



SPECTRUM  
Lighting up the market

# SPECTRUM TRADING MANUAL

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# 1. INTRODUCTION

## 1.1 PURPOSE

The purpose of this document is to provide participants with:

- Communication channels related to trading on the Spectrum System.
- Overview and reference to the technical interfaces of the Spectrum Trading System.
- A business overview of Spectrum Trading System.
- Details regarding Trading Operations.
- Procedures to handle recovery end extraordinary events.

This document sets out guidance and practical information on Spectrum and the processing and implementation of the rules as set down in the Spectrum Rulebook. In case of discrepancies, the rules and definitions of either the Spectrum Rulebook or the Prospectus of Products traded on the Spectrum Trading System shall prevail.

## 1.2 RELEVANT SPECTRUM COMMUNICATION CHANNELS

### TARGET GROUP FOR PHONE AND MAIL

All Spectrum phone and mail contacts are only for the communication between Spectrum and its business partners (including regulators) or entities preparing for a potential membership. Other groups should use the contacts of their current or intended contracting party.

### RECORDING OF PHONE CALLS TO AND FROM SPECTRUM

Callers of Spectrum phone numbers must agree that phone calls with Spectrum can be recorded. In case there is a disagreement to recording, communication must be done in written form (e.g. email).

### SPECTRUM RULEBOOK

The current Spectrum Rulebook is available on: [www.spectrum-markets.com/rulebook](http://www.spectrum-markets.com/rulebook)

Changes or amendments to the Spectrum Rulebook will be announced by Website Notice.

### WEBSITE NOTICES

Spectrum Website Notices including history are published on: [www.spectrum-markets.com/notices](http://www.spectrum-markets.com/notices)

### SPECTRUM MARKET OPERATIONS (DURING SPECTRUM OPERATING HOURS)

Functional enquiries and questions regarding trading and rulebook can be addressed to:

Telephone: +49 69 4272991 11

Email: [operations@spectrum-markets.com](mailto:operations@spectrum-markets.com)

### SPECTRUM IT (DURING SPECTRUM OPERATING HOURS)

Technical enquiries and questions regarding connectivity and messages can be addressed to:

Telephone: +49 69 4272991 12

Email: [it@spectrum-markets.com](mailto:it@spectrum-markets.com)

### SPECTRUM COMPLIANCE

Compliance related enquiries and complaints according to Spectrum Rulebook can be addressed to:

Email: [compliance@spectrum-markets.com](mailto:compliance@spectrum-markets.com)

# 1. INTRODUCTION (CONTINUED)

## 1.3 COMMUNICATION FROM SPECTRUM TO MEMBERS

Members must provide Spectrum with telephone and email address for enquiries and urgent information (e.g. trade cancellation/amendment). Separate contacts can be provided for different areas of enquiries. Telephone and email of the trading contact must be processed during Spectrum operating hours by a person who is authorised to act on behalf of the member (e.g. consultation/agree on transaction cancellations/amendments) and agrees to the recording of the phone calls. Members must also assure that in case of connecting or forwarding calls, the caller agrees to the recording.

## 1.4 SPECTRUM MEMBER CONTACTS

Spectrum will publish a list with the contact details of every member on the Spectrum Website ([www.spectrum-markets.com/member-contacts](http://www.spectrum-markets.com/member-contacts)). Members must assure that the contact information published there is up to date. Members can provide their contact information via email to [operations@spectrum-markets.com](mailto:operations@spectrum-markets.com). In case no special contact details are provided by a member, the data will be taken from the onboarding documents.

Contact data will consist of:

Company Name

Company Address

Telephone Number

Fax Number (optional)

Email address

LEI

Member-ID

Type of Membership (e.g. Broker, Market Maker)

CSD (e.g. Clearstream)

CSD Account

## 1.5 READERSHIP

This document is intended as a major source of information for all functions involved in executing or preparing a trading membership with Spectrum MTF in a function related to Trading, BackOffice, System Design, IT or Compliance.

