Trading in links with Liquidity provider on Equities market

This manual describes the implementation of functionality of trades in Links with Liquidity providers and includes information about Links with Liquidity providers for external systems using ASTS Bridge or MFIX Trade service to interact with MOEX Equity market Trading system.

This version focused on sequence of steps for Liquidity providers (hereinafter Providers) and regular trading participants (hereinafter Consumers or trading participants) while trading with external liquidity. The process includes pre-matching stage when preliminary trade is registered.

The following structure of FIX messages is based on 4.8 version of MFIX trade, MFIX Trade Capture services.

The following structure of information objects is based on IFC_Broker39 version of interface.

This document contains information about trading reports related to the trades with Liquidity providers.

The following text only describes table fields and transactions that have key meaning for the preliminary matching technology understanding, and preliminary trades conclusion. For the explanation of other fields refer to the interface description.

Table of contents

Document Version History 3
Trading boards settled in foreign currency 3
Trading with Liquidity provider's quotes using FIX protocol 4
Related ASTS Bridge interface objects 6
Reference tables 6
Trading tables 6
Trading transactions 6
Changes in the broker interface structure related to trading with Liquidity providers 6
Orders and quotes rejection to avoid price crossing 8
Trading with external Liquidity provider via ASTS Bridge 9
Preliminary trade non-confirmation 11
Withdrawal of partially filled order 13
Withdrawal of fully pre-matched order 14
Confirmation of quote volume partially 15
Changes in trade reports related to trading with Liquidity providers 16
Quote register 16

Document Version History

Version	Date	Description
1.0	11 October 2021	Original version of this document

Trading boards settled in foreign currency

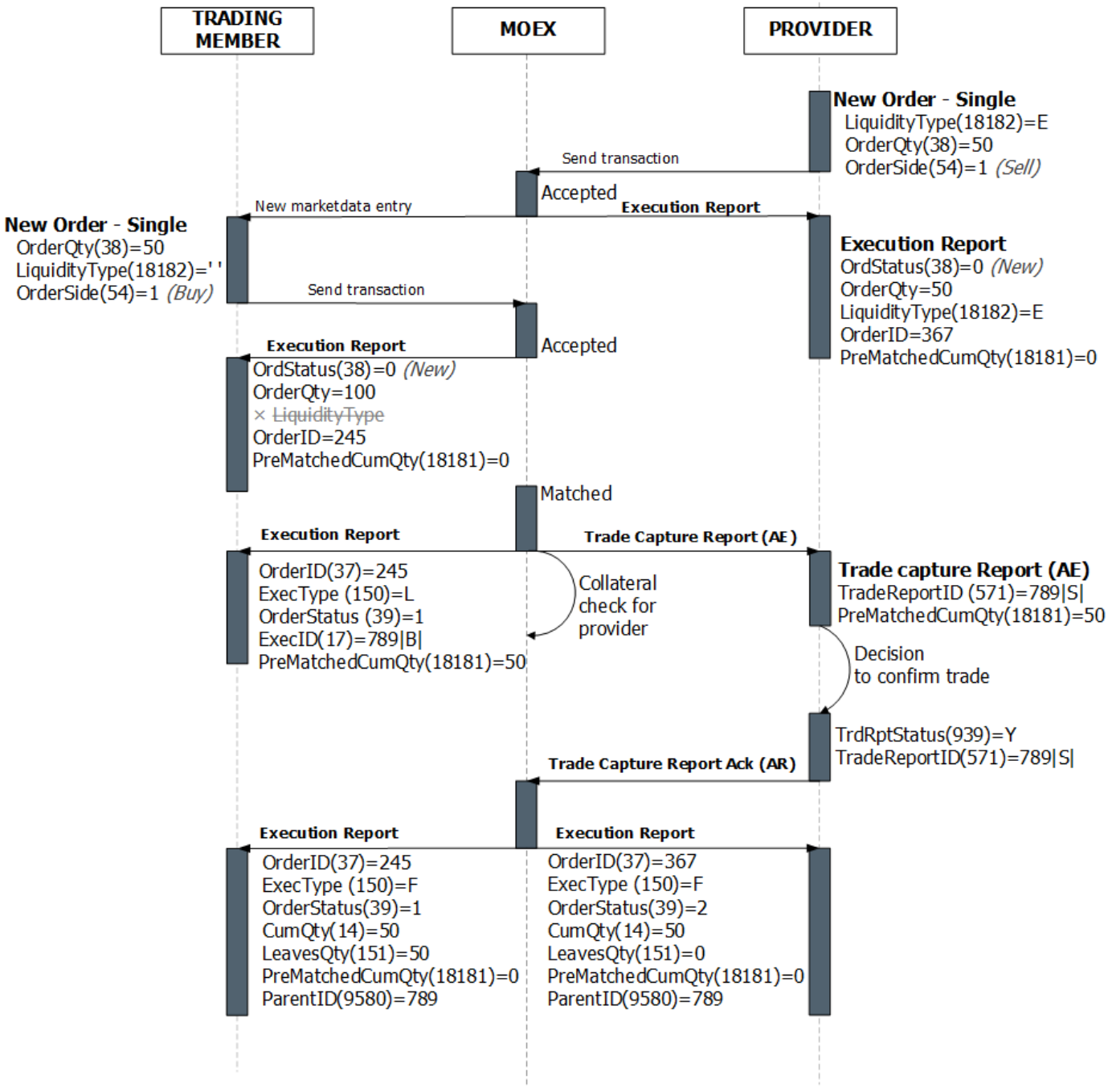
The following boards of T+ Main trading mode are intended for trading with external liquidity providers:

Board	Board name	Settlement code
TQBD	T+: FRGN stocks, DRs USD	Y2
FQBE	T+: FRGN stocks, DRs EUR	Y2
FQBH	T+: FRGN stocks, DRs HKD	Y2

By 6 December 2021 the TQBD trading board will have been available for trading in production environment.

Trading with Liquidity provider's quotes using FIX protocol

The FIX protocol is recommended to be used as the main way to access trades with external liquidity.



Sequence of steps:

1. Liquidity provider sends **New Order Single (D)** message with a flag *LiquidityType (18182) = E* that indicates a quote based on external liquidity.
2. FIX server replies with **Execution Report (8)** message with *ExecType (150) = 0 (New)* and *OrderID = 367*
3. Regular trading participant sends matching **New Order Single** message that allows matching with any liquidity type (no LiquidityType field or LiquidityType = <SPACE>)
4. FIX server replies with **Execution Report (8)** message with *ExecType (150) = 0 (New)* and *OrderID = 245*
5. Preliminary trade occurs:
    - Provider receives **Trade Capture Report (AE)** message with pre-trade parameters

- Regular trading participant receives **Execution Report (8)** with *ExecType (150) = L* and pre-trade parameters

6. Liquidity Provider sends **Trade Capture Report Ack (AR)** message with pre-trade ID and trade confirmation
7. FIX server sends **Execution Report (8)** with *ExecType (150) = F* to both parties.

If Liquidity provider sends trade cancellation at step 6, then FIX server:

- Sends to regular trading participant an **Execution Report (8)** with *ExecType (150) = H* and increased by rejected trade volume *LeavesQty* field value.
- Sends to Liquidity provider an **Execution Report (8)** with *ExecType (150) = H* and then **Execution Report (8)** with *ExecType (150) = 6* (pending cancel while waiting for completion of confirmation or rejection of all pre-matched trades). After reporting all *150 = F* or *150 = H* messages, server finally sends **Execution Report (8)** with *ExecType (150) = 4*, *OrderStatus (39) = 4*.

If regular trading participant or Liquidity provider sends **Order Cancel Request** while waiting for pre-trade confirmation (even if available for execution balance is zero), then:

- FIX server replies with **Execution Report (8)**, where *ExecType (150) = 6* (pending cancel). Cancelling order does NOT mean rejection of pre-matched trades. Pre-matched trades may be confirmed or rejected by provider via messages of type **Trade Capture Report Ack (AR)**.
- If pre-matched trade is rejected, then its volume does NOT become available for execution for order in pending cancel status. FIX server sends final **Execution Report (8)** with *150 = 4*, *39 = 4* after sending for pending cancel order all Execution Reports with *ExecType (150) = F* or *ExecType (150) = H*.

