Methodology for the Calculation of Scheduled Exchanges resulting from single intraday coupling – Explanatory Note

21 February 2018

Disclaimer

This explanatory document is approved by All TSOs, but only submitted to all relevant NRAs by "TSOs which intend to calculate Scheduled Exchanges", for information and clarification purposes only accompanying the ID Scheduled Exchanges Calculation Methodology in accordance with Article 56 of the Regulation 2015/1222 of 24 July 2015 establishing a Guideline on Capacity Allocation and Congestion Management

Table of Contents

1. Introduction

Article 56(1) of the Commission Regulation 2015/1222 establishing a Guideline on Capacity Allocation and Congestion Management (hereafter referred to as "**CACM Regulation**") requires that, by 16 months after the entry into force of CACM Regulation, all Transmission System Operators (hereafter referred to as "**TSOs**") which intend to calculate Scheduled Exchanges resulting from single intraday coupling (hereafter referred to as "**SIDC**") shall develop a proposal for a common methodology for this calculation.

The common calculation methodology (hereafter referred to as "**ID SEC Methodology**") shall be subject to approval by all National Regulatory Authorities ("**NRAs**") as per Article 9(7)(d) of the CACM Regulation. According to Article 9(9) of the CACM Regulation, the ID SEC Methodology proposal shall be submitted to ACER in parallel with the submission to all NRAs. In accordance with Article 9(11) of the CACM Regulation where the regulatory authorities have not been able to reach agreement in due time or upon NRAs joint request, the Agency shall adopt a decision concerning the submitted proposals for terms and conditions or methodologies within six months in accordance with Article 8(1) of Regulation (EC) No 713/2009.

This document is an explanatory note accompanying the ID SEC Methodology and describing the background as the basis for the methodology.

Capitalised terms used in this document are understood as defined CACM Regulation, Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity (hereafter referred to as "Regulation (EC) No 714/2009"), Commission Regulation (EU) 543/2013 and the ID SEC Methodology proposal.

2. Current Situation

In order to create a clear understanding of the requirements laid out in Article 56 of the CACM Regulation, the current situation across Europe is described.

The SIDC solution is not yet implemented in the EU. The target model for the European cross-zonal intraday market consists of a continuous implicit intraday market based on a single capacity management module[1] and a shared order book[2] in a one-to-one relationship as defined by the CACM Regulation. This target model[3] has been the basis for the requirements for the intraday market and capacity allocation formulated in the CACM Regulation and within the current XBID implementation project.

2.1 Background

[1] Defined in Article 2(40) of the CACM Regulation.
[2] Defined in Article 2(24) of the CACM Regulation.
[3] Based on this model, several TSOs and NEMOs have, via the XBID project, commenced with the build of a platform with an integrated shared order book and capacity management module.

The SIDC is based on a continuous matching process of sell and buy orders. Orders are collected by NEMOs and forwarded to the Shared Order Book function for matching. In the SIDC for each order, the originating NEMO is known as well as the originating area.

The topology of Bidding Zones and Scheduling Areas is represented by Market Areas and Delivery Areas. A Market Area holds one or more Delivery Areas. Thus, a Market Area corresponds to a Bidding Zone and Delivery Area corresponds to a Scheduling Area.

Remaining sections of this chapter explains overview how Scheduled Exchanges are derived from XBID solution.

2.2 Matching and capacity allocation

The matching of orders is driven by the price, however only where a path is available for the physical shipping through the grid. The matching of orders takes into account relevant constraints of the grid i.e. the available capacity and allocation constraints such as ramping limitations.

Once a preliminary match of orders has been reached, the required capacity on Bidding Zone borders or underlying Scheduling Area borders is allocated. The routing algorithm searches for the cheapest (= shortest) possible path from the Scheduling Area of the sell order (Source) to the Scheduling Area of the buy order (Sink).

The result of SIDC are matched orders and, attached to each pair of matched orders, an allocation path from Source to Sink.

2.3 Enrichment of the allocation path

The full allocation path of each individual pair of matched orders is enriched to enable the physical and financial shipping, except where the buy and the sell orders are coming from the same NEMO in the same Scheduling Area.