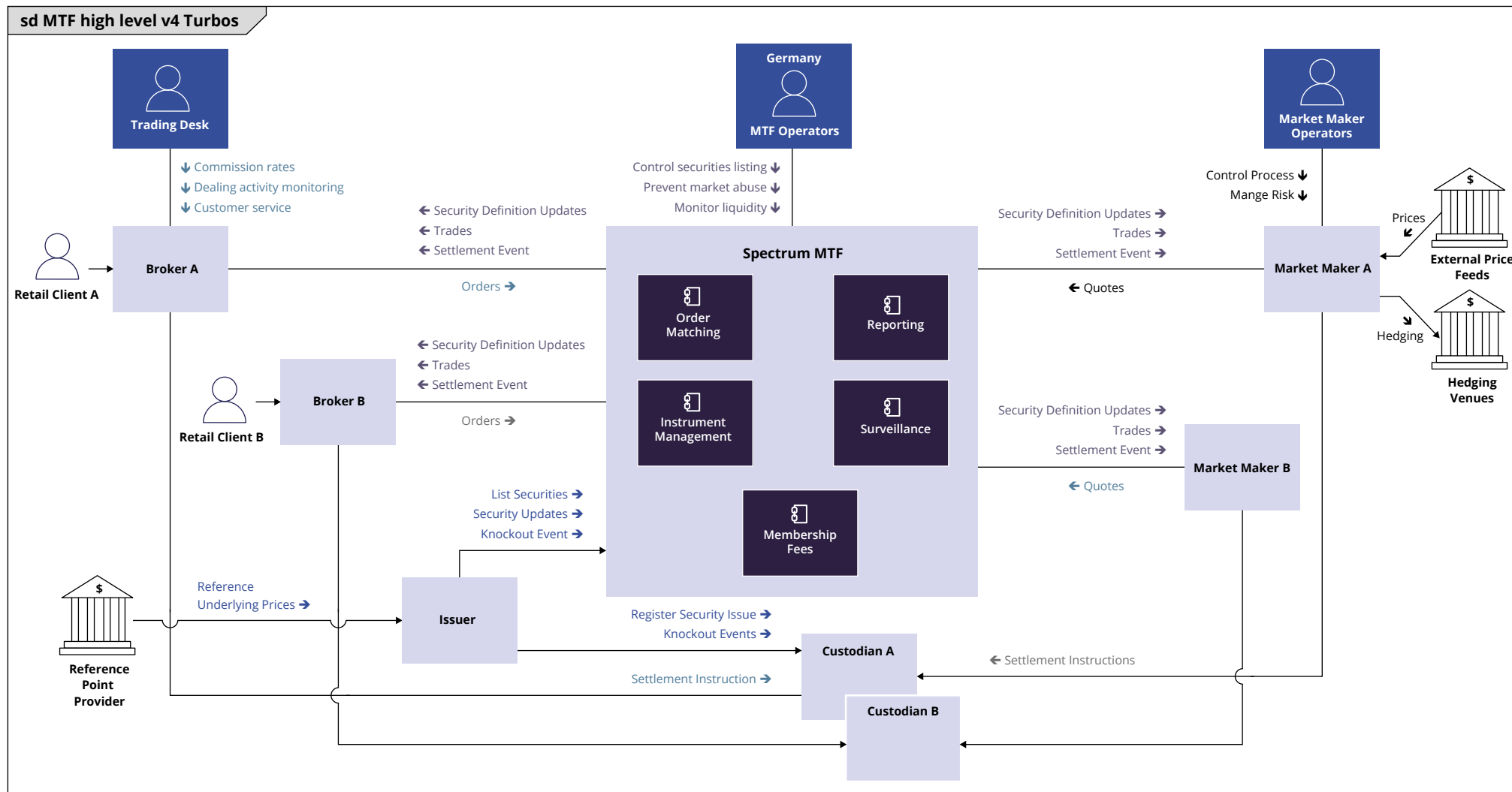
## 1.6 DOCUMENT VERSION RECORD

VERSION	DATE PUBLISHED	DESCRIPTION
1.0	03.07.2019	Initial Version

## 2. SPECTRUM EXCHANGE TECHNICAL CUSTOMER INTERFACES

### 2.1 OVERVIEW

The following diagram shows the main interfaces of Spectrum:



### 2.2 MESSAGE WORKFLOW, TYPES AND FORMATS

The technical interaction between Spectrum and its Members is performed using the FIX (Financial Information eXchange) protocol. The corresponding messages and formats are described in the document "Spectrum FIX Rules of Engagement" available on the Spectrum Website [www.spectrum-markets.com/fixroe](http://www.spectrum-markets.com/fixroe)

### 2.3 TIME SYNCHRONISATION

Members shall synchronise the business clocks they use to record the date and time of events with Coordinated Universal Time (UTC) issued and maintained by timing centres list in the latest BIPM annual report. Spectrum System times refer to local time of Frankfurt/Main, Germany.

### 2.4 SUPPORTED HARDWARE AND SOFTWARE

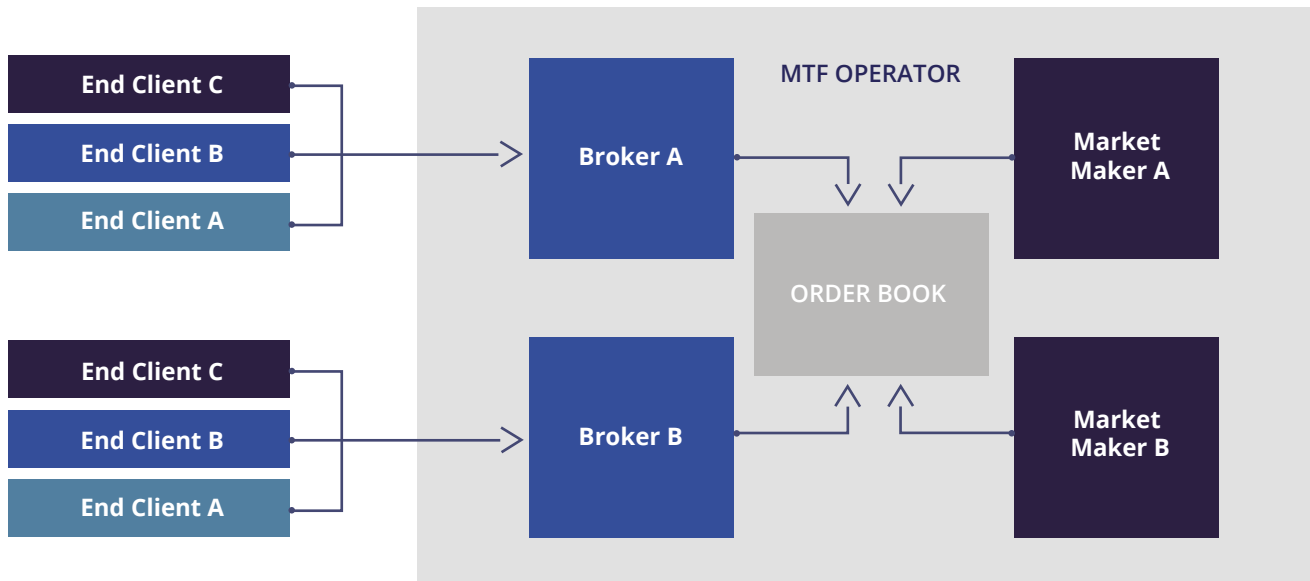
Currently there are no restrictions on supported hardware and software as long as it conforms to the "Spectrum FIX Rules of Engagement" and the "Spectrum Technical connectivity guide".

