline requirement documents includes a User Requirements Specification for each of the services of the central BSC systems (except FAA - see footnote 1). Within these documents each requirement across the set of services is uniquely identified to provide traceability of each individual requirement from URS to System Specification (functional specification) and then to Design Specification (technical specification).

In keeping with industry good practise, this URS adopts a requirements numbering system that works as follows:

1.   Each requirement is associated with either an individual service, or as common to all services supported by the central systems. (TAA is typically excluded from the latter.) If a requirement applies to more than one service, but not all (e.g. two out of six), then the requirement is restated for each, i.e. there would be two separately numbered requirements (which happen to be the same) in this example.

Each requirement is prefaced by one of the following codes, as a clear indicator as to which service generates the business need:

- CRA (Central Registration Agent);

- SAA (Settlement Administration Agent);

- CDCA (Central Data Collection Agent);

- ECVAA (Energy Contract Volume Aggregation Agent);

- BMRA (Balancing Mechanism Reporting Agent);

- TAA (Technical Assurance Agent);

- FAA (Funds Administration Agent);

- GEN (General).

2. Requirements are categorised into the following headings:

- Functional (F), a specific business requirement of the service.

- Interface (I), a requirement for data exchange between services or to external parties.

- Non-functional (N), which includes auditing, security, resilience etc. The majority of these will probably be associated with the General (GEN) service.

- Service (S), which includes all time-related service delivery requirements, including performance and volumetrics.

3. Within a service, each requirement has unique number in the range 001 to 999. Numbers are not unique across services. Leading zeroes are always included.

Combining 1, 2 and 3 thus gives the following format for numbering each requirement (including a separator character):

[Service]-[Category][Number]

For example:

- CRA-F001

- BMRA-S022

- GEN-N112

- SAA-I033

Amend section 4.7 as follows:

4.~~7~~6 Attributes of Individual Requirements

For each identified requirement, the following items of information are represented in a tabular format:

Requirement ID: a unique identifier for the requirement, as described above.

Status: while the majority of SAA requirements will be mandatory for the Go Live date, others may not necessarily be. This field indicates whether the requirement is Mandatory (M) or Optional (O) in this context.

Title: a short descriptive title for the requirement.

BSC reference: a cross reference to the BSC documentation which is the original source of the business need. In most cases this will include a reference to the relevant Service Description and where appropriate, any Change Proposals or Modifications that have affected a particular requirement.

Man/auto: this field provides an indication as to whether a given requirement is likely to be satisfied by a manual, as opposed to automated, mechanism. For interface requirements an additional mechanism of 'via shared database' may be specified indicating that combined computer system will be built for the SAA, CRA and CDCA services. This mechanism statement is not however intended to be prescriptive, and the approach to supporting any individual requirement will be made definitively during the design phase.

Frequency: an indication of how often a business event will take place. Minimum, maximum and average frequencies, and any timing or scheduling requirements, are also identified here, as appropriate.

Volumes: data volumes associated with the requirement are identified here; this may include an estimate of the initial volume, and subsequent growth rates.

The requirement is then described in detail, with any associated specific non-functional and interface requirements separately identified. Any outstanding issues relating to the requirement definition are also identified.

Amend section 5 as follows:

5 Functional Requirements

This section describes the detailed set of business requirements for the Settlement Administration Service. To ensure traceability through to other deliverable documents such as the System Specification and Design Specification, each requirement is uniquely numbered, based on the convention described in section 4.

Amend section 5.5 as follows:

5.5 SAA-F005: Calculate balancing mechanism volumes

| Requirement ID: SAA-F005 | Status: M | Title: Calculate balancing mechanism volumes | **BSC reference**: SAA BPM 3.5 SAA SD 3.2.2-7, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.17.1, 3.18, 3.19, |

			CP632, P71, CP754, P305.
Man/auto: Automatic	Frequency: Once, on each settlement run.	Volumes:	

Functional Requirements:

A large number of intermediate calculations are required to produce the balancing mechanism volumes. All calculation steps in this requirement are included here.

Whilst all half-hourly integrated MWh energy quantities should be explicitly calculated as part of the settlement process, it is not intended that these continuous functions of time should actually be calculated or reported. The variables to which this applies are as follows:

Final Physical Notification ($FPN_{ij}(t)$)

Bid-Offer Volume ($qBO^n_{ij}(t)$)

Bid-Offer Upper Range ($BOUR^n_{ij}(t)$)

Bid-Offer Lower Range ($BOLR^n_{ij}(t)$)

Acceptance Volume ($qA^k_{ij}(t)$)

Accepted Bid-Offer Volume ($qABO^{kn}_{ij}(t)$)

Accepted Offer Volume ($qAO^{kn}_{ij}(t)$)

Accepted Bid Volume ($qAB^{kn}_{ij}(t)$)

1: The value of Final Physical Notification, $FPN_{ij}(t)$ shall be defined for times, t, falling within Settlement Period j by linear interpolation from the values of Point FPN ($^fFPN_{it}$), submitted for that Settlement Period j, for BM Unit i.

