

Document title

OPTIQ[®] MARKET DATA GATEWAY FEED CONFIGURATION

EURONEXT CASH AND DERIVATIVES MARKETS

CURRENT AND NEXT RELEASE EXTERNAL USER ACCEPTANCE ENVIRONMENTS

Document type or subject

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PREFACE

DOCUMENT HISTORY

The following table provides a description of all changes to this document.

VERSION NO.	DATE	CHANGE DESCRIPTION
1.0	Sept 2016	Optiq® Market Data Gateway External User Acceptance (EUA) – Virtual and Physical – Environment feed configuration details.
1.1	Nov 2016	Optiq® Market Data Gateway External User Acceptance (EUA) – Virtual and Physical – File services access for the V-EUA
1.2	March 2017	Retail Matching Facility renamed into Best of Book. BBBO changed into FBMU for Equities/Funds/Fixed Income and Bourse de Luxembourg. Change of the layout of the feed configuration.
1.3	April 2017	Correct made to Multicast Group IP for the 1G channel - Index Options Netherlands
1.4	November 2017	New Channels added for APA SI Quotes and APA Trade Publication to Optiq Segment – 10, Trade Reporting and Publication.
1.5	June 2018	Removal of MDG Set Of Channels ID 12 – Trade Reporting And Publication
1.6	July 2018	New Channels added for ETF Access to Optiq Segment – 2, Funds. Removal MDG Set Of Channels ID 10 - Societe Generale Systematic Internaliser (SI)
1.7	July 2018	New Channels added for Best of Book (RMF) Funds.
1.8	July 2018	MDG Set of Channels 9 and 15 renamed for Euronext Dublin Integration.
1.9	November 2018	New Channel added for Euronext Block.
2.0	November 2018	Changes made to Derivatives Feed Configuration for Optiq Step 3. MDG Set of Channels 18, 19 and 28 removed. Introduction of new Optiq Segments for Equity Derivatives, Index Derivatives and Financial Derivatives. MDG Set of Channels 20 to 26 renamed.

REFERENCE MATERIAL

The following document, which either should be read in conjunction with this document or which provide other relevant information for the user:

- [Euronext Cash and Derivatives Markets – Optiq MDG Client Specifications](#)

SUPPORT

Please find below the Optiq Support Desk contact details, which has been established to ensure customer readiness by:

- sending information to customers related to Optiq
- answering customers' questions related to Optiq
- assisting customers in their testing and validation on the EUA environment
- providing follow-up on customer conformance testing
- assessing customers' state of readiness with regards to technical changes

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FURTHER INFORMATION

For additional information please visit: www.euronext.com/optiq

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1. INTRODUCTION

This document provides all multicast addresses required to access the Euronext Optiq® Market Data Gateway External User Acceptance (EUA). Only shaped data is provided in the test environment. In order to ensure a Production-like test environment, separate IP addresses and ports are used to replicate the Production 'shaped' and 'unshaped' configuration.

The Euronext Optiq® Market Data Gateway Next Release-EUA (P-EUA) environment is located in Basildon and the Current Release-EUA (V-EUA) environment is located at St. Denis. The P-EUA and V-EUA Source IP Address ranges are provided in this document and for P-EUA the Source IP Address ranges are provided for the live and standby systems as part of the High Availability mechanism. EUA High Availability (HA) and failover testing will only be conducted on the Next Release test environment (P-EUA).

Customers are requested to allow the V-EUA and P-EUA Source IP Address ranges through their Firewalls.

With the XML Standing Data files for the different Optiq Segments, customers will be able to map which instruments are available in which channel. The Optiq MDG feed configuration can be found at the end of each Standing Data file available and these will be provided on a daily basis in XML format. It is required to use the feed configuration details as part of the standing data files to connect to the feed on a daily basis.

In case a new partition is added to an Optiq Segment, customers are required to adapt to this type of change using the Optiq MDG Standing Data files that include the feed configuration details.

1.1 OPTIQ SEGMENTS, PARTITIONS AND MDG SET OF CHANNELS

Below you will find an overview of the available Optiq Segments, the number of partitions per Optiq Segment and the MDG Set Of Channels ID and Name that are part of each Optiq Segment. The Optiq Segments listed in the below table are also available in the real-time Standing Data (1007) messages and Contract Standing Data (1013) messages and also available in Standing Data files.

Optiq Segment	Number of Partitions	MDG Set Of Channels ID	MDG Set Of Channels Name
1. Equities	4	6	Equities Netherlands
		5	Equities France
		7	Equities Belgium
		8	Equities Portugal
		9	Equities Dublin
		11	Best of Book (RMF)
2. Funds	1	1	Funds
		32	ETF Access
		31	Best of Book (RMF) Funds
3. Fixed Income	1	2	Fixed Income
4. Warrants and Certificates	1	4	Warrants and Certificates
5. Bourse de Luxembourg	1	3	Bourse De Luxembourg
Optiq Segment	Number of Partitions	MDG Set Of Channels ID	MDG Set Of Channels Name
9. Indices	1	13	Euronext Indices
		14	Euronext iNAVs
		15	Euronext Dublin Indices
Optiq Segment	Number of Partitions	MDG Set Of Channels ID	MDG Set Of Channels Name
10. Trade Reporting and Publication	1	29	APA SI Quotes
		30	APA Trade Publication
Optiq Segment	Number of Partitions	MDG Set Of Channels ID	MDG Set Of Channels Name
14. Euronext Block	1	33	Euronext Block
Optiq Segment	Number of Partitions	MDG Set Of Channels ID	MDG Set Of Channels Name
8. Commodity Derivatives	1	16	Commodity Derivatives
11. Index Derivatives	2	23	Index Options France
		24	Index Options Netherlands
		25	Index Derivatives Other
		26	Index Futures France
		27	Index Futures Netherlands
		20	Equity Derivatives France
12. Equity Derivatives	2	21	Equity Derivatives Netherlands
		22	Equity Derivatives Other
13. Financial Derivatives	1	17	Currency Derivatives

