



NYSE BondMatch™

NYSE BondMatch-Infrastructure & Technical Summary



NYSE BondMatch™

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- On-Boarding
- SFTI Connectivity Options
- Market Data/Order Entry
- Order Types
- Technical Trading day
- How to get NYSE BondMatch
- Contact details

NYSE BondMatch – On-Boarding Procedure

How to be ready in 4 steps

Administrative Process

Euronext Cash
Member

Fast-Track
Membership
Admission

New
Member

Standard
Membership
Admission

IT Set Up

Trading &
Connectivity Model

- Choose Market Access Model
- Test with NYSE Euronext

PTS Set Up

Post-Trading Model
(ICM or GCM)

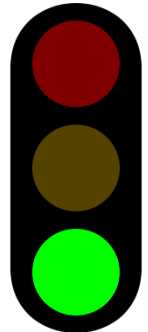
- Choose Clearing Model
- Sign Clearing Agreement
- Test with LCH Clearnet and impacted CSD

Test Period

End-to-End
(trading to
settlement)
& Conformance
Tests

Final
Acceptances

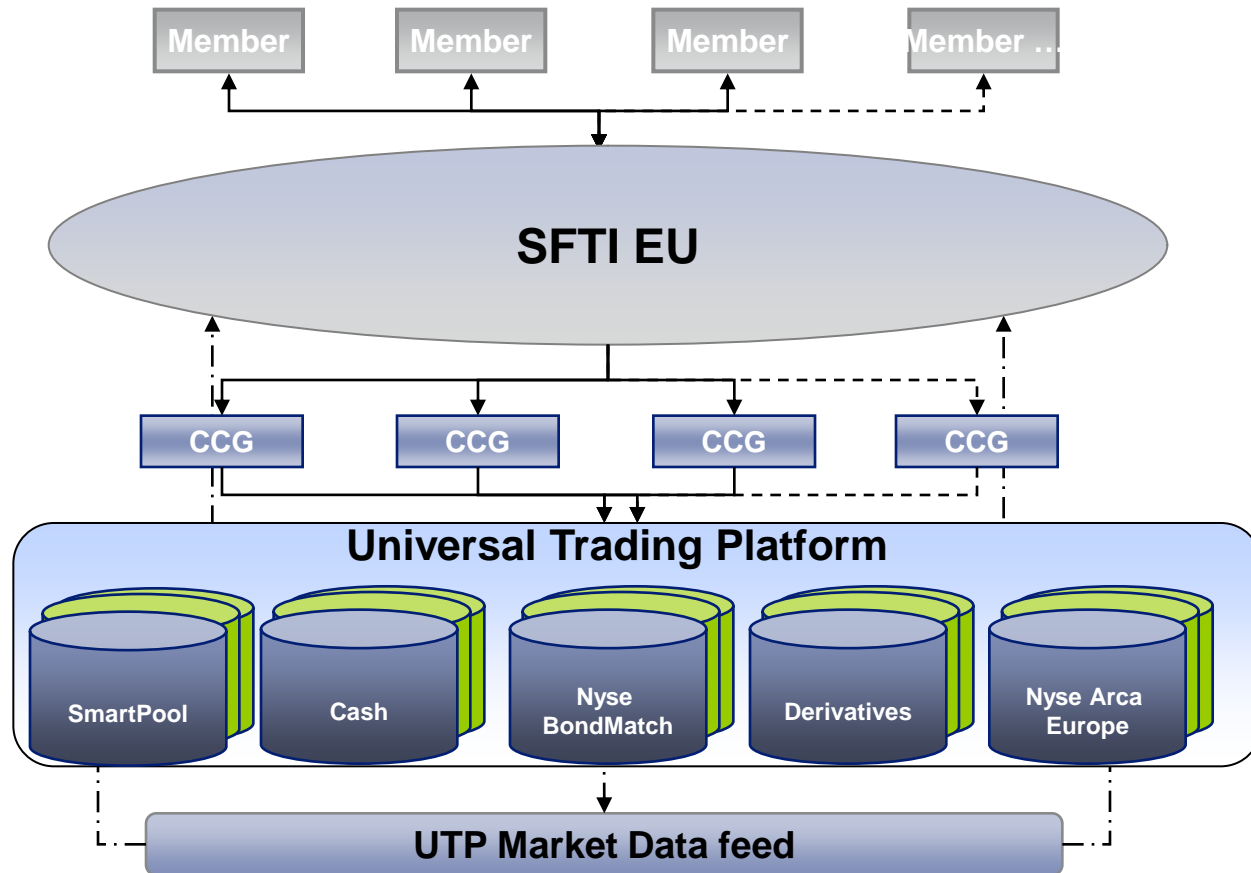
Production



Intermediated
Participant

*Special Agreement to be signed
with a NYSE BondMatch Member*

Architecture: overview

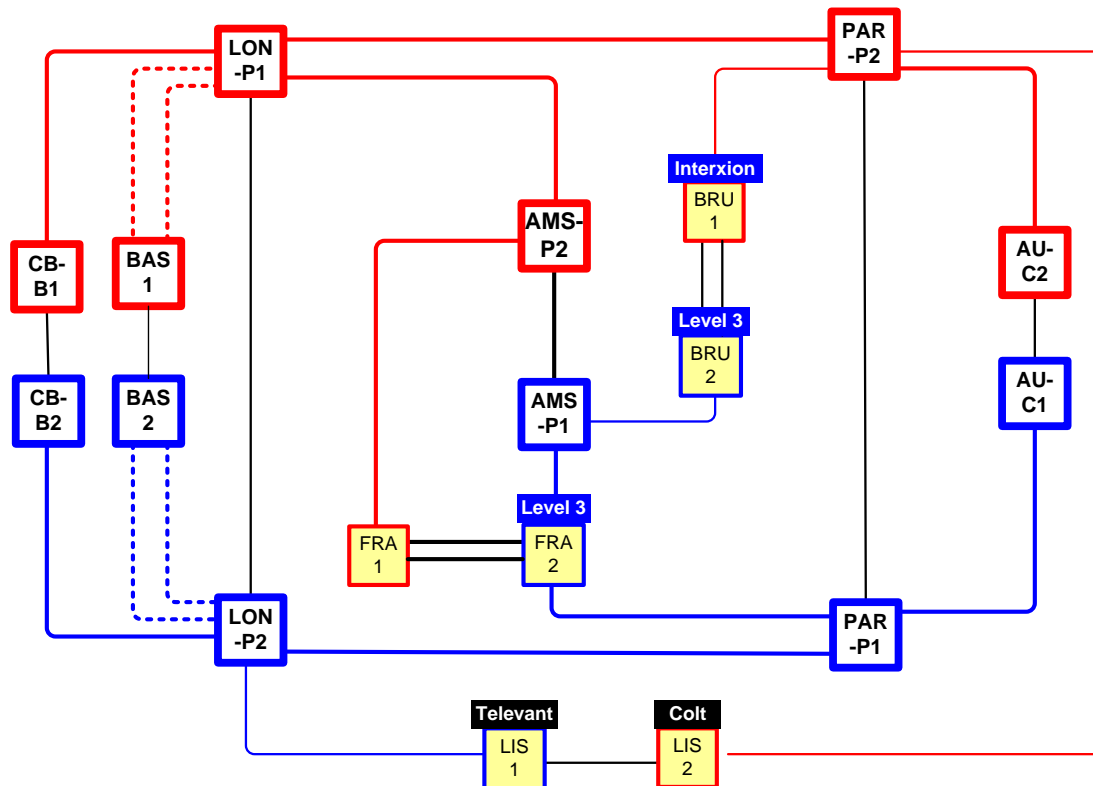


SFTI[®] Europe Rationale

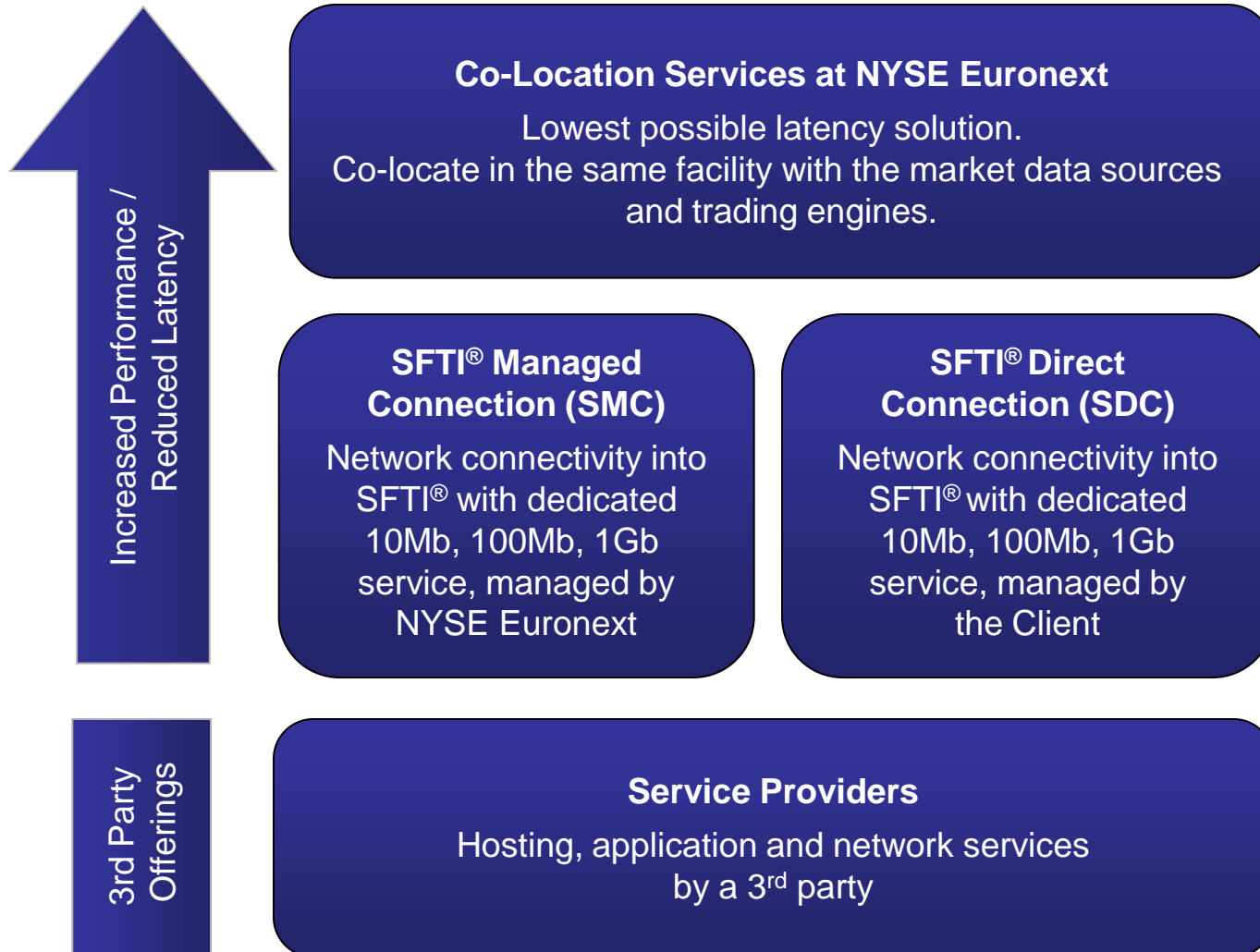
- **Provides necessary resilience for the smooth running of our markets**
 - Dedicated network for NYSE Technologies customers
- **Simplifies NYSE Euronext connectivity**
 - Single network for every market – NYSE Liffe, NYSE Euronext, NYSE Arca Europe, Smartpool, NYSE BondMatch
- **Flexible connectivity options to suit all firms**
 - Choice of access method ('managed' or 'direct' connections, Extranet or Application Service Provider), speed (10Mb, 100Mb, 1Gbps)
- **Utilises shared backbone for optimised, low latency routes**

SFTI Europe Network

- Network deployed and live in London, Paris, Amsterdam, Brussels, Frankfurt and Lisbon
- Customers in other countries long-line into nearest Access Centres
- All customers connect into at least two Access Centres
- Additional cities to be added based on individual business cases
- Majority of customers on 100Mb and 1Gb circuits

