The Single Electricity Market (SEM)

Agreed Procedure 2: Interconnector User Capacity Right Calculation and Dispatch Notification

Version 10.0

21 October 2011

SEM Agreed Procedure

Title	Agreed Procedure 2: Interconnector User Capacity Right Calculation and Dispatch Notification
Version	10.0
Date	21 October 2011

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DOCUMENT HISTORY

Version	Date	Author	Comment
1.0	18/10/2006	SEM Implementation Team	Incorporation of more comments
2.3a	10/04/2007	Regulatory Authorities	Updated with RA397 and Code 1.3
2.7	25/04/2007	Regulatory Authorities	Internal review
3.2	22/06/2007	Regulatory Authorities	Approved for Go-Active by Regulatory Authorities and TSO/SEM Programme
4.0	20/11/2007	Modification Panel Secretariat	Incorporating RA-Approved Mod_45_07
4.1	24/10/2008	Modification Committee Secretariat	Mod_59_08: Interconnector Unit Nominations-Net Zero Flow
4.2	24/11/2008	Modification Committee Secretariat	Mod_60_08: Changes to AP2 to reflect MO obligation to calculate MIUNs in enduring Code and IA responsibility to calculate and submit ATC.
5.0	07/04/2009	SEMO	SEMO Baseline Documentation at V5.0
6.0	30/10/2009	SEMO	SEMO Baseline Documentation at V6.0
7.0	28/05/2010	SEMO	SEMO Baseline Documentation at V7.0
8.0	19/11/2010	SEMO	SEMO Baseline Documentation at V8.0
9.0	06/05/2011	SEMO	SEMO Baseline Documentation at V9.0
10.0	21/10/2011	SEMO	SEMO Baseline Documentation at V10.0

RELATED DOCUMENTS

Document Title	Version	Date	By
Trading and Settlement Code	V10.0	21/10/2011	SEMO
BETTA Operational Procedures	Version 3.0	Nov 2005	SONI
Moyle Interconnector Procedures	Version 1.0	07th March 2005	SONI
Agreed Procedure 1 "Participant and Unit Registration and Deregistration"			
Agreed Procedure 4 "Transaction Submission and Validation"			
Agreed Procedure 6 "Publications"			

Agreed Procedure 11 "Market System Operation, Testing, Upgrading and Support"			

1.   INTRODUCTION

1.1   BACKGROUND AND PURPOSE

This Agreed Procedure describes the specific procedures for the treatment of Interconnectors which connect the Transmission Systems of Ireland or Northern Ireland with systems outside Ireland and Northern Ireland and which interact with the SEM (the "Single Electricity Market"). This Agreed Procedure sets out the processes for the operation of Interconnectors as required by the Trading and Settlement Code (the "Code") and with which Parties to the Code must comply.

1.2   SCOPE OF AGREED PROCEDURE

This Agreed Procedure is a definition of procedural steps to be followed by the Market Operator, Interconnector Owner, Interconnector Administrator(s), System Operator(s) and Participants. It forms an annexe to, and is governed by, the Code. This document is a statement of process and procedure. Parties' rights and obligations are set out in the Code.

1.3   DEFINITIONS

Save as expressly defined, words and expressions defined in the Code shall have the same meanings when used in this Agreed Procedure. Abbreviations and definitions that are specific to this Agreed Procedure are set out within Appendix 1.

References to particular sections relate internally to this Agreed Procedure unless specifically noted.

1.4   COMPLIANCE WITH AGREED PROCEDURE

Compliance with this Agreed Procedure is required under the terms as set out the Code.

2.   DESCRIPTIVE OVERVIEW

Interconnectors and their related Units have special treatment under the SEM that which differs from that of other Generator Units. The details are set out in the Code and this Section 2 of this Agreed Procedure provides a non-legally binding overview of those provisions, for information purposes only, as context for the remaining provisions of this Agreed Procedure.

The Code provides that an Interconnector Owner (the entity that owns or controls an Interconnector) will shall register the an Interconnector using Type 1 Channel, and in doing so shall appoint an Interconnector Administrator to perform day-to-day functions under the Code. The Interconnector Administrator will be designated as the responsible Party for all Type 2 Channel and Type 3 Channel communications in respect of to the an Interconnector.

Any procedures established for the interface to any relevant market outside SEM are outside the scope of this Agreed Procedure.

For each Interconnector, an Interconnector Error Unit and an Interconnector Residual Capacity Unit are shall be registered. The Interconnector Error Unit is used for managing and settling Interconnector imbalances. The Interconnector Residual Capacity Unit is intended for the utilisation of residual capacity by the relevant System Operator, subject to commercial agreement.

On registration of the an Interconnector, the Interconnector Owner shall determines ensure that the Interconnector Administrator is registered and that the Interconnector Error Unit is shall is registered to the Interconnector Administrator. The System Operator shall register the Interconnector Residual Capacity Unit.

The procedures to be followed by the Interconnector Administrator in determining the Active Interconnector Unit Capacity Holdings and in recovering the managing Interconnector operationsimbalances fall outside the scope of this Agreed Procedure.

In this Agreed Procedure, whenever a Party is required to submit data via a Type 1 Channel, then the person submitting the data on behalf of from that Party must be duly authorised to do so, pursuant to send that data as set out in Agreed Procedure 11 "Market System Operation, Testing, Upgrading and Support".

For any values in MW or MWh for an Interconnector, positive values relate to imports to the Pool and negative values relate to exports from the Pool.

3.2.1   REGISTRATION OF INTERCONNECTOR ENTITIES

An Interconnector is registered in accordance with Agreed Procedure 1 "Participant and Unit Registration and Deregistration". As part of this process, the Interconnector Owner determines the identity of the Interconnector Administrator and the parties responsible for the registration of the Interconnector Residual Capacity Unit and the Interconnector Error Unit.

The Interconnector Owner maintains the Interconnector Registration Data in accordance with Agreed Procedure 1 "Participant and Unit Registration and Deregistration".

The Interconnector Administrator may also maintain the Interconnector Technical Data which is a subset of the Interconnector Registration Data, in accordance with this Agreed Procedure.

3.12.2   AVAILABLE TRANSFER CAPACITY

The Available Transfer Capacity of an Interconnector is determined by the relevant Interconnector Administrator and is notified to the Market Operator by 109:030 on TD-2.

Revisions to the Available Transfer Capacity after the initial notifications shall be notified to the Market Operator by the relevant Interconnector Administrator, as soon as possible following any change in the Available Transfer Capacity.

3.22.3 INTERCONNECTOR UNIT NOMINATIONS AND MODIFIED INTERCONNECTOR UNIT NOMINATIONS

3.2.12.3.1 Pre Gate Window Closure

Interconnector Users shall may only submit Commercial Offer Data to each Gate Window for their the Interconnector Units which corresponds with that Gate Window, in respect of the corresponding each Interconnector prior to Gate Closure. Each Interconnector Unit shall be defined by the following data items:

- The Interconnector to which the Interconnector Unit is registered;

- The Participant ID; and

- The Gate Window Identifier with which the Interconnector Unit is associated.

The A Data Transaction containing Commercial Offer Data for Interconnector Units shall include:

- An identifier Identification of the Interconnector Unit to which the Commercial Offer Data relates;.

- An identifier of the Gate Window to which the Data Transaction relates. The identifier of the Gate Window must match the Gate Window to which the Data Transaction is submitted;

- Uup to ten Price Quantity Pairs per Interconnector Unit per Trading Period in the relevant Trading Day; and.

- Maximum Interconnector Unit Import Capacity and Maximum Interconnector Unit Export Capacity per Trading Period in the relevant Trading Day.

The Market Operator shall reject any Commercial Offer Data submission for any Interconnector Unit where the identifier of the Gate Window as submitted within the associated Data Transaction does not correspond with the Interconnector Unit Gate Window Identifier.

In accordance with the Code, where no valid Commercial Offer Data is submitted in respect of an Interconnector Unit in a Trading Period, the Maximum Interconnector Unit Import Capacity and the Maximum Interconnector Unit Export Capacity is shall be set to zero by the Market Operator.

The Interconnector Administrator shall submit the Active Interconnector Unit Capacity Holding Data for each Interconnector Unit prior to the EA1 Gate Window Closure that is consistent with the Interconnector Available Transfer Capacity (ATC) in each direction.

3.2.22.3.2 Calculation of Modified Interconnector Unit Nominations

Following the completion of each Ex-Ante One MSP Software Run, Ex-Ante Two MSP Software Run, and Within Day One MSP Software Run, tThe Market Operator shall:

- by 11:00 on the day prior to the start of the Trading Day Ddetermine Interconnector Unit Nominations for each Interconnector Unit and for each Interconnector from the Ex Ante Indicative MSP Software Run based on the relevant inputs (including Active Interconnector Unit Capacity Holding, Commercial Offer Data, and Interconnector Technical Data and, in the case of the Ex-Ante One MSP Software Run only, the Active Interconnector Unit Capacity Holding). In calculating the Interconnector Unit

Nominations, the Ramp Rate for each Interconnector Unit will be set to a value of 99999.9 MW/min, and the relevant Accepted Aggregate Interconnector Ramp Rate will be applied as a limit across all corresponding Interconnector Units.

- The Market Operator shall cCalculate the Modified Interconnector Unit Nominations (MIUNs), separately for each Interconnector pursuant to paragraph 2.71, by applying the appropriate Accepted Aggregate Interconnector Ramp Rate and with respect to the rules in Appendix 2 – Calculation of Modified Interconnector Unit Nominations. The Market Operator shall, in calculating the Modified Interconnector Unit Nominations (MIUNs), take into account the latest most recently Accepted Available Transfer Capacity for the relevant Interconnector for the Trading Day.