Related ASTS Bridge interface objects

Reference tables

BOARDS – trading boards.

SECURITIES - securities (traded instruments) traded on different trading boards.

Trading tables

EXT_ORDERBOOK – extended order book table. contains information on current best buy & sell prices and activation time for a particular security. Each row corresponds to a unique pair of price & activation time and shows the total number of lots to sell or to buy at this price.

ORDERS – orders sent by trading firm since the beginning of the current trading session.

TRADES – information on all trades registered in the trading system for a trading firm since the beginning of the current trading session.

NEGDEALS – technical negotiated deals to conclude trades after preliminary matching. Table also contains information on all negotiated deals submitted by the trading firm since the beginning of the trading session.

ALL_TRADES – anonymous information on all trades registered in the Trading System for a trading firm since the beginning of current trading session.

Trading transactions

ORDER – enter order.

WD_ORDERS – withdraw active (not completely matched) order.

CONFIRM_PREMATCH_TRADE – transaction is used by Liquidity provider to confirm or decline preliminary trade.

Changes in the broker interface structure related to trading with Liquidity providers

IFCBroker39 interface version contains the following new fields:

1. The new field in the ORDER transaction LIQUIDITYTYPE. The field has the following values set:
   - *I* – Inner liquidity only;
   - *E* – External quote;
   - ' ' – default value (Additional liquidity is allowed).
2. The new field LIQUIDITYTYPE in ORDERS and ONEORDER tables. The field has same values as above.
3. PREMATCHEDBALANCE field in ORDERS and ONEORDER tables to display volume of order that is pre-matched.
4. NEGDEALS table has the new PARENTTRADENO field to mark technical trades with identifier of the original trade with a Liquidity provider.
5. New values in the TTradeStatus enumerated type for trades with Liquidity provider:
   - 'L' – Confirmation by Liquidity provider is required
   - 'H' – Liquidity provider's trade has that status while external quote is checked for sufficiency.

6. New value for TTradeType enumerated type 'Q' – Pre-match trade with Liquidity provider.
7. New values for TOrderCancelReason type:
    - 36 - Cancellation of active quotes due to the trading session end
    - 37 - Internal liquidity order is rejected before trade conclusion with external quote
    - 38 - Quote is rejected before matching with active order
    - 39 - Canceled due to liquidity provider confirmation timeout
    - 40 - Declined by liquidity provider
    - 41 - Canceled due to collateral deficiency for external quote of Liquidity provider.
8. The new CONFIRM_PREMATCH_TRADE transaction to accept or decline preliminary trades. The transaction is intended for Liquidity providers.
9. TRADES table has the new CANCELREASON field to specify the reason of trade cancellation by a liquidity provider:
    - 39 - Canceled due to liquidity provider confirmation timeout
    - 40 - Declined by liquidity provider
    - 41 - Canceled due to collateral deficiency for external quote of Liquidity provider.

Orders and quotes rejection to avoid price crossing

The following restrictions are applied to price levels crossing of provider's quote and consumer's order:

1. New external quote will be cancelled before pre-matching in the following cases:
   - Order queue contains active suited order of inner liquidity
   - Order queue contains active suited order of additional liquidity
   - Order queue contains active suited opposite external quote.

