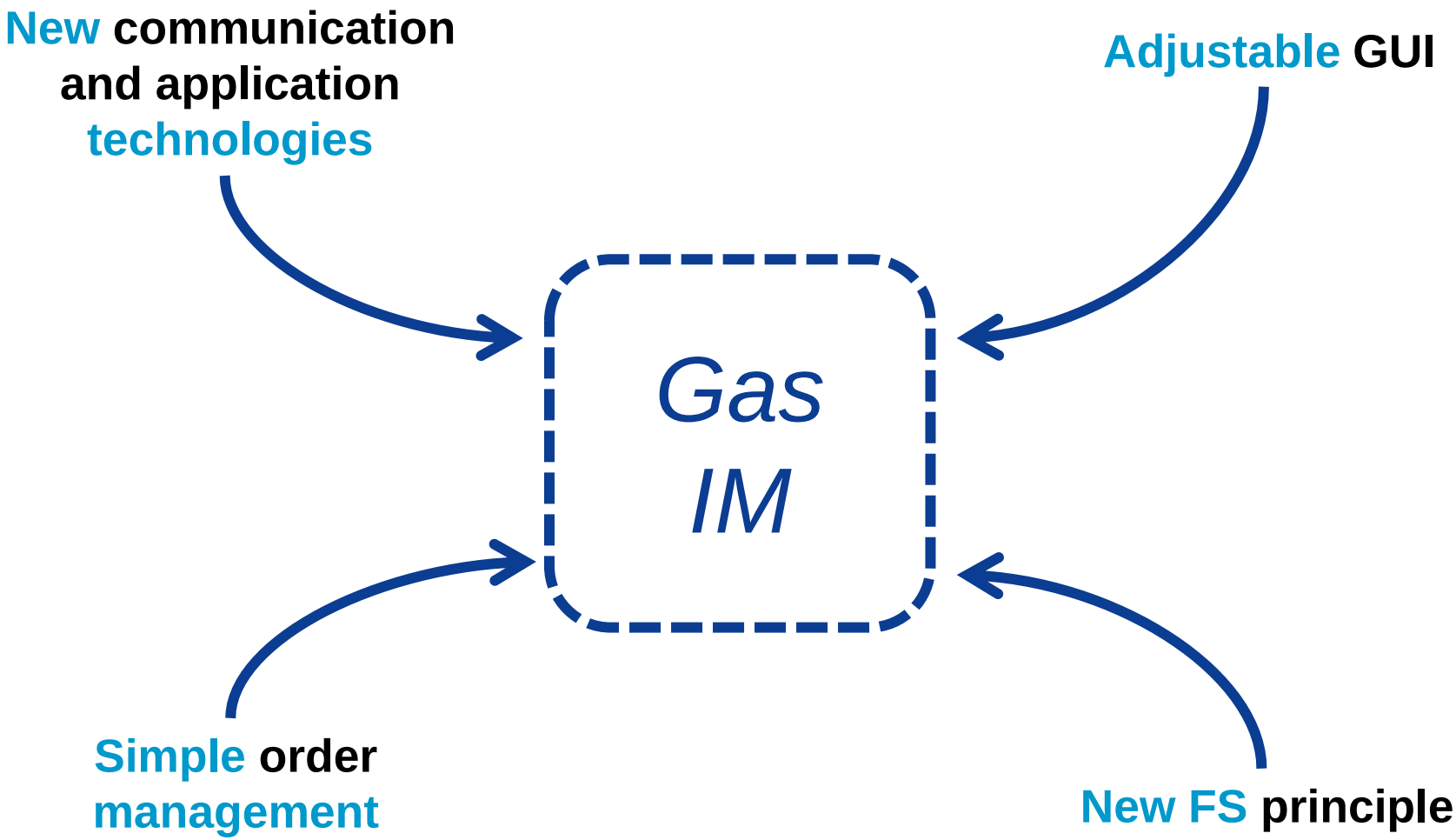
Innovated solution for Gas IM

OTE-COM

Combining opportunities with markets

Innovated IM solution OTE-COM, developed by OTE a.s., including an application for trading on Intraday Gas Market in the Czech Republic, allows quick response to the current market situation 365 days a year.



Changes in technical solution

Innovated IM solution OTE-COM is based on cutting edge technology, application logic and it **ensures fast and reliable distribution of trading data.**

- The solution is based on **a platform for quick exchanges of messages** using the binary protocol AMQP, according to the open international standard (ISO/IEC 19464).