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- The Market Operator shall by 12:00 on the day prior to the start of the Trading Day sSubmit to each Interconnector User in respect of its Interconnector Units the corresponding MIUNs, in accordance with Table 1.

- The Market Operator shall by 12:00 on the day prior to the start of the Trading Day sSubmit Aggregate Modified Interconnector Unit Nomination (AMIUNs) to the relevant System Operator, in accordance with Table 1. AMIUNs represent aggregate import and export MW values per Trading Period over each Interconnector registered.

- The Market Operator shall not calculate Modified Interconnector Unit Nominations in respect of an Interconnector Unit where:

    o Commercial Offer Data was not Accepted within the Gate Window corresponding to the particular MSP Software Run Type for the relevant Trading Day; or

    o Interconnector Unit Nominations have not been calculated as a result of any completed MSP Software Run Type in respect of the relevant Trading Day.

Table 1 – Scheduled calculation and submission Timings for IUNs, MIUNs and AMIUNs

MSP Software Run	Interconnector Unit Nominations	Modified Interconnector Unit Nominations	Aggregate Modified Interconnector Unit Nominations
Ex-Ante One MSP Software Run	By 11:00 on the day prior to the Trading Day	By 11:00 on the day prior to the Trading Day	By 11:00 on the day prior to the Trading Day
Ex-Ante Two MSP Software Run	By 13:00 on the day prior to the Trading Day	By 13:00 on the day prior to the Trading Day	By 13:00 on the day prior to the Trading Day
Within Day One MSP Software Run	By 09:30 on Trading Day	By 09:30 on Trading Day	By 09:30 on Trading Day

3.32.4 SO INTERCONNECTOR TRADES

The System Operator using the Interconnector Residual Capacity Unit shall be entitled under the terms of the Code, subject to commercial agreement, to make SO Interconnector Trades across the relevant Interconnector in either direction, using any available Interconnector

capacity which is not allocated to Interconnector Users under the aggregate of the prevailing Modified Interconnector Unit Nominations.

SO Interconnector Trades in respect of any Trading Period must be conducted after Gate Closure and after the calculation of the MIUNs by the Market Operator, and the submission to the relevant System Operator of the Aggregate Modified Interconnector Unit Nominations.as follows:

1. For each Trading Period that is within the WD1 Trading Window:

     a. Where an MSP Software Run Cancellation applies in respect of the Within Day One MSP Software Run, SO Interconnector Trades shall be conducted after publication of the associated MSP Software Run Cancellation Report.

     b. Otherwise, SO Interconnector Trades shall be conducted after:

          i.   calculation of the Within Day One Market Schedule and the associated Modified Interconnector Unit Nominations; and

          ii. after submission to the relevant System Operator of the associated Aggregate Modified Interconnector Unit Nominations.

2. For each Trading Period that is not within the WD1 Trading Window:

     a. Where an MSP Software Run Cancellation applies in respect of the Ex-Ante Two MSP Software Run, SO Interconnector Trades shall be conducted after publication of the associated MSP Software Run Cancellation Report.

     b. Otherwise, SO Interconnector Trades shall be conducted after:

          i.   calculation of the Ex-Ante Two Market Schedule and the associated Modified Interconnector Unit Nominations; and

          i.ii. after submission to the relevant System Operator of the associated Aggregate Modified Interconnector Unit Nominations."

3.42.5   POST EA1 GATE WINDOW CLOSURE REDUCTIONS IN ATC

In the event of a reduction in the magnitude of the Available Transfer Capacity (this includes reductions in the absolute magnitude of the Maximum Import Available Transfer Capacity and/or the Maximum Export Available Transfer Capacity) after the EA1 Gate Window Closure, then the following shall be performed:

- The Interconnector Administrator shall, as soon as possible, notify the Market Operator of the revised Available Transfer Capacity values via the Available Transfer Capacity Data Transaction,

- In addition, tThe Market Operator shall, as soon as possible, recalculate the Modified Interconnector Unit Nominations shall be recalculated by the Market Operator and shall re-issued such MIUNs to each Interconnector User for each of their Interconnector Units. The Modified Interconnector Unit Nominations shall be recalculated by the Market Operator in accordance with the rules in Appendix 2 - Calculation of Modified Interconnector Unit Nominations,

- The Market Operator shall, as soon as possible, recalculate the Aggregate Modified Interconnector Unit Nominations (AMIUNs) and shall re-issue such AMIUNs to the relevant System Operator.

The Modified Interconnector Unit Nominations for each Interconnector Unit shall be revised to the minimum extent necessary, taking into account any SO Interconnector Trades which are in the opposite direction to the aggregate of the MIUNs, but not taking into account any SO Interconnector Trades which are in the same direction to the aggregate of the MIUNs.

The Modified Interconnector Unit Nominations shall be recalculated by the Market Operator in accordance with the rules in Calculation of Modified Interconnector Unit Nominations. The Market Operator shall submit the revised MIUNs to the relevant Interconnector Users and the aggregate of the MIUNs to the relevant System Operator.

3.52.6   POINT OF APPLICATION OF VALUES

All values which are expressed in MW, MW/min or MWh and which are not Loss-Adjusted in relation to an Interconnector, Interconnector Units, Interconnector Residual Capacity Units or Interconnector Error Units shall be applicable at the point of Connection.

4.3.   PROCEDURE DEFINITION

4.13.1 INTERCONNECTOR REGISTRATION DATA MAINTENANCE

The Interconnector Owner or Interconnector Administrator as appropriate shall inform the Market Operator of changes to the Interconnector Technical Data at least 29 days prior to the Trading Dayprior to Gate Closure. Any submission of Interconnector Technical Data which uses the Type 1 Communication Channel shall be made at least five Working Days before Gate Closure for the first Trading Day for which the relevant data shall be effective. In such circumstancesUpon receipt, the Market Operator shall confirm receipt of the data by return fax email by 11:00 on the next Working Day following receipt. In the absence of receipt of such confirmation, the relevant Party shall re-submit the relevant data.

Within 1 Working Day of receipt or by TD-1 12:00 hourson the day prior to the Trading Day, whichever is the earlier, the Market Operator shall submit the revised Interconnector Technical Data to the relevant System Operator.

3.2   ACTIVE INTERCONNECTOR UNIT CAPACITY HOLDINGS

Each Interconnector Administrator shall determine the Active Interconnector Unit Capacity Holdings for its Interconnector (consisting of the Active Interconnector Unit Import Capacity Holding and the Active Interconnector Unit Export Capacity Holding) for each Trading Period in the Optimisation Time Horizon. The Active Interconnector Unit Capacity Holding Data Transaction shall be submitted to the Market Operator by the Interconnector Administrator, by the EA1 Gate Window Closure, as set out in Appendix K of the Code.

The Market Operator shall notify each Interconnector User of its Active Interconnector Unit Capacity Holdings in respect of its registered Interconnector Units (where capacity is held), as soon as possible following receipt of the associated Data Transaction.

4.23.3 INITIAL AVAILABLE TRANSFER CAPACITY NOTIFICATION

The Interconnector Administrator shall determines the Available Transfer Capacity (consisting of the Maximum Import Available Transfer Capacity and the Maximum Export Available Transfer Capacity) for each Interconnector for each Trading Period in the Optimisation Time Horizon. The Available Transfer Capacity Data Transaction will shall be determined and submitted by the Interconnector Administrator to the Market Operator by the EA1 Gate Window Closure, as 09.30 on the day prior to Gate Closure (TD-2) according to the Interconnector Available Transfer Capacity Data Transaction set out in Appendix K of the Code.

The Market Operator shall publish the Available Transfer TCapacity s via the MPI and the Market Operator Website, as soon as possible following receipt of the associated Data Transaction by 10.00 on the day prior to Gate Closure (TD-2).

4.33.4 UPDATES TO AVAILABLE TRANSFER CAPACITY

Whenever there is a change to the ATC on an Interconnector after the initial notification in 3.23.23.23.2, the following shall apply:

- Tthe relevant Interconnector Administrator shall notify the System Operator, as soon as possible.

- Where any change in ATC occurs prior to the EA1 Gate Window Closure, the relevant Interconnector Administrator shall submit the revised ATC to the Market Operator as soon as possible, in accordance with the Interconnector Available Transfer Capacity Data Transaction set out in Appendix K of the Code.

- The relevant Interconnector Administrator for each corresponding Interconnector shall submit the final ATCs to the Market Operator by TD+1 12:00 hours, in accordance with the Interconnector Available Transfer Capacity Data Transaction set out in Appendix K of the Code.

Whenever there is a change in Available Transfer Capacity prior to the EA1 Gate Window Closure, then the Interconnector Administrator shall submit the revised data to the Market Operator and shall, where possible, take account of such change and if possible in order to recalculate and resubmit the Active Interconnector Unit Capacity Holdings prior to the EA1 Gate Window Closure.

Whenever there is a reduction in ATC, from the ATC used to produce the final Active Interconnector Unit Capacity Holdings, prior to the calculation of the MIUNs by the Market Operator, then where possible, the Market Operator shall take into account the reduction in ATC in calculating the MIUNs (in paragraph 3.53.53.53.4 of this Agreed Procedure).

Whenever there is a change in ATC after the initial calculation of MIUNs, then the Market Operator shall recalculate revised MIUNs, taking into account the corresponding change in ATC. The revised MIUNs shall each be in the same direction and must not exceed in absolute magnitude the value of the corresponding IUNs.

The Market Operator shall submit:

1. as soon as possible after identifying the change in ATC, the revised MIUNs to the relevant Interconnector Users using MITS.

2. as soon as possible after receiving notification of the reduction in ATC, the Aggregate MIUNs to the relevant System Operator.

4.43.5 MODIFIED INTERCONNECTOR UNIT NOMINATIONS

Prior to Gate Closure, the Interconnector Administrator shall submit Active Interconnector Unit Capacity Holding Data for the relevant Interconnector to the Market Operator using the Active Interconnector Unit Capacity Holding Data Transaction set out in Appendix K of the Code.