1.2 CHANNEL TYPES AND CHANNEL IDS

The Channel Types and Channel ID's that are available to each customer depend on the available bandwidth on customer connections to the SFTI Network and the services that were selected in the SFTI® order form. Depending on the Asset Class, the following Optiq MDG channel types are made available to customers:

1. Pre-trade
 - a. BBBO – Best Bid and Offer
 - b. FBMU – Full Book using Market Update message (includes Best Bid and Best Offer)
 - c. FBOU – Full Book using Order Update message (includes Best Bid and Best Offer)
2. Post Trade – REFT – Reference Data and Full Trade Information
3. Indices – REFI – Reference Data and Index messages

Please read chapter **2.1 TYPE OF MARKET DATA CHANNELS** of the Euronext Cash and Derivatives Markets. – Optiq MDG Client Specifications for more details.

1.3 ADDITION OF A NEW PARTITION

The Channel ID contains 5 numbers and is provided as a field in the Optiq MDG packet header.

1. The first number on the left is used to identify if the channel is a real-time channel (3 for V-EUA and 5 for P-EUA) or snapshot (4 for V-EUA and 6 for P-EUA)
2. The second number is n= the partition number -1, with n=0 for the first partition, n=1 for the second partition, etc.
3. The last three number xxx represent the last numbers on the right used for the Multicast Group IP.

Each partition as part of an Optiq Segment has a Feed A and a Feed B and uses a unique Source IP address from the ranges as specified below:

Feed A/B	Feed A	Feed B
Rendez-vous Point SFTI WAN	156.48.121.2	156.48.121.55
Rendez-vous Point SFTI Co-Io	156.48.99.5	
VEUA IP Address range	212.197.220.128/25	212.197.221.128/25
PEUA Primary IP Address range	212.197.220.0/25	212.197.221.0/25
PEUA Secondary IP Address range	212.197.220.0/25	212.197.221.0/25

Customers are required to allow the whole range as specified above through their Firewalls to allow for the addition of a new partition within an Optiq Segment. In case of a new partition

1. A new Source IP will be used for the new partition, the Multicast Group IP Addresses for Feed A and B remain unchanged for the new partition
2. A new Channel ID is defined as 1(n)xxx and is equal to the ports used for the new partition.

The Multicast Group IP addresses for Real-time and Snapshot, for Feed A and B are:

Environment	Channel ID	Real-Time/Snapshot	Multicast Group Feed A	Multicast Group Feed B
VEUA	3(n)xxx	Real-Time	224.0.52.xxx	224.0.53.xxx
	4(n)xxx	Snapshot		
PEUA	5(n)xxx	Real-Time		
	6(n)xxx	Snapshot		

2. OPTIQ SEGMENT – 1. EQUITIES REAL-TIME AND SNAPSHOT CONFIGURATION

2.1 MDG SET OF CHANNELS ID 6 – EQUITIES NETHERLANDS

Environment	VEUA and PEUA	MDGSetOfChannels ID	6
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities Netherlands

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.120	VEUA 30120	VEUA 31120	VEUA 32120	VEUA 33120
Multicast Group IP Feed B	224.0.53.120	PEUA 50120	PEUA 51120	PEUA 52120	PEUA 53120
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.120	VEUA 40120	VEUA 41120	VEUA 42120	VEUA 43120
Multicast Group IP Feed B	224.0.53.120	PEUA 60120	PEUA 61120	PEUA 62120	PEUA 63120

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.121	VEUA 30121	VEUA 31121	VEUA 32121	VEUA 33121
Multicast Group IP Feed B	224.0.53.121	PEUA 50121	PEUA 51121	PEUA 52121	PEUA 53121
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.122	VEUA 30122	VEUA 31122	VEUA 32122	VEUA 33122
Multicast Group IP Feed B	224.0.53.122	PEUA 50122	PEUA 51122	PEUA 52122	PEUA 53122
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.121	VEUA 40121	VEUA 41121	VEUA 42121	VEUA 43121
Multicast Group IP Feed B	224.0.53.121	PEUA 60121	PEUA 61121	PEUA 62121	PEUA 63121

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.123	VEUA 30123	VEUA 31123	VEUA 32123	VEUA 33123
Multicast Group IP Feed B	224.0.53.123	PEUA 50123	PEUA 51123	PEUA 52123	PEUA 53123
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.124	VEUA 30124	VEUA 31124	VEUA 32124	VEUA 33124
Multicast Group IP Feed B	224.0.53.124	PEUA 50124	PEUA 51124	PEUA 52124	PEUA 53124
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.125	VEUA 30125	VEUA 31125	VEUA 32125	VEUA 33125
Multicast Group IP Feed B	224.0.53.125	PEUA 50125	PEUA 51125	PEUA 52125	PEUA 53125
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.123	VEUA 40123	VEUA 41123	VEUA 42123	VEUA 43123
Multicast Group IP Feed B	224.0.53.123	PEUA 60123	PEUA 61123	PEUA 62123	PEUA 63123

2.2 MDG SET OF CHANNELS ID 5 – EQUITIES FRANCE

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	5
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities France

