



CTS++ Trader User guide

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Summary

Related process	
Objective of the procedure	Describe actions to be taken by CTS++ user to participate the Frequency response Auction
Concerned persons	Frequency response auction Participants

Historical of the document (Update must be performed after any modification of the process)

Evolution	Date	Version	Author	Comments
Creation	31/07/2019	1.0	EPEX SPOT	
Update				
Update				
Update				

Current version must be designated with grey background

Related Documents

Document Name	File location

Introduction

The operations of the Frequency Response auction market mainly consist of the management of weekly auctions relying on the CTS++ trading system.

The aim of this document is to describe the CTS++ principles for its users.

1. Connection

1.1 Rules

1.1.1 Password rules

S.No	Rule Description
1	Password must have: • a minimum of 8 characters • a maximum of 128 characters • a minimum of one capital letter • a minimum of one small letter • a minimum of 1 digit • a minimum of 1 special sign (space,!#\$%&'()*+,;=?@[]^_`{}~\ / " :<>) • First character and last character must not be space
2	Last 5 passwords cannot be reused
3	Maximum password age = 90 days

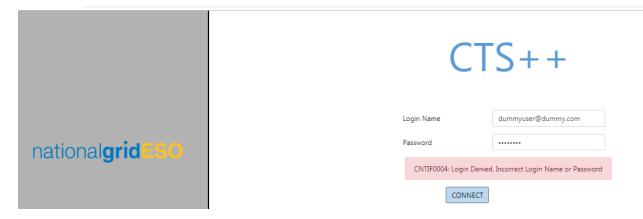
1.2 Connection

The "Connect" screen contains the below listed fields which allows the authorized user to access the CTS++ Trading Platform to do their trading activities for an auction day if the credentials provided are valid

- Login Name: User must enter their email address in this field (ex: dummyuser@dummy.com)
- Password: User must enter their password. Password will not visible as a plain text in this field. It will be displayed in the format ••••••

Once the Login Name and Password are provided in the respective fields, user must click on "CONNECT" button available in the screen

- CTS++ will authenticate the user credentials provided. If the authentication is successful, then user will be navigated to the CTS++ Trading Platform Main Screen
- Else if the authentication is unsuccessful, then CTS++ will displayed the respective error message screen (see below example)



At any given point of time, an authorized user can request for new password from CTS++ which will then allow the user to set a new password by clicking on the option Reset Password [Please refer to 1.3 for more details about this screen]. This feature is available in CTS++ to allow the user to change his/her password in case if they forgot the current password or if they have any security concerns with the current password.

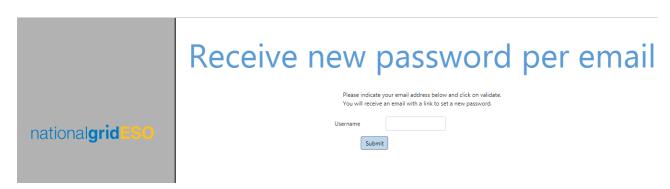
In the bottom level, there is a disclaimer displayed. This disclaimer is notifying the user who is using the CTS++ about the mandatory policies on Personal Data Protection as per the law. By connecting to CTS++ Trading Platform means user has agreed with this policy conditions. In order to read the detailed conditions please click on link Politics of personal data protection available in the screen.

1.3 Password initialization

When a user clicks on the option <u>Reset Password</u> in the Connection screen, CTS prompts a screen to enter user login for which password reset is desired.

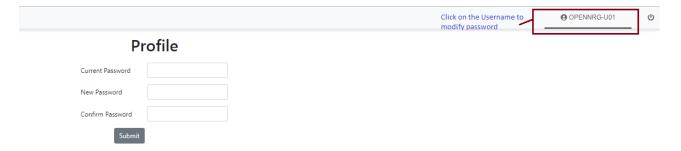
Once user's email address is provided in the respective field, user must click on "Submit button" available in the screen. CTS++ will send an email to the user, which contains a hyperlink to a screen where a new password can be set.

In this screen, the user must key in the new password twice to prevent typo and click on "SUBMIT" button. Next connection to CTS++ must be done with the new password. Please see Password rules described part 1.1.1.