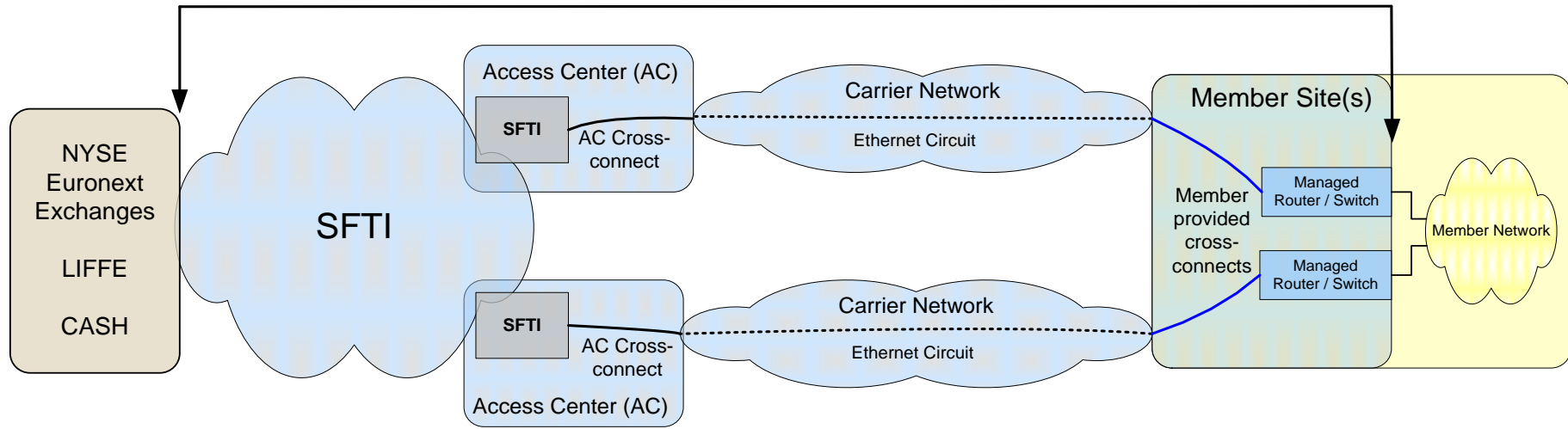


SFTI® - Connectivity Options



1- SFTI Managed Connection (SMC)

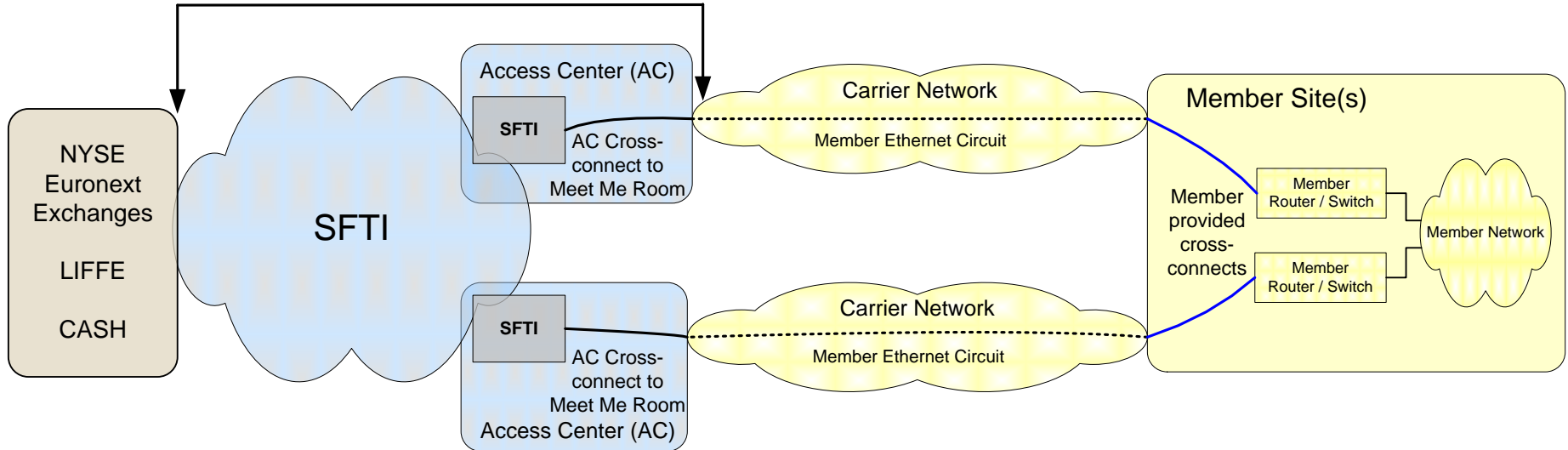
SFTI Managed Connection (SMC) service demarks



Member Model	SFTI Ports	AC Cross Connects	Ethernet Circuits	Member site Cross-connects	Member Premises Equipment
SFTI Managed Connection	Included	Included	Included	Member responsibility	Included