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.110	VEUA 30110 PEUA 50110	VEUA 31110 PEUA 51110	VEUA 32110 PEUA 52110	VEUA 33110 PEUA 53110
Multicast Group IP Feed B	224.0.53.110				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.110	VEUA 40110 PEUA 60110	VEUA 41110 PEUA 61110	VEUA 42110 PEUA 62110	VEUA 43110 PEUA 63110
Multicast Group IP Feed B	224.0.53.110				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.111	VEUA 30111	VEUA 31111	VEUA 32111	VEUA 33111
Multicast Group IP Feed B	224.0.53.111	PEUA 50111	PEUA 51111	PEUA 52111	PEUA 53111
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.112	VEUA 30112	VEUA 31112	VEUA 32112	VEUA 33112
Multicast Group IP Feed B	224.0.53.112	PEUA 50112	PEUA 51112	PEUA 52112	PEUA 53112
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.111	VEUA 40111	VEUA 41111	VEUA 42111	VEUA 43111
Multicast Group IP Feed B	224.0.53.111	PEUA 60111	PEUA 61111	PEUA 62111	PEUA 63111

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.113	VEUA 30113 PEUA 50113	VEUA 31113 PEUA 51113	VEUA 32113 PEUA 52113	VEUA 33113 PEUA 53113
Multicast Group IP Feed B	224.0.53.113				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.114	VEUA 30114 PEUA 50114	VEUA 31114 PEUA 51114	VEUA 32114 PEUA 52114	VEUA 33114 PEUA 53114
Multicast Group IP Feed B	224.0.53.114				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.115	VEUA 30115 PEUA 50115	VEUA 31115 PEUA 51115	VEUA 32115 PEUA 52115	VEUA 33115 PEUA 53115
Multicast Group IP Feed B	224.0.53.115				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.113	VEUA 40113 PEUA 60113	VEUA 41113 PEUA 61113	VEUA 42113 PEUA 62113	VEUA 43113 PEUA 63113
Multicast Group IP Feed B	224.0.53.113				

2.3 MDG SET OF CHANNELS ID 7 – EQUITIES BELGIUM (INCLUDING PUBLIC AUCTION MARKET)

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	7
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities Belgium (Including Public Auction Market)

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.100	VEUA 30100	VEUA 31100	VEUA 32100	VEUA 33100
Multicast Group IP Feed B	224.0.53.100	PEUA 50100	PEUA 51100	PEUA 52100	PEUA 53100
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.100	VEUA 40100	VEUA 41100	VEUA 42100	VEUA 43100
Multicast Group IP Feed B	224.0.53.100	PEUA 60100	PEUA 61100	PEUA 62100	PEUA 63100

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.101	VEUA 30101	VEUA 31101	VEUA 32101	VEUA 33101
Multicast Group IP Feed B	224.0.53.101	PEUA 50101	PEUA 51101	PEUA 52101	PEUA 53101
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.102	VEUA 30102	VEUA 31102	VEUA 32102	VEUA 33102
Multicast Group IP Feed B	224.0.53.102	PEUA 50102	PEUA 51102	PEUA 52102	PEUA 53102
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.101	VEUA 40101	VEUA 41101	VEUA 42101	VEUA 43101
Multicast Group IP Feed B	224.0.53.101	PEUA 60101	PEUA 61101	PEUA 62101	PEUA 63101

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.103	VEUA 30103	VEUA 31103	VEUA 32103	VEUA 33103
Multicast Group IP Feed B	224.0.53.103	PEUA 50103	PEUA 51103	PEUA 52103	PEUA 53103
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.104	VEUA 30104	VEUA 31104	VEUA 32104	VEUA 33104
Multicast Group IP Feed B	224.0.53.104	PEUA 50104	PEUA 51104	PEUA 52104	PEUA 53104
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.103	VEUA 40103	VEUA 41103	VEUA 42103	VEUA 43103
Multicast Group IP Feed B	224.0.53.103	PEUA 60103	PEUA 61103	PEUA 62103	PEUA 63103

2.4 MDG SET OF CHANNELS ID 8 – EQUITIES PORTUGAL

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	8
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities Portugal

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.105	VEUA 30105	VEUA 31105	VEUA 32105	VEUA 33105
Multicast Group IP Feed B	224.0.53.105	PEUA 50105	PEUA 51105	PEUA 52105	PEUA 53105
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.105	VEUA 40105	VEUA 41105	VEUA 42105	VEUA 43105
Multicast Group IP Feed B	224.0.53.105	PEUA 60105	PEUA 61105	PEUA 62105	PEUA 63105

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.106	VEUA 30106	VEUA 31106	VEUA 32106	VEUA 33106
Multicast Group IP Feed B	224.0.53.106	PEUA 50106	PEUA 51106	PEUA 52106	PEUA 53106
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.107	VEUA 30107	VEUA 31107	VEUA 32107	VEUA 33107
Multicast Group IP Feed B	224.0.53.107	PEUA 50107	PEUA 51107	PEUA 52107	PEUA 53107
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.106	VEUA 40106	VEUA 41106	VEUA 42106	VEUA 43106
Multicast Group IP Feed B	224.0.53.106	PEUA 60106	PEUA 61106	PEUA 62106	PEUA 63106

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.108	VEUA 30108	VEUA 31108	VEUA 32108	VEUA 33108
Multicast Group IP Feed B	224.0.53.108	PEUA 50108	PEUA 51108	PEUA 52108	PEUA 53108
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.109	VEUA 30109	VEUA 31109	VEUA 32109	VEUA 33109
Multicast Group IP Feed B	224.0.53.109	PEUA 50109	PEUA 51109	PEUA 52109	PEUA 53109
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.108	VEUA 40108	VEUA 41108	VEUA 42108	VEUA 43108
Multicast Group IP Feed B	224.0.53.108	PEUA 60108	PEUA 61108	PEUA 62108	PEUA 63108

