EPEX Spot Trader Manual

EPEX Spot Trader Manual

3.3.202

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Disclaimer

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Chapter 1   Disclaimer

EPEX Spot Client offers a great deal of flexibility to exchanges to configure new products. Considering the generic nature of the EPEX Spot Client, and thus this manual, some products and functionality described in this document may not be available to you.

The screenshots used in this manual are of non-existent configurations. Products displayed in the various screens may not apply to your exchange and use imaginary values.

Please consult your exchange to see what products are available and refer to your market rules regarding availability of described functions.

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Chapter

2

Introduction

Chapter 2   Introduction

This guide is intended for EPEX Spot Traders.

Please refer to your market rules regarding availability of described functions.

Assumption throughout this guide is made that the reader has full authority and permission to perform the actions required.

There are two different EPEX Spot Clients available.

The EPEX Spot Fixed Version Client is the full client, containing all program logic needed to perform trader actions. The EPEX Spot Fixed Version Client however is not able to update to the latest program logic, making a new manual installation necessary when such code becomes available.

Default installation directory:
C:\Program Files (x86)\ETS Client for EPEX Spot (version)

The EPEX Spot Upgradable Client is the full client, containing all program logic needed to perform trader actions. The EPEX Spot Upgradable Client is able to update to the latest program logic, and will automatically update itself to the latest version when such code becomes available. The server it is connected to, dictates the version that is needed.
This ensures the client software is always up to par without the need to manually collect and install a newer version.

If the server connected to requires a different version than locally available for the upgradable client, it checks on the local computer if the correct version is there. If that is the case, it starts up that version. If not, it downloads and installs the correct version from the connected server. This version can be higher or lower than the installed version. Every downloaded version is stored on the local computer.

The executable (.exe) collected from the exchange via the Upgradable mechanism, will be saved by default in:

C:\ProgramData\EPEXTradingSystem\EPEX\<version>

Older versions of the Upgradable client will not be removed automatically. This ensures downgrades stay possible. If an upgradable client version is removed manually, but a connection to an ETS server expects this version, it is automatically re-installed. This can be a newer or older version.

Both the EPEX Spot Fixed Version Client and the EPEX Spot Upgradable Client will perform identically once the login procedure is completed, given the version of both the clients is the same.

ClientSettings.xml is a local file that contains the basic connection settings needed to connect to the exchange. Each version of EPEX Spot Client has its own file. The settings file for Windows 7, 8 and 10 is situated in:

C:\Users\<User>\AppData\Roaming\EPEXTradingSystem\EPEX\<version>

In case of a downgrade (older version), the ClientSettings.xml is newly created and will not contain any previous customer preferences. In case of an upgrade (newer version) it copies the existing preferences from an older file.

The **EPEX Spot Trader Client** consists of all functionality needed to perform trading related actions on the EPEX Spot Trading Systems installed on your local machine. In order to get up-to-date functionality, manual installation of the latest version is required.

Important:
Using an Upgradable client on a Citrix platform is not supported.

2.1   Getting Started with EPEX Spot Client

In this chapter we will describe how to start up **EPEX Spot Client**, how to connect to the **EPEX Spot** servers and how to disconnect from them.

Also, we will explain the process of authenticating users when establishing a connection.

The **EPEX Spot Fixed Version Client** consists of all functionality needed to perform trading related actions on the EPEX Spot Trading Systems installed on your local machine. In order to get up-to-date functionality, manual installation of the latest version is required.

2.1.1   Starting up EPEX Spot Trader Fixed Version Client

Select **ETS Client for EPEX Spot** from the **Windows Start** menu to start **EPEX Spot Trader Client**.

2.1.2   Starting the First Time

Before a connection can be made to the **EPEX Spot** servers, the **Network Settings** need to be defined.
After installation the default **Server Address** and **Server Port** require modification into the settings provided by the exchange.

To access the **Global Network Settings**, click the [icon] icon on the **EPEX Spot Trader Client**.

Please note that modifying these settings incorrectly can result in the inability to connect to the **EPEX Spot** servers. We strongly suggest to only modify these settings on request from the exchange operator.

Please note that the network settings are only accessible when no connection is established with the exchange servers.

The settings in this screenshot are intentionally left incorrect because they are different per exchange.

2.1.3   Connecting / disconnecting EPEX Spot Trader Client

The **Connect** option is replaced by the **Disconnect** option upon login.

          Disconnect

          Connect

Upon logout, the **Disconnect** option is replaced by the **Connect** option again.

2.1.3.1   Connecting with Password

In order to create a connection to the **EPEX Spot** servers either click the [icon] icon in the screen bar, select the option **Connect** from the **screen** menu, or use **[ALT-T]** & **[ALT-C]** respectively.
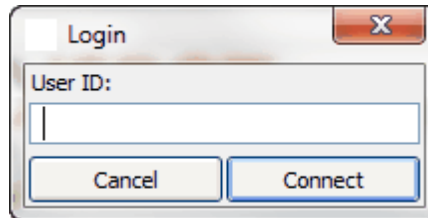
A dialog will open requesting your User ID. This User ID will be checked in the database for validity. Enter your User ID and either click the **Connect** button or press ENTER.

EPEX Spot now asks for a password. Enter the password provided for this User ID by the exchange.
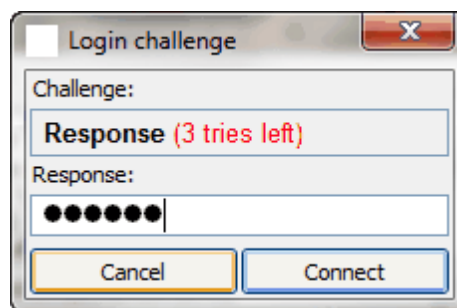
Be aware that you have a maximum of three attempts to enter a correct password. After the third invalid attempt your User ID will be blocked from access until the EPEX Spot system operator resets your User ID.
In any entry screen, when you click Cancel, it will not be counted as an attempt. It is therefore 'safe' to click Cancel.

After the password has been entered into the **Response** field of the **Login challenge** dialog of **EPEX Spot,** and the **Connect** button is clicked, an authentication check is performed.

Icons for modules for which permission is granted will appear in the **EPEX Spot Trader Client**. Depending on the required traffic over the internet, this can take a few moments.
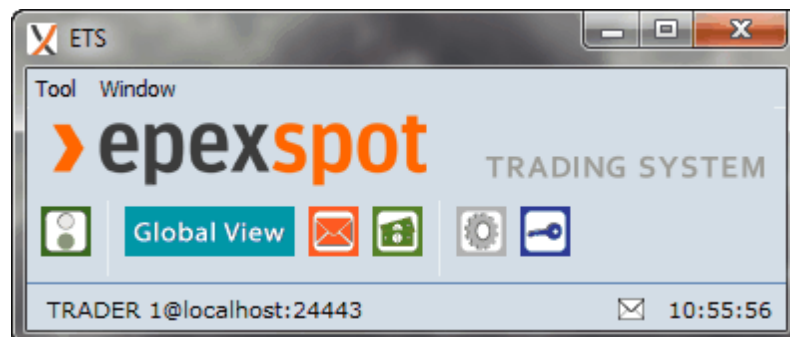
The connection state bar at the bottom of the console indicates you are logged in accompanied by the appropriate server time, converted to your local time zone as per your settings.

Please note it is possible for a user to change the password. For further details, please see Password Settings chapter.

2.1.3.2   Failed Login

If, during the submission of a password a wrong response is used to connect, EPEX Spot Trading System will deny access.
A warning will be displayed, informing about the failure.
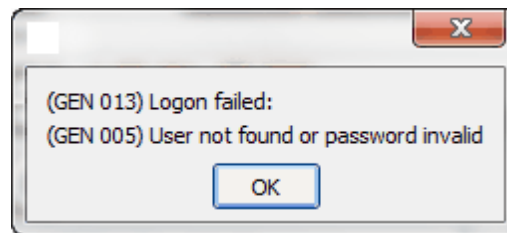
(GEN 013) Logon failed:
(GEN 005) User not found or password invalid

OK

The Login challenge dialog will be offered again, and the passcode can be entered again.

Login challenge

Challenge:

Password (2 tries left)

Response:

Cancel   Connect

Assuming the password is correct this time, you are logged in as usual. The 'tries left' counter will be reset to the default 3 attempts after a successful response.
If the password is incorrect again, the warning will be displayed again, and the process above repeats itself. Each failed response will lower the 'tries left' counter. If there are no tries left, contact EPEX Spot market operations for assistance.

2.1.3.3   Disconnecting EPEX Spot Trader Client

To terminate the connection with the **EPEX Spot Trading System** servers either click the [icon] icon in the Welcome Screen, select the option **Disconnect** from the **screen** menu, or use **[ALT-T]** & **[ALT-D]** respectively. Please note that the **Disconnect** option replaces the **Connect** option upon login.

Alternatively you can click on the *Windows X* in the upper right corner of the **EPEX Spot Trader Client** to terminate the **EPEX Spot** connection.

Please note that closing any other window does not disconnect you from the **EPEX Spot** servers. Only disconnecting in the **EPEX Spot Trader Client** screen will terminate the connection.

Please note that the exchange operator can also disconnect you. This is handled in the same way as if you were disconnecting yourself. With default settings you will not get a warning dialog with an Operator triggered disconnect.

A defect internet connection will be detected by **EPEX Spot Trading System** after a maximum of 120 seconds or as soon as any message is sent to the **EPEX Spot** servers and fails to get a response.

2.2 Getting started with EPEX Spot Upgradable Client

In this chapter we will describe how to start up **EPEX Spot Upgradable Client**, how to connect to the **EPEX Spot** servers and how to disconnect from them.

Also, we will explain the process of authenticating users when establishing a connection.

In order to get up-to-date functionality only a successful login is required. The **EPEX Spot Upgradable Client** will automatically update to the latest versions if required, ensuring **EPEX Spot Upgradable Client** is always up-to-date. Functionality is furthermore identical to the **EPEX Spot Fixed Version Client**, given the versions are the same.

2.2.1 Starting up EPEX Spot Upgradable Client

Select **EPEX Spot Upgradable Client** from the **Windows Start** menu to start **EPEX Spot Upgradable Client**.

EPEX Spot Upgradable Client will initially start with loading the installed version. This local version will automatically be superseded if a newer version is available from the exchange.
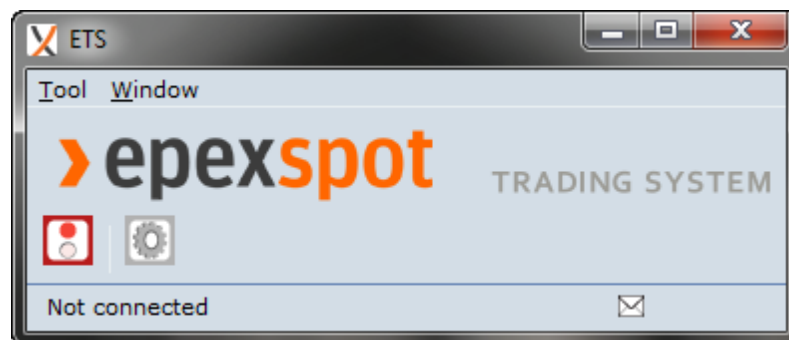
2.2.1.1 Undo Upgrade

In certain circumstances, the exchange can decide to enforce a downgrade to a previous version.

In order to downgrade an Upgradable Client, select the **Tool** menu in the Welcome Screen.

In the **Tool** menu, select **Undo Upgrade**.

The installed upgrade(s) will be removed from your local installation and the originally installed version will be reactivated.

Important:

Only perform this action on explicit request of the exchange.

2.2.2 Starting the First Time

Before a connection can be made to the **EPEX Spot** servers, the **Network Settings** need to be defined.
After installation the default **Server Address** and **Server Port** require modification into the settings provided by the exchange.

To access the **Global Network Settings**, click the [icon] icon on the **EPEX Spot Client**.

Please note that modifying these settings incorrectly can result in the inability to connect to the **EPEX Spot** servers. We strongly suggest to only modify these settings on request from the exchange operator.

Please note that the network settings are only accessible when no connection is established with the exchange servers.
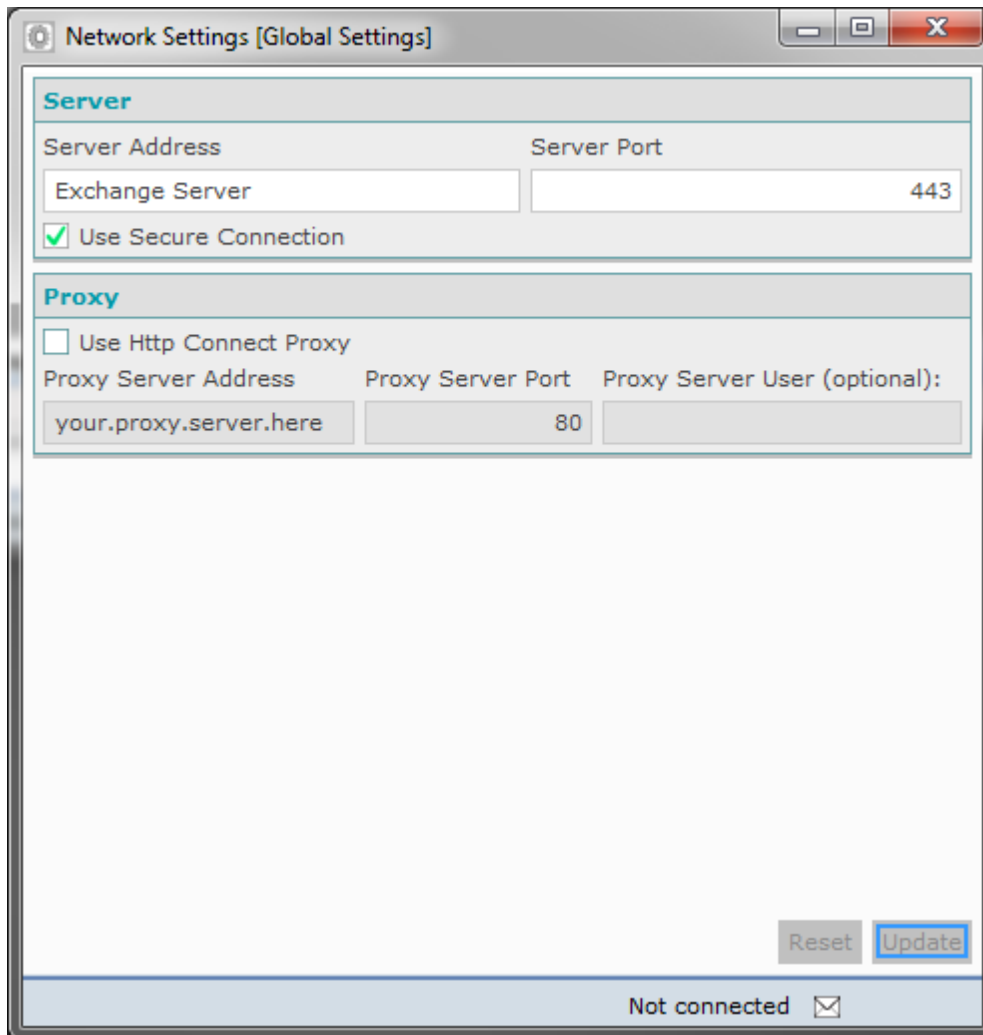
The settings in this screenshot are intentionally left incorrect because they are different per exchange.

2.2.3   Connecting / disconnecting EPEX Spot Trading System

The **Connect** option is replaced by the **Disconnect** option upon login.
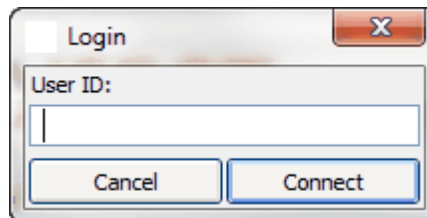
Disconnect

Connect

Upon logout, the **Disconnect** option is replaced by the **Connect** option again.

2.2.3.1   Connecting with Password

In order to create a connection to the **EPEX Spot** servers either click the [icon] icon in the Welcome Screen, select the option **Connect** from the menu, or use **[ALT-T]** & **[ALT-C]** respectively.

A dialog will open requesting your User ID. This User ID will be checked in the database for validity. Enter your User ID and either click the **Connect** button or press ENTER.

The **EPEX Spot Upgradable Client** will perform a version check. Now one of two things can happen, depending on the availability of newer versions.

Option 1:
If no newer version is detected, the login sequence will proceed after which **EPEX Spot Main Tool** will be presented.

Option 2:

If a newer version is detected, the newer version is automatically fetched from the exchange server. This is indicated with the 'Fetching update for' message.
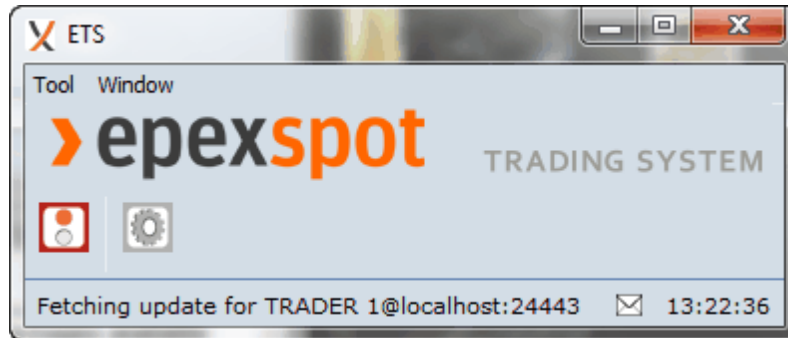
The newer version will be downloaded automatically, and installed. Depending on the internet speed and size of the download, this process can take a short while.

This procedure requires a restart of the EPEX Spot Upgradable Client once to execute the update, for which you will be prompted in a dialog.
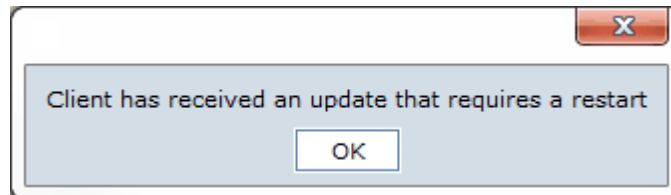
The Login sequence will start anew, using the just updated version information. Note that further starts of EPEX Spot Upgradable Client will automatically use the just updated version information, until a newer version becomes available again.

EPEX Spot now asks for a password. Enter the password provided for this User ID by **EPEX Spot SE**.
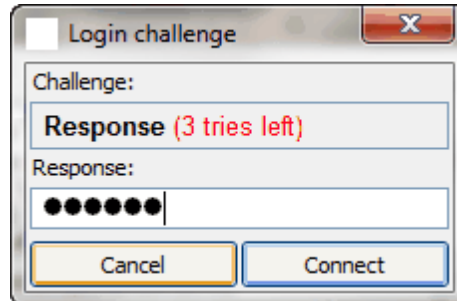
Be aware that you have a maximum of three attempts to enter a correct password. After the third invalid attempt your User ID will be blocked from access until the EPEX Spot system operator resets your User ID.
In any entry screen, when you click Cancel, it will not be counted as an attempt. It is therefore 'safe' to click Cancel.

After the password has been entered into the **Response** field of the **Login challenge** dialog of **EPEX Spot,** and the **Connect** button is clicked, an authentication check is performed.

Once authentication was successful, Icons for modules for which permission is granted will appear in the **EPEX Spot Upgradable Client**. Depending on the required traffic over the internet, this can take a few moments. Note that further behavior of **EPEX Spot Upgradable Client** is identical to the corresponding version of **EPEX Spot Fixed Client**.
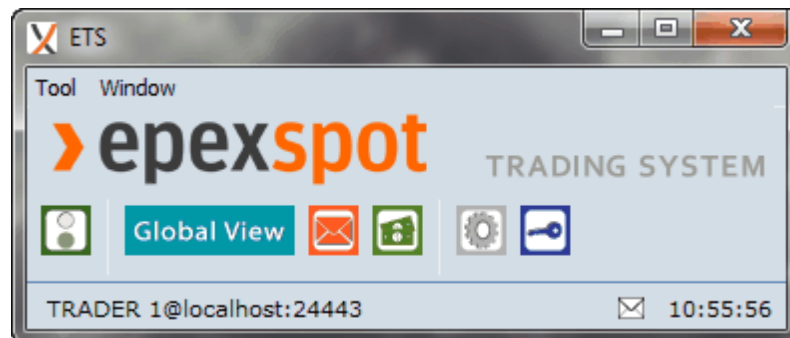
The connection state bar at the bottom of the console indicates you are logged in accompanied by the appropriate server time, converted to your local time zone as per your settings.

Please note it is possible for a user to change the password. For further details, please see The Settings Book chapter.

2.2.3.2   Failed Login

If, during the submission of a password a wrong response is used to connect, **EPEX Spot** will deny access.
A warning will be displayed, informing about the failure.
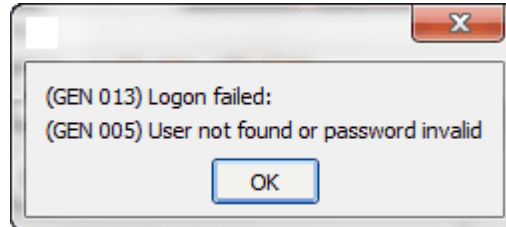
The Login challenge dialog will be offered again, and the passcode can be entered again.
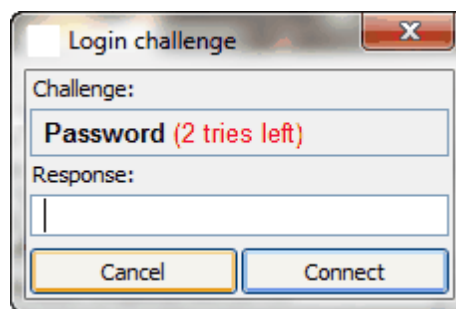
Assuming the password is correct this time, you are logged in as usual. The 'tries left' counter will be reset to the default 3 attempts after a successful response.
If the password is incorrect again, the warning will be displayed again, and the process above repeats itself. Each failed response will lower the 'tries left' counter. If there are no tries left, contact EPEX Spot market operations for assistance.

2.2.3.3   Disconnecting EPEX Spot Trading System

To terminate the connection with the **EPEX Spot Trading System** servers either click the [icon] icon in the Welcome Screen, select the option **Disconnect** from the menu, or use **[ALT-T]** & **[ALT-D]** respectively. Please note that the **Disconnect** option replaces the **Connect** option upon login.

Alternatively you can click on the *Windows X* in the upper right corner of the **EPEX Spot Client** to terminate the **EPEX Spot** connection.

Please note that closing any other window does not disconnect you from the **EPEX Spot** servers. Only disconnecting in the **EPEX Spot Client** screen will terminate the connection.

Please note that the exchange operator can also disconnect you. This is handled in the same way as if you were disconnecting yourself.

A defect internet connection will be detected by **EPEX Spot** after a maximum of 120 seconds or as soon as any message is sent to the **EPEX Spot** servers and fails to get a response.

2.3   Secure Connection and HTTP Proxy Settings

EPEX Spot Trader Client connects secure to communicate with the Exchange server. Default this is set enabled.

EPEX Spot Trader Client can connect over a proxy server that needs authentication and supports the use of HTTP CONNECT proxy.
Please note that use of the SOCKS Proxy protocol is not supported.

The authentication protocol that is supported is the 'http basic authentication' standard, no other authentication protocols are currently implemented.

When the EPEX Spot Trader Client connects to the proxy server it will pop-up a dialog box that requests the user name and password for proxy server access.

It is possible to fill in the user name in the ETS trade client settings panel, so that the proxy user name does not need to be typed into the dialog every time a trader logs in.

More technically: The proxy protocol used is the 'http CONNECT tunnel' standard.
The proxy authentication protocol ETS supports is 'http basic authentication'.

In order to activate HTTP CONNECT Proxy Settings, enable the corresponding checkbox in the Global Settings.

Use secure Connection	Checkbox, alter only on request of Exchange. Enables or disables use of TLS
Use HTTP CONNECT proxy	Checkbox, enable to use HTTP CONNECT proxy
Proxy Server Address:	IP Address or network name of local proxy server
Proxy Server Port:	Listening port of local proxy server
Proxy Server User (optional):	Login name for the proxy server user, if needed

The settings above are dependent of the configuration of the local HTTP CONNECT proxy server. Consult your local network administrator for values.