2- SFTI Direct Connection (SDC)

SFTI Direct Connection service demarks

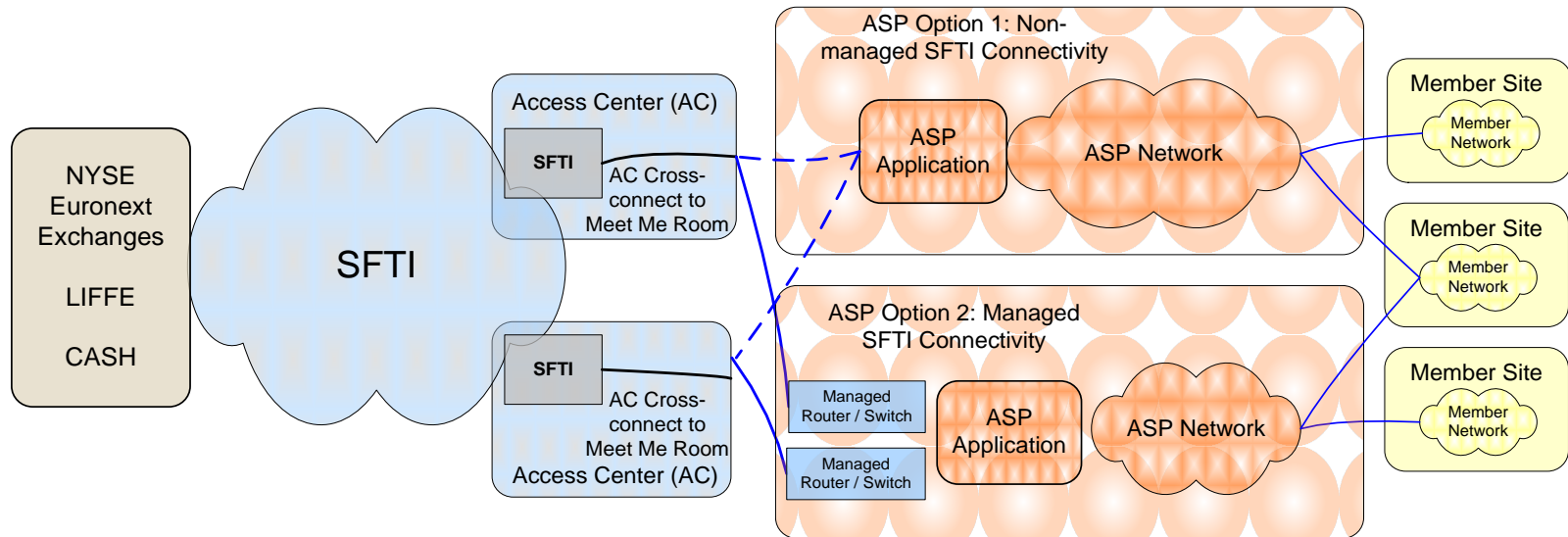


Member Model	SFTI Ports	AC Cross Connects	Ethernet Circuits	Member site Cross-connects	Member Premises Equipment
SFTI Direct Connection	Included	Member to provide to MMR	Member Responsibility	Member responsibility	Member responsibility

London 1 Telehouse East	London 2 Interxion	Paris 1 Telehouse	Paris 2 Interxion	Amsterdam 1 Level 3	Amsterdam 2 Interxion
9 Carriers	9 Carriers	13 Carriers	13 Carriers	9 Carriers	12 Carriers
Verizon	Colt	Verizon	Colt	Verizon	Colt
Abovenet	BT	AT&T	AT&T	AT&T	AT&T/Concert
BT	Cable & Wireless	Belgacom	Belgacom	BT	BT
Cable & Wireless	Cogent	BT	BT	COLT	Cogent
COLT	COLT	Cable & Wireless	Cable & Wireless	Enertel	COLT
Easynet	Easynet	Cegetel	Cegetel	KPN	Enertel
Equant	Global Crossing	Cogent	Cogent	Level 3	Euro Fibre
Level 3	KPN	COLT	COLT	Telia	Global Crossing
Telia	Level 3	Completel	Completel	UPC	KPN
Verizon	Telia	France Telecom	France Telecom	Versatel	Level 3
		KPN	KPN		T-Systems
		Level 3	Level 3		Tiscali
		Telia	Telia		Verizon
		Verizon	Verizon		
Frankfurt1 Equinix	Frankfurt2 Level 3	Brussels1 Interxion	Brussels2 Level 3	Lisbon1 Telvent	Lisbon2 Colt
7 Carriers	7 Carriers	11 Carriers	11 Carriers	11 Carriers	4 Carriers
Colt	Verizon	Colt	Verizon	Portugal Telecom	Colt
BT	BT	AT&T	Belgacom	BT	COLT
COLT	Cable & Wireless	Belgacom	BNIX	AT&T	Novis
Euronet	COLT	BT	BT	Belgacom	ONI
Level 3	Euronet	Cogent	COLT	Cable & Wireless	Portugal Telecom
Mainova	Level 3	COLT	Eurofibre	Cogent	
Telia	Mainova	KPN	KPN	COLT	
Verizon	Verizon	Level 3	Level 3	Global Crossing	
		Sprint	Telenet	KPN	
		Telenet	Telia	Novis	
		Telia	Verizon	Portugal Telecom	
		Verizon		VSNL	