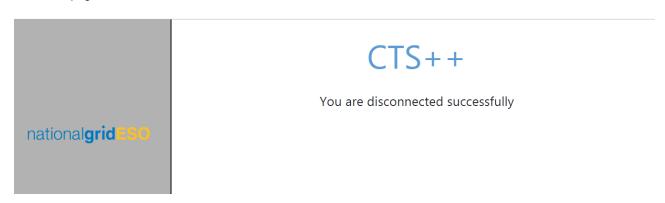
1.4 Password modification

User can modify its password when connected. User must fill in the current password, and new password twice to prevent typo; user must click then on "SUBMIT" button. Next connection to CTS++ must be done with the new password. Please see Password rules described part 1.1.1.



1.5 Disconnect

Once user is connected to CTS++ trading platform, user can be disconnected by the clicking on the disconnect icon which is available in the top right corner web page. On a successful disconnection, user will be redirected to the below webpage.



2. Trading session

2.1 Trader global view

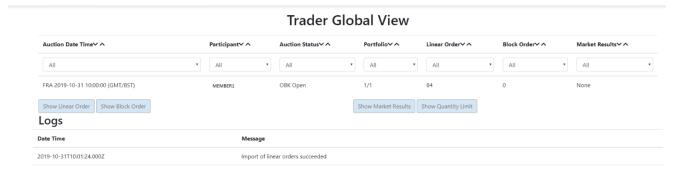
2.1.1 Overview

Screen Name	Trader Global View
Purpose	View the auction status by the trader
	View market results
	View quantity limit
	 View linear or block order(s)
	View Logs
Accessible by	TRADER
Accessible from	By default, Trader Global View screen is displayed after the TRADER user is connected
	to CTS++

2.1.2 Screen layout

The screen layout consists of three sections:

(1) : <Grid> Panel(2) : <Action> Panel(3) : <Log> Panel



2.1.2.1 Grid panel

This panel contains the list of all auction sessions based on the filter criteria selected in the **Header** panel. The below describes each field in the Grid panel.

Field Name	Description	Example		
Auction Date Time	Auction date and time of the corresponding	FRA 2019-04-19 10:00 (GMT/BST)		
	auction session in GMT/BST time zone			
Participant	Name of the participant	ABC		
Auction Status	Status of the corresponding auction session	OBK Open		

	OBK Open: Order book is open, and user can submit/delete/modify the orders OBK Closed: Order book is closed, and user can no longer submit/delete/modify the orders	
Portfolio	Display number of portfolios with at least one active order / Total number of active portfolios of the corresponding user	4/5
Linear Order	Display the total number of active linear orders of the corresponding auction session; otherwise NA if user don't have access to submit linear order	4
Block Order	Display the total number of active block orders of the corresponding auction session; otherwise NA if user doesn't have access to submit block order	NA
Market Results	Display the market result publication status None: Market results are not published Available: Market results are published, and user can view the results in the trading system	None

2.1.2.2 Action panel

This panel consists of several buttons as listed below

- **Show Linear Order:** Allows the user to open the Linear Order Management screen. If user does not have permission to submit linear order, then the user is not allowed to open the Linear Order Management screen
- **Show Block Order:** Allows the user to open the Block Order Management screen. If user does not have permission to submit block order, then the user is not allowed to open the Block Order Management screen
- Show Market Results: Allows the user to open the Market Results screen (This feature is currently unavailable. It is planned to release in future version)
- **Show Quantity Limit:** Allows the user to open the Quantity Limit screen (*This feature is currently unavailable. It is planned to release in future version*)

2.1.2.3 Log panel

This panel displays the notifications related to order submission, order deletion, order modification

- Date Time (UTC): Displays server date and time for each log message in the format dd/mm/yyyy hh:mm:ss and in the time zone UTC
- Message Log: Displays the log messages

CTS display the logs in the descending order of Date Time(UTC) from top to bottom

2.2 Order entry and portfolio set up

In order to submit any type of orders (linear or block orders) via the CTS++ platform, an authorized CTS++ user must have:

- at least one active portfolio with:
 - The general read/write permission
 - The permission to submit an order on the corresponding bidding level
 - If relevant for the traded bidding level (*):
 - (*) the corresponding bidding level must be configured to allow the user to submit a specific order type (ex: Classic Block Order (C01), Linked Family (C02)).

Please contact our Market operation team to double check your user and portfolio settings if required.