During the login procedure, if your local HTTP CONNECT Proxy server does require login credentials, the Proxy Server login dialog will prompt to provide the HTTP CONNECT Proxy server login credentials. The dialog will not appear if login to the HTTP CONNECT Proxy server is not required.
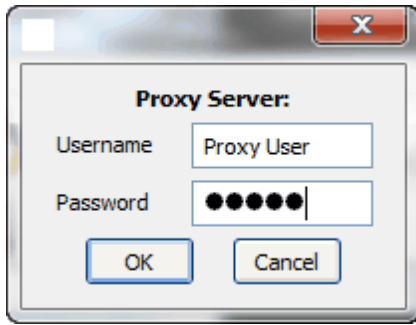
If the Proxy Server User (optional) setting was left empty, the Username in the Proxy Server prompt dialog will remain empty as well.

Provide the Password, if required, and click OK to proceed with the EPEX Spot Trader Client login sequence, or click Cancel to abort the login sequence.

2.4   The EPEX Spot Trader Client Welcome Screen

The **EPEX Spot Trader Client** is the trading interface screen of the **EPEX Spot environment**. The **EPEX Spot Trader Client** displays the modules that are available to the user that is logged in.
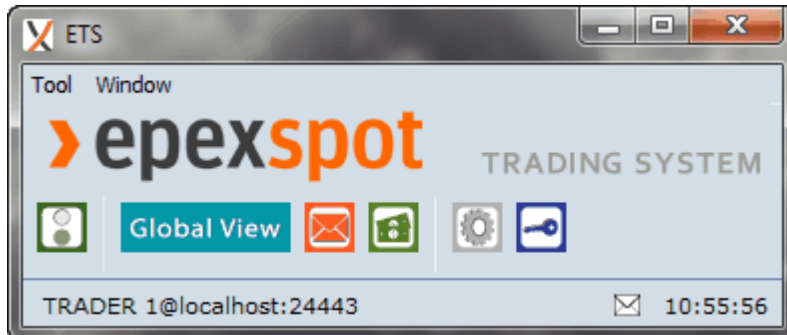
From left to right, the launcher above displays the (**Dis)Connect**, **EPEX Spot Trading System**, **Client Messages, Trading Limits Book, Financial, Global Settings** and **Change Password** icons.

The menu options in the **Tool** [ALT-T] menu above the icons offer the same functionality as the icons. In addition options for **About** and **Exit** are available.

The menu options in the **Window** [ALT-W] menu are essentially a list of any screens that are open and are a quick link to bring the selected screen to the foreground. In addition the options **Collapse All** [ALT-C] and **Restore All** [ALT-R] respectively drop all screens to the Windows Taskbar and open them all to the screen.

The **connection state bar** at the bottom of the launcher indicates you are logged in and to which server-environment.

The **message indicator** (little envelope) indicates if messages are unread in the **Client Message Book**. Double-click will access the message.

The **clock** to the right displays the exchange server time, modified to your local time setting. This clock will not necessarily be identical to the time of your local computer. The clock settings can be configured in the Time Zone settings.

2.5   Organization of the screens
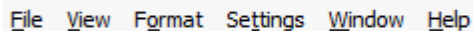
The various screens in EPEX Spot Trader Client share common functionalities.

2.5.1   Menu Bar

The **Menu Bar** is available in all windows of the **Trader Module**. It contains the lists of options that can be used within that window.

All options in the **Menu Bar** are available by simultaneously using the **ALT** key and a **letter** key. In the menu the corresponding letter key is indicated by underlining.

For instance, to access the **Auto Fit Columns** option in the **Market Global View**, press **[ALT-O]**, followed by **[ALT-A]**.

File   View   Format   Settings   Window   Help

2.5.1.1   File

The **File** [ALT-F] menu contains the following options:

The **New Window** [ALT-W] option opens an additional screen in the same module. This screen will open with the default screen as set in the settings.

The **Export to Excel** [Alt-E] option expands with further options, depending on the window you select the **File** menu from.

Select one of these options, and a third menu expands, giving access to **All** and **Selection**.

All: This option exports all available data from this window to an *MS Excel* sheet
Selection: This option exports only the selected row of information to an *MS Excel* sheet

In several screens the Export to Excel function is also available as the

Export All   Export Selection   buttons, respectively exporting all or only the selected item.

The **Close** [ALT-C] option closes the screen from which the option was selected.

2.5.1.2   **View**

The **View** [ALT-V] menu contains the following options:

The **Select View** option expands with further options, depending on the views you defined in the settings.
Selecting one of these views will immediately update the screen to the selected view settings.

The Market Global View option opens a new Market Global View.

The Market Results option opens a new Market Results screen.

Please note that the underlined character indicates the ALT-key you can use to access the option.

2.5.1.3   **Format**

The **Format** [ALT-O] menu contains the **Auto Fit Columns** [ALT-A] option that rearranges the widths of the columns in e current screen, so that any information in those columns is displayed fully.

The **Save Column Widths into <name of current view>** [ALT-S] option will save the current screen display into your selected view settings.

2.5.1.4   **Settings**

The **Settings** [ALT-T] menu contains the **View Settings** [ALT-V] options.

A detailed description of the **Settings** can be found in the Settings Book Chapter.

2.5.1.5   **Window**

The menu options in the **Window** [ALT-W] menu essentially form a list of screens that are open and offer quick links to bring a selected screen to the foreground.

2.5.1.6   **Help**

The **Help** [ALT-H] opens the website of the exchange in your default browser, where further information can be found.

The **About** [ALT-A] option in the **screen** menu of the EPEX Spot screen bar displays the **version number of EPEX Spot**.

Important:
Not every **EPEX Spot Trader Client** version is compatible with every **EPEX Spot Server** version. Always use the newest version of the client as the exchange has determined. Incompatible client versions cannot connect to the server. You will be warned with a message when you try to log in with a **EPEX Spot Trader Client** version that is not compatible with the exchange server environment.

2.5.2   Filter Bar

In the Market Global View you can use the **Column Filter Bar**.

This filter bar allows you to select how you want to filter the columns in the screen below.
By default all values are set to 'All'.

You can filter in 2 ways using the filter bar, and combine results into multiple filters.

1. Click the little arrow of the selection field for the column you wish to filter, to open a list of options.
The list is automatically filled with all entries that are present in the column below.
Choose a selection from the list in order to update the display. Only the selected items will be
displayed in the Book.
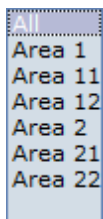
Incremental search, or self-completing text entry, is supported.

2. Clicking on the label of the column accesses a toggle option to switch from A-Z sorting to Z-A
sorting and vice verse.

Multiple filters in several columns can be applied to further customize the View.
Please note that these filters are not saved when closing the screen.

2.5.3   Message Bar

The **Message Bar**, visible from most screens in **EPEX Spot Trader Client**, offers insight into what is wrong or expected at key moments during entry of data.

The descriptions following the message should give a good idea of the source of the message.

(TR 200) The Order Book is Idle	NUBO@localhost:20445	✉	13:30:01

By default only the most urgent message is displayed in the message bar, but by hovering the mouse cursor over the message bar, a full list of all messages will pop-up.

Note that in order entry screens the message bar is located just above the order entry grid.

2.5.4   Navigating with Keyboard

To navigate the various interface widgets with the keyboard, please use the TAB / SHIFT+TAB to navigate between widgets, and use the arrow keys to navigate between cells within a single dataset.

Also note the various ALT-Key combinations to access menu items; these are indicated in the interface with a _ below the name of the menu item.

Chapter

3

Bid Submission

Chapter 3   Bid Submission

3.1   The Market Global View

The **Market Global View** is the main trading interface.

In the upper pane of this screen a user has overview of outstanding bids, and can access bid submission screens as well as the market result screen.

In the lower pane, under **Messages:**, an overview is given of bid submissions and other bid status change messages, as well as the titles of operator messages.

Black colored messages include information about bid submission of portfolios the user has access to, including bids submitted by other users for these portfolios, including operators.

Red colored messages indicate important information, such as Password expiry, Market Result cancellation and receipt of an operator message.

All times displayed are times of receipt by the exchange servers.

The messages pane displays messages up to three days old, i.e today, yesterday and the day before yesterday.

Please note that the messages pane is read only.

Selection Bar

Multiple selections can be made to create a custom view.

Day Type	Selection Box, choose to display Auction Day, or Delivery Day
Date Range	Checkbox, enable to access the **To Date** entry field. By enabling the date range checkbox, it becomes possible to display more than one auction or delivery date in the market global view.
From Date	Start Date Entry field. This date can be altered by clicking the little arrows, to increase the date. This way it is possible to submit bids for delivery further in the future, should the exchange allow this. The date can also be decreased to the past, or today, to give access to market results. Double click the day field to access the calendar screen.
To Date	Only when **Date Range** is enabled. End Date Entry field. This date can be altered by clicking the little arrows, to increase the date. This way it is possible to submit bids for delivery further in the future, should the exchange allow this. The date can also be decreased to the past, or today, to give access to market results. Double click the day field to access the calendar screen.
Auction Status	Selection Box, choose to display either All, or any single auction status
Auction Group	Selection Box, choose to display either All, or any single auction group
Auction Name	Selection Box, choose to display either All, or any single auction name
Market Area	Selection Box, choose to display either All, or any single market area. When a single Market Area is selected, the corresponding Flag is displayed in the upper right corner.
Area	Selection Box, choose to display either All, or any single area
Participant	Selection Box, choose to display either All, or any single participant

Auction Grid (note the filter bar)

Delivery Day	Date display of the product delivery day
Area	Product Area code display
Portfolio	Portfolio account
Auction Date Time	Auction Name and Timestamp the auction will run (exchange timezone)
Order Book Status	Current state of the Order Book of the Auction Date Time. Can be Finished, Idle, OBK Close, OBK Open, Published
Duration	Auction period duration, 15 min, 30 min or 60 min
Currency	Area Settlement Currency
Linear	Indicator Linear Bid presence, can be **Exists**, **Deleted** or none. Physical Delivery Bids are indicated here with **Not Confirmed** or **Confirmed** status
Last Update Time	Timestamp (exchange timezone) of last linear bid modification
Block	Indicator Block Bid presence, can be **Exists** or none
Last Update Time	Timestamp (exchange timezone) of last block bid modification
Complex	Indicator Complex Bid presence, can be **Exists**, **Deleted** or none. For 15 and 30 min period durations N/A will be displayed
Last Update Time	Timestamp (exchange timezone) of last complex bid modification
Mkt Results	Indicator Market Result presence, can be **Available** (orange for preliminary), **Available** (green for final), or none

The data in the auction grid is interactive.

Double-click on Linear, Block or Complex field to immediately access the bid entry for the selected bid format on the selected auction.

Buttons

Show Linear	Click to open the Linear Bid Entry screen for the selected Auction. When a bid already exists, it will open that bid.
Show Block	Click to open the Block Bid Entry screen for the selected Auction. When a bid already exists, it will open that bid.
Show Complex	Click to open the Complex Bid Entry screen for the selected Auction. When a bid already exists, it will open that bid.
Show Market Results	Click to open the Market Results screen for the selected Auction.
Show Indexes	Click to open the Indexes screen for the selected Auction. If no index exists yet, the default Index screen will open.

3.2   Linear Bids

The **Linear Bid Entry** screen can be accessed via the ⬚Show Linear⬚ button of the Market Global
View screen.
Alternatively, double-click the Linear field you wish to open a Linear Bid screen for.

As depicted in the example above, the Linear Bid Entry screen is opened with the delivery date, area
and portfolio set.

Click the ☑ Submit Several Delivery Days option to create bids for a range of days.
Click the option again to revert to single day entry.

The Import Bid button pastes information from the windows clipboard into the Linear Bid Entry
screen.

Note that the Submit button must be pressed to submit the imported volumes to the exchange.
For valid Excel information, please consult Appendix F.

The Export Bid button exports the information in the Linear Bid Entry screen to a *.csv* file.
For an example of the exported result, please consult Appendix F.

The Delete button sets all volumes for each price column to 0.0. A confirmation dialog will be
presented to verify the action.
Note that the **Submit** button must be pressed to submit the zeroed volumes to the exchange.

The **Differences** checkbox, if enabled, highlights volumes that are different from the active version of
the Linear Bid. Use the selection box placed on the right side of the checkbox to move through the
versions of the Linear Bid.

A **Flag**, depicting the Area it belongs to is displayed as a visual aid. The flag is read only and offers
no functionality.
Next to the Flag, the **Order Type** and the **Portfolio-Area Currency** is displayed. These are also
read only.

Click the **Submit** button to send the bid to the exchange. A confirmation dialog can optionally be set in the settings.

Click the **Close** button to close the Linear Bid entry screen. This action will loose all modifications. A confirmation dialog can optionally be set in the settings.

3.2.1   Order Types

Currently, two different order types can be offered as linear orders, either Piecewise or Stepwise. The supported order type for a Market Area is displayed next to the flag in the order submission screens.

Both Piecewise and Stepwise can be offered for 15 minute, 30 minute and 60 minute period durations.

Please refer to your market rules regarding availability of described functions.

For a definition of the order types, please see Appendix D, Glossary.

3.2.2   Manual Entry

Enter values in the comment fields, for each period. This is optional.

The minimum and maximum price columns are displayed by default. The volumes for these prices are mandatory if volumes for other prices are entered.

To add additional price columns, click the **Add Prices** button to access the price entry dialog.

Enter prices in the dialog you wish to include in the bid.

In each field in the data grid now volumes can be entered, subject to the exchange validation rules.

The Adjust to Price Limit button will modify the entries in the Linear Bid Entry screen in such a way that the order complies with the Trading Limits, if possible.
Please see the Adjust to Price limit chapter for details about the button.

In the **User Comment:** field a comment can be entered.
Allowed characters are: space, A-Z, a-z, 0-9 and ! # $ % & ' ( ) * + , - . ; = ? @ [ ] ^ _ ` { } ~

Please note:

On **Daylight Saving Days** the Linear Bid entry screen will behave slightly different, in that there will be grayed out period(s) in March for the 23 hour day and extra period(s) in October for the 25 hour day.

Click the Submit button to send the bid to the exchange. A confirmation dialog can optionally be set in the settings.

Click the Close button to close the Linear Bid entry screen. This action will loose all modifications. A confirmation dialog can optionally be set in the settings.

3.2.2.1   Buttons

In the Linear Bid Entry screen, several buttons offer additional functionality.

Add Prices	Gives access to the **Add Prices** dialog
Modify Price	Select the **Price** column header to be modified and click the **Modify Price** button. Gives access to the Modify Price dialog
Remove Price	Select the **Price** column header to be removed and click the **Remove Price** button. Instantly removes the selected price
Copy Line	Select a **Volume** row and click the **Copy** button.
Paste Line	Select a **Volume** row and click the **Paste** button. Pastes the Copied values in the selected row.
Replicate To All	Select a **Volume** field and click the **Replicate to All** button. The quantities contained in the row are replicated to all other periods of the auction.

3.2.2.2   Adjust to Price Limit

In the Linear Bid Entry screen the Adjust to Price Limit button will become enabled when a bid is created that violates one or more price limits which are defined with Trading Limits.

Note the red message below the **Import B**id button, and the enabled button.

When the Adjust to Price Limit button is clicked then the order displayed in the screen is adjusted to fit the hard price cap of the most restricting active trading limit.

Piecewise:

The same bid as above could result in the bid below if a Trading Limit exists for this participant.

Let assume that for Area 1 P_{min} = -4000€ and P_{max} = 4000€, and that a Portfolio has P_{min_TL} = -2250€ and P_{max_TL} = 2250€.

Period (cet/cest)	-4,000.00	-2,250.01	-2,250.00	2,250.00	2,250.01	4,000.00
17 - 18	20.00			20.00	0.00	0.00
18 - 19	20.00			20.00	0.00	0.00
19 - 20	20.00			20.00	0.00	0.00
20 - 21	20.00			20.00	0.00	0.00
21 - 22	20.00			20.00	0.00	0.00
22 - 23	20.00			20.00	0.00	0.00
23 - 00	20.00			20.00	0.00	0.00
00 - 01	20.00			20.00	0.00	0.00
01 - 02	20.00			20.00	0.00	0.00
02 - 03	20.00			20.00	0.00	0.00
03 - 04	20.00			20.00	0.00	0.00
04 - 05	20.00			20.00	0.00	0.00
05 - 06	20.00			20.00	0.00	0.00
06 - 07	20.00			20.00	0.00	0.00
07 - 08	20.00			20.00	0.00	0.00
08 - 09	20.00			20.00	0.00	0.00
09 - 10	20.00			20.00	0.00	0.00
10 - 11	20.00			20.00	0.00	0.00
11 - 12	0.00	0.00	-60.00			-60.00
12 - 13	0.00	0.00	-60.00			-60.00
13 - 14	0.00		-60.00			-60.00
14 - 15	0.00	0.00	-60.00			-60.00
15 - 16	0.00	0.00	-60.00			-60.00
16 - 17	0.00	0.00	-60.00			-60.00
Sum	360.00	0.00	-360.00	360.00	0.00	-360.00

Stepwise:

The same bid as above could result in the bid below if a Trading Limit exists for this participant.

Let assume that for Area 1 P_{min} = -4000€ and P_{max} = 4000€, and that a Portfolio has P_{min_TL} = -2250€ and P_{max_TL} = 2250€:

Comment	Period (cet/cest)	-4,000.00	-2,250.00	-2,250.00	2,250.00	2,250.00	4,000.00	
	17 - 18	20.00			20.00	0.00	0.00	
	18 - 19	20.00			20.00	0.00	0.00	
	19 - 20	20.00			20.00	0.00	0.00	
	20 - 21	20.00			20.00	0.00	0.00	
	21 - 22	20.00			20.00	0.00	0.00	
	22 - 23	20.00			20.00	0.00	0.00	
	23 - 00	20.00			20.00	0.00	0.00	
	00 - 01	20.00			20.00	0.00	0.00	
	01 - 02	20.00			20.00	0.00	0.00	
	02 - 03	20.00			20.00	0.00	0.00	
	03 - 04	20.00			20.00	0.00	0.00	
	04 - 05	20.00			20.00	0.00	0.00	
	05 - 06	20.00			20.00	0.00	0.00	
	06 - 07	20.00			20.00	0.00	0.00	
	07 - 08	20.00			20.00	0.00	0.00	
	08 - 09	20.00			20.00	0.00	0.00	
	09 - 10	20.00			20.00	0.00	0.00	
	10 - 11	20.00			20.00	0.00	0.00	
	11 - 12	0.00	0.00	-60.00			-60.00	
	12 - 13	0.00	0.00	-60.00			-60.00	
	13 - 14	0.00	0.00	-60.00			-60.00	
	14 - 15	0.00	0.00	-60.00			-60.00	
	15 - 16	0.00	0.00	-60.00			-60.00	
	16 - 17	0.00	0.00	-60.00			-60.00	
	Sum	360.00	0.00	-360.00	360.00	0.00	-360.00	

3.2.3   Excel Import

Select and copy the data in Excel to be pasted into the Linear Bid Entry screen.

Click the `Import Bid` button.

Depending on the information in the Excel paste buffer, additional price columns will be created and filled with their volumes.

Please note that the validation framework can prevent the paste if the data contained in the paste buffer is invalid.
In such a case a list of validation messages is displayed.
For examples of legitimate paste formats, please consult Appendix F.

Manual modification of the data pasted is possible as described in the previous chapter, Manual Entry.

3.2.4   Linear Bid Submission for Several Days

The ☑ Submit Several Delivery Days option allows entry of a range of delivery days, for which the Linear Bids can then be submitted in one action.
Clicking the checkbox again will return to the single day entry mode.

The bids will then be identical for each delivery date, but will be further handled as independent bids.

The **From** and **To** entry fields can be double-clicked to access the **Calendar screen.** Select the date in the calendar screen and click the OK button to set the date in the From or To field.
The date can also manually be typed into the From and To fields. Note that the little arrows in the From and To fields can be clicked to in- or decrease the date as well.

The All button will, within the range set by the From: and To: fields, enable all days.

The Monday To Friday button will, within the range set by the From and To fields, enable all week days.

The Saturday To Sunday button will, within the range set by the From and To fields, enable all weekend days.

The check boxes for each day of the week allow for manual selection of the corresponding day, within the range set by the From and To fields. Thus for submission entries need to be included in both the date range and the selected days.

Upon submission of a Linear Bid, the bid will be submitted for all selected delivery days, subject to exchange validation rules. It is for instance not possible to submit bids for a date that is not (yet) open for trade.

If the range of days includes a **Daylight Saving Day**, either the obsolete period(s) will be ignored, or the extra period(s) will be copied from the previous hour.

3.2.5   Linear Bid Submission in several steps

Step-by-step guide to create a submitted Linear bid.

1. Open the Market Global View	Menu option View -> Market Global View
2. Open the Linear Bid submission screen	Double-click the Last Update Time field next to the Linear column for date, area and portfolio or Select the Last Update Time field next to the Linear column for date, area and portfolio. Click button Show Linear
3. For Submission for Several Days	Click checkbox Submit Several Days Set Delivery Day Range to include in bid
4. Import data from Excel	Copy data from Excel and click the Import Bid button to paste into Linear Bid screen
5. Manual data entry	Enter comments Click button Add Prices In the Dialog, enter all prices to be included in Linear Bid Press Accept Enter volumes into each desired Price/Volume field
6. Enter Comments if desired	
7. Resolve any validation issues reported	Submission is only possible with a valid Bid
8. Press Submit	The Bid is sent to the market
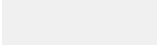
3.2.6   Linear Bid Modification

It is possible to modify an existing Linear Bid, as long as the auction has not closed yet.

If this modified bid is sent to the market, it will become the active version of the bid, replacing the previous version. This way, only one version of a bid can ever be active and therefore present in the market. A maximum of 200 versions of the same bid can be submitted. If this limit is reached, contact market operations for further assistance if needed.
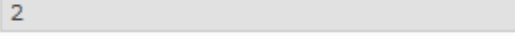
In order to better distinguish between the various states a bid can have, a background color scheme was introduced, as well as the **Differences** option.

Possible Linear Bid States:

Initial

Active

Inactive

Deleted

Suspended

If the **Differences** option is enabled, a blue highlight will indicate differences within the bid grid, in comparison with the Active version of this bid.

In the example above, the blue colored columns apparently contain different volume values as are present in the active version of the bid.

Note that by using the option, you can scroll through the various versions of the Linear Bid.

3.3   Block Bids

The **Block Bid Entry** screen can be accessed via the Show Block button of the Market Global View
screen.
Alternatively, double-click the Block field you wish to open a Block Bid screen for.

Note that Standard Block Bid (C01), Linked Family Block Bid (C02), Exclusive Group Block Bid
(C04) and/or Loop Family Block Bid (C88) might not be available for your exchange.
Please refer to your market rules to find the products available to you.

3.3.1   Order Types

As depicted in the example above, the Block Bid Entry screen is opened with the delivery day, area and portfolio.

Click the Submit button to send the bid to the exchange. A confirmation dialog can optionally be set in the settings.

Click the Close button to close the Block Bid entry screen. This action will loose all modifications. A confirmation dialog can optionally be set in the settings.

The Import from Excel button pastes information from the windows clipboard into the Block Bid Entry screen.
For valid Excel information, please consult Appendix F.

The Export Bids button exports the information in the Block Bid Entry screen to Excel.
For an example of the exported result, please consult Appendix F.

The **Show side:** option allows for selection of displaying All Block bids, only Purchase block bids or only Sale block bids.

The **Active Block Bids** pane displays all block bids currently active for the set auction and delivery day, area and portfolio, per duration period.
Please note the First and Last period indication just above the Bid Grid.

First Period: 2017-04-26-14:00 cet / Last Period: 2017-04-27-13:00 cet

Please note that it is possible to multi-select Active Block Bids by holding the CTRL or SHIFT key while selecting the Bids with the mouse.

	Sequence number in this overview only
Block Id	Actual Identifier Number of the Block Bid
Block Code	Identifies the kind of Block Bid
	C01 = Standard Block Bid
	C02 = Linked Family Block Bid
	C04 = Exclusive Group Block Bid
	C88 = Loop Family Block Bid
BlockCodePRM	Block Code Parameter, must be between 1 and 999.999.999
	C01 = Not used
	C02 = Parent Id(s), underscore separated, used to create family structure
	C04 = Group Id, each bid with the same BlockCodePRM is part of the same exclusive group
	C88 = Group Id, each bid with the same BlockCodePRM is part of the same loop family
MAR	Minimum Acceptance Ratio
Comment	Text comment attached to the Block Bid
Price	Price of the Block Bid
Total	Added Total volume of all periods of a Block Bid
Period number (1-24)	Column containing volume for each period number of the Block Bid
Sum	Added Total volume for each period over all Active Block Bids

Select an Active Block Bid and click on one of the following buttons.

Edit

The Edit option pastes the selected Active Block Bid data into the Block Bid Entry pane, ready to be modified.
Please note that this option constitutes a bid modification, and will retain the same Block Id.

