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EURONEXT OPTIQ PHASE 3 DERIVATIVES: MEMBERS' CONSULTATION

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1. INTRODUCTION

Euronext is currently deploying its new generation trading platform, bringing improved customer experience through the migration from its current technology platform Euronext UTP to its new leading edge platform: Optiq®. Optiq provides customers with maximum flexibility, simplified and harmonised messaging as well as high performance and stability.

Optiq Market Data Gateway (MDG) was rolled-out for both Euronext Cash and Derivatives Markets in July and August 2017. Optiq Order Entry Gateway (OEG) was rolled-out for Euronext Cash Markets on 23 April and 25 June 2018.

Euronext will next initiate the roll out of Optiq Order Entry Gateway (OEG) for Euronext Derivatives Markets.

The migration of the Euronext Derivatives Markets to Optiq presents an opportunity to review:

- The technical services provided by the platform
- The business services provided by the platform (i.e. trading features, microstructure and access model)

The purpose of this consultation is to inform our customers of the major changes being made to Euronext's Derivatives Markets and to obtain feedback on a subset of elements.

1.1 THE OBJECTIVES OF THE OPTIQ DERIVATIVES MIGRATION

The objectives of the migration of the Euronext Derivatives Markets to Optiq are to:

- Deliver improved performance and predictability of the trading platform;
- Provide maximum flexibility with shorter time-to-market for new products and services;
- Leverage the implementation of Optiq on Euronext Cash Markets for Euronext Cash and Derivatives Trading Members by harmonising access, protocols and private messages.

1.2 CONTEXT OF THE CONSULTATION

The migration of the Euronext Derivatives Markets to the Optiq platform presents an opportunity for Euronext to reconsider the current structure of our Derivatives Markets and leverage on the Optiq technology to:

- Redesign the access model to our trading platform
- Re-focus on the core features of the Derivatives Markets
- Provide flexibility to strengthen Euronext ability to develop new products

whilst maintaining a unique state-of-the-art trading platform for all Euronext Cash & Derivatives Markets.

This document provides an overview of some of the major changes planned as part of the migration to Optiq. The changes described in this document are for information only and solely intended for consultation purposes. In doing so, Euronext aims to enable customers anticipate potential technical, organisational and business impacts the programme may have on their firm and clients.

The consultation is organised by trading features as follows:

1. Technical changes in the Access Model
   a. Market segmentation
   b. Access Model
2. Migration strategy
3. Functional changes in Market Data referential
4. Functional changes in trading features and market model including:
   a. Wholesale trading
   b. Price Limit and trade price validation
   c. Implied model
   d. Market Making
   e. Drop Copy
   f. Pre-Trade Risk Management

2. MARKET SEGMENTATION AND ACCESS MODEL

The migration of the Euronext Derivatives Markets to the Optiq platform will involve important changes in terms of market segmentation, access model and throttling.

On the Optiq platform, an Optiq segment defines a universe of instruments sharing common trading and financial properties. It allows Euronext to segregate instruments among several independent universes that aim to simplify clients' organisation.

Referential standing data, provided on a daily basis for each instrument via messages and files, will identify which Optiq Segment an instrument belongs to.

Since Optiq Segments are technically independent from one another, access to each Optiq Segment will require dedicated order entry access.

2.1 MARKET SEGMENTATION – *FOR INFORMATION*

- **Current market segmentation**

Following Phase 1 of the Optiq migration, the market segmentation of Euronext Derivatives on the **Market Data Gateway** (MDG) is currently as follows:

On the Order Entry side, Derivatives products are load-balanced across six (6) UTP Matching Engines. For more details, please refer to the Euronext Market Status Euronext Market Status page.

- **Forecasted market segmentation**

To improve capacity and performance of each segment with the Optiq Order Entry and Matching Engine migration, Euronext has reviewed the Optiq market segmentation for its Euronext Derivatives Markets. The target market segmentation is the following:

Equity Derivatives *(EQD)*	Index Derivatives *(IXD)*	Financial Derivatives *(FID)*	Commodities *(COM)*
. Individual Equity Options . Single Stock Futures . Single Stock Dividend Futures . Equity Total Return Futures	. Index Futures . Index Dividend Futures . Index Options . Total Return Futures	. Currency Futures . Currency Options	. Commodities Futures . Commodities Options

The forecasted segmentation will apply to Order Entry, Matching Engine and Market Data.

- **Impact on Market Data channels**

The forecasted market segmentation for Euronext Derivatives Markets on Optiq will require changes to the Market Data channels with limited customer impacts.

The Derivatives Standing Data files (MDG connectivity section of the files) will be also updated to reflect the new market segmentation and the business feed configuration. Full details will be communicated in due course.

The following external documents will therefore be reviewed:

- Euronext Cash & Derivatives Markets – Optiq MDG Client Specification
- Euronext Cash & Derivatives Markets – Optiq File Client Specifications
- Euronext Cash & Derivatives Markets – EFS User Guide
- Optiq Feed Configuration *(for both EUA & PROD environments)*

- **Impact on Order Entry**

The forecasted market segmentation will mean that customers will be able to access four market segments through their Order Entry sessions, as described in the next section.

2.2 ACCESS MODEL AND ORDER ENTRY (OE) SESSIONS – *FOR INFORMATION*

A new Order Entry session will be introduced to replace the current UTP-D ITM model.

Members will be able to connect to each of the Optiq segments with dedicated OE sessions known as Logical Accesses. This is the same connectivity model as for Euronext Cash Markets.

2.2.1 Partitions and Order Entry Sessions (OE Session)

Individual Optiq Segments may be comprised of at least one or several **Optiq Partitions**. An Optiq Partition is a technical subdivision of an Optiq Segment. Each Partition relies on an optimized technical environment, physically independent from one another, but connected.