2.5 MDG SET OF CHANNELS ID 9 – EQUITIES DUBLIN

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	9
Optiq Segment name	Equities	MDGSetOfChannelsName	Equities Dublin

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.165	VEUA 30165	VEUA 31165	VEUA 32165	VEUA 33165
Multicast Group IP Feed B	224.0.53.165	PEUA 50165	PEUA 51165	PEUA 52165	PEUA 53165
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.165	VEUA 40165	VEUA 41165	VEUA 42165	VEUA 43165
Multicast Group IP Feed B	224.0.53.165	PEUA 60165	PEUA 61165	PEUA 62165	PEUA 63165

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.166	VEUA 30166 PEUA 50166	VEUA 31166 PEUA 51166	VEUA 32166 PEUA 52166	VEUA 33166 PEUA 53166
Multicast Group IP Feed B	224.0.53.166				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.167	VEUA 30167 PEUA 50167	VEUA 31167 PEUA 51167	VEUA 32167 PEUA 52167	VEUA 33167 PEUA 53167
Multicast Group IP Feed B	224.0.53.167				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.166	VEUA 40166 PEUA 60166	VEUA 41166 PEUA 61166	VEUA 42166 PEUA 62166	VEUA 43166 PEUA 63166
Multicast Group IP Feed B	224.0.53.166				

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.168	VEUA 30168	VEUA 31168	VEUA 32168	VEUA 33168
Multicast Group IP Feed B	224.0.53.168	PEUA 50168	PEUA 51168	PEUA 52168	PEUA 53168
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.169	VEUA 30169	VEUA 31169	VEUA 32169	VEUA 33169
Multicast Group IP Feed B	224.0.53.169	PEUA 50169	PEUA 51169	PEUA 52169	PEUA 53169
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.168	VEUA 40168	VEUA 41168	VEUA 42168	VEUA 43168
Multicast Group IP Feed B	224.0.53.168	PEUA 60168	PEUA 61168	PEUA 62168	PEUA 63168

2.6 MDG SET OF CHANNELS ID 11 – BEST OF BOOK (RMF)

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	11
Optiq Segment name	Equities	MDGSetOfChannelsName	Best of Book (RMF)

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.138	VEUA 30138	VEUA 31138	VEUA 32138	VEUA 33138
Multicast Group IP Feed B	224.0.53.138	PEUA 50138	PEUA 51138	PEUA 52138	PEUA 53138
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.139	VEUA 30139	VEUA 31139	VEUA 32139	VEUA 33139
Multicast Group IP Feed B	224.0.53.139	PEUA 50139	PEUA 51139	PEUA 52139	PEUA 53139
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.138	VEUA 40138	VEUA 41138	VEUA 42138	VEUA 43138
Multicast Group IP Feed B	224.0.53.138	PEUA 60138	PEUA 61138	PEUA 62138	PEUA 63138

3. OPTIQ SEGMENT – 2. FUNDS REAL-TIME AND SNAPSHOT CONFIGURATION

3.1 MDG SET OF CHANNELS ID 1 – FUNDS

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	1
Optiq Segment name	Funds	MDGSetOfChannelsName	Funds

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.130	VEUA 30130			
Multicast Group IP Feed B	224.0.53.130	PEUA 50130			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.130	VEUA 40130			
Multicast Group IP Feed B	224.0.53.130	PEUA 60130			

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.131	VEUA 30131			
Multicast Group IP Feed B	224.0.53.131	PEUA 50131			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.132	VEUA 30132			
Multicast Group IP Feed B	224.0.53.132	PEUA 50132			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.131	VEUA 40131			
Multicast Group IP Feed B	224.0.53.131	PEUA 60131			

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.133	VEUA 30133			
Multicast Group IP Feed B	224.0.53.133	PEUA 50133			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.134	VEUA 30134			
Multicast Group IP Feed B	224.0.53.134	PEUA 50134			
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.135	VEUA 30135			
Multicast Group IP Feed B	224.0.53.135	PEUA 50135			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.133	VEUA 40133			
Multicast Group IP Feed B	224.0.53.133	PEUA 60133			

3.2 MDG SET OF CHANNELS ID 32 – ETF ACCESS

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	32
Optiq Segment name	Funds	MDGSetOfChannelsName	ETF Access

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.90	VEUA 30090			
Multicast Group IP Feed B	224.0.53.90	PEUA 50090			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.90	VEUA 40090			
Multicast Group IP Feed B	224.0.53.90	PEUA 60090			

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.91	VEUA 30091			
Multicast Group IP Feed B	224.0.53.91	PEUA 50091			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.92	VEUA 30092			
Multicast Group IP Feed B	224.0.53.92	PEUA 50092			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.91	VEUA 40091			
Multicast Group IP Feed B	224.0.53.91	PEUA 60091			

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.93	VEUA 30093			
Multicast Group IP Feed B	224.0.53.93	PEUA 50093			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.94	VEUA 30094			
Multicast Group IP Feed B	224.0.53.94	PEUA 50094			
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.95	VEUA 30095			
Multicast Group IP Feed B	224.0.53.95	PEUA 50095			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.93	VEUA 40093			
Multicast Group IP Feed B	224.0.53.93	PEUA 60093			