Edit Groups

The Edit Groups option pastes the selected Active Block Bid data, along with all other block bids from the same group, into the Block Bid Entry pane, ready to be modified.
Please note that this option constitutes a bid modification, and will retain the same Block Id. Each member of the group can be modified independently.

Delete

The Delete option allows for withdrawing the selected Active Block Bid from the exchange.
Please note that this action triggers a confirmation dialog, requesting acceptance of the action.
Once confirmed, the withdrawal of the Bid is irrevocable.
Note that it is not possible to delete a Block Bid which has children still.

Delete Groups

The Delete Groups option allows for withdrawing the selected Active Block Bid, along with all other members of its group, from the exchange.
Please note that this action triggers a confirmation dialog, requesting acceptance of the action.
Once confirmed, the withdrawal of the Bid Group is irrevocable.

View Versions

While the last, active version of a Block Bid is always displayed in the Active Block Bid view, the previous versions of these Block Bids are still available for view.
Select an active Block Bid in the upper pane and select View Versions to access the previous versions of the same Block Bid. This view is read only, but has an Export to Excel function.

View Deleted Block Bids

Only active versions of Block Bids are displayed in the Active Block Bid view, but any canceled versions of Block Bids are still available for view.

Select View Deleted Block Bids to view any canceled Block Bids. This view is read only, but has an Export to Excel function.
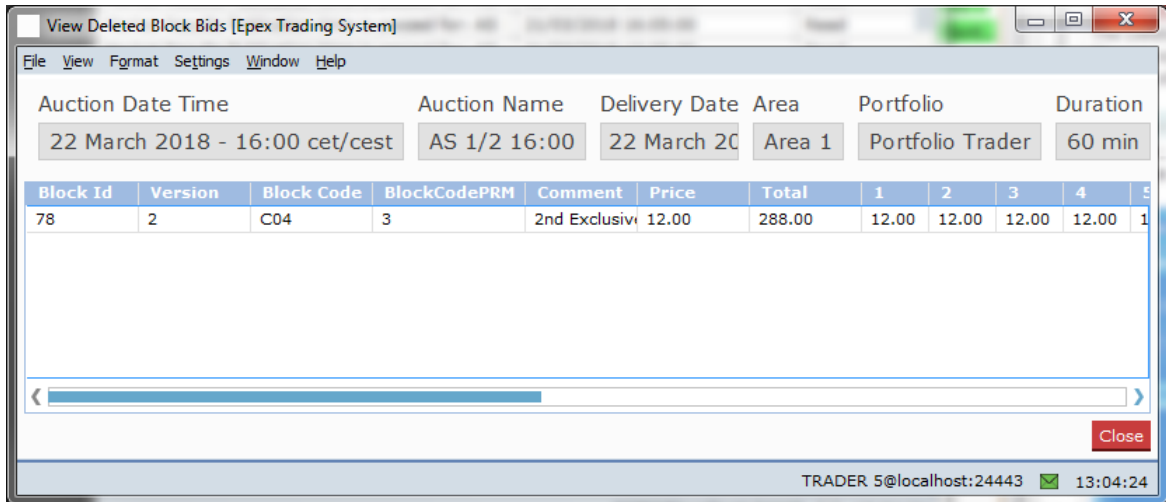
3.3.2   Manual Entry

In the lower **Block Bid Entry** pane new Block Bids can be created, or existing Block Bids modified.

There are two views, which can be toggled by clicking the [Simple View] **or** [Extended View] buttons.

The **Extended View:**

	Block Id	BlockCode	Id	BlockCodePRM	Comment	Price	Total	1	2	3	4	5	6	7	8	9	10	11
▶	73	C01 ⌄	73		Standard Bid	12.00	288.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00

	Indicator column for active row
Block Id	Actual Identifier Number, only available for an active bid modification, assigned by system
BlockCode	Identifies kind of Block Bid, select from: C01 = Standard Block Bid C02 = Linked Family Block Bid C04 = Exclusive Group Block Bid C88 = Loop Family Block Bid
Id	Temporary Id, only used to connect family and/or linked Block Bids This Id will be re-assigned by the system after submission Must be between 1 and 999.999.999
BlockCodePRM	Block Code Parameter, must be between 1 and 999.999.999 C01 = Not used C02 = Parent Id(s), underscore separated, used to create family structure C04 = Group Id, each bid with the same BlockCodePRM is part of the same exclusive group C88 = Group Id, each bid with the same BlockCodePRM is part of the same loop family
MAR	Minimum Acceptance Ratio, percentage. 1.00 = 100%, 0.01 = 1%, etc.
Comment	Enter text comment to be attached to the Block Bid
Price	Enter Price for the Block Bid
Total	Automatically filled. Total of all period Volumes
Period number (1-24)	Enter Volume for the periods in the corresponding columns

The **Simple View:**

	Block Id	BlockCode	Id	BlockCodePRM	Comment	Periods	Price	Quantity
▶	73	C01 ⌄	73		Standard Bid	01-24	12.00	12.00

	Indicator column for active row
Block Id	Actual Identifier Number, only available for an active bid modification, assigned by system
BlockCode	Identifies kind of Block Bid, select from: C01 = Standard Block Bid C02 = Linked Family Block Bid C04 = Exclusive Group Block Bid C88 = Loop Family Block Bid
Id	Temporary Id, only used to connect family and/or linked Block Bids This Id will be re-assigned by the system after submission Must be between 1 and 999.999.999
BlockCodePRM	Block Code Parameter, must be between 1 and 999.999.999 C01 = Not used

	C02 = Parent Id(s), underscore separated, used to create family structure
	C04 = Group Id, each bid with the same BlockCodePRM is part of the same exclusive group
	C88 = Group Id, each bid with the same BlockCodePRM is part of the same loop family
MAR	Minimum Acceptance Ratio, percentage. 1.00 = 100%, 0.01 = 1%, etc.
Comment	Enter text comment to be attached to the Block Bid
Periods	Sets the range of period numbers, i.e. 14H-13H indicates 60 min periods 14 to 13 next day
Price	Enter Price for the Block Bid
Quantity	Quantity per period, only displayed if Quantity is identical for each period, otherwise empty

Use any of the following buttons to add, remove or clear bids from the entry pane.

The `Add Block` button adds an additional Standard Block Bid (C01) entry row to the pane.

The `Add Linked Block` button adds an additional Linked Block Bid (C02) entry row to the pane.

The `Add Exclusive Block` button adds an additional Exclusive Block Bid (C04) entry row to the pane.

The `Add Loop Block` button adds an additional Loop Family Block Bid (C88) entry row to the pane.

The `Clear Block` button clears the selected Block Bid entry row from non-submitted data, resetting the Bid to the last submitted state.

The `Remove Block` button removes the selected Block Bid entry row from the pane, this does not cancel the Block Bid.

The `Clear All Blocks` button removes all Block Bid entry rows from the pane, except the default empty one. This does not cancel the Block Bid.

Important:
Volumes of 0 are not possible due to business logic restrictions.

Right-click the mouse with the cursor inside the Block Bid Entry pane to access a pop-up menu. This pop-up menu contains the a number of pre-defined **Block Definitions,** both those defined by the exchange, and those defined by yourself in the user settings under Block Definitions. Both can be used as templates for Block Bids.
First select the Block Bid row you wish to use the Block definition template on, then right-click to access the pop-up menu. Select the desired Block Definition to create the Block Bid template, ready to be filled with actual bid volumes and price.

On **Daylight Saving Days** the Block Bid entry screen will behave slightly different, in that there will be grayed out period(s) in March for the 23 hour day and extra period(s) in October for the 25 hour day.

3.3.3   Excel Import

Select and copy the data in Excel to be pasted into the Block Bid Entry screen.

Click the [Import Bid] button.

Depending on the information in the Excel paste buffer, additional price columns will be created and filled with their volumes.

Please note that the validation framework can prevent the paste if the data contained in the paste buffer is invalid.
In such a case a list of validation messages is displayed.
For examples of legitimate paste formats, please consult Appendix F.

Manual modification of the data pasted is possible as described in the previous chapter, Manual Entry.

3.3.4   Curtailable Blocks

With curtailable block orders, trading participants will be able to submit block orders for which the execution can be total, equal or greater than a minimum acceptance ratio.
By relaxing the execution constraint for a block order, it is more likely that a block order will be executed.

The default value for the MAR (Minimum Acceptance Ratio) of 1.00 is identical to the previous All Or Nothing execution constraint.

A minimum value for the MAR is defined at the Area level by the Exchange.

Note that the MAR has no impact on Trade Limit exposure formulas, i.e. for the Trade Limits a Block Bid is always either fully executed, or fully rejected.

3.3.5   Block Bid Submission in several steps

Step-by-step guide to create a submitted block bid.

1. Open the Market Global View	Menu option View -> Market Global View
2. Open the Block Bid submission screen	Double-click the Last Update Time field following the Block column for date, area and portfolio or Select the Last Update Time field following the Block column for date, area and portfolio. Right-click and select menu option Show Block
3. Import data from Excel	Copy data from Excel and click the button to paste into Block Bid screen
4. In the lower pane, Block Bid Entry	Select the Add Block button to create an additional Standard Block Bid Select the Remove Block button to remove without saving the selected Block Bid
5. Set the Block Bid type	Select the Block Code desired. Please consult here for C01, C02, C04 or C88.
6. Select Extended View or Simple View	Toggle the Simple View / Extended View button to switch between these two views. Any Block Bid data already entered will remain available
7. Create Blocks using Block definitions	Right Click to open menu Manually enter a volume anywhere in the Block Bid Select the desired Block definition. Only the periods within the chosen Block Definition are filled with the just entered volume Enter a Price Enter a Comment, if desired
8. Create Blocks using manual entry	Manually enter a volume in the periods to be included in the Block Bid
9. Resolve any validation issues reported	Submission is only possible with a valid Block Bid
10. Press Submit	The Block Bid is sent to the market

Important:
There is a limit on the number of Block Bids that can be active in the Market Area per Portfolio set by the exchange. If this limit is exceeded, all Block Bids included in the batch that contains the limit exceeding Bid will be rejected by the system. The submitter, as well as the market operators, are informed of the rejection by a Breaking Message, and a message in the lower message pane of the Market Global View.

3.3.5.1   Standard Block Bids (C01)

Standard Block Bids are identified in the Block Code column with code C01.

These Block Bids require no further parameters and are the default selection.

A C01 Block Bid can function as a root parent for linked family block bids.

3.3.5.2   Linked Family Bids (C02)

Linked Family Block Bids are identified in the Block Code column with code C02.

These Block Bids can have multiple parents, as well have multiple children. The maximum number of these relatives are set per Market Area by the exchange.

To identify the relation between the family block bids, the Id and BlockCodePRM are used. Note: The Block Id has nothing to do with building a family tree.

To make a Block Bid a child of a parent Block Bid (a C01 or a C02 Bid), enter the Id of the parent in the BlockCodePRM field of the child.

If more than one parent needs to be set, use '_' (underscore) as separators: i.e. 176_88_1501. This will indicate Block Bids 176, 88 and 1501 all as parents.

A C01 Block Bid can function as a root parent for linked family block bids.
A C02 Block Bid is a child by default, but can also be set as a parent for one or more further C02 Block Bids, up to the maximum set by the exchange.

3.3.5.3   Exclusive Group Bids (C04)

Exclusive Group Block Bids are identified in the Block Code column with code C04.

These Block Bids are grouped together, and only one will be matched. The maximum number of these relatives are set per Market Area by the exchange.

To identify the grouping of these block bids, the BlockCodePRM are used. All C04 Block Bids with the same BlockCodePRM are considered to be part of the same Group.

3.3.5.4   Family Loop Bids (C88)

Family Loop Bids are identified in the Block Code column with code C88.

These Block Bids are grouped together, and either all block orders included in the loop family are executed or all block orders included in the loop family are rejected.
The maximum number of these relatives are set per Market Area by the exchange.

To identify the grouping of these block bids, the BlockCodePRM are used. All C88 Block Bids with the same BlockCodePRM are considered to be part of the same Family Loop.

Note: The Block Id has nothing to do with building a family tree.

3.4   Complex Bids

The **Complex Bid Entry** screen can be accessed via the Show Complex button of the Market Global View screen.
Alternatively, double-click the Complex field you wish to open a Complex Bid screen for.

Please note that Complex Bids can only be created for markets with a 60 minute duration.

As depicted in the example above, the Complex Bid Entry screen is opened with the delivery date, area and portfolio set.

Click the ✓ Submit Several Delivery Days option to create bids for a range of days.
Click the option again to revert to single day entry.

The Import Bid button pastes information from the windows clipboard into the Complex Bid Entry screen.

Note that the Submit button must be pressed to submit the imported volumes to the exchange.
For valid Excel information, please consult Appendix F.

The Export Bid button exports the information in the Complex Bid Entry screen to a *.csv* file.
For an example of the exported result, please consult Appendix F.

The Delete button sets all volumes for each price column to 0.0. A confirmation dialog will be presented to verify the action.
Note that the **Submit** button must be pressed to submit the zeroed volumes to the exchange.

The **Differences** checkbox, if enabled, highlights volumes that are different from the active version of the Complex Bid. Use the selection box placed on the right side of the checkbox to move through the versions of the Complex Bid.

A **Flag**, depicting the Area it belongs to is displayed as a visual aid. The flag is read only and offers no functionality.

Next to the Flag, the **Order Type** and the **Portfolio-Area Currency** is displayed. These are also read only.

Click the [Submit] button to send the bid to the exchange. A confirmation dialog can optionally be set in the [settings](#).

Click the [Close] button to close the Linear Bid entry screen. This action will loose all modifications. A confirmation dialog can optionally be set in the [settings](#).

3.4.1   Order Types

Currently, only Stepwise Complex bids are supported for 1 hour periods.

Each period must have the same side, either all Buy or all Sell.

Currently only Sell is supported.

Please refer to your market rules regarding availability of described functions.

For a definition of the order types, please see [Appendix D, Glossary](#).

3.4.2   Manual Entry

Enter values in the comment fields, for each period. This is optional.

The minimum and maximum price columns are displayed by default. The volumes for these prices are mandatory if volumes for other prices are entered.

To add additional price columns, click the **Add Prices** button to access the price entry dialog.

Enter prices in the dialog you wish to include in the bid.

In each field in the data grid now volumes can be entered, subject to the exchange validation rules.

The [Adjust to Price Limit] button will modify the entries in the Linear Bid Entry screen in such a way that the order complies with the Trading Limits, if possible.
Please see the <u>Adjust to Price</u> limit chapter for details about the button.

In the **User Comment:** field a comment can be entered.
Allowed characters are: space, A-Z, a-z, 0-9 and !#$%&'()*+,-.;=?@[]^_`{}~

Please note:

On **<u>Daylight Saving Days</u>** the Linear Bid entry screen will behave slightly different, in that there will be grayed out period(s) in March for the 23 hour day and extra period(s) in October for the 25 hour day.

Click the [Submit] button to send the bid to the exchange. A confirmation dialog can optionally be set in the <u>settings</u>.

Click the [Close] button to close the Linear Bid entry screen. This action will loose all modifications. A confirmation dialog can optionally be set in the <u>settings</u>.

3.4.2.1   Buttons

In the Complex Bid Entry screen, several buttons offer additional functionality.

Add Prices	Gives access to the **Add Prices** dialog
Modify Price	Select the **Price** column header to be modified and click the **Modify Price** button. Gives access to the Modify Price dialog
Remove Price	Select the **Price** column header to be removed and click the **Remove Price** button. Instantly removes the selected price
Copy Line	Select a **Volume** row and click the **Copy** button.
Paste Line	Select a **Volume** row and click the **Paste** button. Pastes the Copied values in the selected row.
Replicate To All	Select a **Volume** field and click the **Replicate to All** button. The quantities contained in the row are replicated to all other periods of the auction.

3.4.2.2   Entry fields

Fixed Term	Mandatory entry field, first economic condition parameter in Settlement Currency, must be 0 or higher. 0 means no value is defined. Defines the 'absolute minimum income' economic constraint.
Variable Term	Mandatory entry field, second economic condition parameter in Settlement Currency, must be 0 or higher. 0 means no value is defined. Defines the 'matched volume dependent minimum income' economic constraint.
Scheduled Stop Periods	Mandatory selection box, select 0,1,2 or 3. Defines the period of the complex bid that remains accepted independent of rejection of the rest of the complex bid. A 0 defines no period.
Increase Gradient	Optional entry field, load gradient defining the maximum volume increase per period. Only allowable for Sell bids. The value must be strictly positive.
Decrease Gradient	Optional entry field, load gradient defining the maximum volume decrease per period. Only allowable for Sell bids. The value must be strictly positive.

A complex order can be submitted only if at least one of following condition is verified:
- Fixed Term > 0
- Variable Term > 0
- Increase Gradient not null
- Decrease Gradient not null
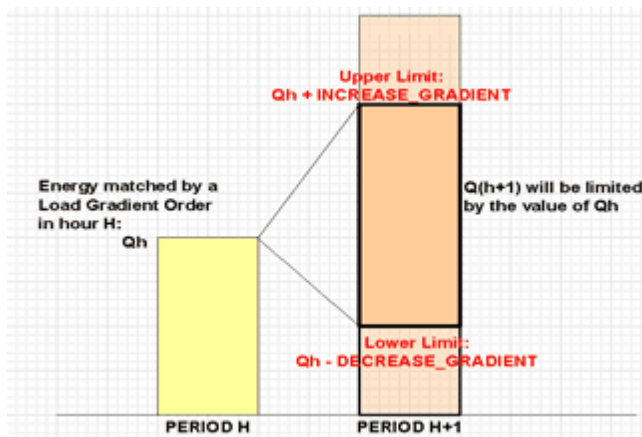
Qh is the Volume per Hour.

3.4.2.3   Adjust to Price Limit

In the Complex Bid Entry screen the Adjust to Price Limit button will become enabled when a bid is created that violates one or more price limits which are defined with Trading Limits.

Note the red message below the **Import Bid** button, and the enabled button.

When the Adjust to Price Limit button is clicked then the order displayed in the screen is adjusted to fit the hard price cap of the most restricting active trading limit.

Stepwise:

The same bid as above could result in the bid below if a Trading Limit exists for this participant.

Let assume that for Area 1 P_{min} = -4000€ and P_{max} = 4000€, and that a Portfolio has P_{min_TL} = -2250€ and P_{max_TL} = 2250€.

3.4.3   Excel Import

Select and copy the data in Excel to be pasted into the Complex Bid Entry screen.

Click the Import Bid button.

Depending on the information in the Excel paste buffer, additional price columns will be created and filled with their volumes.

Please note that the validation framework can prevent the paste if the data contained in the paste buffer is invalid.
In such a case a list of validation messages is displayed.
For examples of legitimate paste formats, please consult Appendix F.

Manual modification of the data pasted is possible as described in the previous chapter, Manual Entry.

3.4.4   Complex Bid Submission for Several Days

The ☑ Submit Several Delivery Days option allows entry of a range of delivery days, for which the Complex Bids can then be submitted in one action.
Clicking the checkbox again will return to the single day entry mode.

The bids will then be identical for each delivery date, but will be further handled as independent bids.

The **From** and **To** entry fields can be double-clicked to access the **Calendar screen.** Select the date in the calendar screen and click the OK button to set the date in the From or To field.
The date can also manually be typed into the From and To fields. Note that the little arrows in the From and To fields can be clicked to in- or decrease the date as well.

The All button will, within the range set by the From: and To: fields, enable all days.

The Monday To Friday button will, within the range set by the From and To fields, enable all week days.

The Saturday To Sunday button will, within the range set by the From and To fields, enable all weekend days.

The check boxes for each day of the week allow for manual selection of the corresponding day, within the range set by the From and To fields. Thus for submission entries need to be included in both the date range and the selected days.

Upon submission of a Complex Bid, the bid will be submitted for all selected delivery days, subject to exchange validation rules. It is for instance not possible to submit bids for a date that is not (yet) open for trade.

If the range of days includes a **Daylight Saving Day**, either the obsolete period(s) will be ignored, or the extra period(s) will be copied from the previous hour.

3.4.5   Complex Bid Submission in several steps

Step-by-step guide to create a submitted Complex bid.

1. Open the Market Global View	Menu option View -> Market Global View
2. Open the Linear Bid submission screen	Double-click the Last Update Time field next to the Complex column for date, area and portfolio or Select the Last Update Time field next to the Complex column for date, area and portfolio. Click button Show Complex
3. For Submission for Several Days	Click checkbox Submit Several Days Set Delivery Day Range to include in bid
4. Import data from Excel	Copy data from Excel and click the Import Bid button to paste into Complex Bid screen
5. Manual data entry	Enter comments Click button Add Prices In the Dialog, enter all prices to be included in Complex Bid Press Accept Enter volumes into each desired Price/Volume field Set the Fixed Term, Variable Term and Scheduled Stop Periods. Optionally, set the In- and Decrease Gradients
6. Enter Comments if desired	
7. Resolve any validation issues reported	Submission is only possible with a valid Bid
8. Press Submit	The Bid is sent to the market

3.4.6   Complex Bid Modification

It is possible to modify an existing Complex Bid, as long as the market has not closed yet for the related delivery day.

If this modified bid is sent to the market, it will become the active version of the bid, replacing the previous version. This way, only one version of a bid can ever be active and therefore present in the market. A maximum of 200 versions of the same bid can be submitted. If this limit is reached, contact market operations for further assistance if needed.
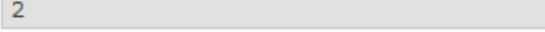
In order to better distinguish between the various states a bid can have, a background color scheme was introduced, as well as the **Differences** option.

Possible Linear Bid States:

Initial	
Active	
Inactive	
Deleted	

If the **Differences** option is enabled, a blue highlight will indicate differences within the bid grid, in comparison with the Active version of this bid.

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In the example above, the second -2250.00 and 4000.00 price columns apparently contain different volume values as are present in the active version of the bid.

Note that by using the [2 ◊] option, you can scroll through the various versions of the Complex Bid.

3.5   Physical Delivery Bids

EPEX Spot offers all participants registered on the EPEX Spot Market the possibility to send a bid for the closed Linear auction intended for physical fulfillment.

Please refer to your market rules regarding availability of described functions.

The trading Participant informs EPEX Spot about the price-independent Linear bid for each delivery period of the futures position in the order book. Please contact the helpdesk for further information regarding the manner to communicate the price-independent Linear bids to EPEX Spot.

With the help of this information, EPEX Spot market operations will select the corresponding contracts and prepare the required Linear bids. Once these Physical Delivery Bids are entered by EPEX Spot market operations; the bids are displayed in the **Market Global View** screen as a Linear bid with a 'Not Confirmed' status.

The Physical Delivery Bids need to be confirmed by an eligible Participant, before they become active in the market.

28/07/2017	Area 21	Portfolio Trader 2	AS 21/22 10:30 2017-07-28-10:30	OBK Open	60 min	EUR	**Confirmed**	27/07/2017 10:55:39	
28/07/2017	Area 11	Portfolio Trader 2	AS 11/12 10:00 2017-07-28-10:00	OBK Open	60 min	EUR	none	27/07/2017 10:40:01	
28/07/2017	Area 1	Portfolio Trader 2	AS 1/2 10:00 2017-07-28-10:00	OBK Open	60 min	EUR	**Not Confirmed**	27/07/2017 10:40:01	

In order to confirm the Physical Delivery Bid, double-click the Bid in either the Linear or the Last Update Time column. Alternatively, use the **Show Linear** button.
A confirmation screen is displayed, and the orders with Physical Delivery can be confirmed for the range of days indicated in the confirmation screen.
The indicated range of dates is a whole week or month, unless bids with Physical Delivery are inserted or modified for part of the week or month. In this case the range of days indicated in the confirmation screen will be only this part of the week or month.

Please note that not confirmed orders will not be taken into account in the Auction.

Click the **Confirm** button to confirm the Physical Delivery Bid.
Click the **Close** button to close the Physical Delivery Confirmation screen, without confirmation.

3.6   Bid Suspension

During a member stop procedure, all active bids for the users concerned are not taken into account for auctions and will be ignored. The bids themselves are not effected, and remain unchanged.

Once a suspension is lifted, the bids will be immediately taken into account again for each auction from that moment onwards, as normal.

Whenever a Portfolio is suspended for an Area via the Emergency member stop procedure, the following screens are visually impacted to increase the member awareness.

3.6.1   Market Global View

The Market Global View will display any normal state with the Suspended extension added when the bids are affected by the Emergency member stop.

A message will be displayed in the Messages pane indicating the status change.

