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PREFACE

PURPOSE

This document outlines the migration details regarding Phase 2 of the Euronext Optiq implementation: Order Entry Gateway and Matching Engine for Cash markets.

TARGET AUDIENCE

The intended audience of this document is any client intending to connect to and trade on the Euronext Cash markets using Optiq.

This document is for informational purposes only, and should be consulted alongside its associated documents outlined below.

WHAT'S NEW?

The following lists only the most recent modification made to this revision/version. For the Document History table, see the Summary of Changes [section](#).

REVISION NO./ VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
1.5	20 June 2018	Euronext	Sixth release

ASSOCIATED DOCUMENTS

The following lists the associated technical documents which either should be read in conjunction with this document or which provide other relevant information for customers:

- Euronext Optiq Cash Regulated Markets – OEG Client Specifications – SBE Binary Interface
- Euronext Optiq Cash Regulated Markets – OEG Client Specifications – FIX 5.0 Interface
- Euronext Cash Market – Optiq Kinematics Specifications
- Euronext Cash Markets - CCG to OEG Changes highlights
- Euronext Cash Markets - Optiq TCS Client Specification - SBE and FIX Interface
- Euronext Cash and Derivatives Markets – Optiq MDG Client Specifications (updated for Phase 2)
- Euronext Cash Markets – Optiq & TCS Error List
- Euronext Cash Markets - Optiq OEG Connectivity Configuration specifications
- Euronext Cash and Derivatives Markets – Optiq File Specification
- Euronext Cash Markets - Change Highlights – Optiq MDG Phase 1 to 2
- OEG SBE Template file
- MDG SBE Template file (updated for Phase 2)
- Optiq Euronext File Services User Guide
- Optiq Technical Note SBE

Clients are advised to also refer to the Euronext Rules and Regulations documents for more details.

For the latest version of documentation please visit <http://www.euronext.com/optiq/documentation>

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1. INTRODUCTION

Euronext announced the launch of its new generation technology programme in May 2016, which is delivering improved customer experience through the migration from its current technology platform UTP to its new leading edge platform: Optiq®.

Optiq will deliver a simplified harmonized messaging model with maximum flexibility, within a single trading platform for cash and derivatives, providing clients with high performance and stability. The migration is managed in phases and began in 2017 with the migration of our market data infrastructure. This will be followed in 2018 with the migration of the Cash Markets to the new order entry and matching engine modules first for the Fixed income segment and second for the remaining Cash market segments, and finally with the migration of the Derivatives Markets.

The move to Optiq will allow Euronext to deliver an enhanced multi-market trading platform, leveraging the latest technology to ensure high reliability and to significantly enhance throughput and predictable latency. The simplified and flexible system will allow shorter time-to-market to deliver new products and implement customers' requests, while creating an opportunity for customers to reduce their administrative costs. The new platform is compliant with MiFID II regulation.

1.1 SCOPE OF OPTIQ PHASE 2

This document outlines the changes and improvements between the current Common Customer Gateway (CCG) and UTP Matching Engines, and the new Optiq Order Entry Gateway (OEG) and Matching Engine (ME) architecture, and will accompany readers during the migration process for Phase 2 on Cash markets.

SCOPE OF MARKETS AND PRODUCTS COVERED BY OPTIQ PHASE 2

Markets and Products		
Cash markets	Equities (OEG + MDG)	✓
	Funds (OEG + MDG)	✓
	Fixed Income (OEG + MDG)	✓
	Warrants & Certificates (OEG + MDG)	✓
	Indices (MDG only)	✓
Trade Confirmation System (TCS)	TCS (through cash market OEG + MDG of the respective asset class)	✓
Luxembourg Stock Exchange	Luxembourg Stock Exchange (OEG + MDG)	✓
Derivatives markets	Derivatives – Futures	
	Derivatives – Options	
	Commodities	
MiFID II reporting	Approved Publication Arrangement	

Note: SmartPool and BondMatch have been decommissioned. Euronext Block and Synapse are not impacted by the Optiq migration. Hosted commercial markets are out of scope of this migration.

SCOPE OF SERVICES COVERED BY OPTIQ PHASE 2

Services	
End of day files	✓
Drop copy	✓
Warrants LP issuer services	✓
Euronext File Server (EFS)	✓

1.2 BENEFITS

The Euronext Optiq Order Entry Gateway (OEG) and Matching Engine (ME) will deliver several important benefits of the Optiq programme.

■ Harmonization for Cash and Derivatives private messages

With Optiq, all Euronext markets will rely on one unique messaging system. The messages are the same in terms of message structure and fields. Some are common and some are specific to both cash and derivatives. Specific fields for separate markets have been reduced to the minimum.

■ A simpler messaging system

The number of messages has been reduced to roughly one-half. Optiq OEG not only maintains the quality of information, it even enriches it. Optiq messages are also easier to process and smaller compared to UTP. Technically, this has been achieved with the introduction of new Simple Binary Encoding (SBE).

■ A flexible messaging system

With SBE technology, messages can evolve without a backward compatibility impact, giving Euronext customers total freedom when it comes to adaptability while delivering on performance and speed objectives.

The Optiq trading chain has been developed specifically for Euronext's markets, and customers will benefit from a simplified and flexible system allowing shorter time-to-market to deliver new initiatives and implement customers' requests while creating an opportunity to reduce administrative costs. **Some of these benefits include (1) new protocols: Simple Binary Encoding (SBE) and FIX 5.0, (2) high quality service, (3) maximum flexibility, and (4) enhanced performance.**

1. NEW PROTOCOLS: SBE AND FIX 5.0

One of the major improvements that will be delivered by Optiq is the use of the Simple Binary Encoding (SBE) protocol. Leveraging the benefits of SBE, Optiq will provide maximum flexibility and harmonization to both market data and order entry across all Euronext Cash and Derivatives. This will replace the current Euronext UTP Binary protocol on Euronext Cash and Derivatives markets, and will offer the possibility of

backward and forward compatibility after the migration. Thanks to this significant message protocol change, clients will no longer be required to implement the latest message structure version, thereby providing clients with a more flexible implementation approach for new releases and functionalities.

SBE uses the binary data format to reduce the size of messages as much as possible, uses bitmap fields to further optimize the data use, and follows the specifications of the SBE protocol.

Euronext provides SBE Template XML files that contain all message types supported by the system. Client systems can decode and encode SBE message using the schema and the template files. In their development, clients and providers should be careful and allow their systems to manage different templates per segment. Clients should be mindful that SBE templates for Phase 2 of the Optiq programme are not backward compatible with SBE templates for Phase 1.

While use of SBE protocol has been described for MDG, clients are encouraged to carefully review the OEG SBE client specifications in order not to miss anything specific to order entry.

Further, Euronext Cash markets support FIX 4.2 protocol for order entry via CCGs and are being upgraded to FIX 5.0 with adjustments required to be in line with new Optiq architecture.

2. HIGH QUALITY SERVICE

Optiq provides high quality of service by leveraging the latest technology to ensure high reliability and significantly enhanced throughput and predictable latency, taking advantage of the digital revolution to improve the high-quality of Euronext's trading services and enhanced surveillance services.

This will then complete the significant performance improvements delivered by MDG.

3. MAXIMUM FLEXIBILITY

Maximum flexibility is built-in into Optiq to provide customers with a simplified and flexible system allowing shorter time-to-market. With Optiq, Euronext will develop new initiatives and implement customers' or markets' present and future needs and/or requests.

4. ENHANCED PERFORMANCE

Optiq provides enhanced efficiency and performance through improved connectivity, protocols, and an optimised messaging model. With the migration of its Cash markets it will deliver an enhanced multi-market trading platform.

2. ORDER ENTRY GATEWAY OVERVIEW

The Euronext Optiq Order Entry Gateway (OEG) provides high-speed and real-time connection to the Euronext markets. The system offers predictability, ultra-low latency, Cash & Derivatives message harmonization, high availability, a reliable network solution, and a high level of scalability.

2.1 MESSAGE HARMONIZATION

2.1.1 Messages

A number of messages similar in structure are combined into less specialized messages to reduce complexity. While the scope of Phase 2 covers Euronext Cash markets, part of the message structure includes the framework for specific Derivatives functionalities, to ensure reduced impact of future migrations and as the first steps in the harmonization between Cash and Derivatives messages.

2.1.2 Fields

New fields have been added to support new Optiq architecture and MiFID II compliance and to facilitate harmonization between the Cash and Derivative feeds. While Derivatives private messages are going to be migrated to Optiq in a later phase 3, phase 2 includes Derivative specific fields. This will offer a single, harmonized specification for Cash and Derivative markets, thereby reducing impacts for any future development.

Existing fields have been adjusted to be MiFID II compliant.

2.2 NEW CONNECTIVITY MODEL

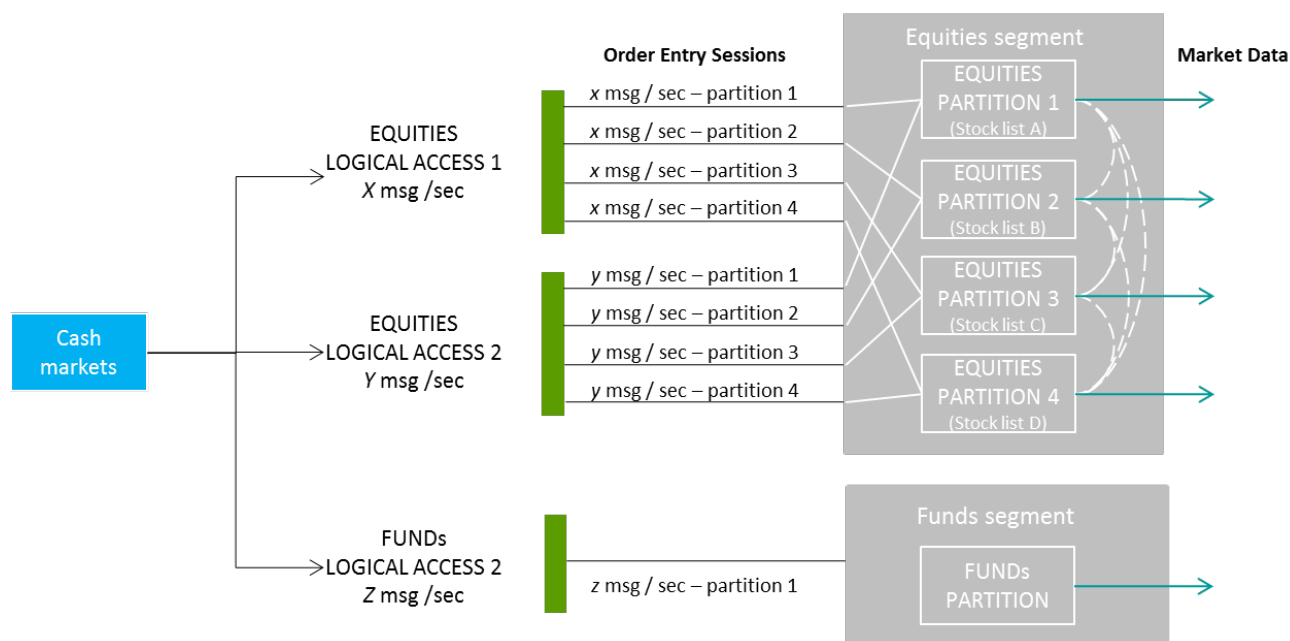
Euronext's new connectivity model will improve performance and stability by offering order entry sessions through logical accesses which connect to dedicated partitions in individual Cash markets Optiq segments.

Under the current UTP and CCG trading infrastructure, a single Order Entry Session can access all cash asset classes.

This will change under Optiq:

- Each asset class is separated into an Optiq Segment. There are four segments: Equities, Fixed Income, Warrants and Certificates, Funds
- Each Optiq Segment requires a separate Logical Access, with logins to each Partition within the segment. Mixed asset class physical connectivity sessions are no longer possible.
- A Logical Access is a logical aggregation of physical connections (OE Sessions) to the Partitions of the same segment.
- Instruments are stored and accessible through a number of Partitions. There is 1 partition each for Fixed Income, Warrants and Certificates and Funds, and 4 partitions for the Equities segment.
- TCS can be traded through any OE Session configured for it, and within the Optiq Segment on which the Euronext instrument is hosted.
- Luxembourg Stock Exchange has a dedicated segment and Logical Access.

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



Logical access requirements are as follows:

- To send messages to an instrument hosted on any segment, the client requires a Logical access on that specific segment. For instance, to send messages to an instrument hosted on an Equities segment, the client requires a Logical Access on segment Equities.
- Standing data will identify instruments with Exchange Market Mechanism (EMM) “1” (Central Order Book) AND/OR “5” (TCS) independently from each other.
- Messages sent to the central order book (COB) and TCS can be sent only if the standing data contains the associated EMM for this book, i.e. EMM 1 (COB) and EMM 5 (TCS).
- The same Logical access for the Equities segment can be used to send messages towards the central order book or TCS. By default, Logical accesses are not enabled for TCS; to send and receive TCS specific messages clients need to request, in their provisioning order form, that their Logical access be configured for this service.
- Clients who need to manage Funds in TCS using an OEG only will need to have a logical access for the Funds segment.

High reliability, significantly increased throughput and latency performance with minimal standard deviation, improved flexibility in delivery of new functionalities and products, shorter time to market as well as the improved resiliency will be ensured within Optiq in part by the introduction of the new instrument segmentation through Optiq Segment.

Referential standing data is provided on a daily basis for each instrument via MDG messages and files (available on EFS), identifying which Optiq Segment and partition an instrument belongs to.

More details are available in the **Euronext Optiq - Cash Markets Order Entry Gateway Sessions pricing and capacity document**, available [here](#)¹.

¹ As a reminder, a fee cap based on the current fees will be applied over the first 6 months after the Optiq migration so that customers can adjust their number of sessions and throughput after experiencing the new Optiq platform.

2.2.1 Partitions and Instrument Mapping

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 via a routing system to other partitions within the segment.

It will be possible to connect through all Partitions belonging to the same Optiq Segment using setup of a single Logical Access. For example, each of the 4 connections comprising the Equity Logical Access will be able to connect to each of the 4 Equity Partitions. Access to Optiq Partitions is managed through Order Entry Sessions. For each Logical Access, an OE Session should be set up to a given Partition. However, since a Logical Access allows trading on the whole Optiq Segment, we can thus define two technical paths connecting a market participant to an instrument order book:

- A direct path through an OE Session being set up to the Partition hosting the targeted instrument
- An indirect path through an OE Session set up on another Partition (within the same Optiq Segment), relying on internal connectivity between Matching Engines of the various Partitions. This path is not recommended as extra latency is introduced due to the additional step involved in routing messages via the indirect connection. From a resilience perspective, clients using one single connection would lose access to the full segment if this partition failed, whereas members using the direct path to a partition would still be able to trade the instruments hosted on the partitions which were not impacted by the failure.

Within the same Optiq segment, the load balancing process may result in instruments being assigned a different Partition, and as such different routing information, from one day to another. Due to this, clients are encouraged to plan developments to leverage this dynamic structure and download and incorporate the standing data on a daily basis to ensure correct routing of their messages. For more information please refer to the OEG Message specifications.

The technical ownership of the orders is with the OE session ID, the physical connection to the individual segment / Partition. The OE Partition ID will be a unique identifier of the Partition across all segments and throughout the Optiq system. Clients are invited to ensure that the OE session set as the owner of orders for any given day matches the ME Partition on which the instrument resides. To facilitate this, clients may use the Ownership Request (18) / (FIX U18) message.

All instruments for Euronext markets are uniquely defined by their Symbol Index. The Symbol Index represents a combination of the ISIN, MIC and Currency, and in some cases the MIC of the Market of Reference, characteristics of the instrument. The Symbol Index is valid for the lifetime of the instrument. The Symbol Index is used as the Optiq system-wide identifier. Both public and private messaging systems rely on this identification which also allows for an easier reconciliation of public and private messages.

Together with the Symbol Index Optiq uses the *Exchange Market Mechanism* (EMM) to route messages to the correct trading platform. EMM represents the platform to which the order sent by the client must be routed. Information on Symbol Index and EMM values available in each Optiq segment is provided in the Standing data files.

Please refer to the *Euronext Cash and Derivatives Markets – Optiq MDG Client Specifications* document for further details on standing data files.

3. MIGRATION PLAN

3.1 OVERVIEW

The migration from the Common Customer Gateway (CCG) to the Optiq Order Entry Gateway (OEG) is designed with customers in mind to secure a simple and effective transition onto the new Optiq platform.

Since the publication of v1.0 of the Migration Guidelines, Euronext has consulted with customers on the migration approach and has modified the migration sequence accordingly, acknowledging the challenges faced by the whole industry on preparation of MiFID II entry into force. Euronext's aim, by modifying the migration sequence, is to reduce the operational risk of the migration as much as possible.

Since the publication of v1.1 of the Migration Guidelines, Euronext has added a Dress Rehearsal week-end on 14 April, giving customers additional time to test the new trading platform. The deadline for conformance testing stays unchanged, i.e. before 7 April. Clients are strongly encouraged to participate in the first dress rehearsal and keep the second one as a backup in case adjustments are needed.

Since the publication of v1.2 of the Migration Guidelines, Euronext has added a Dress Rehearsal week-end on Saturday 2 June 2018, giving customers additional time to test the new trading platform. The deadline for conformance is extended to 1 June 2018. Clients are strongly encouraged to participate in the first dress rehearsal and keep the second one as a backup in case adjustments are needed.

Euronext has also adjusted the date of the second migration to Optiq following customer requests for a longer testing period. The Go-Live date for the migration of all remaining Cash market segments is now Monday 25 June 2018.

The migration strategy is the following:

	PRODUCTION MIGRATION DATES		
	Dress rehearsal	Final test in Production	Go Live
1. Migrate the Fixed Income segment to Optiq (complete) On the Friday of the migration, purge Fixed Income orders in UTP at the end of the trading session on Friday; open markets on Monday with Fixed Income on Optiq OE / ME / MDG Phase 2 (n.b. trading groups are defined in Appendix) and other segments on UTP / MDG Phase 1. Submission of declarations for Fixed Income products via TCS will not be available for the six weeks during the two Optiq Phase 2 Go Lives.	✓ Saturday 7 April 2018 ✓ Saturday 14 April 2018	Saturday 21 April 2018	Monday 23 April 2018 Successfully launched
2. Migrate the remaining Cash Market segments to Optiq On the Friday of the migration, purge orders on all UTP-Cash instruments at the end of the trading session on Friday; open markets with all segments on Optiq on Monday, i.e. Warrants and Certificates, Funds, Equities, Indices and Luxembourg Stock Exchange. The TCS service will also migrate to Optiq. All orders placed through CCG will be rejected. Note that TCS orders will not be purged.	✓ Saturday 19 May 2018 ✓ Saturday 2 June 2018 ✓ Saturday 9 June 2018 ✓ Saturday 16 June 2018	Saturday 23 June 2018	Monday 25 June 2018

The list of trading groups that are transferred to Optiq for the first and second migration is available in Appendix. The list of instruments across Equities partitions in Production is also available in Appendix.

The test and production environments are being upgraded in consequence, and software is being released in the test environment in order to enable customers to validate their software prior to Go Live. Details on the test and production environments can be found in later sections.

Please note that upon the migration of Fixed Income instruments to Optiq, these instruments are no longer available for trading on UTP, and once Optiq Phase 2 is in Production, customers will no longer be able to send messages to the Euronext Cash market through the existing CCGs as no backward compatibility will be available between CCGs and OEGs.

As a reminder, during Phase 2, there is no impact on the derivatives markets' order entry systems (CCG).

3.1.1 Customer Readiness Checklist

The actions required of customers before the Go Live of the remaining Cash segments to Optiq are the following:

	CUSTOMER READINESS CHECKLIST			
	Availability in EUA	Availability in Production	Deadline	Relevant documentation
Sign the TPAA <i>Trading Members</i> Required of Trading Members to use Optiq in Production	N/A	N/A	Friday 22 June 2018	TPAA provided by Euronext Membership
Develop and test <i>Trading Member developers and Providers</i> For order entry and market data software (V-EUA)	September 2017	N/A	Friday 1 June 2018	Optiq documentation
Validate conformance tests <i>Trading Member developers and Providers</i> Functional and technical (HA)	Monday 29 January 2018	N/A		Conformance guidelines Conformance scripts MDG conformance web form Webform for meeting request
Configure network <i>Trading Members, ASPs and ESPs</i> Update connectivity and perform telnet tests. For new source IP addresses, customers are reminded to contact their SFTI representative.	August 2017	Monday 29 January 2018		Connectivity specifications Connectivity test guidelines

	CUSTOMER READINESS CHECKLIST			
	Availability in EUA	Availability in Production	Deadline	Relevant documentation
Order OE sessions <i>Trading Members</i> Provided for V-EUA; to be ordered for Production; required for dress rehearsal	August 2017	A confirmation will be sent to the Member before the Dress Rehearsal	Friday 1 June 2018 No modifications or requests for new order entry sessions will be accepted after 1 June 2018 and before Go-Live.	OE session order forms
Participate in a Dress Rehearsal <i>Trading Members and Providers</i> Validate technical and functional access to Production	N/A	✓ Saturday 19 May 2018 ✓ Saturday 2 June 2018 ✓ Saturday 9 June 2018 ✓ Saturday 16 June 2018	N/A	Detailed dress rehearsal guidelines will be published before each test
Test final set-up on the Go Live week-end <i>Trading Members and Providers</i> Validate technical and functional access before the market segment migrates to Optiq	N/A	Saturday 23 June 2018	N/A	Further information will be provided

3.2 MIGRATION SEQUENCE

As mentioned above, the migration plan for Optiq Phase 2 involves two separate weekends, with Fixed Income as the first step and the remaining Cash Market segments and Luxembourg Stock Exchange as the second.

3.2.1 Migrating Fixed Income to Optiq (successfully launched)

On the Saturday **7 April and 14 April**, Euronext organised a **mandatory Dress Rehearsal** in anticipation of the migration week-end. Euronext opened the market for customers to test access to the Optiq segment through their OE sessions and its corresponding updated MDG channel. This enabled customers to verify their connectivity to the Production environment, log on / log off, inject orders into the OEGs in Production and verify their ability to manage MDG Phase 1 on UTP and MDG Phase 2 on Optiq. Requirements to be met by Customers in order to be authorised to take part in the Dress Rehearsal week-end were the following : (i) validation of their conformance test, (ii) confirmation of Telnet connectivity to Production and (iii) ordering of OE Sessions for Production. Participation in at least one of the Dress Rehearsal week-ends was mandatory for customers. Clients were strongly encouraged to participate in the first dress rehearsal and keep the second one as a backup in case adjustments were needed. Customers were also able to test access to Production on the migration week-end. Euronext did not consider any requests or potential

customer issues encountered on the day of the Production migration if the customer has not taken part in a Dress Rehearsal.

On the **Friday before the Fixed Income segment migration** to Optiq, Euronext **purged orders of the Fixed Income instruments** on UTP. Customers who disconnected their systems from the order book prior to the purge were required to purge their own orders. Euronext reminded customers that it would not be able to restore the order book in case of an incident during the migration week-end. The list of Fixed Income trading groups that migrated to Optiq is available in Appendix.

Order books of instruments in other segments were not impacted by the order book purge for Fixed Income.

On the **Saturday of the migration** to Optiq, **Euronext migrated all Fixed Income products onto Optiq and opened the markets to customers** who wish to test their functional and technical access to the trading chain.

On the **Monday following the migration week-end**, **Optiq started up in production with the Fixed Income segment** and **UTP started up in production offering the remaining Cash markets segments**.

- A Phase 2 SBE template for Fixed Income was be available in the EFS for order entry and market data.
- The Fixed Income MDG channels that were upgraded are channels 150 to 154.
- Orders on Fixed Income products formerly traded on the Central Order Book passed through the CCG are rejected with a 20351 *Order entry disabled for this class or a 20141 Class closed* error message.
- Submission of declarations for the Fixed Income products via TCS are not be available until the final migration to Optiq Phase 2.
- All remaining segments remain on UTP and require the use of the existing Phase 1 SBE template for market data.

In the following the sequencing for the Fixed Income migration is explained:

FIXED INCOME IMPLEMENTATION SCHEDULE		
Sequence	Requirement	Effective Date
Dress Rehearsals	The market opens, customers test that they have access to their Order Entry Session on Optiq, log on, inject orders into the order book, receive market data messages and log off. Customers are able to test sending orders on UTP on the other segments. The new Fixed Income OE and MDG SBE templates are available during the Dress Rehearsal. Once the tests are complete, Euronext shuts down Optiq and customers restore their systems to their status on Friday night at market close. Customers are required to fill in a web form to confirm they participated in the Dress Rehearsal(s).	Saturday 7 April 2018 Saturday 14 April 2018
Order book purge on UTP	Central Order Book (COB) purge after 17:40 CET for the identified Fixed Income products, their order types including day orders and validity types.	Friday 20 April 2018

FIXED INCOME IMPLEMENTATION SCHEDULE		
Sequence	Requirement	Effective Date
Migration of Fixed Income instruments from UTP to Optiq	All Bonds migrate to the new Optiq Fixed Income trading chain. Access to Fixed Income instruments through CCG is no longer possible and is rejected with a 20351 <i>Order entry disabled for this class</i> or a 20141 <i>Class closed</i> error message.	Saturday 21 April 2018
Verification of the successful migration to Optiq	The market opens, customers test that they have access to their Order Entry Session, log on, inject orders into the order book, receive market data messages and log off. Once the Go-Live is confirmed, clients keep the configuration in place and do not perform a roll-back in order to begin trading using Optiq OEG and MDG on the following Monday. Clients need to ensure that they have purged their systems of the orders placed during the Saturday tests.	Saturday 21 April 2018
Updated SBE template on OE and MD	A new SBE template for order entry on Fixed Income is available on the website and on the EFS. A new SBE template for market data on Fixed Income is available on the website and on the EFS. The templates used in Production are the same version as those available in V-EUA. All other existing market segments remain on the existing SBE template. The new SBE template is not backward compatible with the previous version.	Monday 23 April 2018
Sending orders on the Fixed Income segment on Optiq	Customers send Fixed Income orders for the Central Order Book through the Optiq OEG. Market data for Fixed Income (channels 150 to 154) is upgraded and disseminated with a new SBE template. All other market data channels remain as for Phase 1.	From Monday 23 April 2018

3.2.2 Managing Optiq and UTP in Production

After the Go-Live of Fixed Income instruments on Optiq, UTP and Optiq will be running in Production at the same time. Customers will be able to place orders for Fixed Income products through Optiq OEG - ME and other cash and derivatives orders through CCG - UTP. MDG will publish market data using (i) a new version of MDG for Fixed Income and (ii) the existing MDG for other cash and derivatives segments and markets, including APA services.

Access to Optiq via the SFTI network will not require any temporary adjustments, as customers will access both CCG and OEG through their existing SFTI channels.

The link towards Clearing houses will be ensured through UTP and Optiq at the same time with no impact on Euronext's Trading and Clearing Members.

3.2.3 Migrating Equities, Funds, Warrants and Certificates, TCS and Luxembourg Stock Exchange to Optiq

On **Saturday 19 May, on 2 June, 9 June and 16 June 2018**, Euronext will organise mandatory **Dress Rehearsals** in anticipation of the migration of the rest of Euronext's Cash Markets. Euronext will open the market for customers to test access to the new Optiq segments through their OE sessions and the corresponding updated MDG channels. This will enable customers to verify their connectivity to the Production environment, log on, inject orders into the OEG in Production, receive market data messages and log off. Customers will not be authorised to take part in the Dress Rehearsal week-end unless they have (i) validated their conformance test, (ii) confirmed Telnet connectivity to Production and (iii) ordered their OE Sessions for Production. Customers who have missed the Dress Rehearsal dates will be able to test access to Production on the migration week-end. Euronext will not consider any requests or potential customer issues encountered on the day of the Production migration if the customer has not taken part in the prior mandatory Dress Rehearsal.