3- Application Service Provider (ASP)

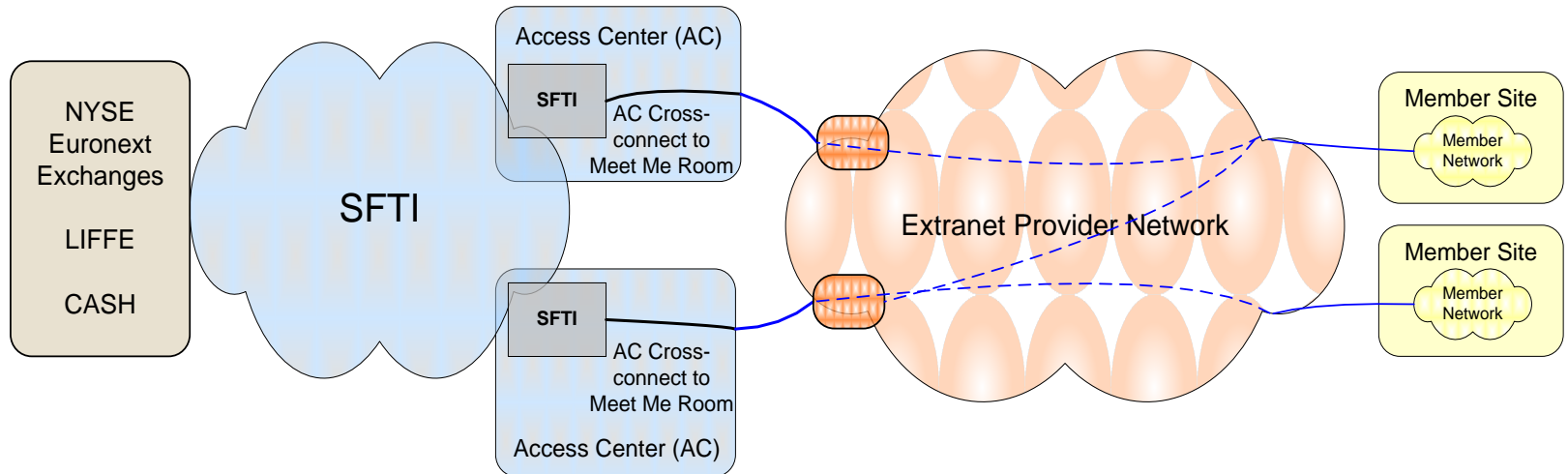
- Provides application software to clients and fronts access to exchanges



Member Model	SFTI Ports	AC Cross Connects	Ethernet Circuits	ASP Premise Equipment	ASP Site Cross-connects	Member Premises Equipment
ASP Member	N/A	N/A	Yes <i>ASP Option 2 Only</i>	Yes <i>ASP Option 2 Only</i>	N/A	ASP or Member Responsibility

4- Extranet Service Provider (ESP)

- Provides aggregated network connectivity for exchange access







Member Model	SFTI Ports	AC Cross Connects	Ethernet Circuits	Extranet site Cross-connects	Member Premises Equipment
EP Member	N/A	N/A	N/A	N/A	Extranet or Member Responsibility

