

Order book examples

New features of the European regulated market for warrants and certificates: order book examples

	RFE	no RFE
1. The issuer is present in the order book, an investor sends a limit order		X
2. The issuer is present in the order book, he updates his quote, the investor is in the order book with a limit order	X	X
3. The issuer is present, two investors trade against each other		X
4. The issuer confirms his quote in RFE mode	X	
5. The issuer improves his quote in RFE mode	X	
6. The issuer does not resend a quote following an RFE message	X	
7. The issuer shifts his quote in RFE mode	X	
8. The issuer is absent, he reverts with a quote, his size is insufficient.	X	X
9. The issuer is present, he updates his quote, his size is insufficient	X	X
10. The issuer is present, he updates his quote, there is only one executable order in the order book.	X	X
11. The issuer is absent, the order book is locked	X	X
12. The issuer is Bid-only (he is sold out)	X	X
13. The issuer is Offer-only (his bid price is lower than the minimum tick size of 1 cent)	X	X
14. The issuer is present, the investor send a market order		X
15. The issuer is present, the investor passes an market order in RFE mode	X	

Issuer orders are represented with the issuer flag

1. The issuer is present in the order book, an investor sends a limit order

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
invA	100103	50	0,75
Issuer	100101	1000	0,75

SELL

Price	Quantity	Order N°	Mmb
0,77	1000	100102	Issuer

New incoming order:

Investor B passes the following order: -100 at 0,75

Execution:

invB - 100 at 0,75
 invA + 50 at 0,75
 Issuer + 50 at 0,75

2. The issuer is present in the order book, he updates his quote, the investor is in the order book with a limit order

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
invA	100103	50	0,75
Issuer	100101	1000	0,75

SELL

Price	Quantity	Order N°	Mmb
0,77	1000	100102	Issuer

New incoming order:

The issuer updates his quote : A1000 at 0,72 / V1000 at 0,74

Execution:

Issuer - 50 at 0,74
 invA +50 at 0,74
 Execution at the improved issuer price and not the investor price: 0,74

3. The issuer is present, two investors trade against each other

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
invA	100103	75	0,77
Issuer	100101	1000	0,76

SELL

Price	Quantity	Order N°	Mmb
0,78	50	100099	invB
0,78	1000	100102	Issuer

New incoming order:

- Investor A updates his price : A75 at 0,78

Execution:

invA + 75 at 0,78
 invB - 50 at 0,78 investor B had priority in the order book
 Issuer - 25 at 0,78

4. The issuer confirms his quote in RFE mode

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100102	1000	0,76

SELL

Price	Quantity	Order N°	Mmb
0,78	1000	100103	Issuer

New incoming order:

- Investor A enters a buy order: +50 at 0,78
- An RFE is sent to the issuer
- The issuer resends the same order : A1000 at 0,76 / V1000 at 0,78 before the end of the refresh period

Execution:

InvA + 50 at 0,78 immediate execution
 Issuer - 50 at 0,78

5. The issuer improves his quote in RFE mode

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100102	1000	0,76

SELL

Price	Quantity	Order N°	Mmb
0,78	1000	100103	Issuer

New incoming order:

- Investor A sends a buy order: +50 at 0,78
- An RFE is sent to the issuer
- The issuer sends : A1000 at 0,75 / V1000 at 0,77 before the end of the refresh period

Execution:

invA + 50 at 0,77 execution at the improved issuer price
 Issuer - 50 at 0,77

6. The issuer does not resend a quote following an RFE message

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100102	1000	0,76

SELL

Price	Quantity	Order N°	Mmb
0,78	1000	100103	Issuer

New incoming order:

- Investor A sends a buy order: +50 at 0,78
- An RFE is sent to the issuer
- The issuer does not send an order during the refresh period

Execution:

invA + 50 at 0,78 execution at the end of the refresh period
 Issuer - 50 at 0,78

7. The issuer shifts his quote in RFE mode

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100102	1000	0,76

SELL

Price	Quantity	Order N°	Mmb
0,78	1000	100103	Issuer

New incoming order:

- Investor A sends a buy order: +50 at 0,78
- An RFE is sent to the issuer
- The issuer resends : A1000 at 0,78 / V1000 at 0,80 before the end of the refresh period

Execution:

No execution

State of the order book:

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
invA	100105	50	0,78
Issuer	100106	1000	0,78

SELL

Price	Quantity	Order N°	Mmb
0,80	1000	100107	Issuer

Investor A has priority in the order book

8. The issuer is absent, he reverts with a quote, his size is insufficient

ORDER BOOK

Instrument: 9424X

State: Authorized - Reserved

BUY

Mmb	Order N°	Quantity	Price

SELL

Price	Quantity	Order N°	Mmb
0,77	50	100093	invA
0,77	1000	100094	invB

New incoming order:

- ▮ The issuer was absent, the instrument is reserved, he receives a message
- ▮ The issuer reverts with a fresh quote : A1000 at 0,78 / V1000 at 0,80

Execution:

- ▮ The instrument is reserved because the Theoretical Opening Price (0,77) is beyond the issuer quote
- ▮ Either the issuer reajusts his price to 0,77: partial execution for 1000 at 0,77 (50 for invA and 950 for invB)
- ▮ Either the issuer reajusts his size to 1050 minimum: total execution at 0,78