3.6.2   Order Entry Screens

Order entry screens will display a light brown background color to indicate the Suspended state.
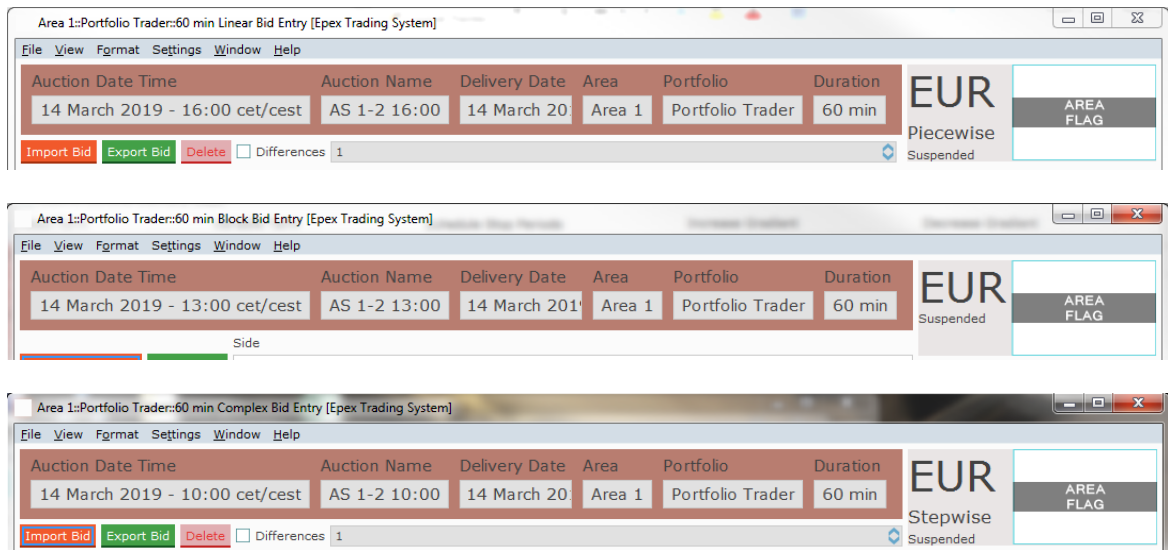
Note that it is still possible to submit and manipulate bids as normal.

3.6.3   Client Message Book

Whenever a Portfolio is suspended for an Area via the Emergency member stop process, each user associated with this Portfolio/Area combination will receive a breaking message in the Client Message Book.
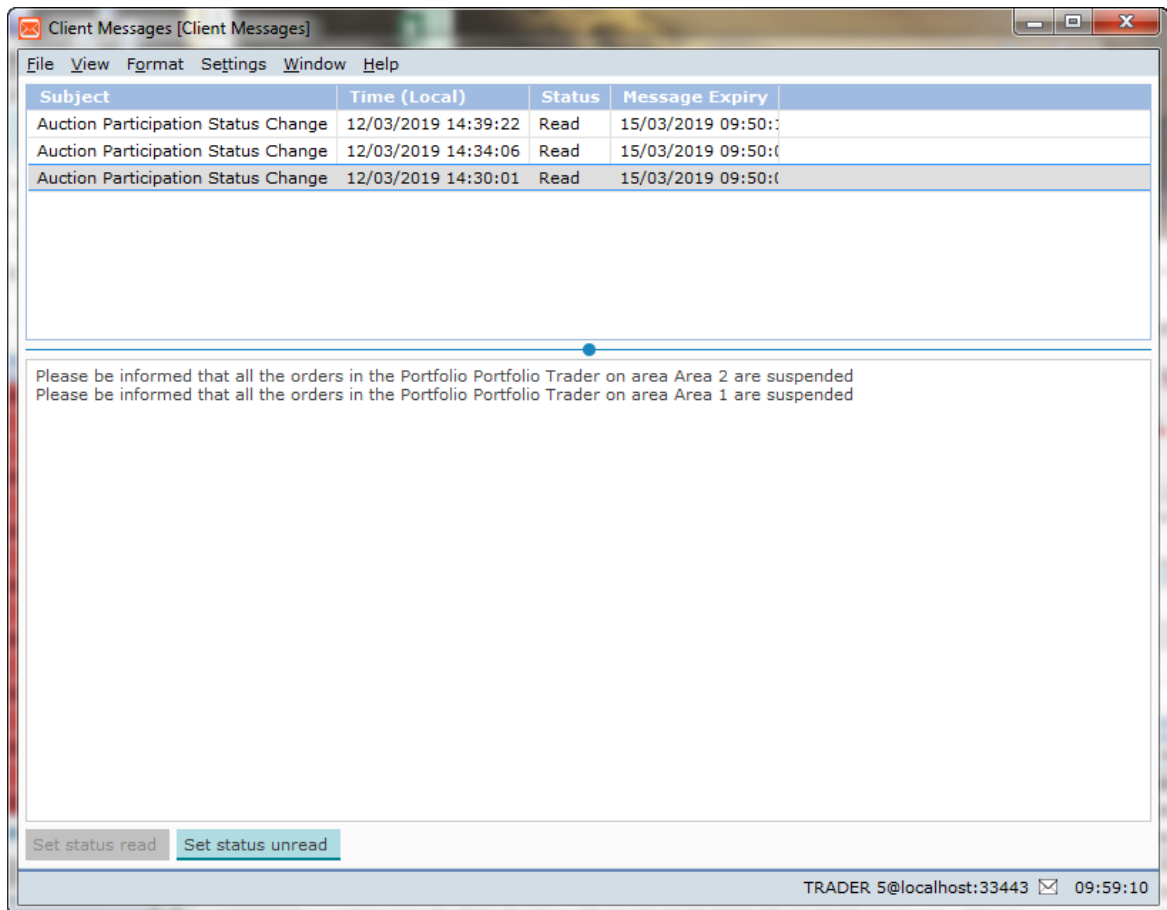
Note that there is no message when Suspension is lifted.

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Chapter

4

Market Results

Chapter 4   Market Results

The **Market Results** screen offers an overview of previously published Market Results.
The **Market Results** screen can be accessed via the <u>**V**</u>**iew** menu menu under option <u>**M**</u>**arket Results** of the Market Global View screen.

Alternatively, double-click the **Mkt results** field you wish to open a Market Results screen for.

Availability of Market Results is indicated in the Market Global View by the display 'Available' in the **Mkt results** column.

The Market Results screen is divided in four tabs, **Overall**, **Block**, **Complex** and **Trade**.

The Export To Excel button exports the information currently displayed in the Market Results screen to Excel.
For an example of the exported result, please consult Appendix F.

Click the **Close** button to close the Market Results screen.

4.1   Overall

The Overall tab display offers an overview of the Published Market Results per participant, and all its portfolios.
Note that using the filter bar options can limit the displayed selection.

Period (cet/cest)	MCP (EUR/MWh)	MCV(MW)	Total Schedule			Linear Schedule			Block Schedule			Complex Schedule		
			Net	Purchase	Sale	Net	Purchase	Sale	Net	Purchase	Sale	Net	Purchase	Sale
00 - 01	3000.00	9550.800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
01 - 02	370.96	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02 - 03	391.32	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03 - 04	-500.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04 - 05	751.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05 - 06	3000.00	9550.800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06 - 07	297.11	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07 - 08	1875.50	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08 - 09	741.96	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09 - 10	3000.00	9550.800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10 - 11	507.26	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 - 12	451.67	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12 - 13	-500.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13 - 14	441.73	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14 - 15	742.89	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 - 16	3000.00	9550.800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 - 17	-500.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17 - 18	3000.00	9550.800	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18 - 19	3000.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19 - 20	723.29	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20 - 21	-500.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21 - 22	380.22	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22 - 23	690.43	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23 - 00	-500.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sum/Avg	994.39	47754.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Day Type	Select either Auction Day or Delivery Day for which Market Results are to be displayed
From Date	If selected Day Type is Auction Day, the date the auction was performed.
	If selected Day Type is Delivery Day, the date the delivery starts.
	Double-click to access the **Calendar screen.** The date can also manually be typed or the arrows can be used to in/decrease the date.
Area Set	Select the Area Set for which Market Results are to be displayed
Auction Name	Select the Auction Name for which Market Results are to be displayed
Area	Select the Area for which Market Results are to be displayed
Duration	Select the Period Duration for which Market Results are to be displayed
Participant	Select the Participant for which Market Results are to be displayed
Portfolio	Select the Portfolio for which Market Results are to be displayed. Note that selecting All will display all accessible Portfolios for the Participant, in column blocks next to each other
Currency	Select the Currency in which Market Results are to be displayed

Period		Period number.
(Timezone)		Also at the bottom the Sum/Avg and all Block Definitions are available separately
MCP		Market Clearing Price in selected Currency
MCV		Market Clearing Volume
If no Portfolio is selected:		Participant totaled Schedules per Order Type + all its separate Portfolio Schedules per order Type
If Portfolio is selected:		Only selected Portfolio Schedules per order Type
Total Schedule	**Net**	Total volume of Purchase and Sale for all Bids
	Purchase	Total bought volume for all Bids
	Sale	Total sold volume for all Bids
Linear Schedule	**Net**	Total volume of Purchase and Sale for all Linear Bids
	Purchase	Total bought volume for all Linear Bids
	Sale	Total sold volume for all Linear Bids
Block Schedule	**Net**	Total volume of Purchase and Sale for all Block Bids
	Purchase	Total bought volume for all Block Bids
	Sale	Total sold volume for all Block Bids
Complex Schedule	**Net**	Total volume of Purchase and Sale for all Complex Bids
	Purchase	obsolete, Complex Bids are always Sale
	Sale	Total sold volume for all Complex Bids

4.2   Block

The Block tab display offers an overview of the Published Market Results per participant, and all its portfolios, for the Block Bids only.
Note that using the filter bar options can limit the displayed selection.

Day Type	Select either Auction Day or Delivery Day for which Market Results are to be displayed
Volume Display	Select either Submitted or Executed for which Market Results are to be displayed
From Date	If selected Day Type is Auction Day, the date the auction was performed.
	If selected Day Type is Delivery Day, the date the delivery starts.
	Double-click to access the **Calendar screen.** The date can also manually be typed or the arrows can be used to in/decrease the date.
Area Set	Select the Area Set for which Market Results are to be displayed
Auction Name	Select the Auction Name for which Market Results are to be displayed
Market Area	Select the Market Area for which Market Results are to be displayed
Duration	Select the Period Duration for which Market Results are to be displayed
Participant	Select the Participant for which Market Results are to be displayed
Portfolio	Select the Portfolio for which Market Results are to be displayed. Note that selecting All will display all accessible Portfolios for the Participant, in column blocks next to each other
Side	Select the Side in which Market Results are to be displayed, All, Purchase or Sale
Status	Select the Status in which Market Results are to be displayed, All Accepted or Rejected

Grid contents:

Block Id	Actual Identifier Number, assigned by system
MAR	Minimum Acceptance Ratio
AAR	Actual Acceptance Ratio
Block Code	Identifies kind of Block Bid:
	C01 = Standard Block Bid
	C02 = Linked Family Block Bid
	C04 = Exclusive Group Block Bid
	C88 = Loop Family Block Bid
BlockCodePRM	Block Code Parameter,
	C01 = Not used
	C02 = Parent Id(s), underscore separated, used to create family structure
	C04 = Group Id, each bid with the same BlockCodePRM is part of the same exclusive group
	C88 = Group Id, each bid with the same BlockCodePRM is part of the same loop family
Area	Name of the Area

Participant	Name of the Submitter Participant
Portfolio	Name of the Submitter Portfolio
Comment	Block Bid comment
Status	Bid can be either Rejected or Executed
Paradoxically	Text, can be Yes, No or PAB with Child (Blockorders are checked against being a Paradoxically Accepted Block; only Linked Blockorders can be Paradoxically Accepted)
Currency	Settlement Currency the Bid was submitted with
av MCP	Average Market Clearing Price in Settlement Currency
Price	Price in Settlement Currency
Total	Added total volume for all periods
Period Numbers	Volume per period

4.3   Complex

The Complex tab display offers an overview of the Published Market Results per participant, and all its portfolios, for the Complex Bids only.
Note that using the filter bar options can limit the displayed selection.

Day Type	Select either Auction Day or Delivery Day for which Market Results are to be displayed
From Date	If selected Day Type is Auction Day, the date the auction was performed.
	If selected Day Type is Delivery Day, the date the delivery starts.
	Double-click to access the **Calendar screen.** The date can also manually be typed or the arrows can be used to in/decrease the date.
Area Set	Select the Area Set for which Market Results are to be displayed
Auction Name	Select the Auction Name for which Market Results are to be displayed
Market Area	Select the Market Area for which Market Results are to be displayed
Duration	Select the Period Duration for which Market Results are to be displayed
Participant	Select the Participant for which Market Results are to be displayed
Portfolio	Select the Portfolio for which Market Results are to be displayed. Note that selecting All will display all accessible Portfolios for the Participant, in column blocks next to each other
Side	Select the Side in which Market Results are to be displayed, All, Purchase or Sale. Note Complex Bids only support Sale side

Grid contents:

Complex Id	Actual Identifier Number, assigned by system
Area	Name of the Area
Participant	Name of the Submitter Participant
Portfolio	Name of the Submitter Portfolio
Comment	Complex Bid comment
Paradoxically Rejected	Checkbox, is checked if this is a Paradoxically Rejected Complex Bid
Activation	Checkbox, is checked if this Complex Bid was accepted
Currency	Settlement Currency the Bid was submitted with
Total	Added total volume for all periods
Period Numbers	Volume per period

4.4   Trade

The Trade tab display offers an overview of the Published Market Results per Trade, and all its portfolios, for all Bids.
Note that using the filter bar options can limit the displayed selection.

Day Type   Select either Auction Day or Delivery Day for which Market Results are to be displayed

From Date If selected Day Type is Auction Day, the date the auction was performed.
           If selected Day Type is Delivery Day, the date the delivery starts.
           Double-click to access the **Calendar screen.** The date can also manually be typed or the arrows can be used to in/decrease the date.

Area Set   Select the Area Set for which Market Results are to be displayed

Auction Name Select the Auction Name for which Market Results are to be displayed

Participant Select the Participant for which Market Results are to be displayed

Portfolio Select the Portfolio for which Market Results are to be displayed. Note that selecting All will display all accessible Portfolios for the Participant, in column blocks next to each other

Side   Select the Side in which Market Results are to be displayed, All, Purchase or Sale. Note Complex Bids only support Sale side

Grid contents:

Order Id   Actual Identifier Number, assigned by system

Order Period ID / Trade ID Actual Identifier Number, assigned by system

Area Name Name of the Area

Portfolio Name Name of the Submitter Portfolio

Delivery Start Delivery Start of the period

Delivery End Delivery End of the period

Currency   Value of the Settlement currency

MCP   Rounded MCP in settlement currency

Executed   Executed quantity

Trader Name Name of Submitter User associated with the order

Export Single To XML Generate Trade Report for the selected (area set, auction name, auction date time, participant) in the filter section.
           If any of the above information is missing in the filter section, the button cannot be pressed.
           See Appendix H, Trade Reports Export Files (.xml) for further details

Export All To XML Generate Trade Report for the selected (area set, auction name, auction date time) in the filter section.
           If any of the above information is missing in the filter section, then the button cannot be pressed.
           See Appendix H, Trade Reports Export Files (.xml) for further details

View Order   Open the bid submission screen which contains the selected order ID

4.5 Market Result for Daylight Saving Days

Market Results for **Daylight Saving Days** are displayed slightly different.

Please see Appendix G, Daylight Saving Time for further information.

4.6 Pop-up Market Results

Upon first publication of market results by the exchange, each logged in user will receive a pop-up screen.

These Market Results are **Final** as is indicated in the pop-up screen.

This screen is read only, and only becomes available once upon publishing of the results.

Please note that the user can choose the areas for which the pop-up will be displayed, as well as the blocks to be visualized in the pop-up, by enabling the option in the settings.

The Export All To CSV button exports the information for all Portfolios according to the users view permissions to a *.csv* file.
For an example of the exported result, please consult Appendix F.

Click the **Close** button to close the Market Results screen.

Once closed, this screen cannot be accessed again by the user.

4.7   Indexes

The **Indexes** screen can be accessed via the Show Indexes button of the Market Global View screen.
Indexes will be available after the Auction has run.

The indexes consists of a reference price and a volume, but do not correspond necessarily to the prices and volumes calculated for an Area.

Please note that the user can choose the blocks to be visualized in the **Indexes** screen, by enabling the option in the settings.

The Export To Excel button exports the information in the Indexes screen to Excel.
For an example of the exported result, please consult Appendix F.

The **From Date** field can be double-clicked to access the **Calendar screen.** Select the date in the calendar screen and click the OK button to set the date in the From Date: field. The date can also manually be typed into the From Date: field. Note that the little arrows in the From Date: field can be clicked to in- or decrease the date as well.

Click the **Close** button to close the Indexes screen, without saving information.

Chapter

5

Message Book

Chapter 5   Message Book

The **EPEX Spot Trader Client Message Book** is the screen where text messages from EPEX Spot Market Operations are received. There is no functionality for a user to send messages to operators or to send messages between traders.

In the **EPEX Spot Trader Client** main screen, click the [icon] icon, select the **Client Message Book** option from the **screen** menu.

The **Client Message Book** will open with all messages from the exchange showing.
Please note that messages are only received if you are logged in.
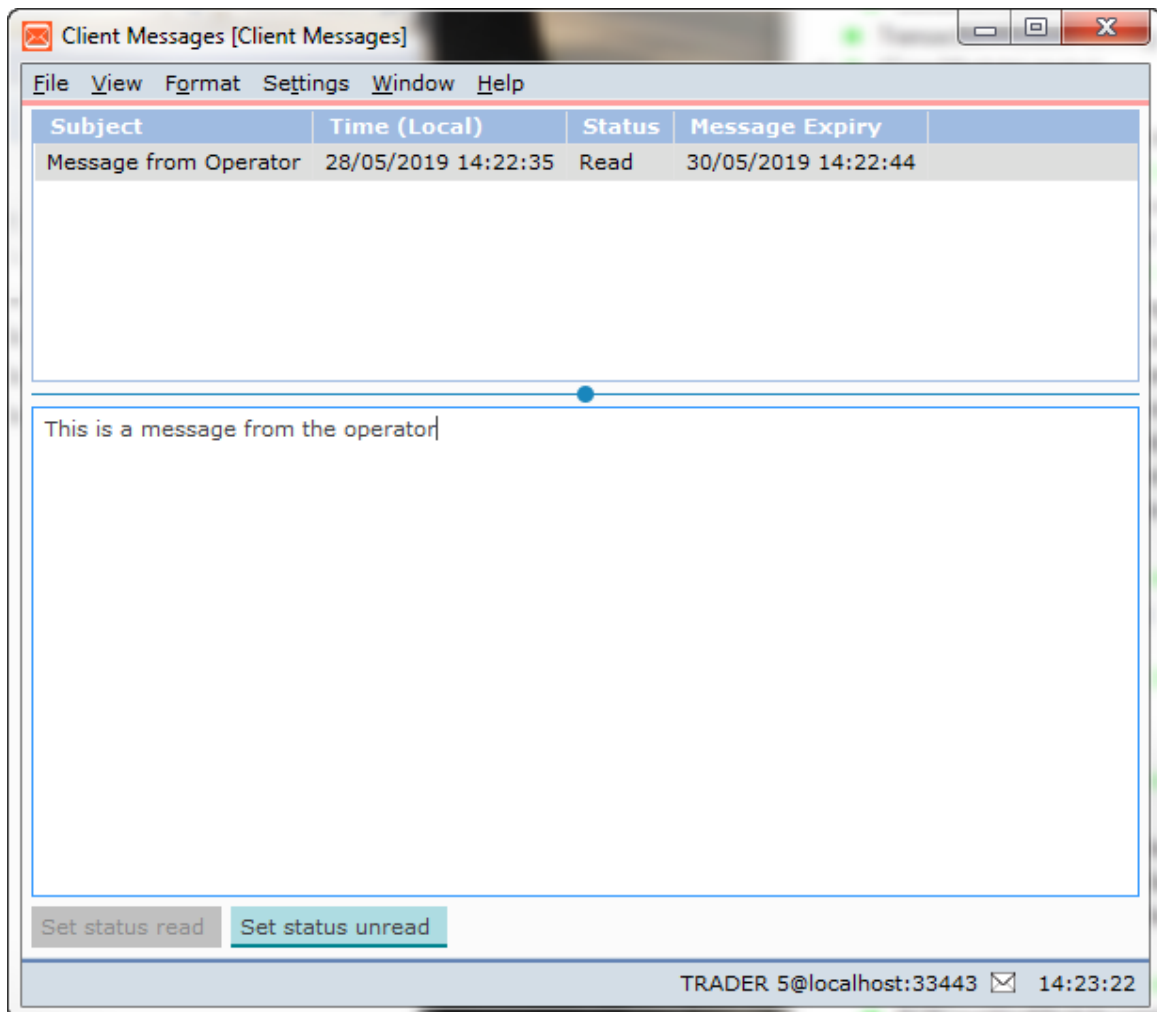
The small field between the message bar and the clock display is an indicator for received messages from the exchange operator. Double-click on this field to quickly open the **EPEX Spot Client Message Book**.

There are 4 different indicators:

✉	**White envelope icon:**	No messages unread
✉	**Green envelope icon:**	1 unread message waiting
✉	**Yellow envelope icon:**	2 – 4 unread messages waiting
✉	**Red envelope icon:**	5 or more unread messages waiting

5.1 Breaking Message

An operator can also send a **Breaking Message** to a logged in User.

This is a normal message, appearing in the **Client Message Book**, but with one important difference.

A **Breaking Message** will upon receipt force open the **Client Message Book** of the addressed user, displaying the sent message in a foreground display.

The **Client Message Book** can be handled as normal after receiving such a message.

5.2 Block Bid Exceed Limit

If for a Market Area the maximum number of allowed Block Bids per portfolio is reached, the Trading System sends a **Breaking Message** to the submitting User.

This is a normal breaking message, appearing in the **Client Message Book**, informing the user of the rejection of the just submitted Block Bids.

There are several other instances where a Breaking Message is sent to a user, for instance when Orders do not meet a price check for a Trading Limit, or exposure exceeds the available trade limit.

Chapter

6

Trading Limits

Chapter 6   Trading Limits

The EPEX Spot Financial Trading Limits Monitor screen offers an actual overview about the exposure and Price boundaries of bids for your portfolio(s) for a certain date range.

These Trading Limits are set by the exchange.

In the **EPEX Spot Trader Client** main screen, click the [icon] icon, select the **Financial** option from the **screen** menu.
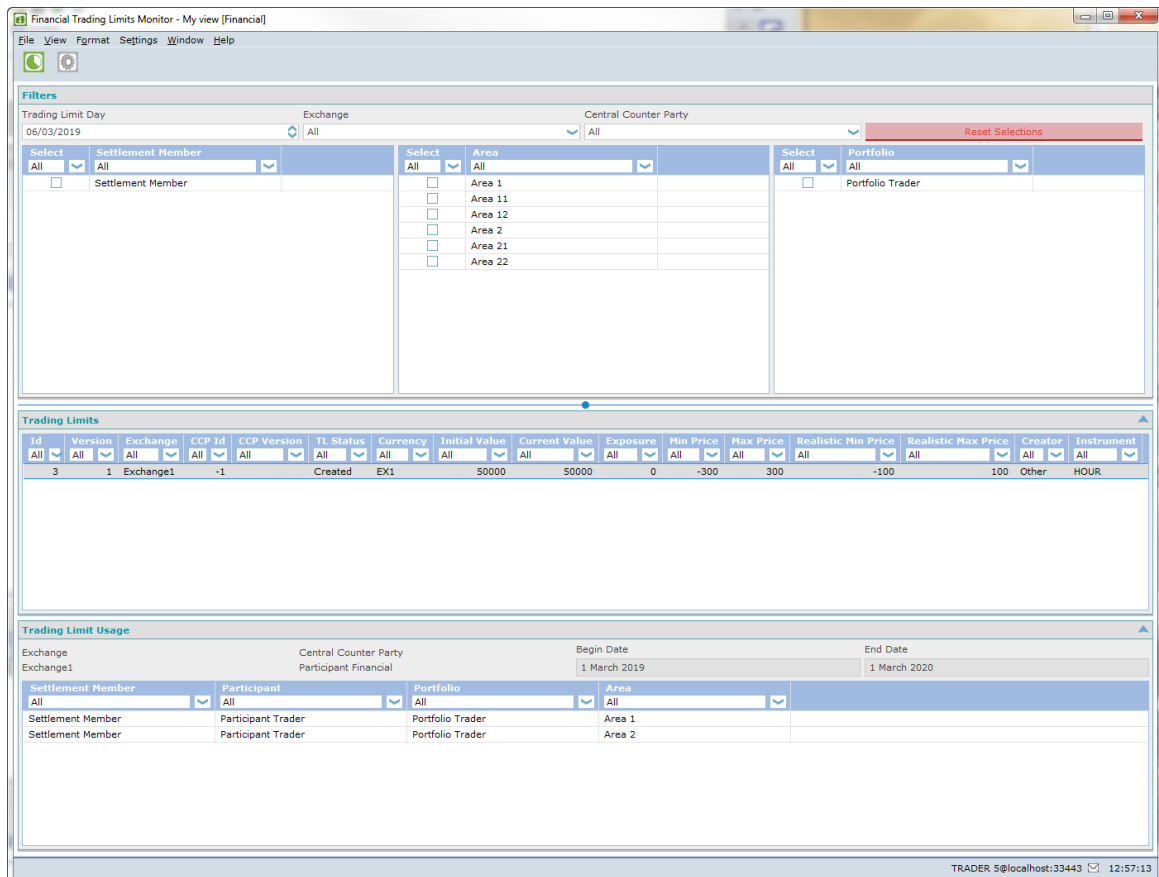
With the selectors in the Filter pane a selection can be created of active Financial Trading Limits that are available to you.