The Market Operator shall notify Interconnector Users of their Active Interconnector Unit Capacity Holdings by TD-1 10:30 hours via the MPI.

Modified Interconnector Unit Nominations are derived from the outputs of an MSP Software Run. The Market Operator shall complete scheduled MSP Software Runs that are conducted prior to the end of the Trading Day (taking into account the provisions in respect of MSP Software Run Cancellation), using the corresponding Commercial Offer Data for the Interconnector Units, a Ramp Rate for each Interconnector Unit set to a value of 99999.9 MW/min, and the Accepted Aggregate Interconnector Ramp Rate for the relevant Interconnector, applied as a limit across all Interconnector Units.

- The Ex-Ante One Indicative MSP Software Run shall be performed to determine the Ex-Ante One Indicative Market Schedule (IMS) by TD-1 11:00 hours on the day prior to the Trading Day. For each Interconnector Unit, the Ex-Ante One MSP Software Run will shall, in addition to the other input data, use the corresponding Active Interconnector Unit Capacity Holdings., Commercial Offer Data for the Interconnector Units, a Ramp Rate for each Interconnector Unit set to a value of 99999.9 MW/min, and the Accepted Aggregate Interconnector Ramp Rate for the relevant Interconnector, applied as a limit across all Interconnector Units.

- The Ex-Ante Two MSP Software Run shall be performed to determine the Ex-Ante Two Market Schedule by 13:00 hours on the day prior to the Trading Day.

- The Within Day One MSP Software Run shall be performed to determine the Within Day One Market Schedule by 09:30 hours on the Trading Day.

The Interconnector Unit Nominations for each Interconnector Unit and Trading Period are equal to the indicative corresponding value of Market Schedule Quantitys (for the corresponding Interconnector Units) that areas calculated by the relevant Ex Ante Indicative MSP Software Run.

Following the successful completion of an MSP Software Run that is prior to the end of the Trading Day, tThe Market Operator shall calculate the Modified Interconnector Unit Nominations (based on the Interconnector Unit Nominations) and submit such relevant calculated values to Interconnector Users by TD-1 12:00as soon as possible. In addition to such calculations, the Modified Interconnector Unit Nominations shall be calculated in respect of a particular Trading Day, on submission of an Available Transfer Capacity Data Transaction after the calculation of Interconnector Unit Nominations for the relevant Interconnector as derived from the Ex-Ante One MSP Software Run.

As soon as possible following each calculation of Modified Interconnector Unit Nominations, tThe Market Operator shall:

- Ssubmit the Aggregate Modified Interconnector Unit Nominations for each Interconnector to the relevant System Operator by TD-1 12:00.

- Submit the Modified Interconnector Unit Nominations in respect of each Interconnector to the relevant Interconnector Administrator.

- Submit the Modified Interconnector Unit Nominations in respect of the Interconnector Units as registered to the relevant Interconnector User.

5. SWIMLANE DIAGRAM

These swimlanes are provided as an illustration of the Procedural Steps. The Procedural Steps take precedence, in the event of conflict between the swimlanes and the Procedural Steps.

5.1 INTERCONNECTOR REGISTRATION DATA MAINTENANCE

5.2 SWIMLANE - INITIAL AVAILABLE TRANSFER CAPACITY NOTIFICATION

Initial Available Transfer Capacity

Interconnector Administrator	09:30 TD-2 Submit Available Transfer Capacity Type 3 Channel
Market Operator	10:00 TD-2 Publish Available Transfer Capacity In accordance with AP6
Interconnector User	X
System Operator	09:30 TD-2 Submit Available Transfer Capacity Type 3 Channel

ATC – Available Transfer Capacity, AIUCH = Active Interconnector Unit Capacity Holding, MIUN – Modified Interconnector Unit Nomination

5.3 SWIMLANE – UPDATES TO AVAILABLE TRANSFER CAPACITY

Revised Available Transfer Capacity

Interconnector Administrator

- Go to Box B in Modified Interconnector Unit Nominations swimlane
- can AIUCH be (re-)issued by GC — Yes / No
- Reduction in ATC? — Yes / No
- Previous reduction in ATC after GC & MIUNS already issued — Yes / No
- Change in Available Transfer Capacity
- As soon as possible — Notify SO and MO — As agreed between IA and SO
- By 12:00 TD+1 — Notify MO — Type 3 Channel
- Can MIUNs be (re-)issued by 11:45 TD-1 — yes / No
- Go to Box A in Modified Interconnector Unit Nominations swimlane

Market Operator

- Receive revised ATC
- By 15:00 TD+1 — Receive and publish latest ATC
- As soon as possible — Calculate & Notify Interconnector Users of revised MIUNS and System Operator of revised Aggregate MIUN — MITS
- By 12:00 TD+1 — Calculate final revised MIUNS — Type 3 Channel

Interconnector User

- Receive revised MIUNs

System Operator

- Receive revised ATC
- As soon as possible — Notify MO of SO Interconnector Trades
- Receive revised Aggregate MIUNs

ATC – Available Transfer Capacity, AIUCH = Active Interconnector Unit Capacity Holding, MIUN – Modified Interconnector Unit Nomination

5.4 MODIFIED INTERCONNECTOR UNIT NOMINATIONS

Modified Interconnector Unit Nominations

Interconnector Administrator

10:00 TD-1
Calculate & Submit Active Interconnector Unit Capacity Holding Data
Type 3 Channel

Box B -
(from revised ATC swimlane)

System Operator

Receive Aggregate MIUNs

Market Operator

Box A -
(from revised ATC swimlane)

12:00 TD-1
Notify System Operator of Aggregate MIUNs
Type 3 Channel

10:30 TD-1
Notify Interconnector Users of the Active Interconnector Unit Capacity Holding Data
MPI

11:00 TD-1
Calculate & Submit Interconnector Unit Nominations
MPI

12:00 TD-1
Calculate Modified Interconnector Unit Nominations
Type 3 Channel

12:00 TD-1
Notify Interconnector Users of the MIUNS
MPI

Interconnector User

Receive Active Interconnector Unit Capacity Holding Data

Receive MIUNs

ATC – Available Transfer Capacity, AIUCH = Active Interconnector Unit Capacity Holding, MIUN – Modified Interconnector Unit Nomination

6.4.   PROCEDURAL STEPS
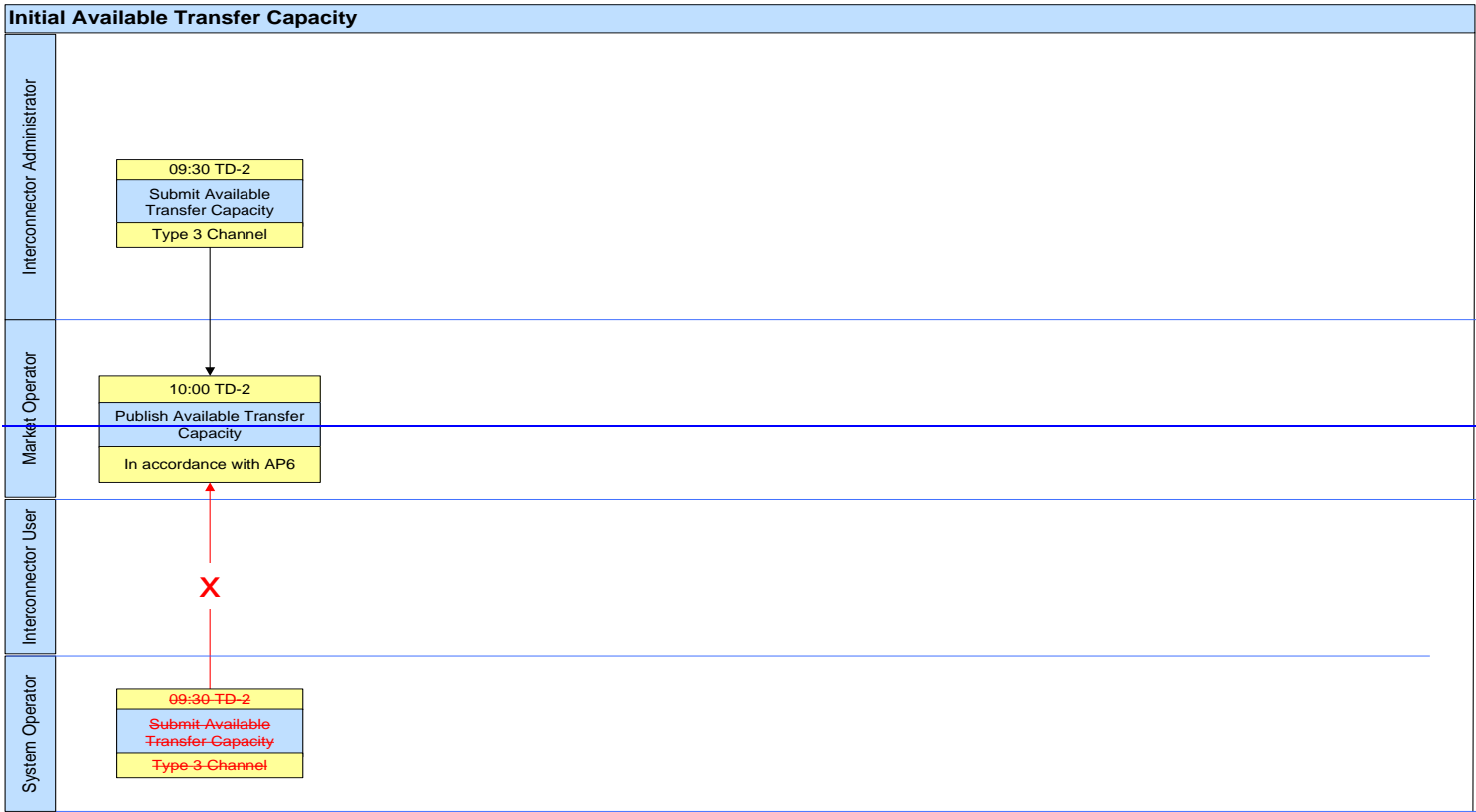
Swimlanes are provided as an illustration of the Procedural Steps. The Procedural Steps take precedence, in the event of conflict between the swimlanes and the Procedural Steps.