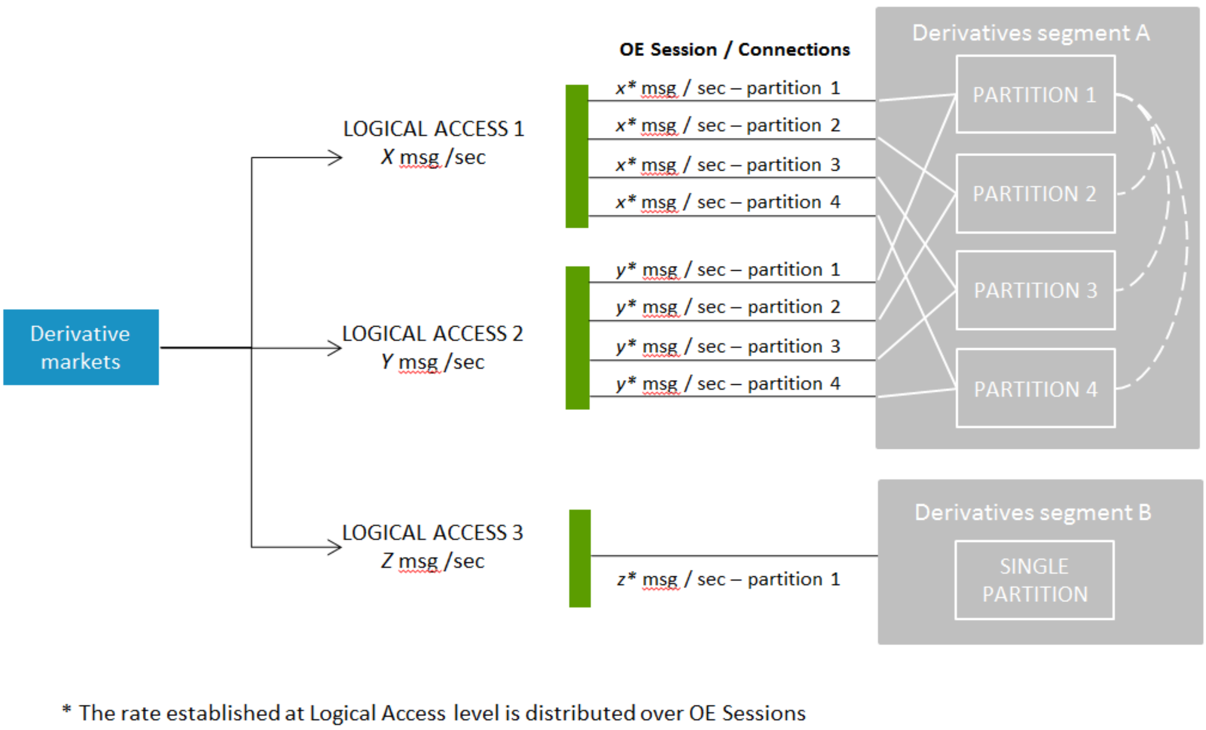
Access to Optiq Partitions is managed through Order Entry Sessions, called Logical Accesses. For each Logical Access, an OE Session can be set up to a given Partition.

However, since a Logical Access allows trading on the whole Optiq Segment, two technical paths are possible for a market participant to reach an instrument order book:

- A direct path through an OE Session established to the partition hosting the targeted instrument
- An indirect path through an OE Session established to another partition (within the same Optiq Segment), relying on internal connectivity between Matching Engines of the various partitions.

In the second case, additional latency is introduced due to the extra step involved in forwarding messages by the system between partitions via the indirect connection.

EXAMPLE: DIAGRAM OF ORDER ENTRY SESSIONS, PARTITIONS AND SEGMENTS ON TWO SEGMENTS:



This new access model will provide Derivatives members with full flexibility to access each Optiq segment in the most efficient way based on their trading rights and trading activity.

The number of partitions per Derivatives Optiq segment will be communicated in due course.

As with Euronext Cash Markets, Market Makers will have the possibility to order dedicated sessions to fulfil their quoting obligations.

2.2.2 Member Firm identification

On the Optiq platform, all members are identified by their FirmID. The FirmID will replace the UTP-D Member Mnemonics (MNEs) currently used as a technical identification of Members when logging with their ITM.

A complete review of the current configuration and usage of ITMs will be performed with each member in preparation of the Optiq migration. The current connectivity forms available on members' web portal will also be reviewed. More details will be communicated in due course. Please reach out to us for any questions.

2.2.3 MiFID II short codes usage

Members should pay attention to the following consequence of the ITM removal.

On the Optiq platform, members will no longer be able to use the ITM as a reference when calling Euronext Market Surveillance (EMS) for any 'on behalf' action.

The identification of a trader under MiFID II is the trader identification short code. All ITM-related requests such as order cancellation 'on behalf' by EMS will be transferred to the short code granularity.

2.3 THROTTLING – *FOR INFORMATION*

On the current UTP-D platform, throttling is managed at a per ITM basis. For some contracts, ITMs are also subject to throttling per contract.

The Optiq platform will provide members the opportunity to benefit from the throttling mechanism implemented for Euronext Cash Markets. Throttling per contract will no longer apply. Members can refer to the "Optiq OEG Throttling Mechanism - Functionality Description" available here for further detail.

More information on potential specific changes in the Optiq throttling mechanism for Euronext Derivatives Markets will be communicated in due course.

3. MIGRATION STRATEGY – *FOR FEEDBACK*

We would appreciate your feedback on the following points related to the migration strategy.

3.1 CHANGES IN MARKET DATA CONFIGURATION

In order to minimise the risk of the migration, Euronext is looking to apply changes to the configuration of Market Data prior to the order entry Go-Live, as described in section 2.

Please note that there would be no functional changes made to real-time market data.

Question 1. Would a configuration change at Market Data level cause any particular issues in your systems?