2.3 Linear order

2.3.1 Stepwise linear order characteristics

A linear order is related to a bidding level, a portfolio and a set of periods. For each of these periods, the linear order is related to a curve which defines for each price between the minimum and maximum prices of the market the willingness to buy or sell a certain amount. The characteristics of a stepwise curve are following:

- A stepwise order is defined by *n* (price, quantity) couples between the minimum price (P_{min}) and the maximum price (P_{max}): [(P_{min},Q₁), ..., (P_{max}, Q_n)]
- For any couple (P_i,Q_i), (P_{i+1},Q_{i+1}) within this list we have either:
 - $\circ \quad P_i < P_{i+1} \text{ and } Q_i = Q_{i+1}$

or

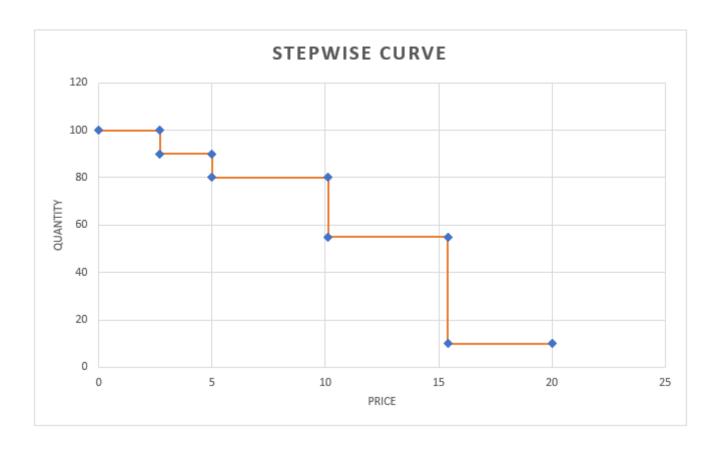
o $P_i = P_{i+1}$ and $Q_i > Q_{i+1}$ excluding P_{min} , P_{max}

Purchase quantities are indicated with positive values (Q>0). Sale quantities are indicated with negative values (Q<0).

2.3.1.1 Example: Stepwise Curve

Please see below for a stepwise curve construction for the combination of (Portfolio, Bidding Level, Period)

Portfolio	Bidding Level	Period	1P	1V	2P	2V	3P	3V	4P	4V	5P	5V	6P	6V	7P	7V	8P	8V	9P	9V	10P	10V
P1	LFS	1	0	100	2.71	100	2.71	90	5.00	90	5.00	80	10.12	80	10.12	55	15.41	55	15.41	10	20	10



2.3.2 Linear order management screen

2.3.2.1 Overview

Screen Name	Linear Order Management
Purpose	Submit linear orders
	Delete linear orders
	Modify linear orders
	View linear orders
	Export linear orders
Accessible by	TRADER
Accessible from	Trader Global View

2.3.2.2 Screen layout

The screen layout consists of three sections:

(1) : <Header> Panel(2) : <Grid> Panel(3) : <Action> Panel

2.3.2.3 Header panel

This panel contains the below listed information which gives an overview on the current auction session information

Element	Description	Example
Auction	Unique name of the auction	FRA
Auction Session	Date and time of the auction session	2019-01-11 10:00 GMT/BST
Currency	Currency of the auction	GBP
Period Duration	Duration of the delivery period of	240 min
	the auction	
First Delivery Period	First delivery period of the auction	2019-01-11 23:00 GMT/BST
	session	
Last Delivery Period	Last delivery period of the auction	2019-01-18 23:00 GMT/BST
	session	

2.3.2.4 Grid panel

This panel displays the information of all active linear orders. The structure of the panel is same as the linear order file import and export

Col No	Element	Description	Example
1	Portfolio	Portfolio of the active linear order	TEST-T01
2	BiddingLevel	Bidding level of the active linear order	LFS
3	Orderld	Order id of the active linear order generated by CTS++ during the submission of linear order	1000000001447
4	Version	Version of active linear order	1

5	User ID	Username of the user who submitted	USER-U01
		the linear order	
6	Period	Period number	1,2,3 42
7N	1P, 1V NP, NV (as many as	(Price, Volume) of a linear order curve	1P = -10, 1V = 10, 2P = -5,
	the curve points)	for a given period	2V = 10 NP = 9999, NV
			= 10

2.3.2.5 Action panel

This panel consists of several buttons as listed below

- **Delete:** Allows the user to delete one active linear order curve per portfolio and per bidding level for the auction session (*This feature is currently unavailable*. It is planned to release in future version)
- Delete All: Allows the user to delete all active linear orders displayed in the screen
- Upload: Allows the user to submit one or several linear orders by importing a CSV file for the auction session
- Export: Allows the user to export all active linear orders present in CTS++ for the auction session in a CSV file format in user's local machine (This feature is currently unavailable. It is planned to release in future version)

2.3.3 Linear order file import / export

A user submits the linear order(s) via importing CSV file from the Linear Order Management screen. One must respect the described file format and content while uploading the csv file within the trading system. If not respected, the system will reject the submission of the order.