#### 3.1 PARTICIPANTS

Participants within Spectrum are known as Members and these Members are divided into the following two groups:

- Market Maker Members - These are Members posting two-way executable quotes into the order book.
- Standard Members - These are Brokers submitting End Client (retail) order flow on a matched principal basis into the order book.

The following diagram shows the basic structure of the of the Spectrum Operator along with the connectivity of the 2 types of Members outlined above. All trading connectivity into Spectrum will be facilitated over FIX Protocol, further details of which can be found in the "Spectrum FIX Rules of Engagement" available on the Spectrum Website.



Orders and quotes contained within the Order Book shall be executed in accordance with the applicable provisions governing the matching process to form Transactions as defined in the Spectrum Rulebook.

### 3. MARKET STRUCTURE (CONTINUED)

#### 3.2 TRADING TIMES

The exchange days and trading cycle of the MTF shall generally be the days determined by the Management Board of Spectrum.

Spectrum will offer trading on a 24-hour by 5-day trading cycle with each 24-hour trading session being punctuated with a 2-minute close period to allow for instrument maintenance. Instrument maintenance here refers to the Strike and Barrier Knock-Out levels of the instruments made available for trading, being adjusted to accommodate overnight funding and any Index dividend adjustments as required. The 2-minute closure will begin at 23:00 CE(S)T and opening of the new trading session will commence at 23:02 CE(S)T.

The Spectrum trading week will commence on a Sunday Evening at 23:00 CE(S)T, offering continuous trading (less the 2-minute closures for security maintenance every 23:00 to 23:02 CE(S)T) until its conclusion at 23:00 CE(S)T on a Friday evening, when Spectrum closes for the weekend to accommodate any system maintenance that may be required. The chart below outlines the weekly Spectrum trading cycle:

		OPEN			CLOSED		
SUN	MON	TUES	WED	THU	FRI	SAT	
CLOSED	OPEN	OPEN	OPEN	OPEN	OPEN	CLOSED	
	23.00	23.00	23.00	23.00	23.00		
23.00	23.02	23.02	23.02	23.02			

Spectrum will operate every week, Sunday night through Friday night irrespective of any National public holidays, except for Christmas (25th December) and New Year (1st January) where these days fall on a business day.

#### 3.3 OPEN AND CLOSE PRICES

The Open and Close prices on either side of this 2-minute closure window will be calculated and published to the order book in accordance with the guidelines mentioned hereunder.

##### 3.3.1 OPEN PRICES

The Opening price will be published/updated at the start of every trading session. The Opening price of a trading session will be the Closing price of the previous trading session with the following exception:

- If a new trading occurs on Sunday evening at 23:00 CE(S)T after the weekend downtime, then the Opening price will be the midpoint of the first two-way quote sent by the Market Maker for an instrument for that trading session.
- For the start of Spectrum or introduction of a new instrument (new ISIN), the Opening price will be the midpoint of the first two-way quote sent by the Market Maker for that instrument for that trading session.

##### 3.3.2 CLOSE PRICES

In general, the Closing price of a daily trading session will be the last traded price of an instrument for that trading session. However, under the circumstance that there is no transaction in an instrument during the entire trading session, the Closing price will be set at the midpoint of the last two-way quote sent by the Market Maker for that instrument for that trading session. The Closing prices will also be published on the Spectrum Website and will be reset at the session close which will remain published until the next close.



### 3.4 SETTLEMENT, PROVISIONS AND DISCIPLINE

Trades concluded on Spectrum are not subject to Central Clearing and as such Members are responsible to ensure that the bilateral settlement occurs directly with the Spectrum counter-party that formed the transaction with them.

Spectrum will provide Members with the Legal Entity Identifier (LEI code) of the contra counter-party that they have transacted with on Spectrum as part of the FIX Execution Report (ER) that they receive back into their Order Management System (OMS) following the partial or full execution of an order to trade submitted onto Spectrum. Members should use this LEI code to identify whom they should be instructing to match settlement instructions within the relevant Central Securities Depository (CSD), in this case Clearstream Banking AG (CBF), where the settlement of transactions concluded on Spectrum shall be done. Members shall ensure that settlement occurs on the intended delivery date, which for securities offered for trading on Spectrum is TWO business days after the date of the transaction (T+2).

A directory of Spectrum Members, their LEI codes, and their associated Standard Settlement Instructions (SSI) for CBF is available on the Spectrum Website to assist Members in the provision of orderly settlement of trades concluded on Spectrum. Members are also responsible for informing the Spectrum Operations Team of any changes to their SSIs/Account numbers.

Where the buyer Member and the seller Member or their respective custodian agent are participants to the CBF securities settlement system and they bilaterally settle a transaction through the said settlement system, the CBF settlement regulations shall apply.

In addition, Members must comply with Article 7 paragraphs 3 to 8 of Regulation (EU) No 909/2014 of 23 July 2014 on improving securities settlement in the EU and on central securities depositories. These are outlined in the following sections.

#### 3.4.1 PREVENTION

After the partial or total completion of a transaction on Spectrum system, Members involved will receive confirmation and details of the said transaction.

Members should ensure that they have all the necessary settlement information from their clients in time to allow for an effective and efficient settlement of transactions. To that end, Members should communicate with their clients to obtain the information relevant for an efficient settlement, including the standardised data needed for the settlement process.

Members shall require their retail clients to send them all the relevant settlement information for transactions concluded via Spectrum Trading System by 12:00 CE(S)T on the trading day following the day transaction has taken place within the investment firm's time zone, unless that client holds the relevant financial instruments and cash in custody under the name of the Member, which will be the case in all trades concluded on Spectrum.

