

## Extension of products for DAM

In relation to development of the day-ahead cross-border market, OKTE, a.s., decided to expand the XMtrade®/ISOT system by implementing new products for the day-ahead market. The extension reflects current needs of the market participants trading on the day-ahead market and also involves unification of the products tradable within the coupled 4M MC area (SK-CZ-HU-RO). Use of the new products will also cover the trading opportunities of market participants within other expected milestones related to the operation of the single day-ahead market – the Interim coupling and subsequently the Core FB MC project.

**Expected go-live date of the new products into production environment of the XMtrade®/ISOT system is 04/01/2021.**

Extension of the supported products in the day-ahead market is done in line with the range of products supported by the EUPHEMIA matching algorithm used in the day-ahead market coupling.

Comparison of the current set of supported products and the new set of supported products is shown in the following table.

Product type	Attribute	Product description	Existing status	Target status
-	-	Unlimited number of purchase orders.		
-	-	Unlimited number of sell orders.		
Standard hourly order	No attribute	Hour order containing 24 trading periods (23/25 during the transition day), whereby a maximum of 25 different queries can be defined for one trading period.		
	Power divisibility	It can be defined for each period within the 1st block of order separately, it ensures the possibility of partial trading of the volume in the given period of the first block (MinimalAcceptanceRatio = 0).		
	Total acceptance of the 1st block	Time indivisibility that will ensure trading of the given block with the condition MinimalAcceptanceRatio = 1 for the trading of 1 block within the entire order.		
Simple block order	-	Block with the possibility to enter quantities for a maximum of 24 hours (23/25 during the transition day) within a day with one weighted average price limit.		
Linked block order	-	Order with the condition that the given block order can be traded in the event that the parent linked order is traded.		
Flexible block order	-	Form of block order for one hour with a fixed price limit and a fixed quantity without specifying a specific trading period.		
Exclusive group of block orders	-	A group of at least 2 and at most 8 simple block orders, while a maximum of 1 block order can be traded within a group. Trading of a given order is determined by the matching algorithm with regard to the rule of maximizing the social welfare.		

**Table 1:** Range of supported products for the day-ahead market

Precondition for the introduction of new products is the possibility of submitting an unlimited number of orders per market participant. This extension results in a change in the concept of submission orders, their modification and administration, as well as the actual entry of individual new types of orders. Details on the individual changes are given in the following chapters.

## Unlimited number of orders per market participant

Implementation of this change will lead to revoking of the condition stated in Operational Order of OKTE (Chapter 5.2, point 1) that one market participant may submit at most one purchase order and one sale order on the day-ahead market.

This change will affect the management of the day-ahead market orders to the following extent:

Initial operation (until 03/31/2020)	New operation (after 04/01/2021)
<ul style="list-style-type: none"> <li>MP can submit a maximum of 1 purchase order and a maximum of 1 sale order</li> <li>Order can contain a maximum of 25 blocks</li> <li>In the first block, sale order may contain a performance divisibility flag defined separately for individual trading periods</li> <li>Order (purchase, sale) can have a sign of the overall acceptance of the 1st block</li> <li>Submission of a new order (if an order exists on the same day and direction) will invalidate the existing order</li> <li>Order modification is done by submission of a new order without identifying the previous one</li> <li>The order always has version no. 1</li> </ul>	<ul style="list-style-type: none"> <li>MP can submit unlimited number of orders</li> <li>Standard order per hour can contain a maximum of 25 blocks</li> <li>Standard order per hour for sale may contain a power divisibility flag in the first block defined separately for each trading period</li> <li>Attribute of the whole acceptance of the 1st block is not supported</li> <li>Submission of a new order (if there is an order for the same day and direction) will create a new order</li> <li>Modification of order by entering a new order, including the identification of an existing order</li> <li>Order can have "n" versions, where the valid is always the last one</li> </ul>

**Figure 1:** Description of differences in the concept of orders for the day-ahead market

Changing of the concept will affect all ways of orders submission:

- Submission/modification of orders through form on the XMtrade®/ISOT portal,
- Submission/modification of orders through XLSX template for order import,
- Submission/modification of orders through import of XML file,
- Submission/modification of orders through web service Orders.

## Cancellation of order support with total acceptance of the first block

Orders with total acceptance of Unit 1 will not be supported from the moment the support of new products starts. Due to their complexity and the necessary transformation of orders submitted by market participants for the needs of the EUPHEMIA matching algorithm, orders will be replaced by the following new product types, which are described in detail in the following chapters of this document.