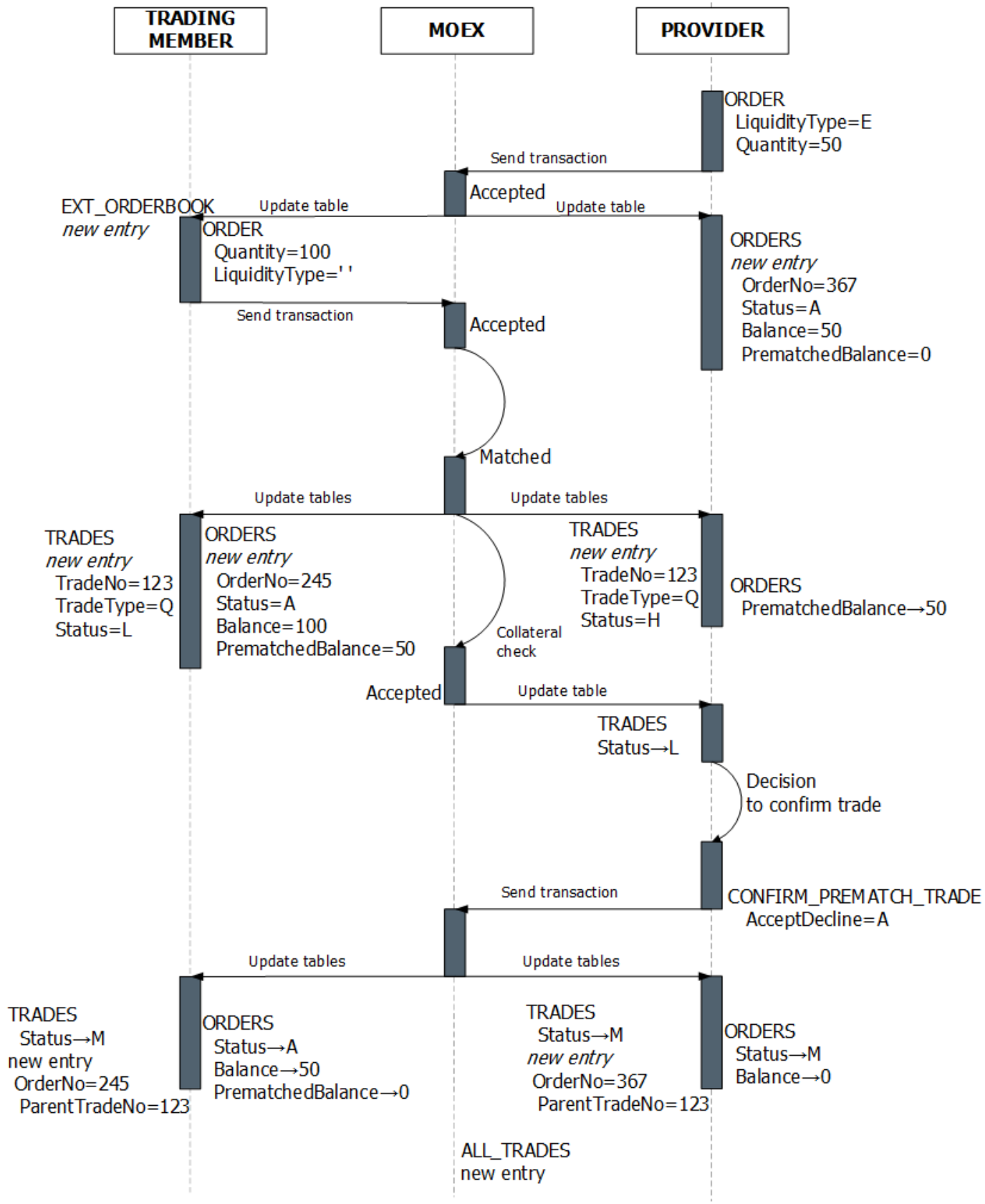
   In those cases record table with data per canceled quote

   CancelReason = 38 (Quote is rejected before matching with active order) in the ORDERS table.
2. New order of inner liquidity will be cancelled before preliminary matching in the following case:
   - Order queue contains active suited opposite external quote.

   In that case record with data per order of inner liquidity will have

   CancelReason = 37 (Internal liquidity order is rejected before trade conclusion with external quote) in the ORDERS table.

Trading with external Liquidity provider via ASTS Bridge



Sequence of steps:

1. Liquidity provider sends quote to the Trading system using ORDER transaction with
   LiquidityType = E
2. Regular trading participant sends ORDER transaction with
   MKTLIMIT – L (market order are not allowed),
   LIQUIDITYTYPE – default value – Additional liquidity order.