2: For any value of Bid-Offer Number, n, the Bid-Offer Volume ($qBO^n_{ij}(t)$) at any time t shall be defined by linear interpolation from the values of Point Bid-Offer Volume ($^fqBO^n_{it}$) submitted for Settlement Period j for BM Unit i.

3: Define Bid-Offer Upper Range for Bid-Offer Pairs with positive Bid-Offer Pair Numbers, and define the Bid-Offer Lower Range for Bid-Offer Pairs with negative Bid-Offer Pair Numbers. The Bid-Offer Upper Range is defined as follows:

$$BOUR^n_{ij}(t) = FPN_{ij}(t) + \Sigma^{n+}qBO^n_{ij}(t); \text{ and}$$

$$BOUR^0_{ij}(t) = FPN_{ij}(t)$$

Where Σ^{n+} represents a sum over all positive Bid-Offer Pairs, 1 to n.

For Bid-Offer Pairs for which the associated Bid-Offer Pair Number n<0, the Bid-Offer Lower Range $BOLR^n_{ij}(t)$ is defined for all times in Settlement Period j as:

$$BOLR^n_{ij}(t) = FPN_{ij}(t) + \Sigma^{n-}qBO^n_{ij}(t); \text{ and}$$
$$BOLR^0_{ij}(t) = FPN_{ij}(t)$$

Where Σ^{n-} represents a sum over all negative Bid-Offer Pairs, -1 to n.

On occasion, the SO may issue acceptances which exceed the Bid-Offer ranges:

In the following equations,

Σ^+ represents a sum over all positive Bid-Offer Pairs (zero if there are none)
Σ^- represents a sum over all negative Bid-Offer Pairs (zero if there are none)
$qA^k_{ij}(t)$ is the acceptance level for acceptance k

If, for any k, $qA^k_{ij}(t) > FPN_{ij}(t) + \Sigma^+ qBO^n_{ij}(t)$

then:

if $FPN_{ij}(t) >= 0$ and there is at least one positive bid-offer pair,

the highest numbered Bid-Offer pair is extended up to $Max^k(qA^k_{ij}(t))$

otherwise,

a new bid-offer pair is created with pair number one greater than the highest (or 1 if none exist) with:

$BOUR^n_{ij}(t) = Max\{ FPN_{ij}(t) + \Sigma^+ qBO^n_{ij}(t), Max^k(qA^k_{ij}(t)) \}$

If, for any k, $qA^k_{ij}(t) < FPN_{ij}(t) + \Sigma^- qBO^n_{ij}(t)$

then:

if $FPN_{ij}(t) <= 0$ and there is at least one negative bid-offer pair,

the lowest numbered Bid-Offer pair is extended down to $Min^k(qA^k_{ij}(t))$

otherwise,

a new bid-offer pair is created with pair number one lower than the lowest (or -1 if none exist) with:

$BOLR^n_{ij}(t) = Min\{ FPN_{ij}(t) + \Sigma^- qBO^n_{ij}(t), Min^k(qA^k_{ij}(t)) \}$

4: The Acceptance Volume ($qA^k_{ij}(t)$) attributable to each Bid-Offer Acceptance shall be defined. This is undertaken through processing the Point Acceptance Volumes that define the MW output levels that the ~~System Operator~~Transmission Company requested the BM Unit to operate for certain times within the Balancing Mechanism Window Period.
Linear interpolation shall be used to define the profile of power output in MW expected to be delivered in each Settlement Period within the Balancing Mechanism Window Period as a result of Bid-Offer Acceptance, k.

For times within the Balancing Mechanism Window Period prior to the first value Point Acceptance Volume for Bid-Offer Acceptance k, or after the last value, the value of the Acceptance Volume is set to the last calculated value of Acceptance Volume for those times. If no such previously calculated value of Acceptance Volume exists, then the Acceptance

Volume will be set to the value of Final Physical Notification ($FPN_{ij}(t)$) for those times.

Acceptance Volumes are then ordered by reference to increasing values of k.