## New types of products on the day-ahead market

### Simple block orders

Simple block (profile) purchase or sale order will consist of the possibility of defining a quantity in MWh for a maximum of 24 (23/25 in the case of a transitional day) trading periods. The price within the order will be one and will represent the weighted average price of order.

Head	Blocks
Price (EUR/MWh)	50.13
Hour	1 2 3 4 5 6 7 8 9 10
Amount (MWh)	10.0 10.0 20.0 20.0 20.0 20.0 10.0

**Picture 2:** Example of a form for submission simple block (profile) order

Trading through the weighted average price will ensure that, despite higher (sale)/lower (purchase) prices in certain periods, the order can be traded if this loss is offset in the remaining periods with a lower (sale)/higher (purchase) price.

A simple block order can be traded in whole or not at all (*minimum acceptance ratio* = 1).

### Linked block orders

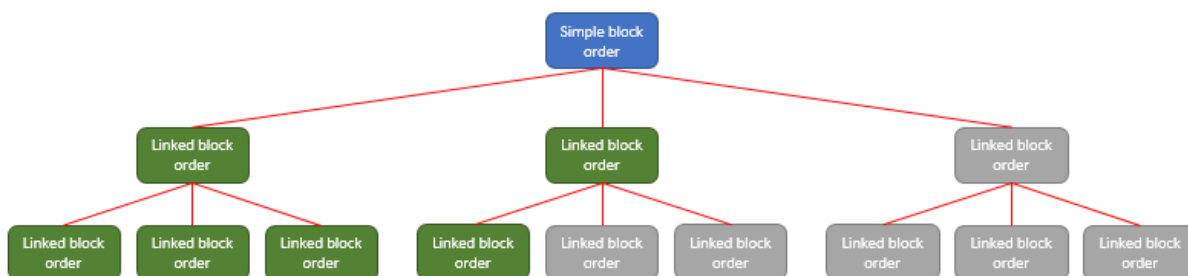
Linked block order is a simple block (profile) order with the definition of a parent order. Successful matching of the parent order is a precondition for trading the given linked order.

The parent order can be a simple block order directly, or an order that already has a linked order flag. Links between orders will generally have to meet the following restrictions:

- a) maximum level of linking of parent orders is 3,
- b) maximum number of offspring orders linked to one parent order is 3,
- c) total number of interconnected orders is 7.

Linked block order can, like a simple block order itself, be traded as a whole or not at all (*minimum acceptance ratio* = 1).

Example of using of block order binding is shown in the following figure:



**Figure 3:** Block order linking levels

Linked order	Price (EUR/MWh)	Hour	1	2	3	4	5	6	7	8
	50.11	Amount (MWh)	10.0	20.0	30.0					

**Figure 4:** Example of a form for submission of a linked block order

### Flexible block orders

Flexible hourly block order is an order with a defined price and quantity for just one trading period, which, however, is not determined in advance. The order of the trading period within a given trading day is determined by the matching algorithm based on the market coupling results with respect to the rules of matching according to prices, including the rule of maximizing the social welfare.

Flexible block order can be traded in whole or not at all (*minimum acceptance ratio* = 1).

Price (EUR/MWh)	Amount (MWh)	Hour	1	2	3	4	5	6	7	8
50.33	100.0	Included periods	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Figure 5:** Example of a form for submission of a flexible block order

The selection of preferred trading periods within the figure above is indicative only and will not be predefined.

## Exclusive group of block orders

Within a group, several simple block orders are traded, which are interconnected by the identification of the group that covers the given orders. Within the group, it must be true that the amount of so-called acceptance ratio of all orders must not exceed 1. Since the XMtrade®/ISOT system allows you to enter block orders with a fixed minimum acceptance ratio of 1, the exclusive group matching results in a maximum of 1 block order. If none of the orders meet the matching criteria, all orders of the exclusive group will remain untraded.

Head		Blocks													
P. Z.	Price (EUR/MWh)	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13
1	<input type="checkbox"/>	Amount (MWh)													
2	<input type="checkbox"/>	Amount (MWh)													
3	<input type="checkbox"/>	Amount (MWh)													
4	<input type="checkbox"/>	Amount (MWh)													
5	<input type="checkbox"/>	Amount (MWh)													
6	<input type="checkbox"/>	Amount (MWh)													
7	<input type="checkbox"/>	Amount (MWh)													
8	<input type="checkbox"/>	Amount (MWh)													

**Figure 6:** Example of a form for submission an exclusive group of block orders