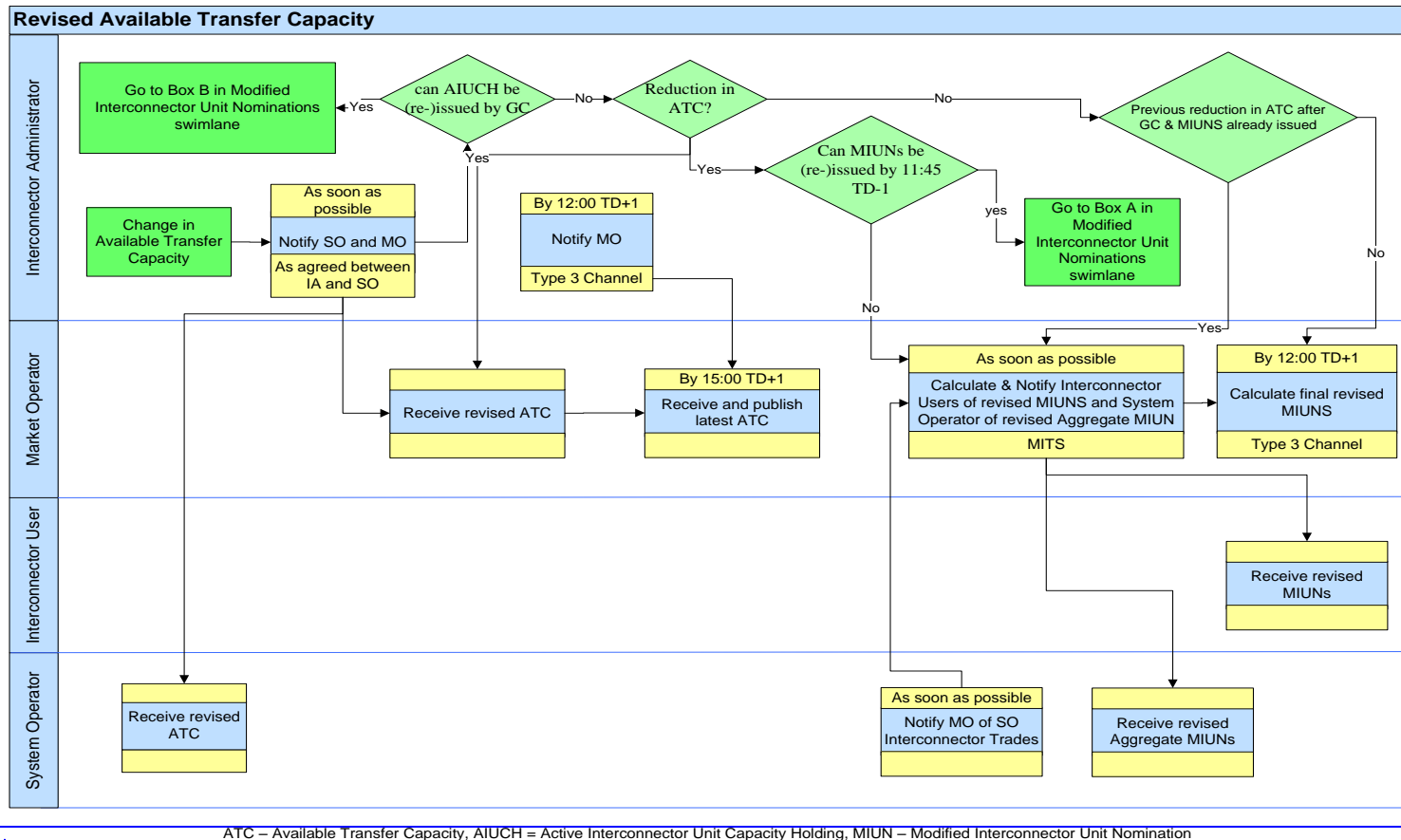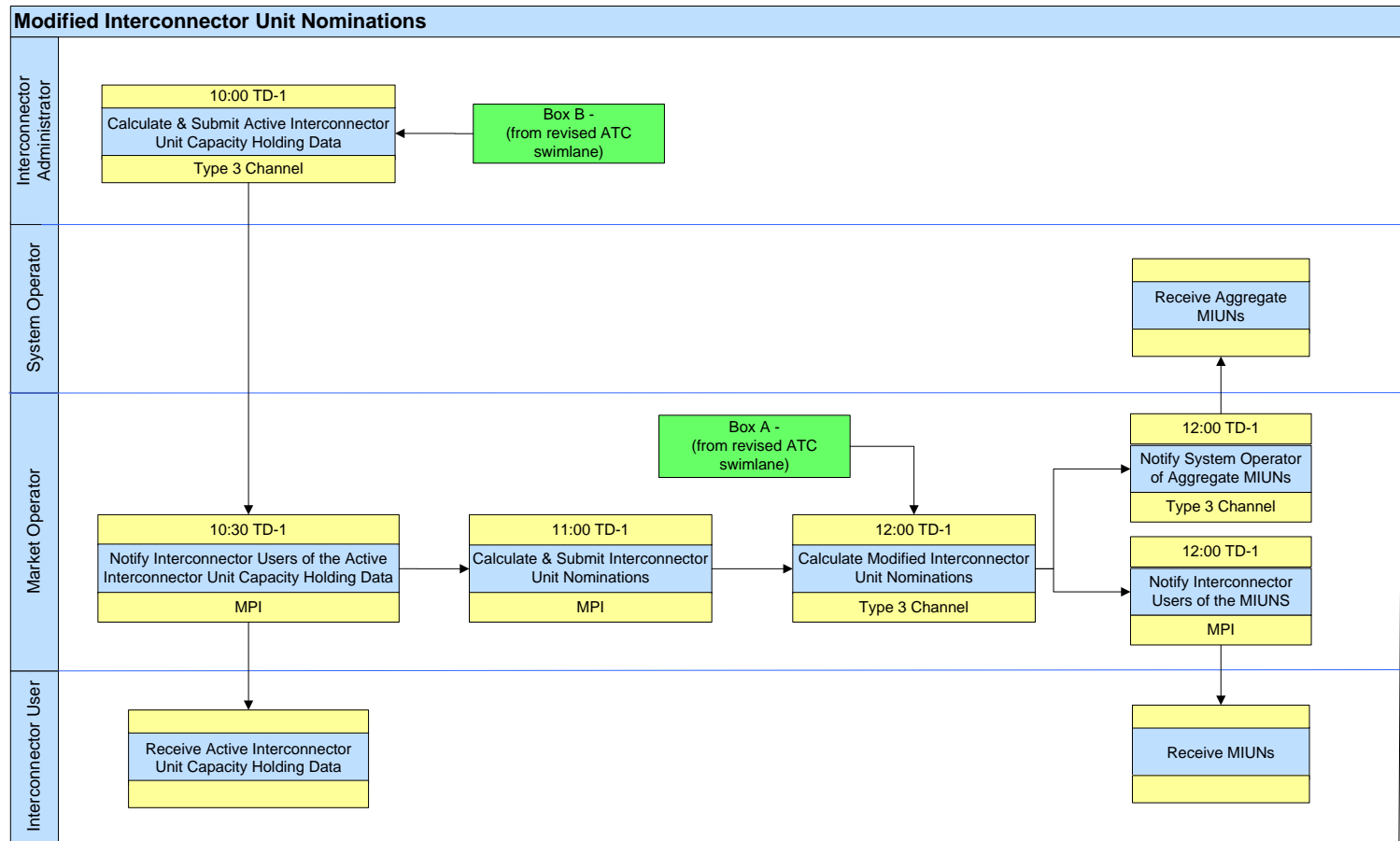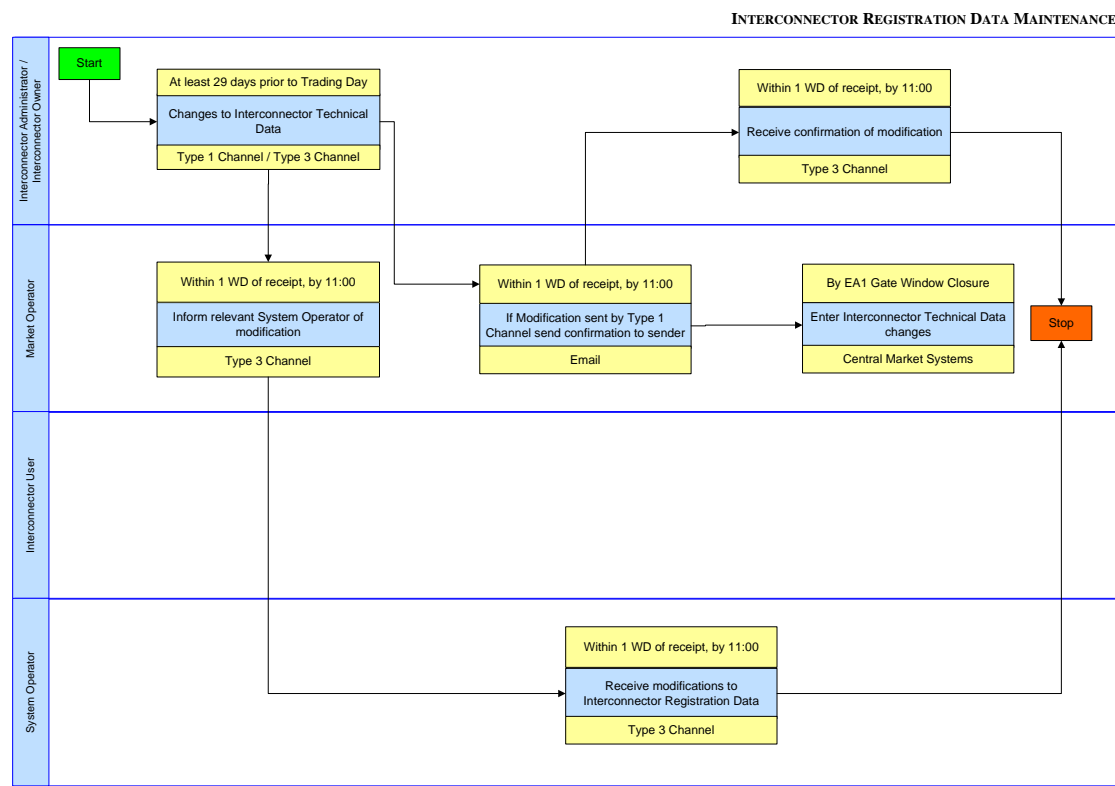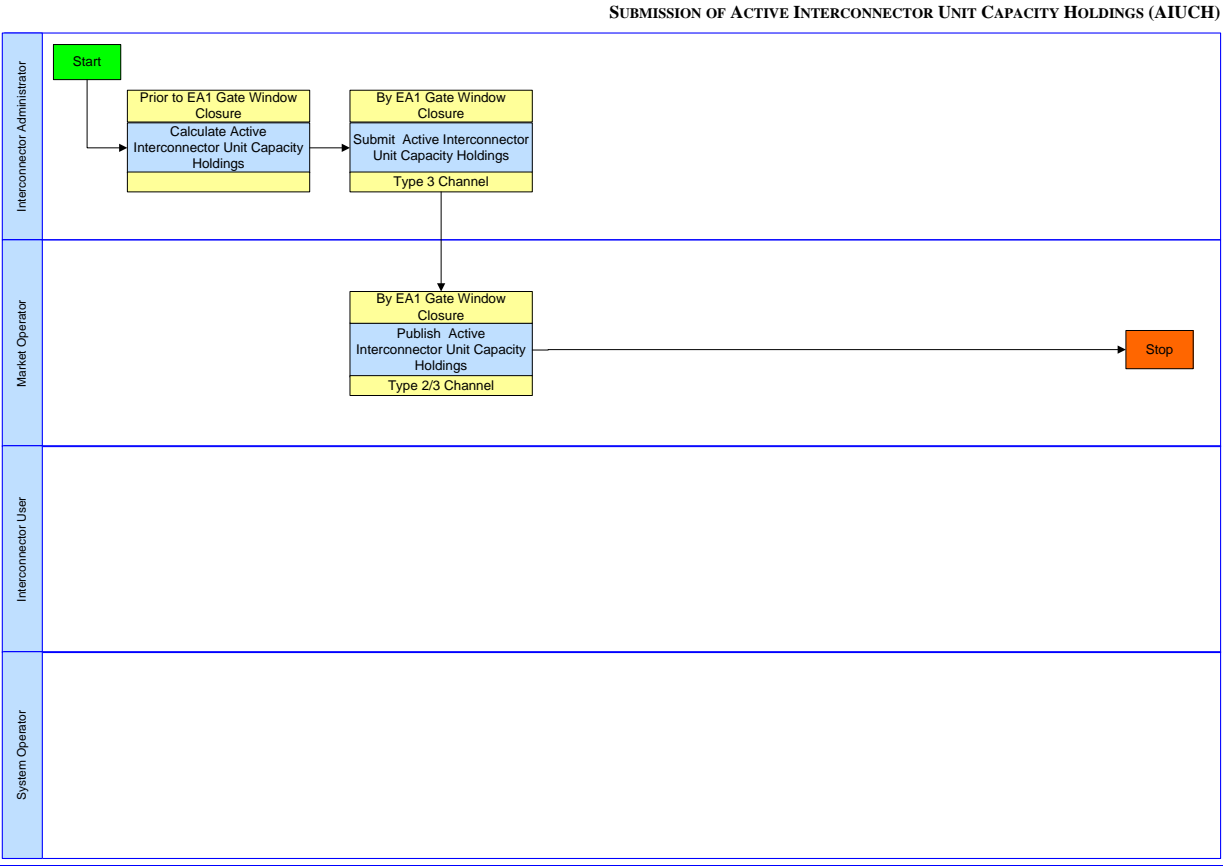## 4.1   SWIMLANE - INTERCONNECTOR REGISTRATION DATA MAINTENANCE