Orders with IMMCANCEL = N (Fill or Kill) or IMMCANCEL = W (Immediate or cancel) are non-acceptable.

Order of trading participant is checked as usual. Collateral is blocked based on the order.

3. In order that quote and counter-order are pre-matched and preliminary trade is concluded, they must contain same values in the following parameters: SECBOARD, SECCODE, SETTLECODE, crossed price levels, except restrictions described above. After preliminary matching both consumer and provider have new record in TRADES where:

   TRADETYPE = Q (Pre-trade),

   STATUS = L for consumer's record and

   STATUS = H (check for collateral) for provider's record.

   NEGDEALS table is supplemented with records about technical orders by consumer and by provider where:

   PARENTTRADENO –preliminary trade number in the Trading system

   CPFIRMID does not contain any data about counterparty firm.

   Technical order on behalf of regular trading participant does not lead to collateral blocked. Both parties can not withdraw technical orders.

   Records with data per original orders in the ORDERS table of consumer and provider have information about pre-matched volume as value of the following fields:

   PrematchedBalance field – total volume of pre-trades based on original order

   Balance – order volume remains unmatched; value does not change until end trade is concluded.

4. Quote of Liquidity provider is checked for collateral sufficiency. In case of success, record of pre-matched trade in the TRADES table will be changed for provider:

   Status = L (Confirmation by liquidity provider required)

5. To confirm trade conclusion, liquidity provider sends the CONFIRM_PREMATCH_TRADE transaction with the following parameters

   BuySell – quote direction,

   TradeNo – preliminary trade number,

   AcceptDecline = A (Accept).

   Provider can send the transaction within the prescribed by Moscow Exchange period.

6. After trade is confirmed by Provider, new actual trade will be concluded between provider and consumer. Records will appear in the TRADES table for both consumer and provider, where:

   TradeNo – unique number of actual concluded trade,

   ParentTradeNo – link to preliminary trade,

   OrderNo –order number from which the trade originates,

   Microseconds – time when trade was confirmed in the Trading system,

   CPFIRMID does not contain data per counterparty firm.

   Record with data per concluded trade will appear in the ALL_TRADES table.