The diagram below shows a Bid-Offer Acceptance in relation to Point Acceptance Volumes and the Bid-Offer Upper and Lower Ranges.
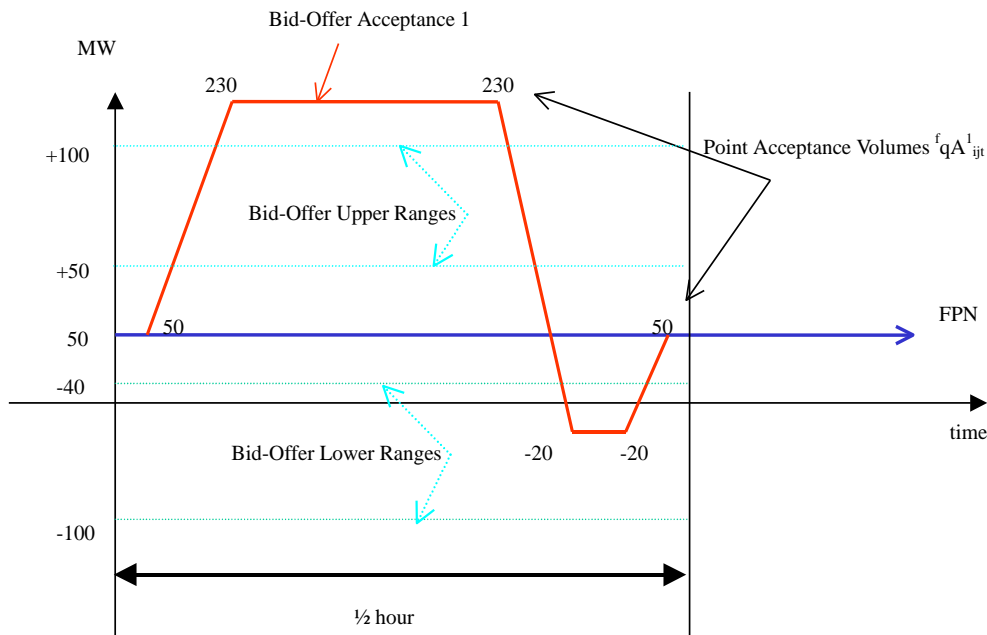
5: The Accepted Bid-Offer Volumes ($qABO^{kn}_{ij}(t)$) shall be defined in MW of a Bid or Offer from Bid-Offer Pair n accepted as a result of Bid-Offer Acceptance k in Settlement Period j from BM Unit i. This is determined as follows:

For n>0,

$$qABO^{kn}_{ij}(t) = Max\{Min(qA^{k}_{ij}(t), BOUR^{n}_{ij}(t)), BOUR^{n-1}_{ij}(t)\} - Max\{Min(qA^{k-}_{ij}(t), BOUR^{n}_{ij}(t)), BOUR^{n-1}_{ij}(t)\}$$

For n<0,

$$qABO^{kn}_{ij}(t) = Min\{Max(qA^{k}_{ij}(t), BOLR^{n}_{ij}(t)), BOLR^{n+1}_{ij}(t)\} - Min\{Max(qA^{k-}_{ij}(t), BOLR^{n}_{ij}(t)), BOLR^{n+1}_{ij}(t)\}$$

Where, from all Bid-Offer Acceptances for which an Acceptance Volume has been determined for Settlement Period j, k- represents the last Bid-Offer Acceptance preceding k which covers time t.

If there is no such Bid-Offer Acceptance, the value of $qA^{k-}_{ij}(t) = FPN_{ij}(t)$.

6: The Accepted Offer Volume ($qAO^{kn}_{ij}(t)$) and Accepted Bid Volume $qAB^{kn}_{ij}(t)$ shall be defined in MW by splitting the positive and negative parts of the Bid-Offer Acceptance
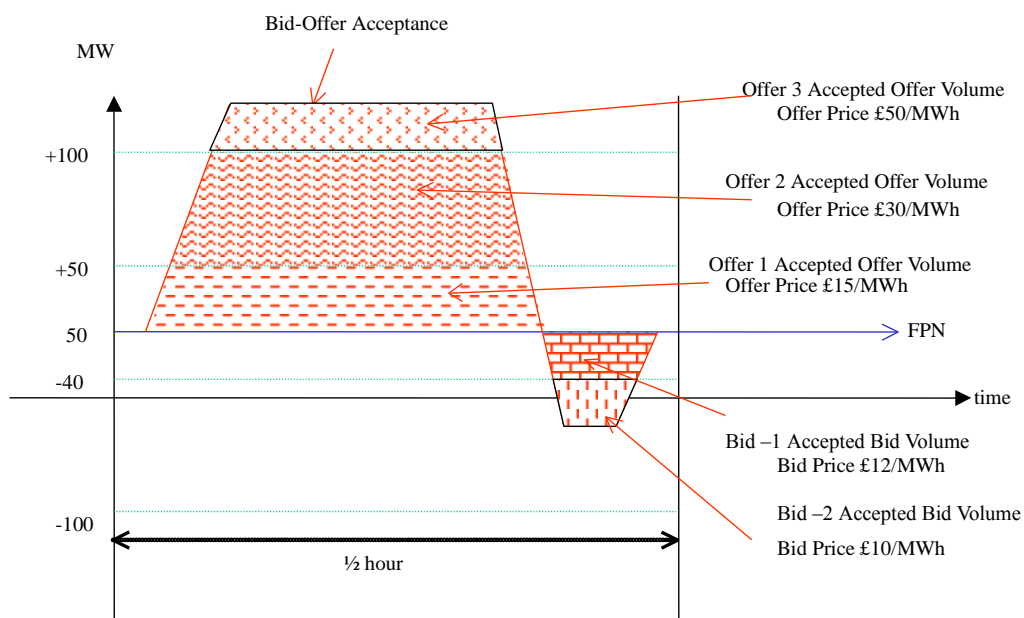
Volume.