- The enrichment assigns Central Counter Parties (hereafter referred to as “CCPs”) to source and sink, representing the involved NEMOs in the source and sink areas.
- The enrichment assigns a Shipping Agent for the shipping between two NEMOs in the same Scheduling Area.
- The enrichment assigns a Shipping Agent to take care of the export from the source area.
- The enrichment assigns a Shipping Agent to take care of the import into the sink area.
- The enrichment assigns a Shipping Agents to take care of the import into any transit area and the export out of the transit area.

This enrichment results in the following handovers, where the source and the sink area are the same:

1. The CCP of the Selling NEMO hands over to the assigned Shipping Agent
2. The Shipping Agent hands over to the CCP of the Buying NEMO

This enrichment results in the following handovers, where hand over 1 and 4 only occur once and hand over 2 and 3 occur zero, one or multiple times:

1. The CCP of the Selling NEMO hands over to the assigned Shipping Agent responsible for exporting out of the area
2. The Shipping Agent exporting out of an area (source or transit) hands over the Shipping Agent importing into an area (transit or sink)

3. The Shipping Agent importing into an area (transit or sink) hands over to the Shipping Agent exporting out of the transit area or
4. The Shipping Agent hands over to the CCP of the Buying NEMO

2.4 Output

The SIDC will be performed by three modules, each having its own output.

- The relevant output of the Shared Order Book module (SOB)
    - Matched orders
    - Local views on the Shared Order Book

  This information is only available to the NEMOs.

- The relevant output of the Capacity Management module (CMM):
    - Capacity allocation per border
    - Net Flow per border

  This information is only available to TSOs.

- The output of the Shipping Module (SM):
    - Each hand over between CCP and Shipping Agent for the source and the sink area
    - Each hand over between Shipping Agents on a border
    - Each hand over between Shipping Agents within an (transit) area

  To the CCPs and Shipping Agents the above-mentioned output is provided at the detailed level of trades and includes information for clearing as well.

  To the TSOs the above-mentioned output is provided after aggregation and netting is applied, per area up to the level of pairs of CCP and Shipping Agent or pair of Shipping Agents and per border up to the level of pairs of Shipping Agents.

2.5 Net Positions

As per Article 52 of the CACM Regulation, All NEMOs, as part of their MCO function, shall ensure that the continuous SIDC delivers Net Positions as a clear data item. Net Positions can be derived from the results of the SIDC:

- The Net Position of a Scheduling Area is equal to the aggregation and netting of matched buy and sell orders in the Scheduling Area
- The Net Position of a Bidding Zone is equal to the aggregation and netting of matched buy and sell orders in the Bidding Zone

2.6 Scheduled Exchanges

The SIDC delivers all basic information to calculate any kind of Scheduled Exchange belonging to the Net Positions resulting from the SIDC:

- Internal commercial schedules are the result of aggregating and netting the hand over:
  - between CCPs in the same area;
  - between a CCP and a Shipping Agent and
  - between Shipping Agents in the same area.

- External commercial schedules are the result of aggregating and netting the hand over between Shipping Agents on a border.

The aggregation and netting shall be done at the level of Scheduling Area as well as Bidding Zones.

3. List of Information required from NEMOs

As per Article 56(3) of the CACM Regulation, the SEC shall be based on net positions for each market time unit.

According to Article 60(1)(a) of the CACM Regulation, all NEMOs performing MCO functions shall deliver the continuous trading matching algorithm results:

- single net positions as specified in Article 52(1b) of the CACM Regulation to all TSOs and all Scheduled Exchange Calculators;
- the execution status per trade specified in Article 52(1a) of the CACM Regulation to all other NEMOs.

Article 56(2) of the CACM Regulation of the CACM Regulation stipulates that the ID SEC Proposal shall 'list the information' which shall be provided by the NEMOs to the TSOs.

The NEMOs shall provide the following information, resulting from the SIDC all TSOs, for each market time unit:

- Allocated capacities, in the form of scheduled flows between bidding zones
- Allocated capacities, in the form of scheduled flows between scheduling areas

It is important to note that all borders belonging to SIDC shall not use Scheduled Exchange Calculator to calculate Scheduled Exchanges. Instead, the scheduling information received from the SIDC solution shall be used as Scheduled Exchanges. Thus, only information related to allocated capacities shall be requested from NEMOs.