Trading Limit Day	Select trading limit day. Doubleclick to access a calendar
Exchange	Select exchange, either a single exchange or all
Central Counter Party	Select central counter party, either a single central counter party or all
Settlement Members	Enter a known settlement member to directly filter for that member. Click one or more checkboxes to select
Areas	Enter a known area to directly filter for that area. Click one or more checkboxes to select
Portfolios	Enter a known portfolio to directly filter for that participant. Click one or more checkboxes to select
Reset Selections	Button, resets selections to default

Trading Limits

Id	Trading Limit identifier in the ETS database
Version	Trading Limit version for a given ETS identifier
CCP Id	Trading Limit identifier in Central Counter Party database
CCP Version	Trading Limit version for a given CCP id
TL Status	Actual Status of the Trading Limit. Can be Created or Cancelled
Initial Value	Initial value of the Trading Limit in Euro's
Current Value	Initial Value - Exposure = Current Value
Exposure	Current exposure value of the orders covered by the Trading Limit
Min Price	Trading Limit minimal price cap
Max Price	Trading Limit maximal price cap
Realistic Min Price	Minimal price boundary used for calculating exposure
Realistic Max Price	Maximal price boundary used for calculating exposure
Creator	User ID of the creator of the Trading Limit
Currency	Exchange currency

Label

Exchange	Displays name of the Exchange for the selected Financial Trading Limit
Central Counter Party	Displays name of the Central Counter Party for the selected Financial Trading Limit
Begin Date	Start date of the selected Financial Trading Limit
End Date	End date of the selected Financial Trading Limit

Financial Trading Limit Details:

Displays the included combinations of Settlement Members, Participants, Portfolios and Areas in the selected Trading Limit.

Chapter

7

EPEX Spot Trading System Configuration

Chapter 7   EPEX Spot Trading System Configuration

The **EPEX Spot Settings Book** is the screen where you can define custom display and behavior settings.

The **Settings Book** is build up according to the various **EPEX Spot Trader Client** modules and their respective screens you have access to.

Select the **View Settings** option from the **Settings** menu.

Depending on which screen you started the **Settings Book** from, it will open with the respective screen showing.

7.1   Navigate the Settings

The best way to navigate through the **Settings Book** is by using the mouse to select the various items.

7.2   Network Settings

When <u>not</u> connected to the **EPEX Spot** servers, the **Network Settings** can be edited.

The settings in this screenshot are intentionally left incorrect because they are different per exchange.

These settings should only be modified on request from an exchange operator, and during the initial installation procedure.

Please see the HTTP Proxy Settings chapter for details about use of HTTP Proxy.

Click the Update button to save your new view settings.

Click the Reset button to revert to the original settings without saving.

7.3   Create View Settings

In order to create a custom view setting for each screen in a module, you need to make a clone of an existing view for each screen in a module.

Select the module and screen tab you want to edit your views manually, or click the [⚙] Settings icon directly from the screen.

Select the screen you want to create a view for in the corresponding tab.

To create a new view, deselect any view in the 'Name Text' list, and press the Add View button.
The new view will appear, and automatically be selected.

To clone an existing view, select the source view to clone from in the 'Name Text' list, and press the Clone View button.
A cloned view will appear, with the timestamp of creation in its name by default, and automatically be selected.

In the **View Name** field you can change the default created name of your new view.

You can now edit any items in the lower pane.

Change any items you want by moving through the items.

Click the Update button to save your new view settings.
Click the Reset button to revert to the original settings without saving.

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7.3.1   Set a Default View

Once you are satisfied with the created view, you can opt to set the view as default. This has the effect that upon opening of the respective screen in **EPEX Spot Trader Client**, these default view settings will be used.

Per book or screen only one view can be set as default. You can have many different views though and display more than one at the same time by opening more screens, each with a separate view.

To set a default view, select the view you want to become the default in the **Name Text** list. Click the   Set View as Default   button.

The selected view will now show with the extension **'[Default]'** in the list.

If no default is set, the **Factory View** will be the default.

7.3.2   Delete a View

To delete a view, select the view you want to remove in the **Name Text** list click the   Delete View   button.

Please note that deleting the view can not be undone.

A default view cannot be deleted.

7.4   Set Columns

Across the **Settings** you find options to modify the columns settings for their respective windows. These settings allow you to define what width it should have, and if they should sort and if so, in what order.

Select the row corresponding to the columns you want to modify.

Show	Checkbox, enable to display the column, disable to hide the column. Note you cannot disable if the column also has sorting enabled.
Name	Name of the Column, cannot be modified
Width	Number of pixels the column is wide, maximum size is 600 pixels
Ascending/ Descending	Check any single one, enforces the column to sort alphanumerically, either top-bottom, or bottom-top respectively.

Click the   Update   button to save your new view settings.

Click the   Reset to factory settings   button to revert to the factory settings without saving. This will not remove any created view settings.

Please note that upon saving a default view your modifications will be updated immediately to the respective window if that view was selected.

Please note that the menu option **Save Column Widths into <Name of View>** in the various screens also saves the current widths to the selected view.

7.5   Global Settings

The **Global Settings** screen offers the **General Client Display Settings.**

Click the ![Global Settings] button to access the Global Settings.

7.5.1   General Client Settings

While connected to the **EPEX Spot** servers, **Global Client Settings** can be edited.
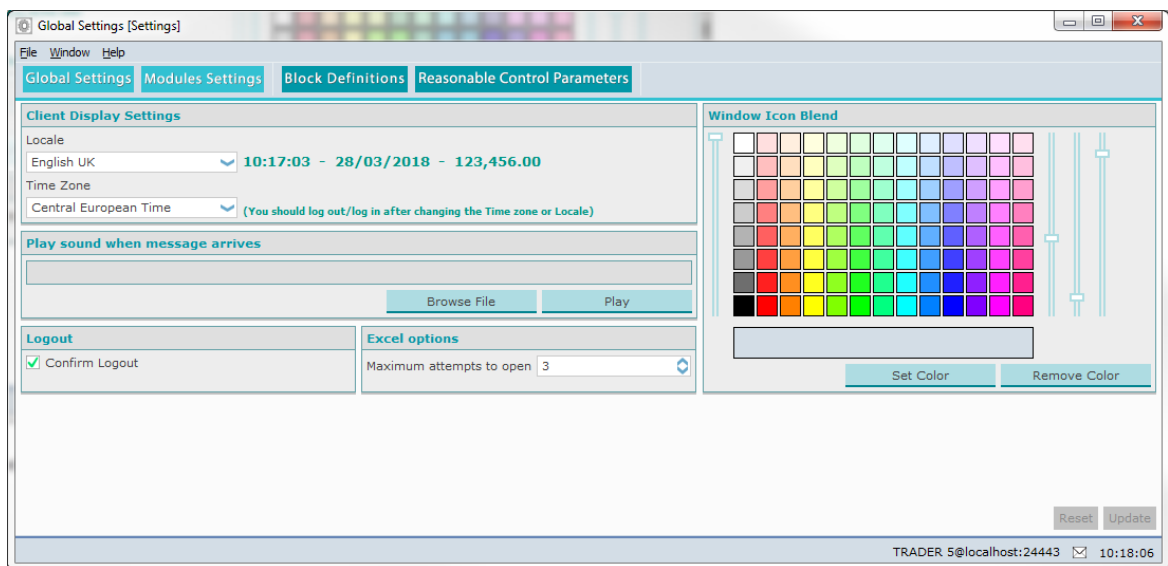
Important:
A change in the **Time Zone** setting will only be executed after logging off and on again.

Click the **Update** button to save your new view settings.
Click the **Reset** button to revert to the original settings without saving.

7.5.1.1   Time-Date-Number Notation

The **Time/Date/Number notation** option sets the default country settings for all screens in your **EPEX Spot Trader Client**.

In all these modules the same settings will be used. Only the Time, Date and Number notation can be set; any written texts will always be English.

The list contains all the country locales currently supported by the **EPEX Spot** system.

The usage of commas, dots or half-spaces in numbers is important, where they are used to indicate decimals or thousands.

Changing these settings does not affect the way bids or contracts are sent or stored at the exchange. This will be set by the exchange.

Also, changing these settings will not affect *Windows* or *Excel* settings in any way. These programs use their own settings where applicable.

7.5.1.2   Time Zone

The **Time Zone** option sets the default time zone settings for your **EPEX Spot Trader Client.**
In all modules the same settings will be used. This setting influences the way the clock is displayed in market views and other screens.

This is a **User setting** and has therefore no influence on the market time. Market time is set by the exchange.

Product codes and other market dependent days are in market time, as dictated by the grid operator of the corresponding market segment.

Important:
A change in the **Time Zone** setting will only be executed after logging off and on again.

7.5.1.3   Play Sound when Message arrives

With this setting you can play a sound when a message arrives in the **Message Book**.

Setting a sound:

To set a sound effect, click on **Browse...** to open a *Windows Explorer*, and navigate to the *.wav* file you want to set as the sound effect.

You can click **Preview** to hear the effect without setting it first.

7.5.1.4   Confirm Logout

The option to set **Confirm Logout** will enable or disable an additional warning dialog before logging off, warning you that you are about to log off.

Within the dialog you can opt to stay connected, or to continue to log off.

Enabling this option will help prevent 'accidental' disconnecting.
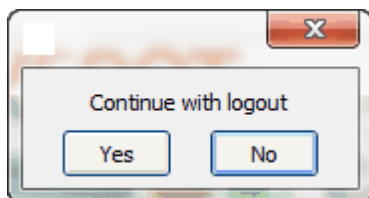
7.5.1.5   Excel Options

With the **Maximum attempts to open:** setting you can set a limit to the number of retries EPEX Spot Trader Client attempts to **Export to Excel** if the export is not correctly handled by Excel.

Use the [arrow buttons icon] arrow buttons to set the value from 3 attempts to 8 maximal. Note that each attempt after the first will have a slight longer timeout, so setting the number of attempts to 8 will result in a maximum timeout of about 1 minute.

7.5.1.6   Window Icon Blend

With the **Window Icon Blend** color you can differentiate more easily between multiple launches of EPEX Spot Trader Client.

When EPEX Spot Trader Client screens are collapsed to the Windows toolbar, the little icon and a part of the screen name are the only thing visible.
If a large number of screens are collapsed, the Window Icon Blend option helps identifying the correct screens.

By setting a Blend Color, the little icons in the Windows toolbar will get that color as an overlay hue.

This feature is only helpful if multiple EPEX Spot Trader Clients are running on the same Windows Interface.

7.6   Modules Settings

The **Modules Settings** give access to settings for the behavior of the accessible modules within the EPEX Spot Trader Client.
These settings will effect only the locally installed EPEX Spot Trader Client.

Please note that these settings are persisted only after you click the `Update` button to save your new view settings.

Click the `Modules Settings` button to access the Modules Settings.

7.6.1   Visual

For each module, the **Visual** tab allows to define the initial screens that will be displayed upon opening the module's screens.
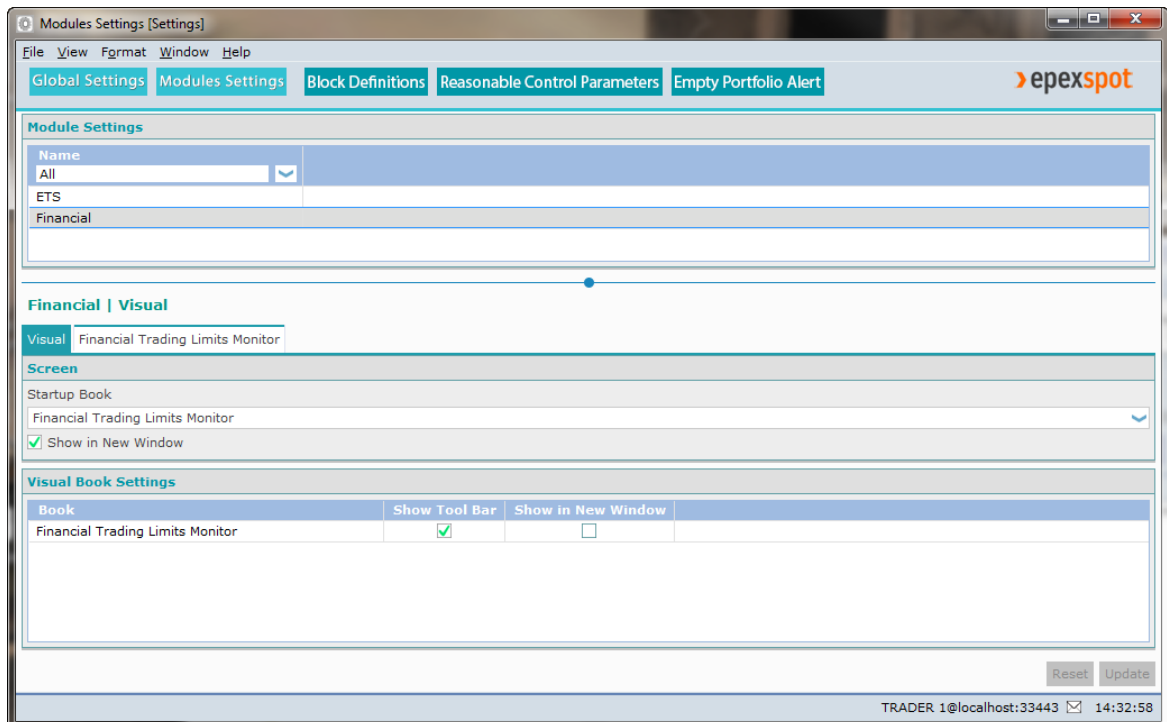
Screen
Select the default screen from the **Startup Book** list.

Check the **Show in New Window** option if opening the Module from the Main Toolbar should open in a fresh screen.
Uncheck the option if opening the Module from the Main Toolbar should open in the already displayed screen, replacing the existing view.

Visual Book Settings
Here you can set the opening behavior within the module. Each screen in the module can be opened using the respective Icon or the corresponding View menu option.
For each screen you can set options here separately.
Please note that for the EPEX Spot Module this cannot be set.

Book	Name of the screen
Show Tool bar	Checkbox, en/disables display of the icon bar within the screen
Show In new window	Checkbox, en/disables if the screen should open in a fresh screen or should open in the already displayed screen, replacing the existing view.

Click the **Update** button to save your new view settings.

Click the **Reset** button to revert to the original settings without saving.

7.6.2   General

The **General** tab is only available for the EPEX Spot Module.
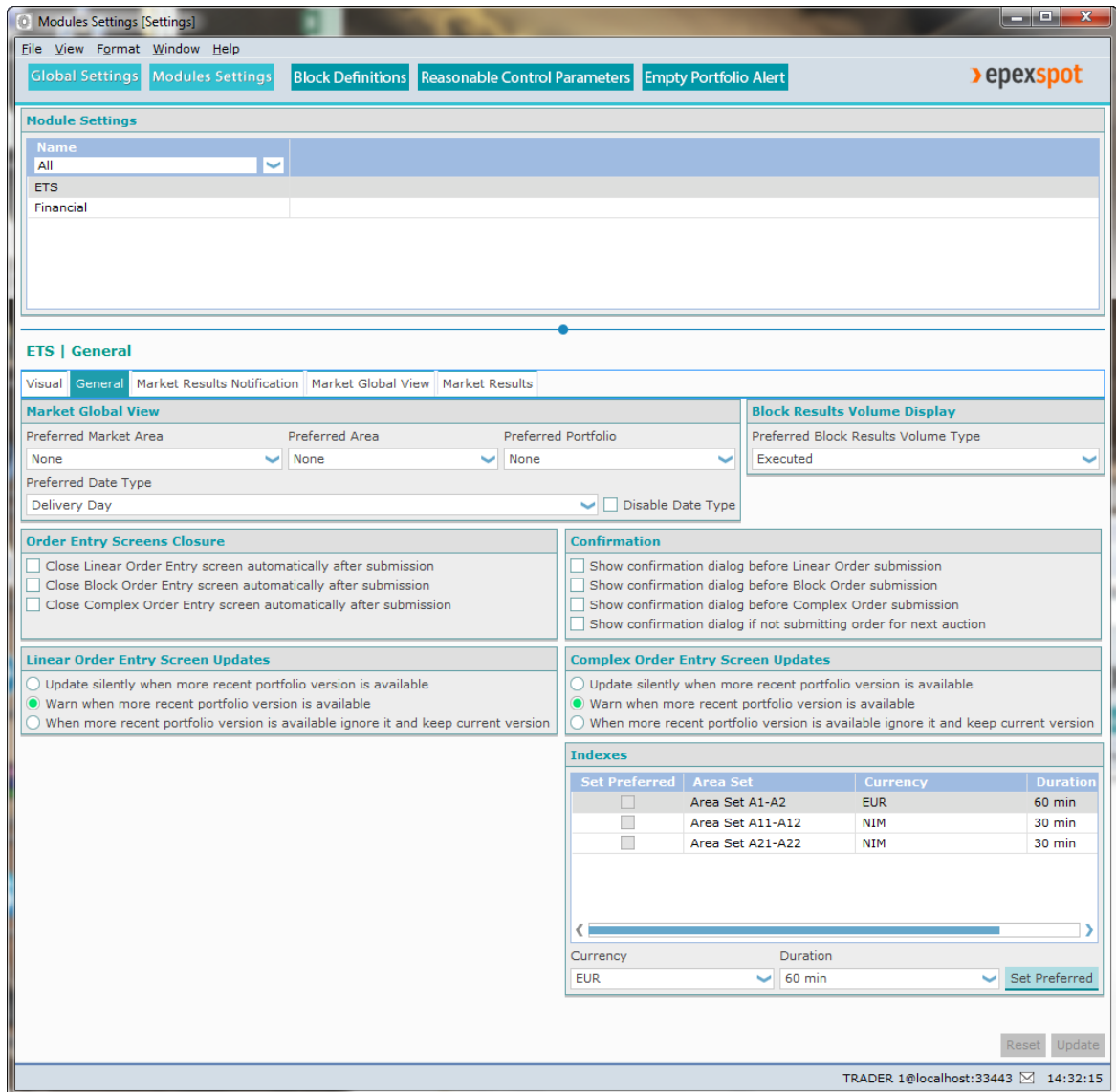
Market Global View

Preferred Market Area
Select the preferred initial displayed Market Area upon opening the Market Global View.

Preferred Area
Select the preferred initial displayed Area upon opening the Market Global View.

Preferred Portfolio
Select the preferred initial displayed Portfolio upon opening the Market Global View.

Preferred Date Type
Select the preferred initial displayed Date Type upon opening the Market Global View.

Disable Date Type

Checkbox, enable to lock the date type filter field on the impacted screens. However the change does not apply to already open screens.

Block Results Volume Display

Preferred Block Results Volume Type
Select the preferred initial displayed Volume Type upon opening the various Market Results Block views.

Order Entry Screens Closure
Check the box to enable the option.
If enabled, the entry screen will be closed immediately after submitting a Bid successfully.
If disabled, the entry screen will remain open after submitting a Bid successfully.

Confirmation
Check the box to enable the option.
If enabled, a confirmation dialog will request confirmation of the submit action before actually submission is executed. This dialog allows to cancel the submission.
If disabled, a submission is executed immediately, and no cancellation of the submission is possible.
The **Show confirmation dialog if not submitting order for next auction** option allows for an extra safeguard to prevent accidental submission of bids not for the next auction.
Having multiple options selected can result in more than one confirmation dialog appearing sequentially.

Linear Order Entry Screen Updates
Select one of the three options corresponding to the desired functionality during updates of portfolio information in the Linear Bid Entry Screen.

Complex Order Entry Screen Updates
Select one of the three options corresponding to the desired functionality during updates of portfolio information in the Complex Bid Entry Screen.

Indexes
Sets the default selected Area Set, Currency and Duration values in the filters of the Indexes screen.
Please note this can only be used if a Preferred Market Area or a Preferred Area was set.

Currency	Select from the available Settlement Currencies
Duration	Select from the available Period Durations
Set Preferred	Click to set the selected Area Set as default filter selection in the Indexes screen

Click the Update button to save your new view settings.

Click the Reset button to revert to the original settings without saving.

7.6.3   Market Results Notification

The **Market Results Notification** tab tab is only available for the EPEX Spot Module.

Auction

Sets the appearance of the Auction Results pop-up per Area Set, per Auction.

Should Popup   Checkbox, en/disable to receive pop-up auction results screen when the auction session has finished

It is also possible to set the appearance of the Auction Results pop-up per Market Area in the same way.

First select an Area Set, Auction. A list of all associated Market Areas appears.

Should Popup   Checkbox, en/disable to receive pop-up auction results screen when the auction session has finished

Click the **Reset to factory settings** button to revert to the factory default settings. This enables all pop-ups.

Click the **Update** button to save your new view settings.

Click the **Reset** button to revert to the original settings without saving.

7.7   Block Definitions

The **Block Definitions** settings allow configuration of Block Definition templates that can be used during Block Bid entry to easily create a pre-defined Block Bid.

These Block Definitions will be added to the list of definitions provided by the exchange, and will be useable by the user only.

Click the **Block Definitions** button to access the Block Definitions settings.

Select the **Market Area, Auction** and **Duration** to create a Block Bid Definition for in the filter bar.

Click the [Add Block Definition] button to create an additional definition template in the Block Definitions list.

Click the [Import Block Definitions] button to import Block Definitions from Excel.

Click the [Export Block Definitions] button to export Block Definitions on screen to Excel.
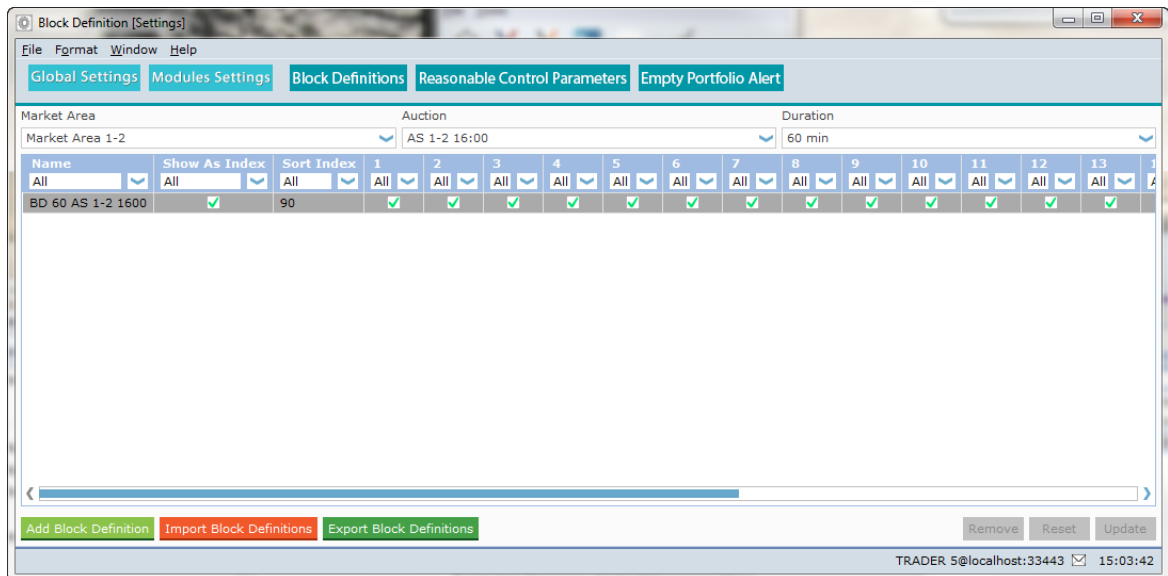
Block Definitions with a dark grey background color are exchange defined. You can however modify the exchange defined Block Definitions.