INTERCONNECTOR REGISTRATION DATA MAINTENANCE

6.14.2 INTERCONNECTOR REGISTRATION TECHNICAL DATA MAINTENANCE

#	Procedural Step	Timing	Method	By/ From	To	Data Transaction
1.1	Submit to changes to Market Operator modified Interconnector Technical Data on change of data.	At least 29 days prior to the Trading DayPrior to Gate Closure	Type 1 Channel / Type 3 Channel	Interconnector Administrator / Interconnector Owner	Market Operator	Interconnector Technical Data
1.2	Notify change in Interconnector Technical Data	Within 1 WD of receipt, by 11:00 hrs.	Type 3 Channel	Market Operator	System Operator	Interconnector Technical Data
1.23	If the Interconnector Technical Data Transaction modification has been received via Type 1 Channel, then send confirmation by fax to senderSending Party.	Within 1 WD of receipt, by By next WD 11:00 hours	FaxEmail	Market Operator	Interconnector Administrator / Interconnector Owner	
1.4	Enter Interconnector Technical Data changes in Central Market Systems. **End Process**	By the EA1 Gate Window Closure for the Trading Day	Central Market Systems	Market Operator	-	Interconnector Technical Data
3	Submit modified Interconnector Registration to System Operator.	Earlier of within 1 WD of receipt or TD-1 12:00hrs	Type 3 Channel	Market Operator	System Operator	Interconnector Technical Data

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4.3   SWIMLANE - ACTIVE INTERCONNECTOR UNIT CAPACITY HOLDINGS

SUBMISSION OF ACTIVE INTERCONNECTOR UNIT CAPACITY HOLDINGS (AIUCH)

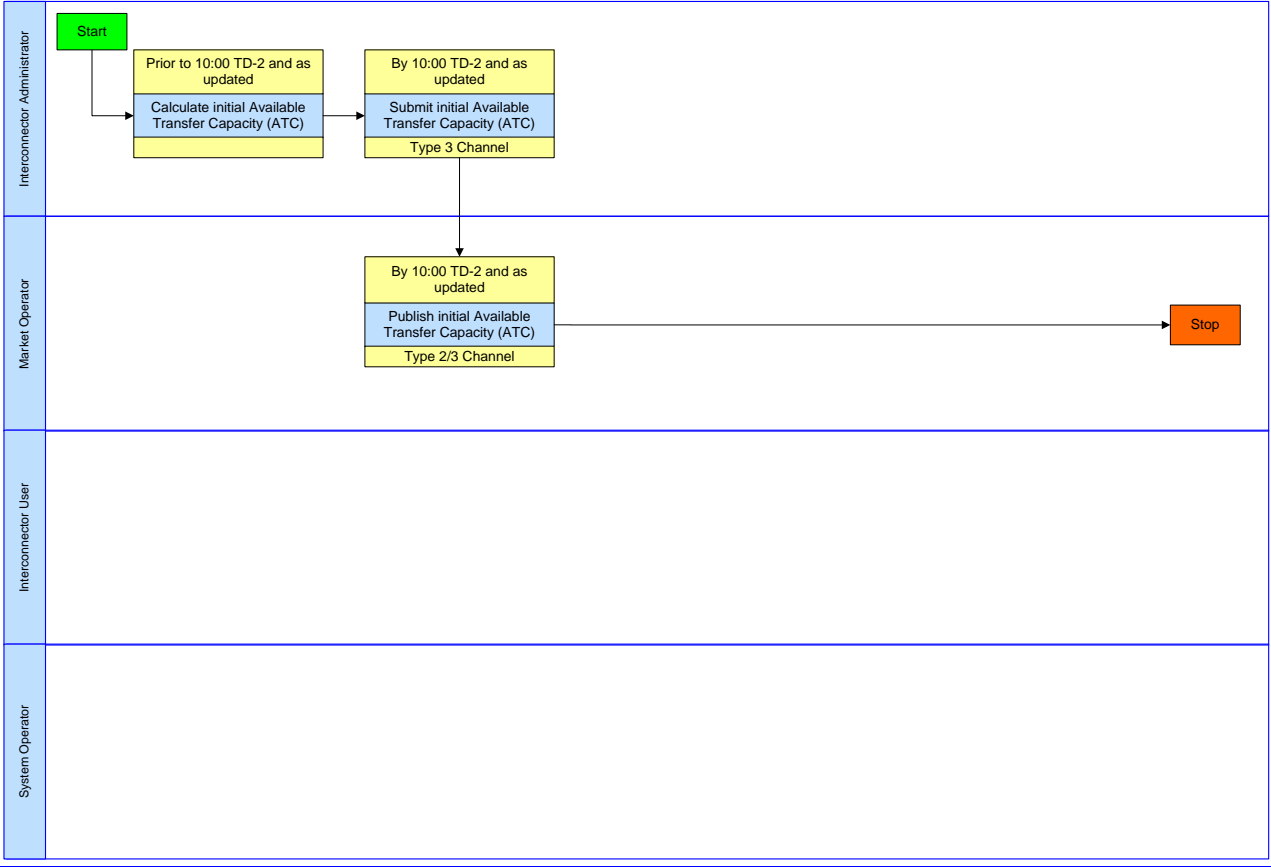|	
Interconnector Administrator	**Start** → Prior to EA1 Gate Window Closure / Calculate Active Interconnector Unit Capacity Holdings → By EA1 Gate Window Closure / Submit Active Interconnector Unit Capacity Holdings / Type 3 Channel
Market Operator	By EA1 Gate Window Closure / Publish Active Interconnector Unit Capacity Holdings / Type 2/3 Channel → **Stop**
Interconnector User	
System Operator	