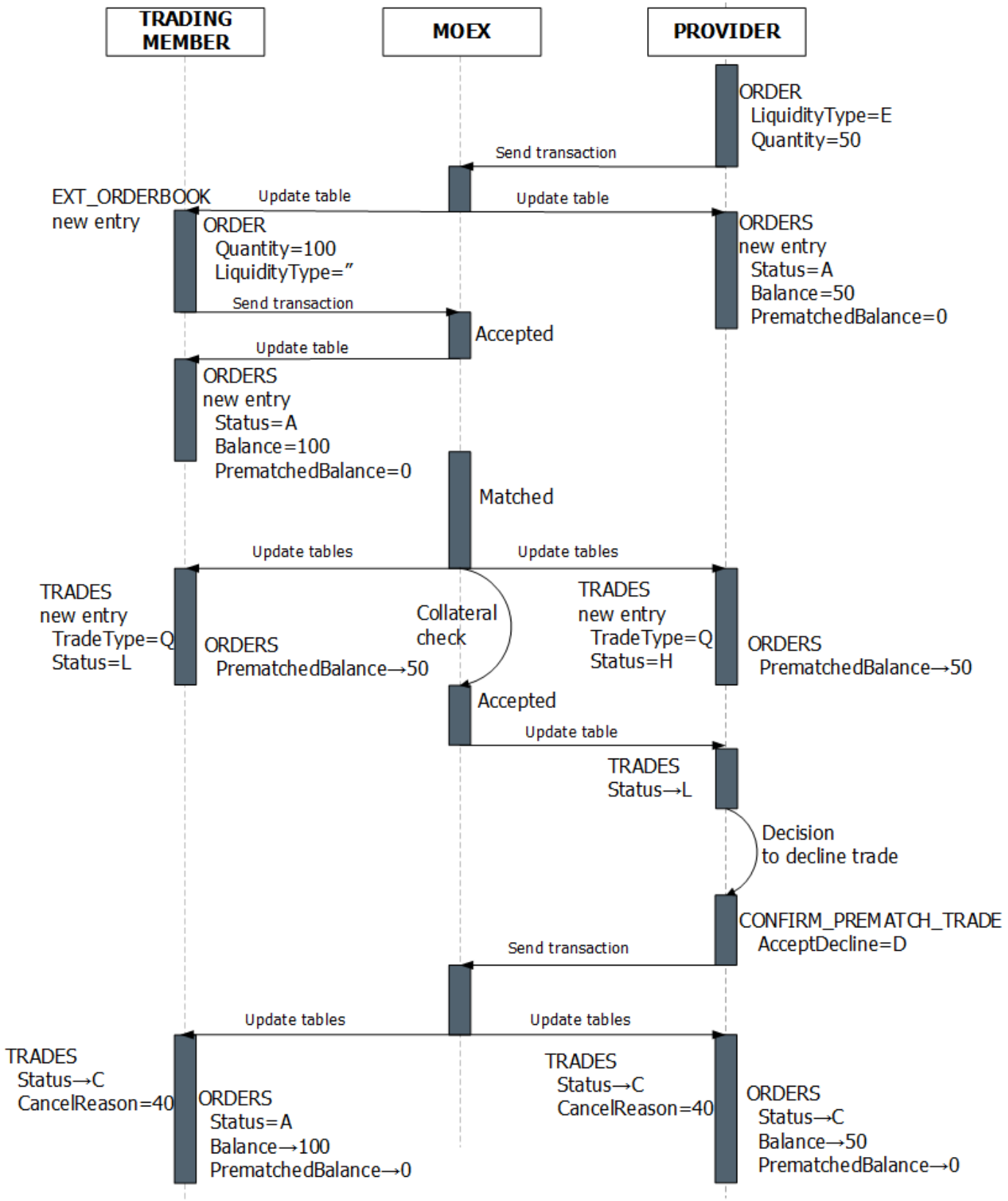
7. Unmatched balance of order having IMMCANCEL = ' ' parameter (Put into queue) remains available for executing. Order will get *Inner liquidity* parameter and will be put into order queue. Record about order in the ORDER table will have following parameters:

   Balance = Balance – PrematchedBalance

   LiquidityType = I

8. Unmatched balance of provider's quote will be withdrawn.

Preliminary trade non-confirmation



Liquidity provider has opportunity to decline trade conclusion after their quote was pre-matched.

If Liquidity provider decide to decline trade conclusion based on pre-matched trade, then CONFIRM_PREMATCH_TRADE transaction should be used with the following parameters:

BuySell – quote direction,

TradeNo – preliminary trade number,

AcceptDecline = D (Decline).

The Cancel Reason of the trade in the TRADES table will change to

CancelReason = 40 (Withdrawn by liquidity provider)
for both consumer and provider.

Decline trade conclusion is equivalent to expiration of period without provider send CONFIRM_PREMATCH_TRADE transaction. In case of time expiration, The Cancel Reason of trade in the TRADES table will change to

CancelReason = 39 (Canceled due to liquidity provider confirmation timeout).

If provider's quote fails collateral check, The Cancel Reason of trade in the TRADES table will change to

CancelReason = 41 (Canceled due to collateral deficiency of liquidity provider order)