Name	Name of the Block Definition, text field.
Show as Index	Check this option if the Block Definition is to be included in the Index, in the Market Result and pop-up overview
Sort Index	Block Definitions can be assigned an index number (max 999), determining the sorting sequence of the block definition lists.
Periods	Check each period to be included in the Block Definition

Click the [Update] button to save your new view settings.

Click the [Reset] button to revert to the original settings without saving.

Click the [Remove] button to delete the selected block definition.

7.8   Reasonable Control Parameters

The **Reasonable Control Parameters** settings allow traders to define reasonable control parameters (RCP) to create their own checks from the trader client.

Click the [Reasonable Control Parameters] button to access the Reasonable Control Parameters settings.

Exceeding the set parameters during order creation will trigger an alert message to be displayed in the Market Global View message bar, and the corresponding order is displayed in yellow in the **Market Global View.**

The parameter checks are:

-   Order side at Pmin/Pmax

-   Volume difference at Pmin/Pmax

All checks are independent and can be filled without the others, e.g. it is possible for a given check to define only the volume difference at Pmin.

Reasonable Control Parameters are defined at the portfolio level, per Area, per duration.

It is possible to export or import the list of checks, by using the [Import from Excel] and [Export to Excel] buttons.

This alert is non-binding: the trader can still submit the order if the check is not successful.

Area	Portfolio	Duration	Volume difference at Pmin	Volume difference at Pmax	Order side change at Pmin	Order side change at Pmax	Compare With
Area 1	Portfolio Trader	60 min	100	100	Alert	No Check	7
Area 11	Portfolio Trader	15 min	100	100	Alert	No Check	7
Area 11	Portfolio Trader	30 min	100	100	Alert	No Check	7
Area 11	Portfolio Trader	60 min	100	100	Alert	No Check	7
Area 12	Portfolio Trader	15 min					
Area 12	Portfolio Trader	30 min					
Area 12	Portfolio Trader	60 min					
Area 2	Portfolio Trader	60 min					
Area 21	Portfolio Trader	15 min					
Area 21	Portfolio Trader	30 min					
Area 21	Portfolio Trader	60 min					
Area 22	Portfolio Trader	15 min	104	104	No Check	Alert	14
Area 22	Portfolio Trader	30 min	104	104	No Check	Alert	14
Area 22	Portfolio Trader	60 min	104	104	No Check	Alert	14

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Area	All area / portfolio with period duration for which there is permission are automatically included in the table
Portfolio	All area / portfolio with period duration for which there is permission are automatically included in the table
Duration	All area / portfolio with period duration for which there is permission are automatically included in the table
Vol difference at Pmin	Absolute value, triggers alert if Volume deviation at Pmin is exceeding the set amount since **Compare With** setting
Vol difference at Pmax	Absolute value, triggers alert if Volume deviation at Pmax is exceeding the set amount since **Compare With** setting
Order side change at Pmin	Triggers alert if Volume at Pmin changes from Buy to Sell or vice versa since **Compare With** setting
Order side change at Pmax	Triggers alert if Volume at Pmax changes from Buy to Sell or vice versa since **Compare With** setting
Compare With	Compare with Xth previous auction session" with X a strictly positive integer included in [1;100]. With 'previous auction session' is meant the auction sessions that were scheduled. If order history is shorter than auction X defined, then no check is done

Click the **Update** button to save your new view settings.

Click the **Reset** button to revert to the original settings without saving.

7.9   Empty Portfolio Alert

The **Empty Portfolio Alert** settings allow traders to set an alert message which warns the user about portfolios not having an order submitted.

Click the Empty Portfolio Alert button to access the Empty Portfolio Alert settings.

The alerts are defined per (area, portfolio, auction name). Multiple alerts can be configured for the same (area, portfolio, auction name) combination.

It is possible to export or import the list of alerts, by using the Import from Excel and Export to Excel buttons.

Click the Add New Alert button to create an additional alert template in the Alert list.

Click the Clone button to create a copy of the selected alert template in the Alert list.

Area set	Area	Portfolio	Auction Name	Alert Sending (min)
Area Set A11-A12	Area 11	Portfolio Trader	AS 11-12 10:00	5
Area Set A11-A12	Area 12	Portfolio Trader	AS 11-12 10:00	10
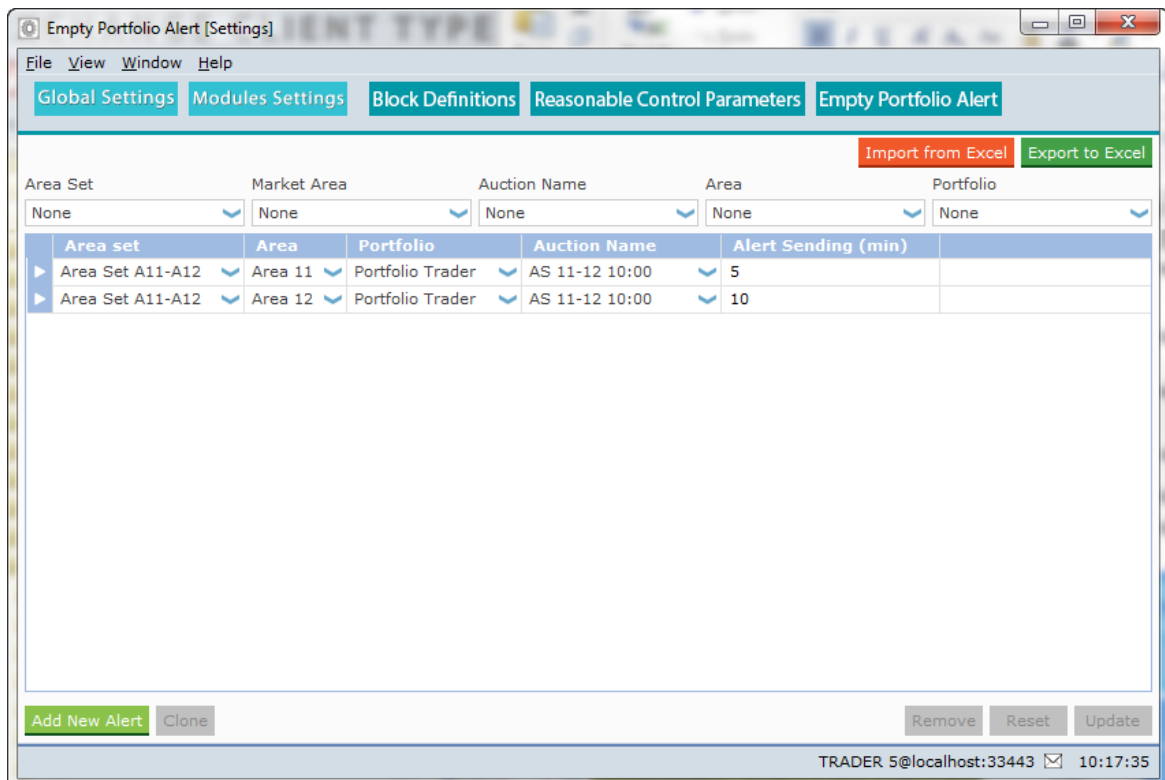
Area Set	Select an Area Set
Area	Select an Area
Portfolio	Select a Portfolio
Auction Name	Select an Auction
Alert Sending (min)	Number of minutes before Order Entry End, the check will be triggered.

If an alert is triggered, a warning message will be sent to the Client Message Book, and to the message pane of the Market Global View.

If there are more Auctions available for the same area, portfolio, auction name combination, for example one for 60 minutes, one for 30 minutes and one for 15 minutes, you will receive a warning for each separately, if applicable.

Click the Remove button to remove the selected Alert.

Click the Reset button to revert to the original settings without saving.

Click the Update button to save your new settings.

7.10   Financial Module Settings

There are no special settings options for the Financial Module.
Please refer to the Visual chapter, the Create a View Setting chapter, and the Set Columns chapter
for details.

Chapter

8
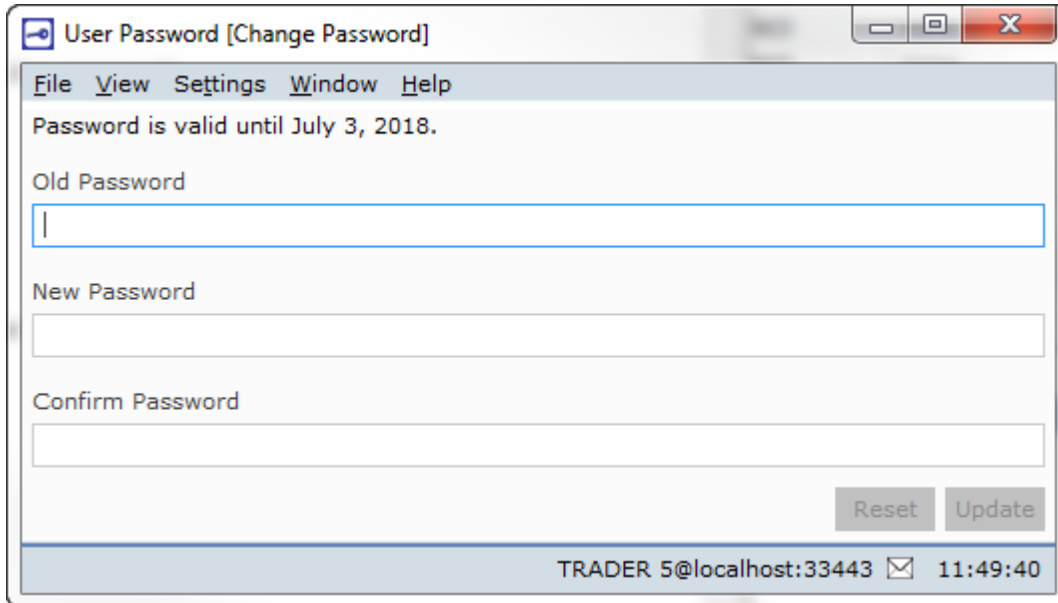
Password Settings

Chapter 8   Password Settings

A user can change the login password.
The initial password is provided by the exchange.

After initial login with the provided password, click the [key icon] button in the main toolbar.

The **Password** screen opens as shown below.

In the **Old Password:** entry field, enter the password **exactly** as provided by the exchange, or your current active password.

In the **New Password:** entry field, enter your chosen password.

In the **Verification Password:** entry field, repeat your **New Password:** entry.

Click **Update** to confirm your new password, click **Reset** to revert to your original password.

Please note, that upon saving your new password, your requested password is verified and validated against a set of rules. See Appendix C, Password Rules. A password that is too simple will be rejected by the exchange, and your old password will be maintained.
Every 90 days a new password must be configured; the system informs you when renewal is due.

Chapter

9

Support

Chapter 9   Support

In case of problems with the **EPEX Spot Trader Client** module, or if you require more information please contact your exchange.
See Appendix E, Helpdesk for details.

To aid you in finding what went wrong, **EPEX Spot Trader Client** offers a detailed error message system via the message bar.

Please note:

In the unlikely case that **EPEX Spot Client** reports a critical failure, or crashes to the Windows desktop (meaning the application closes without further notice), an *error.log* file is written to your hard disk. This file can be very important for the **Helpdesk** to help track down the problem and will automatically be sent to the exchange the next time you log in.

Chapter

10

Appendix B, Technical Requirements

Chapter 10   Appendix B, Technical Requirements

Recommended system requirements for the client computer:

Intel Dual Core or equivalent processor,
2048 MB internal memory,
100 Mb of free Hard Disk space.
Each upgradable client version collected from the exchange server is locally stored, requiring approximately an additional 15Mb per version.

Supported operating systems:

Windows7 Professional or Ultimate, latest service pack,
Windows8 Professional or Enterprise, latest service pack,
Windows10 Pro or Enterprise, latest service pack,
MS Excel 2010, 2013, 2016, locally installed,
Please note that MS Excel Viewer is not supported.

Network settings:

EPEX Spot Trader Client requires a stable Internet connection.
Recommended minimum connection speed is 256Kbit/s or better.
All traffic is TLS encrypted.

Proxy support

The EPEX Spot Trader Client does support connecting to an exchange using HTTP CONNECT proxy servers.
Please see the HTTP Proxy Settings chapter for more details.

Note:

Using an Upgradable client on Citrix is not recommended.

For further details please contact the Helpdesk.

Chapter

11

Appendix C, Password Rules

Chapter 11   Appendix C, Password Rules

The user defined password needs to abide by a set of rules in order to guarantee the password is sufficiently secure.

1   Must contain a minimum of 8 characters
2   Must include 3 out of 4 of symbol, number, uppercase letter and lowercase letter
3   May not include composed characters
4   May include a space, but this counts as a symbol
5   May only repeat each character once in sequence, i.e. each character can be doubled, but not tripled in a row

Symbol: examples are: '$', '&', '~', ']', etcetera
Number: examples are: '1', '7', '0'
Uppercase: examples are: 'E', 'T', 'S'
Lowercase: examples are: 'e', 't', 's'
Composed: examples are: 'é', 'â', 'ê'

Your password will automatically expire 90 days after the last change. Upon expiration, you will be prompted to alter your password during login.
The initial password, assigned by the operator, remains valid for only 7 days however.

Chapter 12

Appendix D, Glossary

Chapter 12   Appendix D, Glossary

Term	Explanation
Actual Acceptance Ratio	AAR the executed fraction of the block order. The matching algorithm returns AAR for each block order. Each period of the block has same AAR value. Each block of a loop family has same AAR value.
Area	A place for delivery, for power contracts: the hub and high voltage network that is being traded
Area Set	Regrouping of areas for which the matching is done at the same moment
Auction Day	Day on which an auction is set to be performed
Auction Group	Filter option allowing grouped auctions to be selected as a filter option
Big Block	A block of which the volume for each of its time steps is inferior or equal to a Maximum volume of a big block order as defined at the market area and with a volume for at least one of its time steps strictly greater than the Maximum volume of a block order as defined for the area
Block Bid	Order relating to a contract on several linked Expiries
Complex Bid	Linear Stepwise orders that are defined by a single side (always sell), a volume, and a limit price, where a single linear stepwise order per period is expected.
Curtailable Block	A block order for which the execution can be total, equal or greater than a minimum acceptance ratio
Delivery Day	Day on which the Contracts negotiated on the exchange are to be delivered
Exclusive Group Block Bid	Exclusive group of choice block bids, from which a maximum of one block bid can be accepted
Index	Price published by the exchange for a market area
Linear Bid	Bid formed by discrete volume / price pairs; expression of sell or purchase interest depending on the price Can be 60 minutes (Hourly Linear) or 15 minute periods
Linked Family Block Bid	Linked Block Bids correspond to a set of block bids which are linked together. Only when all parent block bids are matched, their children can also be matched
Loop Family Block Bid	Loop Family Block Orders correspond to a group of block orders which must either all be executed or none of them be executed
Market Area	An area comprising one or several Delivery Areas
Minimum Acceptance Ratio	MAR the minimum fraction of the block order that has to be accepted. MAR is defined for each block order (standard, linked family, exclusive group, loop). Each period of the block has same MAR value. Per default, the value of MAR is 1, i.e. all or none
MCP	Market Clearing Price: the price at which the bids are executed
MCV	Market Clearing Volume: traded volume on a market area
Portfolio	Provides the possibility to separate participant bids and trades by aspect
Piecewise Order	Orders that are defined by a side (buy or sell), a volume, an initial price at which the order starts to be (partially) accepted, and a final price at which the order is completely accepted. Piecewise orders are accepted at a proportion depending on price
Smart Blocks	Collective definition containing Linked Family Blocks and Exclusive Group Blocks
Stepwise Order	Orders that are defined by a type (buy or sell), a volume and a limit price, whereas the limit price applies to the entire volume irrespective of it being accepted completely or in part. Stepwise orders may be accepted in whole or in part as soon as they are in-the-money
Suspended	Bid that is subject to an Auction Exclusion Rule
Trading Limit Day	Day on which a Trading Limit is set to be applied

Chapter

13

Appendix E, Helpdesk

Chapter 13   Appendix E, Helpdesk

EPEX SPOT Market Operations Hotlines

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Chapter

14

Appendix F, Excel Paste supported

Chapter 14   Appendix F, Excel Paste supported

To copy/paste information from Excel, certain information must be available within the paste information in order to be accepted by the EPEX Spot Trading System.

All pastes from Excel are validated by the EPEX Spot Trading System, thus invalid entries are rejected.

Any resulting message dialogs indicate what is missing or invalid in the paste.
In such cases include or correct the data in the Excel copy and retry the copy/paste action.

Please note that the Windows File Browser that is opened in order to select a file to import, does not support shortcuts. Only actual directories and files are supported.

Important:
Please note that Excel Viewer versions are not supported; copied information from Excel Viewer is not recognized as legitimate Excel format, and will be rejected.

Important:
Please note that Excel must be installed locally, working via the cloud to access the *Excel.exe* is not supported.

14.1   Linear Bids (Step- and Piecewise)

Stepwise and Piecewise order submission templates are (almost) identical. Note that for Stepwise each price column except the min and max price columns must occur at least twice, in order to create quantity steps.

Please refer to your market rules regarding availability of described functions.

General remark:

Prices are written in the 1st line, first price and last price must always be the price limits.
Quantities are written in subsequent lines.

Copy/paste operation :
A comment can be optionally written in the 1st column (not mandatory), but in this case 'comment' has to be written in the upper cell to indicate the column contains comment information.

Optionally, periods can be written in the 1st column (if there is no comment column) or in the 2nd column (if there is a comment column), but in this case 'period' has to be written in the upper cell to indicate the column contains period information.

Information regarding the period:

If the pasted grid does not contain any period, then the first line contains the price information, the 2nd line contains quantities for the 1st period, the 3rd line contains quantities for the 2nd period…, etc.

If the pasted grid contains periods, then the 1st line must contain the price information, and subsequent lines must contain quantities for the given period.

Four possible configurations (Piecewise) are illustrated below:

Configuration 1

Prices in 1st line	→
Volumes for 1st period	→
Volumes for 5th period	↘
The periods (i.e. 25 lines, 97 lines, etc.) have not necessarily to be indicated	

-500	200	3000
10		10
30		-90
40	36	-30
50		50

Configuration 2

Comments and periods are indicated	→
Periods can be mixed	
Some rows can be empty	
Not all periods (i.e. 25 lines, 97 lines, etc.) have to be indicated	

comment	period	-500	200	3000
	1	10		10
my bid	3	8	5	-6
	15	8	5	-6
	6	8	5	-6
	10	8	5	-6
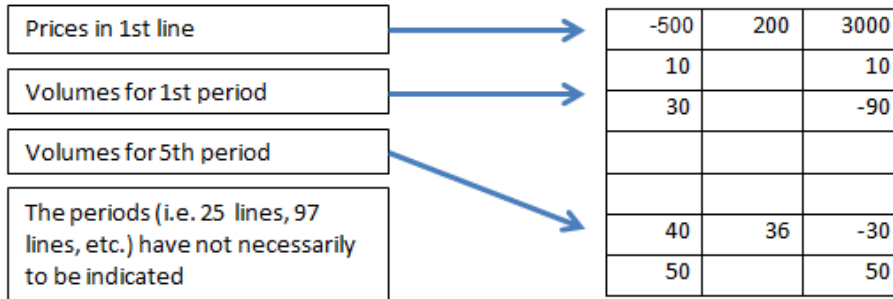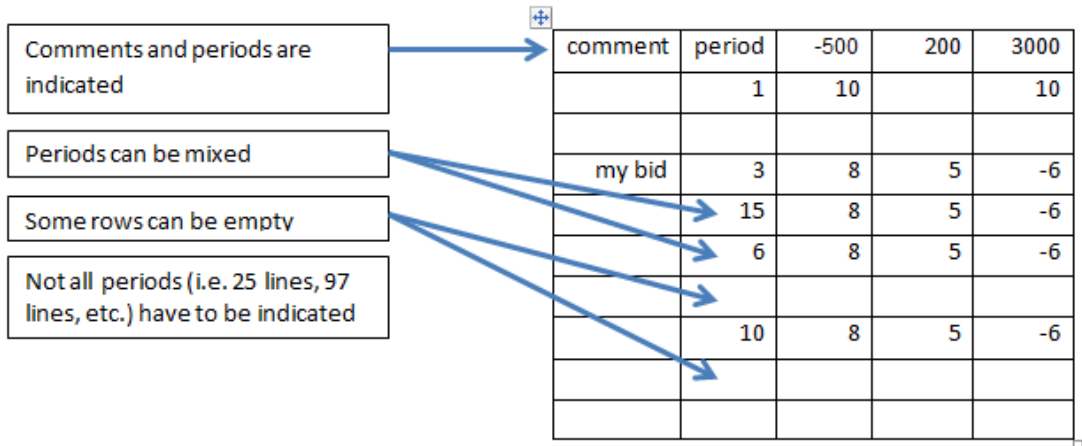
Configuration 3

period	-500	200	3000
1	10		10
3	8	5	-6
15	8	5	-6
6	8	5	-6
10	8	5	-6

Configuration 4

comment	-500	200	3000
	10		10
my bid	8	5	-6
	8	5	-6
	8	5	-6
	8	5	-6

Four possible configurations (Stepwise) are illustrated below:

Configuration 1

| Prices in 1st line | Volumes for 1st period | Volumes for 5th period | The periods (i.e. 25 lines, 97 lines, etc.) have not necessarily to be indicated |

-500	200	200	3000
10			10
30	30	-90	-90
40	40	-30	-30
50			50

Configuration 2

Comments and periods are indicated

Periods can be mixed

Some rows can be empty

Not all periods (i.e. 25 lines, 97 lines, etc.) have to be indicated

comment	period	-500	200	200	3000
	1	10	10	10	10
my bid	3	8	8	-6	-6
	15	8	8	-6	-6
	6	8	8	-6	-6
	10	8	8	-6	-6
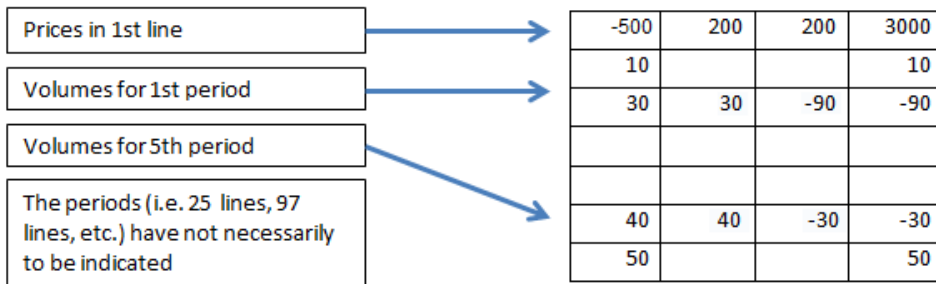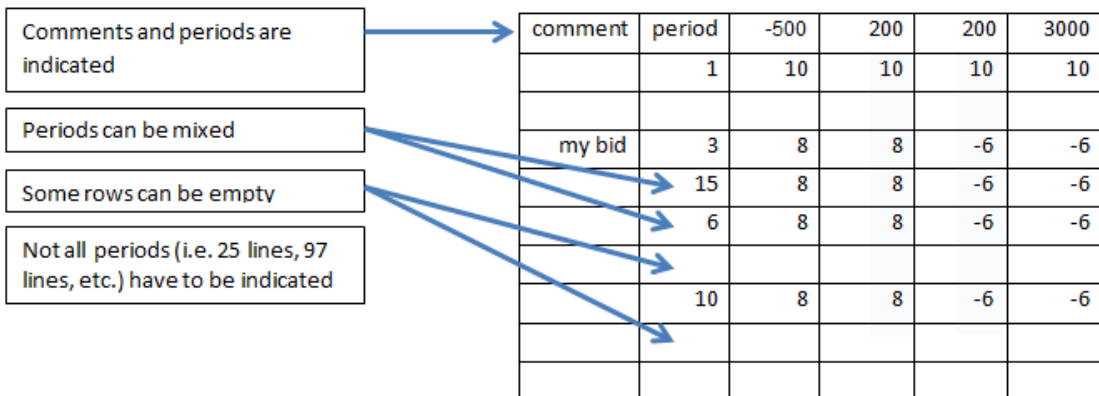
Configuration 3

period	-500	200	200	3000
1	10			10
3	8	8	-6	-6
15	8	8	-6	-6
6	8	8	-6	-6
10	8	8	-6	-6

Configuration 4

comment	-500	200	200	3000
	10			10
my bid	8	8	-6	-6
	8	8	-6	-6
	8	8	-6	-6
	8	8	-6	-6

14.2   Block Bids

Market participants can either enter bids directly into the trading system or paste them in from Excel by using the copy & paste functionality.