Question 2. How long would you require to make these types of changes?

3.2 ORDER ENTRY MIGRATION: PHASED APPROACH VERSUS BIG BANG

Question 1. What is your preferred scenario: phased approach with one or several segments at a time (as seen in section 2) vs. Big Bang migration?

Question 2. Could you please list the major impacts for your trading organisation in each of these scenarios? (dependencies across products, etc.)

Question 3. In the event of a phased approach and taking into consideration the target market segmentation, could you please indicate which market segment you would rather migrate first: Equity Derivatives, Index Derivatives, Financial Derivatives?

Question 4. Other - Please do not hesitate to raise other important points related to the migration strategy for your organisation that Euronext should consider in the migration plan.

4. REFERENTIAL MANAGEMENT

This part of the consultation focuses on changes in Market Data, especially referential and static information.

4.1 CHANGES TO INSTRUMENT IDENTIFICATION – *FOR FEEDBACK*

Currently all Euronext Derivatives instruments are identified by an AMR (Automated Market Reference), a 15-char string.

On the Optiq platform, instruments are identified based on a SymbolIndex.

The SymbolIndex, a Numerical ID, will also be used as a replacement of the AMR for all Euronext Derivatives contracts i.e. outright Futures and Options contracts as well as strategies. More information about SymbolIndex for strategies will be provided in due course.

Question 1. Would the replacement of the AMR by the SymbolIndex have a particular technical impact on the way you manage referential for Euronext Derivatives instruments? Please provide a high level overview of these impacts.

Question 2. Please also indicate whether you foresee that this change will have a business impact for you, positive, neutral or negative, especially on middle and back-office operations and systems.

4.1.1 Expiry cycles

On UTP-D, a number of Equity and Index Derivatives contracts have daily, weekly and monthly expiries.

While monthly expiries are linked to the underlying contract code, weeklies and dailies are considered as separate contracts with their individual contract codes. Spread trading across these expiries is currently done using the Inter Commodity Spreads (ICSs) predefined by the Matching Engine.

On the Optiq platform, all expiries will be merged and linked to the underlying contract code. This change, aligned with industry standards, will provide clients all required flexibility to do spread trading between the different expiries without relying on predefined ICSs.

Question 1. Do you believe that this new management of expiry cycles will have a particular impact on your systems? If so, please describe them.

Question 2. Please indicate any specific foreseen business impacts, positive, neutral or negative, especially on middle and back-office operations and systems.

4.2 MANAGEMENT OF TICK SIZES – *FOR INFORMATION*

Tick Sizes for Euronext Cash instruments on the Optiq platform are managed using Tick Tables that provide the Order Entry / Matching Engine rules to be applied on a given instrument for tick determination based on:

- Predefined price ranges
- Submitted order / quote price

Tick Tables are provided through a specific file. In this file, each Tick Table is identified by a unique ID (TickSizeIndexID).

Each instrument refers to a Tick Table, inherited from its class or set-up at instrument level to override the inherited value.

For Euronext Derivatives instruments on the current UTP-D platform, there are two tick types in the order entry rules:

- The standard tick size
- The Premium Based Tick Size (PBTS) that sets a greater minimum price interval when the option premium moves above a specified threshold.

The tick sizes as well as the levels of the PBTS thresholds are provided in the standing data files.

In order to enforce harmonisation across instruments, tick sizes for Euronext Derivatives contracts on the Optiq platform will also be managed through Tick Tables.

This change implies that the following fields provided in the standing data will become obsolete:

- Instrument Denominator
- Instrument Numerator
- Premium based tick size
- Premium based tick size threshold

Instead, the derivatives standing data file will provide the following data at Contract level:

- Ticktable ID (**NEW**)
- Strike Price Decimal Ratio
- Instrument Settlement Tick Size
- Instrument EDSP Tick Size

The usage of the Tick Table will still provide Euronext the ability to offer larger tick sizes above a pre-defined threshold for deep in-the-money strikes, i.e. similarly to the Premium Based Tick Size facility.

Tick tables will give Euronext the opportunity to apply different tick sizes for the different price levels of individual books for Futures and Option contracts. The Blue Month will have its own parameter to apply reduced tick.

As a result of this, Optiq Matching Engine could generate an implied price on a book at a different tick than the explicit one applied at order entry. Members should note that incoming orders can match the implied price at a different tick than the one used at order entry without any price improvement.

Tick sizes will be used for order entry but not for matching.

4.3 INSTRUMENT PATTERNS AND TIMETABLES – *FOR INFORMATION*

One of Optiq's objectives is to bring enhanced transparency and predictability to the Derivatives Markets. By introducing patterns in the day, Euronext is applying a similar structure to contracts and products in the order book, thereby enabling Members to trade more efficiently.

A pattern is defined as a succession of trading phases. The typology of the phases can be adjusted by predefined qualifiers.

As part of the harmonisation across Cash and Derivatives Markets, trading patterns will also be provided for Euronext Derivatives contracts through dedicated timetable files and subsequent messages.

Each Derivative contract will be assigned a pattern. All subsequent series of the contract will follow the same pattern.

At present, the following trading phases are defined for Euronext Cash Markets:

Phase ID	Description
1	Inaccessible
2	Closed
3	Call
4	Uncrossing
5	Continuous
7	Continuous Uncrossing (Warrants and Certificates Only)

New Phase IDs will be introduced specifically for the Euronext Derivatives Markets especially to notify clients of (1) an expiry of a contract, (2) the widening of price limits.

In the timetable messages, Members will also be provided with "Order Entry Qualifiers" i.e. order entry indicators specifying what is allowed on each trading phase. New order entry qualifiers will be added to the current list when relevant.

The timetable will allow Members to predefine trading patterns of instruments for the trading day at start of day. Any exceptions to the timetable applying to a contract / group of contracts will be communicated to the market through specific messages.