For their professional clients, Members are expected to require the necessary settlement information in accordance with Article 2 of Commission Delegated Regulation of 25/05/2018 with regards to regulatory technical standards on settlement discipline.

Members' settlement instructions shall be sent in accordance with CBF regulations or in accordance with their custodian agent where the settlement is to be done via an internalisation of settlement outside of such securities settlement system. Custodian agents shall identify Spectrum and the transactions in their settlement instructions in the absence of a direct transaction feed from Spectrum to CBF.

### 3. MARKET STRUCTURE (CONTINUED)

#### 3.4.2 FAILED SETTLEMENT

Where it is found that a transaction concluded on Spectrum system is not settled by the agreed settlement date, the Spectrum Operations Team shall:

- (i) seek provision of all relevant information concerning the settlement fail from Members involved in the transaction;
- (ii) initiate proceedings for breach of CSDR provision(s) against the Member responsible for repeated and systematic settlement fails, without prejudice to any obligations for compensation;
- (iii) if necessary, after communication with BaFin and immediate notification of the Member concerned, impose a suspension of its membership, and make public the fact of this suspension.

Notwithstanding the preceding paragraph, in case of failure to settle a transaction by the agreed settlement date, the Spectrum Operations Team shall be informed without delay of the fail by the Members that are party to the transaction.

The Member that causes a failed settlement of securities (the failing Member) shall have an extension period of seven (7) business days to regularise the settlement if the settlement fail persists.

Members that are party to the trade shall proceed to the buy-in of the securities that have not been delivered by the failing Member, at the expense of the latter and including any services costs. The securities subject to the buy-in shall be delivered within seven (7) business days to the Member that did not receive the securities (the receiving Member).

The failing Member shall also promptly compensate Spectrum for any amounts due under the preceding paragraph and for all incidental fees and expenses that Spectrum may have incurred as a result of the settlement failure of the failing Member.

If a buy-in of the undelivered securities is not possible, the receiving Member may accept a deferral of the buy-in to a maximum of seven (7) business days (deferral period) as determined by the failing Member, or receive cash compensation from the failing Member, at the latest within two (2) business days after the expiration of the extension period.

If it is found that the settlement of securities remains impossible at the expiration of the deferral period, cash compensation shall be paid by the failing Member to the receiving Member within two (2) business days after expiration of the deferral period.

#### 3.4.3 MANDATORY BUY-IN

Members that originally concluded the relevant transaction are responsible for the execution of the buy-in. The buy-in is to be affected at the level where the contractual obligations to buy and sell securities have been created. The failing Member bears responsibility for the payment of the buy-in costs, the price difference and the cash compensation in the first place.

Where the failing Member does not comply with their obligation to pay those amounts, their client, as the failing client, should, however, cover the buy-in costs and the price difference but not the cash compensation.

Delivery obligations of bought-in securities or the payment of cash compensation or of any price difference in the financial instruments subject to buy-in should ultimately be performed through the reception of the relevant securities or cash by the Members through their clients.

Where the buy-in fails and in the absence of express communication on whether to extend the buy-in period within the prescribed timeframe, cash compensation should be paid to protect the interests of the parties and avoid any uncertainty resulting from the failed buy-in.

### 3. MARKET STRUCTURE (CONTINUED)

#### 3.4.4 INITIAL VERIFICATION

The receiving custodian shall inform the receiving Member (s) of any settlement fails without undue delay. The receiving Member(s) shall in turn immediately inform Spectrum of any settlement fails.

Spectrum shall disclose to the receiving Member the identity of the failing Member (s) upon request. On the business day following the expiry of the extension period, the receiving trading Member shall verify whether a buy-in is possible.

A buy-in shall only be considered not possible where the relevant securities no longer exist, or the failing Member is subject to insolvency proceedings.

Where a buy-in is possible, the receiving trading venue member shall appoint a buy-in agent on the business day following the expiry of the extension period and notify the failing Member thereof.

Upon receipt of the notification mentioned above, the failing Member shall ensure that any relevant settlement instruction relating to the settlement fail is put on hold. The failing Member may only deliver the securities to the buy-in agent where the buy-in agent gives prior consent.

Prior to receipt of the notification mentioned above, the failing Member may still deliver the securities directly to the receiving Member.

The receiving Member shall notify the results of the buy-in to the failing Member at the latest on the last business day of the seven business days after the extension period.

Where the buy-in is successful in part or in full, the notification mentioned shall include the quantity and price of the bought-in securities.

Where a buy-in is not possible, the receiving Member shall notify the failing Member of the results of the verification and the cash compensation amount calculated in accordance with the calculation of the cash compensation process below. The cash compensation shall be paid by the failing Member.

Where the buy-in fails in part or in full, the notification shall include the cash compensation amount calculated in accordance with the calculation of the cash compensation process below unless that notification specifies that the execution of the buy-in is deferred.

Where the execution of the buy-in is deferred, the receiving Member shall notify the results of that deferred buy-in to the failing Member at the latest on the last business day of the deferral period.

Where the buy-in fails in part or in full after the deferral period, the notification shall include the cash compensation amount calculated in accordance with the cash compensation process below.

The receiving Member shall accept and pay for the bought-in securities.

The receiving and the failing Members shall ensure that the following is carried out at the end of each business day on which the receiving Member receives the securities:

- (a) the settlement instructions relating to the settlement fail are cancelled;
- (b) the new settlement instructions are entered into the securities settlement system for any non-delivered securities and the CSD receives the information necessary to identify such new settlement instructions accordingly.

The failing Member shall pay the relevant cash compensation.