Copy/paste operation :
The 1st column must contain a Block Code.
The 2nd column may contain an Id.
The 3rd column must contain a BlockCodePRM for C02, C04 and C88 Bids. For C01 bids the column remains empty.
The 4th column may contain a MAR value. If left empty, the default value of 1.00 (100%) will be inserted after paste. MAR is indicated as a decimal number and not as a percentage to avoid any confusion during the copy paste operation.
        Example: 10% in excel percentage format will paste a value of 0.1; but one can think that a value of 10 should be pasted to indicate 10%...
The 5th column may contain a comment.
The 6th column must contain the price.
Subsequent columns contain Quantities (with at least one volume among them), the periods of the block are not necessarily contiguous.

Check on the copied/pasted grid:

The copied grid must always have 6 columns more as the number of periods for the Area, otherwise it will be rejected.
i.e: 30 for 60-minutes (Hourly), 54 for 30-minutes and 102 for 15-minutes.

A	Block Id	Block Code	Id	BlockCodePRM	MAR	Comment	Price	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1	C01				Standard Bid	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2	175	C01	3			Parent	12	12	12	12	12	12	12	12	12					12	12	12	12	12	12	12					
3	176	C02	4	3		1st Gen Child	11					12	12	12	12					12	12	12	12								
4	177	C02	5	4		2nd Gen Child	10	12	12	12										12	12	12									
5	250	C04	6	2		1st Exclusive	12					12	12	12	12					12	12	12	12								
6	251	C04	7	2		2nd Exclusive	10	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
7		C88	8	6		1st Loop	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
8		C88	9	6		2nd Loop	13	12	12	12	12	12	12	12						12	12	12	12	12	12						
9		C88	10	6		3rd Loop	15					12	12	12	12					12	12	12	12								

Hourly columns

In the examples above, the gray selection is valid for copy/paste action.

Note that it is not possible to update existing Block Bids using the Block Id, this must be done manually.

On Daylight Saving Days there are exceptions:

DST25 - 15min, expected are 106 columns: 96 normal periods + 4 specific DST25 + the 6 first values (Block Code, …)
DST23 - 15min, expected are the same number of columns as of a normal day (96+6 = 102) including 4 empty columns
DST25 - 30min, expected are 56 columns: 48 normal periods + 2 specific DST25 + the 6 first values (Block Code, …)
DST23 - 30min, expected are the same number of columns as of a normal day (48+6 = 54) including 4 empty columns
DST25 - hourly, expected are 30 columns: 24 normal periods + 1 specific DST25 + the 6 first values (Block Code, …)
DST23 - hourly, expected are 30 columns, including 1 empty column

Please refer to your market rules regarding availability of described functions.

14.3 Block Definitions

The **Block Definitions** screen in the User Settings accepts the following Excel paste format:

Name	Show As Index	Sort Index	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
BD 60 AS 1-2 1600	Yes	92	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BD 60 AS 1-2 1601	Yes	93	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BD 60 AS 1-2 1602	Yes	94	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Pasting from Excel does not allow overwriting entries that have the same Sort Index value.

14.4   Complex Bids

Market participants can either enter bids directly into the trading system or paste them in from Excel by using the copy & paste functionality.

- The first line of the import format should always be the labels of the parameters, and the second line the value for each parameter
  a. The order of the parameters is fixed and is defined as follows:
      i. Fixed Term
      ii. Variable Term
      iii. Schedule Stop Periods
      iv. Increase Gradient
      v. Decrease Gradient
  b. The names of the parameters labels can be changed and is no subject to a sanity check

- The "Comment" and "Period" columns are optional: both can be present, only one of them, or none of them
  c. If the columns (or one column) are present, the labels ("Comment" and/or "Period") must be present
  d. The labels of these columns must be "Comment" and "Period" and are subject to a sanity check
  e. The labels "Comment and "Period" are not case sensitive

- The order of the "Comment" and "Period" columns, if both present, can be inverted.

- For DST23, there must be 24 periods, but the 3rd one is ignored.

- For DST 25, there must be 25 periods and all of them are taken into account

Example 1: All columns are present

Fixed Term	Variable Term	Schedule Stop Periods	Increase Gradient	Decrease Gradient
0	0	3		
Comment	Period	-500	3000	
	1	-10	-10	
	2	-10	-10	
	3	-10	-10	
	4	-10	-10	

Example 2: Order of columns "Comment" and "Period" are inverted

Fixed Term	Variable Term	Schedule Stop Periods	Increase Gradient	Decrease Gradient
0	0	3		
Period	Comment	-500	3000	
1		-10	-10	
2		-10	-10	
3		-10	-10	
4		-10	-10	

Example 3: Only the "Comment" column is present

Fixed Term	Variable Term	Schedule Stop Periods	Increase Gradient	Decrease Gradient
0	0	3		
Comment	-500	3000		
	-10	-10		
	-10	-10		
	-10	-10		
	-10	-10		

Example 4: Only the "Period" column is present

Fixed Term	Variable Term	Schedule Stop Periods	Increase Gradient	Decrease Gradient
0	0	3		
Period	-500	3000		
1	-10	-10		
2	-10	-10		
3	-10	-10		
4	-10	-10		

Example 5: None of the columns "Comment" and "Period" are present

Fixed Term	Variable Term	Schedule Stop Periods	Increase Gradient	Decrease Gradient
0	0	3		
-500	3000			
-10	-10			
-10	-10			
-10	-10			
-10	-10			

Example 6: DST23

Fixed Term	Variable Term	Schedule Stop Periods	Increase Gradient	Decrease Gradient
0	0	3		
Comment	Period	-500	3000	
	1	-10	-10	
	2	-10	-10	
	3	-10	-10	
	4	-10	-10	
	5	-10	-10	
	6	-10	-10	
	7	-10	-10	
	8	-10	-10	
	9	-10	-10	
	10	-10	-10	
	11	-10	-10	
	12	-10	-10	
	13	-10	-10	
	14	-10	-10	
	15	-10	-10	
	16	-10	-10	
	17	-10	-10	
	18	-10	-10	
	19	-10	-10	
	20	-10	-10	
	21	-10	-10	
	22	-10	-10	
	23	-10	-10	
	24	-10	-10	

NB: In this example, the 3rd period would be ignored

Example 7: DST25

Fixed Term	Variable Term	Schedule Stop Periods	Increase Gradient	Decrease Gradient
0	0	3		
Comment	Period	-500	3000	
	1	-10	-10	
	2	-10	-10	
	3	-10	-10	
	4	-10	-10	
	5	-10	-10	
	6	-10	-10	
	7	-10	-10	
	8	-10	-10	
	9	-10	-10	
	10	-10	-10	
	11	-10	-10	
	12	-10	-10	
	13	-10	-10	
	14	-10	-10	
	15	-10	-10	
	16	-10	-10	
	17	-10	-10	
	18	-10	-10	
	19	-10	-10	
	20	-10	-10	
	21	-10	-10	
	22	-10	-10	
	23	-10	-10	
	24	-10	-10	
	25	-10	-10	

14.5   Reasonable Control Parameters

The **Reasonable Control Parameters** screen accepts the following Excel paste format:

Area	Portfolio	Duration	Volume difference at Pmin	Volume difference at Pmax	Order side change at Pmin	Order side change at Pmax	Compare With
Area 1	Portfolio Trader	60 min	-500	3000	alert	no check	21
Area 11	Portfolio Trader	15 min	-500	3000	alert	no check	21
Area 11	Portfolio Trader	30 min	-500	3000	alert	no check	21
Area 11	Portfolio Trader	60 min	-500	3000	alert	no check	21
Area 12	Portfolio Trader	15 min	-500	3000	alert	no check	21
Area 12	Portfolio Trader	30 min	-500	3000	alert	no check	21
Area 12	Portfolio Trader	60 min	-500	3000	alert	no check	21
Area 2	Portfolio Trader	60 min	-500	3000	alert	no check	21
Area 21	Portfolio Trader	15 min	-500	3000	alert	no check	21
Area 21	Portfolio Trader	30 min	-500	3000	alert	no check	21
Area 21	Portfolio Trader	60 min	-500	3000	alert	no check	21
Area 22	Portfolio Trader	15 min	-500	3000	alert	no check	21
Area 22	Portfolio Trader	30 min	-500	3000	alert	no check	21
Area 22	Portfolio Trader	60 min	-500	3000	alert	no check	21

Please note that the copy-paste should not contain the title bar.

Pasting from Excel does not allow overwriting entries that have the same Area/Portfolio combination.

Chapter 15

Appendix G, Daylight Saving Time

Chapter 15   Appendix G, Daylight Saving Time

This chapter is specified for the **Central European Time Zone (CET)**.

In March and October each year, the change between summer and winter time is made.

For Central Europe, this means that at 02.00 hours, last Sunday of March, an hour is removed from the day.
For Central Europe, this means that at 02.00 hours, last Sunday of October, an hour is added to the day.

This does create a number of issues with creating and handling bids for these days.

15.1 March Short Day (Summer)

On the short March day, the period from 02.00 to 03.00 hours cannot be entered, because the hour does not exist.

In EPEX Spot Trader Client this non-existent hour is indicated by grayed out row(s) or column(s), which is (are) not writable.

Paste from Excel:
The obsolete hour in March will be left blank, and is further ignored.
The normal Linear Excel paste templates can be used, the obsolete period(s) for this hour are automatically left out.

15.1.1 Linear / Complex

In March for the 23 hour day the missing hour will be displayed as below:

Comment	Period	-4,000.00	4,000.00
	17 - 18		
	18 - 19		
	19 - 20		
	20 - 21		
	21 - 22		
	22 - 23		
	23 - 00		
	00 - 01		
	01 - 02		
	03 - 04		
	04 - 05		

Hourly

For 15 minute products each quarter of the missing hour will have its own row, grayed out.

Comment	Period	-4,000.00	4,000.00
	01:00 - 01:15		
	01:15 - 01:30		
	01:30 - 01:45		
	01:45 - 02:00		
	03:00 - 03:15		
	03:15 - 03:30		
	03:30 - 03:45		
	03:45 - 04:00		

15 minute

For 30 minute products each half hour of the missing hour will have its own row, grayed out.

Comment	Period	-4,000.00	4,000.00	
	23:30 - 00:00			
	00:00 - 00:30			
	00:30 - 01:00			
	01:00 - 01:30			
	01:30 - 02:00			
	03:00 - 03:30			
	03:30 - 04:00			
	04:00 - 04:30			
	04:30 - 05:00			
	05:00 - 05:30			

30 minutes

If Submitting Several Days, including the March DST day, then all normal days are handled normally, and the DST day will ignore the value(s) for the missing hour.

In case of more periods for the non-existing hour, all these periods will be grayed out.

15.1.2   Block

In March for the 23 hour day there will be a total of 24 hours in periods but the 'missing' hour will be empty and cannot be filled.

First Period: 2018-03-24-14:00 cet / Last Period: 2018-03-25-13:00 cet

Block Id	BlockCode	Id	BlockCodePRM	Comment	Price	Total	1	2	3	4	5	6	7	8	9	10	11	12		14
▶	C01 ⌄					0														

Hourly

First Period: 2018-03-24-14:00 cet / Last Period: 2018-03-25-13:30 cet

5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			27	28	29	30	31	32	33	34

30 minute

First Period: 2018-03-24-14:00 cet / Last Period: 2018-03-25-13:45 cet

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48			53	54	55	56	57	58	59	60

15 minute

Submitting Block Bids using Block Definitions will take the missing periods into account.

The missing periods will be left blank, and cannot be filled.

15.1.3   Market Results

In March for the 23 hour day the 'missing' periods for the hour will be offered as gray line(s) in the Market Results overview.

Exports to Excel or *.csv* will not include the missing period(s).

Please refer to your market rules regarding availability of the 15 and/or 30 minute functionality.

15.2   October Long Day (Winter)

On the long October day, the period(s) from 02.00 to 03.00 hours exist(s) twice.

In EPEX Spot Client the double existent hour is indicated by an extra row(s) or column(s), which can contain either duplicated values of each other, or contain independent values.

Duplicate Long Day Hour:
If enabled, this means that entering values in period(s) in one of these two hours will automatically apply the same values to the period(s) of the other hour.

If disabled, this means that entering values in period(s) in one of these two hours will only apply to the period(s) of the entered hour. The period(s) of the other hour have separate values.

Paste from Excel:

A normal 24 hour Excel paste template will no longer result in a 25 hour filled bid, but will return an invalid paste error.
A full 25 hour Excel paste template is needed for both an independent and a duplicated long day, with all periods in the double hour having their own values.
For a duplicated long day hour, the values for all periods in the double hour must be the same however.

This is also true of course for all periods in these hours.

15.2.1   Linear / Complex

In October for the 25 hour day there will be a total of 25 periods.

Comment	Period	-4,000.00	4,000.00	
	15 - 16			
	16 - 17			
	17 - 18			
	18 - 19			
	19 - 20			
	20 - 21			
	21 - 22			
	22 - 23			
	23 - 00			
	00 - 01			
	01 - 02			
	02 - 03			
	02X - 03X			
	03 - 04			

60 minutes

For 15 minute products each quarter of the duplicate hour will have its own row, with the periods indicated with an 'x'.

Comment	Period	-4,000.00	4,000
	02:00 - 02:15		
	02:15 - 02:30		
	02:30 - 02:45		
	02:45 - 03:00		
	02:00X - 02:15X		
	02:15X - 02:30X		
	02:30X - 02:45X		
	02:45X - 03:00X		
	03:00 - 03:15		
	03:15 - 03:30		
	03:30 - 03:45		
	03:45 - 04:00		
	04:00 - 04:15		
	04:15 - 04:30		

15 minutes

For 30 minute products each half hour of the duplicate hour will have its own row, with the periods indicated with an 'x'.

Comment	Period	-4,000.00	4,000
	01:00 - 01:30		
	01:30 - 02:00		
	02:00 - 02:30		
	02:30 - 03:00		
	02:00X - 02:30X		
	02:30X - 03:00X		
	03:00 - 03:30		
	03:30 - 04:00		
	04:00 - 04:30		
	04:30 - 05:00		
	05:00 - 05:30		
	05:30 - 06:00		
	06:00 - 06:30		
	06:30 - 07:00		

30 minutes

Duplicate DST hour:
If Submitting Several Days, including the October DST day, then all normal days are handled normally, and the DST day will insert a copy of the values of the periods from the 'parent hour into the 'X' hour.

Independent DST hour:
Submitting Several Days, including the October DST day, is not possible. A warning message 'Orders Submission for several days is not possible because one of the Delivery Days is a Long DST Day' is presented if this is attempted.

15.2.2   Block

In October for the 25 hour day there will be a total of 25 hours in periods.
The extra hour is no longer specifically indicated; the extra hour is only displayed as extra period(s) on the day.

Submitting Block Bids using Block Definitions will take the extra hour into account.

If Duplicate Long Hour is enabled for the Market Area, the period(s) for the extra hour will automatically be filled with a copy of the value of the corresponding period(s) of the 'actual' hour.
If Duplicate Long Hour is NOT enabled for the Market Area, the period(s) for the extra hour must be normally filled with it's own value, independent of the corresponding period(s) of the 'actual' hour.
Please refer to the Market Rules which of the above is available.

No screenshots are available, since these would be identical to a 'normal' day.

15.2.3   Market Results

In October for the 25 hour day the 'extra' period(s) will be offered in the Market Results overview. There will therefore be 25 hours in periods in the Market Results.

Exports to Excel or *.csv* will also include the extra period(s).

Please refer to your market rules regarding availability of the 15 and/or 30 minute functionality.

Period (CET)	MCP	MCV	Total Schedule Net	Purchase	Sale	Linear Schedule Net	Purchase	Sale	Block Schedule Net	Purchase	Sale	Comp Net
11 - 12	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
12 - 13	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
13 - 14	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
14 - 15	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
15 - 16	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
16 - 17	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
17 - 18	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
18 - 19	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
19 - 20	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
20 - 21	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
21 - 22	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
22 - 23	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
23 - 00	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
00 - 01	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
01 - 02	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
02 - 03	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
02X - 03X	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
03 - 04	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
04 - 05	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
05 - 06	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
06 - 07	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
07 - 08	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
08 - 09	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
09 - 10	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
10 - 11	400.000	0	-24	12	36	12	12	0	-12	0	12	-24
Sum/Avg	400.000	0	-600	300	900	300	300	0	-300	0	300	-600
BD 60 AS 1/2 10:00	400.000	0	-600	300	900	300	300	0	-300	0	300	-600

These results are Final

Chapter 16

Appendix H, Trade Reports Export Files (.xml)

Chapter 16   Appendix H, Trade Reports Export Files (.xml)

Introduction

This XML report contains an inventory of order/trade information of (portfolio, area) combinations for which the user has read or read write rights.

Please refer to your market rules regarding availability of described functions.

16.1   File Content

File name/ format

If 'XML Export Single' is selected in Market Results screen:

Name	<auction date time>_TradeReport_<Shortname participant>_<area set>_<auction name>
Format	XML ZIP file containing generated XML Member report Encoding for the xml file = <?xml version="1.0" encoding="UTF-8"?>

If 'XML Export All' is selected in Market Results screen:

Name	<auction date time>_TradeReport_<Shortname exchange>_<area set>_<auction name>
Format	XML ZIP file containing generated XML Member report Encoding for the xml file = <?xml version="1.0" encoding="UTF-8"?>

[Auction date time]: auction date time (format: YYYYMMDDhhmmss) in GMT

[Shortname]: Shortname of the market participant in case of 'XML Export Single'; Shortname of the exchange linked to the area set in case of 'XML Export All'

[area set]: name of the area set

[auction name]: name of the auction

File content

Element	Data Type	Card.	Content
AreaSetName	String	[1..1]	Name of the area set
AuctionName	String	[1..1]	Auction name
AuctionDateTime	DateTime	[1..1]	Auction date time in the "YYYY-MM-DDTHH24:MI:SSZ" format
MarketArea	Group	[1..n]	List of market areas of the area set
+MarketAreaName	String	[1..1]	Market area name
+MarketAreaIndex	Group	[0..n]	
++DeliveryStart	DateTime	[1..1]	Delivery start of the period in the "YYYY-MM-DDTHH24:MI:SSZ" format
++DeliveryEnd	DateTime	[1..1]	Delivery end of the period in the "YYYY-MM-DDTHH24:MI:SSZ" format
++PriceIndex	Group	[1..n]	Price index is indicated for all settlement, trade limit and auction currencies available at the level of the area set
+++Currency	String	[1..1]	Currency name
+++Price	Decimal	[1..1]	Price index value The value is reported with the number of decimal places of the price tick plus one extra decimal place
++VolumeIndex	Decimal	[1..1]	Quantity index The value is reported with the number of decimal places of the volume tick
+TradeArea	Group	[0..n]	If the member(s) do not have any active order for the considered auction session, then this tag will not appear (omitted) In case of Non Market Participant user this tag will not appear (omitted) The group will be processed in descending area name order
++AreaName	String	[1..1]	Area name
++AreaTimeZone	String	[1..1]	Time zone of the area
++MemberDetail	Group	[1..n]	The group will be processed in descending participant shortname order
+++MemberName	String	[1..1]	Participant shortname to whom the portfolios belong
+++Order	Group	[1..n]	First linear orders, then complex orders, then block orders The group will be processed in ascending order ID, with order ID as defined in §2.3

Element	Data Type	Card.	Content
			Only active orders for the considered auction sessionare reported
++++OrderID	Integer	[1..1]	Order ID as defined in §2.3
++++Portfolio	String	[1..1]	Portfolio name
++++OrderType	String	[1..1]	Type of the order; either "Linear" or "Complex" or "Block"
++++OrderEntryTime	DateTime	[1..1]	Order entry time in "YYYY-MM-DDTHH24:MI:SSZ" format
++++OrderEntryUser	String	[1..1]	Trader ID as defined in §2.1
++++SettlementCurrency	String	[0..1]	Settlement currency
++++BlockOrderDetails	Group	[0..n]	This tag will appear only if OrderType is "Block"
+++++Price	Decimal	[1..1]	Block price limit in settlement currency
+++++AverageMCP	Decimal	[1..1]	Weighted average MCP over the periods of the considered block, in the settlement currency The value is reported with the number of decimal places of the price tick plus one extra decimal place
+++++MAR	Decimal	[1..1]	Value of minimum acceptance ratio
+++++AAR	Decimal	[1..1]	Value of actual acceptance ratio
+++++Status	String	[1..1]	Execution status: "Executed" or "Rejected"
+++++BlockCode	String	[1..1]	C01 for normal block, C02 for linked block, C04 for exclusive block, C88 for loop block
+++++BlockCodePRM	String	[0..1]	If "BlockOrderType" = C01 : the tag is omitted If "BlockOrderType" = C02 : The "BlockCodePRM" field corresponding to this BlockOrderType will be : - A number "OrderID": If this Block has one parent. This field contains the OrderID of its parent - Several numbers "OrderID": If this Block has several parents. This field contains the OrderID of all its parent, separated by the "_" character between each OrderID If "BlockOrderType" = C04: The "BlockCodePRM" field corresponding to this BlockCode will be an "Exclusive Group" ID generated by ETS server. It will be unique and the same for all contents blocks in this group If "BlockOrderType" = C88: The "BlockCodePRM" field corresponding to this BlockCode will be an "Loop family" ID generated by ETS server. It will be unique and the same for all contents blocks in this group
+++++Paradoxically	String	[1..1]	"No" or "PRB" or "PAB with child"

Element	Data Type	Card.	Content
++++ComplexOrderDetails	Group	[0..n]	This tag will appear only if OrderType is "Complex"
+++++Fixed_Term	Decimal	[0..1]	Not used yet
+++++Variable_Term	Decimal	[0..1]	Not used yet
+++++Increase_Gradient	Decimal	[0..1]	Not used yet
+++++Decrease_Gradient	Decimal	[0..1]	Not used yet
+++++Schedule_Stop	Integer	[0..1]	Not used yet
+++++Paradoxically	Integer	[1..1]	Value of Paradoxically Rejected (1 – paradoxically rejected / 0 – not paradoxically rejected)
+++++Activation	Integer	[1..1]	Value of Activation (1 – Accepted / 0 – Rejected)
++++Period	Group	[1..n]	The group is processed in ascending Delivery Start
+++++OrderPeriodID	Integer	[1..1]	ID for a period of the order (see §2.2 and §2.4)
+++++TradeID	Integer	[1..1]	ID of the trade ; same value as OrderPeriodID
+++++DeliveryStart	DateTime	[1..1]	Delivery Start in the "YYYY-MM-DDTHH24:MI:SSZ" format
+++++DeliveryEnd	DateTime	[1..1]	Delivery End in the "YYYY-MM-DDTHH24:MI:SSZ" format
+++++MarketClearingPrice	Decimal	[1..1]	Market clearing price in settlement currency The value is reported with the number of decimal places of the price tick plus one extra decimal place
+++++ExecutedVolume	Decimal	[1..1]	Executed volume The value is reported with the number of decimal places of the volume tick
+++++Curve	Group	[0..1]	Not used yet
++++++CurvePoint	Group	[2..n]	Not used yet
+++++++Price	Decimal	[1..1]	Not used yet Submitted price in settlement currency
+++++++Volume	Decimal	[1..1]	Not used yet Submitted volume
+++++Volume	Decimal	[0..1]	Block order submitted volume This tag will appear only if OrderType is "Block"

Chapter

17

Appendix I, Market Results Export File (.csv)

Chapter 17   Appendix I, Market Results Export File (.csv)

Introduction

This report contains an inventory of a participant's Trades that have been executed in ETS during an Auction. This report is generated at the Auction level.

Please refer to your market rules regarding availability of described functions.

17.1   File Content

File name/ format

If 'CSV Export Single' is selected in Market Results screen:

Name	[auction date time]_MarketResult_[Shortname participant]_[area set]_[auction name]
Format	CSV

If 'CSV Export All' is selected in Market Results screen:

Name	[auction date time]_MarketResult_[Shortname exchange]_[area set]_[auction name]
Format	CSV

[Auction date time]: auction date time (format: YYYYMMDDhhmmss) in GMT

[Shortname]: Shortname of the market participant in case of 'CSV Export Single'; Shortname of the exchange linked to the area set in case of 'CSV Export All'

[area set]: name of the area set

[auction name]: name of the auction

File content

Auction information

<u>Line 1</u>

Col. Number	Type	Description
1	Char(8)	"Area set"
2	Char(40)	Name of the area set

<u>Line 2</u>

Col. Number	Type	Description
1	Char(12)	"Auction name"
2	Char(30)	Name of the auction (e.g. Intraday morning, Intraday afternoon...)