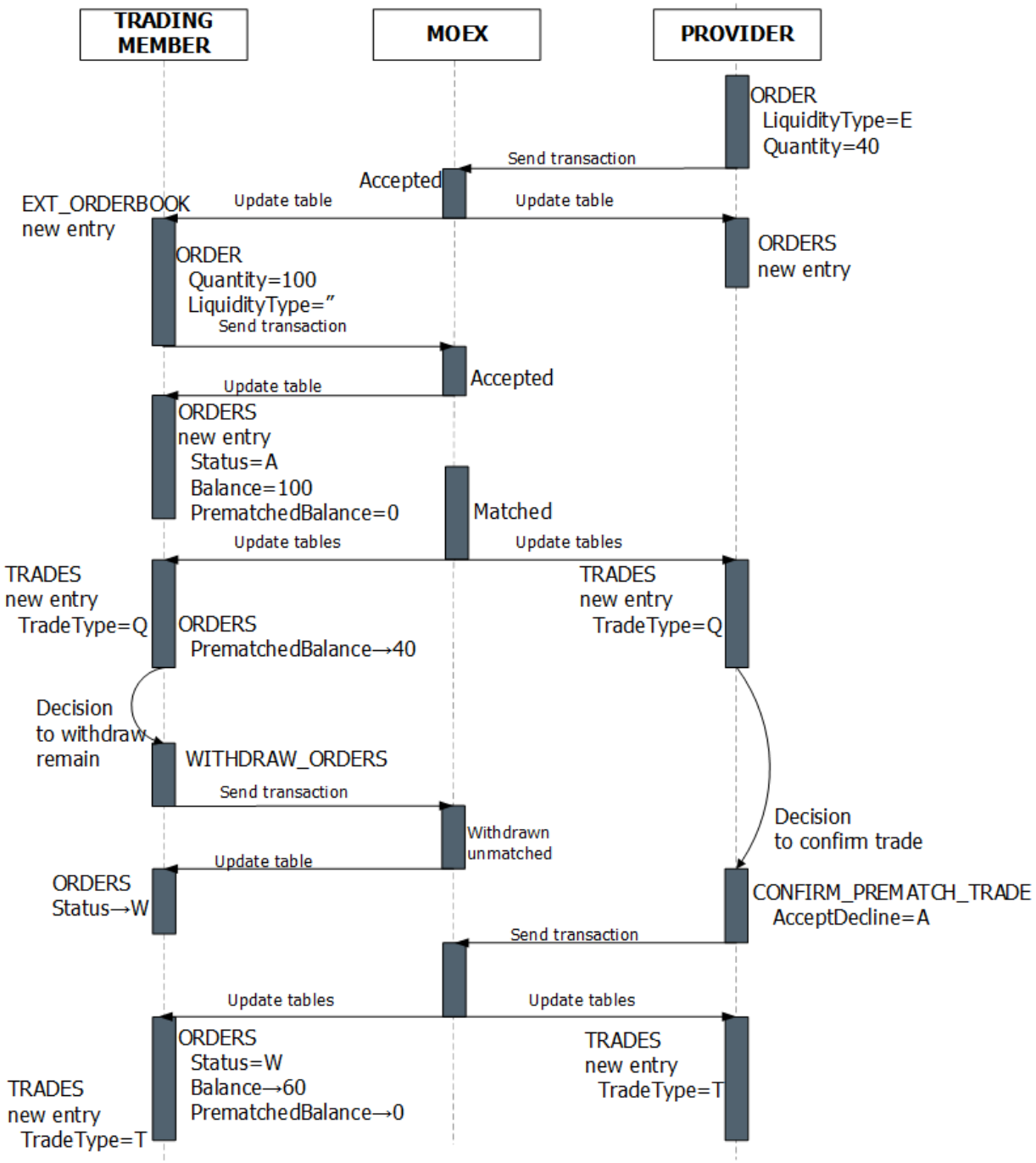
All described cases when pre-matched traded does not lead to real trade conclusion, orders in the queue will be processed by the following rules:

Provider's quote will be fully canceled, exclude volume have already pre-matched by other orders

Consumer's limit order that has "Put into queue" parameter will be put into order queue with the new position number and volume of Balance to subsequent matching with counter-orders.

Withdrawal of partially filled order

There is non-zero pre-matched balance of order. Consumer withdraws an unmatched part of order.



To withdraw order, Consumer sends WD_ORDERS transaction. To withdraw quote, Provider sends WD_QUOTES transaction.

It is not permitted to withdraw pre-matched volume of orders and quote. The PrematchedBalance field in the ORDERS table accounts volume that cannot be withdrawn.