The file exported by the system has same format as the imported one.

2.3.3.1 File name / format

Import file

Name	<any as="" be="" by="" can="" desired="" file="" for="" import="" name="" the="" used="" user=""></any>
File Format	CSV (value separator: semi colon (;); decimal separator: point (.)). There must be no thousand
	separator.

Export file

Name	LinearOrder_[auction name]_[auction date time] _[Creation date time]	
	Where auction date time in YYYYMMDDhhmm and creation date in YYYYMMDDhhmmss; creation date time is the local time of user's system when they exported the file	
File Format	CSV (value separator: semi colon (;); decimal separator: point (.)). No thousand separator.	
Value	LinearOrder_FRA-WA_201811151200_20181114151500.csv	

2.3.3.2 File content

ALL COLUMNS DESCRIBED BELOW ARE MANDATORY AND MUST BE IN THE SAME ORDER AS INDICATED BELOW

Line 1

Col. Number	Column Name	Mandatory or Optional content for import file	Mandatory or Optional content for export file	Can be Empty?
1	"Portfolio"	Mandatory	Mandatory	Value in the column must not be Empty
2	"BiddingLevel"	Mandatory	Mandatory	Value in the column must not be Empty
3	"OrderId"	Optional (for new order creation); Mandatory (for order modification)	Mandatory	For new order creation, value in the column must be empty
4	"Version"	Optional (value not considered by CTS)	Mandatory	Value in the column can be empty
5	"User ID"	Optional (value not considered by CTS)	Mandatory	Value in the column can be empty
6	"Period"	Mandatory	Mandatory	Value in the column must not be Empty
7p	"1P", "1V", "2P", "2V", so on	Mandatory	Mandatory	Value in the column can be Empty

Line 2n (a	ine 2n (as many lines as there are linear orders)						
Col.	Column Name	Format	Description	Reference Value	Reference Value		
Number				(for import)	(for export)		
1	"Portfolio"	CHAR(32)	Portfolio name	TEST-T01	TEST-T01		
2	"BiddingLevel"	CHAR(40)	BiddingLevel name	LFD	LFD		
3	"OrderId"	Number(15,0)	Order id	Blank	10000000010012		
4	"Version"	Number(3,0)	version	Blank	1		
5	"User ID	CHAR(30)	User name of the user	Blank	NG-U01		
			who submitted the order				
6	"Period"	Number(3,0)	Curve period	1, 2, N	1, 2, N		
				As many rows as	As many rows as		
				there are periods	there are periods		
				for the auction	for the auction		
				session. Maximum	session. Maximum		
				value of N = 42	value of N = 42		
7p	"1P", "1V",	CHAR(7)	1P: Price of Point 1 of	1P: -10,1V: 10	1P: -10,1V: 10		
	"2P", "2V",		Curve 1	2P: -5, 2V: 10	2P: -5, 2V: 10		
	so on		1V: Volume of Point 1 of				
			Curve 1	So on	So on		
			So on				

2.4 Block order

2.4.1 Block order characteristics

2.4.1.1 Block Order Global Description

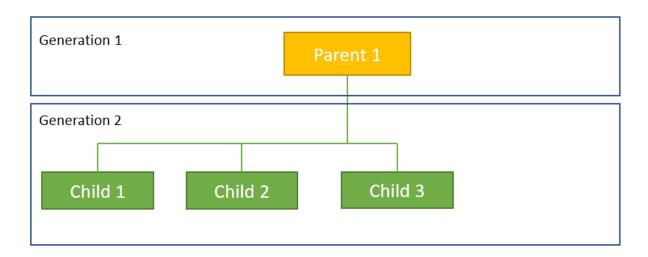
A block order is a combined interest to buy or sell an amount of quantity; either all the block order conditions are fulfilled, and the order is accepted or one (or several) condition of the block order is not filled and the block is rejected.