<u>Line 3</u>

Col. Number	Type	Description
1	Char(17)	"Auction date time"
2	DateTime	Auction date time in GMT: YYYY-MM-DDThh:mm:ssZ

FX rate information

Header

FX rate header is always displayed, even if there is no FX rate defined for the area set

<u>Line 1</u>

Col. Number	Type	Description
1	Char(8)	"FX rates"

For each FX rate, following line is written. FX rate is indicated only from auction currency to settlement currency:

<u>Line 1</u>

Col. Number	Type	Description
1	Char(3)	Value of Currency From: "EUR", "GBP"…
2	Char(3)	Value of Currency To: "EUR", "GBP"…
3	Number(16,8)	Value of currency rate applied to the specific auction; usually currency will be have 4 decimal places

Results per period duration

Results for each period duration: index information, area executed quantity information, block executed quantity information, complex order executed quantity information

Header

Col. Number	Type	Description
1	Char(15)	"Period duration"
2	Char(3)	Period duration in minute: "15", "30", "60"

Index information

Index information is indicated for the auction currency and for the settlement currencies of the area set. Index price is reported with the number of decimal places of the price tick plus one extra decimal place.

Line 1

Col. Number	Type	Description
1	Char(11)	"Market area"
2	Char(40)	Market area shortname (e.g. "DE-AU", "FR")
…		*Completed as long as there are indexes in the area set*

Line 2

Col. Number	Type	Description
2	Char(21)	"Price index (<currency>/MWh)" <currency>: auction currency for the area set ("EUR", "GBP"…)
3	Char(21)	"Price index (<currency>/MWh)" <currency>: settlement currency used for the area set ("EUR", "GBP"…) Price index must not be reported two times with the same currency, i.e. If settlement currency and auction currency are identical then price index for that particular currency must be reported only once
…		*Completed as long as there are settlement currencies to be reported*
3 (or greater)	Char(17)	"Volume index (MW)"
…		*Completed as long as there are indexes in the area set*

Line 3 → n

Col. Number	Type	Description
1	DateTime	Period date time delivery start in GMT: YYYY-MM-DDThh:mm:ssZ

2	Number(15,5)	Value of the price index in the auction currency
3	Number(15,5)	Value of the price index in the settlement currency
…		*Completed as long as there are settlement currencies to be reported*
3 (or greater)	Number(10,4)	Value of the volume index
…		*Completed as long as there are indexes in the area set*

Note: the number of lines changes in case of long clock change and short clock change

Line n+1

Col. number	*Type*	*Description*
1	Char(9)	"Sum / Avg"
2	Number(15,5)	Average of price indexes over all the time steps
3	Number(10,4)	Sum of volume index over all the time steps
…		*Completed as long as there are indexes in the area set*

Area executed quantity information

These lines have to be repeated for each area of the area set for which the participant is enabled to trade.

In case the user has R or RW access to portfolios belonging to several participants, and the user has selected 'CSV Export All', then 'Area executed quantity information' is repeated for each participant for which the user has R or RW access.

Line 1

Col. Number	Type	Description
1	Char(40)	Area name
4 (or greater)	Char(23)	"Participant: " [Participant name] Example: "Participant: ACCORD"
16 (or greater)	Char(43)	"Portfolio: " [Participant portfolio] Example: "Portfolio: ACCORD-T1"
…		Completed as long as the participant has portfolios for this area

Line 2

Col. number	Type	Description
4 (or greater)	Char(12)	"Total sched."
7 (or greater)	Char(13)	"Linear sched."
10 (or greater)	Char(12)	"Block sched."
13 (or greater)	Char(14)	"Complex sched."
…		Completed as long as the participant has portfolios for this area

Line 3

2	Char(13)	"MCP (<currency>/MWh)"

		<currency>: auction currency for the area set ("EUR", "GBP"…)
3	Char(13)	"MCP (<currency>/MWh)" <currency>: settlement currency for the area set ("EUR", "GBP"…) Value must not be reported two times with the same currency, i.e. If settlement currency and auction currency are identical then value for that particular currency must be reported only once
…		*Completed as long as there are settlement currencies to be reported*
3(or greater)	Char(8)	"MCV (MW)"
4(or greater)	Char(3)	"Net" for Total Schedule
5(or greater)	Char(8)	"Purchase" for Total Schedule
6(or greater)	Char(4)	"Sale" for Total Schedule
7(or greater)	Char(3)	"Net" for Linear Schedule
8(or greater)	Char(8)	"Purchase" for Linear Schedule
9(or greater)	Char(4)	"Sale" for Linear Schedule
10(or greater)	Char(3)	"Net" for Block Schedule
11(or greater)	Char(8)	"Purchase" for Block Schedule
12(or greater)	Char(4)	"Sale" for Block Schedule
13(or greater)	Char(3)	"Net" for Complex Schedule
14(or greater)	Char(4)	"Purchase" for Complex Schedule
15(or greater)	Char(3)	"Sale" for Complex Schedule
…		Completed as long as the participant has portfolios for this area

<u>Line 4 → n</u>

Col. number	Type	Description
1	DateTime	Period date time delivery start in GMT: YYYY-MM-DDThh:mm:ssZ
2	Number(15,5)	Market clearing price for the considered time step in auction currency
3	Number(15,5)	Market clearing price for the considered time step in settlement currency
…		*Completed as long as there are settlement currencies to be reported*
3(or greater)	Number(10,4)	Market clearing volume for the considered time step
4(or greater)	Number(10,4)	Col 5 - Col 6
5(or greater)	Number(10,4)	Col 8 + Col 11 + Col 14
6(or greater)	Number(10,4)	Col 9 + Col 12 + Col 15
7(or greater)	Number(10,4)	Col 8 - Col 9
8(or greater)	Number(10,4)	Sum of purchase executed quantity for interpolated order over all the portfolios (positive value)
9(or greater)	Number(10,4)	Sum of sell executed quantity for interpolated order over all the portfolios (negative value)
10(or greater)	Number(10,4)	Col 11 - Col 12
11(or greater)	Number(10,4)	Sum of purchase executed quantity for block order over all the portfolios (positive value)
12(or greater)	Number(10,4)	Sum of sell executed quantity for block order over all the portfolios (negative value)

Col. number	Type	Description
13(or greater)	Number(10,4)	Col 14 - Col 15
14(or greater)	Number(10,4)	Sum of purchase executed quantity for complex order over all the portfolios (positive value)
15(or greater)	Number(10,4)	Sum of sell executed quantity for complex order over all the portfolios (negative value)
…		To be completed as long as the participant has portfolios for this area

Note: the number of lines changes in case of long clock change and short clock change

<u>Line n+1</u>

Col. number	Type	Description
1	Char(9)	"Sum / Avg"
2	Number(15,5)	Average of MCP over all the time steps (auction currency)
3	Number(15,5)	Average of MCP over all the time steps (settlement currency)
…		*Completed as long as there are settlement currencies to be reported*
3(or greater)	Number(10,4)	Sum of MCV over all the time steps
4(or greater)	Number(10,4)	Sum over all the time steps
5(or greater)	Number(10,4)	Sum over all the time steps
6(or greater)	Number(10,4)	Sum over all the time steps
7(or greater)	Number(10,4)	Sum over all the time steps
8(or greater)	Number(10,4)	Sum over all the time steps

9(or greater)	Number(10,4)	Sum over all the time steps
10(or greater)	Number(10,4)	Sum over all the time steps
11(or greater)	Number(10,4)	Sum over all the time steps
12(or greater)	Number(10,4)	Sum over all the time steps
13(or greater)	Number(10,4)	Sum over all the time steps
14(or greater)	Number(10,4)	Sum over all the time steps
15(or greater)	Number(10,4)	Sum over all the time steps
…		Completed as long as the participant has portfolios for this area

Line n+2 → m

For each Baseload, Peakload, Off-Peak 1, Off-Peak 2, Off-Peak, and the block orders defined by the user in the Block Definitions Settings as 'Show as Index', following line is created:

Col. number	Type	Description
1	Char(40)	Block name; e.g. "01-24 (Baseload)"
2	Number(15,5)	Average of MCP over the time steps of the block (auction currency)
3	Number(15,5)	Average of MCP over the time steps of the block (settlement currency)
…		*Completed as long as there are settlement currencies to be reported*
3(or greater)	Number(10,4)	Sum of MCV over the time steps of the block
4(or greater)	Number(10,4)	Sum over the time steps of the block

5(or greater)	Number(10,4)	Sum over the time steps of the block
6(or greater)	Number(10,4)	Sum over the time steps of the block
7(or greater)	Number(10,4)	Sum over the time steps of the block
8(or greater)	Number(10,4)	Sum over the time steps of the block
9(or greater)	Number(10,4)	Sum over the time steps of the block
10(or greater)	Number(10,4)	Sum over the time steps of the block
11(or greater)	Number(10,4)	Sum over the time steps of the block
12(or greater)	Number(10,4)	Sum over the time steps of the block
13(or greater)	Number(10,4)	Sum over the time steps of the block
14(or greater)	Number(10,4)	Sum over the time steps of the block
15(or greater)	Number(10,4)	Sum over the time steps of the block
…		Completed as long as the participant has portfolios for this area

Block order information

Line 1

Col. number	Type	Description
1	Char(4)	"Area"
2	Char(9)	"Portfolio"
3	Char(8)	"Block id"
4	Char(3)	"MAR"
5	Char(3)	"AAR"
6	Char(9)	"BlockCode"
7	Char(12)	"BlockCodePRM"
8	Char(7)	"Comment"
9	Char(6)	"Status"
10	Char(13)	"Paradoxically"
11	Char(16)	"av MCP (<currency>/MWh)" <currency>: auction currency of the area set
12	Char(16)	"av MCP (<currency>/MWh)" <currency>: settlement currency for the area set ("EUR", "GBP"…) Value must not be reported two times with the same currency, i.e. If settlement currency and auction currency are identical then value for that particular currency must be reported only once
…		*Completed as long as there are settlement currencies to be reported*
12(or greater)	Char(5)	"Price"

13(or greater)	Char(8)	"Currency"
14(or greater) → n	DateTime	Period date time delivery start in GMT: YYYY-MM-DDThh:mm:ssZ Due to clock change, the number of columns may be variable (e.g. in case of 60min day ahead auction for DST 23, the number of columns is 23)

Line 2 → n

Col. Number	Type	Description
1	Char(40)	Area name
2	Char(32)	Portfolio name ; all portfolios for which the user has R or RW access; the portfolios do not belong necessarily to the same participant
3	Number(10,0)	Value of Block ID
4	Number(3,2)	Value of minimum acceptance ratio (default: 1)
5	Number(6,5)	Value of actual acceptance ratio (default: 0 rejected / 1 accepted)
6	Char(3)	According to block type's, the code is different: • C01 for normal block • C02 for Linked block • C04 for Exclusive block
7	Char	The "BlockCodePRM" column will contain parameters for linked,exclusive and flexible blocks depending on the BlockCode of each Block entered: • "BlockCode" = C01 : The "BlockCodePRM" field corresponding to this BlockCode will be empty (N/A) • "BlockCode" = C02 : The "BlockCodePRM" field corresponding to this BlockCode will be : o A number "Block ID": If this Block has one parent. This field contains the Block ID number of its parent

		o Several numbers "Block ID": If this Block has several parents. This field contains the Block ID number of all its parent, separated by the "_" character between each Block ID number • "BlockCode" = C04: The "BlockCodePRM" field corresponding to this BlockCode will be an "Exclusive Group" ID generated by ETS server. It will be unique and the same for all contents blocks in this group
8	Char(30)	Comment for the block
9	Char(8)	"Executed" or "Rejected"
10	Char(14)	"No" or "PRB" or "PAB with child"
11	Number(15,5)	Value of average MCP over the periods of the considered block (in the auction currency) The value is reported with the number of decimal places of the price tick plus one extra decimal place
12	Number(15,5)	Value of average MCP over the periods of the considered block (in the settlement currency) The value is reported with the number of decimal places of the price tick plus one extra decimal place
…		*Completed as long as there are settlement currencies to be reported*
12(or greater)	Number(15,5)	Value of block order price (as submitted by member, no conversion to auction currency is made)
13(or greater)	Char(3)	Value of the settlement currency for the considered (portfolio, area) combination, e.g. EUR, GBP
14(or greater) → m	Number(10,4)	Value of block quantity for the given time step Due to clock change, the number of columns may be variable (e.g. in case of 60min day ahead auction for DST 23, the number of columns is 23)

Note: the number of lines depends on the number of blocks that have been submitted.

Line n+1

Col. number	*Type*	*Description*

13 (or greater)	Char(3)	"Sum"
14 (or greater)→ m	Number(10,4)	Sum over all the blocks

Complex order information

<u>Line 1</u>

Col. number	Type	Description
1	Char(4)	"Area"
2	Char(9)	"Portfolio"
3	Char(22)	"Paradoxically rejected"
4	Char(10)	"Activation"

<u>Line 1 → n</u>

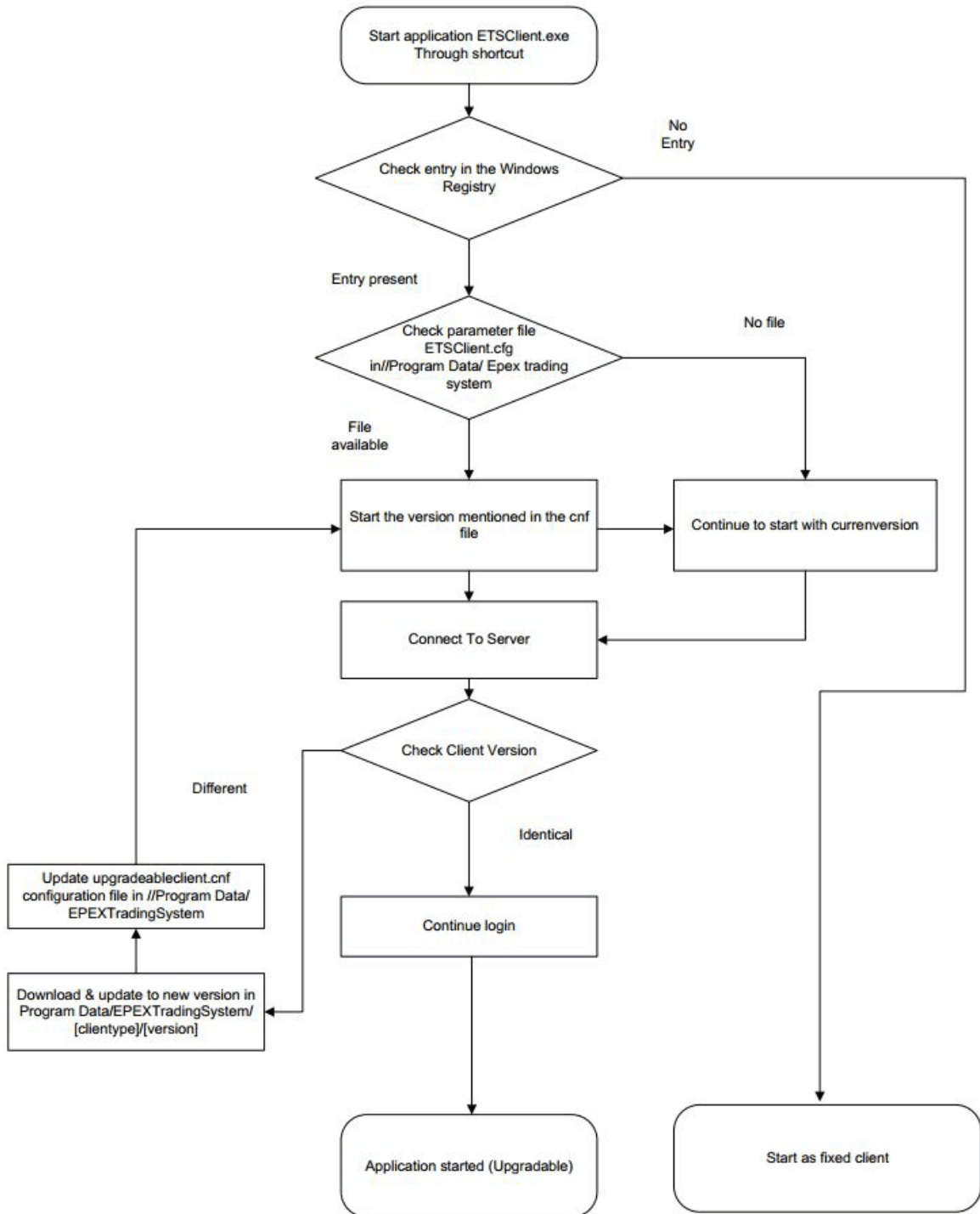| Col. number	Type	Description
1	Char(40)	Area name
2	Char(32)	Portfolio name; all portfolios for which the user has R or RW access; the portfolios do not belong necessarily to the same participant
3	Number(1,0)	Value of Paradoxically Rejected (1 – paradoxically rejected / 0 – not paradoxically rejected)
4	Number(1,0)	Value of Activation (1 – Accepted / 0 – Rejected)

Note: the number of lines depends on the number of complex orders that have been submitted.

Chapter 18

Appendix J, Upgrade Schematic

Chapter 18   Appendix J, Upgrade Schematic

```
                    ┌─────────────────────────┐
                    │ Start application        │
                    │ ETSClient.exe            │
                    │ Through shortcut         │
                    └─────────────────────────┘
                                │
                                ▼
                         Check entry in the        No
                         Windows Registry       ──────── Entry
                                │
                         Entry present
                                │
                                ▼
                         Check parameter file      No file
                         ETSClient.cfg          ────────
                         in//Program Data/ Epex
                         trading system
                                │
                         File available
                                │
                                ▼
              ┌────────────────────────┐   ┌──────────────────────────┐
              │ Start the version      │──▶│ Continue to start with   │
              │ mentioned in the cnf   │   │ currenversion            │
              │ file                   │   └──────────────────────────┘
              └────────────────────────┘
                                │
                                ▼
                    ┌─────────────────────┐
                    │ Connect To Server   │◀──
                    └─────────────────────┘
                                │
                                ▼
                         Check Client Version
                                │
      Different                 │
                         Identical
                                │
                                ▼
  ┌─────────────────────┐  ┌──────────────────┐
  │ Update              │  │ Continue login   │
  │ upgradeableclient.cnf│  └──────────────────┘
  │ configuration file  │
  │ in //Program Data/  │
  │ EPEXTradingSystem   │
  └─────────────────────┘
  ┌─────────────────────┐
  │ Download & update   │
  │ to new version in   │
  │ Program Data/       │
  │ EPEXTradingSystem/  │
  │ [clientype]/[version]│
  └─────────────────────┘
                                │
                                ▼
                    ┌─────────────────────────┐   ┌──────────────────────┐
                    │ Application started      │   │ Start as fixed client│
                    │ (Upgradable)             │   └──────────────────────┘
                    └─────────────────────────┘
```

Chapter 19

Appendix K, Average MCP for Block

Chapter 19   Appendix K, Average MCP for Block

$$avMCP_{b,curr} = Round\left(\frac{\sum_{h \in H_b} q_{h,b} * Round\left(MCP\_Unrounded_{h,a}.ConvertTo(curr); K_p + 1\right)}{\sum_{h \in H_b} q_{h,b}}; K_p + 1\right)$$

With:

curr: the considered currency

If the prices are the same within the market area of block b

Area a is the area which comes first in alphabetic order in the market area of block b

If the prices are different within the market area of block b

Area a is the area of block b

Remark: submitted quantity and not executed quantity is considered to calculate avMCP. The reason is:

- curtailable block may receive rounding deviation for specific period(s): this leads to a different value of avMCP if it is calculated from executed volume or submitted volume

- EUPHEMIA/PMB provides the PRB status without knowing the allocated rounded deviation.

Chapter 20

Appendix L, Keyboard usage

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Focus shifting ('tabbing'):

- The Tab key is used to switch keyboard focus between widgets in a window. Tab for forward motion and Shift+Tab for reverse motion.
Exception: some widgets need to interpret Tab and Shift+Tab internally, such as a text editor widget. In such cases Ctrl+Tab and Ctrl+Shift+Tab can be used.
- Circular: 'Tabbing' through the widgets should result in a circular pattern: when focus is at at the last/first widget in the window the next Tab/Shift+Tab keystroke should take you to the first/last widget in the window.
- Skipping: not all widgets are reachable by tabbing, for example: temporarily invisible widgets, or disabled widgets are skipped. Some widgets can be explicitly programmed by the application designer to always be skipped.

Default Actions:

- Hitting the 'Return' key may invoke a 'default action' on one of the widgets (usually an 'accept' button) regardless of whether that widget has keyboard focus or not.
- The presence or absence of such a default action is decided by the application designer.
- Some widgets that need to interpret the Return key (such as a text editor) can 'eat' the default action while they have keyboard focus

Escape:

- The 'Escape' key is used to abort an edit by a widget. For an input field it resets it to its initial value, for combo box pull-down menus it re-selects the original value, etc.

Widgets:

- Action button
  - 'Space' performs button press action
  - 'Return' performs button press action (if no 'default action' is defined on this application window).
  - A shortcut character may be defined (made visible by an underscore) on the label 'Alt'+this character will activate this button even when it does not have the keyboard focus.

- Binary indicator (check box, expander button)
  - 'Space' performs button press action
  - 'Return' performs button press action (if no 'default action' is defined on this application window).

- Radio button
  - 'Space' performs button press action.
  - 'Return' performs button press action (if no 'default action' is defined on this application window).

- Input field
  - typing of normal characters will insert (replace selection) with them
  - Return accepts (sets) current value, Esc reverts it to original.
  - Left/Right arrow moves cursor by 1 character
  - Ctrl+Left/Right move cursor by 1 word
  - Home/End ArrowUp/Down move cursor to begin/end
  - Shift+ArrowLeft/Right selects characters
  - Ctrl+Shift+ArrowLeft/Right selects words
  - Shift+Home/End selects to begin/end
  - Ctrl+C copy selection
  - Ctrl+X cut selection

- o Ctrl+V paste over selection
- o Ctrl+Z undo
- o Ctrl+Y redo
- o Ctrl+Delete delete next word
- o Ctrl+Backspace delete previous word
- o Ctrl+F find
- o Ctrl+G find again
- o Ctrl+Shift+G find backwards again
- o Ctrl+R replace
- o Ctrl+Shift+R replace again
- o Ctrl+] indent
- o Ctrl+[unindent

- Text editor
  - o see all of Input Field
  - o Return and Tab are inserted into the text
  - o Arrow Up/Down, PageUp/Down moves cursor
  - o Ctrl+Home/End move to start/end of document
  - o Shift+ ArrowUp/Down, PageUp/Down selects lines/pages of text

- Combo box
  - o typing normal characters will try to match one of the menu items
  - o ArrowDown will open the menu with preset values
  - o ArrowUp/Down/Left/Right with menu open will run through the menu selections.
  - o Return accepts the current value (if not acceptable flashes red and resets to original value)

- Data set
  - o Tab/Shift+Tab will move between editable fields inside the Data set
  - o if there are no editable fields in the rows then Tab will select the whole Data set, ArrowUp/Down will select rows in such a Data set.
  - o Single-select Data set:
    - ArrowUp/Down will move selected row (and if possible editable cell focus).
    - Home/End will change selection (and if possible editable cell focus) to be first/last row.
    - PageUp/Down will move selected row (and if possible editable cell focus) by number of visible rows.
  - o Multi-select Data set has a movable 'focus' ring separable from the selected rows :
    - Ctrl+ArrowUp/Down will move focus (and not alter selections) by one row.
    - Ctrl+PageUp/Down will move focus (not alter selections) by number of visible rows.
    - Space will add the row indicated by the focus ring to the selections.
    - Ctrl+Space will toggle whether the row indicated by the focus ring is in the selections.
    - Ctrl+A will select all the rows.
    - ArrowUp/Down will set selections to be only the previous/next row.
    - PageUp/Down will set selections to be only the previous/next page's row.
    - Shift+ArrowUp/Down will add previous/next row to selections
    - Shift+PageUp/Down will add a page worth of rows to the selections.
    - Shift+Home/End will add all previous/following rows to the selections.

- Stepper
  - o see all of Input field, except:
  - o ArrowUp/Down steps the value up/dow

- Tab bar
  - o ArrowLeft/Right selects previous/next tab.
  - o Home/End selects first/last tab

- Splitter
  - o no keyboard interaction.

- Linear gauge
  - o no keyboard interaction.

Menu Actions:

- Pop-up menus (right-mouse click) no longer exist. These are replaced with actual buttons where appropriate.
- All options in the Menu Bar are available by simultaneously using the **ALT** key and a **letter** key. In the menu the corresponding letter key is indicated by underlining.

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