3.3 MDG SET OF CHANNELS ID 31 – BEST OF BOOK (RMF)

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	31
Optiq Segment name	Funds	MDGSetOfChannelsName	Best of Book (RMF) Funds

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.136	VEUA 30136 PEUA 50136			
Multicast Group IP Feed B	224.0.53.136				
Channel Speed	1G	Partition 1			
Multicast Group IP Feed A	224.0.52.137	VEUA 30137 PEUA 50137			
Multicast Group IP Feed B	224.0.53.137				
Channel Speed	100M	Partition 1			
Multicast Group IP Feed A	224.0.52.136	VEUA 40136 PEUA 60136			
Multicast Group IP Feed B	224.0.53.136				

4. OPTIQ SEGMENT – 3. FIXED INCOME REAL-TIME AND SNAPSHOT CONFIGURATION

4.1 MDG SET OF CHANNELS ID 2 – FIXED INCOME

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	2
Optiq Segment name	Fixed Income	MDGSetOfChannelsName	Fixed Income

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.150	VEUA 30150			
Multicast Group IP Feed B	224.0.53.150	PEUA 50150			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.150	VEUA 40150			
Multicast Group IP Feed B	224.0.53.150	PEUA 60150			

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.151	VEUA 30151			
Multicast Group IP Feed B	224.0.53.151	PEUA 50151			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.152	VEUA 30152			
Multicast Group IP Feed B	224.0.53.152	PEUA 50152			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.151	VEUA 40151			
Multicast Group IP Feed B	224.0.53.151	PEUA 60151			

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.153	VEUA 30153			
Multicast Group IP Feed B	224.0.53.153	PEUA 50153			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.154	VEUA 30154			
Multicast Group IP Feed B	224.0.53.154	PEUA 50154			
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.153	VEUA 40153			
Multicast Group IP Feed B	224.0.53.153	PEUA 60153			

5. OPTIQ SEGMENT – 4. WARRANTS & CERTIFICATES REAL-TIME AND SNAPSHOT CONFIGURATION

5.1 MDG SET OF CHANNELS ID 4 – WARRANTS & CERTIFICATES

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	4
Optiq Segment name	Warrants & Certificates	MDGSetOfChannelsName	Warrants & Certificates

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.155	VEUA 30155			
Multicast Group IP Feed B	224.0.53.155	PEUA 50155			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.155	VEUA 40155			
Multicast Group IP Feed B	224.0.53.155	PEUA 60155			

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.156	VEUA 30156			
Multicast Group IP Feed B	224.0.53.156	PEUA 50156			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.157	VEUA 30157			
Multicast Group IP Feed B	224.0.53.157	PEUA 50157			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.156	VEUA 40156			
Multicast Group IP Feed B	224.0.53.156	PEUA 60156			

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.158	VEUA 30158			
Multicast Group IP Feed B	224.0.53.158	PEUA 50158			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.159	VEUA 30159			
Multicast Group IP Feed B	224.0.53.159	PEUA 50159			
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.158	VEUA 40158			
Multicast Group IP Feed B	224.0.53.158	PEUA 60158			

6. OPTIQ SEGMENT – 5. BOURSE DE LUXEMBOURG REAL-TIME AND SNAPSHOT CONFIGURATION

6.1 MDG SET OF CHANNELS ID 3 – BOURSE DE LUXEMBOURG

Please note that the Bourse de Luxembourg Index messages are included in the Referential Data and Full Trade Information (REFT) real-time and snapshot channels.

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	3
Optiq Segment name	Bourse de Luxembourg	MDGSetOfChannelsName	Bourse de Luxembourg

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.170	VEUA 30170			
Multicast Group IP Feed B	224.0.53.170	PEUA 50170			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.170	VEUA 40170			
Multicast Group IP Feed B	224.0.53.170	PEUA 60170			

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.171	VEUA 30171			
Multicast Group IP Feed B	224.0.53.171	PEUA 50171			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.172	VEUA 30172			
Multicast Group IP Feed B	224.0.53.172	PEUA 50172			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.171	VEUA 40171			
Multicast Group IP Feed B	224.0.53.171	PEUA 60171			

Channel Type	FBOU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.173	VEUA 30173			
Multicast Group IP Feed B	224.0.53.173	PEUA 50173			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.174	VEUA 30174			
Multicast Group IP Feed B	224.0.53.174	PEUA 50174			
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.173	VEUA 40173			
Multicast Group IP Feed B	224.0.53.173	PEUA 60173			

7. OPTIQ SEGMENT – 9. INDICES REAL-TIME AND SNAPSHOT CONFIGURATION

7.1 MDG SET OF CHANNELS ID 13 – EURONEXT INDICES

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	13
Optiq Segment name	Indices	MDGSetOfChannelsName	Euronext Indices

Channel Type	REFI	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.250	VEUA 30250			
Multicast Group IP Feed B	224.0.53.250	PEUA 50250			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.250	VEUA 40250			
Multicast Group IP Feed B	224.0.53.250	PEUA 60250			

7.2 MDG SET OF CHANNELS ID 14 – EURONEXT INAV'S

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	14
Optiq Segment name	Indices	MDGSetOfChannelsName	Euronext iNAV's

Channel Type	REFI	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.251	VEUA 30251			
Multicast Group IP Feed B	224.0.53.251	PEUA 50251			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.251	VEUA 40251			
Multicast Group IP Feed B	224.0.53.251	PEUA 60251			

7.3 MDG SET OF CHANNELS ID 15 – EURONEXT DUBLIN INDICES

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	15
Optiq Segment name	Indices	MDGSetOfChannelsName	Euronext Dublin Indices