- The **AMQP server** is used to deliver messages to/from client applications and to/from market participant systems. The exchange of messages is done through the pre-existing connections without re-authentication, thus **speeding up the data exchange.**

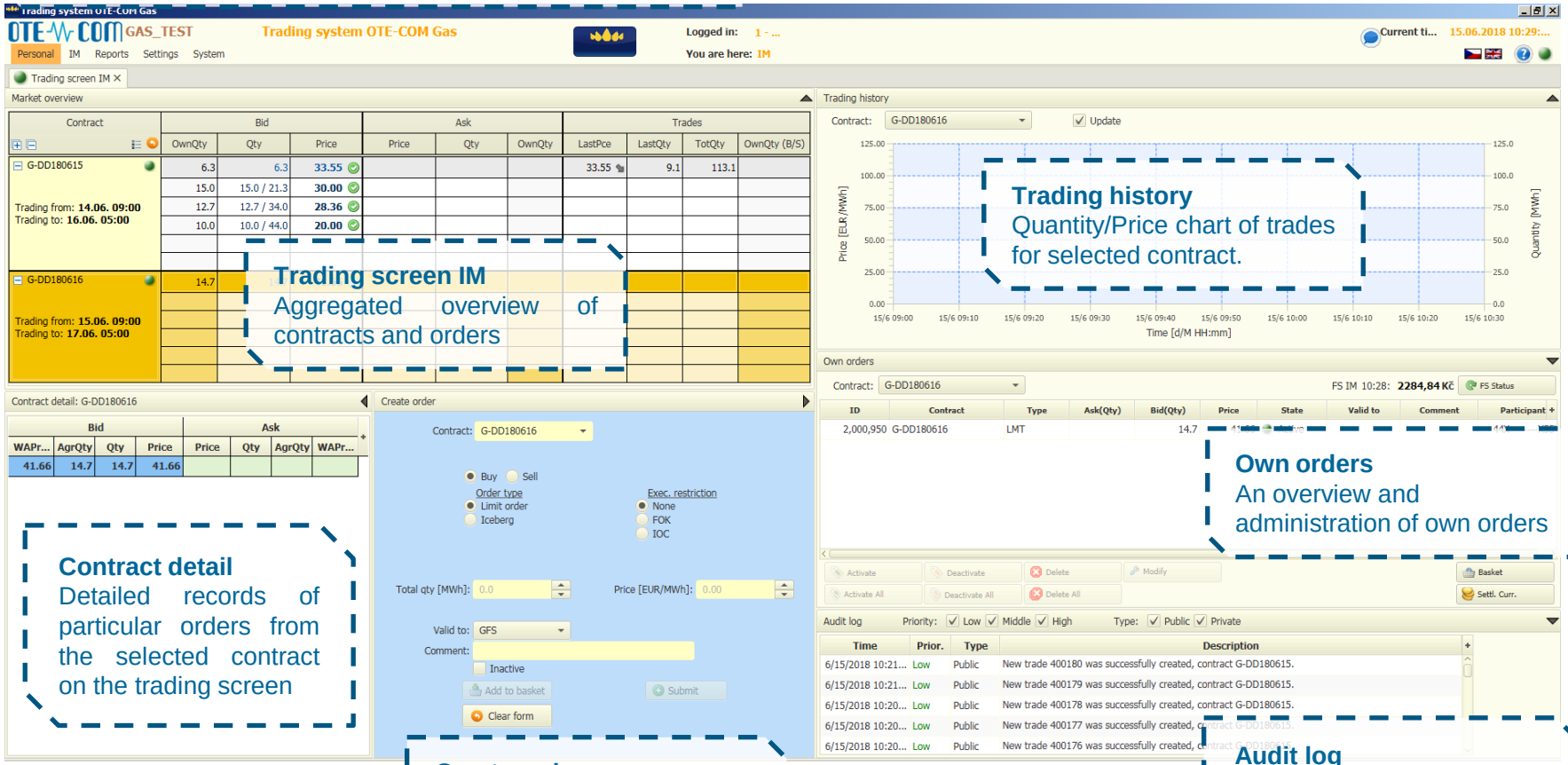
- Access to the intraday gas market will be possible via an **OTE-COM application** installed on market participant´s side or it is possible to use own solution with access via **automatic communication** using an AMQP server

Trading client

- Each trading client is a **standalone application,** with separate production and testing environment (SANDBOX).
- **Installation of the application is needed before the first use.**
- The application serves as the main user tool for trading on IM.
- It is built on **JavaFX** technology (trading screen). After the participant authentication (the verification of the participant is checked against data on the LDAP server CS OTE), it connects directly to the AMQP server.
- **Supported versions of OS** : Windows 7, Windows 8.1 and Windows 10 (both the 32 bit and 64 bit version).
- The standalone application will always be launched with the required version of JAVA JRE included in the application directory. The application is always distributed with the corresponding version of JRE.

Trading client – Trading screen

Menu
The header containing the menu and active tabs overview



Trading screen IM
Aggregated overview of contracts and orders

Trading history
Quantity/Price chart of trades for selected contract.