4.4   SUBMISSION OF ACTIVE INTERCONNECTOR UNIT CAPACITY HOLDINGS

#	Procedural Step	Timing	Method	By/ From	To	Data Transaction
2.1	Calculate the Active Interconnector Unit Capacity Holdings for the relevant Interconnector Units and submit to the Market Operator.	EA1 Gate Window Closure	Type 3 Channel	Interconnector Administrator	Market Operator	Active Interconnector Unit Capacity Holding
2.2	Notify Interconnector Users of their Active Interconnector Unit Capacity Holdings. **End Process.**	EA1 Gate Window Closure	Type 3 Channel	Market Operator	Interconnector Users	Active Interconnector Unit Capacity Holding

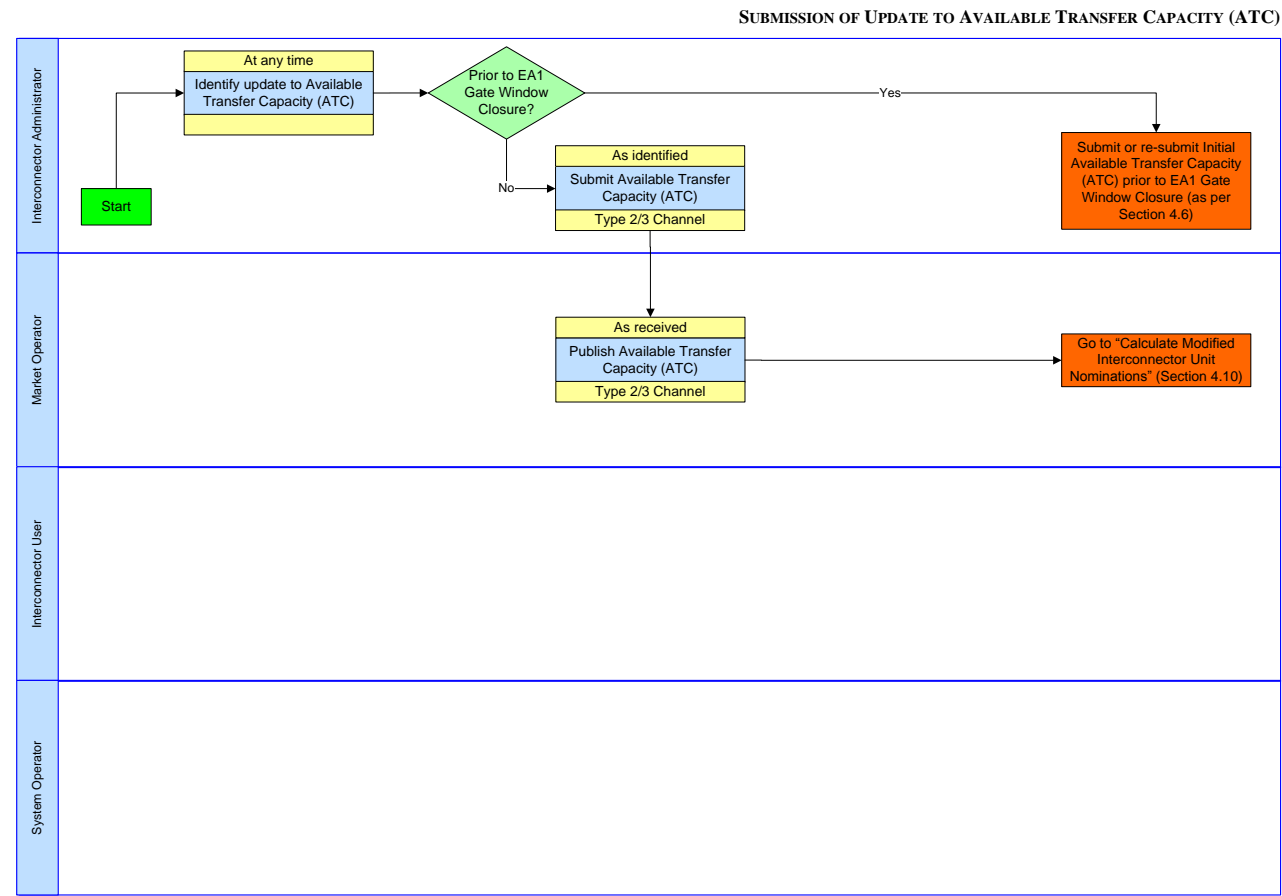## 4.5   SWIMLANE - INITIAL AVAILABLE TRANSFER CAPACITY NOTIFICATION

SUBMISSION OF INITIAL AVAILABLE TRANSFER CAPACITY (ATC)

6.24.6 INITIAL SUBMISSION OF INITIAL AVAILABLE TRANSFER CAPACITY SUBMISSION

#	Procedural Step	Timing	Method	By/ From	To	Data Transaction
3.1	Determination of Calculate the Available Transfer Capacity (ATC) by for the relevant Interconnector Administrator for each Interconnector and submit submission to the Market Operator.	09:3010:00, TD-2 and as updated	Type 3 Channel	Interconnector Administrator	Market Operator	Interconnector Available Transfer Capacity Data Transaction as set out in Appendix K of the Code.
3.2	Publisheation of the Interconnector Available Transfer Capacity Data Transaction. **End Process.** in accordance with Agreed Procedure 6 "Publications"	10:00, TD-2 and as updated	Market Operator Website	Market Operator	PartiesGeneral Public	Agreed Procedure 6 "Publications"Interconnector Available Transfer Capacity

4.7   SWIMLANE – UPDATES TO AVAILABLE TRANSFER CAPACITY
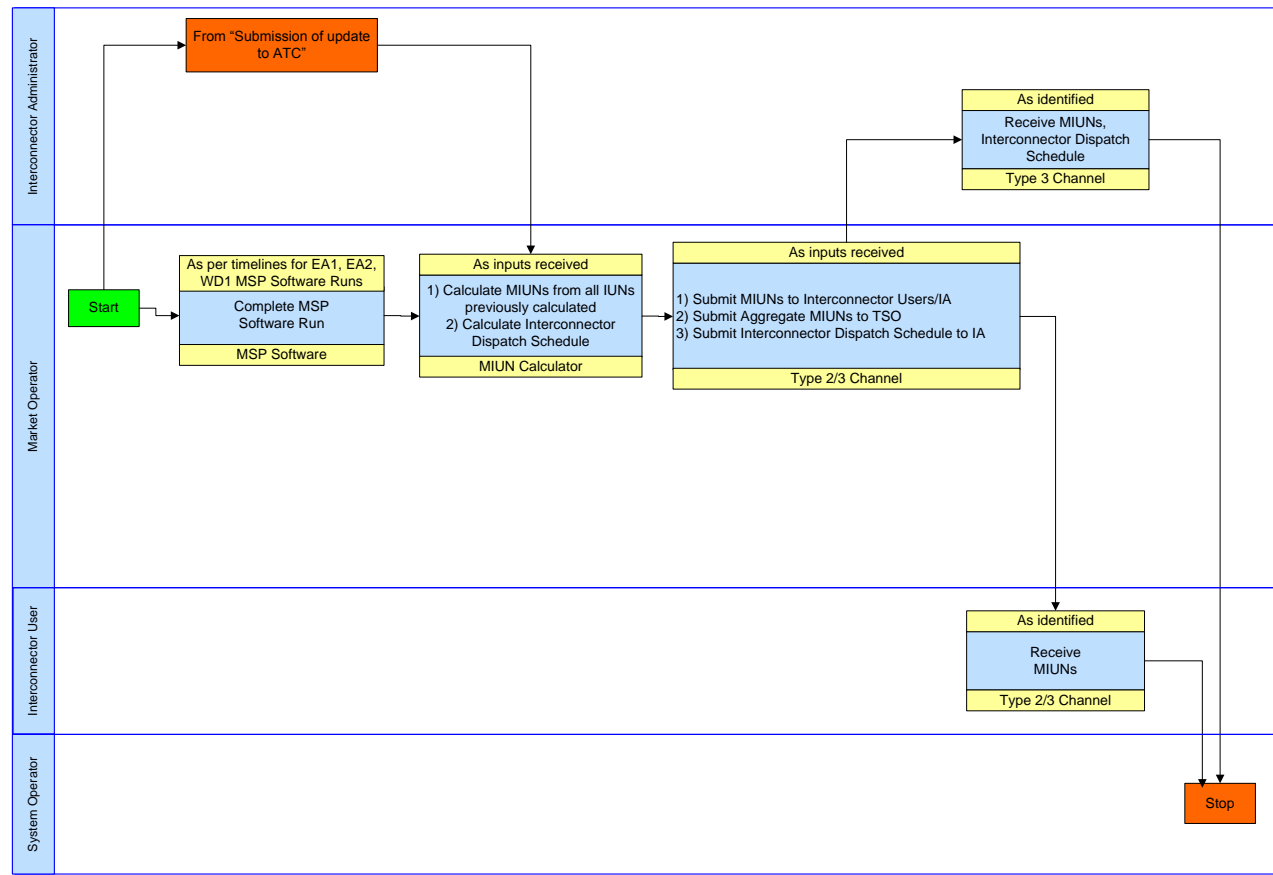
SUBMISSION OF UPDATE TO AVAILABLE TRANSFER CAPACITY (ATC)