Channel Type	REFI	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.252	VEUA 30252			
Multicast Group IP Feed B	224.0.53.252	PEUA 50252			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.252	VEUA 40252			
Multicast Group IP Feed B	224.0.53.252	PEUA 60252			

8. OPTIQ SEGMENT – 10. TRADE REPORTING AND PUBLICATION REAL-TIME AND SNAPSHOT CONFIGURATION

8.1 MDG SET OF CHANNELS ID 29 – APA SI QUOTES

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	29
Optiq Segment name	Trade Reporting and Publication	MDGSetOfChannelsName	APA SI Quotes

Channel Type	APSI	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.145		VEUA 31145		
Multicast Group IP Feed B	224.0.53.145		PEUA 51145		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.145		VEUA 41145		
Multicast Group IP Feed B	224.0.53.145		PEUA 61145		

8.2 MDG SET OF CHANNELS ID 30 – APA TRADE PUBLICATION

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	30
Optiq Segment name	Trade Reporting and Publication	MDGSetOfChannelsName	APA Trade Publication

Channel Type	APTR	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.146		VEUA 31146		
Multicast Group IP Feed B	224.0.53.146		PEUA 51146		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.146		VEUA 41146		
Multicast Group IP Feed B	224.0.53.146		PEUA 61146		

9. OPTIQ SEGMENT – 14. EURONEXT BLOCK

9.1 MDG SET OF CHANNELS ID 33 – EURONEXT BLOCK

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	33
Optiq Segment name	Euronext Block	MDGSetOfChannelsName	Euronext Block

Channel Type	EBLK	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.99	VEUA 30099			
Multicast Group IP Feed B	224.0.53.99	PEUA 50099			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.99	VEUA 40099			
Multicast Group IP Feed B	224.0.53.99	PEUA 60099			

10. OPTIQ SEGMENT – 8. COMMODITY DERIVATIVES REAL-TIME AND SNAPSHOT CONFIGURATION

10.1 MDG SET OF CHANNELS ID 16 – COMMODITY DERIVATIVES

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	16
Optiq Segment name	Commodity Derivatives	MDGSetOfChannelsName	Commodity Derivatives

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.245	VEUA 30245			
Multicast Group IP Feed B	224.0.53.245	PEUA 50245			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.245	VEUA 40245			
Multicast Group IP Feed B	224.0.53.245	PEUA 60245			

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.246	VEUA 30246			
Multicast Group IP Feed B	224.0.53.246	PEUA 50246			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.247	VEUA 30247			
Multicast Group IP Feed B	224.0.53.247	PEUA 50247			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.246	VEUA 40246			
Multicast Group IP Feed B	224.0.53.246	PEUA 60246			

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.248	VEUA 30248			
Multicast Group IP Feed B	224.0.53.248	PEUA 50248			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.249	VEUA 30249			
Multicast Group IP Feed B	224.0.53.249	PEUA 50249			
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.248	VEUA 40248			
Multicast Group IP Feed B	224.0.53.248	PEUA 60248			

11. OPTIQ SEGMENT – 11. INDEX DERIVATIVES REAL-TIME AND SNAPSHOT CONFIGURATION

11.1 MDG SET OF CHANNELS ID 23 – INDEX OPTIONS FRANCE

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	23
Optiq Segment name	Index Derivatives	MDGSetOfChannelsName	Index Options France

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.220	VEUA 30220	VEUA 31220		
Multicast Group IP Feed B	224.0.53.220	PEUA 50220	PEUA 51220		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.220	VEUA 40220	VEUA 41220		
Multicast Group IP Feed B	224.0.53.220	PEUA 60220	PEUA 61220		

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.221	VEUA 30221	VEUA 31221		
Multicast Group IP Feed B	224.0.53.221	PEUA 50221	PEUA 51221		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.222	VEUA 30222	VEUA 31222		
Multicast Group IP Feed B	224.0.53.222	PEUA 50222	PEUA 51222		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.221	VEUA 40221	VEUA 41221		
Multicast Group IP Feed B	224.0.53.221	PEUA 60221	PEUA 61221		

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.223	VEUA 30223	VEUA 31223		
Multicast Group IP Feed B	224.0.53.223	PEUA 50223	PEUA 51223		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.224	VEUA 30224	VEUA 31224		
Multicast Group IP Feed B	224.0.53.224	PEUA 50224	PEUA 51224		
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.225	VEUA 30225	VEUA 31225		
Multicast Group IP Feed B	224.0.53.225	PEUA 50225	PEUA 51225		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.223	VEUA 40223	VEUA 41223		
Multicast Group IP Feed B	224.0.53.223	PEUA 60223	PEUA 61223		

11.2 MDG SET OF CHANNELS ID 24 – INDEX OPTIONS NETHERLANDS

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	24
Optiq Segment name	Index Derivatives	MDGSetOfChannelsName	Index Options Netherlands

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.230	VEUA 30230	VEUA 31230		
Multicast Group IP Feed B	224.0.53.230	PEUA 50230	PEUA 51230		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.230	VEUA 40230	VEUA 41230		
Multicast Group IP Feed B	224.0.53.230	PEUA 60230	PEUA 61230		

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.231	VEUA 30231	VEUA 31231		
Multicast Group IP Feed B	224.0.53.231	PEUA 50231	PEUA 51231		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.232	VEUA 30232	VEUA 31232		
Multicast Group IP Feed B	224.0.53.232	PEUA 50232	PEUA 51232		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.231	VEUA 40231	VEUA 41231		
Multicast Group IP Feed B	224.0.53.231	PEUA 60231	PEUA 61231		