While introducing this new mechanism, Members should note that there will not be any loss of information provided compared to the current UTP-D messages.

5. TRADING FEATURES

5.1 GIVE-UP DECLARATION - *FOR FEEDBACK*

The UTP-D platform currently provides members the ability to give-up a trade either at the ITM or Member Mnemonic level (through the combination of the PartyRole and PartyID fields).

The Optiq platform for Cash Markets only authorises give-up instructions at a Clearing Account level.

As part of the harmonisation between Cash and Derivatives Markets and as a result of the implementation of the new session model, Euronext is looking to support give-up instructions on Euronext Derivatives Markets at Optiq Firm ID level, through the ClearingFirmID field, equivalent to the current participant code - rather than at the ITM or MNE level. Please note that such a change will be subject to consultation with Euronext clearing partners.

Such a change would have limited operational impacts on the following clearing arrangements currently available:

- Account Authorizations (available in the Amsterdam market only)
- Stock Contingent Trades (delta-neutral trades)

Authorisations are set by the MCC department at Member level. All controls at order entry level will be removed. As on Euronext Cash Markets, it will be the responsibility of the member using these features to guarantee the accuracy of the clearing information passed to the clearing system at the order entry level.

All clearing instructions will be fully detailed in the Optiq client specifications.

Question. Please describe any major impacts that such a change would have on your front-to-back systems both from a technical and / or operational point of view.

In order to anticipate on any "blocking points", we would really appreciate your assistance. Please reach out to us with any comments and suggestions.

5.2 WHOLESALE TRADING – *FOR FEEDBACK*

The legacy UTP-D platform offers various types of wholesale trades:

- Block Trade (Large In Scale)
- Prof Trade (Large In Scale Package)
- Guaranteed Cross
- Against Actuals
- Exchange For Swap
- Basis Trade

On the UTP-D platform, all these transactions can be submitted via the New Order Cross message. However the Matching Engine applies two different internal matching rules depending on the type of trades.

Subject to regulatory approval, Euronext is considering rationalising the management of wholesale trades alongside the Optiq migration of Euronext Derivatives Markets:

- Euronext would only support one type of 'Large In Scale (LIS)-like' wholesale trade
  - Block Trade, Prof Trade, Exchange For Swap and Against Actuals would be supported via a unique message and same matching rules.
  - The message would include all the specific rules for each type of trade.

Block Trades, Prof Trades, Exchange For Swap and Against Actuals will still be available after the Optiq migration, however they will be implemented on Saturn, the Euronext Global Reporting service and not directly on the Optiq platform. All matching rules and controls linked to the management of wholesale trades will therefore be transferred from the Matching Engine to Saturn.

It is important to note that the migration to the Saturn platform will have **no** impact on the following:

- Wholesale trades will be checked against BBO and Price limits from the Central Order Book,
- Trades will still be published through standard and existing MDG messages,
- Trades will continue to be offered in extended trading hours,
- In case of suspension of a contract, wholesale submission will be rejected.

Members will have the opportunity to enter these trades either manually through the Saturn User Interface or automatically through the Saturn API.

- Guaranteed Cross will be decommissioned. Members could use the dedicated wholesale trading facility via Saturn for cross trades above LIS instead. For cross trades below LIS, Members can continue to use the Request For Cross (RFC) facility which will be made available on the Optiq platform.

Since all Euronext Members already have access to Saturn for regulatory reporting purposes, Euronext expects the migration of wholesale trading to Saturn to have limited operational impact.

Question 1. In order to anticipate any "blocking points" for the migration, could you indicate any foreseen impact for your trading organisation (including middle and back-office)?

Question 2. Saturn will provide a FIX API over the web service (REST API). Could you please assess the impacts in terms of integration of such an interface in your front-office systems?

Also, do not hesitate to reach out to us for any functional comments on wholesale trading.

5.3 MARKET ON OPEN (MOO) ORDERS - *FOR INFORMATION*

Please note that Market On Open (MOO) orders will no longer be available for Euronext Derivatives contracts on the Optiq platform. The removal of this order type is driven by the limited current usage as well as the enhancements made to the Uncrossing phase (please refer to section 6 for more information).

6. TRADING: IMPLIED

This section is dedicated to the presentation of the Implied models that Euronext will make available for Euronext Derivatives contracts with the Optiq migration.

Please note that changes described in this section will be subject to regulatory approval.

6.1 THE UTP-D IMPLIED MODEL – *FOR INFORMATION*

The legacy UTP-D platform supports two types of Implied prices.

- **Implied In**: prices in a strategy market derived from prices in the associated outright Markets. Implied In prices are calculated by UTP-D but not disseminated via MDG. Members are required to calculate the implied prices themselves.
- **Implied Out:** prices in an outright market derived from prices in one strategy and prices in associated legs of the strategy. Implied Out are available only for strategy types defined with the same weight for all legs. Although the Trading Host calculates 'implied out' prices, it only transmits the best 'implied out' prices along with full explicit pricing.

Implied In and Implied Out are activated on a per Strategy Type basis for each Contract and calculated on a continuous basis by UTP-D.

In addition, some Derivatives contracts can have implied pricing turned off.

Euronext will take the opportunity of the Optiq migration to introduce a new implied model, called 'Event Driven Implied Matching (EDIM)'. The UTP-D model will still be available, with a few changes described below. On the Optiq platform, this model will be referred as 'Spontaneous Implied Matching (SIM)' model.

As with the current situation, certain contracts will have implied turned off.

6.2 THE 'SPONTANEOUS IMPLIED MARKET (SIM)' MODEL – *FOR INFORMATION*

The SIM model will be applied in the same way as the current implied model, on a per strategy type basis for applicable contracts:

- Implied In will be available for all strategy types,
- Implied Out will be available for strategy types defined with the same number of legs,
- Implied will be calculated on a continuous basis by the Matching Engine.