On **Wednesday 20 June 2018**, Euronext will suspend Funds trading groups 8E and KU which has a Day +2 cycle in TCS at 17:00 CEST. Incoming orders will be rejected until Monday 25 June 2018.

On **Thursday 21 June 2018**, Euronext will suspend Funds trading groups 8D, KP, KR, KX and KZ which have a daily expiry in TCS after the cut-off time of the different instruments (between 15:00 and 16:00 CEST) and will re-open on Monday 25 June 2018, in order to manage the migration from CCG to OEG. Fund Agents will still be able to upload their NAV on Friday 22 June 2018 morning for the execution of orders submitted on Thursday 21 June 2018 for the previous cycle.

On **Friday 22 June 2018**, subject to final validation, Euronext will close the Warrants market at 17:30 and all other Cash markets as usual at 17:40 CEST. The Euronext Market Surveillance team will then **purge the order books** on UTP-Cash between 17:40 and 18:10 CEST. The products impacted are: Warrants and Certificates, Funds, Equities and Luxembourg Stock Exchange. TCS Fund Declarations that are in TCS on Friday evening (related to other frequencies weekly, monthly, quarterly) will remain untouched. Customers can choose to purge their order books after market close and before the global order book purge should they wish to do so. Customers who disconnected their systems from the order book prior to the purge are required to purge their own orders. Please note that Euronext will not be able to restore the order book in case of an incident during the migration week-end.

Derivative instruments will continue to be traded via CCGs - UTP-Derivatives. Order book purges on Cash will not result in any migration-related order book purge on the Derivative markets.

Orders on the Fixed Income segment will not be impacted by the order book purge on UTP-Cash.

Please note that the Cleared OTC Trade Facility (K) services will be deactivated on the TCS platform on Friday 22 June 2018 at market close and fully migrated to Saturn as of 25 June 2018 in Production.

On **Saturday 23 June 2018**, Euronext will migrate all remaining cash markets products onto Optiq and will **open the markets to customers** who wish to test their functional and technical access to the new trading chain application. TCS will be accessible through any OEG session. The Market Data Gateway messages for all remaining cash segments (i.e. all except for Fixed Income) will be upgraded to the latest version in Production, including on Index Products. At approximately 16:30 CEST, an Info Flash will be issued confirming or not the Go-Live on Optiq on the following Monday morning.

On **Monday 25 June 2018**, subject to final validation, **Optiq will start up in production offering all of Euronext's Cash markets**, and **UTP-Cash will not be available for trading**. Orders on Cash markets products through the CCG will be rejected with a 20351 *Order entry disabled for this class* or a 20141 *Class closed* error message. A dedicated SBE template for each market segment will be available in the EFS. The version

number is 103. MDG will be using (i) the same version of MDG for all Cash markets and (ii) will continue to publish the existing MDG for derivatives markets and APA services. Please note that Fund declarations entered in TCS prior to the migration to Optiq with a weekly, monthly and quarterly cycle that were pre-matched before the migration will not receive any automatic confirmation via OEG when they are executed. Clients are advised to contact their Fund Agent or Euronext Market Services to confirm matching of their fund declarations or obtain the extract of their transactions via TCS Web.

REMAINING CASH SEGMENTS IMPLEMENTATION SCHEDULE		
Sequence	Requirement	Effective Date
Dress Rehearsal	The market will open, customers will test that they have access to their Order Entry Session, log on, inject orders, receive market data messages and log off. The new OE and MDG SBE templates will be available during the Dress Rehearsal. Orders sent to the CCG will be rejected with a 20351 <i>Order entry disabled for this class</i> or a 20141 <i>Class closed</i> error message. Once the tests are complete, Euronext will shut down Optiq and customers will restore their systems to their status on Friday night at market close. Customers will be required to fill in a web form to confirm they participated in the Dress Rehearsal.	✓ Saturday 19 May 2018 ✓ Saturday 2 June 2018 ✓ Saturday 9 June 2018 ✓ Saturday 16 June 2018
Closing of Funds trading groups on TCS	TCS Funds trading groups 8E and KU will close on Wednesday 20 June at 17:00 CEST. TCS Funds trading groups 8D, KP, KR, KX and KZ will close between 15:00 and 16:00 CEST on Thursday 21 June 2018. They will re-open on Monday 25 June 2018 on Optiq.	Wednesday 20 June 2018 Close groups 8E and 2Z at 17:00 CEST Thursday 21 June 2018 15:00-16:00 CEST until Monday 25 June 2018 07:15 CEST
Order book purge on UTP	Subject to final validation, market close at 17:30 CEST for Warrants and at 17:40 CEST for all other Cash Markets on Friday 22 June 2018. Fund declarations in TCS will remain. Central Order Book (COB) purge between 17:40 and 18:00 CEST for all Equities, Warrants and Certificates Funds, Exchange Traded Commodities products and Luxembourg Stock Exchange, their order types including day orders and validity types.	Friday 22 June 2018 Info Flash at approx. 16:30 CEST Market close at 17:30 CEST for Warrants and 17:40 CEST for Cash Markets Purge between 17:40 and 18:00 CEST
Migration of remaining Cash instruments to Optiq OEG ME	All Equities, Funds, and Warrants are migrated to the new Optiq OE/ ME/ MDG trading chain. TCS order entry access is migrated from CCG to OEG. Access to Euronext Cash Markets and TCS through CCG is no longer possible.	Saturday 23 June 2018

REMAINING CASH SEGMENTS IMPLEMENTATION SCHEDULE		
Sequence	Requirement	Effective Date
Verification of the successful migration to Optiq	The market will open, customers will test that they have access to their Order Entry Session, log on, inject orders, receive market data messages and log off. Subject to final validation and publication around 16:45 CEST, clients will keep the configuration in place and will not perform a roll-back in order to begin trading using Optiq OEG and MDG on the following Monday. Clients will need to ensure that they have purged their systems of the orders placed during the Saturday tests.	Saturday 23 June 2018 Info Flash at approx. 16:45 CEST
Updated SBE templates on order entry and market data	A new SBE template for order entry will be available for each new Optiq segment, namely Equities, Funds, and Warrants and Certificates. In addition to these, an OE SBE template dedicated to specific TCS messages will also be provided in Production. A new SBE template for market data will be available for each new Optiq segment, namely Equities, Funds, Warrants and Certificates and Indices. The templates used in Production are the same version as those available in V-EUA and in Production on the Fixed Income segment (version number 103). The Derivatives and APA market data segments will remain on the existing Optiq Phase 1 SBE template.	Monday 25 June 2018
Sending orders on all Cash market segments on Optiq	Customers send orders for the Central Order Book and TCS through the Optiq OEG. Orders sent to the CCG will be rejected. OTC Trade (K) services will no longer be available on TCS via OEG, but via Saturn. TCS orders that were pre-matched before the migration will not receive a confirmation via OEG.	From Monday 25 June 2018

3.2.4 Managing Files and Services for Order Entry and Market Data During the Migration

Please find below a summary of how files and services will be provided throughout the migration to Optiq Phase 2.

3.2.4.1 Drop Copy

Optiq Drop Copy will be available for instruments that have migrated to Optiq.

- After the Fixed Income migration to Optiq, clients consuming Drop Copy will start receiving messages for the Fixed Income Central Order Book via the new Optiq Drop Copy, and the remaining segments will continue to use the CCG Drop Copy.

- After the migration of the remaining segments to Optiq, clients consuming Drop Copy will receive messages for the Central Order Book via the Optiq Drop Copy only.

3.2.4.2 EOD Application Files

Trade files in the End of Day (EOD) applications for Optiq remain in the same format as today with some adjustments, such as adjustment of values to be in line with Optiq. Trades for all instruments will be provided in a single file, even during the migration. Timestamps will match the ones in Optiq and will be provided in UTC.

Order files in Optiq are changing and are provided in two different formats: XML and flat file.

- After the Fixed Income migration to Optiq, the new order files will be populated with data for Fixed Income orders entered in Optiq. Orders for the other segments will continue to be provided in the existing files in the “UTP” format.
- After the migration of the remaining segments to Optiq, all order files will be the new order file.

Audit Files in EOD applications are being decommissioned under Optiq.

- After the Fixed Income migration to Optiq, Audit files will not be populated with Fixed Income data. They will continue to be populated with the data for the other segments.
- After the migration of the remaining segments to Optiq, audit files will no longer be provided.

For more information on EOD files, please refer to the EOD specifications available on the [Euronext website](#). Further information on EOD file testing in EUA will be provided in due time.

3.2.4.3 Saturn

There is no change to the format of Saturn fields with the Optiq migration. For instruments reported on Optiq, *UTPEXID* will be replaced with *Execution ID* on the SBE protocol and *ExecID* (tag 17) on the FIX protocol.

As soon as a segment migrates to Optiq, the flat file solution in place from 3 January 2018 for short codes information is no longer admissible. Customers will be required to report mandatory MiFID II information through the relevant Optiq order entry fields.

3.2.4.4 Central Counterparties

Central Counterparties will receive updated information on instruments with the migration to Optiq:

- After the Fixed Income migration to Optiq, Fixed Income instruments will use the Trade IDs, Order IDs and Timestamps in the format provided by Optiq (e.g. with Timestamps in UTC). There is no change to the instruments remaining on UTP.
- After the migration of the remaining segments to Optiq, all instruments will use the Trade and Order IDs and Timestamps in format provided by Optiq, with all Timestamps provided in UTC.

Clients are invited to review guidelines for order ID reconciliation with Central Counterparties provided in the *Change Highlights for Optiq* document, available on the [Euronext website](#).

3.2.4.5 Euronext File Services

Find below the list of files available in the EFS at each step of the migration to Optiq.

	OE or MDG	Production set-up before Optiq Phase 2 migration	Fixed Income migration to Optiq	All remaining segments migrating to Optiq
OpenInterestFile	MDG	One file per segment (Commodities, futures, options)	No change	No change
PrevDayCapAndVolTradeFile	MDG	One file per segment (Bonds, Equities, ETFs, Warrants, Luxembourg Stock Exchange)	No change	No change
CashStandingDataFile	OEG & MDG	<u>MDG only:</u> one file per segment (Bonds, Equities, ETFs, Warrants, Luxembourg Stock Exchange, indices)	<u>On Optiq:</u> Optiq step 2 files for the Fixed Income segment, including OEG and MDG data. <u>On UTP:</u> no change	Optiq step 2 files for each segment, including OEG and MDG data.
DerivativesStandingDataFile	MDG	One file per segment (Commodities, futures, options)	No change	No change
SBE Templates	OEG & MDG	<u>MDG only</u> One file for Regulated Markets (Cash and Derivatives), one file for APA	<u>On Optiq,</u> 2 SBE templates for Fixed Income: one for OEG and one for MDG. <u>On UTP cash:</u> Optiq Phase 1 MDG SBE template is split per segment <u>Derivatives and APA</u> do not change (Phase 1)	2 SBE templates: one for OEG and one for MDG, split into segments. The templates between segments are the same Derivatives and APA do not change (Phase 1)
TimetableFile	MDG	One single file for Cash markets	One single file for Cash markets, repeated in each segment	No change
CashTickSizeReferentialFile	MDG	One file for Cash and one file for Derivatives	One file per segment: Bonds, Equities, Warrants, ETFs, Luxembourg Stock Exchange, indices One file for Derivatives until Phase 3	No change
RepoSettlementPriceFile	MDG	One file for Cash markets	No change	No change

3.3 TEST ENVIRONMENTS

The virtual EUA (V-EUA) is the environment to be used for end-to-end testing of the new Optiq OEG and conformance. **On the test environment, customers are expected to (i) check their connectivity to the OEG, (ii) validate their conformance tests with an Optiq analyst, (iii) ensure they have completed end-to-end tests on the V-EUA environment and (iv) test Optiq and UTP running at the same time in P-EUA.**

The changes to the V-EUA environment in the context of Optiq Phase 2 have continued to enhance and enrich the platform for customer testing. This test environment contains the target Optiq software with all cash segments. They are summarized below:

	V-EUA CHANGES	
	Availability in V-EUA	Info Flash / Optiq Notice reference
Technical set up For connectivity testing and validation of OE sessions	8 August 2017	Available here
First functional release	5 September 2017	Available here
Updated SBE template for Market Data	31 October 2017	Available here
Second functional release	12 December 2017	Available here
Third software release	11 January 2018	Available here
Fourth software release + high availability Providing remaining functionalities for the start of conformance testing and a new OE SBE template including HA	29 January 2018	Available here
Fifth software release Including remaining functionalities for conformance testing	16 February 2018	Available here
Sixth software release	1 March 2018	Available here
TCS availability	14 March 2018	Available here
Transfer Central Clearing Counterparties access from P-EUA to V-EUA, for end-to-end testing in the Optiq testing environment	22 February 2018	Available here

3.3.1 Checking Connectivity to V-EUA

As a reminder, Euronext provided Order Entry Sessions to all clients' Member Connectivity Administrator and to all providers in August 2017. In addition, Drop Copy sessions were also provided to customers who filled in the order form for V-EUA on 22 March 2018. Customers who have not received their Order Entry Sessions in V-EUA are invited to contact Customer Access Services (see contact details in the [Support](#) section of this document).

Clients can refer to the [Order Entry Gateway configuration document](#) for full connectivity details to the V-EUA.

3.3.2 Validating Conformance Tests

The main test environment for Optiq Phase 2 is the V-EUA. Software has been available since September 2017, enabling customers to start testing. The functional release for the start conformance was made available on 29 January 2018.

Conformance testing consists in two distinct parts: technical and functional conformance:

- Functional conformance testing will allow customers to validate the full scope of the Optiq order entry gateway (OEG), taking into account all message types that will be offered. This testing will be made available across all markets, and across all product types.
- Technical testing (or high availability (HA) testing) will present several different types of failures, and customers will be expected to manage each failure appropriately.

Euronext offers conformance tests based on the Trading Member's chosen software development set-up:

	Trading Member developer	Member developer + using a provider	Liquidity Provider using a provider only	Trading Member using a provider only	Provider
Full / Light conformance*	Full	Full	Light	Light	Full
Mandatory / optional	Mandatory	Mandatory	Mandatory	Optional	Mandatory

***Full Conformance:** This test examines all functional and technical messages available for the platform and market the client is conforming to.

Light Conformance: During light conformance testing, only functional messages are tested. This conformance testing is only required for clients using a technology provider's trading solution.

Conformance testing is available in the **V-EUA environment** and customers will need to conform **each of their solution on each member code for each protocol and on each Euronext market:**

- Cash Regulated Markets (mandatory if customers trade Fixed Income, Equities and Funds)
- Warrants (mandatory if customers trade Warrants)
- Trade Confirmation System (TCS) (mandatory if customers use TCS via order entry)

In addition, customers will be required to complete their technical conformance with a **High Availability (HA)** test in V-EUA. Currently single partition HA can be tested on Fridays in V-EUA on the Funds segment at 17:00 CEST. Multi-partition HA testing, which is mandatory for all customers trading on the Equities segment, will be made available in due course.

Customers are invited to book a conformance test appointment with an Optiq analyst using the following form on the Connect portal: <https://connect2.euronext.com/en/form/optiq-s2-conformance-booking>

Please note that customers need to fill in the conformance booking form at least 72 hours prior to the desired timeslot. Euronext strongly recommends booking the Fixed Income conformance test slot as soon as possible, in order to guarantee the availability of an Optiq Analyst before the Dress Rehearsal. As a reminder, no conformance test will take place on Tuesday morning as the V-EUA platform is closed for maintenance until 13:00 CEST.

Please note that:

- customers will not be able to access the Production environment neither during the Dress Rehearsal nor for Go-Live unless they have completed their **functional conformance tests** on the relevant segments;
- customers will not be able to access the Production environment for Go-Live unless they have completed their **technical conformance tests**.

All conformance information can be found in conformance scripts and conformance guidelines documents available on the [Euronext website](#).

3.3.3 End-to-End Testing

The main test environment for Optiq Phase 2 is the V-EUA. Customers have been able to test their end-to-end systems from trading through to clearing in the V-EUA environment since 22 February. As such, **access to LCH.SA in Euronext's test environment will be in V-EUA only during the Optiq programme test period**. Please refer to the table of V-EUA changes for information on dates and documentation.

Customers will also be able to test changes to MDG for Optiq Phase 2 in the V-EUA environment. Development and testing on MDG for Phase 2 is required, especially as the MDG SBE template for Phase 2 is not compatible with the template used during Phase 1. Customers can check that they have made the necessary changes for MDG Phase 2 by consulting the following [web form](#).

3.3.4 Testing of Optiq Fixed Income and UTP in P-EUA

On 21 March, the Physical External User Acceptance (P-EUA) environment was upgraded with the following set-up on its cash markets:

- Fixed Income instruments on Optiq OE ME and using MDG Phase 2;
- All other cash segments on UTP using the current production version of MDG.

Euronext provided dedicated P-EUA accesses to members trading Fixed Income and their providers. Fixed Income customers who have not received their Order Entry Sessions for P-EUA are invited to contact Customer Access Services (see contact details in the [Support](#) section of this document).

During this period, order entry and market data SBE templates for Fixed Income instruments will be available in their target version, i.e. with a new order entry and market data SBE template. The MDG SBE template for all other segments remains unchanged. As a reminder, SBE templates can be found in the EFS and on Euronext's website.

	SBE template availability in P-EUA	
	Order Entry	Market Data Gateway
Fixed Income	Phase 2	Phase 2
Equities	N/A	Phase 1
ETF	N/A	Phase 1
Warrants and Certificates	N/A	Phase 1
TCS	N/A	Phase 1
APA	N/A	Phase 1
Luxembourg Stock Exchange	N/A	Phase 1

Please note that the P-EUA environment was upgraded with the full Optiq segments for all cash markets on 7 June 2018. The main test environment for customers remains the V-EUA throughout the Optiq programme.

3.4 PRODUCTION ENVIRONMENT

The Production environment will be upgraded to Optiq Phase 2 which will replace UTP on Cash Markets.

On the Production environment, customers are expected to (i) test connectivity to production, (ii) order new order entry sessions to access Production, and (iii) validate their access and software in a mandatory Dress Rehearsal.

3.4.1 Testing Connectivity to Production and the Disaster Recovery Environments

The Production and Disaster Recovery environments opened on 29 January 2018 for Telnet connectivity testing. Please refer to the [Optiq Connectivity Guidelines](#) and the [Telnet testing guidelines](#) for more information.

Technical connectivity testing does not require any specific connectivity setup (i.e. Logical access information) as it covers generic telnet testing.

Telnet connectivity tests are available for Logical and Drop Copy access in the Production and Disaster Recovery environments. Customers are required to perform Telnet commands in order for Euronext to receive network validation of the connectivity. The table below describes the start dates and times frames for connectivity testing:

Type of Access	Start Date	Timing
OEG Logical Access	29 January 2018	Monday to Friday between 20:30 CEST until 01:00 CEST
Drop Copy Access	29 January 2018	Monday to Friday at all times

Customers are reminded that if they wish to change their source IP address, they need to contact their SFTI representative.

3.4.2 Ordering Order Entry Sessions to Access Production

Each Member Connectivity Administrator (MCA) received session mapping projections via e-mail based on their current session usage, allowing members to easily identify the number of sessions required for OEG Cash, as well as a suggested message per second throughput limit. These emails also contain information relative to the projected cost of the new sessions, which members will need to carefully review and adjust as necessary.

As a reminder, the fully detailed order entry session [fee scheme](#) is available for download from the Optiq section of the Euronext website. The new pricing policy has been designed taking into account the new Optiq architecture.

All Trading Members using the new Optiq OEG ME Cash trading system are now required to order their Optiq Cash OE Sessions for Production prior to 1 June 2018. Please note that **Providers (ISVs, ASPs) do not have the ability to order OE Sessions on behalf of their clients**. Customers who have not ordered their OE

sessions for Production yet are required to do so immediately. Please be informed that no modifications or requests for new order entry sessions will be accepted after 1 June 2018 and before Go-Live. For any questions, please contact your CCC relationship manager.

The Order Forms are available online on the Euronext website at the following locations:

- Optiq Cash Order Entry
 - [Logical access \(former SLE\) creation form](#)
 - [Logical access modification form](#)
 - [Logical access deletion form](#)
 - [Drop Copy creation form](#)
 - [Logical access form Free package](#)
- Optiq Cash Order Entry (Liquidity Providers)
 - [Logical access creation LP form](#)
 - [Logical access LP temporary deactivation form](#)
 - [Logical access LP reactivation](#)

After receiving an order, logins will be communicated to customers by Customer Access Services. Customers are required to have tested their connectivity in Production before the mandatory Dress Rehearsal.

As a reminder:

- Providers cannot order Production OEG sessions, only EUA OEG sessions
- Trading members can only order Production OEG sessions themselves
- Sessions can only be ordered by a nominated Member Connectivity Administrator (MCA). Any customer without an MCA account should contact the Customer Access Services (CAS) team for more information at cas@euronext.com / Tel: +33 1 85 148 589

3.4.3 Dress Rehearsals

The Dress Rehearsals will take place before each Go Live, allowing customers to test the target Production implementation of Order Entry Gateway (OEG) Cash in advance. **Customers will not be authorised to take part in the Dress Rehearsal week-ends unless they have (i) validated their conformance test, (ii) confirmed Telnet connectivity to Production and (iii) ordered their OE Sessions for Production.**

3.4.3.1 Fixed Income migration Dress Rehearsals

The scope of the tests are the following

- Optiq Order Entry and Market data Phase 2 for the Fixed Income segment, including Drop Copy
- CCG – UTP-Cash Order Entry and MDG Step 1 for all the other Cash segments

Tests which are out of scope are the following:

- Tests with LCH
- End of day files
- Functional high availability
- Derivatives market
- TCS
- Saturn

Customers are expected to conduct the following tests

- Secure network resources on the day of the Dress Rehearsal to validate firewall / security path
- Connect to the Production environment
- Inject orders
- Purge the book at the end of the day and restore order book to Friday night
- Validate participation at the end of the day via a web form

The roll-back to CCG-UTP after each dress rehearsal should be managed by the participants of each test to ensure a smooth start-up on the next trading day. All clients are required to participate in one Saturday dress rehearsal prior to each Go Live. Participation in the migration week-end is highly recommended.

On the Saturday before go-live, clients will be asked to connect to the Optiq OEG, as well as to the MDG multicast channels that will be implemented in Production on the next trading day. Once the Go-Live is confirmed, clients will keep the configuration in place and will **not** perform a roll-back in order to begin trading using Optiq OEG and MDG on the following Monday. Clients will need to ensure that they have purged their systems of the orders placed during the Saturday tests.

A detailed description of the dress rehearsals, go-live organization, disaster recovery testing and test scenarios will be provided in due course.

3.4.3.2 All Cash migration Dress Rehearsals

The scope of the tests are the following

- Optiq Order Entry and Market data Phase 2 for Fixed Income, Equities, Funds, Warrants and Certificates and Luxembourg Stock Exchange, including Drop Copy

Tests which are out of scope are the following:

- Market Data Phase 2 for Indices
- Tests with LCH
- End of day files
- Functional high availability
- TCS
- Saturn
- Derivatives market

Customers are expected to conduct the following tests

- Secure network resources on the day of the Dress Rehearsal to validate firewall / security path
- Connect to the Production environment
- Inject orders
- Purge the book at the end of the day and restore order book to Friday night
- Validate participation at the end of the day via a web form

The roll-back to CCG-UTP after each dress rehearsal should be managed by the participants of each test to ensure a smooth start-up on the next trading day. All clients are required to participate in one Saturday dress rehearsal prior to each Go Live. Participation in the migration week-end is highly recommended.

On the Saturday before go-live, clients will be asked to connect to the Optiq OEG, as well as to the MDG multicast channels that will be implemented in Production on the next trading day. Once the Go-Live is confirmed, clients will keep the configuration in place and will **not** perform a roll-back in order to begin trading using Optiq OEG and MDG on the following Monday. Clients will need to ensure that they have purged their systems of the orders placed during the Saturday tests.

A detailed description of the dress rehearsals, go-live organisation, disaster recovery testing and test scenarios will be provided in due course.

4. EURONEXT MEMBERSHIP AND CONNECTIVITY APPROACH DURING THE MIGRATION PERIOD

Please note that the following processes are in place during the Optiq migration period. As a reminder, customers are required to sign the Trading Platform Access Agreement (TPAA) prior to trading on Euronext Markets on Optiq.

	Membership and connectivity to Euronext markets		
	V-EUA availability	P-EUA availability	Production availability
New Cash markets membership New legal entity or member code, including new clearing member	- To UTP: N/A - To Optiq: at all times	- To UTP: until mid-February - To Optiq: N/A	- On UTP: until 23 April 2018, provided tests were completed in P-EUA - On Optiq: from 23 April 2018 for members using Fixed Income only and 25 June 2018 for members using other cash segments
New Derivatives markets membership New legal entity or member code, including new clearing member	From mid-February 2018	Until mid-February 2018	At all times
New UTP SLEs on Cash markets	Not available	At all times	Available up until 2 weeks before each migration to Optiq
New UTP ITMs	At all times	At all times	At all times

5. COMMUNICATION PLAN

A strong focus on communication will continue throughout the Optiq migration, in order to ensure that all clients have access to clear and useful information for the duration of the programme. The following list of communications will be sent to convey key details and clients should be sure to subscribe to any relevant distribution lists.

A dedicated Optiq contact registration form is available on the Optiq website, allowing customers to register as key entry points for all information relating to the Optiq Programme. The form is available [here](#) and we invite all customers to complete registration.

- **Optiq Website:** a dedicated section of the Euronext website has been created for Optiq, and includes key information on the migration, as well as an exhaustive repertoire of all Optiq communications and documentation published. <https://www.euronext.com/optiq>
- **Info Flashes:** These communications will announce key milestones of the project, and details that all clients should be aware of, such as: documentation publication, the opening of each platform, and confirmed Production implementation dates.
- **Optiq Newsletters:** sent on a monthly basis, the newsletters are particularly useful in that they provide a single point of reference each month for key programme milestones, documentation publication dates, and high-level functionality overviews. All clients are encouraged to subscribe to and read each monthly newsletter.
- **Optiq Technical Notes:** Each note will focus on a specific aspect of the technical implementation of Optiq, such as message behaviors and protocol implementation, and is published for clients' technical and development teams.
- **Optiq Notices:** The Optiq support desk will provide programme updates via 'Optiq Notices' to inform the market of milestones, EUA environment details, and other important programme updates.
- **Technical Documentation:** new and updated documentation will be provided throughout the course of the migration, and will provide clients with the required information to develop and implement Optiq.
- **Bilateral Meetings:** Clients will meet regularly with representatives from the Optiq Client Readiness team during each step of the migration, to cover topics like impact assessment, readiness updates, connectivity on-boarding and escalations.
- **Regional Info Sessions:** Information sessions will be organized in the various Euronext locations and will provide an opportunity to learn about the latest updates on the Optiq migration programme and to catch up with fellow market participants. The sessions are open to all members and technology providers.

- **Monthly Technology Partner Conference Calls:** ISV, ASP and Data Vendors wishing to participate in the monthly calls should register using the designated web form, here: <https://connect2.euronext.com/en/form/optiq-survey>

Note: to subscribe to any of the aforementioned communications, please contact optiq@euronext.com

6. DOCUMENTATION OVERVIEW

This section outlines the various documents that are now available to clients on the Euronext Optiq website.