6.34.8 UPDATES TO AVAILABLE TRANSFER CAPACITY

#	Procedural Step	Timing	Method	By/ From	To	Data Transaction
4.1	Identify an reduction in update to Interconnector Available Transfer Capacity on an for a particular Interconnector. Go to Continue from sStep 4.2 and Step 5.	As occurs	-	Interconnector Administrator	-	
4.2	• If If an update is identified by the EA1 Gate Window Closure, include in initial ATC Data Transaction as detailed in section 4.6, plus use to calculate the Active Interconnector Unit Capacity Holdings Data Transaction. **End Process.** • If an update is identified after the EA1 Gate Window Closure: o If after the end of the Trading Day, submit data as part of revised Interconnector Available Transfer Capacity ATC Data Transaction. Continue from step 4.4; else o Submit Interconnector ATC Data Transaction, then continue from step 4.3. change prior to Gate Closure go to step 3 Otherwise go to step 4	As occursAs occurs	Type 3 Channel	Interconnector Administrator	Market Operator	Interconnector Available Transfer Capacity Revised Interconnector Available Transfer Capacity

#	Procedural Step	Timing	Method	By/ From	To	Data Transaction
4.3	As received, publish ~~Submit revised~~ Interconnector Available Transfer Capacity ~~to Market Operator~~ ~~Stop~~data. **End Process**, then continue with the process as set out in section 4.10 (starting at step 5.1).	As soon as possible ~~after reduction in ATC~~post receipt	Type 3 Channel	~~Interconnector Administrator~~Market Operator	~~Market Operator~~Market Operator website	Interconnector Available Transfer Capacity ~~Data Transaction (Appendix K of the Code)~~
4.4	Submit final ATC to Market Operator. ~~Stop~~**End Process.**	By TD+1 12:00 hours	Type 3 Channel	Interconnector Administrator	Market Operator	Interconnector Available Transfer Capacity ~~Data Transaction (Appendix K of the Code)~~
~~5~~	~~If there is sufficient time to use the revised ATC in calculation and submission of AIUCH prior to Gate Closure go to Step 6~~ ~~Else, if there is sufficient time to use the revised ATC in calculation of MIUNs prior to 12:00 TD-1 go to step 7~~ ~~Else go to step 8~~	~~-~~	~~-~~	~~Interconnector Administrator~~	~~-~~	
~~6~~	~~Go to Step 2 in section 5.4 Modified Interconnector Unit Nominations~~					
~~7~~	~~Go to Step 5 in section 5.4 Modified Interconnector Unit Nominations~~					
~~8~~	~~Calculate revised MIUNs based on the revised ATC and submit the MIUNs to the relevant Interconnector Users~~	~~As soon as possible~~	~~MITS~~	~~Interconnector Administrator~~	~~Interconnector User~~	

#	Procedural Step	Timing	Method	By/ From	To	**Data** Transaction
9	Calculate revised Aggregate MIUNs based on the revised ATC and submit the MIUNs to the relevant System Operator	As soon as possible	CMS	Market Operator	System Operator	

4.9   SWIMLANE – CALCULATION OF MIUNs

CALCULATION OF MODIFIED INTERCONNECTOR UNIT NOMINATIONS (MIUNS)

6.44.10 CALCULATION OF MODIFIED INTERCONNECTOR UNIT NOMINATIONS

		Procedural Step	Timing	Method	By/ From	To	Data Transaction
5.1		Start either: • On submission of an Available Transfer Capacity Data Transaction after the calculation of Interconnector Unit Nominations for the relevant Interconnector as derived from the Ex-Ante One MSP Software Run, continue from step 5.2; or • On successful completion of an Ex-Ante One MSP Software Run, Ex-Ante Two MSP Software Run or Within Day One MSP Software Run, continue from step 5.2. • 2Submission of Active Interconnector Unit Capacity Holdings to the Market Operator	By EA1 Gate Window Closure10:00, TD-4	Type 3 Channel	Interconnector Administrator / System Operator	Market Operator	Active Interconnector Unit Capacity Holding Data Transaction (Appendix K of the Code)

	Procedural Step	Timing	Method	By/ From	To	Data Transaction
5.2	Calculate Modified Interconnector Unit Nominations for all Interconnector Units where the associated Interconnector Unit Nominations have been previously calculated for the associated Trading Period and the Interconnector Dispatch Schedule. The Modified Interconnector Unit Nominations will be based on the latest Accepted values of: • Interconnector Unit Nominations • Interconnector Registration Data	As soon as possible, once inputs are received	MIUN Calculator	Market Operator	-	-
5.3	~~Submission~~ Submit ~~of~~ MIUNs to Interconnector Users.	~~By 12:00, TD-1~~As soon as possible	MPI	Market Operator	Interconnector Users	Modified Interconnector Unit Nominations ~~Transaction (Appendix K of the Code)~~
5.4	Submit Interconnector Dispatch Schedule to Interconnector Administrator.	As soon as possible	Type 3 Channel	Market Operator	Interconnector Administrator	Interconnector Dispatch Schedule
5.5~~7~~	~~Submission of~~ Submit Aggregate Modified Interconnector Unit Nominations to relevant System Operator(s). **End Process.**	~~By 12:00, TD-1~~As soon as possible	Type 3 Channel	Market Operator	System Operator(s)	Aggregate Modified Interconnector Unit Nominations

APPENDIX 1: DEFINITIONS AND ABBREVIATIONS

DEFINITIONS

Accepted	As defined in the Code
Active Interconnector Unit Capacity Holding	As defined in the Code
Active Interconnector Unit Capacity Holding Data	As defined in the Code
Active Interconnector Unit Export Capacity Holding	As defined in the Code
Active Interconnector Unit Import Capacity Holding	As defined in the Code
Aggregate Interconnector Ramp Rate	As defined in the Code
Aggregate Modified Interconnector Unit Nomination	As defined in the Code
Agreed Procedure	As defined in the Code
Available Transfer Capacity	As defined in the Code
Capacity Payment	As defined in the Code
Change Point	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations
Code	As defined in the Code
Commercial Offer Data	As defined in the Code
Ex-Ante ~~Indicative~~ One (EA1) Market Schedule	As defined in the Code
Ex-Ante ~~Indicative~~ One (EA1) MSP Software Run	As defined in the Code
Ex-Ante Two (EA2) Market Schedule	As defined in the Code
Ex-Ante Two (EA2) MSP Software Run	As defined in the Code
Gate Window Closure	As defined in the Code
Interconnector	As defined in the Code
Interconnector Administrator	As defined in the Code
Interconnector Dispatch Schedule Data Transaction	As defined in the Code
Interconnector Error Unit	As defined in the Code
Interconnector Owner	As defined in the Code
Interconnector Registration Data	As defined in the Code
Interconnector Residual Capacity Unit	As defined in the Code

Interconnector Technical Data	As defined in the Code
Interconnector Unit	As defined in the Code
Interconnector Unit Nominations	As defined in the Code
Interconnector User	As defined in the Code
Interconnector Technical Data	As defined in the Code
Intersection	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations
Logical Interconnector	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations
Market Operator	As defined in the Code
Market Operator Website	as defined in Agreed Procedure 1 "Participant and Unit Registration and Deregistration"
Market Participant Interface	as defined in Agreed Procedure 1 "Participant and Unit Registration and Deregistration"
Market Schedule Quantity	As defined in the Code
Maximum Export Available Transfer Capacity	As defined in the Code
Maximum Export Available Transfer Capacity	As defined in the Code
Maximum Interconnector Unit Export Capacity	As defined in the Code
Maximum Interconnector Unit Import Capacity	As defined in the Code
Modified Interconnector Unit Nominations	As defined in the Code
Minimum Interconnector Export Level	As defined in the Code
Minimum Interconnector Import Level	As defined in the Code
MIUN Calculator	As defined in the Code
No Load Cost	As defined in the Code
Optimisation Time Horizon	As defined in the Code
Participant	As defined in the Code
Party	As defined in the Code
Pool	As defined in the Code
Price Quantity Pair	As defined in the Code
Quantity	As defined in the Code
Ramp Rate	As defined in the Code
Regulatory Authorities	As defined in the Code

Run-Through	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations
Settlement Period	As defined in the Code
Single Electricity Market	As defined in the Code
Start Up Costs	As defined in the Code
SO Interconnector Export Quantity	As defined in the Code
SO Interconnector Import Quantity	As defined in the Code
SO Interconnector Trade	As defined in the Code
System Operator	As defined in the Code
Trading Day	As defined in the Code
Trading Period	As defined in the Code
Trip	As defined in Appendix 2 – Calculation of Modified Interconnector Unit Nominations
Unit	As defined in the Code
Within Day One (WD1) Market Schedule	As defined in the Code
Within Day One (WD1) MSP Software Run	As defined in the Code

ABBREVIATIONS

AMIUN	Aggregate Modified Interconnector Unit Nomination
ATC	Available Transfer Capacity
CMS	Central Market Systems
IUN	Interconnector Unit Nomination
MIUN	Modified Interconnector Unit Nomination
MPI	Market Participant Interface
MSQ	Market Schedule Quantity
SEM	Single Electricity Market
TD	Trading Day

APPENDIX 2: CALCULATION OF MODIFIED INTERCONNECTOR UNIT NOMINATIONS

INTRODUCTION

This Appendix describes in general terms the rules used by the Market Operator to calculate Modified Interconnector Unit Nominations from the Interconnector Unit Nominations.