The Implied orders In and Out will be generated upon BBO updates (no change compared to UTP-D) with the BBO update generated by one of the following events:

a. A trade
b. An order cancellation
c. A new explicit Order
d. An order price update

As presented in the previous chapter, there will be a number of changes to the Uncrossing mechanism in order to guarantee a fair market.

The Uncrossing mechanism will also be different depending on the Implied model applicable to the strategy order book.

The main difference between the legacy UTP-D implied model and the Optiq SIM model is in the way strategies and Implieds are generated at Uncrossing.

6.2.1 Uncrossing mechanism of strategy books in the SIM model

Euronext is simplifying the overall Uncrossing mechanism with new SIM rules.

Currently, the primary rules for the SIM model are the following:

- Strategy order books will be reserved during any auction phase (**NEW**);
- Only order cancellations will be permitted until all component leg books (i.e. outright contracts) are uncrossed (**NEW**).

Please note that the calculation of the indicative matching prices for outright Markets will be based on the same principles as on Cash Markets. Note as well that Uncrossing of the outright Markets will be done independently without any sequencing logic.

Once all component legs will be uncrossed, the strategy books will switch from Reserved to Uncrossing state.

The main rules of the Uncrossing of strategy books with the SIM Implied model will be as follows and will not generate any technical change:

- Uncrossing of the Strategy Markets will take into account both explicit prices of the strategies as well as Implied In prices. Implied In will be generated only if they update the strategy BBO. Furthermore, only strategy orders having component legs within the price limits would be executable.
- A second Uncrossing of the outright Markets will take into account Implied Out. Implied Out will be generated only if they update the outright BBO and will be executable only if the strategy order and the Implied out orders are within their respective price limits. Note that for strategies with a leg ratio > 1, there will be no Implied Out calculation.

6.3 THE NEW 'EVENT DRIVEN IMPLIED MATCHING (EDIM)' MODEL - *FOR FEEDBACK*

Please note that the implementation of this model will be subject to regulatory approval.

The main characteristics of the proposed EDIM model are the following:

- Implieds will be activated on a per strategy type for each contract subject to the EDIM Model
- Implied In will be available for all strategy types
- Implied Out will NOT be available
- The implied calculation will be driven by one of the two following events:

1. Reception of a priority order (new or revision) in the strategy order book leading to a BBO improvement
2. Reception of a Request For Execution (**NEW**)

Request for Execution (RFE) will be a new facility implemented on Optiq for Derivatives contracts. Note that it is already available for Euronext Cash Markets, and that different rules apply.

- RFEs will be allowed only if the submitter already has an active order in the book
- RFEs will be subject to throttling at session level as new orders and quotes
- RFEs will trigger matching on the whole strategy book (not on the single order of the submitter)

The potential trade in the strategy will be checked against price limits, which can cause the strategy book to become Reserved.

6.3.1 Uncrossing mechanism of strategy books in EDIM model

The primary rules: for the Uncrossing of strategy books in EDIM model are the following:

- Strategy order books will be Reserved during any auction phase of one component leg (**NEW**)
- Only order cancellations will be permitted until all component leg books (i.e. outright contracts) are uncrossed (**NEW**).

Please note that the calculation of the indicative matching prices for outright Markets will be based on the same principles as on Cash Markets. Note as well that Uncrossing of the outright Markets will be done independently without any sequencing logic.

Once all component legs are uncrossed, the strategy books will switch from Reserved to Uncrossing state.

The main rules of the Uncrossing of strategy books with EDIM implied model will be as follows:

- The strategy order books will be individually uncrossed (**NEW**);
- Uncrossing of the Strategy Markets will take into account both explicit prices of the strategies as well as Implied In prices. Only strategy orders having component legs within the price limits will be executable **(NEW)**;
- Once the outright Markets are uncrossed, the execution of the strategy order books will be triggered with the following order:
    - Ordering of strategy books by maturity of the nearest leg
    - Ordering of strategy books per strategy types based on leg ratios (e.g. butterflies before spreads)
    - Ordering of strategy books by the strategy creation date and timestamp

The main difference at Uncrossing between the SIM and EDIM model is that the EDIM model will have no Implied Out calculation.

Question 1. Please provide us with any comments, suggestions on this model as well as on the introduction of Request For Execution.

Question 2. Please raise any specific functional points of attention that could help Euronext fine tune this new model.

6.4 FORECASTED IMPLIED CONFIGURATION FOR EURONEXT DERIVATIVES CONTRACTS - *FOR FEEDBACK*

Subject to regulatory approval, the new EDIM model will apply to all option contracts for all segments and illiquid future contracts.

The SIM model will apply to the most liquid Commodity and Index Derivatives Futures contracts.

Optiq Segment	*Liquid Futures*	*Illiquid Futures*	*Options*
Equity Derivatives	*EDIM (NEW)*	*EDIM (NEW)*	*EDIM (NEW)*
Index Derivatives	***SIM/EDIM/TBD***	*EDIM (NEW)*	*EDIM (NEW)*
Commodities	***SIM/EDIM/TBD***	*EDIM (NEW)*	*EDIM (NEW)*
Financial Derivatives	*No Implied*	*No Implied*	*No Implied*

Note: This set up is at contract level. For some strategies, as explained above, Implied pricing may be turned off by Euronext Market Surveillance.

Question 1: Would you be comfortable having only the EDIM (no SIM) model on all Financial Derivatives – including Index Futures?

Question 2: Would you be comfortable having also the EDIM model replacing the SIM model on Commodity Futures?

7. PRICE LIMITS AND TRADE PRICE VALIDATION

This section is dedicated to changes that Euronext is considering implementing on Optiq for Derivatives Markets on (i) price limits and (ii) trade validation in the different trading phases.