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.233	VEUA 30233	VEUA 31233		
Multicast Group IP Feed B	224.0.53.233	PEUA 50233	PEUA 51233		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.234	VEUA 30234	VEUA 31234		
Multicast Group IP Feed B	224.0.53.234	PEUA 50234	PEUA 51234		
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.235	VEUA 30235	VEUA 31235		
Multicast Group IP Feed B	224.0.53.235	PEUA 50235	PEUA 51235		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.233	VEUA 40233	VEUA 41233		
Multicast Group IP Feed B	224.0.53.233	PEUA 60233	PEUA 61233		

11.3 MDG SET OF CHANNELS ID 25 – INDEX DERIVATIVES OTHER (BELGIUM AND PORTUGAL)

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	25
Optiq Segment name	Index Derivatives	MDGSetOfChannelsName	Index Derivatives Other

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.240	VEUA 30240	VEUA 31240		
Multicast Group IP Feed B	224.0.53.240	PEUA 50240	PEUA 51240		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.240	VEUA 40240	VEUA 41240		
Multicast Group IP Feed B	224.0.53.240	PEUA 60240	PEUA 61240		

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.241	VEUA 30241	VEUA 31241		
Multicast Group IP Feed B	224.0.53.241	PEUA 50241	PEUA 51241		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.242	VEUA 30242	VEUA 31242		
Multicast Group IP Feed B	224.0.53.242	PEUA 50242	PEUA 51242		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.241	VEUA 40241	VEUA 41241		
Multicast Group IP Feed B	224.0.53.241	PEUA 60241	PEUA 61241		

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.243	VEUA 30243	VEUA 31243		
Multicast Group IP Feed B	224.0.53.243	PEUA 50243	PEUA 51243		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.244	VEUA 30244	VEUA 31244		
Multicast Group IP Feed B	224.0.53.244	PEUA 50244	PEUA 51244		
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.243	VEUA 40243	VEUA 41243		
Multicast Group IP Feed B	224.0.53.243	PEUA 60243	PEUA 61243		

11.4 MDG SET OF CHANNELS ID 26 – INDEX FUTURES FRANCE

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	26
Optiq Segment name	Index Derivatives	MDGSetOfChannelsName	Index Futures France

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.190	VEUA 30190	VEUA 31190		
Multicast Group IP Feed B	224.0.53.190	PEUA 50190	PEUA 51190		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.190	VEUA 40190	VEUA 41190		
Multicast Group IP Feed B	224.0.53.190	PEUA 60190	PEUA 61190		

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.191	VEUA 30191	VEUA 31191		
Multicast Group IP Feed B	224.0.53.191	PEUA 50191	PEUA 51191		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.192	VEUA 30192	VEUA 31192		
Multicast Group IP Feed B	224.0.53.192	PEUA 50192	PEUA 51192		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.191	VEUA 40191	VEUA 41191		
Multicast Group IP Feed B	224.0.53.191	PEUA 60191	PEUA 61191		

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.193	VEUA 30193	VEUA 31193		
Multicast Group IP Feed B	224.0.53.193	PEUA 50193	PEUA 51193		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.194	VEUA 30194	VEUA 31194		
Multicast Group IP Feed B	224.0.53.194	PEUA 50194	PEUA 51194		
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.195	VEUA 30195	VEUA 31195		
Multicast Group IP Feed B	224.0.53.195	PEUA 50195	PEUA 51195		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.193	VEUA 40193	VEUA 41193		
Multicast Group IP Feed B	224.0.53.193	PEUA 60193	PEUA 61193		

11.5 MDG SET OF CHANNELS ID 27 – INDEX FUTURES NETHERLANDS

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	27
Optiq Segment name	Index Derivatives	MDGSetOfChannelsName	Index Futures Netherlands

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.200	VEUA 30200	VEUA 31200		
Multicast Group IP Feed B	224.0.53.200	PEUA 50200	PEUA 51200		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.200	VEUA 40200	VEUA 41200		
Multicast Group IP Feed B	224.0.53.200	PEUA 60200	PEUA 61200		

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.201	VEUA 30201	VEUA 31201		
Multicast Group IP Feed B	224.0.53.201	PEUA 50201	PEUA 51201		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.202	VEUA 30202	VEUA 31202		
Multicast Group IP Feed B	224.0.53.202	PEUA 50202	PEUA 51202		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.201	VEUA 40201	VEUA 41201		
Multicast Group IP Feed B	224.0.53.201	PEUA 60201	PEUA 61201		

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.203	VEUA 30203	VEUA 31203		
Multicast Group IP Feed B	224.0.53.203	PEUA 50203	PEUA 51203		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.204	VEUA 30204	VEUA 31204		
Multicast Group IP Feed B	224.0.53.204	PEUA 50204	PEUA 51204		
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.205	VEUA 30205	VEUA 31205		
Multicast Group IP Feed B	224.0.53.205	PEUA 50205	PEUA 51205		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.203	VEUA 40203	VEUA 41203		
Multicast Group IP Feed B	224.0.53.203	PEUA 60203	PEUA 61203		

12. OPTIQ SEGMENT – 12. EQUITY DERIVATIVES REAL-TIME AND SNAPSHOT CONFIGURATION

12.1 MDG SET OF CHANNELS ID 20 – EQUITY DERIVATIVES FRANCE

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	20
Optiq Segment name	Equity Derivatives	MDGSetOfChannelsName	Equity Derivatives France