DEFINITIONS

In this Appendix:

"Change Point"	is a point that occurs whenever any Interconnector Unit Nomination changes or whenever the Aggregate Interconnector Ramp Rate changes;
"Intersection"	means the situation where the Interconnector is dispatched upwards but before the target can be achieved the Interconnector must be dispatched downwards in order to achieve the next Change Point's target;
"Logical Interconnector"	means the interconnector in which electricity flows in one direction, i.e. electricity flowing from Scotland to Northern Ireland will form one logical interconnector and electricity flowing from Northern Ireland to Scotland will form another logical interconnector;
"Run-Through"	Means the situation where the Interconnector is dispatched upwards but cannot achieve its target by the next Change Point, and cannot achieve the Change Point's expected position at the Change Point boundary;
"Trip"	Means a technical failure on an Interconnector which causes a reduction in the magnitude of the Available Transfer Capacity in either direction.
"Deadband"	Means the energy band between the Minimum Interconnector Import Level and the Minimum interconnector Export Level
" Dominant Direction"	Is the direction of the net Interconnector Unit Nominations in the last Trading Period in which there was an interconnector flow i.e. import or export

RULES FOR THE CALCULATION OF THE MODIFIED INTERCONNECTOR UNIT NOMINATIONS ("MIUN")

Values of MIUNs

1. MIUNs shall be calculated for each Interconnector separately.

2. The value of each ~~Modified Interconnector Unit Nomination~~ MIUN, in respect of a particular Interconnector Unit and for a particular Trading Period, must be in the same

direction (i.e. both positive or both negative) as the corresponding ~~and must not exceed in absolute magnitude the relevant~~ Interconnector Unit Nomination (IUN)~~for any Interconnector Unit in any Trading Period~~.

~~1.~~3. The value of each MIUN, in respect of a particular Interconnector Unit and for a particular Trading Period, must not exceed in absolute magnitude the corresponding IUN.

4. In calculating the MIUNs for each Trading Period:

    a. where the sum of the positive IUNs is greater in absolute terms than the absolute value of the Interconnector Import ATC, the positive IUNs will be scaled pro rata such that the resulting MIUN will respect the import ATC value.

    b. where the sum of all IUNs is greater in absolute terms than the absolute value of the Interconnector Export ATC, the negative IUNs will be scaled pro rata such that the resulting MIUNs will respect the export ATC value.

Application of the Interconnector Ramp Rate

5. The Interconnector R~~r~~amp R~~r~~ate ~~for the Interconnector~~ applies to the sum of all the ~~Interconnector Unit Nominations~~IUNs (i.e. import and export) and not to ~~any~~ the individual ~~Interconnector Unit Nominations~~IUNs. As a result, IUNs between and within each Trading Period shall start and finish ramping at the same time.

6. Where the sum of all IUNs for a particular Trading Period and Interconnector, is equal for two consecutive Trading Periods, each corresponding IUN for that Trading Period shall be considered to ramp instantaneously.

7. Any ~~Interconnector Unit Nominations~~ IUNs moving in opposition to the net Interconnector flow are deemed to move instantaneously on the Change Point boundary (the instant ramp).

8. Any IUNs moving in the same direction as the Net Interconnector Flow are allocated the instant ramp on a pro-rata basis, with the Interconnector Ramp Rate being divided up pro-rata to the IUNs moving in the opposite direction to the Net Interconnector Flow.

~~2.~~

~~The Interconnector Ramp Rate is~~Rate is ~~divided up pro-rata to Active Interconnector Unit Capacity Holdings of equal priority. Active Interconnector Unit Capacity Holdings of equal priority must start and finish their ramp at the same time.~~

~~3.~~9. ~~Where an Interconnector Unit Nomination for a Trading Period is less than the Interconnector Unit Nomination for the previous Trading Period, the Interconnector Unit Nomination must be ramped in order to reach the next Interconnector Unit Nomination by the Settlement Period boundary. This r~~Ramping may take place over any number of Trading Periods, including Trading Periods within the previous day if necessary.

10. Where the absolute value of an IUN for a Trading Period (B) is less than the absolute value of the IUN in the immediately preceding Trading Period (A), the IUN shall be ramped in order to reach the value of the IUN for Trading Period (B) by the start of Trading Period (B).

11. Where the absolute value of an ~~Interconnector Unit Nomination~~ IUN for a Trading Period (B) is greater than the absolute value of ~~Interconnector Unit Nomination~~ the IUN for the immediately ~~previous~~ preceding Trading Period (A), the ~~Interconnector Unit Nomination~~ IUN ~~must~~ shall ~~not~~ start ramping at the start of ~~until the~~ Trading Period (B)~~boundary~~. This ramping may take place over any number of Trading Periods.

12. Where IUNs change direction between successive Trading Periods(i.e. from positive to negative or negative to positive), ramping shall occur such that the value at the boundary between the two affected Trading Periods is zero.

4.13.   If a Trip ~~or reduction rate in the~~ values of ~~Available Transfer Capacity (ATC)~~ occurs on a~~n~~ ~~Logical~~ Interconnector~~,~~ then the sum of all ~~Interconnector Unit Nominations~~ IUNs shall be considered ~~on that Logical Interconnector~~ to ramp instantly to the revised value of ~~Logical Interconnector's~~ ATC.

~~Where multiple Interconnector Unit Nominations for a particular Trading Period change in a manner that results in no change to the sum of all the Interconnector Unit Nominations for that Trading Period, the ramps shall be instantaneous.~~

Application of the Minimum Interconnector Import Level, Minimum Interconnector Export Level and Deadband

14. An Interconnector may have an associated Deadband, within which the relevant Interconnector is not able to operate.

15. The Deadband for an Interconnector shall apply between (but excluding) the Minimum Interconnector Export Level and the Minimum Interconnector Import Level.

16. Any Interconnector for which the Minimum Interconnector Export Level and Minimum Interconnector Import Level are equal to zero shall be considered to have no Deadband.

5.17.   Where an Interconnector has a Deadband, t~~T~~he Interconnector shall be considered to ramp~~s~~ between zero (0) and the associated Minimum Interconnector Import Level instantaneously.

18. Where an Interconnector has a Deadband, t~~T~~he Interconnector shall be considered to ramp~~s~~ between zero (0) and the associated Minimum Interconnector Export Level instantaneously.

6.19.   Where an Interconnector has a Deadband, any instant ramp resulting from the Interconnector passing through the Minimum Interconnector Export Level, zero (0) MW or Minimum Interconnector Import Level shall be allocated to the individual Interconnector Unit Nominations that are ramping at the time of the instant ramp.

Adjustments when Net Interconnector Flow is within a Deadband

7.20.   If the total ~~Interconnector Unit Nominations~~ IUNs for a Trading Period are in the Deadband and all IUNs are in the Dominant Direction, then each of the ~~Interconnector Unit Nominations~~ IUNs should be considered to be zero for the purpose of calculating the ~~Modified Interconnector Unit Nominations~~MIUNs.

21. Where IUNs exist in both directions and the sum of all IUNs for a particular Interconnector and Trading Period is within the Deadband for the Interconnector:

    a.   Where the sum of the IUNs net to exactly zero:
        i.   If the sum of the IUNs in each direction are within the Deadband, then the IUNs used in the calculation of MIUNs in both directions shall be reduced to zero.
        ii.   If the sum of the IUNs in each direction are outside the Deadband, the IUNs used in the calculation of MIUNs in both directions will remain unchanged.

    b.   If the sum of the IUNs in any direction are within the Deadband, the IUNs in that direction shall be considered to be zero for the purpose of calculating the MIUNs.

    c.   Where the sum of IUNs for each direction are outside the Deadband:
        i.   The IUNs in the same direction (i.e. import or export) as the Dominant Direction used in the calculation of MIUNs will remain unchanged;

ii. The IUNs in the opposite direction (i.e. import or export) ~~as~~to the Dominant Direction shall be reduced on a pro-rata basis, such that the resulting net flow is outside the Deadband.

~~Any instant ramp resulting from the Interconnector passing through Minimum Interconnector Export Level, 0MW or Minimum Interconnector Import Level should be allocated to the individual Interconnector Unit Nominations that are ramping at the time of the instant ramp.~~

~~The instant ramp is allocated to Interconnector Unit Nominations moving with the Interconnector on a pro-rata basis.~~

~~If a Trip or reduction rate in the ATC occurs on a Logical Interconnector then all Interconnector Unit Nominations on that Logical Interconnector ramp instantly to the Logical Interconnector's ATC.~~

~~The sum of the Interconnector Unit Nominations for a Logical Interconnector cannot exceed, in absolute terms, the ATC for that Logical Interconnector.~~

~~Where the sum of the Interconnector Unit Nominations net to exactly zero, the following rules apply:~~

~~If Interconnector Unit Nominations exist in both directions and in each direction the sum of the Interconnector Unit Nominations are equal, but are within the interconnector Deadband, then the Interconnector unit nominations used for the calculation of Modified Interconnector Unit Nominations in both directions will be reduced to zero and the net flow will be 0MW.~~

~~If Interconnector Unit Nominations exist in both directions and in each direction the sum of the Interconnector Unit Nominations are equal, but outside the Deadband, then the Interconnector Unit Nomination used for the calculation of the Modified Interconnector Unit Nominations in the Dominant Direction will remain unchanged. The Interconnector Unit Nominations used for the calculation of the Modified Interconnector Unit Nomination in the opposite direction will be reduced by the Minimum Interconnector Export or Import level on a pro-rata basis.~~

Treatment of SO Interconnector Trades

22. SO Interconnector Trades can only occur once the final set of Ex-Ante MIUNs in respect of a particular Trading Period have been determined by the Market Operator (i.e. resulting from an Ex Ante One MSP Software Run, Ex Ante Two MSP Software Run or Within Day One MSP Software Run).

~~8.~~23. In all cases ~~System Operator~~ SO Interconnector T~~t~~rades will be reduced first as required to minimise the effect on ~~Interconnector Unit Nominations~~IUNs.