The Accepted Offer Volume ($qAO^{kn}_{ij}(t)$) represents the volume (in MW) of Offer n accepted as a result of Bid-Offer Acceptance k from BM Unit i at times t within Settlement Period j. It is the positive part of the Bid-Offer Acceptance Volume, defined by:

$$qAO^{kn}_{ij}(t) = \text{Max } \{qABO^{kn}_{ij}(t), 0\}$$

Similarly, the Accepted Bid Volume ($qAB^{kn}_{ij}(t)$) represents the volume of Bid n accepted as a result of Bid-Offer Acceptance k from BM Unit i at times t within Settlement Period j. It is the negative part of the Bid-Offer Acceptance Volume, defined by:

$$qAB^{kn}_{ij}(t) = \text{Min } \{qABO^{kn}_{ij}(t), 0\}$$

The diagram below represents the volumes of Bids and Offers bought or sold as a result of a Bid-Offer Acceptance.

7: The Period Accepted Offer Volume (QAO^{kn}_{ij}) and Period Accepted Bid Volume (QAB^{kn}_{ij}) shall be calculated by integrating the Accepted Offer Volume and Accepted Bid Volume over all times in the Settlement Period.

The Period Accepted Offer Volume (QAO^{kn}_{ij}) is determined by integrating the Accepted Offer Volume over all times t in Settlement Period j. It represents the half-hourly integrated volume of Offer n, in MWh, accepted as a result of Bid-Offer Acceptance k.

The Period Accepted Bid Volume (QAB^{kn}_{ij}) is determined by integrating the Accepted Bid Volume over all times, t, in Settlement Period, j. It represents the half-hourly integrated volume of Bid n, in MWh, accepted as a result of Bid-Offer Acceptance k.

8: The Period BM Unit Total Accepted Offer Volume shall be calculated as follows:

$$QAO^n_{ij} = \Sigma^k QAO^{kn}_{ij}$$

The Period BM Unit Total Accepted Bid Volume shall be calculated as follows:

$$QAB^n_{ij} = \Sigma^k QAB^{kn}_{ij}$$

This is the total MWh volume of Offer or Bid n accepted from all Bid-Offer Acceptances.

Where either of QAO^n_{ij} or QAB^n_{ij} is non-zero, a flag (NZ^n_i) is set to record that a non-zero value has been calculated for the Settlement Period [see SAA-I014 sub flow 2 in IDD part 2].

9: The Period BM Unit Balancing Services Volume shall be calculated as follows:

$$QBS_{ij} = \Sigma^n (QAO^n_{ij} + QAB^n_{ij}) + QAS_{ij} + BMUADDV_{ij} - QDD_{ij}$$
where

$\quad$ Σ^n represents the sum over all Bid-Offer Pair numbers for the BM Unit

$\quad$ QAS_{ij} is the BM Unit Applicable Balancing Services Volume

$\quad$ $BMUADDV_{ij}$ is the BM Unit Allocated Demand Disconnection Volume

$\quad$ QDD_{ij} is the Period BM Unit Demand Disconnection Volume

This represents the net volume of Balancing Services accepted in Settlement Period j for BM Unit i

10: The Period FPN (FPN_{ij}) shall be calculated for each BM Unit i, by integrating the value of Final Physical Notification $FPN_{ij}(t)$ across all times t, falling within Settlement Period j. The Period FPN is quoted in MWh.

11: The Reserve Scarcity Price ($RSVP_j$) shall be the value reported to the SAA by the BMRA. Only if the SAA receives updated/amended LoLP data from the Transmission Company for a Settlement Period, the $RSVP_j$ is calculated as:

$$RSVP_j = LoLP_j * VoLL$$

where LoLPj is the Final or latest Indicative Loss of Load Probability for the Settlement Period and VoLL is the Value of Lost Load system parameter.

Until 1 November 2018, Iif the SO does not report there is no Final or Indicative Loss of Load Probability (or it is reported as 'null') available for the Settlement Period, then:

$RSVP_j = 0$.

From 1 November 2018, if the SO does not report a Final Loss of Load Probability (or it is reported as 'null') for the Settlement Period, then the BMRA will use the most recent Indicative LoLP as though it were the Final LoLP, else if no Indicative LoLP is available then:

$RSVPj = 0$.

If the BMRA uses an Indicative LoLP in the absence of a Final LoLP provided to it by the SO, then the BMRA will set the Default LoLP Flag to 'True'.