Own orders
An overview and administration of own orders

Contract detail
Detailed records of particular orders from the selected contract on the trading screen

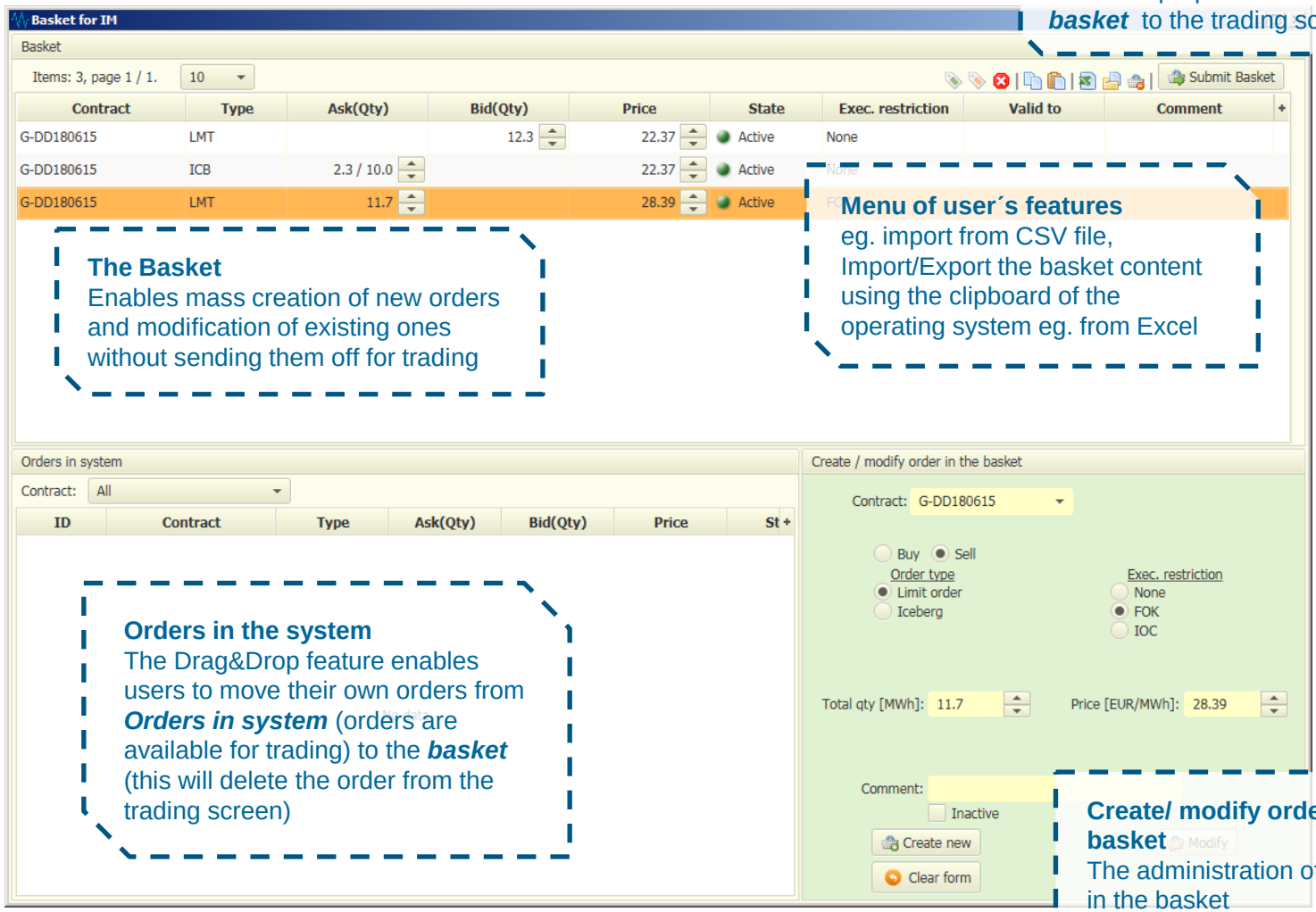
Create order
Form for creating a new order

Audit log
Messages generated by the system which are relevant for the logged in user.

Graphical display of new IM trading client in this presentation might be amended.

Trading Client - Basket

Submit Basket
Sends all prepared orders in the ***basket*** to the trading screen



The Basket
Enables mass creation of new orders and modification of existing ones without sending them off for trading

Menu of user´s features
eg. import from CSV file, Import/Export the basket content using the clipboard of the operating system eg. from Excel

Orders in the system
The Drag&Drop feature enables users to move their own orders from ***Orders in system*** (orders are available for trading) to the ***basket*** (this will delete the order from the trading screen)

Create/ modify order in the basket
The administration of orders in the basket

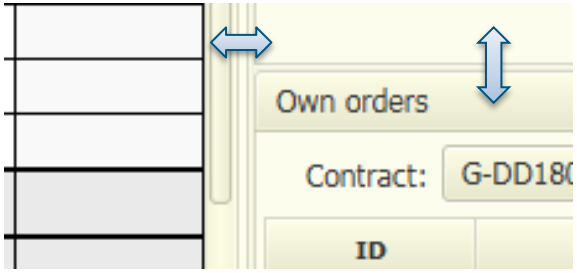
Graphical display of new IM trading application in this presentation might be amended.