The failing and receiving Members shall ensure that the relevant settlement instructions relating to the settlement fail are cancelled upon payment of the cash compensation mentioned above or at the latest on the second business day after the notification of the amount of cash compensation.

#### 3.4.5 CALCULATION OF THE CASH COMPENSATION

The cash compensation to be paid pursuant to CSDR Article 7(7) shall be the difference between the market value of the relevant securities on the business day before the payment of the cash compensation and the settlement amount included in the failed settlement instruction where that settlement amount is lower than that market value;

Where not already included in the market value of the securities, the cash compensation to be paid pursuant to CSDR.

Article 7(7) shall include a component reflecting exchange rates variation, as well as corporate entitlements and accrued interest.

The market value of the securities shall be determined as the value determined based on the Closing price of Spectrum. Such market value and the component reflecting exchange rates variation, corporate entitlements and accrued interest, shall be disclosed to Members in a detailed breakdown.

### 4.1 INTRODUCTION TO TURBO WARRANT

Turbo Warrants are transferable securities that permits leveraged exposure into the price changes of the underlying financial instrument or asset that they represent. A Turbo Warrant provides a higher degree of exposure than investing the same amount of capital directly into the underlying financial instrument or asset, meaning that it also comes with more risk than the same investment into that underlying instrument or asset. Underlying financial instruments or assets can be Indices, Currencies or Futures on Commodities. Turbo Warrants allow you to open a Long or Short position for a given underlying. Turbo Long Warrants prices benefit from rising prices in the underlying instrument or asset, whereas Turbo Short Warrants prices benefit from a fall in the price of the underlying financial instrument or asset that they represent.

Every incremental movement in the price of the underlying financial instrument or asset can lead to disproportionately high returns or high losses due to the leveraged effect of these securities.

The price movements of Turbo Warrant have a delta of one in relation to the underlying market, which means that when the underlying market moves one point, Turbo Warrant also moves one point. A key feature of Turbo Warrant available for trading on Spectrum is that the strike price and financing level are the same, which means that a Turbo Warrant is deemed worthless after a Knock-Out event. The leverage of said Turbo Warrants is determined by the current underlying price divided by the price of the specific Turbo Warrant.

However, while these leverage securities permit a higher exposure over investing directly in the underlying instrument or asset, the risk of losing the entire amount of initial capital invested if the Knock-Out level is breached is its major downside.

An Issuer will issue Turbo Warrants with strike prices equivalent to the Knock-Out level. Turbo Long Warrants will have a strike level given below the current price of the underlying financial instrument or asset they represent. Turbo Short Warrants will have a strike level given above the current price of the underlying financial instrument or asset that they represent.

The Issuer will at any given time, issue different series of warrants covering the same underlying financial instrument or asset. These different warrants issues will be issued with differing "Strike Levels" at pre-determined points or ticks above the current level of the market price of the underlying that they represent (Turbo Short warrants), and at pre-determined points or ticks below the current level of the market price of the underlying that they represent (Turbo Long warrants).

Turbo Warrants representing the same underlying financial instrument or asset, but with differing "Strike Levels" will also be divided in Turbo Long and Turbo Short securities; totally separate financial instruments with different ISIN numbers. They are not fungible and will trade on separate order books.

Purchasing a Turbo Long or Short warrant with a strike level close to the current price of the underlying will provide the investor with greater leverage than choosing a warrant with a strike level further from the current level of the underlying. The major downside is the risk of a sharp market movement and consequently the strike level being breached (and the Turbo warrant being knocked-out) is of course greater when investing in a strike price close to the current underlying market price level.

The strike level of a Turbo Warrant is the price level at which the underlying market that it represents must breach for that security to "Knock-Out" and become worthless, at which point the investor would lose all the initial capital they invested when purchasing the warrant.

Turbo Warrants available for trading on Spectrum will be "Open-Ended", meaning that they will not be issued with an expiry date. Other Turbo Warrants in issuance at present may have a future expiry date.

Turbo Warrants may be redeemed by its Issuer or exercised by a Warrant Holder, and therefore receive a fixed expiry date. Please refer to the Issuer's Prospectus for further information about these processes.

### 4.2 LIFE CYCLE OF A TURBO WARRANT

- An Issuer will under a prospectus (Base prospectus and Final terms) issue Turbo Warrants as transferable securities, which will provide leveraged exposure into the price changes of the underlying financial instrument or asset that they represent.
- Different Warrants series representing an individual underlying will be issued to cover Long and Short exposure opportunities. Both these Long and Short warrants will have different strike price levels at pre-determined distances from the current price level of the underlying they represent.
- Each issue (Long/Short Strike Level) is classed as a separate securities issue and as such will be allocated a unique ISIN and will trade on separate order books.
- Following the allocation of a unique ISIN for a given issue, the Issuer Warrants will be authorised for trading on to Spectrum MTF where liquidity in each unique strike price level will be provided by Market Maker(s).
- Market Maker(s) on Spectrum MTF is (are) obligated to offer two- way executable quotes on each listed strike price level.
- Standard Members are free to submit End Client order flow to interact with the Market Maker quotes.
- Securities transactions must be settled via a custody entity or within the CSD on a T+2 basis.
- The Turbo Warrants can then trade in a Multi-Lateral basis until the point where the strike price level of that issue is breached on the underlying that it represents.
- The Issuer of the Turbo Warrants will determine when the strike price level of a warrant has been breached in the underlying market price and will in turn inform Spectrum MTF and Market Maker(s) on Spectrum MTF that the securities have been knocked-out, the issue is no longer active and that they should cease quoting prices. The securities will be suspended on Spectrum MTF.
  - Spectrum MTF will purge the order book of any un-executed orders in the knocked-out securities and reject further new orders from being submitted in this securities issue.
  - Spectrum MTF will remove the securities from its Trading System.
  - Spectrum MTF will arrange for securities to be removed from the CSD where they are held and all Members whom still had open positions in that securities will via there appointed custodian agent within the CSD be informed that the securities have now expired and distribute redemption payments (should there be any).