- Euronext Optiq Cash Regulated Markets – OEG Client Specifications – SBE Interface
- Euronext Optiq Cash Regulated Markets – OEG Client Specifications – FIX 5.0 Interface
- Euronext Cash Market – Optiq Kinematics Specifications
- Euronext Cash Markets - CCG to OEG Changes highlights
- Euronext Cash Markets - Optiq OEG Connectivity Configuration specifications
- Euronext Cash Markets - Optiq TCS Client Specification - SBE and FIX Interface
- Euronext Cash Markets – Optiq & TCS Error List
- Euronext Cash Markets - OEG Cancel on Disconnect (CoD) Functional Overview
- Euronext Cash Markets - Optiq Self-Trade Prevention (STP) Functional Overview
- Euronext Cash and Derivatives Markets – Optiq MDG Client Specifications (updated for Phase 2)
- Euronext Cash and Derivatives Markets – Optiq File Specification
- Euronext Cash Markets - Change Highlights – Optiq MDG Phase 1 to 2
- OEG SBE Template file
- MDG SBE Template file (updated for Phase 2)
- Optiq Euronext File Services User Guide
- Optiq Technical Note SBE

Clients are advised to also refer to the Euronext Rules and Regulations documents for more details.

For the latest version of documentation please visit <http://www.euronext.com/optiq/documentation>

7. SUPPORT

A Support Desk dedicated to the Optiq programme was launched in June 2016, and will be available to customers for the duration of the Optiq implementation programme. It has been set up to answer customers' queries related to the Optiq programme, to send information to customers related to Optiq, to assist customers in their testing and validation on the EUA environment, and to provide follow-up on client conformance testing.

The Optiq Support Desk has been set up to ensure customer readiness and will be the primary point of contact for clients throughout the migration. The scope of the Support Desk will include:

- Answering customer queries about the Optiq programme, such as technical and functional questions, clarifications on the specifications and documentation, questions relative to the migration and associated dates, and questions regarding connectivity.
- Sending information about Optiq to customers, such as the monthly newsletters, regular technical notes, programme Info Flashes and updates to the dedicated Optiq web page.
- Assisting customers in their testing and validation on EUA environment by generating test orders, trades and market data, matching client orders upon request, and facilitating testing on the platform by creating Production-like conditions.
- Coordination and follow-up on customer conformance testing by ensuring that clients have made the required developments for the new Optiq platform and providing support during the conformance testing periods.

In addition, the Membership team is available to answer customers' queries related to the TPAA.

Finally, the Customer Access Services team is available to manage queries related to their access to Optiq in V-EUA, P-EUA and Production.

Find below the contact details of Euronext's support teams:

Team	Contact details
Optiq Support Desk For technical support throughout the testing period	■ Tel: +33 1 70 48 25 55 ■ Email: optiq@euronext.com
Membership For questions related to the TPAA	■ Email: EuronextMembership@euronext.com
Customer Access Services For questions related to access and log-in credentials to Optiq OEG	■ Tel: +33 1 85 14 85 89 ■ Email: CAS@euronext.com

8. APPENDIX

8.1 LIST OF TRADING GROUPS THAT WILL MIGRATE TO OPTIQ WITH THE FIRST FIXED INCOME MIGRATION

Since v1.1 of the migration guidelines, the following additional trading groups were included in the scope of migration of Fixed Income to Optiq:

Gr.	Market	Nature	Type	Optiq Segment
CM	Brussels	Bonds	Corporate Bonds - NBB Settlement - Qualified Investors - Continuous	Fixed Income
CN	Brussels	Bonds	Convertible bonds - Qualified Investors	Fixed Income
CO	Brussels	Bonds	Euronext Growth - Bonds - Qualified Investors	Fixed Income
LP	Amsterdam	Bonds	Corporate bonds – Guaranteed - Qualifie Investors	Fixed Income
41	Paris	Bonds	Convertible Bonds - Qualified Investors	Fixed Income
42	Paris	Bonds	Convertible Bonds - Qualified Investors	Fixed Income
43	Paris	Bonds	Corporate Bonds - Qualified Investors - FMT	Fixed Income
45	Paris	Bonds	Bonds - Foreign currencies - Qualified Investors - FMT	Fixed Income
55	Paris	Bonds	Euronext Growth - Convertible Bonds - Qualified Investors - Single Auction	Fixed Income
56	Paris	Bonds	Euronext Growth - Convertible Bonds - Qualified Investors - Continuous	Fixed Income
40	Paris	Bonds	Corporate Bonds - Qualified Investors - FMT	Fixed Income
4P	Paris	Bonds	Euronext Access - Bonds - Fixing - Qualified Investors - FMT	Fixed Income
4Q	Paris	Bonds	Euronext Access - Bonds - Foreign currencies - Qualified Investors - FMT	Fixed Income
FJ	Paris	Bonds	Euronext Access - Convertible Bonds - Qualified Investors	Fixed Income
S7	Lisbon	Bonds	Corporate Bonds - Qualified Investors - FMT	Fixed Income
V6	Lisbon	Bonds	Convertible bonds - Qualified Investors	Fixed Income

Please note that other trading groups may need to be set up in order to address requirements for sanctions associated to MiFID II (e.g. restrictions for missing LEI codes, or PRIIPS). These lists will be updated upon completion of the regulatory review of these subjects, if available prior to the migration to Optiq Phase 2.

Gr.	Market	Nature	Type	Optiq Segment
95	Brussels	Bonds	Primary Market Bonds - NBB	Fixed Income
B5	Brussels	Bonds	Euronext Access - Bonds	Fixed Income
C1	Brussels	Bonds	Convertible bonds	Fixed Income
C2	Brussels	Bonds	Convertible bonds	Fixed Income
C3	Brussels	Bonds	Corporate bonds - NBB settlement	Fixed Income
C5	Brussels	Bonds	Bonds - Foreign currencies	Fixed Income
C6	Brussels	Bonds	Bonds - Foreign currencies	Fixed Income
C7	Brussels	Bonds	Corporate bonds	Fixed Income
C8	Brussels	Bonds	State bonds - NBB settlement (weekly)	Fixed Income
C9	Brussels	Bonds	State bonds - Physical delivery (weekly)	Fixed Income
CA	Brussels	Bonds	State bonds - NBB settlement	Fixed Income
CB	Brussels	Bonds	Convertible bonds - NBB settlement	Fixed Income
CC	Brussels	Bonds	Convertible bonds	Fixed Income
CD	Brussels	Bonds	Real Estate certificates	Fixed Income
CE	Brussels	Bonds	Treasury Certificates - NBB Settlement	Fixed Income
CF	Brussels	Bonds	Corporate bonds FMT - Minimum trade amount	Fixed Income
CG	Brussels	Bonds	Corporate Bonds - NBB Settlement - Continuous	Fixed Income
CH	Brussels	Bonds	Corporate bonds - FMT - Minimum trade amount - Foreign currencies - CT	Fixed Income
CI	Brussels	Bonds	Euronext Growth – Bonds – Recovery Box - Fixing	Fixed Income
CJ	Brussels	Bonds	Euronext Growth – Bonds – Penalty Box - Fixing	Fixed Income
ER	Brussels	Bonds	Euronext Growth - Bonds - NBB Settlement	Fixed Income
ET	Brussels	Bonds	Euronext Growth - Bonds - Foreign currencies	Fixed Income
EX	Brussels	Bonds	Euronext Growth - Bonds	Fixed Income
EY	Brussels	Bonds	Euronext Growth - Bonds - BNB Continuous	Fixed Income

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Gr.	Market	Nature	Type	Optiq Segment
94	Amsterdam	Bonds	Primary Market Bonds - Amsterdam	Fixed Income
L0	Amsterdam	Bonds	State Bonds	Fixed Income
L1	Amsterdam	Bonds	Corporate bonds – Non guaranteed	Fixed Income
L2	Amsterdam	Bonds	Corporate bonds – Guaranteed	Fixed Income
L3	Amsterdam	Bonds	Convertible Bonds	Fixed Income
L4	Amsterdam	Bonds	Other bonds	Fixed Income
L5	Amsterdam	Bonds	Convertible Bonds	Fixed Income
L6	Amsterdam	Bonds	Bonds - Foreign currencies	Fixed Income
L7	Amsterdam	Bonds	Bonds - Foreign currencies	Fixed Income
L8	Amsterdam	Bonds	Corporate Bonds - Non guaranteed -Foreign Currency	Fixed Income
L9	Amsterdam	Bonds	Convertible Bonds - Foreign currencies	Fixed Income
LA	Amsterdam	Bonds	Corporate bonds - Non guaranteed	Fixed Income
LB	Amsterdam	Bonds	Corporate Bonds - Non guaranteed -Foreign Currency	Fixed Income
LC	Amsterdam	Bonds	State Bonds - Foreign currencies	Fixed Income
LD	Amsterdam	Bonds	Corporate bonds - Special box - guaranteed	Fixed Income
LE	Amsterdam	Bonds	Bonds - Special box - guaranteed	Fixed Income
LF	Amsterdam	Bonds	Corporate bonds - guaranteed - minimum trade amount	Fixed Income
LG	Amsterdam	Bonds	Corporate bonds - For CCY - minimum trade amount - FMT	Fixed Income
LI	Amsterdam	Bonds	Corporate bonds – Non clearable - Continuous	Fixed Income
LJ	Amsterdam	Bonds	Bonds others - Non clearable - Double Fixing	Fixed Income
LK	Amsterdam	Bonds	Bonds - Non clearable - Foreign Currency - Fixing	Fixed Income
LL	Amsterdam	Bonds	Bonds - Min trade amount - Non clearable - Continuous	Fixed Income
LM	Amsterdam	Bonds	Bonds - Min trade amount - Non clearable - foreign currency - Continuous	Fixed Income
LN	Amsterdam	Bonds	Bonds – Min Dem restriction - EUR	Fixed Income
LO	Amsterdam	Bonds	Bonds – Min Dem restriction – Foreign currencies	Fixed Income
35	Paris	Bonds	Convertible Bonds	Fixed Income
37	Paris	Bonds	Convertible Bonds	Fixed Income
40	Paris	Bonds	Euronext Access - Convertible Bonds	Fixed Income
44	Paris	Bonds	Other Bonds (€)	Fixed Income
58	Paris	Bonds	Convertible Bonds - Foreign currencies	Fixed Income
68	Paris	Bonds	Bonds Special Box UNT	Fixed Income
97	Paris	Bonds	Primary Market Bonds – Paris	Fixed Income
4A	Paris	Bonds	Bonds - Public/ Semi-public - FMT	Fixed Income
4B	Paris	Bonds	State Bonds - FMT	Fixed Income
4C	Paris	Bonds	Corporate Bonds - FMT	Fixed Income
4D	Paris	Bonds	Other Bonds - FMT	Fixed Income
4E	Paris	Bonds	State Bonds for retail - FMT	Fixed Income
4F	Paris	Bonds	Corporate bonds FMT – minimum trade amount	Fixed Income
4G	Paris	Bonds	Euronext Access - Bonds - Fixing - FMT	Fixed Income
4H	Paris	Bonds	Euronext Access - Bonds - Foreign currencies - FMT	Fixed Income
4I	Paris	Bonds	Corporate bonds - CT - minimum trade amount - FMT	Fixed Income
4J	Paris	Bonds	Bonds tradable in units - Non clearable - Double Fixing	Fixed Income
4M	Paris	Bonds	Bonds - Foreign currencies - FMT	Fixed Income
4N	Paris	Bonds	Bonds - Foreign currencies - FMT	Fixed Income
4R	Paris	Bonds	Euronext Growth - Bonds - FMT	Fixed Income
4S	Paris	Bonds	Euronext Growth - Bonds - Foreign currencies - FMT	Fixed Income
4T	Paris	Bonds	Euronext Growth - Bonds - Continuous - FMT	Fixed Income
4U	Paris	Bonds	Euronext Growth – Bonds – Recovery Box - Fixing	Fixed Income
4V	Paris	Bonds	Euronext Growth – Bonds – Penalty Box - Fixing	Fixed Income
EU	Paris	Bonds	Euronext Growth - Convertible Bonds - Single Auction	Fixed Income
EV	Paris	Bonds	Euronext Growth - Convertible Bonds - Continuous	Fixed Income
T8	Paris	All - Tests	DUMMY GROUP 7	Fixed Income
93	Lisbon	Bonds	Primary Market Bonds - Lisbon	Fixed Income
EZ	Lisbon	Bonds	Euronext Growth - Bonds - Double Fixing	Fixed Income
R1	Lisbon	Bonds	State bonds	Fixed Income
R2	Lisbon	Bonds	Corporate bonds	Fixed Income
R3	Lisbon	Bonds	Euronext Access - Bonds	Fixed Income
R4	Lisbon	Bonds	Bonds - Recovery Box - Fixing	Fixed Income
R6	Lisbon	Bonds	Bonds - Foreign currencies - Non guaranteed	Fixed Income
R7	Lisbon	Bonds	Corporate bonds FMT - minimum trade amount	Fixed Income
R8	Lisbon	Bonds	Bonds - Mind Trad Amount - For CCY - CT - FMT	Fixed Income
R9	Lisbon	Bonds	Bonds - Recovery Box - For CCY - Fixing	Fixed Income
S2	Lisbon	Bonds	corporate Bonds - Non clearable - double fixing	Fixed Income
S3	Lisbon	Bonds	Euronext Access Bonds - non clearable - double fixing	Fixed Income
S4	Lisbon	Bonds	Bond recovery box FOR CCY - non clearable - double fixing	Fixed Income
V1	Lisbon	Bonds	Convertible bonds	Fixed Income
V2	Lisbon	Bonds	Convertible bonds	Fixed Income

Gr.	Market	Nature	Type	Optiq Segment
V4	Lisbon	Bonds	Euronext Growth – Bonds – Recovery Box - Continuous	Fixed Income
V5	Lisbon	Bonds	Euronext Growth – Bonds – Penalty Box - Continuous	Fixed Income

8.2 LIST OF TRADING GROUPS THAT WILL MIGRATE WITH THE SECOND MIGRATION TO OPTIQ (UPDATED IN VERSION 1.5 OF THE MIGRATION GUIDELINES)

Please find below the full list of Euronext trading groups that will migrate with the second migration from UTP-Cash to Optiq:

Group	Market	Type	Optiq Segment
10	Paris	Euronext Access - shares	Equities
11	Paris	Equities SRD	Equities
12	Paris	Foreign Equities SRD	Equities
13	Paris	Equities	Equities
14	Paris	Equities SRD Long	Equities
16	Paris	Equities	Equities
17	Paris	Equities	Equities
19	Paris	Equities - Non regulated	Equities
21	Paris	Foreign Equities SRD	Equities
22	Paris	Foreign Equities	Equities
23	Paris	Foreign Equities	Equities
30	Paris	Euronext Access - Ancillary shares	Equities
31	Paris	Ancillary Shares	Equities
32	Paris	Euronext Access - Shares - Penalty bench / Non-Compliant issuers	Equities
33	Paris	Ancillary Shares	Equities
39	Paris	Ancillary shares - Non regulated	Equities
50	Paris	Equities - Foreign currencies	Equities
51	Paris	Equities - Foreign currencies	Equities
54	Paris	Euronext Access - Equities - Foreign currencies	Equities
63	Paris	Lending/ Borrowing	Equities
65	Paris	Compulsory Buy-out Offer	Equities
96	Brussels	Equities Regulated Market - IPOs	Equities
98	Paris	Euronext Access - Equities - Shiva - IPOs	Equities
05	Paris	Equities IPO	Equities
A0	Brussels	Equities BEL20	Equities
A1	Brussels	Equities	Equities
A2	Brussels	Equities - Trading Facility - Double Fixing	Equities
A3	Brussels	Foreign Equities	Equities
A4	Brussels	Equities - Trading facility - Continuous	Equities
A5	Brussels	Equities	Equities
A6	Brussels	Equities - Trading facility- Foreign currencies - Continuous	Equities
A7	Brussels	Foreign Equities	Equities
A8	Brussels	Equities Temporary listing	Equities
A9	Brussels	Real Estate certificates	Equities
AA	Brussels	Scripts - fixing	Equities
AB	Brussels	Equities - Foreign currencies	Equities
AC	Brussels	Equities - Trading Facility - Foreign currencies - Double Fixing	Equities
AD	Brussels	Equities - Foreign currencies	Equities

Group	Market	Type	Optiq Segment
AE	Brussels	Equities recovery box - Continuous	Equities
AF	Brussels	Equities recovery box - Fixing	Equities
AG	Brussels	Equities- Penalty box - Continuous	Equities
AH	Brussels	Equities - Penalty box - Fixing	Equities
AI	Brussels	Euronext Growth – Shares – Recovery Box - Fixing	Equities
AJ	Brussels	Euronext Growth – Shares – Penalty Box - Fixing	Equities
AK	Brussels	Shares - BRS - Non clearable - Continuous	Equities
AL	Brussels	Shares - BRS - Non clearable - Double Fixing	Equities
B0	Brussels	Structured products	Equities
B4	Brussels	Euronext Access - Equities	Equities
B7	Brussels	Ancillary Shares	Equities
B8	Brussels	Ancillary Shares	Equities
B9	Brussels	Strips	Equities
BA	Brussels	Euronext Access - Ancillary shares	Equities
BB	Brussels	Euronext Access - Equities - IPOs - SHIVA	Equities
BG	Brussels	Equities - Euronext Access +	Equities
BH	Brussels	Euronext Access - Shares - Penalty bench / Non-Compliant issuers	Equities
E1	Paris	Euronext Growth - Equities	Equities
E2	Paris	Euronext Growth - Equities	Equities
E3	Paris	Euronext Growth - Ancillary shares	Equities
E4	Paris	Euronext Growth - Ancillary shares	Equities
E9	Paris	Euronext Growth - Equities - Foreign currencies	Equities
EA	Paris	Euronext Growth - Equities - Private investment	Equities
EC	Brussels	Euronext Growth - Equities	Equities
ED	Brussels	Euronext Growth - Equities	Equities
EE	Brussels	Euronext Growth - Equities - Private investment	Equities
EF	Brussels	Euronext Growth - Ancillary shares	Equities
EG	Brussels	Euronext Growth - Ancillary shares	Equities
EI	Paris	Euronext Growth - Private investment	Equities
EM	Lisbon	Euronext Growth - Equities	Equities
EN	Lisbon	Euronext Growth - Equities	Equities
EO	Lisbon	Euronext Growth - Equities - Private Placement	Equities
EP	Lisbon	Euronext Growth - Equities - Private Placement	Equities
EQ	Brussels	Euronext Growth - Equities - Foreign currencies	Equities
EW	Lisbon	Euronext Growth - Equities - Ancillary Shares - Continuous	Equities
F1	Paris	Equities CAC40 - Group 1	Equities
F2	Paris	Equities CAC40 - Group 2	Equities
F3	Paris	Equities - Penalty box - Cont.	Equities
F4	Paris	Equities - Penalty box - Fixing	Equities
F5	Paris	Euronext Growth – Shares – Recovery Box - Continuous	Equities
F6	Paris	Euronext Growth – Shares – Penalty Box - Continuous	Equities
F7	Paris	Euronext Access - Equities - Non clearable	Equities
F8	Paris	Euronext Access - Ancillary shares - Non clearable	Equities
F9	Paris	Shares - Euronext access +	Equities
G0	Paris	Equities recovery box - Continuous	Equities
G1	Paris	Equities recovery box - Fixing	Equities
J0	Amsterdam	Equities AEX	Equities
J1	Amsterdam	Equities	Equities
J2	Amsterdam	Foreign Equities	Equities
J3	Amsterdam	Equities	Equities

Group	Market	Type	Optiq Segment
J7	Amsterdam	Foreign Equities	Equities
J8	Amsterdam	Foreign Equities	Equities
J9	Amsterdam	Equities	Equities
JA	Amsterdam	Equities Trading facility	Equities
JB	Amsterdam	Equities Trading facility	Equities
JC	Amsterdam	Equities recovery box - Continuous	Equities
JD	Amsterdam	Equities recovery box - Fixing	Equities
JE	Amsterdam	Equities - Foreign currencies	Equities
JF	Amsterdam	Equities - Foreign currencies	Equities
JG	Amsterdam	Equities - Penalty Box - Continuous	Equities
JH	Amsterdam	Equities - Penalty Box – Fixing	Equities
K0	Amsterdam	Ancillary Shares	Equities
K1	Amsterdam	Ancillary Shares	Equities
P0	Lisbon	Equities PSI20	Equities
P1	Lisbon	Equities	Equities
P2	Lisbon	Equities	Equities
P3	Lisbon	Equities - Professional Compartment - Continuous	Equities
P4	Lisbon	Equities - Professional Compartment - Double Fixing	Equities
P5	Lisbon	Foreign Equities	Equities
P6	Lisbon	Foreign Equities	Equities
P7	Lisbon	Euronext Access - Equities	Equities
P8	Lisbon	Equities recovery box - Continuous	Equities
P9	Lisbon	Equities recovery box - Fixing	Equities
PC	Lisbon	Equities - Penalty box - Continuous	Equities
PD	Lisbon	Equities - Penalty box - Fixing	Equities
PG	Lisbon	Shares - TCS	Equities
PH	Lisbon	Euronext Growth – Equities – Recovery Box - Continuous	Equities
PI	Lisbon	Euronext Growth – Equities – Penalty Box - Continuous	Equities
PJ	Lisbon	Euronext Access - Equities - Penalty Box - Double Fixing	Equities
PK	Lisbon	Euronext Access - Equities - Recovery Box	Equities
PL	Lisbon	Equities - Euronext Access +	Equities
Q1	Lisbon	Ancillary Shares	Equities
Q2	Lisbon	Ancillary Shares	Equities
T6	Paris	DUMMY GROUP 3	Equities
T9	Paris	DUMMY GROUP 4	Equities
TS	Paris	DUMMY GROUP 1	Equities
TU	Paris	DUMMY GROUP 5	Equities
TW	Paris	DUMMY GROUP 2	Equities
VA	Brussels	SHARES - REGISTERED - VPU	Equities
VB	Brussels	SHARES - EUROCLEAR - VPU	Equities
VC	Brussels	FUNDS - EUROCLEAR - VPU	Equities
VD	Brussels	BONDS - EUROCLEAR - VPU	Equities
VE	Brussels	BONDS - NBB - VPU	Equities
VF	Brussels	SHARES - VPU	Equities
VG	Brussels	FUNDS - VPU	Equities
VH	Brussels	BONDS - VPU	Equities
VI	Brussels	DECIMALS FUNDS - VPU	Equities
VJ	Brussels	DECIMALS FUNDS -EUROCLEAR- VPU	Equities
VK	Brussels	BONDS - FOR CCY - VPU	Equities
VL	Brussels	FUNDS -EUROCLEAR- FOR CCY-VPU	Equities
VM	Brussels	FUNDS - FOR CCY - VPU	Equities

Group	Market	Type	Optiq Segment
VN	Brussels	DECIMALS FUNDS - FOR CCY - VPU	Equities
VO	Brussels	DEC FUNDS - ECLEAR-FOR CCY- VPU	Equities
18	Paris	ETFs FR Blue Chip CAC40 -FTSE100 - SR = 2%	Funds
47	Paris	ETFs - Alternate Trading Hours SR = 2%	Funds
49	Paris	ETV	Funds
52	Paris	ETFs - FOR CCY - SR=2%	Funds
53	Paris	ETVs	Funds
59	Paris	ETFs FR Blue Chip ESTX50 - DAX - SR = 2%	Funds
66	Paris	ETFs FR Alternate trad - FOR CCY - SR=2%	Funds
08	Paris	ETFs FR Equity SR = 2%	Funds
2A	Paris	ETFs FR BLUE CHIP SR3	Funds
2H	Paris	ETF FR - ALL CCY - EB - SR3	Funds
2I	Paris	ETF FR - ALL CCY - EB - SR2	Funds
2J	Paris	ETV - FOR CCY	Funds
2K	Paris	ETFs - LOW CCY - SR3 - CONTINUOUS	Funds
8A	Paris	ETFs FR NAV 1	Funds
8B	Paris	ETFs FR NAV 2	Funds
8C	Amsterdam	ETF NL - NAV 1	Funds
8D	Lisbon	ETFs PT NAV 1	Funds
8E	Lisbon	ETFs PT NAV 2	Funds
B1	Brussels	SICAV	Funds
B2	Brussels	ETFs BE - SR = 2%	Funds
B6	Brussels	ETFs BE - SR = 2%	Funds
BC	Brussels	ETFs BE - SR = 3%	Funds
BD	Brussels	ETFs BE - SR = 3%	Funds
BE	Brussels	ETF BE - ALL CCY - EB - SR3	Funds
BF	Brussels	ETF BE - ALL CCY - EB - SR2	Funds
FG	London	ETF London - Continuous	Funds
FH	London	ETF London - Continuous - Euroclear Bank	Funds
G2	Paris	ETFs FR Fixed Income - Commo - SR = 2%	Funds
G3	Paris	ETFs FR ALTERNATE - SR = 3%	Funds
G5	Paris	ETFs - FOR CCY SR = 3%	Funds
G6	Paris	ETFs FR Blue chip EST50 SR3	Funds
G7	Paris	ETFs FR ALTERNATE FOR CCY - SR = 3%	Funds
G8	Paris	ETFs FR FIXED INCOME - COMMO - SR = 3%	Funds
G9	Paris	ETFs FR EQUITY SR = 3%	Funds
K2	Amsterdam	ETFs NL - SR = 2%	Funds
K3	Amsterdam	ETFs - FOR CCY - CONTINUOUS - SR = 2%	Funds
K4	Amsterdam	Investment funds Low Volatility	Funds
K5	Amsterdam	Investment funds High Volatility	Funds
K6	Amsterdam	Investment funds	Funds
K7	Amsterdam	Investment funds	Funds
KA	Amsterdam	Investment funds low vol - Foreign currencies	Funds
KB	Amsterdam	Investment funds low vol - Foreign Currencies	Funds
KC	Amsterdam	ETFs – Alternate trading hours - SR = 2%	Funds
KD	Amsterdam	ETFs - Alternate trad - FOR CCY - SR = 2%	Funds
KE	Amsterdam	ETFs NL - SR = 3%	Funds
KF	Amsterdam	ETFs - FOR CCY - SR = 3%	Funds
KG	Amsterdam	ETFs ALTERNATE - SR = 3%	Funds
KH	Amsterdam	ETFs ALTERNATE - FOR CCY - SR = 3%	Funds
KI	Amsterdam	ETF NL - ALL CCY - EB - SR3	Funds
KJ	Amsterdam	ETF NL - ALL CCY - EB - SR2	Funds
KK	Amsterdam	ETFs - LOW CCY - SR3 - CONTINUOUS	Funds
N5	Amsterdam	ETVs	Funds