The changes described in this chapter are presented for information only. However, please feel free to add any specific comments or questions you may have.

7.1 PRICE LIMITS ENHANCEMENTS - *FOR INFORMATION*

In order to improve predictability of Euronext Derivatives markets, Euronext is looking into building a simplified collar management model on Derivatives.

In UTP-D, two price limits safeguards are defined: (1) inner price limits, (2) outer price limits. This model will be replaced by a single dynamic collar logic.

On one hand, Euronext will provide in the specifications the rules applied by Optiq to determine a dynamic collar reference price on a given book.

On the other hand, Euronext will provide through daily referential data the spreads to be applied on the reference price to compute the effective collar levels. In the event that a change is applied intraday by Euronext Market Surveillance, the multiplier applied will be disseminated through MDG.

This new logic will allow Euronext members to maintain in real-time within their systems the same collar levels as applied by Optiq Matching Engine, therefore preventing (1) orders and quotes being rejected without latency, (2) oversized data flow of MDG messages if Euronext were to publish them explicitly

7.2 FUTURE SPIKE PROTECTION - *FOR INFORMATION*

Management of price limits is a key element of any electronic trading environment where sudden fast market conditions could bring a significant risk of extreme and erroneous price volatility.

Euronext will take the opportunity of the Optiq migration to enhance the management of price limits.

Internal technical and functional changes within the Optiq Matching Engine will be implemented to enhance price limit validation through all the different trading phases (Uncrossing as well as continuous).

As part of these enhancements, Euronext is looking to implement a new and innovative algorithm called Future Spike Protection (FSP), in order to protect Futures Markets from extreme price movements within a short timeframe. The FSP mechanism will be based on Blue month prices and can be enabled / disabled at a contract level.

General overview of Future Spike Protection

The FSP functionality introduces four notions:

1- FSP Value: reference value snapped by the Matching Engine
2- FSP Value range: spread applied based on the reference value snapped
3- FSP Time interval: time range between two snapshots of the FSP value

Whenever the expected trade price of a Futures is out of the FSP Value Range within the pre-determined FSP Time Interval, an FSP event is triggered, resulting in an FSP Freeze period defined as follows.

4- The FSP Freeze Period: pre-determined time period, during which the price of the blue month is not permitted to trade outside the FSP Value Range.

During the FSP Freeze Period:

1. Trading continues for the related contract(s),
2. Euronext only allows trade prices within/on this value range,
3. No new FSP Limit Value will be generated,
4. The FSP Value Range will stay as it was at time of the breach.

The FSP Limit Value will be calculated from the Blue month, equal to the snapshot of the last traded price at the end of the time interval.

The FSP Value Range will correspond to the maximum number of ticks (or other variables) that a blue month is allowed to move up or down during the FSP time interval.

FSP customer impacts

- Existing Market Data Gateway (MDG) values will be re-used to disseminate this information:
  1- At the moment an FSP Event is triggered. The message will include: start time, duration (end time), the static FSP Value and the corresponding FSP Value Range (Lower and Upper limit).
  2- At the end of the FSP Freeze Period.
     a. A notification that the FSP period has ended.
     b. The new FSP Value Range that will be equal to the last traded price in the Blue month.

- Private messages will also be sent for any orders rejected or cancelled in the event that the residual volume would cause a potential trade outside the boundaries of the FSP Value Range.

Euronext is looking at enabling the Future Spiking Mechanism on all its Futures contracts.

7.3 TRADE PRICE VALIDATION - *FOR INFORMATION*

Trade Price validation mechanisms will also be enhanced with the Optiq migration. Not only will these new mechanisms be aligned with Cash trade price validation, they will also limit the risk of aberrant trades and provide a fair and orderly market.

7.3.1.1 Trade Price Validation at Opening Uncrossing

In the UTP legacy system, at the Opening Call phase, price limits are set to Extended. There is however a potential risk for mistrades due to the fact that resting Good 'Til Cancel (GTCs) / Good 'Til Date (GTDs) and orders sent in Pre-Open are not checked against the same price limits.

A new mechanism will be implemented on Optiq to guarantee that all trades participating in the Uncrossing phase will be checked against identical price limits. Trades within the price limits will be accepted and executed.

The main impacts of the change are described below:

- In the event that trades are generated outside of the price limits, the instrument will be reserved after the Uncrossing (**NEW**);
- In the reserved phase, an RFQ will be sent;
- The reservation and re-opening will be automatically scheduled. The re-opening will be scheduled with a pre-defined unhalt parameter and a notification will be published via MDG;
- During the reserved phase, order entry / revision and cancellation in the reserved outright instrument will be permitted;
- Price limits will be active in the subsequent reservation phase;
- If the situation persists when re-opening (second Uncrossing), the mechanism will be re-triggered; and
- A maximum iteration number will be defined. If the situation persists, orders participating to the suspicious trades will be pulled by the Matching Engine in order to allow opening of the contract.

<u>Impact for strategies</u>

Members should note that strategies could also be in Reserved state in the event that one of the component legs is in Reserved state. The strategy book will stay Reserved until all component legs are in continuous state. In such situations, only cancellations will be permitted.

The Uncrossing of the strategy book will depend on the Implied model applying to the contract. Please refer to section 6 for additional information.

<u>Indirect impact for Market Makers</u>

The new trade price validation mechanism will have a positive impact for Market Makers especially when Market Maker Protections have been set.

Indeed, Market Maker Protections also apply during Pre-Open however no pulling takes place prior to Market Open.

Trades executed during the Uncrossing process update the Protection Positions of the Market Maker, but do not directly cause a breach action. The first trade occurring after the Uncrossing phase updates the Protection Position further and may potentially cause the configured breach action to be applied at this time. The cumulative position can be calculated as trades resulting from quotes. However, if a Market Maker is not restricted to quotes but allowed to submit other order types, the cumulative position is calculated on all orders.