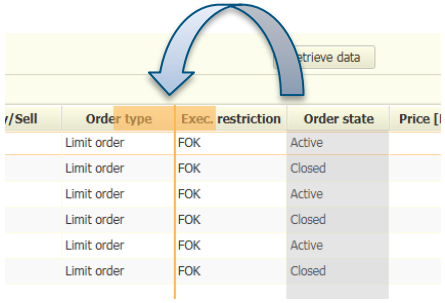
Trading application– GUI

- **The display option** of the various panels and their **layout** on the trading screen is **customizable.** The size of the individual sections is adjustable.

- Users can save **several types of trading screen layouts**.

- Reports are also customizable. Users can **move or hide individual columns** according to their preferences and the changes can be **saved**.





External interface- automatic communication

Participants who prefer to use their own IT systems for trading on IM can carry out all business activities via **automatic communication**

- Automatic communication is **exclusively** based on communication with the **AMQP server RabbitMQ** (www.rabbitmq.com) to ensure fast distribution of messages.

- Compared with the SOAP solution, **no special settings/permission are required on OTE side** and the interface to the RabbitMQ AMQP server is available for all participants regardless of the system used.

- Market participants can create their own clients (own solution instead of OTE-COM application) that connects to the MQ server and sends requests and receives responses and mass messages. It is possible to use the AMQP client library RabbitMQ.

The process of establishing communication and individual communication scenarios is described in the document **External interface of CS OTE.**

External interface – Communication messages

All messages sent between the user and the IM application have their own message content, based on the **XML format.**

Two basic types of communication are used for Client – MQ server exchange:

- **Request-response** – requests initiated by the client to which the MQ server will respond asynchronously. The response is sent only to the initiator of the communication.

- **Mass message** – global message distribution from the MQ server to clients. Messages are sent based on specific distributional rules and access rights.

The description of messages can be found in the **Documentation of OTE-COM application.**

Changes in IM financial security principle

- **Orders** inserted in IM **will be secured within the new trading limit** intended solely for IM, which is allocated out of the current trading limit.

- A separate IM trading limit **accelerates the process of order validation**.

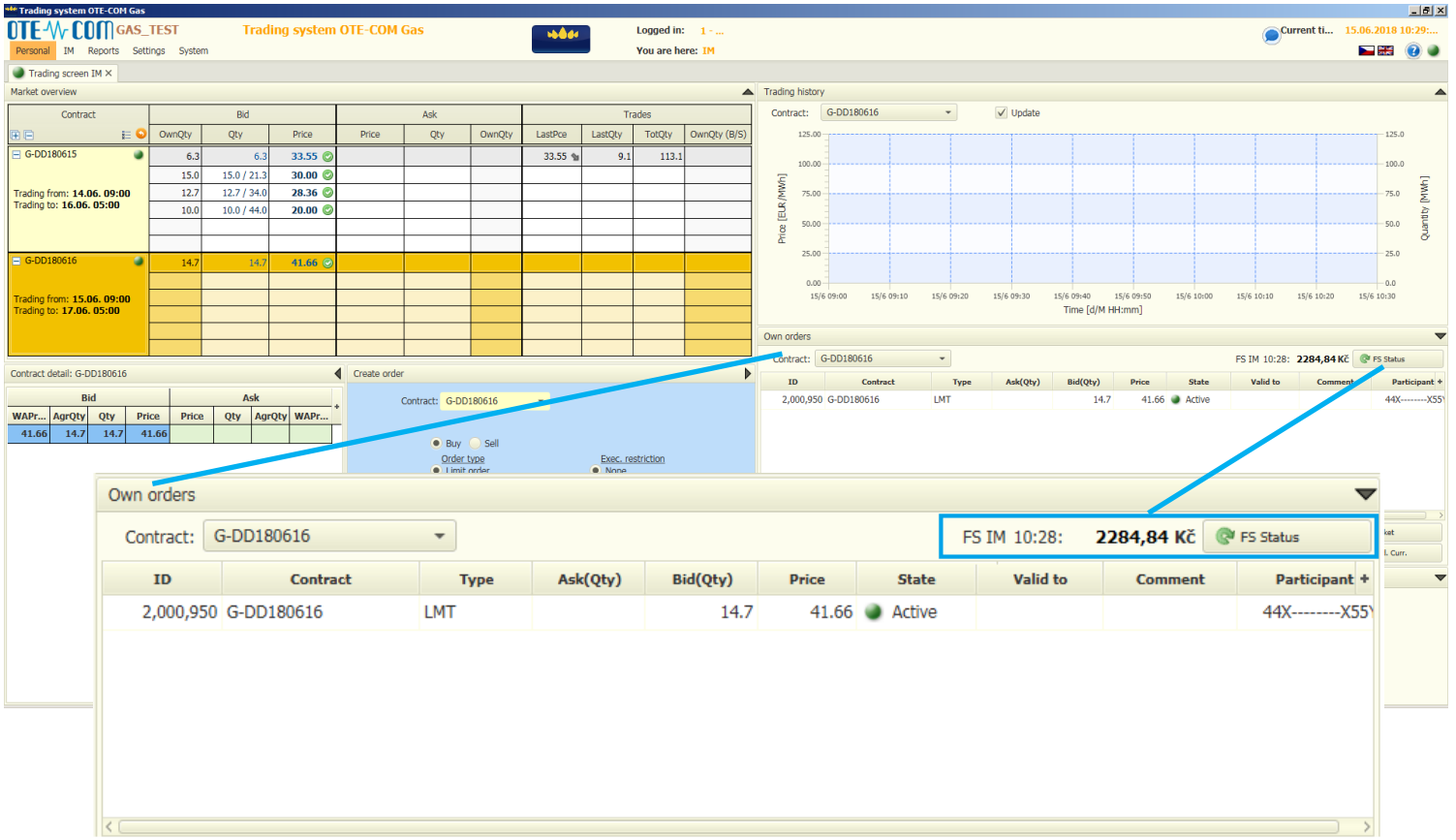
- Market participants **can set up and manage** the trading limit for IM as needed (within the range of resources of the current trading limit).