9. The issuer is present, he updates his quote, his size is insufficient

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100101	1000	0,76

SELL

Price	Quantity	Order N°	Mmb
0,77	50	100093	invA
0,78	1000	100104	invB
0,78	1000	100102	Issuer

New incoming order:

- ▮ The issuer updates his quote: A1000 at 0,78 / V1000 at 0,80 before the end of the refresh period

Execution:

- ▮ No execution: offer size = 1050 > LP size = 1000
- ▮ Either the issuer reajusts his size to 0,77: execution at 0,77 (invA for 50)
- ▮ Either the issuer reajusts his size to 1050 minimum: total execution at 0,78

10. The issuer is present, he updates his quote, there is only one executable order in the order book

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100101	1000	0,76

SELL

Price	Quantity	Order N°	Mmb
0,77	5000	100103	invA
0,78	1000	100101	Issuer

New incoming order:

■ The issuer updates his quote : A1000 at 0,78 / V1000 at 0,81 there is only one executable order in the order book

Execution:

invA - 1000 at 0,78 partial execution at the issuer price

Order book:

State: Authorized - Reserved

BUY

Mmb	Order N°	Quantity	Price

SELL

Price	Quantity	Order N°	Mmb
0,77	4000	100103	invA
0,81	1000	100106	Issuer

The instrument is reserved as the issuer is absent on the buy side

11. The issuer is absent, the order book is locked

ORDER BOOK

Instrument: 9424X

State: Authorized - Reserved

BUY

Mmb	Order N°	Quantity	Price
invA	100115	50	0,75

SELL

Price	Quantity	Order N°	Mmb
0,75	50	100110	invB
0,80	50	100116	invC

New incoming order:

- The issuer was absent, the instrument is reserved, he receives a message

Execution:

- Either the issuer reverts with:
A1000 at 0,73/V1000 at 0,74

invA	+ 50 at 0,74	Issuer price
Issuer	- 50 at 0,74	
- Either the issuer reverts with:
A1000 at 0,75/V1000 at 0,77

invA	+ 50 at 0,75	
invB	- 50 at 0,75	
- Either the issuer reverts with:
A1000 at 0,77/V1000 at 0,79

Issuer	+ 50 at 0,77	Issuer price
invB	- 50 at 0,77	

12. The issuer is Bid-only (he is sold out)

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

Bid-only

BUY

Mmb	Order N°	Quantity	Price
invA	100115	100	0,76
Issuer	100100	1000	0,75

SELL

Price	Quantity	Order N°	Mmb
0,80	50	100116	invB
1,50	1000	100112	invC

New incoming order:

- The Issuer is absent on the sell side
- The situation is flagged "Bid-Only"

Execution:

- Investor D can be executed if he sends V50 at 0,76
 - invA + 50 at 0,76
 - invD - 50 at 0,76
- Investor E can be executed if he sends A50 at 0,80
 - invE + 50 at 0,80
 - invB - 50 at 0,80
- The seller at 1,50 will not be executed as the matching engine automatically deducts (0,78 in this example) a maximum reservation threshold to avoid trades at erroneous prices

13. The issuer is Offer-only (his bid price is lower than the minimum tick size of 1 cent)

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

Offer-only

BUY

Mmb	Order N°	Quantity	Price
invA	100115	100	0,01

SELL

Price	Quantity	Order N°	Mmb
0,03	50	100116	invB
0,04	1000	100111	Issuer
0,11	1000	100112	invC

New incoming order:

- The issuer is not in the order book on the buy side
- The situation is flagged with an Offer-only flag

Execution:

- Investor B can be executed if he changes his price: V50 at 0,01
 - invA + 50 at 0,01
 - invB - 50 at 0,01

14. The issuer is present, the investor send a market order

ORDER BOOK Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100101	1000	0,75

SELL

Price	Quantity	Order N°	Mmb
0,77	1000	100102	Issuer
1,20	1000	100099	invA

New incoming order:

- Investor B sends a buy market order for 1200

Execution:

invB + 1000 at 0,77
Issuer - 1000 at 0,77

- The balance of the order will not be executed into the depth of the order book, it will stay in the book

- If the issuer revert with an identical new quote, the balance of the order will be executed

invB + 200 at 0,77
Issuer - 200 at 0,77

Order book:

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100101	1000	0,75

SELL

Price	Quantity	Order N°	Mmb
0,77	800	100102	Issuer
1,20	1000	100099	invA

Order book examples

15. The issuer is present, the investor passes an market order in RFE mode

ORDER BOOK

Instrument: 9424X

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100101	1000	0,75

SELL

Price	Quantity	Order N°	Mmb
0,77	1000	100102	Issuer
1,20	1000	100099	invA

New incoming order:

- Investor B sends a buy market order for 1200
- An RFE message is sent to the issuer
- The issuer resends the quote: A1000 at 0,75/V1000 at 0,77

Execution:

invB + 1000 at 0,77
Issuer - 1000 at 0,77

- The balance of the order will not be executed into the depth of the order book, it will stay in the book
- If the issuer revertst with an identical new quote, the balance of the order will be executed

invB + 200 at 0,77
Issuer - 200 at 0,77

Order book:

State: Authorized - Open

BUY

Mmb	Order N°	Quantity	Price
Issuer	100101	1000	0,75

SELL

Price	Quantity	Order N°	Mmb
0,77	800	100102	Issuer
1,20	1000	100099	invA

CONTACTS

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