2.4.1.2 Linked Family Block Order Description

A linked block orders family is a set of block orders which have together a linked execution constraint.

A linked block order family is constructed with two types of blocks: C01 and C02. The execution of a C01 block order does not depend on the execution of another block order; the execution of a C02 block order depends on the execution of all its parent block orders.

It is possible to design a "linked family", with several "generations". An example of such "family" is illustrated in the below picture:



In this example the number of generations is 2; the children for Parent 1 are: Child 1, Child 2 and Child 3; the size of the family is 4. The generation 1 block orders have block type C01; the other generations block orders have block type C02.

2.4.2 Block order management screen

2.4.2.1 Overview

Screen Name	Block Order Management
Purpose	View block orders
	Create block orders
	Delete block orders
	Modify block orders
	Export block orders
Accessible by	TRADER
Accessible from	Trader Global View

2.4.2.2 Screen layout

The screen layout consists of three sections:

(1) : <Header> Panel(2) : <Grid> Panel(3) : <Action> Panel

2.4.2.3 Header panel

This panel contains the below listed information which gives an overview on the current auction session information

Element	Description	Example
Auction	Unique name of the auction	FRA
Auction Session	Date and time of the auction session	2019-01-11 10:00 GMT/BST
Currency	Currency of the auction	GBP
Period Duration	Duration of the delivery period of the auction	240 min
First Delivery Period	First delivery period of the auction session	2019-01-11 23:00 GMT/BST
Last Delivery Period	Last delivery period of the auction session	2019-01-18 23:00 GMT/BST

2.4.2.4 Grid panel

This panel displays the information of all active linear orders accessible by the user according to its permissions.

The structure of the panel is same as the block order file import and export

Col No	Element	Description	Example
1	Portfolio	Portfolio of the block linear order	TEST-T01
2	BiddingLevel	Bidding level of the active block order	LFS
3	Orderld	Order id of the active block order	10000000001447
		generated by CTS++ during the	
		submission of block order	
4	Version	Version of active block order	1
5	User ID	Username of the user who submitted	USER-U01
		the linear order	
6	BlockCode	Block code of the block order; C01	C01 or C02
		[Classic Block Order] or CO2 [Linked	
		Family Block Order]	
7	BlockPRM	Block Parameter; in case of C01 block:	10000000001448
		the field is not filled; in case of C02 block it	
		contains the Orderld of the parent	
8	MAR	Minimum Acceptance Ratio of the block	1 or 0
		order	
		For CO1, MAR = 1 always	
		For CO2, MAR = 0 always	
9	Price	Limit price of the block order	15.62
10N	1, 2, 3 N (as many as	Volume defined against each period	-10
	number of periods)	from 1, 2, N	

2.4.2.5 Action panel

This panel consists of several buttons as listed below

- **Delete:** Allows the user to delete one active block order submitted per portfolio and per bidding level for the auction session (This feature is currently unavailable in and is planned to release in future version)
- Delete All: Allows the user to delete all block linear orders displayed in the screen
- **Upload:** Allows the user to submit one or several block orders by importing a CSV file for the auction session, according to its permissions
- Export: Allows the user to export all active block orders present in CTS++ for the auction session in a CSV file format in user's local machine (This feature is currently unavailable in and is planned to release in future version)

2.4.3 Block order file import / export

A user can submit the block order(s) via importing CSV file via the Block Order Management screen. One must respect the described file format and content while uploading the csv file within the trading system. If not respected, the system will reject the submission of the order.

The file exported by the system has same format as the imported one.

2.4.3.1 File name / format

Import file

Name	<any as="" be="" by="" can="" desired="" file="" for="" import="" name="" the="" used="" user=""></any>
File Format	CSV (value separator: semi colon (;); decimal separator: point (.)). There must be no thousand
	separator.