12: The STOR Instructed Volume ($QSIV^t_j$) shall be calculated as follows:

In respect of each Settlement Period that is in a STOR Availability Window, for each accepted Offer or BSAA that is a STOR Action, the STOR Instructed Volume ($QSIV^t_j$) shall be equal to the Period Accepted Offer Volume derived from an accepted Offer that is STOR Flagged.

13: The STOR Action Price ($STAP^t_j$) shall be calculated as follows:

In respect of each Settlement Period that is in a STOR Availability Window, for each accepted Offer that is a STOR action:

$STAP^t_j = \max(PO^n_{ij}, RSVP_j)$.

In respect of each Settlement Period, for each Balancing Services Adjustment Action that is a STOR action:

$STAP^t_j = \max(BSAP^m_j, RSVP_j)$.

14: The Demand Control Volumes shall be calculated as follows:

The SAA shall receive, from the BMRA or Transmission Company, and maintain Demand Control Event details. The SAA shall share these details with the CDCA via it shared database.

The Start Point Demand Control level and End Point Demand Control Level shall be the Demand Control Event Estimates determined at the relevant times and dates notified by the Transmission Company.

In respect of each Settlement Period, the Demand Control Volume for each Demand Control Event Stage shall be established by linear interpolation from the values of the Start Point Demand Control Level and End Point Demand Control Level.

The System Demand Control Volume ($QSDC_j$) shall be determined as the sum of the Demand Control Volumes where the Demand Control Volume Notice has the SMAF Flag set to 'Yes'.

The Balancing Demand Control Volume ($QBDC_j$) shall be determined as the sum of the Demand Control Volumes where the Demand Control Volume Notice has the SMAF Flag set to 'No'.

| Non-Functional Requirement: |
| Interfaces: |
| Issues: |

Amend section 5.11 as follows:

5.11   SAA-F011: Calculate energy imbalance cashflows

Requirement ID: SAA-F011	Status: M	Title: Calculate energy imbalance cashflows	BSC reference: SAA SD 3.24.3, 3.30.1, 3.33, 3.34, 3.35, 3.36, 3.37, SAA BPM 3.11, CR028, P71
Man/auto: Automatic	**Frequency:** Once, on each settlement run.	**Volumes:**	
Functional Requirements:			

A number of intermediate calculations are required to produce the energy imbalance cashflows. All calculation steps in this requirement are included here.

The SAA shall exclude the System Operator Production and Consumption Imbalance Volumes from the calculations in steps 3, 4, and 5 below .[REDUNDANT]

The System Operator Production Imbalance and System Operator Consumption Imbalance shall be reported to all parties on a Settlement Period basis.[REDUNDANT]

1: The Account Period Balancing Services Volume, $QABS_{aj}$, shall be calculated as follows:

$$QABS_{aj} = \Sigma_{i \in a} QBS_{ij} * TLM_{ij}$$

Where

   $\Sigma_{i \in a}$ represents a sum over all BM Units i for which Energy Account a is the Lead Energy Account;

   QBS_{ij} is the Period BM Unit Balancing Services Volume and

   TLM_{ij} is the Transmission Loss Multiplier for BM Unit i in Settlement Period j.

The Account Period Bid-Offer Volume represents the net volume of accepted Balancing Mechanism Bids and Offers attributable to each Energy Account a, in Settlement Period j.

2: The Account Energy Imbalance, $QAEI_{aj}$, attributable to each Energy Account a in Settlement Period j, shall be calculated. This shall be determined by subtracting the Total Energy Contract Volume ($QABC_{aj}$) and Account Period Balancing Services Volume

$(QABS_{ij})$ from the Account Credited Energy Volume $(QACE_{aj})$, as follows:

$$QAEI_{aj} = QACE_{aj} - QABS_{aj} - QABC_{aj}$$

Where the Total Energy Contract Volumes for each Energy Account is obtained from the Energy Contract Volume Aggregation Agent.

3: The Total System Energy Imbalance Volume $TQEI_j$ (summed across all Energy Accounts a) shall be calculated as follows:

$$TQEI_j = \Sigma_a QAEI_{aj}$$

Where Σ_a is the sum of all Energy Accounts for Settlement Period j and a ≠ SO Energy Account(s).

4: The Energy Imbalance Cashflow $(CAEI_{aj})$.shall be calculated for each Energy Account a, in Settlement Period j as follows:

If $QAEI_{aj} > 0$, then

$$CAEI_{aj} = -QAEI_{aj} * SSP_j,$$

Otherwise,
$$CAEI_{aj} = -QAEI_{aj} * SBP_j,$$

Where SSP_j is the System Sell Price and SBP_j is the System Buy Price for Settlement Period j and a ≠ SO Energy Account(s).

Thus, the price that applies to the Energy Imbalance Volume of a particular Energy Account shall depend on the net Energy Imbalance Position of that that Energy Account.

5: The Total System Energy Imbalance Cashflow, $TCEI_j$ shall be calculated as:
$$TCEI_j = \Sigma_a CAEI_{aj}$$

Where a ≠ SO Energy Account(s)
This represents the total cashflow relating to settlement of energy imbalances in Settlement Period j.