Accredited ESP providers

ESP List
BT RADIANT
ATRIUM
SAVVIS
TNS
SIA-BIT



Service Providers/ISVs

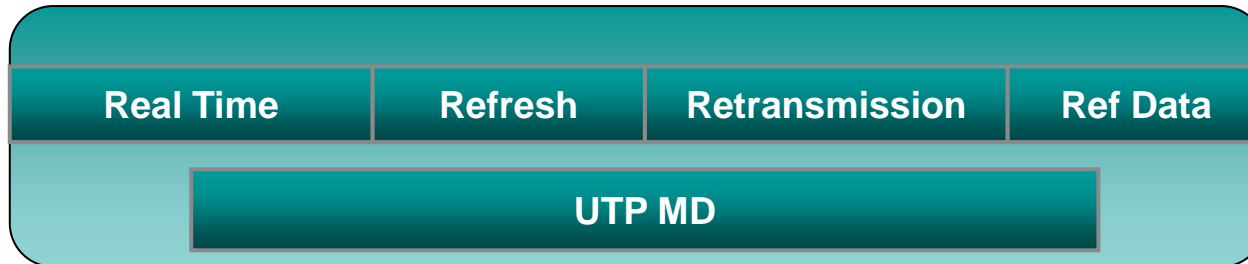
	Software Providers	Website
Bloomberg	Bloomberg (TOMS)	www.bloomberg.com
 Professional Trading Solutions	Deriva	www.deriva.nl
	ION TRADING	www.iontrading.com
ORC	ORC SOFTWARE	www.orcsoftware.com
 REALTIME SYSTEMS	RTS REALTIME SYSTEMS	www.rtsgroup.net
SUNGARD®	SUNGARD	www.sungard.com
	ULLINK	www.ullink.com

Discussions in progress with additional providers (Fidessa , Trading Screen, LatentZero, ThinkLogic, etc.)

Access means

- Nyse BondMatch platform is accessible through the same means as NYSE Euronext markets (SFTI, CCG,UTP MD)
- Two protocols are available for order Entry:
 - FIX 4.2
 - UTP Direct
- Dedicated SLE will be necessary to access NYSE BondMatch
- Dedicated CCGs are assigned to NBM
- Market data is available within the UTP MD protocol-Market Data is Free
- UTP MD Specifications publication
- Test platform available

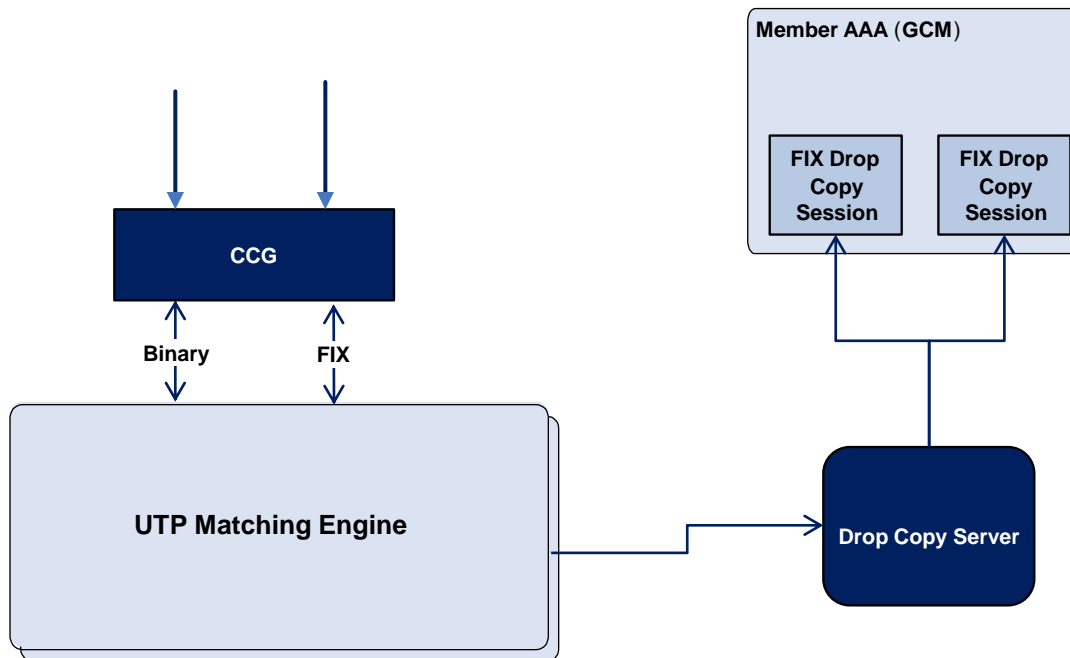
Market Data via UTP MD



- **Market Data: Real time data broadcast via dual multicast streams (A and B)**
 - **Divided into product groups serviced by separate multicast streams**
- **Retransmission: for the re-transmission of a limited number of missed data packets.**
- **Refresh: to provide a Snapshot of the order book at the time of request - would be used for starting your application intraday. This will be provided in dual multicast streams**
- **Reference Data via a separate Multicast channel**