### 4.3 PRICING OF TURBO WARRANTS

Turbo Warrants will be priced in primary issuance using a formula that is derived from the price of the underlying Financial Instrument or Asset that they represent. The resulting cost from this formula is used to form the price of the security and this will also determine the amount of leverage the investor has taken.

For Turbo Long Warrants: Spot price (Current underlying price) – Strike price.

For Turbo Short Warrants: Strike price – Spot price (Current underlying price).

For example:

- The FTSE100 is currently trading at a level of 7,000.
- An investor buys an Issuer Turbo Warrant FTSE100 Long Warrant with a Strike Level of 6,930.
- Using the above formula, the investor pays 70 and that becomes the current price of this security.
- The investor has gained leverage of 100:1 in this example and any move in the underlying upwards of the 7,000 mark will mean the investor is in profit.
- Any move downward in the price of the underlying from 7,000 will mean the investor has made a loss and should the underlying fall to 6930 the investor's security is knocked-out and they have lost their invested capital.

Please note that pricing on Spectrum MTF will be facilitated using 2-way Market Maker quotes with a Bid/Offer spread and a Scaling Factor/Multiplier. Using the example of the FTSE100 Long Warrant above where the theoretical price of the product has been calculated as 70 and indices products having a Scaling Factor/Multiplier of 0.01, the price on the order book with the Market Maker Bid/Offer spread could be 0.69 / 0.71 in reality. This means the investor will have to pay little more, 71, than the theoretical price of 70 as calculated above. Please contact the Spectrum Operations Team for further information regarding the scaling of the Turbo Warrant products being made available for trading.

### 5.1 STANDARD ORDERS

Spectrum MTF offers two order types viz. Limit Order and Market Order.

#### 5.1.1 LIMIT ORDER

A Limit Order is a priced order that remains visible when persistent in the order book and may be executed at a price equal to or better than its set price. Limit Orders will never have priority over a Market Order.

#### 5.1.2 MARKET ORDER

A Market Order is an un-priced order that will always be executed ahead of a resting Limit Order. During regular trading sessions, a Market Order cannot persist in the order book. Two Market Order types are offered; Fill or Kill (FOK) and Immediate or Cancel (IOC), with the first type either executing the order completely or cancelling it without any execution.

The latter allows an order to be partially executed, and any outstanding volume to be cancelled.

All persistent Limit Orders will be removed from the order book whenever the product Issuer applies an adjustment for dividends in the underlying market or when an underlying futures contract is changed from the front month to the back month futures contract. Standard Members should re-send any End Client order flow that they wish to keep following such an event.

### 5.2 QUOTES

Spectrum operates a matching engine that uses the same mechanics as a standard cash instruments exchange, matching buying and selling interests (orders and quotes) on a price and time priority in a central limit order book. As written in Spectrum's Market Maker Agreement, section 4.1: Except in Exceptional Circumstances and where continuous trading takes place, the Market Maker is obliged, for at least 50 % of the daily Trading Hours and calculated for each Trading Day, unless otherwise notified by the Operator by posting a Website Notice. Market Makers are obliged to post simultaneous Two-Way Quotes that qualify as Firm Quotes and are of Comparable Size and Competitive Prices in at least the Market Volume in all Financial Instrument on Spectrum.

For full details regarding the Market Maker Obligations, please contact: [info@spectrum-markets.com](mailto:info@spectrum-markets.com)

As referenced in Spectrum's Rulebook, section 6.14, the Operations Team imposes parameters and/or limits on the number of Quotes that a Member can enter into on any one day, including the total value of those Quotes and the number of messages that can be submitted to the System. The Operations Team will notify the relevant Member(s) of these parameters and limits, along with possible amendments.



## 5. QUOTES AND ORDER MANAGEMENT (CONTINUED)

### 5.3 TIME IN FORCE

Spectrum MTF supports the following time in force features in specific combination with standard order types viz. Limit Order and Market Order:

#### 5.3.1 GOOD TO DAY (DAY)

Expires at the end of the current trading day (23:00 CE(S)T).

#### 5.3.2 GOOD TILL DATE (GTD)

Expires at the end of the trading day (23:00 CE(S)T) as specified in the order placing.

#### 5.3.3 GOOD TILL CANCELLED (GTC)

Expires when the order placer removes it manually.

#### 5.3.4 IMMEDIATE OR CANCEL (IOC)

Executed upon entry, with any outstanding volume to be cancelled.

#### 5.3.5 FILL OR KILL (FOK)

Order is either executed fully upon entry or expired without execution.

Spectrum MTF Members (Standard Members) submitting End Client order flow will be permitted to utilise the following combinations of Standard Orders and Time in Force:

		TIME IN FORCE				
		DAY	GTC	IOC	FOK	GTD
ORDER TYPE	LIMIT ORDER	Yes	Yes	Yes	Yes	Yes
	MARKET ORDER	No	No	Yes	Yes	No

Should a Standard Member attempt to submit an order to trade with a combination not supported in the above list, then that order will be rejected at the Spectrum MTF FIX Gateway and a rejection message be returned to the Standard Member with a rejection text.

### 5.4 TICK SIZES

Spectrum can accept a wide range of tick sizes when dealing with order and quote inputs. However, it is currently configured to Order and Quote inputs from Standard Members and Market Makers with a precision of three decimal points (0.001).