The new mechanism of providing a fair participation of all orders types in the Uncrossing will also guarantee Market Makers a fair protection of their quotes and limit the risk of breaching their protections in place after the first trade following the Uncrossing.

7.3.1.2 Trade Price Validation in Continuous phase

Similar price validation will be implemented during the continuous trading phase. This new mechanism can result in an outright instrument being in Reserved state (**NEW**).

Such a scenario will happen when previously accepted orders are no longer within the price limits calculated by the Optiq Matching Engine, but end up in a trade (therefore a trade outside of price limits). as the result of a new price reference following the instrument underlying market price movements.

The following scenario will occur in the event that an outright instrument is in Reserved state:

- An RFQ will be sent;
- Private breach confirmation messages will also be sent to counterparties on suspicious orders i.e. outside of the price limits;
- The re-opening is scheduled automatically after a fixed period of time and a scheduled event and the associated scheduled event time are sent to the market;
- During the reserved phase, order entry / revision and cancellation in the reserved outright instrument will be permitted;
- If the situation persists when reopening (at Uncrossing), the mechanism will be re-triggered;
- A maximum iteration number will be defined. If the situation persists passed this number, orders participating to the suspicious trades will be pulled by the Matching Engine in order to allow the opening.

When an outright is Reserved, all related strategy books will also be turned into a Reserved state. The strategy book will be re-opened based on the same logic.

7.3.1.3 Intraday Trade Price Validation for Strategies

This change is related to the specific scenario of strategies being reserved intraday in the context of price limit validation applying to strategy order books (i.e. not as the result of at least one component leg of the strategy being reserved).

Different scenarios and order types will be authorized during the Reserved state of the strategy. They will depend on whether the Implied facility is turned on for the strategy or not.

- **Scenario 1: the strategy has no implied turned off**

In this case, the strategy will behave as an outright. The same scenario as described in the previous section will apply to the strategy book.

- **Scenario 2: the strategy has Implieds turned on**

The main difference to note is that only order cancellations will be permitted during the Reserved period.

Private breach notification messages will be sent to both counterparties of suspicious trades.

If the strategy (i) has the SIM Implied model turned on, (ii) is reserved on its own with outright market still open, and (iii) a trade is triggered from the open outright books on a limit from an existing order, an Uncrossing Trade is sent on the strategy level while reserved (please refer to the next chapter for further details).

8. TRADING: MARKET MAKING

This chapter focuses on some of expected impacts on Market Makers following the migration of Euronext Derivatives Markets to the Optiq platform.

8.1 MARKET MAKER REGISTRATION AND MONITORING - *FOR FEEDBACK*

Market Making roles are currently set per contract, Member Code, ITM and Market Making role.

On the Optiq platform, Market Makers will still register for a Market Making role per contract, but will do so using FirmID instead of Member Code, and per Logical Access instead of ITM.

In order to align the monitoring of Market Maker obligations with Market Makers roles, Optiq will indicate on the public Market Data feed the At The Money series per contract in real time. This will avoid occurrences observed today of mis-alignment following the underlying market price movements.

Daily performance reports will contain at least the following information:

1- Number of orders sent per day (each individual record of a 'Quote' message is considered as an order), per contract
2- Time duration per instrument on which a given 'Firm ID' has the best bid and/or offer
3- Number of messages sent per Session, per Firm ID, per instrument

Question. Would you also be interested in receiving the list of At The Money (ATM) series per contract, at start of day as well as intraday changes following market movements of the underlying instrument?

8.2 THE QUOTE MESSAGE – *FOR INFORMATION*

Market Makers on Euronext Derivative Markets will be able to fulfil their quoting obligations using the same Quote (08) message as available for Cash Markets.

While providing identical basic features and controls as the UTP-D legacy Mass Quote message, the Optiq Quote message should bring more flexibility to Market Makers in the following areas:

- **Scope of instruments**: At present, the scope of instruments within a Quote message is limited to instruments hosted on the same partition. Euronext will study whether any changes will be required with regards to this limitation as part of the Optiq migration of Derivatives contracts.
- **Number of quotes in a single message**: the maximum size of a Quote message on the Optiq platform is currently 150 single-sided quotes, compared to 65 double-sided quotes on the UTP-D legacy platform.
- **Validation rules**: In the event that the Quote message contains multiple updates for the same instrument, only the last occurrence is taken into account (the other ones are ignored).
- **Clearing information:** The Optiq platform offers an optimised way for Market Makers to automatically include their clearing data in the Quote message, i.e. clearing data only needs to be sent once at the beginning of the day (and not repeated in all subsequent quotes throughout the trading day).

<u>Note on Request For Quote</u>

The RFQ functionality will remain available on the Optiq platform with no functional changes, including its availability for Strategies.

8.3 MARKET MAKER PROTECTIONS – *FOR INFORMATION*

The following Market Maker Protections will be available for Euronext Derivative Markets on the Optiq platform:

- Delta Protection
- Volume Protection

These two types of MM Protection will only be available at a contract level, but **no longer at an Expiry level** as Euronext believes this is no longer required with the new management of expiries on the Optiq platform.

All other features will remain unchanged.

Note that Market Maker Protection messages will only be provided in SBE protocol.

9. SUPERVISION AND RISK MONITORING

9.1 DROP COPY – *FOR FEEDBACK*

- The Drop Copy service for Euronext Derivatives provides a near real-time copy of orders and trades. It can be set for a Member Mnemonic, an ITM or a group of ITMs. Trading Members can set Drop Copy sessions to risk monitor their own activities, whilst General Clearing Members can request Drop Copy sessions for the NCMs they clear.

- While still providing a near real-time copy of orders and trades through the Execution Report (8) messages, the Drop Copy service has been significantly improved on the Optiq platform.