Non-Functional Requirement:

Interfaces:

Issues:

Amend section 5.18 as follows:

5.18   SAA-F018: Allocate BSCCo Ltd Costs (Redundant)

Requirement ID: SAA-F018	Status: M	Title: Allocate BSCCo Ltd Costs	BSC reference: SAA SD 3.47, SAA BPM 3.16, CR016, CR028
Man/auto: Automatic	**Frequency:** Once, on each settlement run.	**Volumes:**	
Functional Requirement:			
A number of intermediate calculations are required to produce the allocation of BSCCo Ltd costs. All calculation steps in this requirement are included here.			
1: The Balancing and Settlement Code Company (BSCCo Ltd) Costs shall be notified to the SAA by BSCCo Ltd.			
2: A proportion of these BSC Co costs be charged out pro-rata as explained below, and the remaining proportion be charged out pro-rata on the modulus of all notified Energy Contract volumes (ECQ_{zbaj}). The ~~System Operators'~~ Transmission Company's (SO) Energy Contract Volumes and Credited Energy Volumes will be excluded from these calculations.			
(i) $\Sigma^{+}(QCE_{aij})$ where Σ^{+} is, for each Account a in Settlement Period j, the sum over all BM Units i that are in delivering Trading Units (i.e. each Trading Unit t where $\Sigma_{i \in t} QM_{ij} >= 0$); and			
(ii) $\Sigma^{-}(-QCE_{aij})$, where Σ^{-} is, for each Account a in Settlement Period j, the sum over all BM Units i that are in offtaking Trading Units (i.e. each Trading Unit t where $\Sigma_{i \in t} QM_{ij} < 0$)			
3: BSCCo Ltd costs shall be recovered monthly, based on a cost forecast, and will reconcile this at year end to total actual costs.			
Non-Functional Requirement:			
Interfaces:			
Issues:			

Amend section 5.21 as follows:

5.21   SAA-F021: Manage settlement disputes

Requirement ID: SAA-F021	Status: M	Title: Manage settlement disputes	BSC reference: SAA SD 5.1, SAA BPM 3.18
Man/auto: Manual & auto	**Frequency:** On demand.	**Volumes:**	
Functional Requirement:			
1: The SAA shall perform settlement runs in support of disputes, on instruction from BSCCo Ltd.			

2: It shall be possible for SAA system operators to create new data or amend existing data for input to a dispute settlement run.
3: The dispute run shall invoke the required calculations for a specific Settlement Period to be re-run.
4: The output from any dispute run, shall be forwarded to the Funds Administration Agent for processing and funds transfer. The SAA provides only the new calculated values to the FAA; the SAA is not required to provide the difference between the new values and the original values.
5: Where the FPN is disputed, an Amended FPN shall be determined. The dispute run (and any future runs pertaining to the disputed Settlement Period) shall be performed against the amended FPN.
Non-Functional Requirement:
A Dispute may be raised by a BSC Party, the ~~System Operator~~Transmission Company or by BSCCo Ltd if they object to the results of a Settlement when they believe that the calculation has been undertaken using the wrong data or the calculation does not follow the rules. The Settlement Administration Agent may raise a dispute on behalf of BSC Parties if errors in calculations or data are detected or suspected. The Settlement Administration Agent shall be able to receive individual Dispute notifications from BSC Parties and shall take appropriate action to process the dispute. All dispute notifications shall be logged. The Settlement Administration Agent shall, when requested by the Customer, undertake evaluation, or analysis if requested, of a dispute to determine the facts and its materiality. The Settlement Administration Agent shall, when requested by the Balancing and Settlement Code Company or Panel submit written evidence concerning a particular Dispute, to the Balancing and Settlement Code Panel. The Settlement Administration Agent shall carry out actions in support of disputes within timescales agreed with BSCCo Ltd.
Interfaces:
The interface requirements SAA-I012 and SAA-I018 describe the Dispute Notifications received by SAA from external parties, and the Dispute Reports produced by the SAA.
Issues:

Amend section 6 as follows:

Amend section 6

6 Interface Requirements

The SAA Service shall provide an interface to the following external parties.

Other Service Providers:

- Central Registration Agent (CRA)

- Central Data Collection Agent (CDCA)

- Funds Administration Agent (FAA)

- Balancing Mechanism Reporting Agent (BMRA)

- Energy Contract Volume Aggregation Agent (ECVAA)

- Supplier Volume Allocation Agent (SVAA)

Other external parties:

- BSC Party

- BSCCo Ltd

- ~~System Operator~~Transmission Company (SO)

- Interconnector Administrator (IA)

- Interconnector Error Administrator (IEA)

The SAA Service shall provide inbound and outbound interfaces as summarised in the following table. Each interface requirement is described in detail below.