- **Individual orders will be secured by the following principle**: the sum for imbalance security (sale order) will be calculated using the parametric price and sum for commodity security (buy order) will be calculated based on the price limit stated in the order.

- **Trades on IM will be secured within the range of the current trading limit.** When the trade is created, order security is released back to the trading limit for IM.

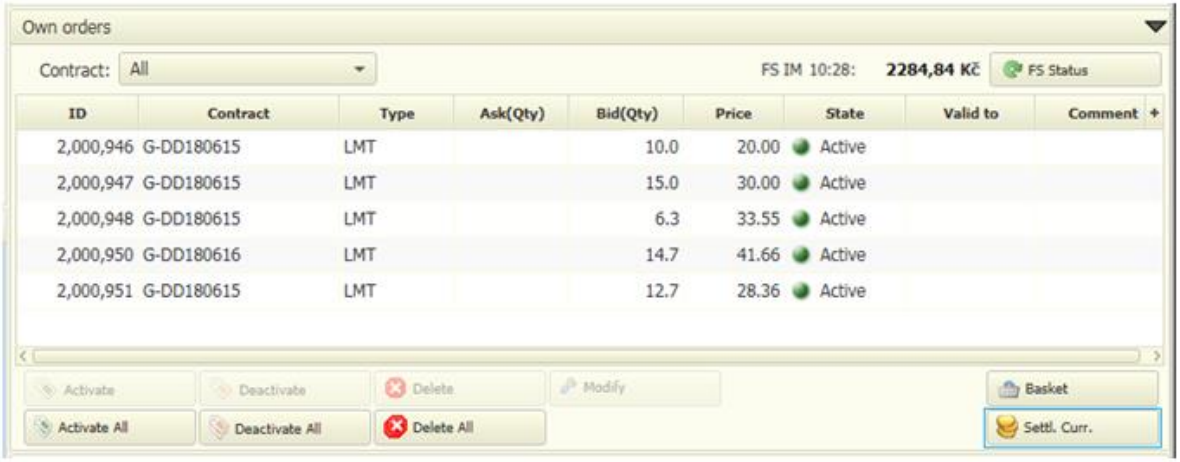
Changes in financial security principle

- Information about the trading limit for IM is available both on the main trading screen and in a separate report.



Change of IM settlement currency

- The user can:
  - **set up the IM settlement currency** for future trading days using the button ***Settl. Curr.*** on the panel ***Own orders***. Default settings from the relevant CS OTE module will be applied for settlement of trades on IM, if the settlement currency is not changed.

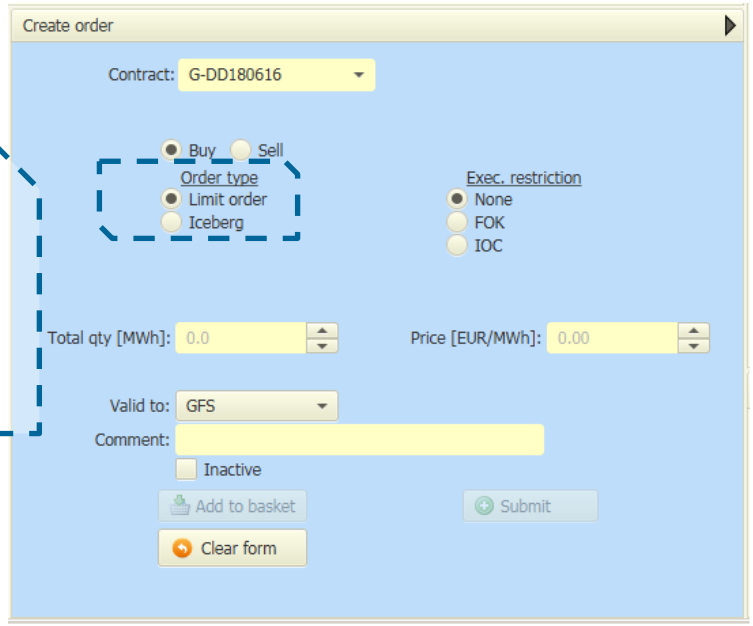


  - **display** a separate report containing **an overview of IM settlement currency** for chosen delivery days period.