  Clients have the ability to select the scope of instruments and Member code activity that their Drop Copy access will receive. On creation or modification of the configuration for the individual Drop Copy connections, clients may select:
  - One or more Optiq Segments, i.e. possibility to request a cross-segment connection;
  - Member Code - A Drop Copy Logical Access may be assigned with a member code with which the client is set up to trade on Euronext, or with which they are identified as managing (e.g. in their role of Risk Manager);
  - Logical Access - The default setup for the Cash Markets Optiq Drop Copy logical access is to assign and receive data for all Trading (OEG) Logical Accesses setup for that member code. If required, clients could choose to segregate their Drop Copy connections to receive information for a single Trading (OEG) Logical Accesses, a sub-set, but not all trading Logical Accesses, per Drop Copy account. For Example: A Sponsored Access client of a member firm A may request a Drop Copy logical access for their own activity performed under a dedicated trading logical access, at the same time back-office handling all activity of that member firm A may setup a separate Drop Copy logical access which will receive data for all activity, including that of the Sponsored Access client.
  - Type of Messages to receive – clients can choose to connect the type of messages they would to receive, i.e. (1) order messages from the Central Order Book, (2) trade message from the central order book or the combination of (1) and (2).

Note that the Drop Copy on Optiq is only provided in FIX 5.0 protocol.

Question 1. Do you have any particular comments or suggestions on this service as well as on the forecasted changes?

Question 2. As a Market Maker, could you please indicate if you would be interested in the Drop Copy to be extended further to have the option when subscribing to the service to receive a copy of quotes messages (note that such a subscription would have an impact on bandwidth)?

Question 3. Would it be of interest to you to have Drop Copy provided in SBE format?

9.2 RISKGUARD – *FOR FEEDBACK*

RiskGuard, the Euronext Pre-Trade Risk Management service, is provided for Euronext Derivatives Markets through FIX 5.0 protocol as well as a web-based User Interface.

The service will be implemented on the Optiq platform. Kill Switch will be available as a basic control functionality of the service.

The other risk controls will also be implemented, i.e.:

- Block / contract restrictions
- Order Size Limit

While all details will be provided in due course, the migration of Euronext Derivatives Markets will offer finer granularity and greater flexibility to Risk Managers to risk monitor their entities and their clients.

In particular the Kill Switch facility will not only be available at Member level but also at:

- Trader level (*ExecutionWithinFirmShortCode)*
- DEA (*ClientIdentificationShortCode)*
- Sponsored Client (*Logical Access)*

The Block / Contract Restriction will allow Risk Managers to submit orders in particular contracts.

Please note that Euronext is considering implementing the Daily Exposure Management in a later phase.

Question 1. Do you believe that there is an interest to keep the option to 'pull only day orders' when triggering a Block / Contract Restriction control?

Question 2. Regarding the Order Size Limit: do you believe that it is relevant to keep the option to set separate Order Size limits for Buy and Sell Orders?

Question 3. Would the late implementation of the Daily Exposure management cause you any issues?

Please do not hesitate to reach out to us for any further questions or comments on the RiskGuard service.

9.3 SELF TRADE PREVENTION – *FOR INFORMATION*

Please note that some of the changes described below are subject to regulatory approval.

As a general overview, the Self-Trade Prevention (STP) is an optional functionality, which in Optiq:

- Prevents the matching of two opposite orders that are eligible to the STP mechanism,
- Cancels the resting or incoming order, depending on the STP Type chosen by the client,
- In case the chosen STP Type is "Cancel Resting", Optiq simultaneously enters the other order from the possible match into the order book, and,
- Triggers sending of appropriate private and public messages to inform clients of the occurred events.

In order to be eligible for the STP mechanism, both opposite orders must satisfy the following criteria:

- **Firm ID**: Both orders come from the same member firm, which means that the values in the *Firm ID* (SBE) / *OnBehalfOfCompID* (FIX) of the incoming order equals the one provided of the resting order,
- **Liquidity Provider**: Both orders have the *Account Type* set to 6 - Liquidity Provider (LP), i.e. field *Account type* set to value "6" (Liquidity Provider); and field *LP Role* set to any of the allowed values,
- **Instrument**: Both orders are sent on the same instrument, represented by a combination of Symbol Index and EMM (the platform to which the order sent by the client must be routed),
- **STP Type**: Both orders have the same value set in the field *Execution Instruction* (SBE) / *STPAggressorIndicator* (FIX) to indicate whether client would like to cancel the incoming or resting order.

If any of the criteria above are not satisfied, the STP mechanism will not be triggered.

The use of the STP functionality does not require any additional setup for the client's connections, and uses the characteristics of orders and firms.

The STP functionality is applied to incoming orders sent within a single Optiq segment, on the same instrument, from the Continuous Phase to end of trading day. To ensure fairness, an STP check will be done on all orders within Optiq segment, for all market participants.

In addition to the above, Euronext is considering to implement the following changes;

- The STP service would support quotes management and triggering rules based on orders submitted by Market Makers via Quotes. The external messages on the private feed in both FIX and SBE formats would be accordingly adjusted.

- Self-Trade Prevention would not be triggered in any transaction involving implied as it would be too much of a complexity to validate the transaction. The STP mechanism would be enclosed at book level only in case of a trade between two explicit orders.

- Explicit Aggregate Order. In the case of a transaction involving an aggregate order where the quantity is split between several orders, one of them being subject to STP:
  1- The trade would be done taking into account the remaining quantity (aggregate quantity minus the individual STP related orders);
  2- If a tradable quantity remains in the book, the STP mechanism would be triggered on the remaining tradable quantity.

- For Euronext Derivatives markets, the STP mechanism would be configured so that both MM and House accounts are taken into account resulting in potential blocking cross trades for a given firm between:
  - MM accounts,
  - MM versus House account,
  - House versus House account.

Note that more information will be provided in due course.