Group	Market	Type	Optiq Segment
PA	Lisbon	ETFs PT - SR = 2%	Funds
PB	Lisbon	ETFs PT - SR3	Funds
S1	Lisbon	Investment funds	Funds
T7	Paris	DUMMY GROUP 6	Funds
24	Paris	Warrants – BNP	Warrants and Certificates
26	Paris	Warrants – Société Générale	Warrants and Certificates
27	Paris	Warrants – Commerzbank	Warrants and Certificates
29	Paris	Certificates – Société Générale	Warrants and Certificates
36	Paris	Warrants – Citigroup	Warrants and Certificates
2B	Paris	CERTIF - PROF COMP - FIX - Euronext Access	Warrants and Certificates
2C	Paris	STRUCT PDTS - PROF COMP - PCT - FIX - Euronext Access	Warrants and Certificates
2D	Paris	CERTIF - PROF COMP - FIX - FOR CCY - Euronext Access	Warrants and Certificates
2E	Paris	STRUCT PDTS - PROF COMP - PCT - FIX -FOR CCY - Euronext Access	Warrants and Certificates
2F	Paris	STRUCT PDTS - PROF COMP - PCT - CONTINUOUS - Euronext Access	Warrants and Certificates
4W	Paris	Structured products (%) - FMT	Warrants and Certificates
4X	Paris	Structured products (%) - FMT	Warrants and Certificates
4Y	Paris	Structured Products (%) - FMT	Warrants and Certificates
4Z	Paris	Structured products (%) - FMT	Warrants and Certificates
D0	Brussels	Exotic certificates – Commerzbank	Warrants and Certificates
D1	Brussels	EXO WAR -SOC GEN-08h00/18h30 C	Warrants and Certificates
D2	Brussels	EXO WAR - SOC GEN -09h05/17h30 C	Warrants and Certificates
D3	Brussels	Warrants	Warrants and Certificates
D4	Brussels	Warrants - KBC Infima	Warrants and Certificates
D6	Brussels	Warrants – Commerzbank	Warrants and Certificates
DC	Brussels	Certificates – Commerzbank	Warrants and Certificates
DE	Brussels	Structured Products – Commerzbank (%)	Warrants and Certificates
GA	Paris	Exotic certificates - ING	Warrants and Certificates
GG	Paris	Warrants - BNP	Warrants and Certificates
GH	Paris	Exotic Certificates - BNP	Warrants and Certificates
GI	Paris	Certificates - BNP	Warrants and Certificates
GM	Paris	Structured products – BNP – Foreign Currency (%)	Warrants and Certificates
GN	Paris	Structured Products (%) – Compartiment Professionnel	Warrants and Certificates
GO	Paris	Structured products - Vontobel - 08h00/18h30	Warrants and Certificates
GP	Paris	Structured products - Vontobel	Warrants and Certificates
H0	Paris	Certificates	Warrants and Certificates
H1	Paris	Exotic certificates – Commerzbank	Warrants and Certificates
H2	Paris	Exotic warrants – Citigroup	Warrants and Certificates
H3	Paris	Exotic certificates – RBS	Warrants and Certificates
H4	Paris	Exotic warrants – Société Générale	Warrants and Certificates
H5	Paris	Exotic certificates – BNP	Warrants and Certificates
H6	Paris	Exotic warrants – Commerzbank	Warrants and Certificates
H7	Paris	Certificates - Barclay	Warrants and Certificates
H8	Paris	Certificates	Warrants and Certificates
HB	Paris	Certificates - Société Générale Foreign Currency	Warrants and Certificates
HC	Paris	ETNs – Continuous	Warrants and Certificates
HD	Paris	Certificates – Continuous	Warrants and Certificates
HE	Paris	Certificates - 09h05/17h30	Warrants and Certificates
HF	Paris	Certificates - BNP	Warrants and Certificates
HG	Paris	Certificates - BNP	Warrants and Certificates

Group	Market	Type	Optiq Segment
HI	Paris	Certificates – Calyon	Warrants and Certificates
HJ	Paris	Certificates - RBS	Warrants and Certificates
HK	Paris	Certificates - Unicredit - 09h05/18h30	Warrants and Certificates
HL	Paris	Exotic warrants – Unicredit - 09h05/18h30	Warrants and Certificates
HM	Paris	Certificates – Professionnal Compartment	Warrants and Certificates
HN	Paris	Certificates – BNP Compartiment Professionnel	Warrants and Certificates
HO	Paris	Certificates - Société Générale	Warrants and Certificates
HP	Paris	Exotic warrants - Barclays	Warrants and Certificates
HQ	Paris	Certificates – Barclays Compartiment Prof. Foreign Currency	Warrants and Certificates
HR	Paris	Exotic certificates - ING	Warrants and Certificates
HS	Paris	Structured Products - Barclays - Comp. Professionnel	Warrants and Certificates
HT	Paris	Structured Produits Société Générale - Delayed opening	Warrants and Certificates
HU	Paris	Structured Products – Barclays - Comp. Professionnel	Warrants and Certificates
HV	Paris	Tracking Certificates – BNP Paribas - Comp. Professionnel	Warrants and Certificates
HW	Paris	Certificates - Barclays - Foreign Currency	Warrants and Certificates
HX	Paris	Tracking Certificates - BNP Paribas	Warrants and Certificates
HY	Paris	Tracking Certificates - BNP Paribas Foreign Currency	Warrants and Certificates
HZ	Paris	Structured products (%) – FMT Barclays - Comp. Professionnel	Warrants and Certificates
I2	Paris	Warrants – Unicredit - 09h05/18h30	Warrants and Certificates
I7	Paris	Structured products – Foreign Currency (%)	Warrants and Certificates
I8	Paris	Structured Products - (%) - comp. professionnel	Warrants and Certificates
I9	Paris	Structured Products - (€) - comp. professionnel	Warrants and Certificates
IA	Paris	Certificates - Unicredit - 08h00/18h30	Warrants and Certificates
IB	Paris	Exotic warrants – Unicredit	Warrants and Certificates
IC	Paris	Warrants – Unicredit	Warrants and Certificates
ID	Paris	Certificates Unicredit - 08h00/18h30 CT	Warrants and Certificates
IG	Paris	Warrants – Commerzbank	Warrants and Certificates
IH	Paris	Exotic warrants – Commerzbank	Warrants and Certificates
II	Paris	Certificates – Commerzbank	Warrants and Certificates
IM	Paris	Warrants – Citigroup	Warrants and Certificates
IN	Paris	Exotic warrants – Citigroup	Warrants and Certificates
IQ	Paris	Certificates - Barclay	Warrants and Certificates
IR	Paris	Exotic warrants - SG - Compartiment Professionnel	Warrants and Certificates
IS	Paris	Certificates - Barclays	Warrants and Certificates
IT	Paris	Exotic warrants - Barclays	Warrants and Certificates
IU	Paris	Warrants - Société Générale - 09h05/18h30	Warrants and Certificates
IV	Paris	Certificates - Société Générale - 08h00/18h30	Warrants and Certificates
IW	Paris	Exotic Warrants - Société Générale - 09h05/18h30	Warrants and Certificates
IX	Paris	Warrants - Société Générale - 08h00/18h30	Warrants and Certificates
IY	Paris	Certificates – Société Générale	Warrants and Certificates
IZ	Paris	Exotic warrants Société Générale - 08h00/18h30	Warrants and Certificates
M0	Amsterdam	Structured products – RBS (€)	Warrants and Certificates
M1	Amsterdam	Warrants – RBS	Warrants and Certificates
M2	Amsterdam	Structured products – RBS/BNP (%)	Warrants and Certificates
M4	Amsterdam	Structured products – ING (%)	Warrants and Certificates
M5	Amsterdam	Exotic certificates– ING	Warrants and Certificates
M6	Amsterdam	Warrants – Commerzbank	Warrants and Certificates
M7	Amsterdam	Certificates – ING	Warrants and Certificates

Group	Market	Type	Optiq Segment
M8	Amsterdam	Structured products (%) - Double Fixing - Non clearable	Warrants and Certificates
MA	Amsterdam	Exotic certificates – RBS/BNP – 09h05/17h30	Warrants and Certificates
MB	Amsterdam	Exotic certificates – ABN AMRO	Warrants and Certificates
MC	Amsterdam	Exotic certificates – Commerzbank	Warrants and Certificates
MD	Amsterdam	Exotic certificates – Citigroup	Warrants and Certificates
MH	Amsterdam	Certificates – UBS	Warrants and Certificates
MI	Amsterdam	Certificates - BNP	Warrants and Certificates
MJ	Amsterdam	Certificates - Société Générale - 08h00/18h30	Warrants and Certificates
MK	Amsterdam	Exotic Certificates – RBS/BNP – 08h00/18h30	Warrants and Certificates
ML	Amsterdam	Exotic Certificates – RBS/BNP – 09h05/18h30	Warrants and Certificates
MM	Amsterdam	EXO CERTIF -ABN -08h00/18h30	Warrants and Certificates
MN	Amsterdam	EXO CERTIF -ABN -09h05/18h30	Warrants and Certificates
MO	Amsterdam	Exotic Warrants - Citigroup - 08h00/18h30	Warrants and Certificates
MP	Amsterdam	Exotic Warrants - Citigroup - 09h05/18h30	Warrants and Certificates
MQ	Amsterdam	Exotic Warrants Commerzbank - 08h00/18h30	Warrants and Certificates
MR	Amsterdam	Exotic Warrants Commerzbank - 09h05/18h30	Warrants and Certificates
MS	Amsterdam	Exotic Certificates - ING - 08h00/18h30	Warrants and Certificates
MT	Amsterdam	TURBOS WAR – ING – 09h05/18h30	Warrants and Certificates
MU	Amsterdam	Structured products -Vontobel - 08h00/18h30	Warrants and Certificates
MV	Amsterdam	Structured products - Vontobel	Warrants and Certificates
N0	Amsterdam	Structured products (%)	Warrants and Certificates
N1	Amsterdam	Structured products (€)	Warrants and Certificates
N2	Amsterdam	Structured products (%)	Warrants and Certificates
N3	Amsterdam	Structured products (€)	Warrants and Certificates
N6	Amsterdam	Structured products percent - Foreign Currency	Warrants and Certificates
N7	Amsterdam	Structured products euro - Foreign Currency	Warrants and Certificates
N8	Amsterdam	Structured products percent - Foreign Currency	Warrants and Certificates
NA	Amsterdam	Structured products – Commerzbank (%)	Warrants and Certificates
NB	Amsterdam	Structured products – Commerzbank (€)	Warrants and Certificates
NC	Amsterdam	Structured products – other issuers (%)	Warrants and Certificates
ND	Amsterdam	Certificates - Société Générale - 09h05/17h30	Warrants and Certificates
NE	Amsterdam	Structured products – ABN AMRO (%)	Warrants and Certificates
NF	Amsterdam	Structured products – ABN AMRO (€)	Warrants and Certificates
NG	Amsterdam	Structured products – Rabobank (%)	Warrants and Certificates
NH	Amsterdam	Structured products – Rabobank (€)	Warrants and Certificates
NJ	Amsterdam	Structured products – Morgan Stanley (%)	Warrants and Certificates
NK	Amsterdam	Structured products – Morgan Stanley (€)	Warrants and Certificates
NL	Amsterdam	Structured products – ABN AMRO – Foreign Currency	Warrants and Certificates
NM	Amsterdam	Structured products – ABN AMRO – Foreign Currency (%)	Warrants and Certificates
NP	Amsterdam	Structured products – BNP (%)	Warrants and Certificates
T1	Lisbon	Certificates - BCP	Warrants and Certificates
T2	Lisbon	Certificates - BCP	Warrants and Certificates
T3	Lisbon	Certificates – Commerzbank	Warrants and Certificates
T4	Lisbon	Certificates – Commerzbank	Warrants and Certificates
T5	Paris	DUMMY GROUP 8	Warrants and Certificates
U2	Lisbon	Warrants – BCP	Warrants and Certificates
U3	Lisbon	Warrants – Citigroup	Warrants and Certificates
U4	Lisbon	Exotic warrants – Citigroup	Warrants and Certificates
U5	Lisbon	Exotic warrants – Citigroup	Warrants and Certificates
U6	Lisbon	Warrants - Commerzbank	Warrants and Certificates
U8	Lisbon	Warrants - Commerzbank	Warrants and Certificates

Group	Market	Type	Optiq Segment
U9	Lisbon	Exotic Warrants - Commerzbank	Warrants and Certificates
UB	Lisbon	Exotic Warrants – BC	Warrants and Certificates

Please find below the list of TCS groups that will migrate to Optiq:

Group	Market	Type	Optiq Segment
8C	Amsterdam	ETF NL - NAV 1	Funds
8A	Paris	ETFs FR NAV 1	Funds
8B	Paris	ETFs FR NAV 2	Funds
8D	Lisbon	ETFs PT NAV 1	Funds
8E	Lisbon	ETFs PT NAV 2	Funds
KM	Amsterdam	Funds NL (monthly uncrossing) - TCS	Funds
KN	Amsterdam	Funds NL (weekly uncrossing) - Foreign Currency - TCS	Funds
KP	Amsterdam	Funds NL (daily uncrossing) - Foreign Currency - TCS	Funds
KQ	Amsterdam	Funds NL (quarterly uncrossing) - TCS	Funds
KR	Amsterdam	Funds NL (daily uncrossing) - Professional Compartment - TCS	Funds
KU	Amsterdam	Funds NL (daily uncrossing -2 days cycle) - TCS	Funds
KW	Amsterdam	Funds NL (weekly uncrossing) - TCS	Funds
KX	Amsterdam	Funds NL NAV 2 (daily uncrossing) - TCS	Funds
KZ	Amsterdam	Funds NL (daily uncrossing) - TCS	Funds
2Z	Amsterdam	Funds FR (daily uncrossing) - TCS - no decimalisation	Funds
2O	Paris	EFS PAR-DEC-1 PRICE-ENX PAR-PROF COMP-BPSS	Funds
2P	Paris	EFS PARIS-DEC-1 PRICE-ACCESS-BPSS	Funds
2Q	Paris	EFS PAR-DEC-1 PRICE-ENX PAR-PROFESSIONAL COMPARTMENT	Funds
2R	Paris	EFS PARIS-DEC-1 PRICE-ACCESS	Funds
2S	Paris	EFS PARIS-NODEC-1PRICE-ACCESS	Funds
2T	Paris	EFS PARIS-DEC-2PRICE-ACCESS	Funds
2U	Paris	EFS PARIS-NODEC-2PRICE-ACCESS	Funds
2V	Paris	EFS PARIS-DEC-1 PRICE-ENX PAR	Funds
2W	Paris	EFS PARIS-NODEC-1PRICE-ENX PAR	Funds
2X	Paris	EFS PARIS-DEC-2PRICE-ENX PAR	Funds
2Y	Paris	EFS PARIS-NODEC-2PRICE-ENX PAR	Funds

8.3 LIST OF CFI CODES THAT WILL MIGRATE TO OPTIQ WITH THE FIXED INCOME MIGRATION

Please find below the list of CFI codes that will be on Optiq with the first migration of Fixed Income²:

DBFGDN	DBFXDB	DBVXDN	DGVGAB	DTFXDB
DBFGFB	DBFXFB	DBVXFB	DGVGFR	DTFXFB
DBFGFN	DBFXFN	DBVXFN	DGVNDB	DTFXFN
DBFGFX	DBFXFR	DBVXFR	DGVNFB	DTFXFR
DBFGGB	DBFXFX	DBVXFX	DGVNFR	DTFXFX

² As a reminder, all asset classes under the Expert Market (MIC code VPXB) will be traded on the Equities segment and disseminated through the Equities MDG channels.

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DBFGGR	DBFXGB	DBVXGB	DGVSDR	DTFXGB
DBFJAB	DBFXGR	DBVXGR	DGVSGB	DTFXGN
DBFJPB	DBFXPN	DBVXLB	DGVXAB	DTFXGR
DBFJPR	DBFXQB	DBVXPB	DGVXAN	DTFXPB
DBFJPX	DBFXXB	DBVXPN	DGVXDN	DTFXXB
DBFJQR	DBFXXN	DBVXPR	DGVXDX	DTFXXN
DBFNDR	DBFXXR	DBVXQB	DGVXFB	DTVGFB
DBFNFB	DBFXXX	DBVXQR	DGXXXX	DTVGGB
DBFNFN	DBVGCB	DBVXQX	DGZGAB	DTVJGB
DBFNFR	DBVGDB	DBVXTB	DGZXAB	DTVNFB
DBFNFX	DBVGDR	DBVXXB	DNFTFN	DTVNFR
DBFNGR	DBVGTR	DBVXXN	DNFTPN	DTVNFX
DBFNXX	DBVGXB	DBVXXR	DNFTXN	DTVNXX
DBFODX	DBVNDN	DBVXXX	DNFXFB	DTVOFB
DBFOFB	DBVNDX	DBXUQR	DNFXFN	DTVSFB
DBFOFN	DBVNFB	DBXXFB	DNZTFN	DTVTFN
DBFOPB	DBVNFX	DBXXPN	DNZTXN	DTVUAX
DBFPFB	DBVNXX	DBXXXB	DNZAFX	DTVUDB
DBFPFR	DBVOFB	DBXXXN	DNZXXX	DTVUFB
DBFQFR	DBVSAB	DBXXXX	DTFGDB	DTVUFN
DBFSBB	DBVSBB	DBZNFN	DTFGFB	DTVUFX
DBFSDB	DBVSBR	DBZTFB	DTFGFN	DTVUGB
DBFSFB	DBVSDR	DBZTXB	DTFGFR	DTVXFB
DBFSFR	DBVSFB	DBZUFB	DTFGFX	DTVXFR
DBFSFX	DBVSFN	DBZUFN	DTFGTB	DTVXFX
DBFSGB	DBVSGB	DBZxcb	DTFJFB	DTVXGB
DBFSGR	DBVSGR	DBZXFB	DTFJFX	DTVXPB
DBFTFB	DBVSXB	DBZXFN	DTFJPX	DTVXQB
DBFTFN	DBVTBB	DBZXFR	DTFNAB	DTVXXB
DBFTFR	DBVTBR	DBZXXB	DTFNBB	DTXXXB
DBFTFX	DBVTFB	DBZXXN	DTFNFB	DTXXXX
DBFTGB	DBVTFR	DCFNGR	DTFNFN	DTZNFB
DBFTGR	DBVTGB	DCFPFN	DTFNFR	DTZSXB
DBFTPB	DBVTXB	DCFUAB	DTFNFX	DTZTXB
DBFTXB	DBVTXN	DCFUAN	DTFOFB	DTZTXR
DBFUAB	DBVUAB	DCFUFB	DTFOFX	DTZUFB
DBFUBR	DBVUAN	DCFUFN	DTFPFB	DTZUFN
DBFUCB	DBVUAR	DCFUFR	DTFSFB	DTZUGB
DBFUCR	DBVUBB	DCFUGB	DTFSFR	DTZXFB
DBFUCX	DBVUCB	DCFUGR	DTFSFX	DTZXGB
DBFUDB	DBVUDR	DCFUPB	DTFSXB	DTZXXB
DBFUDR	DBVUFB	DCFxDB	DTFTFB	DYFSXB
DBFUDX	DBVUFN	DCFxDN	DTFTFN	DYFUXN
DBFUEN	DBVUFR	DCFxFN	DTFTFX	DYFXXB
DBFUFB	DBVUFX	DCFXXB	DTFTGB	DYVXXB

DBFUFN	DBVUGB	DCVXFN	DTFTXB	DYXXXB
DBFUFR	DBVUGN	DCXPFB	DTFUAX	DYZTXR
DBFUFX	DBVUGR	DCZUFB	DTFUCB	DYZXXB
DBFUGB	DBVUPB	DCZUFN	DTFUDB	
DBFUGR	DBVUPN	DCZXFN	DTFUFB	
DBFULB	DBVUPR	DGFGFR	DTFUFN	
DBFUPN	DBVUQB	DGFNFB	DTFUFR	
DBFUQB	DBVUQN	DGFNFR	DTFUFX	
DBFUQN	DBVUQR	DGFSFR	DTFUGB	
DBFUQR	DBVXAB	DGFUFB	DTFXAN	
DBFXBB	DBVXBB	DGFUFN	DTFXAX	
DBFXCB	DBVXBR	DGFXAB	DTFXCB	

8.4 SPLIT OF EQUITIES INSTRUMENTS ACROSS PARTITIONS IN PRODUCTION

Find below the split of Equities instruments across partitions that will be in place for Cash markets migration to Optiq. Please note that the allocation of instruments is likely to change in the future with load balancing requirements. Once the load balancing is active, the allocation of instruments can be found in the standing data files and standing data real time messages. Information regarding repartition of instruments can also be retrieved through OEG using the Instrument Synchronization List (50) message. Further information explanation can be found in the [Optiq High Availability and Business Continuity](#) document on Euronext website.

ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
BE0974328602	1418487	10	XMLI	BE0974328602	0
BE6200101556	1126806	10	XMLI	BE6200101556	0
CA38055V2049	1146937	10	XMLI	CA38055V2049	0
FR0000030769	1110204	10	XMLI	FR0000030769	0
FR0000031866	1110212	10	XMLI	FR0000031866	0
FR0000051302	1110300	10	XMLI	FR0000051302	0
FR0000052755	1110309	10	XMLI	FR0000052755	0
FR0000052920	1110314	10	XMLI	FR0000052920	0
FR0000054371	1110335	10	XMLI	FR0000054371	0
FR0000064735	1110402	10	XMLI	FR0000064735	0
FR0000077232	1110463	10	XMLI	FR0000077232	0
FR0004152700	1125222	10	XMLI	FR0004152700	0
FR0004155208	1110684	10	XMLI	FR0004155208	0
FR0010436170	1110982	10	XMLI	FR0010436170	0
FR0010447086	1110988	10	XMLI	FR0010447086	0
FR0010515742	1111025	10	XMLI	FR0010515742	0
FR0010766642	1122723	10	XMLI	FR0010766642	0
FR0010882886	1125812	10	XMLI	FR0010882886	0
FR0010972091	1128567	10	XMLI	FR0010972091	0
FR0010976746	1127075	10	XMLI	FR0010976746	0
FR0011908045	1153968	10	XMLI	FR0011908045	0
FR0012336691	1153812	10	XMLI	FR0012336691	0
FR0012991040	1169605	10	XMLI	FR0012991040	0
FR0013072741	1173591	10	XMLI	FR0013072741	0
FR0013266772	1315037	10	XMLI	FR0013266772	0

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0013310281	1410976	10	XMLI	FR0013310281	0
GB00BT9PTW34	1159893	10	XMLI	GB00BT9PTW34	0
NL0010273694	1138101	10	XMLI	NL0010273694	0
FR0000031122	1110208	11	XPAR	FR0000031122	0
FR0000035081	1110229	11	XPAR	FR0000035081	0
FR0000044448	1110267	11	XPAR	FR0000044448	0
FR0000051807	1110305	11	XPAR	FR0000051807	0
FR0000053225	1110319	11	XPAR	FR0000053225	0
FR0000054900	1110339	11	XPAR	FR0000054900	0
FR0000061137	1110360	11	XPAR	FR0000061137	0
FR0000062234	1110372	11	XPAR	FR0000062234	0
FR0000063935	1110386	11	XPAR	FR0000063935	0
FR0000120107	1110481	11	XPAR	FR0000120107	0
FR0000120966	1110498	11	XPAR	FR0000120966	0
FR0000121204	1110502	11	XPAR	FR0000121204	0
FR0000121329	1110507	11	XPAR	FR0000121329	0
FR0000121634	1110511	11	XPAR	FR0000121634	0
FR0000121725	1110515	11	XPAR	FR0000121725	0
FR0000130395	1110533	11	XPAR	FR0000130395	0
FR0000131757	1110543	11	XPAR	FR0000131757	0
FR0000184798	1110557	11	XPAR	FR0000184798	0
FR0004035913	1110653	11	XPAR	FR0004035913	0
FR0004125920	1168524	11	XPAR	FR0004125920	0
FR0005691656	1110720	11	XPAR	FR0005691656	0
FR0006174348	1110725	11	XPAR	FR0006174348	0
FR0010040865	1110766	11	XPAR	FR0010040865	0
FR0010241638	1110854	11	XPAR	FR0010241638	0
FR0010411983	1110967	11	XPAR	FR0010411983	0
FR0011476928	1140698	11	XPAR	FR0011476928	0
FR0011981968	1148615	11	XPAR	FR0011981968	0
FR0013199916	1306648	11	XPAR	FR0013199916	0
FR0013258662	1301048	11	XPAR	FR0013258662	0
FR0013269123	1319593	11	XPAR	FR0013269123	0
FR0000036980	1110243	13	XPAR	FR0000036980	0
FR0000037970	1110247	13	XPAR	FR0000037970	0
FR0000038804	1110255	13	XPAR	FR0000038804	0
FR0000039216	1110259	13	XPAR	FR0000039216	0
FR0000060196	1110344	13	XPAR	FR0000060196	0
FR0000060451	1110348	13	XPAR	FR0000060451	0
FR0000060824	1110352	13	XPAR	FR0000060824	0
FR0000060907	1110356	13	XPAR	FR0000060907	0
FR0000061780	1110368	13	XPAR	FR0000061780	0
FR0000064164	1110390	13	XPAR	FR0000064164	0
FR0000065765	1110410	13	XPAR	FR0000065765	0
FR0000065971	1110414	13	XPAR	FR0000065971	0
FR0000066482	1110418	13	XPAR	FR0000066482	0
FR0010588079	1111056	13	XPAR	FR0010588079	0
FR0000032526	1110216	16	XPAR	FR0000032526	0
FR0000033243	1110220	16	XPAR	FR0000033243	0
FR0000035370	1110233	16	XPAR	FR0000035370	0
FR0000038465	1110251	16	XPAR	FR0000038465	0
FR0000039620	1110263	16	XPAR	FR0000039620	0

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0000045239	1110276	16	XPAR	FR0000045239	0
FR0000045544	1110280	16	XPAR	FR0000045544	0
FR0000050049	1110294	16	XPAR	FR0000050049	0
FR0000053837	1110327	16	XPAR	FR0000053837	0
FR0000054199	1110331	16	XPAR	FR0000054199	0
FR0000054678	1115328	16	XPAR	FR0000054678	0
FR0000061459	1110364	16	XPAR	FR0000061459	0
FR0000062671	1110376	16	XPAR	FR0000062671	0
FR0000062978	1110380	16	XPAR	FR0000062978	0
FR0000064362	1110394	16	XPAR	FR0000064362	0
FR0000065278	1110406	16	XPAR	FR0000065278	0
FR0000066722	1110422	16	XPAR	FR0000066722	0
FR0000071797	1110426	16	XPAR	FR0000071797	0
FR0000072597	1110431	16	XPAR	FR0000072597	0
FR0000074072	1110441	16	XPAR	FR0000074072	0
FR0000075343	1257742	16	XPAR	FR0000075343	0
FR0000075392	1110451	16	XPAR	FR0000075392	0
FR0000075954	1110455	16	XPAR	FR0000075954	0
FR0000076887	1110459	16	XPAR	FR0000076887	0
FR0000079147	1110472	16	XPAR	FR0000079147	0
FR0000120560	1110490	16	XPAR	FR0000120560	0
FR0000120669	1110494	16	XPAR	FR0000120669	0
FR0000130692	1110538	16	XPAR	FR0000130692	0
FR0000185506	1110562	16	XPAR	FR0000185506	0
FR0004007813	1110636	16	XPAR	FR0004007813	0
FR0004023208	1110640	16	XPAR	FR0004023208	0
FR0004027068	1110645	16	XPAR	FR0004027068	0
FR0004034072	1110649	16	XPAR	FR0004034072	0
FR0004038263	1110658	16	XPAR	FR0004038263	0
FR0004050300	1110667	16	XPAR	FR0004050300	0
FR0004152874	1110679	16	XPAR	FR0004152874	0
FR0004156297	1163851	16	XPAR	FR0004156297	0
FR0004159473	1110689	16	XPAR	FR0004159473	0
FR0004529147	1110711	16	XPAR	FR0004529147	0
FR0006239109	1110729	16	XPAR	FR0006239109	0
FR0006864484	1110733	16	XPAR	FR0006864484	0
FR0007317813	1110752	16	XPAR	FR0007317813	0
FR0010095596	1110780	16	XPAR	FR0010095596	0
FR0010151589	1110789	16	XPAR	FR0010151589	0
FR0010193979	1110828	16	XPAR	FR0010193979	0
FR0010214064	1110844	16	XPAR	FR0010214064	0
FR0010263202	1110867	16	XPAR	FR0010263202	0
FR0010298620	1110876	16	XPAR	FR0010298620	0
FR0010309096	1110883	16	XPAR	FR0010309096	0
FR0010341032	1110902	16	XPAR	FR0010341032	0
FR0010395681	1137344	16	XPAR	FR0010395681	0
FR0010461053	1110994	16	XPAR	FR0010461053	0
FR0010481960	1111009	16	XPAR	FR0010481960	0
FR0010490920	1111015	16	XPAR	FR0010490920	0
FR0011026749	1129173	16	XPAR	FR0011026749	0
FR0011191766	1132989	16	XPAR	FR0011191766	0
FR0011341205	1135911	16	XPAR	FR0011341205	0