Export file

Name BlockOrder_[auction name]_[auction date time] _[Creation date time]	
	Where auction date time in YYYYMMDDhhmm and creation date in YYYYMMDDhhmmss; creation date time is the local time of user's system when they exported the file
File Format	CSV (value separator: semi colon (;); decimal separator: point (.)). No thousand separator.
Value	BlockOrder_FRA-WA_201811151200_20181114151500.csv

2.4.3.2 File content

ALL COLUMNS DESCRIBED BELOW ARE MANDATORY AND MUST BE IN THE SAME ORDER AS INDICATED BELOW

Line 1				
Col. Number	Column Name	Mandatory or Optional content for import file	Mandatory or Optional content for export file	Can be Empty?
1	"Portfolio"	Mandatory	Mandatory	Value in the column must not be Empty
2	"BiddingLevel"	Mandatory	Mandatory	Value in the column must not be Empty
3	"Orderld"	Optional in case of order creation and no C02 block order in the file Mandatory in case of block order modification or C02 block order in the file	Mandatory	For new order creation, value in the column must be empty if there is no C02 block order in the file
4	"Version"	Optional (value not considered by CTS)	Mandatory	Value in the column can be empty
5	"User ID"	Optional (value not considered by CTS)	Mandatory	Value in the column can be empty
6	"BlockCode"	Mandatory	Mandatory	Value in the column must not be Empty
7	"BlockPRM"	Optional (for C01 block); Mandatory for C02 block	Mandatory	For C01: value in the column must be empty For C02: Value in the column must not be Empty
8	"MAR"	Optional (value not considered by CTS)	Mandatory	Value in the column can be empty
9	"Price"	Mandatory	Mandatory	Value in the column must not be Empty
10p	Identifier of the period As many columns as there are periods for the auction session	Mandatory	Mandatory	Value in the column can be Empty or can contain 0 values

Line 2n (a	ine 2n (as many lines as there are linear orders)					
Col.	Column Name	Format	Description	Reference Value	Reference Value (for	
Number				(for import)	export)	
1	"Portfolio"	CHAR(32)	Portfolio name	TEST-T01	TEST-T01	
2	"BiddingLevel"	CHAR(40)	BiddingLevel name	HFD	HFD	
3	"OrderId"	Number(15,0)	Order Id	For new order creation virtual order id ranging from 0 < OrderId < 10000	100000000010012	

> epexspot

4	"Version"	Number(3,0)	Version of the block order	Blank	1
5	"User ID"	CHAR(30)	User name of the user who submitted the order	Blank	MEMBER-U01
6	"BlockCode"	C01 C02	C01: classic block order, or root block for a linked family C02: linked block order	C01	C01
7	"BlockPRM"	Number(15,0)	C01 block: the field is not filled C02 block: identification of the parent block order. BlockCodePRM must correspond either to BlockID of an already submitted block orders for the considered (auction session, portfolio) or to a value included in ID column of the submitted batch of block orders. This field cannot be empty since a parent for C02 block must be defined.	For C01: Blank For C02: 100000000010012	For C01: Blank For C02: 100000000010012
8	"MAR"	NUMBER(3,2)	Minimum Acceptance Ratio Decimal number which defines the minimum executed volume ratio for an executed block order. E.g. if MAR=0.1, then an executed block order must have 10% of the submitted volume executed	Blank	For C01 block code: MAR=1 For C02 block code: MAR=0
9	"Price"	Number(15,4)	Block order Price limit	15.12 (only multiples of price tick)	15.12 (only multiples of price tick)
10p	Identifier of the period As many columns as there are periods for the auction session	Number(15,4)	Block order submitted volume	Against each period column, volume is given (from line 2 onwards) Ex: 10.00 (only multiples of volume tick)	Against each period column, volume is given (from line 2 onwards) Ex: 10.00 (only multiples of volume tick)

2.4.4 Example

The below example depicts how the block orders (C01, C02) can be submitted with virtual <OrderId>:

Portfolio	BiddingLevel	OrderId	Version	User ID	BlockCode	BlockPRM	MAR	Price	1	2	3	4	5	6
MEMBER1-T01	LFS	1			C01			12.32	-10	-10				
MEMBER1-T01	LFS	2			C02	1		18	-12					
MEMBER1-T01	LFS	3			C01			15			-15			П

creation of block order with virtual id = 1 creation of block order with virtual id = 2; the parent has virtual id = 1 creation of block order with virtual id = 3

3. Daylight saving time

3.1 March short day (Summer)

Last Sunday of March lasts 23 hours instead of 24 hours. The auction session which contains this day has still 42 periods. However the 7th period of the auction session will last 5 hours instead of 4 hours.

3.2 October long day (Winter)

Last Sunday of October lasts 25 hours instead of 24 hours. The auction session which contains this day has still 42 periods. However the 7th period of the auction session will last 3 hours instead of 4 hours.