The information requirements listed above are essential for the post calculation verification tasks to ensure that the aggregated sum of all Scheduled Exchanges per Bidding Zone or Scheduling Area border extracted from SIDC are compliant with Scheduled Exchanges and CMM output of SIDC.

4. Requirements for Scheduled Exchanges Calculation

TSOs shall use the allocated capacities in the form of Scheduled Flows received from the NEMOs. These allocated capacities are calculated in accordance with requirements set for ID

algorithm in accordance with Article 37 of the CACM Regulation. The needed output of SIDC algorithm shall be (as defined in Chapter 3):

- Allocated capacities, in the form of scheduled flows between bidding zones
- Allocated capacities, in the form of scheduled flows between scheduling areas

Border capacity is allocation for each trade concluded in SIDC (between Source and Sink) shall be aggregated for the detailed output on the required level of Scheduled Exchanges for Scheduled Flows between bidding zones and between scheduling areas.

These aggregated Scheduled Flows shall be validated by TSOs and used as the Scheduled Exchanges resulting from the SIDC for that market time unit.

5. Implementation

The ID SEC Methodology shall be implemented by any TSO in parallel with the implementation of the SIDC Solution.

The ID SEC Methodology is currently aligned with the All NEMOs' (draft) Proposal for the continuous trading matching algorithm, incorporating a common set of requirements for the continuous trading matching algorithm in accordance with Article 37(4) of the CACM Regulation. All TSOs highlight that there is a risk associated with the difference in time frames between the deadline for submission of the ID SEC Methodology and the All NEMOs Proposal for the continuous trading matching algorithm. The List of Information Required from NEMOs as provided in Article 3 of the ID SEC Methodology is essential for the ID SEC Methodology. This risk shall be mitigated by ensuring that the All NEMOs Proposal includes the List of Information Required from NEMOs as outlined in Article 3 of the ID SEC Methodology.

Additionally, as per Article 56 of the CACM Regulation no later than two years after the approval by the NRAs of the ID SEC Methodology, TSOs shall review the methodology. All TSOs shall participate this review.

It is noted that currently all TSOs intend to use directly the results from SIDC and there are no TSOs intending to use Scheduled Exchange Calculator to calculate Scheduled Exchanges.

ANNEX 1 - List of comments received

Question	Organization	Comment	All TSO Response
Please provide us with general comments on the proposed Methodology for calculating Scheduled Exchanges resulting from single intraday coupling. - ID SEC Proposal	**EDF SA**	EDF wishes to recall that If stakeholders are consulted to provide feedbacks and inputs, TSOs should make their best efforts to explain in a pedagogical way what is the context and the objectives pursued by TSOs to understand the purpose of a common Scheduled Exchanges calculation methodology and its impact on market participants' activities. Therefore, an updated version of the explanatory notes published in December 2016 when the first version of the two methodologies was submitted to NRAs should have been published together with the new methodology proposals in order to provide full information to stakeholders.	TSOs remind that the timeframe was very short between the letter from NRAs (25th of September 2017) to resubmit the proposals and the start of the public consultation (5th November 2017). In addition, a stakeholder workshop was organized during the public consultation to answer all stakeholders' questions and to explain more the context of the proposal.
Please provide us with general comments on the proposed Methodology for calculating Scheduled Exchanges resulting from single intraday coupling. - ID SEC Proposal	**HSE Group**	HSE urges all calculations within proposed methodologies to be public, transparent, with understandable results and in a user-friendly format (XML for example), which enables adequate long-term planning and data management. When proposing unification of information systems and concepts, it is important to bear in mind the benefits of existing elements and information systems that are already in practice and work well. Consistency and continuation is an important element of trading. We support ID capacities to be on a continous basis, with less limitations in terms of timing, quantity and vaule (no auctions, sessions), which enables more flexibility in trading and decision-making close to real-time. We also propose auctions to follow the FCFS principle and not a bididng one, which enables cost reduction. Intraday capacities should undergo the netting process.	TSOs have considered this feedback and have added more details about the calculation of Scheduled Exchanges between bidding zones and Scheduled Exchanges between scheduling areas. The format of the result of the calculation is not part of the proposal. The ID capacities trading is not part of this proposal. The auction function is not part of this proposal.