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.175	VEUA 30175	VEUA 31175		
Multicast Group IP Feed B	224.0.53.175	PEUA 50175	PEUA 51175		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.175	VEUA 40175	VEUA 41175		
Multicast Group IP Feed B	224.0.53.175	PEUA 60175	PEUA 61175		

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.176	VEUA 30176 PEUA 50176	VEUA 31176 PEUA 51176		
Multicast Group IP Feed B	224.0.53.176				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.177	VEUA 30177 PEUA 50177	VEUA 31177 PEUA 51177		
Multicast Group IP Feed B	224.0.53.177				
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.176	VEUA 40176 PEUA 60176	VEUA 41176 PEUA 61176		
Multicast Group IP Feed B	224.0.53.176				

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.178	VEUA 30178	VEUA 31178		
Multicast Group IP Feed B	224.0.53.178	PEUA 50178	PEUA 51178		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.179	VEUA 30179	VEUA 31179		
Multicast Group IP Feed B	224.0.53.179	PEUA 50179	PEUA 51179		
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.178	VEUA 40178	VEUA 41178		
Multicast Group IP Feed B	224.0.53.178	PEUA 60178	PEUA 61178		

12.2 MDG SET OF CHANNELS ID 21 – EQUITY DERIVATIVES NETHERLANDS

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	21
Optiq Segment name	Equity Derivatives	MDGSetOfChannelsName	Equity Derivatives Netherlands

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.180	VEUA 30180	VEUA 31180		
Multicast Group IP Feed B	224.0.53.180	PEUA 50180	PEUA 51180		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.180	VEUA 40180	VEUA 41180		
Multicast Group IP Feed B	224.0.53.180	PEUA 60180	PEUA 61180		

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.181	VEUA 30181	VEUA 31181		
Multicast Group IP Feed B	224.0.53.181	PEUA 50181	PEUA 51181		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.182	VEUA 30182	VEUA 31182		
Multicast Group IP Feed B	224.0.53.182	PEUA 50182	PEUA 51182		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.181	VEUA 40181	VEUA 41181		
Multicast Group IP Feed B	224.0.53.181	PEUA 60181	PEUA 61181		

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.183	VEUA 30183	VEUA 31183		
Multicast Group IP Feed B	224.0.53.183	PEUA 50183	PEUA 51183		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.184	VEUA 30184	VEUA 31184		
Multicast Group IP Feed B	224.0.53.184	PEUA 50184	PEUA 51184		
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	10M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.183	VEUA 40183	VEUA 41183		
Multicast Group IP Feed B	224.0.53.183	PEUA 60183	PEUA 61183		

12.3 MDG SET OF CHANNELS ID 22 – EQUITY DERIVATIVES OTHER (BELGIUM AND PORTUGAL)

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	22
Optiq Segment name	Equity Derivatives	MDGSetOfChannelsName	Equity Derivatives Other

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.185	VEUA 30185	VEUA 31185		
Multicast Group IP Feed B	224.0.53.185	PEUA 50185	PEUA 51185		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.185	VEUA 40185	VEUA 41185		
Multicast Group IP Feed B	224.0.53.185	PEUA 60185	PEUA 61185		

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.186	VEUA 30186	VEUA 31186		
Multicast Group IP Feed B	224.0.53.186	PEUA 50186	PEUA 51186		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.187	VEUA 30187	VEUA 31187		
Multicast Group IP Feed B	224.0.53.187	PEUA 50187	PEUA 51187		
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.186	VEUA 40186	VEUA 41186		
Multicast Group IP Feed B	224.0.53.186	PEUA 60186	PEUA 61186		

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.188	VEUA 30188	VEUA 31188		
Multicast Group IP Feed B	224.0.53.188	PEUA 50188	PEUA 51188		
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.189	VEUA 30189	VEUA 31189		
Multicast Group IP Feed B	224.0.53.189	PEUA 50189	PEUA 51189		
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.188	VEUA 40188	VEUA 41188		
Multicast Group IP Feed B	224.0.53.188	PEUA 60188	PEUA 61188		

13. OPTIQ SEGMENT – 13. FINANCIAL DERIVATIVES REAL-TIME AND SNAPSHOT CONFIGURATION

13.1 MDG SET OF CHANNELS ID 17 – CURRENCY DERIVATIVES

Environment	V-EUA and P-EUA	MDGSetOfChannels ID	17
Optiq Segment name	Financial Futures	MDGSetOfChannelsName	Currency Futures

Channel Type	REFT	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.140	VEUA 30140			
Multicast Group IP Feed B	224.0.53.140	PEUA 50140			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.140	VEUA 40140			
Multicast Group IP Feed B	224.0.53.140	PEUA 60140			

Channel Type	BBBO	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.141	VEUA 30141			
Multicast Group IP Feed B	224.0.53.141	PEUA 50141			
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.142	VEUA 30142			
Multicast Group IP Feed B	224.0.53.142	PEUA 50142			
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.141	VEUA 40141			
Multicast Group IP Feed B	224.0.53.141	PEUA 60141			

Channel Type	FBMU	Channel ID /Port			
Real-time					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.143	VEUA 30143 PEUA 50143			
Multicast Group IP Feed B	224.0.53.143				
Channel Speed	1G	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.144	VEUA 30144 PEUA 50144			
Multicast Group IP Feed B	224.0.53.144				
Channel Speed	10G	Partition 1	Partition 2	Partition 3	Partition 4
Snapshot					
Channel Speed	100M	Partition 1	Partition 2	Partition 3	Partition 4
Multicast Group IP Feed A	224.0.52.143	VEUA 40143 PEUA 60143			
Multicast Group IP Feed B	224.0.53.143				