Types of orders– Limit order

Daily order – a contract with a delivery period of 1 day

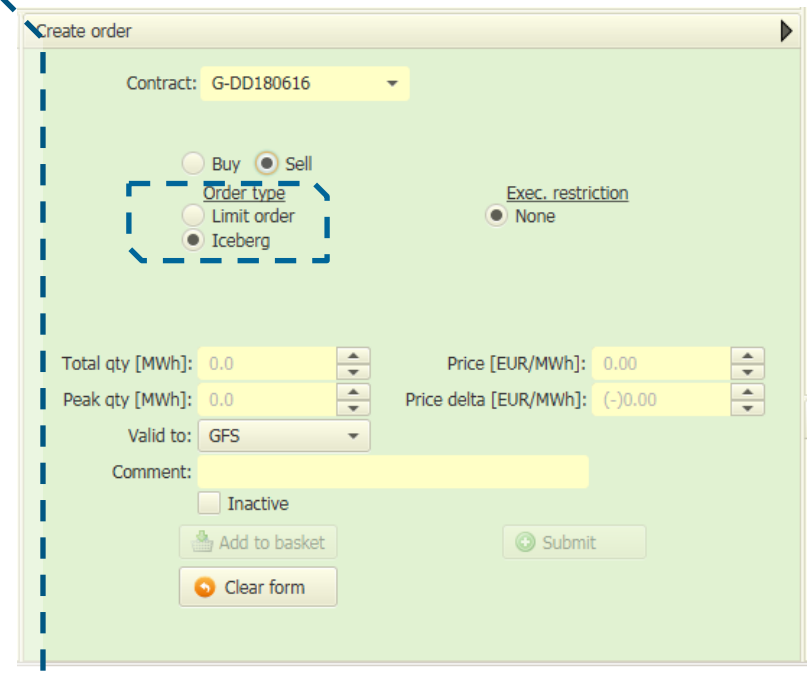
The order can be traded at a price which is lower or equal to the limit price of the buy order, or at a price which is higher or equal to the limit price of the sale order



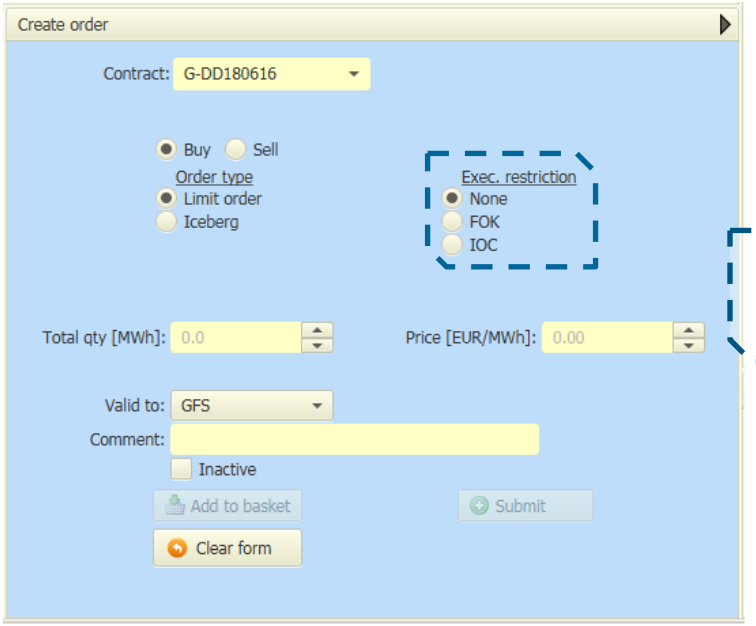
Types of orders– ICEBERG

Daily order– a contract with a delivery period of 1 day

The amount of the order will be shown to the market gradually according to the user´s definition of price and quantity step. Once the displayed amount is fully traded, the system automatically shows another part of the order. If the remaining amount of the order is smaller than the defined volume step, the remaining amount is shown. An order is shown until the total amount of the order is traded or the time validity of the order expires (in the case of an order with a specified time restriction GTD)