It is the intention that the SAA URS and the IDD should be fully consistent. However, in the event that some inconsistency is found, the definition in the IDD should be assumed to take precedence until such time as the inconsistency can be corrected at the next release of the document.

It is anticipated that the SAA Service will acquire correct and complete operational data from market participants on an ongoing basis. The SAA Service will not be migrating bulk data from any source.

Reqt No.	Interface Requirement	Inbound/ Outbound	Interface User (IU)	Mechanism
SAA-I001	Receive Registration Data	Inbound	CRA	Via shared database
SAA-I002	Receive Credit Assessment Load Factor	Inbound	CRA	Via shared database
SAA-I003	Receive Balancing Mechanism Data	Inbound	BMRA	Automatic
SAA-I004	Receive Period Meter Data	Inbound	CDCA	Via shared database
SAA-I005	*Requirement not currently used*			
SAA-I006	Receive BM Unit Metered Volumes for Interconnector Users	Inbound	IA	Automatic
SAA-I007	Receive BM Unit Allocated Demand Volume	Inbound	SVAA	Automatic
SAA-I008	Receive Energy Contract Data	Inbound	ECVAA	Automatic
SAA-I009	Receive Transmission Loss Data	Inbound	BSCCo Ltd	Manual
SAA-I010	Receive BSCCo Ltd Costs (Redundant)	Inbound	BSCCo Ltd	Automatic
SAA-I011	Receive Payment Calendar Data	Inbound	FAA	Manual
SAA-I012	Receive Dispute Notification	Inbound	BSC Party, BSCCo Ltd, SO	Manual
SAA-I013	Issue Credit/Debit Reports	Outbound	FAA, ECVAA	Automatic
SAA-I014	Issue Settlement Reports	Outbound	BSC Party, BSCCo Ltd, SO	Automatic
SAA-I015	Issue BM Unit Credit Assessment Import Capability Data	Outbound	CRA	Via shared database
SAA-I016	Publish Settlement Calendar	Outbound	BSC Party, BSC Party Agent, SVAA, BSCCo Ltd	Manual
SAA-I017	Issue SAA Data Exception Reports	Outbound	ECVAA, SO, SVAA, IA, MIDP	Automatic
SAA-I018	Issue Dispute Reports	Outbound	BSC Party, BSCCo Ltd, SO	Manual
SAA-I019	Issue BSC Party Performance Reports (Redundant)	Outbound	BSCCo Ltd	Automatic
SAA-I020	Issue SAA Performance Reports	Outbound	BSCCo Ltd	Manual
SAA-I021	Receive Acknowledgement of SAA Messages	Inbound	All automatic outbound IU	Automatic
SAA-I022	Issue SAA Acknowledgement of Messages	Outbound	All automatic inbound IU	Automatic
SAA-I023	Receive System Parameters	Inbound	BSCCo Ltd	Manual
SAA-I025	SAA BSC Section D Charging Data	Outbound	BSCCo Ltd	Manual
SAA-I026	Receive Balancing Services Adjustment Date	Inbound	SO	Automatic
SAA-I027	Report pre-settlement run validation failure	Outbound	BSCCo Ltd	Manual
SAA-I028	Receive settlement run decision	Inbound	BSCCo Ltd	Manual
SAA-I029	Receive settlement run instructions	Inbound	BSCCo Ltd	Manual
SAA-I030	Receive Market Index Data	Inbound	MIDP	Automatic
SAA-I031	Receive Market Index Data Provider Thresholds	Inbound	BSCCo Ltd	Manual
SAA-I032	Report Market Index Data Provider Thresholds	Outbound	BSCCo Ltd	Manual
SAA-I033	Receive Request for Data Change	Inbound	SO	Manual
SAA-I034	Report Recommended Data Change	Outbound	BSCCo Ltd	Manual
SAA-I035	Receive Instruction for Data Change	Inbound	BSCCo Ltd	Manual

Reqt No.	Interface Requirement	Inbound/ Outbound	Interface User (IU)	Mechanism
SAA-I036	Report Confirmation of Data Change	Outbound	BSCCo Ltd, SO	Manual
SAA-I037	Issue Withdrawals Checklist - Settlement Data	Outbound	CRA	Via shared database
SAA-I038	Receive Excluded Emergency Accepted Pricing Information	Inbound	BSCCo Ltd	Manual
SAA-I039	Send Excluded Emergency Acceptance Dry Run Results	Outbound	BSCCo Ltd	Manual
SAA-I040	Receive Authorisation To Proceed With Full Settlement Run	Inbound	BSCCo Ltd	Manual
SAA-I043	Demand Control Instructions to CDCA	Outbound	CDCA	Via shared database
SAA-I044	Aggregated BM Unit Disconnection Volumes	Inbound	CDCA	Via shared database
SAA-I045	BM Unit Allocated Disconnection Demand Volume	Inbound	SAA	Electronic data file transfer, Pool Transfer File Format
SAA-I047	BSCCo Calculated SBR Imbalance Price	Inbound	BSCCo Ltd	Manual
SAA-I048	SBR Imbalance Price Discrepancy Notice	Outbound	BSCCo Ltd	Manual
SAA-I049	Trading Unit Data	Outbound	BMRA	Manual

The following diagrams illustrate these interface requirements.