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0011471135	1139591	16	XPAR	FR0011471135	0
FR0011472943	1140354	16	XPAR	FR0011472943	0
FR0011592104	1143139	16	XPAR	FR0011592104	0
FR0011665280	1144489	16	XPAR	FR0011665280	0
FR0011790542	1146317	16	XPAR	FR0011790542	0
FR0011800218	1146581	16	XPAR	FR0011800218	0
FR0011950682	1148370	16	XPAR	FR0011950682	0
FR0011995588	1149237	16	XPAR	FR0011995588	0
FR0012202497	1188670	16	XPAR	FR0012202497	0
FR0012333284	1161408	16	XPAR	FR0012333284	0
FR0012452746	1155178	16	XPAR	FR0012452746	0
FR0012613610	1283056	16	XPAR	FR0012613610	0
FR0012616852	1157395	16	XPAR	FR0012616852	0
FR0012633360	1162294	16	XPAR	FR0012633360	0
FR0012789386	1215959	16	XPAR	FR0012789386	0
FR0012872141	1163451	16	XPAR	FR0012872141	0
FR0013183589	1185485	16	XPAR	FR0013183589	0
FR0013190410	1189604	16	XPAR	FR0013190410	0
FR0013233012	1241509	16	XPAR	FR0013233012	0
FR0013296746	1369571	16	XPAR	FR0013296746	0
FR0000033904	1110224	17	XPAR	FR0000033904	0
FR0013018124	1170179	17	XPAR	FR0013018124	0
NSCFR000GNE8	1111380	21	XPAR	US3696041033	0
GA0000121459	1111091	22	XPAR	GA0000121459	0
MA0000011488	1111188	22	XPAR	MA0000011488	0
US1491231015	1111495	22	XPAR	US1491231015	0
US4595061015	1161810	22	XPAR	US4595061015	0
FR0011408731	1178776	31	XPAR	FR0011408731	0
FR0013266764	1320840	31	XPAR	FR0013266764	0
CH0299791381	1167959	32	XMLI	CH0299791381	0
CI0000000832	1110162	32	XMLI	CI0000000832	0
FR0000053415	1110323	32	XMLI	FR0000053415	0
FR0000074361	1110445	32	XMLI	FR0000074361	0
FR0000077885	1110467	32	XMLI	FR0000077885	0
FR0010680033	1114968	32	XMLI	FR0010680033	0
FR0010823724	1123881	32	XMLI	FR0010823724	0
FR0010945733	1126651	32	XMLI	FR0010945733	0
FR0011100759	1132387	32	XMLI	FR0011100759	0
FR0011896463	1152943	32	XMLI	FR0011896463	0
FR0012833770	1162583	32	XMLI	FR0012833770	0
HK0000038429	1111105	32	XMLI	HK0000038429	0
HK0000049327	1111109	32	XMLI	HK0000049327	0
PTAZR0AM0006	1175038	32	XMLI	PTAZR0AM0006	0
FR0011198175	1133168	33	XPAR	FR0011198175	0
FR0013299450	1377302	33	XPAR	FR0013299450	0
FR0013301272	1376311	33	XPAR	FR0013301272	0
FR0013306073	1376305	33	XPAR	FR0013306073	0
FR0013306149	1376301	33	XPAR	FR0013306149	0
FR0013306206	1376297	33	XPAR	FR0013306206	0
FR0013308772	1376625	33	XPAR	FR0013308772	0
FR0013308830	1376619	33	XPAR	FR0013308830	0
FR0000863219	1426608	63	XPAR	FR0000863219	0

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0000866212	1426568	63	XPAR	FR0000866212	0
FR0000873796	1426588	63	XPAR	FR0000873796	0
FR0000880486	1426600	63	XPAR	FR0000880486	0
FR0000881112	1426488	63	XPAR	FR0000881112	0
FR0000881237	1426496	63	XPAR	FR0000881237	0
FR0000881591	1426596	63	XPAR	FR0000881591	0
FR0000881815	1426552	63	XPAR	FR0000881815	0
FR0000883134	1426520	63	XPAR	FR0000883134	0
FR0000885089	1426536	63	XPAR	FR0000885089	0
FR0000885444	1426584	63	XPAR	FR0000885444	0
FR0000890972	1426524	63	XPAR	FR0000890972	0
FR0000892382	1426492	63	XPAR	FR0000892382	0
FR0000893943	1426576	63	XPAR	FR0000893943	0
FR0000894784	1426604	63	XPAR	FR0000894784	0
FR0000896243	1426544	63	XPAR	FR0000896243	0
FR0000897423	1426572	63	XPAR	FR0000897423	0
FR0000898983	1426620	63	XPAR	FR0000898983	0
FR0012401370	1426516	63	XPAR	FR0012401370	0
FR0012402030	1426628	63	XPAR	FR0012402030	0
FR0012402303	1426528	63	XPAR	FR0012402303	0
FR0013071685	1426532	63	XPAR	FR0013071685	0
FR0013071859	1426484	63	XPAR	FR0013071859	0
FR0013226750	1426504	63	XPAR	FR0013226750	0
FR0013227303	1426612	63	XPAR	FR0013227303	0
FR0013231552	1426464	63	XPAR	FR0013231552	0
FR0013303237	1426560	63	XPAR	FR0013303237	0
FR0013303393	1426512	63	XPAR	FR0013303393	0
NL0010384632	1426500	63	XAMS	NL0010384632	0
QS0010993457	1426540	63	XPAR	QS0010993457	0
QS0011008016	1426508	63	XPAR	QS0011008016	0
QS0011019369	1426556	63	XPAR	QS0011019369	0
QS0011025531	1426632	63	XPAR	QS0011025531	0
QS0011053574	1426624	63	XPAR	QS0011053574	0
QS0011109020	1426616	63	XPAR	QS0011109020	0
QS0011109749	1426636	63	XPAR	QS0011109749	0
QS0011131263	1426472	63	XPAR	QS0011131263	0
QS0011202809	1426480	63	XPAR	QS0011202809	0
QS0011238704	1426592	63	XPAR	QS0011238704	0
QX0000059445	1426580	63	XBRU	QX0000059445	0
QX0000059809	1426564	63	XBRU	QX0000059809	0
QX0000060880	1426548	63	XBRU	QX0000060880	0
QX0000061243	1426468	63	XBRU	QX0000061243	0
QX0000062068	1426476	63	XPAR	QX0000062068	0
BE0003826436	1110106	A0	XBRU	BE0003826436	0
BE0003877942	1110136	A0	XBRU	BE0003877942	0
BE0003555639	1110034	A1	XBRU	BE0003555639	0
BE0003625366	1110048	A1	XBRU	BE0003625366	0
BE0003696102	1110057	A1	XBRU	BE0003696102	0
BE0003707214	1110061	A1	XBRU	BE0003707214	0
BE0003724383	1110065	A1	XBRU	BE0003724383	0
BE0003735496	1110069	A1	XBRU	BE0003735496	0
BE0003741551	1110073	A1	XBRU	BE0003741551	0

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
BE0003760742	1110081	A1	XBRU	BE0003760742	0
BE0003766806	1110085	A1	XBRU	BE0003766806	0
BE0003789063	1110089	A1	XBRU	BE0003789063	0
BE0003807246	1110094	A1	XBRU	BE0003807246	0
BE0003820371	1110102	A1	XBRU	BE0003820371	0
BE0003836534	1110112	A1	XBRU	BE0003836534	0
BE0003844611	1110120	A1	XBRU	BE0003844611	0
BE0003851681	1110124	A1	XBRU	BE0003851681	0
BE0003858751	1110128	A1	XBRU	BE0003858751	0
BE0974265945	1133930	A1	XBRU	BE0974265945	0
BE0974289218	1180880	A1	XBRU	BE0974289218	0
NL0009901610	1131348	A1	XBRU	NL0009901610	0
LU0061462528	1111178	A3	XBRU	LU0061462528	0
NSCBE00BREB4	1149540	A3	XBRU	LU1068091351	0
DE0007236101	1110173	A4	TNLB	DE0007236101	0
NSCNL00VWAPO	1348232	A4	TNLB	DE0007664039	0
ES0178430E18	1110199	A4	TNLB	ES0178430E18	0
IT0003132476	1111167	A4	TNLB	IT0003132476	0
BE0003463685	1110030	A5	XBRU	BE0003463685	0
BE0003575835	1110038	A5	XBRU	BE0003575835	0
BE0020575115	1110145	A5	XBRU	BE0020575115	0
BE0974278104	1150897	A5	XBRU	BE0974278104	0
US4581401001	1111501	A6	TNLB	US4581401001	0
US6745991058	1111505	A6	TNLB	US6745991058	0
US92343V1044	1111511	A6	TNLB	US92343V1044	0
BE0003600112	1110042	A9	XBRU	BE0003600112	0
BE0003674851	1110053	A9	XBRU	BE0003674851	0
BE0003811289	1110098	AL	XBRU	BE0003811289	0
BE0003751659	1110077	B1	XBRU	BE0003751659	0
BE0003885051	1110141	B4	MLXB	BE0003885051	0
BE0003866838	1110132	BH	MLXB	BE0003866838	0
FR0000054421	1130678	E1	ALXP	FR0000054421	0
FR0000064529	1110398	E1	ALXP	FR0000064529	0
FR0004175099	1230483	E1	ALXP	FR0004175099	0
FR0004187367	1110706	E1	ALXP	FR0004187367	0
FR0010528059	1111037	E1	ALXP	FR0010528059	0
FR0011217710	1134484	E1	ALXP	FR0011217710	0
ES0109429037	1110195	E2	ALXP	ES0109429037	0
FR0000035818	1110237	E2	ALXP	FR0000035818	0
FR0000037640	1135160	E2	ALXP	FR0000037640	0
FR0000044810	1122865	E2	ALXP	FR0000044810	0
FR0000044943	1110272	E2	ALXP	FR0000044943	0
FR0000079683	1110476	E2	ALXP	FR0000079683	0
FR0004029478	1147591	E2	ALXP	FR0004029478	0
FR0004032746	1125447	E2	ALXP	FR0004032746	0
FR0004065639	1110673	E2	ALXP	FR0004065639	0
FR0004166197	1110693	E2	ALXP	FR0004166197	0
FR0004174233	1110697	E2	ALXP	FR0004174233	0
FR0004178572	1110702	E2	ALXP	FR0004178572	0
FR0004197747	1136471	E2	ALXP	FR0004197747	0
FR0010131409	1161007	E2	ALXP	FR0010131409	0
FR0010337444	1110897	E2	ALXP	FR0010337444	0

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0010397760	1110954	E2	ALXP	FR0010397760	0
FR0010458729	1143476	E2	ALXP	FR0010458729	0
FR0010907956	1126063	E2	ALXP	FR0010907956	0
FR0011049824	1129551	E2	ALXP	FR0011049824	0
FR0011052257	1129716	E2	ALXP	FR0011052257	0
FR0011053636	1130380	E2	ALXP	FR0011053636	0
FR0011648716	1144062	E2	ALXP	FR0011648716	0
FR0011648971	1144323	E2	ALXP	FR0011648971	0
FR0011716265	1145226	E2	ALXP	FR0011716265	0
FR0012819381	1162174	E2	ALXP	FR0012819381	0
FR0013204070	1199901	E2	ALXP	FR0013204070	0
FR0013231180	1237729	E2	ALXP	FR0013231180	0
FR0013254851	1295252	E2	ALXP	FR0013254851	0
FR0013284627	1345363	E2	ALXP	FR0013284627	0
FR0012860542	1162942	E3	ALXP	FR0012860542	0
FR0013309028	1432132	E3	ALXP	FR0013309028	0
FR0011928407	1148143	E4	ALXP	FR0011928407	0
FR0012057149	1154178	E4	ALXP	FR0012057149	0
FR0013220530	1208747	E4	ALXP	FR0013220530	0
FR0013247228	1267285	E4	ALXP	FR0013247228	0
FR0013275971	1341031	E4	ALXP	FR0013275971	0
FR0013279692	1331600	E4	ALXP	FR0013279692	0
FR0013294089	1353893	E4	ALXP	FR0013294089	0
FR0013298502	1366121	E4	ALXP	FR0013298502	0
FR0004043487	1110662	EA	ALXP	FR0004043487	0
FR0010326090	1110890	EA	ALXP	FR0010326090	0
FR0010377127	1110943	EA	ALXP	FR0010377127	0
FR0010383877	1129255	EA	ALXP	FR0010383877	0
FR0010654087	1115467	EA	ALXP	FR0010654087	0
BE0003840577	1110116	EC	ALXB	BE0003840577	0
BE0974298300	1203220	EE	ALXB	BE0974298300	0
ES0158252033	1139017	EI	ALXP	ES0158252033	0
FR0010208488	1110838	F1	XPAR	FR0010208488	0
FR0000073272	1110436	F2	XPAR	FR0000073272	0
FR0000120321	1110485	F2	XPAR	FR0000120321	0
FR0000124141	1110519	F2	XPAR	FR0000124141	0
FR0000125486	1110528	F2	XPAR	FR0000125486	0
NL0000226223	1111246	F2	XPAR	NL0000226223	0
FR0005142999	1110716	F7	XMLI	FR0005142999	0
FR0000124711	1110524	J0	XAMS	FR0000124711	0
NL0000009132	1111204	J0	XAMS	NL0000009132	0
NL0000009827	1111209	J0	XAMS	NL0000009827	0
NL0000379121	1111324	J0	XAMS	NL0000379121	0
NL0000395903	1111332	J0	XAMS	NL0000395903	0
NL0009432491	1125713	J0	XAMS	NL0009432491	0
NL0011794037	1188349	J0	XAMS	NL0011794037	0
ANN4327C1220	1110000	J1	XAMS	ANN4327C1220	0
DE0007921835	1152221	J1	XAMS	DE0007921835	0
GB00B03MM408	1111096	J1	XAMS	GB00B03MM408	0
NL0000288918	1111274	J1	XAMS	NL0000288918	0
NL0000313286	1111308	J1	XAMS	NL0000313286	0
NL0000337319	1111312	J1	XAMS	NL0000337319	0

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
NL0000345627	1111316	J1	XAMS	NL0000345627	0
NL0000362648	1111320	J1	XAMS	NL0000362648	0
NL0000440477	1111337	J1	XAMS	NL0000440477	0
NL0000442523	1111347	J1	XAMS	NL0000442523	0
NL0000852523	1111353	J1	XAMS	NL0000852523	0
NL0000888691	1111357	J1	XAMS	NL0000888691	0
NL0009169515	1122544	J1	XAMS	NL0009169515	0
NL0009269109	1123341	J1	XAMS	NL0009269109	0
NL0010391025	1138626	J1	XAMS	NL0010391025	0
NL0010558797	1141971	J1	XAMS	NL0010558797	0
NL0010696704	1145593	J1	XAMS	NL0010696704	0
NL0010801007	1148965	J1	XAMS	NL0010801007	0
NL0010937058	1167386	J1	XAMS	NL0010937058	0
NL0011509294	1168924	J1	XAMS	NL0011509294	0
NL0011832811	1181769	J1	XAMS	NL0011832811	0
NL0011872650	1183045	J1	XAMS	NL0011872650	0
BMG7209L1000	1376218	J2	XAMS	BMG7209L1000	0
GB00BDCPN049	1182223	J2	XAMS	GB00BDCPN049	0
IM00BDD7WV31	1311736	J2	XAMS	IM00BDD7WV31	0
LU1789205884	1416694	J2	XAMS	LU1789205884	0
NL0012747059	1407808	J2	XAMS	NL0012747059	0
NL0009312842	1124442	J3	XAMS	NL0009312842	0
NL0009822014	1130570	J3	XAMS	NL0009822014	0
NL0010545679	1141323	J3	XAMS	NL0010545679	0
CA1125851040	1110151	J7	XAMS	CA1125851040	0
GG00B1GHHH78	1111101	J7	XAMS	GG00B1GHHH78	0
JE00B3DCF752	1122997	J7	XAMS	JE00B3DCF752	0
PTEDP0AM0009	1111424	P0	XLIS	PTEDP0AM0009	0
PTGAL0AM0009	1111430	P0	XLIS	PTGAL0AM0009	0
PTIBS0AM0008	1122622	P0	XLIS	PTIBS0AM0008	0
PTMEN0AE0005	1111438	P0	XLIS	PTMEN0AE0005	0
PTZON0AM0006	1111471	P0	XLIS	PTZON0AM0006	0
PTBPI0AM0004	1111408	P1	XLIS	PTBPI0AM0004	0
PTINA0AP0008	1111434	P1	XLIS	PTINA0AP0008	0
PTORE0AM0002	1111444	P1	XLIS	PTORE0AM0002	0
PTSNC0AM0006	1111464	P1	XLIS	PTSNC0AM0006	0
PTTD10AM0000	1126279	P1	XLIS	PTTD10AM0000	0
PTINA2VP0019	1132031	P2	XLIS	PTINA2VP0019	0
PTRED0AP0010	1111453	P2	XLIS	PTRED0AP0010	0
PTSCT0AP0018	1111460	P2	XLIS	PTSCT0AP0018	0
PTCDU0AE0003	1123323	P7	ENXL	PTCDU0AE0003	0
PTFEN0AP0006	1123327	P7	ENXL	PTFEN0AP0006	0
DE0007164600	1113339	TO	XETR	DE0007164600	0
DE0008404005	1114102	TO	XETR	DE0008404005	0
NSC000000040	1146975	TW	XOTH	NSC000000040	0
BE0003084770	1153487	VA	VPXB	BE0003084770	0
BE0003222214	1164703	VA	VPXB	BE0003222214	0
BE0003254530	1153307	VA	VPXB	BE0003254530	0
BE0003432375	1154143	VA	VPXB	BE0003432375	0
BE0010566900	1153499	VA	VPXB	BE0010566900	0
BE0020918638	1153510	VA	VPXB	BE0020918638	0
BE0021556221	1166149	VA	VPXB	BE0021556221	0

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
BE0023325450	1165791	VA	VPXB	BE0023325450	0
BE0023561872	1165017	VA	VPXB	BE0023561872	0
BE0024915838	1154167	VA	VPXB	BE0024915838	0
BE0026025297	1155724	VA	VPXB	BE0026025297	0
BE0035966762	1164129	VA	VPXB	BE0035966762	0
BE0049482129	1153531	VA	VPXB	BE0049482129	0
BE0099887748	1278015	VA	VPXB	BE0099887748	0
BE0123251614	1153525	VA	VPXB	BE0123251614	0
BE0162868054	1167936	VA	VPXB	BE0162868054	0
BE0164078512	1177909	VA	VPXB	BE0164078512	0
BE0946377455	1154156	VA	VPXB	BE0946377455	0
BE6283459905	1171262	VA	VPXB	BE6283459905	0
BE6301506950	1383526	VA	VPXB	BE6301506950	0
BE0003631422	1179852	VB	VPXB	BE0003631422	0
BE0101619600	1153286	VB	VPXB	BE0101619600	0
BE0105003496	1154161	VB	VPXB	BE0105003496	0
BE6264882406	1158747	VB	VPXB	BE6264882406	0
LU0006067663	1153514	VB	VPXB	LU0006067663	0
NSCEX0000109	1153880	VB	VPXB	NSCEX0000109	0
NSCEX0000158	1154427	VB	VPXB	NSCEX0000158	0
BE0003239382	1156354	VF	VPXB	BE0003239382	0
BE0003244432	1153564	VF	VPXB	BE0003244432	0
BE0003257566	1153491	VF	VPXB	BE0003257566	0
BE0003417228	1162669	VF	VPXB	BE0003417228	0
BE0010026350	1153303	VF	VPXB	BE0010026350	0
BE0011253011	1153297	VF	VPXB	BE0011253011	0
BE0011539930	1153871	VF	VPXB	BE0011539930	0
BE0013068706	1154171	VF	VPXB	BE0013068706	0
BE0013118238	1153505	VF	VPXB	BE0013118238	0
BE0013546636	1155400	VF	VPXB	BE0013546636	0
BE0022780820	1153293	VF	VPXB	BE0022780820	0
BE0099304736	1158183	VF	VPXB	BE0099304736	0
BE0172505399	1153319	VF	VPXB	BE0172505399	0
BE0945246784	1153518	VF	VPXB	BE0945246784	0
BE0945331669	1153315	VF	VPXB	BE0945331669	0
NL0000009645	1153646	VF	VPXB	NL0000009645	0
NL0000288652	1154775	VF	VPXB	NL0000288652	0
NL0012044788	1197081	VF	VPXB	NL0012044788	0
FR0000057895	1110340	10	XMLI	FR0000057895	1
FR0000063976	1110387	10	XMLI	FR0000063976	1
FR0000065773	1110411	10	XMLI	FR0000065773	1
FR0000076481	1110456	10	XMLI	FR0000076481	1
FR0000077992	1110468	10	XMLI	FR0000077992	1
FR0004038818	1110659	10	XMLI	FR0004038818	1
FR0004175222	1110698	10	XMLI	FR0004175222	1
FR0006174496	1110726	10	XMLI	FR0006174496	1
FR0010050773	1110768	10	XMLI	FR0010050773	1
FR0010157115	1110792	10	XMLI	FR0010157115	1
FR0010328302	1110893	10	XMLI	FR0010328302	1
FR0010492181	1111017	10	XMLI	FR0010492181	1
FR0010518605	1111029	10	XMLI	FR0010518605	1
FR0010529719	1111038	10	XMLI	FR0010529719	1

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0012384907	1154200	10	XMLI	FR0012384907	1
FR0012859916	1163452	10	XMLI	FR0012859916	1
FR0012968485	1165826	10	XMLI	FR0012968485	1
FR0012990968	1166560	10	XMLI	FR0012990968	1
FR0013253812	1336049	10	XMLI	FR0013253812	1
FR0013285103	1371713	10	XMLI	FR0013285103	1
MC0010000826	1143157	10	XMLI	MC0010000826	1
NL0010623518	1149036	10	XMLI	NL0010623518	1
PTGVE1AE0009	1162295	10	XMLI	PTGVE1AE0009	1
SE0007045380	1164779	10	XMLI	SE0007045380	1
FI0009000681	1169404	11	XPAR	FI0009000681	1
FR0000031577	1110209	11	XPAR	FR0000031577	1
FR0000032658	1110217	11	XPAR	FR0000032658	1
FR0000033409	1110221	11	XPAR	FR0000033409	1
FR0000050353	1110296	11	XPAR	FR0000050353	1
FR0000052292	1110306	11	XPAR	FR0000052292	1
FR0000054470	1110336	11	XPAR	FR0000054470	1
FR0000064578	1110399	11	XPAR	FR0000064578	1
FR0000064784	1110403	11	XPAR	FR0000064784	1
FR0000071946	1110428	11	XPAR	FR0000071946	1
FR0000073298	1110437	11	XPAR	FR0000073298	1
FR0000120354	1110486	11	XPAR	FR0000120354	1
FR0000120685	1110495	11	XPAR	FR0000120685	1
FR0000125585	1110529	11	XPAR	FR0000125585	1
FR0000130452	1110535	11	XPAR	FR0000130452	1
FR0004024222	1110641	11	XPAR	FR0004024222	1
FR0004191674	1110707	11	XPAR	FR0004191674	1
FR0010242511	1110855	11	XPAR	FR0010242511	1
FR0010417345	1133279	11	XPAR	FR0010417345	1
FR0010451203	1110990	11	XPAR	FR0010451203	1
FR0010667147	1148616	11	XPAR	FR0010667147	1
FR0011950732	1148216	11	XPAR	FR0011950732	1
FR0012757854	1161158	11	XPAR	FR0012757854	1
FR0013204336	1196684	11	XPAR	FR0013204336	1
LU0088087324	1111179	12	XPAR	LU0088087324	1
FR0000030074	1110201	13	XPAR	FR0000030074	1
FR0000031973	1110213	13	XPAR	FR0000031973	1
FR0000035123	1110230	13	XPAR	FR0000035123	1
FR0000035719	1110234	13	XPAR	FR0000035719	1
FR0000037343	1110244	13	XPAR	FR0000037343	1
FR0000038499	1110252	13	XPAR	FR0000038499	1
FR0000039026	1110256	13	XPAR	FR0000039026	1
FR0000039638	1110264	13	XPAR	FR0000039638	1
FR0000053944	1110328	13	XPAR	FR0000053944	1
FR0000054215	1110332	13	XPAR	FR0000054215	1
FR0000060535	1110349	13	XPAR	FR0000060535	1
FR0000061475	1110365	13	XPAR	FR0000061475	1
FR0000062101	1110369	13	XPAR	FR0000062101	1
FR0000062341	1110373	13	XPAR	FR0000062341	1
FR0000062788	1110377	13	XPAR	FR0000062788	1
FR0000063034	1110382	13	XPAR	FR0000063034	1
FR0000064180	1110391	13	XPAR	FR0000064180	1

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0000064388	1110395	13	XPAR	FR0000064388	1
FR0000065393	1110407	13	XPAR	FR0000065393	1
FR0000072563	1122570	13	XPAR	FR0000072563	1
FR0000076952	1110460	13	XPAR	FR0000076952	1
FR0000121857	1110516	13	XPAR	FR0000121857	1
FR0004010338	1110637	13	XPAR	FR0004010338	1
FR0010209809	1110839	13	XPAR	FR0010209809	1
FR0012185536	1152996	13	XPAR	FR0012185536	1
FR0000030827	1110205	16	XPAR	FR0000030827	1
FR0000034548	1110225	16	XPAR	FR0000034548	1
FR0000036105	1110238	16	XPAR	FR0000036105	1
FR0000038184	1110248	16	XPAR	FR0000038184	1
FR0000039232	1110260	16	XPAR	FR0000039232	1
FR0000044471	1110268	16	XPAR	FR0000044471	1
FR0000045304	1110277	16	XPAR	FR0000045304	1
FR0000045551	1110281	16	XPAR	FR0000045551	1
FR0000051070	1241778	16	XPAR	FR0000051070	1
FR0000051393	1110302	16	XPAR	FR0000051393	1
FR0000052839	1110310	16	XPAR	FR0000052839	1
FR0000053027	1110315	16	XPAR	FR0000053027	1
FR0000053324	1110320	16	XPAR	FR0000053324	1
FR0000053506	1110324	16	XPAR	FR0000053506	1
FR0000060303	1188487	16	XPAR	FR0000060303	1
FR0000060329	1110345	16	XPAR	FR0000060329	1
FR0000060832	1110353	16	XPAR	FR0000060832	1
FR0000060949	1110357	16	XPAR	FR0000060949	1
FR0000066052	1110415	16	XPAR	FR0000066052	1
FR0000066540	1110419	16	XPAR	FR0000066540	1
FR0000066755	1110423	16	XPAR	FR0000066755	1
FR0000072894	1110433	16	XPAR	FR0000072894	1
FR0000074122	1110442	16	XPAR	FR0000074122	1
FR0000074759	1110447	16	XPAR	FR0000074759	1
FR0000075442	1110452	16	XPAR	FR0000075442	1
FR0000121352	1110508	16	XPAR	FR0000121352	1
FR0000124232	1110520	16	XPAR	FR0000124232	1
FR0000185514	1110563	16	XPAR	FR0000185514	1
FR0004029411	1110646	16	XPAR	FR0004029411	1
FR0004034320	1110650	16	XPAR	FR0004034320	1
FR0004036036	1110654	16	XPAR	FR0004036036	1
FR0004154060	1353894	16	XPAR	FR0004154060	1
FR0004163111	1110690	16	XPAR	FR0004163111	1
FR0004170017	1110694	16	XPAR	FR0004170017	1
FR0004180537	1110703	16	XPAR	FR0004180537	1
FR0004548873	1149640	16	XPAR	FR0004548873	1
FR0005175080	1110717	16	XPAR	FR0005175080	1
FR0010099515	1110782	16	XPAR	FR0010099515	1
FR0010298901	1110877	16	XPAR	FR0010298901	1
FR0010380626	1110949	16	XPAR	FR0010380626	1
FR0010436584	1110983	16	XPAR	FR0010436584	1
FR0010478248	1111004	16	XPAR	FR0010478248	1
FR0010483768	1111012	16	XPAR	FR0010483768	1
FR0010557264	1125612	16	XPAR	FR0010557264	1