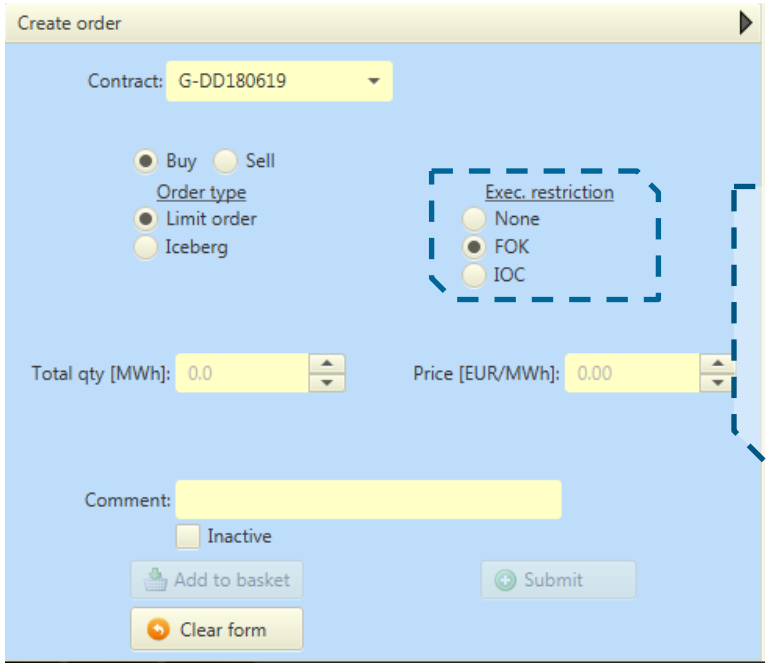


Executive restriction – None



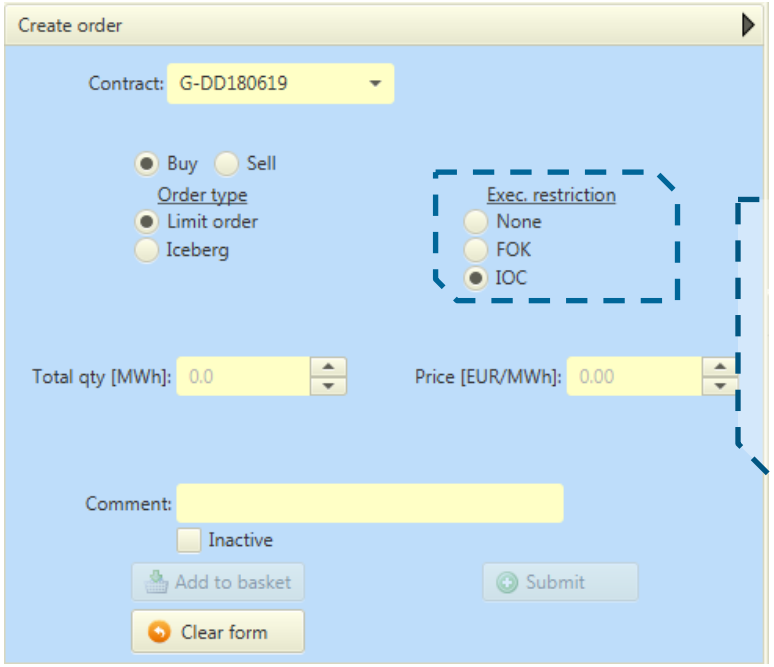
An order can be traded fully against one order or partly against more orders

Executive restriction – Fill or Kill FOK



The whole amount is traded immediately after the insertion of the order into the system. If this condition is not met, the order will be withdrawn from the market immediately.

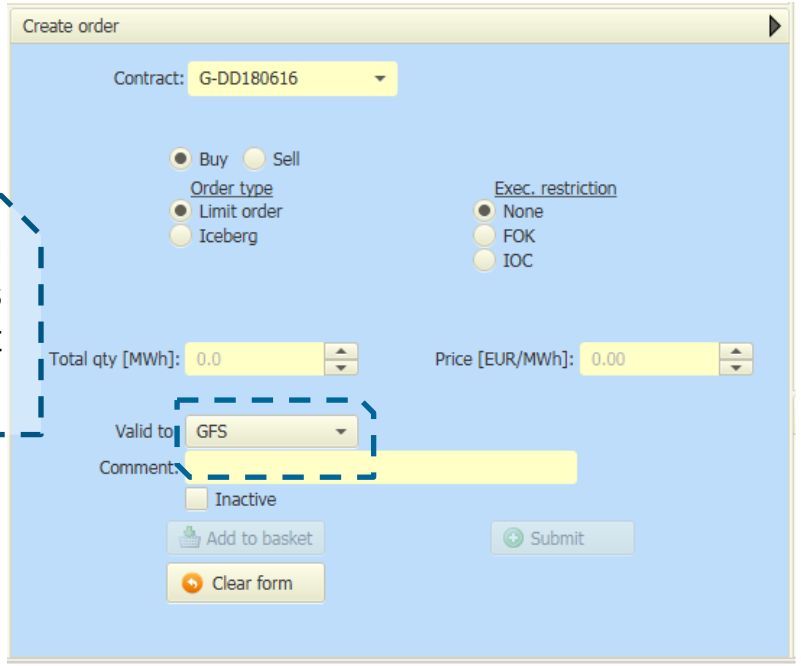
Executive restriction– Immediate or Cancel IOC



An order can be traded fully or partly immediately after the order is inserted into the system. If the order amount is not traded fully, the order is withdrawn from the market immediately.