### 5.5 ORDER AND EXECUTION PRIORITY

Matching on Spectrum MTF is operated by price-time priority. Orders are first ranked according to the price, and prices that have multiple orders are then ranked on the time each was entered. A Market Order will always be executed before a resting Limit Order.

### 5.6 ORDER AMENDMENT OR CANCELLATION

During the trading session, a Member who entered an Order may Change/Amend any Order that has not been cancelled, deleted, or executed in full. When the Spectrum MTF exchange is closed, any persistent orders will remain in the order book, thus cannot be cancelled or amended. Changing/Amending an order will lead to a new time priority if the Limit Price is changed or if the Order Size is increased. The current time priority of an existing Order will remain the same if the Order Size is decreased.

### 6.1 ORDER BOOK MONITORING

With volatile markets and rapid price movements, Spectrum operates price movement monitoring. If our set price tolerance levels are breached, Spectrum will halt trading and resume after a random end. If this halt occurs during a Limit Order execution, the un-executed volume will remain in the order book. The price monitoring does not remove the Member's responsibility to ensure enough protection from erroneous order entries.

The price level thresholds, the random end durations, the Order units and the Order values are continuously managed by Spectrum Operations Team from a business perspective. Spectrum also incorporate pre-trading controls such as price collars to prevent erroneous trading, limiting the distance from the last traded price of the Underlying when entering an Order.

### 6.2 TRANSACTION CANCELLATION

As set forth in Spectrum's Rulebook, section 6.12, if both parties to a Transaction agree to the cancellation, the Operator may terminate such Transaction upon receipt of both notices no later than 30 minutes after the Transaction was executed. The fee for such a cancellation is €1,000 to both parties, payable to Spectrum MTF.

Should one party request to have a Transaction Cancelled, this must be done within 30 mins of the execution and the mistrade fee of €1,000 will apply. The Operator will determine whether the relevant transaction will be subject to a review.

Upon deciding to review a Transaction, the Operator will promptly notify the affected Members of such a decision. Each affected member shall, within one hour after receipt of such notification, confirm in writing (e-mail is sufficient) to the Operator, whether it consents to the cancellation or adjustment of the transaction.

If confirmation from both parties is received, then the transaction will be cancelled.

Where any relevant confirmation has not been received, the Operator may, in its reasonable discretion and in accordance with Section 74 para. 2 WpHG in connection with Section 24 para. 2 sentence 4 BörsG, cancel or amend the relevant Transaction and will inform the affected Members of its decision to either cancel or amend the relevant Transaction as soon as practicable or will, otherwise, notify all affected Members indicating that the Transaction shall stand. In making its decision, the Operator may reasonably consider the circumstances at the time the Transaction was entered into and the interests of the Members involved in the Transaction.

The Operator may, in accordance with the Rules and Regulations set forth in Spectrum's Rulebook, section 6.11, cancel, amend, or correct a Transaction. The Operator may, at its discretion, consult the relevant Member(s) and will notify them of its decisions and actions under this rule as soon as practicable.

### 6.3 CANCELLATION OF ORDERS OR QUOTES

The following describes the process for Order and Quote Cancellation, as set out in Spectrum's Rulebook sections 6.9 through to 6.10.

As set forth in Spectrum's Rulebook, section 6.9, any Member may request to cancel an Order or Quote. The Operator shall use reasonable endeavours to cancel the specific Order/ Quote, subject to Rule 18.2. The Operator bears no responsibility or liability for such a cancellation, rather the Member acknowledges that it shall be responsible and liable for any Order or Quote entered where it is not reasonably practicable or possible to cancel an Order or Quote made by the Member.

The Operator may reject or cancel an Order or a Quote as set forth in Spectrum's Rulebook, section 6.10, and will notify the relevant Member(s) of its decision to take any action under Rules 6.9 as well as 6.10.

For further details, and specific instructions on how to cancel orders and quotes, please see section 7.4 below.

### 6.4 PRE-TRADE AND POST-TRADE CONTROLS

#### 6.4.1 PRE-TRADE CONTROLS

Spectrum in accordance with RTS 7 Article 20 will have in place pre-trade controls that will reject automatically, potentially aberrant orders that may be unusual in their number, price or size (in both units and value). These controls are described further in the following;

##### Price collars

Limit orders will be rejected automatically from entering the order book should their limit price be more than a predetermined percentage away from the current mid-price of the underlying instrument or asset that they represent. This value will be set as a default value of 30% +/- from the current mid-price of the underlying, however the Spectrum Operations Team will have the functionality to review and amend this configuration manually intraday should the Spectrum Operations Team feel it has become too restrictive, or in fact, not restrictive enough.

##### Maximum order value collar

The MTFO will automatically reject new incoming member orders should they be of a size (value in €) exceeding a configurable threshold for that instrument as determined by the Spectrum management. Please contact Spectrum's Operations Team for full information on specific markets' thresholds in terms of monetary value for order value collar at: [operations@spectrum-markets.com](mailto:operations@spectrum-markets.com)

##### Maximum order size collar

The MTFO will automatically reject new incoming member orders should they be off a size (number of units) exceeding a configurable threshold for that instrument as determined by the Spectrum management. Please contact Spectrum's Operations Team for full information on specific markets' thresholds in terms of maximum number of units at: [operations@spectrum-markets.com](mailto:operations@spectrum-markets.com)

##### Member Suspension Functionality

Member suspension functionality cancels un-executed orders or quotes submitted by the Member and is used under the following circumstances:

- (i) in case a Member is technically unable to delete its own orders or quotes, they can request Operations Team by telephone to suspend their access;
- (ii) where the order book contains erroneous duplicated orders;
- (iii) following a suspension initiated either by the MTF Operator or the Competent Authority.