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0010609206	1111065	16	XPAR	FR0010609206	1
FR0010609263	1130416	16	XPAR	FR0010609263	1
FR0011027135	1129174	16	XPAR	FR0011027135	1
FR0011040500	1129743	16	XPAR	FR0011040500	1
FR0011271600	1146609	16	XPAR	FR0011271600	1
FR0011277391	1134649	16	XPAR	FR0011277391	1
FR0011284991	1142194	16	XPAR	FR0011284991	1
FR0011471291	1139592	16	XPAR	FR0011471291	1
FR0011799907	1146318	16	XPAR	FR0011799907	1
FR0012432516	1155184	16	XPAR	FR0012432516	1
FR0012821890	1163184	16	XPAR	FR0012821890	1
FR0013185857	1198106	16	XPAR	FR0013185857	1
FR0013233475	1238948	16	XPAR	FR0013233475	1
FR0013258399	1297633	16	XPAR	FR0013258399	1
MC0000031187	1111189	16	XPAR	MC0000031187	1
NL0010949392	1234237	16	XPAR	NL0010949392	1
FR0012938884	1168032	17	XPAR	FR0012938884	1
FR0013247137	1262585	17	XPAR	FR0013247137	1
NSCFR000SLB3	1111381	21	XPAR	AN8068571086	1
GB0002374006	1111092	22	XPAR	GB0002374006	1
GB00BZ21RF93	1165127	22	XPAR	GB00BZ21RF93	1
IT0001389631	1125823	22	XPAR	IT0001389631	1
US9098831004	1124524	22	XPAR	US9098831004	1
US91912E1055	1122669	22	XPAR	US91912E1055	1
CI0000053161	1110163	23	XPAR	CI0000053161	1
SN0000033192	1111487	23	XPAR	SN0000033192	1
FR0004070795	1110674	30	XMLI	FR0004070795	1
FR0013066313	1179346	31	XPAR	FR0013066313	1
FR0013309622	1407809	31	XPAR	FR0013309622	1
BE0948833760	1123033	32	XMLI	BE0948833760	1
BE6201089735	1126471	32	XMLI	BE6201089735	1
CA8584971003	1110154	32	XMLI	CA8584971003	1
CH0044947239	1114989	32	XMLI	CH0044947239	1
CH0120879058	1127102	32	XMLI	CH0120879058	1
CI0000001020	1131915	32	XMLI	CI0000001020	1
FR0000079477	1110473	32	XMLI	FR0000079477	1
FR0000079691	1110477	32	XMLI	FR0000079691	1
FR0000184822	1110559	32	XMLI	FR0000184822	1
FR0010033480	1110761	32	XMLI	FR0010033480	1
FR0010312181	1110885	32	XMLI	FR0010312181	1
FR0010762740	1122878	32	XMLI	FR0010762740	1
FR0011158823	1137350	32	XMLI	FR0011158823	1
FR0011233659	1136318	32	XMLI	FR0011233659	1
FR0012395457	1154027	32	XMLI	FR0012395457	1
FR0012880482	1163853	32	XMLI	FR0012880482	1
FR0013155975	1181897	32	XMLI	FR0013155975	1
FR0013222346	1218619	32	XMLI	FR0013222346	1
HK0000038783	1111106	32	XMLI	HK0000038783	1
IT0005154635	1180129	32	XMLI	IT0005154635	1
LU1179353617	1157470	32	XMLI	LU1179353617	1
FR0013301256	1376312	33	XPAR	FR0013301256	1
FR0013306065	1376306	33	XPAR	FR0013306065	1

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0013306115	1376302	33	XPAR	FR0013306115	1
FR0013306198	1376298	33	XPAR	FR0013306198	1
FR0013308749	1376628	33	XPAR	FR0013308749	1
FR0013308814	1376621	33	XPAR	FR0013308814	1
FR0013309358	1377721	33	XPAR	FR0013309358	1
FR0000861775	1426585	63	XPAR	FR0000861775	1
FR0000865255	1426493	63	XPAR	FR0000865255	1
FR0000865370	1426613	63	XPAR	FR0000865370	1
FR0000865495	1426569	63	XPAR	FR0000865495	1
FR0000867434	1426473	63	XPAR	FR0000867434	1
FR0000869232	1426605	63	XPAR	FR0000869232	1
FR0000880122	1426577	63	XPAR	FR0000880122	1
FR0000881476	1426525	63	XPAR	FR0000881476	1
FR0000883258	1426533	63	XPAR	FR0000883258	1
FR0000883498	1426513	63	XPAR	FR0000883498	1
FR0000883738	1426621	63	XPAR	FR0000883738	1
FR0000884090	1426625	63	XPAR	FR0000884090	1
FR0000884231	1426529	63	XPAR	FR0000884231	1
FR0000885568	1426541	63	XPAR	FR0000885568	1
FR0000891459	1426609	63	XPAR	FR0000891459	1
FR0000891574	1426629	63	XPAR	FR0000891574	1
FR0000894909	1426521	63	XPAR	FR0000894909	1
FR0000896490	1426465	63	XPAR	FR0000896490	1
FR0000899346	1426545	63	XPAR	FR0000899346	1
FR0000899585	1426469	63	XPAR	FR0000899585	1
FR0012806404	1426485	63	XPAR	FR0012806404	1
FR0013182227	1426501	63	XPAR	FR0013182227	1
FR0013226602	1426597	63	XPAR	FR0013226602	1
FR0013265048	1426581	63	XPAR	FR0013265048	1
FR0013302676	1426477	63	XPAR	FR0013302676	1
FR0013304474	1426573	63	XPAR	FR0013304474	1
NL0010385118	1426565	63	XAMS	NL0010385118	1
NL0010386074	1426489	63	XAMS	NL0010386074	1
NL0010386918	1426593	63	XAMS	NL0010386918	1
NL0010387270	1426481	63	XAMS	NL0010387270	1
NL0010998985	1426549	63	XLIS	NL0010998985	1
QS0010976296	1426517	63	XPAR	QS0010976296	1
QS0010993945	1426617	63	XPAR	QS0010993945	1
QS0011064928	1426537	63	XPAR	QS0011064928	1
QS0011066212	1426553	63	XPAR	QS0011066212	1
QS0011066345	1426633	63	XPAR	QS0011066345	1
QS0011108352	1426505	63	XPAR	QS0011108352	1
QS0011108485	1426557	63	XPAR	QS0011108485	1
QS0011203088	1426589	63	XPAR	QS0011203088	1
QS0011239439	1426601	63	XPAR	QS0011239439	1
QS0011263546	1426561	63	XPAR	QS0011263546	1
QX0000060161	1426637	63	XBRU	QX0000060161	1
QX0000060526	1426509	63	XBRU	QX0000060526	1
QX0000061854	1426497	63	XBRU	QX0000061854	1
BE0003470755	1110031	A0	XBRU	BE0003470755	1
BE0003565737	1110035	A0	XBRU	BE0003565737	1
BE0003717312	1110062	A0	XBRU	BE0003717312	1

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
BE0003592038	1110039	A1	XBRU	BE0003592038	1
BE0003730448	1110066	A1	XBRU	BE0003730448	1
BE0003743573	1110074	A1	XBRU	BE0003743573	1
BE0003763779	1110082	A1	XBRU	BE0003763779	1
BE0003770840	1110086	A1	XBRU	BE0003770840	1
BE0003790079	1110090	A1	XBRU	BE0003790079	1
BE0003808251	1110095	A1	XBRU	BE0003808251	1
BE0003822393	1110103	A1	XBRU	BE0003822393	1
BE0003837540	1110113	A1	XBRU	BE0003837540	1
BE0003846632	1110121	A1	XBRU	BE0003846632	1
BE0003867844	1110133	A1	XBRU	BE0003867844	1
BE0003878957	1110137	A1	XBRU	BE0003878957	1
BE0974258874	1126873	A1	XBRU	BE0974258874	1
BE0974260896	1140793	A1	XBRU	BE0974260896	1
BE0974271034	1143510	A1	XBRU	BE0974271034	1
BE0974272040	1144375	A1	XBRU	BE0974272040	1
BE0974283153	1162175	A1	XBRU	BE0974283153	1
BE0974290224	1176682	A1	XBRU	BE0974290224	1
NL0010832176	1149287	A3	XBRU	NL0010832176	1
DE0008430026	1110174	A4	TNLB	DE0008430026	1
ES0113211835	1110196	A4	TNLB	ES0113211835	1
IT0003497168	1111168	A4	TNLB	IT0003497168	1
BE0003602134	1110043	A5	XBRU	BE0003602134	1
BE0003654655	1110049	A5	XBRU	BE0003654655	1
BE0003752665	1110078	A5	XBRU	BE0003752665	1
BE0974275076	1148393	A5	XBRU	BE0974275076	1
BE0974311434	1279060	A5	XBRU	BE0974311434	1
US1667641005	1111496	A6	TNLB	US1667641005	1
US4592001014	1111502	A6	TNLB	US4592001014	1
US7134481081	1111506	A6	TNLB	US7134481081	1
IL0010830391	1111162	A7	XBRU	IL0010830391	1
NL0000488153	1111349	A7	XBRU	NL0000488153	1
BE0003676872	1110054	A9	XBRU	BE0003676872	1
BE0003698124	1110058	A9	XBRU	BE0003698124	1
BE0974287196	1170181	A9	XBRU	BE0974287196	1
BE0003813301	1110099	AL	XBRU	BE0003813301	1
BE0003736502	1110070	B1	XBRU	BE0003736502	1
BE0003829463	1110108	B4	MLXB	BE0003829463	1
BE0003841583	1110117	B4	MLXB	BE0003841583	1
XS0290764728	1111662	B7	XBRU	XS0290764728	1
BE0003852697	1110125	BH	MLXB	BE0003852697	1
BE0003860773	1110129	BH	MLXB	BE0003860773	1
FR0007080254	1110747	E1	ALXP	FR0007080254	1
FR0010221069	1110845	E1	ALXP	FR0010221069	1
FR0010397901	1110956	E1	ALXP	FR0010397901	1
BE0160342011	1129336	E2	ALXP	BE0160342011	1
FR0000061244	1110361	E2	ALXP	FR0000061244	1
FR0000077562	1110464	E2	ALXP	FR0000077562	1
FR0000185423	1130889	E2	ALXP	FR0000185423	1
FR0004044600	1110663	E2	ALXP	FR0004044600	1
FR0004053510	1110668	E2	ALXP	FR0004053510	1
FR0004152882	1110680	E2	ALXP	FR0004152882	1

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0004155240	1110685	E2	ALXP	FR0004155240	1
FR0010202606	1110831	E2	ALXP	FR0010202606	1
FR0010278762	1110870	E2	ALXP	FR0010278762	1
FR0010337865	1110898	E2	ALXP	FR0010337865	1
FR0010342329	1110903	E2	ALXP	FR0010342329	1
FR0010424697	1110977	E2	ALXP	FR0010424697	1
FR0010554113	1141655	E2	ALXP	FR0010554113	1
FR0010641449	1125269	E2	ALXP	FR0010641449	1
FR0010820274	1123963	E2	ALXP	FR0010820274	1
FR0010889386	1125716	E2	ALXP	FR0010889386	1
FR0011179886	1132995	E2	ALXP	FR0011179886	1
FR0011289198	1135166	E2	ALXP	FR0011289198	1
FR0011398874	1138250	E2	ALXP	FR0011398874	1
FR0011464452	1139452	E2	ALXP	FR0011464452	1
FR0011766229	1145952	E2	ALXP	FR0011766229	1
FR0011858190	1147666	E2	ALXP	FR0011858190	1
FR0011915339	1185632	E2	ALXP	FR0011915339	1
FR0013015583	1168644	E2	ALXP	FR0013015583	1
FR0013053535	1169931	E2	ALXP	FR0013053535	1
FR0013079092	1173672	E2	ALXP	FR0013079092	1
FR0013257409	1306952	E2	ALXP	FR0013257409	1
FR0013263878	1312560	E2	ALXP	FR0013263878	1
FR0013245123	1269865	E3	ALXP	FR0013245123	1
FR0013239977	1346108	E4	ALXP	FR0013239977	1
FR0013268042	1321144	E4	ALXP	FR0013268042	1
FR0013268091	1315326	E4	ALXP	FR0013268091	1
FR0013282936	1342622	E4	ALXP	FR0013282936	1
FR0013297587	1366122	E4	ALXP	FR0013297587	1
FR0013321817	1418649	E4	ALXP	FR0013321817	1
CA4433003064	1153433	EA	ALXP	CA4433003064	1
FR0000035305	1130602	EA	ALXP	FR0000035305	1
FR0013060100	1171446	EA	ALXP	FR0013060100	1
LU0394945660	1115339	EA	ALXP	LU0394945660	1
BE0974302342	1204764	EI	ALXP	BE0974302342	1
CY0104972217	1152390	EI	ALXP	CY0104972217	1
FR0010688440	1126073	EI	ALXP	FR0010688440	1
PTNEX0AM0002	1140424	EM	ALXL	PTNEX0AM0002	1
CH0012214059	1162584	F1	XPAR	CH0012214059	1
FR0000045072	1110273	F1	XPAR	FR0000045072	1
FR0000120172	1110482	F1	XPAR	FR0000120172	1
FR0000120503	1132118	F1	XPAR	FR0000120503	1
FR0000121014	1110499	F1	XPAR	FR0000121014	1
FR0000121220	1110503	F1	XPAR	FR0000121220	1
FR0000121667	1110512	F1	XPAR	FR0000121667	1
NL0000235190	1111247	F1	XPAR	NL0000235190	1
FR0000120578	1110491	F2	XPAR	FR0000120578	1
FR0000125007	1110525	F2	XPAR	FR0000125007	1
FR0000130809	1110539	F2	XPAR	FR0000130809	1
FR0000131906	1110544	F2	XPAR	FR0000131906	1
FR0013176526	1182758	F2	XPAR	FR0013176526	1
FR0004998318	1110712	F7	XMLI	FR0004998318	1
FR0005783503	1110722	F7	XMLI	FR0005783503	1

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0006563904	1110730	F7	XMLI	FR0006563904	1
NSCNL000AMT7	1286600	J0	XAMS	LU1598757687	1
NL0000009165	1111205	J0	XAMS	NL0000009165	1
NL0000400653	1111333	J0	XAMS	NL0000400653	1
NL0006144495	1111364	J0	XAMS	NL0006144495	1
NL0010273215	1136515	J0	XAMS	NL0010273215	1
NL0011821202	1188726	J0	XAMS	NL0011821202	1
NL0011872643	1183046	J0	XAMS	NL0011872643	1
NSCNL00APAM5	1128577	J1	XAMS	LU0569974404	1
NL0000018034	1111210	J1	XAMS	NL0000018034	1
NL0000200384	1133996	J1	XAMS	NL0000200384	1
NL0000289213	1111275	J1	XAMS	NL0000289213	1
NL0000334118	1111309	J1	XAMS	NL0000334118	1
NL0000339703	1111313	J1	XAMS	NL0000339703	1
NL0000352565	1111317	J1	XAMS	NL0000352565	1
NL0000387058	1111326	J1	XAMS	NL0000387058	1
NL0000440584	1111338	J1	XAMS	NL0000440584	1
NL0000852531	1111354	J1	XAMS	NL0000852531	1
NL0009197771	1122793	J1	XAMS	NL0009197771	1
NL0009272137	1123381	J1	XAMS	NL0009272137	1
NL0009739416	1129628	J1	XAMS	NL0009739416	1
NL0010389508	1138833	J1	XAMS	NL0010389508	1
NL0010661864	1144560	J1	XAMS	NL0010661864	1
NL0010998878	1155526	J1	XAMS	NL0010998878	1
NL0011660485	1180929	J1	XAMS	NL0011660485	1
NL0012365084	1303286	J1	XAMS	NL0012365084	1
NL0012756316	1416695	J1	XAMS	NL0012756316	1
BMG7209L1182	1376219	J2	XAMS	BMG7209L1182	1
ANN4327C1303	1110001	J3	XAMS	ANN4327C1303	1
NL0000370419	1111321	J3	XAMS	NL0000370419	1
NL0009875483	1132542	J3	XAMS	NL0009875483	1
GB00B15Y0C52	1111097	JE	XAMS	GB00B15Y0C52	1
GG00B1RMC548	1111102	JE	XAMS	GG00B1RMC548	1
PTBCP0AM0015	1200524	P0	XLIS	PTBCP0AM0015	1
PTCTT0AM0001	1144110	P0	XLIS	PTCTT0AM0001	1
PTRELOAM0008	1111454	P0	XLIS	PTRELOAM0008	1
PTSEMOAM0004	1111461	P0	XLIS	PTSEMOAM0004	1
PTSNP0AE0008	1111465	P0	XLIS	PTSNP0AE0008	1
PTCFN0AE0003	1111411	P1	XLIS	PTCFN0AE0003	1
PTIPROAM0000	1111435	P1	XLIS	PTIPROAM0000	1
PTMFROAM0003	1111439	P1	XLIS	PTMFROAM0003	1
PTPAD0AM0007	1111449	P1	XLIS	PTPAD0AM0007	1
PTEPT0AM0005	1145385	P2	XLIS	PTEPT0AM0005	1
PTES00AM0000	1111427	P2	XLIS	PTES00AM0000	1
PTCPA0AP0006	1123324	P7	ENXL	PTCPA0AP0006	1
PTLITOAE0005	1123328	P7	ENXL	PTLITOAE0005	1
PTSNGOAM0007	1350737	P7	ENXL	PTSNGOAM0007	1
NSCPT00ENXP5	1150908	PG	XLIS	NL0006294274	1
PTGFIBIM0004	1111431	S1	XLIS	PTGFIBIM0004	1
NSC000000016	1146972	T6	XOTH	NSC000000016	1
DE0005190003	1114231	TO	XETR	DE0005190003	1
DE0007100000	1113340	TO	XETR	DE0007100000	1