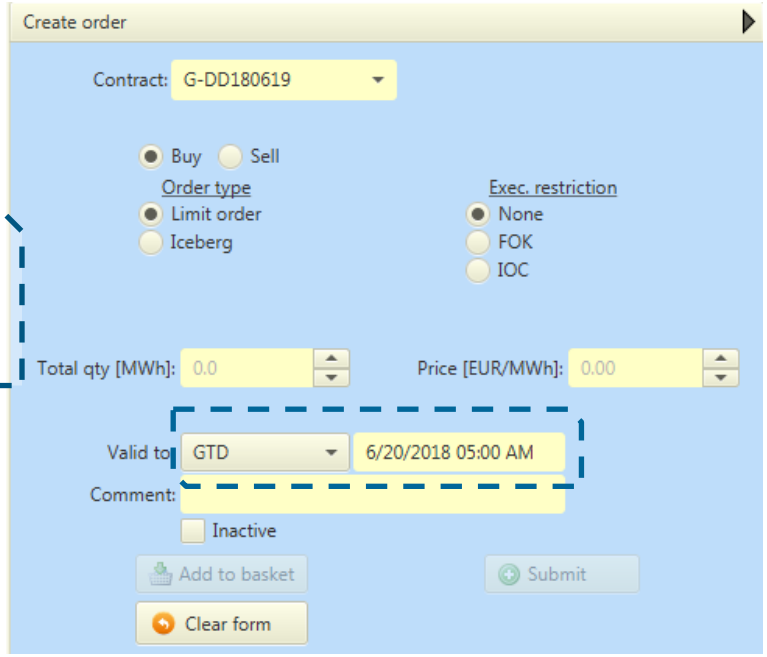
Time restriction – Good for trading session GFS

An order is valid until the end of trading with the respective contract or until it is fully traded or deleted by the market participant.



Time restriction – Good till date GTD

An order with a set time restriction. After the time expires, the order is automatically withdrawn from trading.



Restrictions and order types combination

Available combination / Unsupported combination	FOK	IOC	NON
Limit order	No time Restriction	No time Restriction	GTD or GFS
ICEBERG	No time Restriction	No time Restriction	GTD or GFS

As orders with FOK and IOC *execution restrictions* are either immediately traded or cancelled, the time restriction can be set only for orders with no *execution restriction*. Note also that FOK and IOC *execution restriction* cannot be used for Iceberg orders.

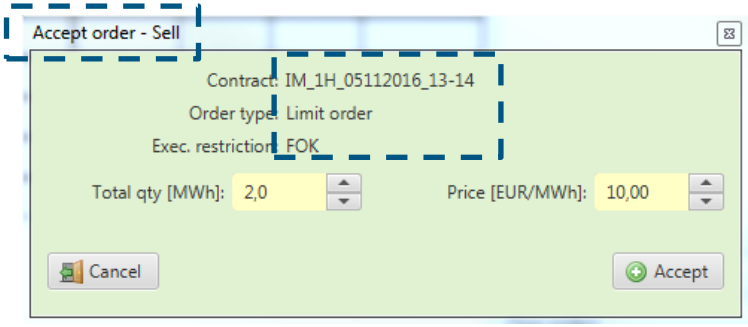
Fast order acceptance

Market overview

Contract	Bid			Ask			Trades			
	OwnQty	Qty	Price	Price	Qty	OwnQty	LastPce	LastQty	TotQty	OwnQty (B/S)
G-DD180615	6.3	6.3	33.55				33.55	9.1	113.1	
	15.0	15.0 / 21.3	30.00							
Trading from: **14.06. 09:00**	12.7	12.7 / 34.0	28.30							
Trading to: **16.06. 05:00**	10.0	10.0 / 44.0	20.00							

System supports **fast order acceptance.**

By clicking the button fast acceptance window appears.



Fast acceptance order is created with **FOK** restriction.

Testing with market participants

- **Testing** with market participants is expected to be **from 27th August to 7th September 2018**.

- **A workshop** (in the form of a webinar) informing market participants about the OTE-COM application for gas IM and the testing schedule will be arranged. The expected date is **7th August**.

- The **OTE-COM application** and also AMQP automatic communication for the testing environment will be available in **mid-August**.

- If a market participant will use automatic communications through the AMQP server, it will be possible to carry out **connectivity tests from 13th to 24th August 2018**.

- **Public certificates** are needed for access to the OTE-COM application and **qualified certificates** are needed for signing orders.

- Dates will be confirmed in mid-July, at the same time that the information about automatic communication setup will be released.

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