#### 6.4.2 POST-TRADE CONTROLS

Spectrum is not obliged to have its own post trade controls because the entity does not offer clearing and settlement services. Spectrum does not have the means to monitor its member positions after transactions.

### 6.5 MECHANISMS FOR VOLATILITY MANAGEMENT

Spectrum in accordance with RTS 7 Article 19 will have in place a number of dynamic system controls to facilitate the orderly functioning of the trading venue, and to ensure that there is sufficient capacity to carry out all its functions without system failures, outages or errors in the matching and execution of transactions. These controls are described in the following.

#### 6.5.1 CIRCUIT BREAKERS

Spectrum has adopted a hybrid solution of circuit breaker to ensure the orderly functioning of its order books.

Trading will be automatically halted on Spectrum should the underlying price feed by which Turbo Warrants are priced move up or down by more than a pre-set percentage from the previous trading sessions closing price for that Turbo Warrant. This value is set at 10% +/- from the previous trading session Closing price. Should a trading halt be initiated on Spectrum then the price point at which the 10% +/- is measured from will be re-set to be calculated from the first available mid-price/tick for that security when trading is resumed.

The parameters which govern the percentage price movement from the reference point before a trading halt is initiated will be configured in such a way that they can be adjusted intraday should they need to be widened or narrowed.

### 6.5.2 TRADING HALT

Should a circuit breaker threshold be touched during the continuous trading period on Spectrum, the trading on the order book for that security will be halted. Executing against Market Maker quotes and client orders will be unavailable during the halt. Orders currently passive in the book will remain but no matching/execution will be facilitated.

The trading halt will persist for a period of 10 seconds up to 30 seconds with a random end to prevent any gaming on the trading venue. Should once trading be resumed following a halt initiated by a circuit breaker event, see the price again move by enough to touch a circuit breaker threshold another trading halt will be activated. This process will continue until the underlying price has stabilised.

Securities authorised for trading on Spectrum will in addition to circuit breaker halts follow the underlying market that they represent into any unscheduled, intraday, limit up/ limit down trading halts on that underlying market. They will also automatically resume trading in line with the underlying market once it resumes trading. Once again during these halts, executing against Market Maker quotes and client orders will be unavailable. Resting passive orders will stay frozen in the book until a trading resumption.

### 6.5.3 TRADING SUSPENSION

Spectrum may suspend or limit the availability for trading of securities or take any other measure it deems necessary in the interests of maintaining an orderly and proper market. Such suspension or limitation, and any restoration or resumption of availability for trading, shall be published on the Spectrum Website.

Should a trading suspension be initiated then all resting orders and quotes in the order book subject to the suspension will be purged (removed/cancelled) clearing the order book of any open interest. Market Makers will be prevented from posting new quotes and Broker Members will see any new orders to trade getting rejected back to their OMS with a rejection text. This status will remain until the restoration of the trading suspension.

An Issuer may seek the suspension or withdrawal of securities from trading. To this end, a justified request specifying the reasons for such request must be addressed to the MTFO. Upon review of the request, the MTFO shall consider the interests of Spectrum and its Members, the interests of securities holders and, if applicable, interests of the Issuer.

Should an underlying market become suspended due to factors outside of MTFO's control, the MTFO will follow the underlying market into the suspension and subsequent restoration.

### 7.1 INFORMATION CHANNELS

In case of unexpected service interruptions or limitations, Spectrum will inform members by

- putting a Notice on the Spectrum Website ([www.spectrum-markets.com/notices](http://www.spectrum-markets.com/notices)); and/or
- via Email to the Email addresses of the trading contact provided according to 1.3.

Information will be updated during the course of the interruption or limitation.

### 7.2 DESCRIPTION OF FAILOVER AND DISASTER RECOVERY PROCESSES

Spectrum failover and disaster recovery is described in the Spectrum "Technical Connectivity Guide" available on the Spectrum Website under [www.spectrum-markets.com/client-connectivity-guide](http://www.spectrum-markets.com/client-connectivity-guide)

Spectrum will offer regular time slots (minimum once per year) for the Members to test the failover and recovery processes together with Spectrum. Such tests will be announced in advance by a Notice on the Spectrum Website. Respective tests will also be part of the technical conformance tests during the process of Member Onboarding.

### 7.3 SYSTEM STATES AFTER RECOVERY OR SERVICE INTERRUPTION

In case of a service interruption or disaster recovery the affected instruments will normally be set to halt status (description see above). There will be a time (announced by Website Notice) before trading is continued. During this time, it can also happen, that Instruments or Members are suspended.

### 7.4 DELETION OF ORDERS AND QUOTES FOR MEMBERS

In case Members have problems with their trading systems or the connection to Spectrum, Spectrum Operations Team will on best effort basis delete orders or quotes for a Member upon request. Such requests must be addressed via phone by an authorised trader as provided in the membership application to Spectrum Market Operations. Spectrum Operations will verify authenticity by asking for the Pin provided in the list of authorised persons or calling back on the registered phone number.

## 8.1 DEFINITIONS

TERMS/ACRONYMS	EXPLANATION
<b>Standard Member</b>	A person that meets the Eligibility Criteria as set out in Rules 5.7 and 5.10 and has entered into a Membership Agreement with the Operator
<b>SSI</b>	Standard Settlement Instruction – means CSD and CSD account as provided in the Spectrum Member Contacts
<b>Spectrum</b>	Spectrum MTF Operator GmbH
<b>Raydius</b>	Raydius GmbH
<b>MTFO/Operator</b>	Spectrum MTF Operator GmbH
<b>CE(S)T</b>	Time zone of Frankfurt/Germany which could be Central European Time (CE(S)T) or Central European Summer Time

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