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
DE0007664039	1115838	TO	XETR	DE0007664039	1
DE000A1EWWW0	1126654	TO	XETR	DE000A1EWWW0	1
NSC000000057	1146976	TS	XOTH	NSC000000057	1
IE00B4ND3602	1211194	TY	XLON	IE00B4ND3602	1
BE0003040335	1154144	VA	VPXB	BE0003040335	1
BE0003783975	1153304	VA	VPXB	BE0003783975	1
BE0010012210	1158748	VA	VPXB	BE0010012210	1
BE0011225704	1153298	VA	VPXB	BE0011225704	1
BE0011395465	1153501	VA	VPXB	BE0011395465	1
BE0024825904	1153511	VA	VPXB	BE0024825904	1
BE0046736790	1177910	VA	VPXB	BE0046736790	1
BE0051300847	1167940	VA	VPXB	BE0051300847	1
BE0057677594	1153289	VA	VPXB	BE0057677594	1
BE0125443227	1383527	VA	VPXB	BE0125443227	1
BE0171100895	1160131	VA	VPXB	BE0171100895	1
BE0942448938	1167547	VA	VPXB	BE0942448938	1
BE0944866863	1154157	VA	VPXB	BE0944866863	1
BE6220058307	1153865	VA	VPXB	BE6220058307	1
BE6302830615	1411477	VA	VPXB	BE6302830615	1
NL0012237614	1319986	VA	VPXB	NL0012237614	1
NSCEX0000091	1153881	VA	VPXB	NSCEX0000091	1
BE0003886067	1110142	VB	VPXB	BE0003886067	1
BE0014799556	1153294	VB	VPXB	BE0014799556	1
BE0014914734	1153507	VB	VPXB	BE0014914734	1
BE0099967573	1110146	VB	VPXB	BE0099967573	1
BE0101626670	1153526	VB	VPXB	BE0101626670	1
BE0101834811	1154162	VB	VPXB	BE0101834811	1
BE0944264663	1153316	VB	VPXB	BE0944264663	1
NSCEX0000224	1164700	VB	VPXB	NSCEX0000224	1
BE0003242410	1153488	VF	VPXB	BE0003242410	1
BE0003245447	1153565	VF	VPXB	BE0003245447	1
BE0003416212	1162670	VF	VPXB	BE0003416212	1
BE0003527356	1153492	VF	VPXB	BE0003527356	1
BE0010381029	1156655	VF	VPXB	BE0010381029	1
BE0011238830	1154174	VF	VPXB	BE0011238830	1
BE0011537918	1154428	VF	VPXB	BE0011537918	1
BE0011538924	1153872	VF	VPXB	BE0011538924	1
BE0011606630	1155725	VF	VPXB	BE0011606630	1
BE0020932779	1161871	VF	VPXB	BE0020932779	1
BE0024644065	1154168	VF	VPXB	BE0024644065	1
BE0024981525	1161601	VF	VPXB	BE0024981525	1
BE0036367895	1153648	VF	VPXB	BE0036367895	1
BE0038785821	1153532	VF	VPXB	BE0038785821	1
BE0099150162	1158185	VF	VPXB	BE0099150162	1
BE0156881329	1153521	VF	VPXB	BE0156881329	1
BE0944960831	1154776	VF	VPXB	BE0944960831	1
LU0006047129	1153515	VF	VPXB	LU0006047129	1
LU0110790085	1153312	VF	VPXB	LU0110790085	1
BE0974299316	1188783	10	XMLI	BE0974299316	2
CH0121668229	1162726	10	XMLI	CH0121668229	2
DE000A0XYM45	1115103	10	XMLI	DE000A0XYM45	2
ES0105118006	1179706	10	XMLI	ES0105118006	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0000033466	1110222	10	XMLI	FR0000033466	2
FR0000035750	1110235	10	XMLI	FR0000035750	2
FR0000051567	1110303	10	XMLI	FR0000051567	2
FR0000061376	1110362	10	XMLI	FR0000061376	2
FR0000066797	1110424	10	XMLI	FR0000066797	2
FR0000185464	1110560	10	XMLI	FR0000185464	2
FR0000185928	1110565	10	XMLI	FR0000185928	2
FR0005843125	1110723	10	XMLI	FR0005843125	2
FR0006205019	1110727	10	XMLI	FR0006205019	2
FR0007200100	1110750	10	XMLI	FR0007200100	2
FR0010035816	1110762	10	XMLI	FR0010035816	2
FR0010176115	1110823	10	XMLI	FR0010176115	2
FR0010439265	1110985	10	XMLI	FR0010439265	2
FR0010518936	1111030	10	XMLI	FR0010518936	2
FR0010679365	1129384	10	XMLI	FR0010679365	2
FR0010717579	1116172	10	XMLI	FR0010717579	2
FR0010768770	1123407	10	XMLI	FR0010768770	2
FR0010961920	1126979	10	XMLI	FR0010961920	2
FR0010979377	1136329	10	XMLI	FR0010979377	2
FR0011040690	1134052	10	XMLI	FR0011040690	2
FR0011668821	1144769	10	XMLI	FR0011668821	2
FR0012336675	1153911	10	XMLI	FR0012336675	2
FR0012709160	1160310	10	XMLI	FR0012709160	2
FR0013268067	1313181	10	XMLI	FR0013268067	2
GB00B92JR174	1164870	10	XMLI	GB00B92JR174	2
IT0004812258	1134781	10	XMLI	IT0004812258	2
IT0005072811	1154258	10	XMLI	IT0005072811	2
IT0005324105	1419111	10	XMLI	IT0005324105	2
ZAE000058723	1111698	10	XMLI	ZAE000058723	2
FR0000031684	1110210	11	XPAR	FR0000031684	2
FR0000034639	1110226	11	XPAR	FR0000034639	2
FR0000035164	1110231	11	XPAR	FR0000035164	2
FR0000052516	1110307	11	XPAR	FR0000052516	2
FR0000052870	1110311	11	XPAR	FR0000052870	2
FR0000053381	1110321	11	XPAR	FR0000053381	2
FR0000064271	1110392	11	XPAR	FR0000064271	2
FR0000120222	1110483	11	XPAR	FR0000120222	2
FR0000121121	1110500	11	XPAR	FR0000121121	2
FR0000121964	1110517	11	XPAR	FR0000121964	2
FR0000130403	1307732	11	XPAR	FR0000130403	2
FR0004188670	1143559	11	XPAR	FR0004188670	2
FR0010221234	1110846	11	XPAR	FR0010221234	2
FR0010340141	1110899	11	XPAR	FR0010340141	2
FR0010386334	1110951	11	XPAR	FR0010386334	2
FR0010533075	1111039	11	XPAR	FR0010533075	2
FR0010613471	1111067	11	XPAR	FR0010613471	2
FR0010918292	1126110	11	XPAR	FR0010918292	2
FR0013227113	1239594	11	XPAR	FR0013227113	2
FR0013230612	1250816	11	XPAR	FR0013230612	2
FR0013280286	1337368	11	XPAR	FR0013280286	2
NL0006294274	1148462	11	XPAR	NL0006294274	2
FR0000030140	1110202	13	XPAR	FR0000030140	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0000037475	1110245	13	XPAR	FR0000037475	2
FR0000050395	1110297	13	XPAR	FR0000050395	2
FR0000062150	1110370	13	XPAR	FR0000062150	2
FR0000062465	1110374	13	XPAR	FR0000062465	2
FR0000063307	1110384	13	XPAR	FR0000063307	2
FR0000064123	1110388	13	XPAR	FR0000064123	2
FR0000064958	1110404	13	XPAR	FR0000064958	2
FR0000066219	1110416	13	XPAR	FR0000066219	2
FR0000078321	1110469	13	XPAR	FR0000078321	2
FR0004165801	1110691	13	XPAR	FR0004165801	2
FR0004175842	1110699	13	XPAR	FR0004175842	2
FR0000031023	1110206	16	XPAR	FR0000031023	2
FR0000032278	1110214	16	XPAR	FR0000032278	2
FR0000033003	1110218	16	XPAR	FR0000033003	2
FR0000036675	1110240	16	XPAR	FR0000036675	2
FR0000036816	1150939	16	XPAR	FR0000036816	2
FR0000038242	1110249	16	XPAR	FR0000038242	2
FR0000038531	1110253	16	XPAR	FR0000038531	2
FR0000039091	1110257	16	XPAR	FR0000039091	2
FR0000039240	1110261	16	XPAR	FR0000039240	2
FR0000044323	1110265	16	XPAR	FR0000044323	2
FR0000044612	1110269	16	XPAR	FR0000044612	2
FR0000045346	1110278	16	XPAR	FR0000045346	2
FR0000052680	1141709	16	XPAR	FR0000052680	2
FR0000053035	1110316	16	XPAR	FR0000053035	2
FR0000053514	1110325	16	XPAR	FR0000053514	2
FR0000054231	1110333	16	XPAR	FR0000054231	2
FR0000060071	1110342	16	XPAR	FR0000060071	2
FR0000060402	1110346	16	XPAR	FR0000060402	2
FR0000060618	1110350	16	XPAR	FR0000060618	2
FR0000061111	1110358	16	XPAR	FR0000061111	2
FR0000062796	1110378	16	XPAR	FR0000062796	2
FR0000064404	1110396	16	XPAR	FR0000064404	2
FR0000064602	1110400	16	XPAR	FR0000064602	2
FR0000065484	1110408	16	XPAR	FR0000065484	2
FR0000065864	1110412	16	XPAR	FR0000065864	2
FR0000066607	1110420	16	XPAR	FR0000066607	2
FR0000066680	1127110	16	XPAR	FR0000066680	2
FR0000072373	1110429	16	XPAR	FR0000072373	2
FR0000074197	1110443	16	XPAR	FR0000074197	2
FR0000075517	1110453	16	XPAR	FR0000075517	2
FR0000076655	1110457	16	XPAR	FR0000076655	2
FR0000077570	1110465	16	XPAR	FR0000077570	2
FR0000079634	1110474	16	XPAR	FR0000079634	2
FR0000120388	1110487	16	XPAR	FR0000120388	2
FR0000121691	1110513	16	XPAR	FR0000121691	2
FR0004016699	1110638	16	XPAR	FR0004016699	2
FR0004026151	1110643	16	XPAR	FR0004026151	2
FR0004037125	1110655	16	XPAR	FR0004037125	2
FR0004040608	1110660	16	XPAR	FR0004040608	2
FR0004052561	1165297	16	XPAR	FR0004052561	2
FR0004056851	1110670	16	XPAR	FR0004056851	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0004076891	1110675	16	XPAR	FR0004076891	2
FR0004180578	1110704	16	XPAR	FR0004180578	2
FR0010127662	1146677	16	XPAR	FR0010127662	2
FR0010282822	1110871	16	XPAR	FR0010282822	2
FR0010291245	1133020	16	XPAR	FR0010291245	2
FR0010929125	1133496	16	XPAR	FR0010929125	2
FR0011184241	1132952	16	XPAR	FR0011184241	2
FR0011466069	1139478	16	XPAR	FR0011466069	2
FR0011742329	1146239	16	XPAR	FR0011742329	2
FR0011992700	1148739	16	XPAR	FR0011992700	2
FR0012612646	1157546	16	XPAR	FR0012612646	2
FR0012789667	1161610	16	XPAR	FR0012789667	2
FR0012821916	1163231	16	XPAR	FR0012821916	2
FR0013181864	1188488	16	XPAR	FR0013181864	2
FR0013183985	1187306	16	XPAR	FR0013183985	2
FR0013252186	1276425	16	XPAR	FR0013252186	2
FR0013258589	1299051	16	XPAR	FR0013258589	2
GB0005405286	1111093	21	XPAR	GB0005405286	2
BMG9887P1068	1125741	22	XPAR	BMG9887P1068	2
CH0308403085	1178206	22	XPAR	CH0308403085	2
IE00BJYS1G50	1147060	22	XPAR	IE00BJYS1G50	2
US4282911084	1130159	22	XPAR	US4282911084	2
US4567881085	1138379	22	XPAR	US4567881085	2
US7427181091	1111508	22	XPAR	US7427181091	2
US9098832093	1124525	22	XPAR	US9098832093	2
US91912E2046	1122670	22	XPAR	US91912E2046	2
CH0008175645	1110155	23	XPAR	CH0008175645	2
CM0000035113	1110164	23	XPAR	CM0000035113	2
SN0008626971	1111488	23	XPAR	SN0008626971	2
US36254L1008	1328361	23	XPAR	US36254L1008	2
FR0010827345	1137382	31	XPAR	FR0010827345	2
FR0012951028	1167553	31	XPAR	FR0012951028	2
FR0013309614	1407810	31	XPAR	FR0013309614	2
CH0309050059	1180524	32	XMLI	CH0309050059	2
FR0000054066	1110329	32	XMLI	FR0000054066	2
FR0000076960	1110461	32	XMLI	FR0000076960	2
FR0000079824	1110478	32	XMLI	FR0000079824	2
FR0006823092	1110731	32	XMLI	FR0006823092	2
FR0010106039	1110783	32	XMLI	FR0010106039	2
FR0010480517	1111006	32	XMLI	FR0010480517	2
FR0010781377	1122914	32	XMLI	FR0010781377	2
FR0010827741	1123998	32	XMLI	FR0010827741	2
FR0011442235	1138853	32	XMLI	FR0011442235	2
FR0012060036	1150560	32	XMLI	FR0012060036	2
FR0012735355	1161218	32	XMLI	FR0012735355	2
GB00B8GJBS16	1156985	32	XMLI	GB00B8GJBS16	2
HK0000041928	1111107	32	XMLI	HK0000041928	2
HK0000052370	1122591	32	XMLI	HK0000052370	2
HK0000058989	1125272	32	XMLI	HK0000058989	2
IT0004844848	1136668	32	XMLI	IT0004844848	2
IT0004982069	1145508	32	XMLI	IT0004982069	2
IT0005072035	1154107	32	XMLI	IT0005072035	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
SN0000000191	1131226	32	XMLI	SN0000000191	2
FR0000045601	1110282	33	XPAR	FR0000045601	2
FR0011627900	1144378	33	XPAR	FR0011627900	2
FR0011994326	1149306	33	XPAR	FR0011994326	2
FR0013281847	1344153	33	XPAR	FR0013281847	2
FR0013303658	1381511	33	XPAR	FR0013303658	2
FR0013306040	1376307	33	XPAR	FR0013306040	2
FR0013306107	1376303	33	XPAR	FR0013306107	2
FR0013306180	1376299	33	XPAR	FR0013306180	2
FR0013306230	1376294	33	XPAR	FR0013306230	2
FR0013308731	1376629	33	XPAR	FR0013308731	2
FR0013308806	1376622	33	XPAR	FR0013308806	2
FR0013309069	1376617	33	XPAR	FR0013309069	2
FR0000863573	1426558	63	XPAR	FR0000863573	2
FR0000867558	1426546	63	XPAR	FR0000867558	2
FR0000871758	1426614	63	XPAR	FR0000871758	2
FR0000871873	1426578	63	XPAR	FR0000871873	2
FR0000882532	1426626	63	XPAR	FR0000882532	2
FR0000882896	1426566	63	XPAR	FR0000882896	2
FR0000883613	1426590	63	XPAR	FR0000883613	2
FR0000883852	1426518	63	XPAR	FR0000883852	2
FR0000883977	1426486	63	XPAR	FR0000883977	2
FR0000884843	1426582	63	XPAR	FR0000884843	2
FR0000885683	1426494	63	XPAR	FR0000885683	2
FR0000886020	1426506	63	XPAR	FR0000886020	2
FR0000889651	1426554	63	XPAR	FR0000889651	2
FR0000890139	1426622	63	XPAR	FR0000890139	2
FR0000891830	1426610	63	XPAR	FR0000891830	2
FR0000896946	1426474	63	XPAR	FR0000896946	2
FR0000897662	1426634	63	XPAR	FR0000897662	2
FR0012401743	1426514	63	XPAR	FR0012401743	2
FR0012816817	1426470	63	XPAR	FR0012816817	2
FR0012847465	1426542	63	XPAR	FR0012847465	2
FR0013071909	1426522	63	XPAR	FR0013071909	2
FR0013227600	1426630	63	XPAR	FR0013227600	2
FR0013227766	1426602	63	XPAR	FR0013227766	2
NL0010384756	1426538	63	XAMS	NL0010384756	2
NL0010384871	1426478	63	XAMS	NL0010384871	2
NL0010384996	1426598	63	XAMS	NL0010384996	2
NL0010385233	1426594	63	XAMS	NL0010385233	2
NL0010386553	1426530	63	XAMS	NL0010386553	2
NL0010387155	1426562	63	XAMS	NL0010387155	2
QS0011010913	1426502	63	XPAR	QS0011010913	2
QS0011026935	1426510	63	XPAR	QS0011026935	2
QS0011035852	1426550	63	XPAR	QS0011035852	2
QS0011057534	1426574	63	XPAR	QS0011057534	2
QS0011065404	1426498	63	XPAR	QS0011065404	2
QS0011109160	1426482	63	XPAR	QS0011109160	2
QS0011151295	1426534	63	XPAR	QS0011151295	2
QS0011231154	1426586	63	XPAR	QS0011231154	2
QS0011239033	1426490	63	XPAR	QS0011239033	2
QS0011247630	1426606	63	XPAR	QS0011247630	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
QS0011263405	1426466	63	XPAR	QS0011263405	2
QX0000059684	1426618	63	XBRU	QX0000059684	2
QX0000060286	1426638	63	XBRU	QX0000060286	2
QX0000060641	1426526	63	XBRU	QX0000060641	2
QX0000061706	1426570	63	XBRU	QX0000061706	2
BE0003593044	1110040	A0	XBRU	BE0003593044	2
BE0003739530	1110071	A0	XBRU	BE0003739530	2
BE0003764785	1110083	A0	XBRU	BE0003764785	2
BE0003797140	1110091	A0	XBRU	BE0003797140	2
BE0974256852	1126665	A0	XBRU	BE0974256852	2
BE0974264930	1135197	A0	XBRU	BE0974264930	2
BE0974268972	1140577	A0	XBRU	BE0974268972	2
BE0974293251	1198803	A0	XBRU	BE0974293251	2
BE0974320526	1346150	A0	XBRU	BE0974320526	2
BE0003008019	1110028	A1	XBRU	BE0003008019	2
BE0003604155	1110044	A1	XBRU	BE0003604155	2
BE0003656676	1110050	A1	XBRU	BE0003656676	2
BE0003678894	1110055	A1	XBRU	BE0003678894	2
BE0003699130	1110059	A1	XBRU	BE0003699130	2
BE0003720340	1110063	A1	XBRU	BE0003720340	2
BE0003746600	1110075	A1	XBRU	BE0003746600	2
BE0003754687	1110079	A1	XBRU	BE0003754687	2
BE0003816338	1110100	A1	XBRU	BE0003816338	2
BE0003823409	1110104	A1	XBRU	BE0003823409	2
BE0003853703	1110126	A1	XBRU	BE0003853703	2
BE0003870871	1110134	A1	XBRU	BE0003870871	2
BE0003880979	1110138	A1	XBRU	BE0003880979	2
BE0003898187	1115402	A1	XBRU	BE0003898187	2
BE0165385973	1110148	A1	XBRU	BE0165385973	2
BE0974273055	1146352	A1	XBRU	BE0974273055	2
BE0974281132	1159649	A1	XBRU	BE0974281132	2
BE0974288202	1169932	A1	XBRU	BE0974288202	2
BE0974294267	1182868	A1	XBRU	BE0974294267	2
BE0974303357	1207816	A1	XBRU	BE0974303357	2
BE0974323553	1366685	A1	XBRU	BE0974323553	2
DE000ENAG999	1110193	A4	TNLB	DE000ENAG999	2
ES0113900J37	1110197	A4	TNLB	ES0113900J37	2
IT0004513666	1123056	A4	TNLB	IT0004513666	2
BE0003503118	1110032	A5	XBRU	BE0003503118	2
BE0003731453	1110067	A5	XBRU	BE0003731453	2
BE0003893139	1110143	A5	XBRU	BE0003893139	2
US17275R1023	1111497	A6	TNLB	US17275R1023	2
US5658491064	1111503	A6	TNLB	US5658491064	2
IL0010846314	1111164	A7	XBRU	IL0010846314	2
NL0000488161	1111350	A7	XBRU	NL0000488161	2
BE0003571792	1110036	A9	XBRU	BE0003571792	2
BE0003809267	1110096	A9	XBRU	BE0003809267	2
LU0092846210	1111180	A9	XBRU	LU0092846210	2
BE0003832491	1110109	B4	MLXB	BE0003832491	2
BE0003847648	1110122	B4	MLXB	BE0003847648	2
BE0003861789	1110130	B4	MLXB	BE0003861789	2
BE0003838555	1110114	BH	MLXB	BE0003838555	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0000060840	1110354	E1	ALXP	FR0000060840	2
FR0000066961	1130610	E1	ALXP	FR0000066961	2
FR0000073728	1110438	E1	ALXP	FR0000073728	2
FR0000074775	1110448	E1	ALXP	FR0000074775	2
FR0010082305	1110778	E1	ALXP	FR0010082305	2
FR0010204453	1110835	E1	ALXP	FR0010204453	2
FR0010304402	1110881	E1	ALXP	FR0010304402	2
FR0010330613	1110894	E1	ALXP	FR0010330613	2
FR0000053076	1126522	E2	ALXP	FR0000053076	2
FR0000054652	1110337	E2	ALXP	FR0000054652	2
FR0000061608	1110366	E2	ALXP	FR0000061608	2
FR0000072993	1110434	E2	ALXP	FR0000072993	2
FR0000124414	1110522	E2	ALXP	FR0000124414	2
FR0004030708	1110647	E2	ALXP	FR0004030708	2
FR0004034593	1110651	E2	ALXP	FR0004034593	2
FR0004045847	1110664	E2	ALXP	FR0004045847	2
FR0004153930	1110681	E2	ALXP	FR0004153930	2
FR0004155687	1110686	E2	ALXP	FR0004155687	2
FR0004171346	1110695	E2	ALXP	FR0004171346	2
FR0010246322	1110858	E2	ALXP	FR0010246322	2
FR0010313486	1110886	E2	ALXP	FR0010313486	2
FR0010343186	1236190	E2	ALXP	FR0010343186	2
FR0010353888	1110927	E2	ALXP	FR0010353888	2
FR0010404368	1110958	E2	ALXP	FR0010404368	2
FR0010425595	1110979	E2	ALXP	FR0010425595	2
FR0010452474	1110991	E2	ALXP	FR0010452474	2
FR0010485268	1111013	E2	ALXP	FR0010485268	2
FR0010493510	1111019	E2	ALXP	FR0010493510	2
FR0010766667	1418109	E2	ALXP	FR0010766667	2
FR0010879056	1125613	E2	ALXP	FR0010879056	2
FR0010908723	1125870	E2	ALXP	FR0010908723	2
FR0011033083	1129211	E2	ALXP	FR0011033083	2
FR0011067669	1130418	E2	ALXP	FR0011067669	2
FR0011071570	1132017	E2	ALXP	FR0011071570	2
FR0011490648	1155667	E2	ALXP	FR0011490648	2
FR0011522168	1140980	E2	ALXP	FR0011522168	2
FR0012407096	1154570	E2	ALXP	FR0012407096	2
FR0012419307	1155278	E2	ALXP	FR0012419307	2
FR0012596468	1158314	E2	ALXP	FR0012596468	2
FR0012788065	1162011	E2	ALXP	FR0012788065	2
FR0013066750	1170375	E2	ALXP	FR0013066750	2
FR0013088606	1171792	E2	ALXP	FR0013088606	2
FR0013156007	1181564	E2	ALXP	FR0013156007	2
FR0013178712	1183350	E2	ALXP	FR0013178712	2
FR0013204351	1200802	E2	ALXP	FR0013204351	2
FR0013219367	1211628	E2	ALXP	FR0013219367	2
FR0013247244	1280658	E2	ALXP	FR0013247244	2
FR0013270626	1319538	E2	ALXP	FR0013270626	2
FR0013286259	1350739	E2	ALXP	FR0013286259	2
FR0013229291	1218818	E3	ALXP	FR0013229291	2
FR0011844067	1147708	E4	ALXP	FR0011844067	2
FR0012160661	1152575	E4	ALXP	FR0012160661	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0012790756	1162197	E4	ALXP	FR0012790756	2
FR0013260973	1303287	E4	ALXP	FR0013260973	2
FR0013307329	1376195	E4	ALXP	FR0013307329	2
FR0013318003	1404709	E4	ALXP	FR0013318003	2
FR0013322724	1416099	E4	ALXP	FR0013322724	2
FR0000045122	1110274	EA	ALXP	FR0000045122	2
FR0010776617	1122815	EA	ALXP	FR0010776617	2
FR0011651819	1144153	EA	ALXP	FR0011651819	2
GB00B19RTX44	1111098	EA	ALXP	GB00B19RTX44	2
IT0004013725	1111170	EA	ALXP	IT0004013725	2
BE0003773877	1110087	EC	ALXB	BE0003773877	2
BE0003842599	1110118	EC	ALXB	BE0003842599	2
BE0974284169	1166031	ED	ALXB	BE0974284169	2
FR0010211037	1110840	EI	ALXP	FR0010211037	2
FR0010245803	1128943	EI	ALXP	FR0010245803	2
FR0000120628	1110492	F1	XPAR	FR0000120628	2
FR0000121261	1110505	F1	XPAR	FR0000121261	2
FR0000125338	1110526	F1	XPAR	FR0000125338	2
FR0000131104	1110540	F1	XPAR	FR0000131104	2
FR0000133308	1110545	F1	XPAR	FR0000133308	2
FR0000120693	1110496	F2	XPAR	FR0000120693	2
FR0000121485	1110509	F2	XPAR	FR0000121485	2
FR0000127771	1110531	F2	XPAR	FR0000127771	2
FR0000130577	1110536	F2	XPAR	FR0000130577	2
FR0004260479	1110709	F7	XMLI	FR0004260479	2
FR0005310463	1110718	F7	XMLI	FR0005310463	2
FR0004998326	1110713	F8	XMLI	FR0004998326	2
NL0000009355	1111207	J0	XAMS	NL0000009355	2
NL0000852564	1111355	J0	XAMS	NL0000852564	2
NL0010773842	1149070	J0	XAMS	NL0010773842	2
NL0011540547	1169446	J0	XAMS	NL0011540547	2
NL0011821392	1182037	J0	XAMS	NL0011821392	2
CWN814651014	1142840	J1	XAMS	CWN814651014	2
NL0000008977	1111202	J1	XAMS	NL0000008977	2
NL0000113652	1111232	J1	XAMS	NL0000113652	2
NL0000302636	1111306	J1	XAMS	NL0000302636	2
NL0000335578	1111310	J1	XAMS	NL0000335578	2
NL0000339760	1111314	J1	XAMS	NL0000339760	2
NL0000359537	1111318	J1	XAMS	NL0000359537	2
NL0000371243	1111322	J1	XAMS	NL0000371243	2
NL0000388619	1111327	J1	XAMS	NL0000388619	2
NL0000430106	1111334	J1	XAMS	NL0000430106	2
NL0000440618	1111339	J1	XAMS	NL0000440618	2
NL0006237562	1111369	J1	XAMS	NL0006237562	2
NL0009767532	1129671	J1	XAMS	NL0009767532	2
NL0010583399	1143212	J1	XAMS	NL0010583399	2
NL0010776944	1148312	J1	XAMS	NL0010776944	2
NL0011323407	1162354	J1	XAMS	NL0011323407	2
NL0011333760	1163881	J1	XAMS	NL0011333760	2
NL0012015705	1196906	J1	XAMS	NL0012015705	2
NL0012194724	1291461	J1	XAMS	NL0012194724	2
BMG9349W1038	1262682	J2	XAMS	BMG9349W1038	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
NSCNL0REINA2	1360086	J2	XAMS	LU0383812293	2
NL0000285278	1111250	J3	XAMS	NL0000285278	2
GB00B94QM994	1140011	J7	XAMS	GB00B94QM994	2
GG00B1ZBD492	1111103	JE	XAMS	GG00B1ZBD492	2
PTJMT0AE0001	1111436	P0	XLIS	PTJMT0AE0001	2
PTPTC0AM0009	1111451	P0	XLIS	PTPTC0AM0009	2
PTSON0AM0001	1111466	P0	XLIS	PTSON0AM0001	2
PTS3P0AM0025	1320428	P1	XLIS	PTS3P0AM0025	2
PTSAG0AE0004	1111456	P1	XLIS	PTSAG0AE0004	2
PTSLB0AM0010	1111462	P1	XLIS	PTSLB0AM0010	2
PTCOM0AE0007	1111415	P2	XLIS	PTCOM0AE0007	2
PTFCP0AM0008	1111428	P2	XLIS	PTFCP0AM0008	2
PTGMC0AM0003	1111432	P2	XLIS	PTGMC0AM0003	2
NSCPT000BSC8	1111403	P5	XLIS	ES0113900J37	2
PTCPN0AE0002	1123325	P7	ENXL	PTCPN0AE0002	2
PTOIR0AE0003	1123329	P7	ENXL	PTOIR0AE0003	2
PTMXR0IM0008	1111442	S1	XLIS	PTMXR0IM0008	2
PTYPJAIM0018	1132350	S1	XLIS	PTYPJAIM0018	2
NSC000000024	1146973	T9	XOTH	NSC000000024	2
DE0005140008	1114242	TO	XETR	DE0005140008	2
DE0005785604	1113970	TO	XETR	DE0005785604	2
BE0003279784	1153305	VA	VPXB	BE0003279784	2
BE0003396018	1168389	VA	VPXB	BE0003396018	2
BE0010621481	1153299	VA	VPXB	BE0010621481	2
BE0010705359	1154176	VA	VPXB	BE0010705359	2
BE0011592491	1153644	VA	VPXB	BE0011592491	2
BE0011844108	1153503	VA	VPXB	BE0011844108	2
BE0012544319	1153295	VA	VPXB	BE0012544319	2
BE0024603624	1168760	VA	VPXB	BE0024603624	2
BE0026342551	1153485	VA	VPXB	BE0026342551	2
BE0026515347	1164701	VA	VPXB	BE0026515347	2
BE0032095854	1167941	VA	VPXB	BE0032095854	2
BE0126745638	1154159	VA	VPXB	BE0126745638	2
BE6283826699	1173764	VA	VPXB	BE6283826699	2
BE0003706208	1154777	VB	VPXB	BE0003706208	2
BE0014199377	1153649	VB	VPXB	BE0014199377	2
BE0014762182	1154169	VB	VPXB	BE0014762182	2
BE0101623644	1154163	VB	VPXB	BE0101623644	2
BE0101624659	1153867	VB	VPXB	BE0101624659	2
BE0101625664	1153527	VB	VPXB	BE0101625664	2
BE0941244536	1153317	VB	VPXB	BE0941244536	2
CG000A0BKQF7	1153313	VB	VPXB	CG000A0BKQF7	2
BE0003253524	1153489	VF	VPXB	BE0003253524	2
BE0003640514	1153874	VF	VPXB	BE0003640514	2
BE0003660710	1153495	VF	VPXB	BE0003660710	2
BE0010005149	1166845	VF	VPXB	BE0010005149	2
BE0010188036	1155726	VF	VPXB	BE0010188036	2
BE0010342609	1162667	VF	VPXB	BE0010342609	2
BE0015534143	1153508	VF	VPXB	BE0015534143	2
BE0016250517	1153562	VF	VPXB	BE0016250517	2
BE0036061746	1163572	VF	VPXB	BE0036061746	2
BE0046318490	1153290	VF	VPXB	BE0046318490	2

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
BE0047511788	1177135	VF	VPXB	BE0047511788	2
BE0156880313	1153522	VF	VPXB	BE0156880313	2
BE0157892739	1153284	VF	VPXB	BE0157892739	2
LU0006040975	1153516	VF	VPXB	LU0006040975	2
LU0092281442	1153512	VF	VPXB	LU0092281442	2
QX0000022625	1154154	VF	VPXB	QX0000022625	2
BE6252013725	1140073	10	XMLI	BE6252013725	3
CH0220529603	1148524	10	XMLI	CH0220529603	3
CH0342399851	1208014	10	XMLI	CH0342399851	3
DE000A11Q133	1163297	10	XMLI	DE000A11Q133	3
FR0000031106	1110207	10	XMLI	FR0000031106	3
FR0000034779	1110227	10	XMLI	FR0000034779	3
FR0000037871	1110246	10	XMLI	FR0000037871	3
FR0000044745	1110270	10	XMLI	FR0000044745	3
FR0000053738	1110326	10	XMLI	FR0000053738	3
FR0000060428	1110347	10	XMLI	FR0000060428	3
FR0000061657	1110367	10	XMLI	FR0000061657	3
FR0000071755	1110425	10	XMLI	FR0000071755	3
FR0000185480	1110561	10	XMLI	FR0000185480	3
FR0004157543	1110688	10	XMLI	FR0004157543	3
FR0004177939	1164998	10	XMLI	FR0004177939	3
FR0005057635	1110715	10	XMLI	FR0005057635	3
FR0006226791	1110728	10	XMLI	FR0006226791	3
FR0010038570	1110765	10	XMLI	FR0010038570	3
FR0010358507	1110929	10	XMLI	FR0010358507	3
FR0010480533	1111007	10	XMLI	FR0010480533	3
FR0010500363	1111022	10	XMLI	FR0010500363	3
FR0010536185	1111042	10	XMLI	FR0010536185	3
FR0010621722	1111070	10	XMLI	FR0010621722	3
FR0010776658	1122837	10	XMLI	FR0010776658	3
FR0010959684	1126997	10	XMLI	FR0010959684	3
FR0011076595	1130671	10	XMLI	FR0011076595	3
FR0011092089	1169998	10	XMLI	FR0011092089	3
FR0011131788	1132024	10	XMLI	FR0011131788	3
FR0011605617	1143442	10	XMLI	FR0011605617	3
FR0011776889	1147067	10	XMLI	FR0011776889	3
FR0013110053	1173967	10	XMLI	FR0013110053	3
FR0013180189	1188669	10	XMLI	FR0013180189	3
FR0013230067	1236192	10	XMLI	FR0013230067	3
FR0013251584	1310176	10	XMLI	FR0013251584	3
IT0005072167	1154385	10	XMLI	IT0005072167	3
LU0881232630	1138478	10	XMLI	LU0881232630	3
ZM0000000037	1111699	10	XMLI	ZM0000000037	3
BE0974310428	1264874	11	XPAR	BE0974310428	3
FR0000031775	1110211	11	XPAR	FR0000031775	3
FR0000033219	1110219	11	XPAR	FR0000033219	3
FR0000038259	1110250	11	XPAR	FR0000038259	3
FR0000038606	1110254	11	XPAR	FR0000038606	3
FR0000039299	1110262	11	XPAR	FR0000039299	3
FR0000050809	1110298	11	XPAR	FR0000050809	3
FR0000061129	1110359	11	XPAR	FR0000061129	3
FR0000077919	1162765	11	XPAR	FR0000077919	3