CRA

Via shared CRA/SAA database

1. Party and Agency Authentication Details
2. BM Unit and Energy Account Registration Data
3. Credit Assessment Load Factors

CDCA

Via shared CDCA/SAA database

1. BM Unit Metered Volumes
2. GSP Group Take Volumes
3. Interconnector Metered Flow

SVAA

Automatic

1. BM Unit metered volumes for suppliers
2. Corrected Component volumes.

IA

Automatic

1. BMU Metered Volumes for I/C Users

ECVAA

Automatic

1. Account Bilateral Contract Volume
2. Meter Volume Reallocation Notification

BMRA

Automatic

1. Final physical notification data
2. Bid-offer data
3. bid-offer acceptance data
4. Dynamic data

BSCCo

Manual

1. Transmission Loss Data
2. Dispute Notification
3. Information Imbalance Price
4. Receive settlement run decision
5. Receive settlement run information
6. MID Thresholds
7. Instruction for Data Change

Automatic

8. BSCCo Costs

MIDP

Automatic

1. Market Index Data

SO

Manual

1. Dispute Notification
2. Request for Data Change

Automatic

3. Balancing Services Adjustment Data

FAA

Manual

1. Payment Calendar

BSC Party

Manual

1. Dispute Notification

SAA

Other BSC Service Providers

External Party

Interface

SAA Service: Inbound Interface Requirements[1]

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[1] Note that details of SAA-I047 (BSCCo Calculated SBR Imbalance Price) flow has not been included in this diagram in order to avoid excessive clutter
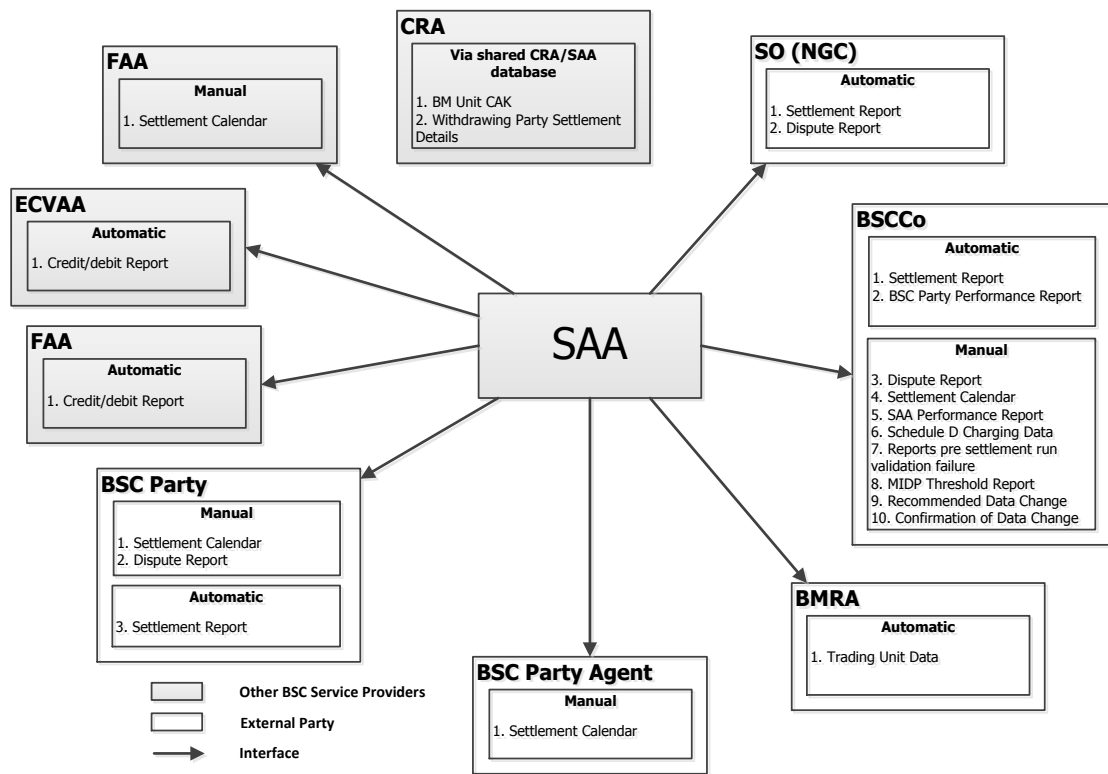
SAA Service: Outbound Interface Requirements[2]

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[2] Note that details of the SAA-I017 (Data Exception Report) and SAA I048 (SBR Imbalance Price Discrepancy Notice) flows have not been included in this diagram, in order to avoid excessive clutter.