Risk Management via Drop Copy

Will send duplicate Execution Reports to the assigned Risk Manager





Specific details

- Securities traded on NYSE BondMatch are identified by dedicated Symbol
- A NYSE BondMatch trading session is built around a continuous session.

6:30-7:29am: technical opening and connectivity tests.

7:30-8:59am: constitution of the order book, calculation and publication of the opening fixing of prices with association, for each bond in the order book, of an indicative interest rate spread.

9:00am-5:54pm: opening and continuous quotation of orders taking into account the price and order of arrival.

5:55-6:00pm: establishment of a closing price which will be published as a price and which will also result in the publication of an indicative interest rate spread.

6:01-7:00 pm: administrative period (cancellation of orders under certain conditions).

7:00 pm: closure of the system and cancellation of non-executed orders.

Order Message

- The Order Type can be a **Limit Order** or **Market Order** to buy or sell, for any time during the trading day
- **All-Or-None (AON) Order** ensures that its quantity cannot be partially executed.
- Time in Force of the Order information is restricted to **Immediate Or Cancel, Day, Fill or Kill** and **Good Till Time**.



Order message Partial overview

Field	Description	Values
Order Type	Order Type	1 Market 2 Limit
ExecInst	Execution Intrsruction	Blank None
		X Cross
		G All or None
Side	Order Side	1 Buy
		2 Sell
Time in force	Time in Force Validity	0 Day
		3 IOC (Immediate or Cancel)
		4 FOK (Fill Or Kill)
		6 GTD (Good Till Time)
ExpireTimeFlag	Expiration Date/Time Indicator	T ExpireTime field is a time
Rule80A	Order Origin	1 Client
		2 House
		7 Related Party

Order message

Accepted Order/Time in Force combination

The table below shows the time in force that can be chosen for a given order in the continuous market.

Market Phase	Order Type	Execution Instruction	Time In Force
Continuous	Limit	All or None	Day
	Market		GTT
Continuous		Blank	Day
			GTT
	Market		IOC
			FOK



Execution and extended response messages

- Execution and Extended response messages have now 4 new fields:
 - Yield,
 - Spread
 - YieldScale
 - SpreadScale.
- The Yields and Spreads are computed on the Fixed Rate Bonds and disseminated via the Market data feed
- The Yields and Spreads are also confirmed in the Trade Execution report, confirmed after every Trade.



How to get NYSE BondMatch

- Contact membership department at Euronext to request an **access**
- Contact Debt Markets team for any business topics
- Contact Technology Partnerships team at Euronext to choose the **adequate SFTI solution**
 - Contact TP team to initiate connection process according to the chosen SFTI Managed Connection (SMC) or SFTI Direct Connection (SDC)
 - Contact your Application Service Provider (ASP) to initiate connection process to Euronext SFTI architecture via stand alone, light or web solution.
 - Contact your Extranet Service Provider (ESP) to initiate connection process to Euronext SFTI architecture
- Contact the support team to request the necessary **SLE connection** for production and test environment
- Contact TP team
 - To get the necessary **documentation and support** to develop the solution that will be used for order entry and market data in case of in-house development
 - To plan and pass the **conformance test** for order entry solution in case of in-house development
- Contact the support team to plan and pass the **go live test**



Contact details

- General information
 - NYSE BondMatch Market Surveillance
 - Tel: +33 1 49 27 5015
 - Email: bondmatchtrading.eu@nyx.com
- Business & Sales information
 - Debt Markets Dept
 - Tel: +33 1 49 27 1303
 - Email: bondmatch.eu@nyx.com
- Connection information and conformance test :
 - Technology Partnerships
 - Tel : +33 149 27 58 29
 - Email: technologypartnerships@nyx.com
- SLE request and go Live test :
 - Support team
 - Tel: +33 1 49 27 5080
 - Email: supportteam-fr@nyx.com