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0000120859	1110497	11	XPAR	FR0000120859	3
FR0000121147	1110501	11	XPAR	FR0000121147	3
FR0000121709	1110514	11	XPAR	FR0000121709	3
FR0000124570	1110523	11	XPAR	FR0000124570	3
FR0000125346	1110527	11	XPAR	FR0000125346	3
FR0000130213	1110532	11	XPAR	FR0000130213	3
FR0000130650	1110537	11	XPAR	FR0000130650	3
FR0010112524	1110784	11	XPAR	FR0010112524	3
FR0010220475	1172875	11	XPAR	FR0010220475	3
FR0010259150	1110862	11	XPAR	FR0010259150	3
FR0010313833	1110887	11	XPAR	FR0010313833	3
FR0010407049	1110962	11	XPAR	FR0010407049	3
FR0010828137	1124003	11	XPAR	FR0010828137	3
FR0010908533	1126029	11	XPAR	FR0010908533	3
FR0011726835	1145533	11	XPAR	FR0011726835	3
FR0012435121	1155311	11	XPAR	FR0012435121	3
FR0012789949	1161699	11	XPAR	FR0012789949	3
FR0013153541	1182038	11	XPAR	FR0013153541	3
FR0013154002	1180732	11	XPAR	FR0013154002	3
FR0013214145	1348182	11	XPAR	FR0013214145	3
BE0974269012	1140635	13	XPAR	BE0974269012	3
FR0000030611	1110203	13	XPAR	FR0000030611	3
FR0000035263	1110232	13	XPAR	FR0000035263	3
FR0000035784	1110236	13	XPAR	FR0000035784	3
FR0000052896	1110312	13	XPAR	FR0000052896	3
FR0000060121	1110343	13	XPAR	FR0000060121	3
FR0000061418	1110363	13	XPAR	FR0000061418	3
FR0000062507	1110375	13	XPAR	FR0000062507	3
FR0000064156	1110389	13	XPAR	FR0000064156	3
FR0000065260	1110405	13	XPAR	FR0000065260	3
FR0000065492	1110409	13	XPAR	FR0000065492	3
FR0000065930	1110413	13	XPAR	FR0000065930	3
FR0000075673	1110454	13	XPAR	FR0000075673	3
FR0000076986	1110462	13	XPAR	FR0000076986	3
FR0000079659	1110475	13	XPAR	FR0000079659	3
FR0004035061	1110652	13	XPAR	FR0004035061	3
FR0010211615	1110841	13	XPAR	FR0010211615	3
FR0000032302	1110215	16	XPAR	FR0000032302	3
FR0000034894	1306441	16	XPAR	FR0000034894	3
FR0000036857	1110242	16	XPAR	FR0000036857	3
FR0000039109	1110258	16	XPAR	FR0000039109	3
FR0000044364	1110266	16	XPAR	FR0000044364	3
FR0000045213	1110275	16	XPAR	FR0000045213	3
FR0000045528	1110279	16	XPAR	FR0000045528	3
FR0000052623	1110308	16	XPAR	FR0000052623	3
FR0000053043	1110317	16	XPAR	FR0000053043	3
FR0000053399	1110322	16	XPAR	FR0000053399	3
FR0000054322	1110334	16	XPAR	FR0000054322	3
FR0000054694	1110338	16	XPAR	FR0000054694	3
FR0000060790	1110351	16	XPAR	FR0000060790	3
FR0000060873	1110355	16	XPAR	FR0000060873	3
FR0000062804	1110379	16	XPAR	FR0000062804	3

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0000063091	1137410	16	XPAR	FR0000063091	3
FR0000063737	1110385	16	XPAR	FR0000063737	3
FR0000064297	1110393	16	XPAR	FR0000064297	3
FR0000064446	1110397	16	XPAR	FR0000064446	3
FR0000066672	1110421	16	XPAR	FR0000066672	3
FR0000072399	1110430	16	XPAR	FR0000072399	3
FR0000073041	1110435	16	XPAR	FR0000073041	3
FR0000073793	1144832	16	XPAR	FR0000073793	3
FR0000073843	1110440	16	XPAR	FR0000073843	3
FR0000074148	1146271	16	XPAR	FR0000074148	3
FR0000074254	1110444	16	XPAR	FR0000074254	3
FR0000074783	1110449	16	XPAR	FR0000074783	3
FR0000076861	1110458	16	XPAR	FR0000076861	3
FR0000078958	1110471	16	XPAR	FR0000078958	3
FR0000121295	1110506	16	XPAR	FR0000121295	3
FR0000131732	1110542	16	XPAR	FR0000131732	3
FR0000182479	1110556	16	XPAR	FR0000182479	3
FR0004031763	1110648	16	XPAR	FR0004031763	3
FR0004038099	1110657	16	XPAR	FR0004038099	3
FR0004042083	1110661	16	XPAR	FR0004042083	3
FR0004050250	1110666	16	XPAR	FR0004050250	3
FR0004110310	1110678	16	XPAR	FR0004110310	3
FR0004155000	1110683	16	XPAR	FR0004155000	3
FR0004177046	1110701	16	XPAR	FR0004177046	3
FR0004186856	1110705	16	XPAR	FR0004186856	3
FR0004527638	1110710	16	XPAR	FR0004527638	3
FR0010193052	1110827	16	XPAR	FR0010193052	3
FR0010331421	1110895	16	XPAR	FR0010331421	3
FR0010428771	1110980	16	XPAR	FR0010428771	3
FR0010501692	1154676	16	XPAR	FR0010501692	3
FR0010526814	1146576	16	XPAR	FR0010526814	3
FR0010949404	1126697	16	XPAR	FR0010949404	3
FR0011051598	1162065	16	XPAR	FR0011051598	3
FR0011289040	1135027	16	XPAR	FR0011289040	3
FR0011352590	1136352	16	XPAR	FR0011352590	3
FR0011584549	1142877	16	XPAR	FR0011584549	3
FR0011950641	1148323	16	XPAR	FR0011950641	3
FR0012127173	1157134	16	XPAR	FR0012127173	3
FR0012650166	1158641	16	XPAR	FR0012650166	3
FR0012882389	1163713	16	XPAR	FR0012882389	3
FR0012969095	1167281	16	XPAR	FR0012969095	3
FR0013006558	1167685	16	XPAR	FR0013006558	3
FR0013030152	1182869	16	XPAR	FR0013030152	3
FR0013283108	1339406	16	XPAR	FR0013283108	3
FR0013284080	1345023	16	XPAR	FR0013284080	3
FR0013295789	1367091	16	XPAR	FR0013295789	3
FR0013318813	1418486	16	XPAR	FR0013318813	3
FR0004026714	1110644	17	XPAR	FR0004026714	3
CH0008853209	1110156	22	XPAR	CH0008853209	3
US5324571083	1138856	22	XPAR	US5324571083	3
US58933Y1055	1123540	22	XPAR	US58933Y1055	3
FR0010649228	1122595	30	XMLI	FR0010649228	3

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ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0013254489	1277033	30	XMLI	FR0013254489	3
FR0000312928	1110575	31	XPAR	FR0000312928	3
FR0013128907	1179799	31	XPAR	FR0013128907	3
LU0234878881	1111182	31	XPAR	LU0234878881	3
BE0948608451	1125621	32	XMLI	BE0948608451	3
DE000A0JCXG4	1161248	32	XMLI	DE000A0JCXG4	3
DK0060129575	1110194	32	XMLI	DK0060129575	3
FR0000064644	1110401	32	XMLI	FR0000064644	3
FR0000077828	1110466	32	XMLI	FR0000077828	3
FR0004174712	1131252	32	XMLI	FR0004174712	3
FR0010086371	1110779	32	XMLI	FR0010086371	3
FR0010487272	1111014	32	XMLI	FR0010487272	3
FR0010978924	1132373	32	XMLI	FR0010978924	3
FR0011421817	1139479	32	XMLI	FR0011421817	3
FR0012300424	1152842	32	XMLI	FR0012300424	3
FR0013063559	1171135	32	XMLI	FR0013063559	3
FR0013232626	1240479	32	XMLI	FR0013232626	3
HK0000043510	1111108	32	XMLI	HK0000043510	3
HK0000058161	1125781	32	XMLI	HK0000058161	3
FR0000045619	1110283	33	XPAR	FR0000045619	3
FR0013306008	1376310	33	XPAR	FR0013306008	3
FR0013306081	1376304	33	XPAR	FR0013306081	3
FR0013306172	1376300	33	XPAR	FR0013306172	3
FR0013306214	1376296	33	XPAR	FR0013306214	3
FR0013308798	1376623	33	XPAR	FR0013308798	3
FR0013308863	1376618	33	XPAR	FR0013308863	3
FR0013308889	1425315	33	XPAR	FR0013308889	3
FR0000864050	1426603	63	XPAR	FR0000864050	3
FR0000869836	1426503	63	XPAR	FR0000869836	3
FR0000870198	1426559	63	XPAR	FR0000870198	3
FR0000880999	1426575	63	XPAR	FR0000880999	3
FR0000881930	1426471	63	XPAR	FR0000881930	3
FR0000882656	1426571	63	XPAR	FR0000882656	3
FR0000883373	1426615	63	XPAR	FR0000883373	3
FR0000884363	1426567	63	XPAR	FR0000884363	3
FR0000884488	1426535	63	XPAR	FR0000884488	3
FR0000884728	1426543	63	XPAR	FR0000884728	3
FR0000890733	1426563	63	XPAR	FR0000890733	3
FR0000891954	1426635	63	XPAR	FR0000891954	3
FR0000894180	1426511	63	XPAR	FR0000894180	3
FR0000897787	1426579	63	XPAR	FR0000897787	3
FR0000898629	1426627	63	XPAR	FR0000898629	3
FR0000899106	1426475	63	XAMS	FR0000899106	3
FR0000899825	1426619	63	XPAR	FR0000899825	3
FR0012401545	1426531	63	XPAR	FR0012401545	3
FR0012402196	1426491	63	XPAR	FR0012402196	3
FR0012403640	1426623	63	XPAR	FR0012403640	3
FR0013164449	1426599	63	XPAR	FR0013164449	3
FR0013226941	1426483	63	XPAR	FR0013226941	3
FR0013264637	1426595	63	XPAR	FR0013264637	3
FR0013268265	1426607	63	XPAR	FR0013268265	3
FR0013270709	1426479	63	XPAR	FR0013270709	3

Euronext Optiq Phase 2: Order Entry Gateway (OEG) and Matching Engine (ME) Migration Guidelines

ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
FR0013281623	1426587	63	XPAR	FR0013281623	3
FR0013289220	1426539	63	XPAR	FR0013289220	3
FR0013302528	1426487	63	XPAR	FR0013302528	3
FR0013302940	1426467	63	XPAR	FR0013302940	3
FR0013303096	1426507	63	XPAR	FR0013303096	3
NL0010385597	1426583	63	XAMS	NL0010385597	3
NL0010385951	1426631	63	XAMS	NL0010385951	3
NL0010386439	1426495	63	XAMS	NL0010386439	3
QS0010993820	1426591	63	XAMS	QS0010993820	3
QS0011064670	1426515	63	XPAR	QS0011064670	3
QS0011064803	1426527	63	XPAR	QS0011064803	3
QS0011108634	1426519	63	XPAR	QS0011108634	3
QS0011214259	1426523	63	XPAR	QS0011214259	3
QS0011230818	1426551	63	XPAR	QS0011230818	3
QS0011238431	1426611	63	XPAR	QS0011238431	3
QS0011239157	1426499	63	XPAR	QS0011239157	3
QX0000060765	1426555	63	XBRU	QX0000060765	3
QX0000061607	1426547	63	XBRU	QX0000061607	3
BE0003810273	1110097	A0	XBRU	BE0003810273	3
BE0974276082	1148846	A0	XBRU	BE0974276082	3
BE0003573814	1110037	A1	XBRU	BE0003573814	3
BE0003599108	1110041	A1	XBRU	BE0003599108	3
BE0003700144	1110060	A1	XBRU	BE0003700144	3
BE0003748622	1110076	A1	XBRU	BE0003748622	3
BE0003755692	1110080	A1	XBRU	BE0003755692	3
BE0003765790	1110084	A1	XBRU	BE0003765790	3
BE0003786036	1110088	A1	XBRU	BE0003786036	3
BE0003839561	1110115	A1	XBRU	BE0003839561	3
BE0003856730	1110127	A1	XBRU	BE0003856730	3
BE0003864817	1110131	A1	XBRU	BE0003864817	3
BE0003874915	1110135	A1	XBRU	BE0003874915	3
BE0003883031	1110139	A1	XBRU	BE0003883031	3
BE0003899193	1122430	A1	XBRU	BE0003899193	3
BE0974259880	1127847	A1	XBRU	BE0974259880	3
BE0974263924	1132975	A1	XBRU	BE0974263924	3
BE0974274061	1149071	A1	XBRU	BE0974274061	3
BE0974280126	1155055	A1	XBRU	BE0974280126	3
BE0974282148	1159811	A1	XBRU	BE0974282148	3
BE0974300320	1202584	A1	XBRU	BE0974300320	3
BE0974313455	1292840	A1	XBRU	BE0974313455	3
BE0974314461	1299684	A1	XBRU	BE0974314461	3
GB00BYWF9Y76	1408742	A1	XBRU	GB00BYWF9Y76	3
GB00B063YS85	1126589	A3	XBRU	GB00B063YS85	3
GB00BYN5BY03	1181768	A3	XBRU	GB00BYN5BY03	3
DE0005557508	1110171	A4	TNLB	DE0005557508	3
DE0007664005	1115465	A4	TNLB	DE0007664005	3
IT0000062072	1111165	A4	TNLB	IT0000062072	3
BE0003215143	1110029	A5	XBRU	BE0003215143	3
BE0003680916	1110056	A5	XBRU	BE0003680916	3
BE0003723377	1110064	A5	XBRU	BE0003723377	3
BE0003734481	1110068	A5	XBRU	BE0003734481	3
BE0003798155	1110092	A5	XBRU	BE0003798155	3

Euronext Optiq Phase 2: Order Entry Gateway (OEG) and Matching Engine (ME) Migration Guidelines

ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
BE0003825420	1110105	A5	XBRU	BE0003825420	3
BE0012378593	1110144	A5	XBRU	BE0012378593	3
US0970231058	1111493	A6	TNLB	US0970231058	3
US3448491049	1111500	A6	TNLB	US3448491049	3
US5949181045	1111504	A6	TNLB	US5949181045	3
US9078181081	1111510	A6	TNLB	US9078181081	3
FR0004166155	1110692	A7	XBRU	FR0004166155	3
BE0003605160	1110045	A9	XBRU	BE0003605160	3
BE0003661726	1110051	A9	XBRU	BE0003661726	3
BE0003740546	1110072	A9	XBRU	BE0003740546	3
BE0003545531	1110033	AK	XBRU	BE0003545531	3
BE0003835528	1110111	B4	MLXB	BE0003835528	3
BE0003849669	1110123	B4	MLXB	BE0003849669	3
FR0000033888	1130264	E1	ALXP	FR0000033888	3
FR0000061582	1160352	E1	ALXP	FR0000061582	3
FR0000066441	1110417	E1	ALXP	FR0000066441	3
FR0005854700	1110724	E1	ALXP	FR0005854700	3
FR0010207795	1110837	E1	ALXP	FR0010207795	3
FR0010340711	1110901	E1	ALXP	FR0010340711	3
FR0010396309	1110952	E1	ALXP	FR0010396309	3
FR0011208693	1133519	E1	ALXP	FR0011208693	3
FR0013256518	1319539	E1	ALXP	FR0013256518	3
FR0013297165	1377301	E1	ALXP	FR0013297165	3
FR0013297488	1365510	E1	ALXP	FR0013297488	3
FR0000033599	1110223	E2	ALXP	FR0000033599	3
FR0000054132	1110330	E2	ALXP	FR0000054132	3
FR0000062184	1110371	E2	ALXP	FR0000062184	3
FR0000185621	1141196	E2	ALXP	FR0000185621	3
FR0004022754	1110639	E2	ALXP	FR0004022754	3
FR0004058949	1110671	E2	ALXP	FR0004058949	3
FR0004172450	1110696	E2	ALXP	FR0004172450	3
FR0010120402	1146782	E2	ALXP	FR0010120402	3
FR0010231860	1110851	E2	ALXP	FR0010231860	3
FR0010285965	1110872	E2	ALXP	FR0010285965	3
FR0010397232	1135863	E2	ALXP	FR0010397232	3
FR0010446765	1110987	E2	ALXP	FR0010446765	3
FR0010523167	1111033	E2	ALXP	FR0010523167	3
FR0010785790	1122928	E2	ALXP	FR0010785790	3
FR0010812230	1129221	E2	ALXP	FR0010812230	3
FR0011005933	1128996	E2	ALXP	FR0011005933	3
FR0011038348	1129401	E2	ALXP	FR0011038348	3
FR0011070457	1130464	E2	ALXP	FR0011070457	3
FR0011191287	1187818	E2	ALXP	FR0011191287	3
FR0011511971	1154126	E2	ALXP	FR0011511971	3
FR0011884378	1149422	E2	ALXP	FR0011884378	3
FR0011898584	1313617	E2	ALXP	FR0011898584	3
FR0011910652	1147842	E2	ALXP	FR0011910652	3
FR0012816825	1162259	E2	ALXP	FR0012816825	3
FR0013143872	1178207	E2	ALXP	FR0013143872	3
FR0013188844	1188848	E2	ALXP	FR0013188844	3
FR0013240934	1330617	E2	ALXP	FR0013240934	3
FR0013328184	1428447	E2	ALXP	FR0013328184	3

Euronext Optiq Phase 2: Order Entry Gateway (OEG) and Matching Engine (ME) Migration Guidelines

ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
NL0012044762	1197025	E2	ALXP	NL0012044762	3
FR0011462803	1144001	E4	ALXP	FR0011462803	3
FR0013134384	1177462	E4	ALXP	FR0013134384	3
FR0013186061	1184578	E4	ALXP	FR0013186061	3
FR0013274545	1320429	E4	ALXP	FR0013274545	3
FR0010844001	1124554	EA	ALXP	FR0010844001	3
BE0003519270	1122674	EC	ALXB	BE0003519270	3
BE0003843605	1110119	EC	ALXB	BE0003843605	3
BE0974285174	1166032	EG	ALXB	BE0974285174	3
FR0010457531	1110993	EI	ALXP	FR0010457531	3
FR0010465534	1137322	EI	ALXP	FR0010465534	3
FR0011041011	1133063	EI	ALXP	FR0011041011	3
FR0011636083	1144488	EI	ALXP	FR0011636083	3
IT0004615396	1153961	EI	ALXP	IT0004615396	3
PTIAN0AM0001	1134444	EO	ALXL	PTIAN0AM0001	3
PTPRS0AM0009	1213845	EO	ALXL	PTPRS0AM0009	3
BE0974261902	1129715	EQ	ALXB	BE0974261902	3
FR0000051732	1110304	F1	XPAR	FR0000051732	3
FR0000120073	1110480	F1	XPAR	FR0000120073	3
FR0000120404	1110488	F1	XPAR	FR0000120404	3
FR0000120644	1110493	F1	XPAR	FR0000120644	3
FR0010307819	1110882	F1	XPAR	FR0010307819	3
FR0000120271	1110484	F2	XPAR	FR0000120271	3
FR0000121501	1110510	F2	XPAR	FR0000121501	3
FR0000121972	1110518	F2	XPAR	FR0000121972	3
GB00BDSFG982	1225713	F2	XPAR	GB00BDSFG982	3
FR0005516804	1110719	F7	XMLI	FR0005516804	3
FR0006859039	1110732	F7	XMLI	FR0006859039	3
FR0007261425	1110751	F7	XMLI	FR0007261425	3
FR0010688465	1115280	F9	XMLI	FR0010688465	3
BE0003818359	1110101	J0	XAMS	BE0003818359	3
GB00B03MLX29	1111095	J0	XAMS	GB00B03MLX29	3
NL0000009082	1111203	J0	XAMS	NL0000009082	3
NL0000009538	1111208	J0	XAMS	NL0000009538	3
NL0000303709	1111307	J0	XAMS	NL0000303709	3
NL0011333752	1163882	J0	XAMS	NL0011333752	3
NL0000288876	1111273	J1	XAMS	NL0000288876	3
NL0000336303	1111311	J1	XAMS	NL0000336303	3
NL0000345577	1111315	J1	XAMS	NL0000345577	3
NL0000360618	1111319	J1	XAMS	NL0000360618	3
NL0000395317	1111331	J1	XAMS	NL0000395317	3
NL0000440311	1111336	J1	XAMS	NL0000440311	3
NL0000817179	1111352	J1	XAMS	NL0000817179	3
NL0000852580	1111356	J1	XAMS	NL0000852580	3
NL0006292906	1111372	J1	XAMS	NL0006292906	3
NL0010627865	1144302	J1	XAMS	NL0010627865	3
NL0010937066	1155672	J1	XAMS	NL0010937066	3
NL0011279492	1162443	J1	XAMS	NL0011279492	3
NL0012047823	1252079	J1	XAMS	NL0012047823	3
NL0012047849	1199313	J1	XAMS	NL0012047849	3
NL0012294466	1283055	J1	XAMS	NL0012294466	3
NL0012817175	1416693	J1	XAMS	NL0012817175	3

Euronext Optiq Phase 2: Order Entry Gateway (OEG) and Matching Engine (ME) Migration Guidelines

ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
US69355L1098	1376217	J2	XAMS	US69355L1098	3
NL0000378669	1111323	J3	XAMS	NL0000378669	3
NL0000440824	1111341	J3	XAMS	NL0000440824	3
NL0009391242	1125378	J3	XAMS	NL0009391242	3
NL0010556726	1141846	J3	XAMS	NL0010556726	3
BMG455841020	1110149	J7	XAMS	BMG455841020	3
GB00BQQFX454	1150840	J7	XAMS	GB00BQQFX454	3
GG00B1FQG453	1111100	J7	XAMS	GG00B1FQG453	3
JE00B1FBT077	1111171	J7	XAMS	JE00B1FBT077	3
GG00B39VMM07	1111104	JE	XAMS	GG00B39VMM07	3
GG00BPFJTF46	1151612	JE	XAMS	GG00BPFJTF46	3
VGG885761061	1114510	JE	XAMS	VGG885761061	3
ES0127797019	1110198	P0	XLIS	ES0127797019	3
PTALT0AE0002	1111404	P0	XLIS	PTALT0AE0002	3
PTCOR0AE0006	1111420	P0	XLIS	PTCOR0AE0006	3
PTFRV0AE0004	1111429	P0	XLIS	PTFRV0AE0004	3
PTPTIOAM0006	1111452	P0	XLIS	PTPTIOAM0006	3
PTNBA0AM0006	1111443	P1	XLIS	PTNBA0AM0006	3
PTSMLOAM0009	1111463	P1	XLIS	PTSMLOAM0009	3
PTGPA0AP0007	1111433	P2	XLIS	PTGPA0AP0007	3
PTLIG0AE0002	1111437	P2	XLIS	PTLIG0AE0002	3
PTSCPOAM0001	1111459	P2	XLIS	PTSCPOAM0001	3
PTVAA0AE0001	1111470	P2	XLIS	PTVAA0AE0001	3
PTCUR0AP0000	1123326	P7	ENXL	PTCUR0AP0000	3
PTSCB0AM0001	1123330	P7	ENXL	PTSCB0AM0001	3
PTTRA0AN0016	1353102	P7	ENXL	PTTRA0AN0016	3
NSC000000073	1407058	T7	XOTH	NSC000000073	3
DE0005552004	1114026	TO	XETR	DE0005552004	3
DE000BASF111	1126242	TO	XETR	DE000BASF111	3
DE000BAY0017	1123289	TO	XETR	DE000BAY0017	3
NSC000000032	1146974	TU	XOTH	NSC000000032	3
BE0003020139	1153486	VA	VPXB	BE0003020139	3
BE0003282812	1168390	VA	VPXB	BE0003282812	3
BE0003666774	1162668	VA	VPXB	BE0003666774	3
BE0003704187	1153496	VA	VPXB	BE0003704187	3
BE0010610377	1153300	VA	VPXB	BE0010610377	3
BE0010704345	1154177	VA	VPXB	BE0010704345	3
BE0011685451	1153650	VA	VPXB	BE0011685451	3
BE0012652427	1153504	VA	VPXB	BE0012652427	3
BE0013473872	1156030	VA	VPXB	BE0013473872	3
BE0013585055	1168761	VA	VPXB	BE0013585055	3
BE0015460372	1167943	VA	VPXB	BE0015460372	3
BE0026514332	1164702	VA	VPXB	BE0026514332	3
BE0027840017	1153292	VA	VPXB	BE0027840017	3
BE0034169251	1169516	VA	VPXB	BE0034169251	3
BE0049483135	1153530	VA	VPXB	BE0049483135	3
BE0150703628	1165788	VA	VPXB	BE0150703628	3
BE6265912038	1153314	VA	VPXB	BE6265912038	3
BE6301507966	1383525	VA	VPXB	BE6301507966	3
BE0013603239	1154170	VB	VPXB	BE0013603239	3
BE0101614551	1154164	VB	VPXB	BE0101614551	3
BE0101717610	1153285	VB	VPXB	BE0101717610	3

ISIN Code	Symbol Index	Trading group	MIC	Trading code	Partition ID
BE0107958945	1154160	VB	VPXB	BE0107958945	3
BE0941243520	1153318	VB	VPXB	BE0941243520	3
NL0000121622	1111240	VB	VPXB	NL0000121622	3
NSCEX0000018	1153645	VB	VPXB	NSCEX0000018	3
BE0003243426	1153563	VF	VPXB	BE0003243426	3
BE0003255545	1153490	VF	VPXB	BE0003255545	3
BE0003256550	1153306	VF	VPXB	BE0003256550	3
BE0003267664	1153875	VF	VPXB	BE0003267664	3
BE0011254027	1153296	VF	VPXB	BE0011254027	3
BE0017609521	1153509	VF	VPXB	BE0017609521	3
BE0099395676	1158182	VF	VPXB	BE0099395676	3
BE0099451263	1153868	VF	VPXB	BE0099451263	3
BE0129984044	1153523	VF	VPXB	BE0129984044	3
BE0947790037	1153517	VF	VPXB	BE0947790037	3
LU0092281103	1153513	VF	VPXB	LU0092281103	3
LU0097891112	1154155	VF	VPXB	LU0097891112	3

8.5 SUMMARY OF CHANGES

REVISION NO./ VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
1.5	20 June 2018	Euronext	Sixth release
1.4	24 May 2018	Euronext	Fifth release
1.3	17 May 2018	Euronext	Fourth release
1.2	22 March 2018	Euronext	Third release
1.1	7 Feb 2018	Euronext	Second release
1.0	30 Aug 2017	Euronext	First release

Version	Change Description
1.5	- In section 3.2.3, provided more detail on the migration to Optiq and the order book purge on 22 June 2018, including the closure of Funds services on TCS on Thursday 21 June 2018 at 16:30 CEST - Added the full list of groups migrating to Optiq in appendix
1.4	- Added two Dress Rehearsals on Saturday 9 June and Saturday 16 June for the full Cash migration.
1.3	- Section 3 has been updated to reflect an additional Dress Rehearsal date on 2 June 2018 and the new cash markets migration date on Monday 25 June 2018. Customers are informed that they can purge their cash order book on Friday 22 June before the global cash order book purge if they wish, to facilitate the migration on their side. Customers are also reminded that if they wish to change their source IP address for Production, they must contact their SFTI representative. Finally, OTC K services are being made available in Saturn from 21 May 2018 and will no longer be available on TCS from 25 June 2018. - Section 3.4.3.2 provides the detail of the cash markets Dress Rehearsal scope of tests. - Appendix section 8.4 provides the list of Equities instruments split across partitions on the Go-Live date.
1.2	- Sections 3.2.1 and 3.2.3 Error messages when UTP groups are disabled with the migration is now either 20351 <i>Order entry disabled for this class</i> error message or 20141 <i>Class closed</i> error message). - Regulated Fixed Income declarations in TCS will not be available between the migration phase, i.e. the six weeks

Version	Change Description
	between the Go Live of Optiq Fixed Income and the Go Live of all the remaining Cash segments on Optiq. - An additional external dress rehearsal date has been made available prior to the Fixed Income Go Live: 14 April 2018. - Technical conformance is now required for Go-Live and no longer for Dress Rehearsals. - Added high level Dress Rehearsal guidelines - Additional trading groups included in the scope of the FXI migration were included in Appendix.
1.1	Added details of individual event dates, availability of services and files, as well as testing requirements
1.0	First release