If consumer withdraws fully pre-matched order, Parameters of the record in the ORDERS table will be changed to

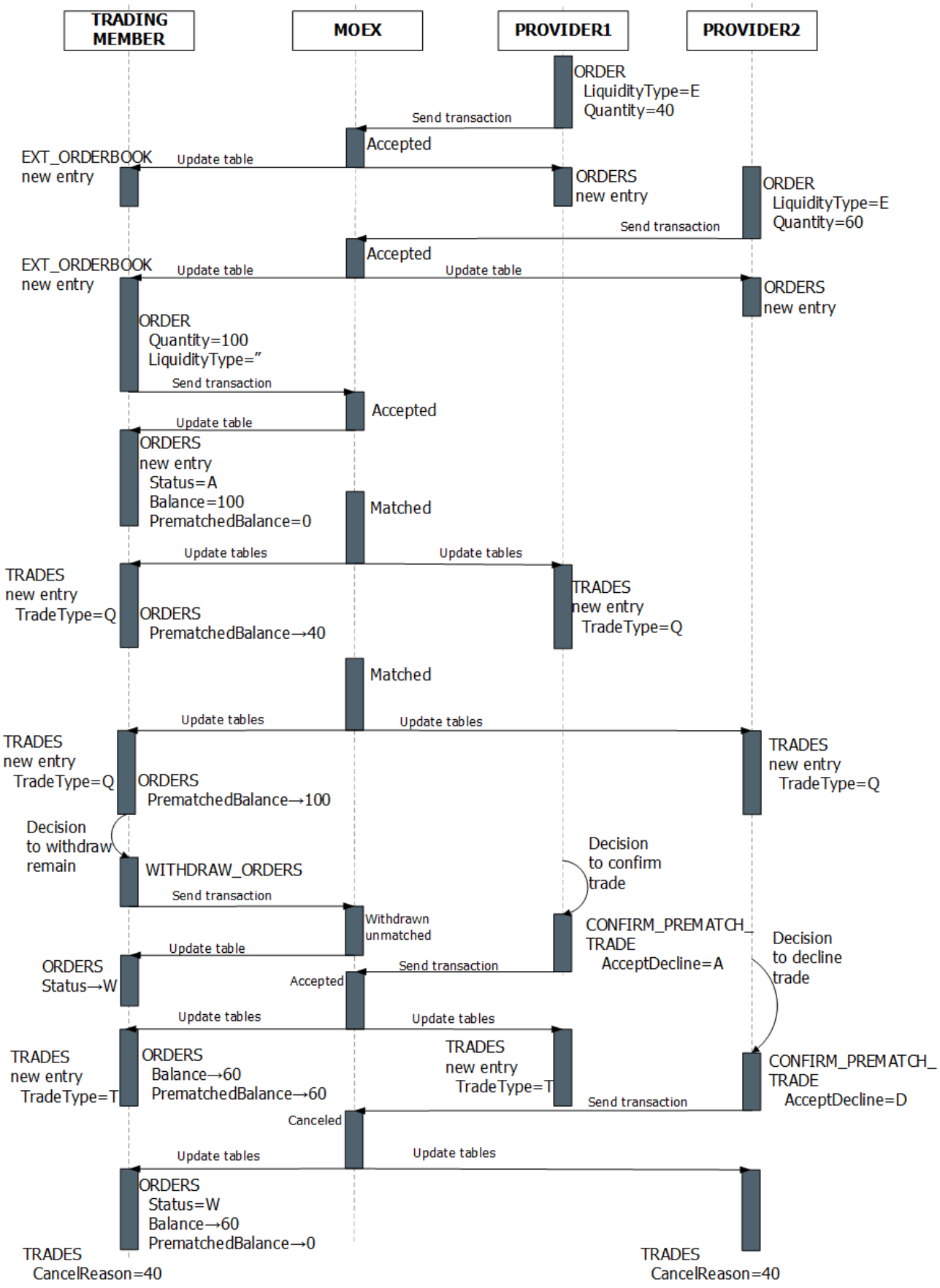
Balance = PrematchedBalance

Status = W

Volume of pre-matched part of order will be accounted as trade volume if Provider confirms actual trade.

Withdrawal of fully pre-matched order

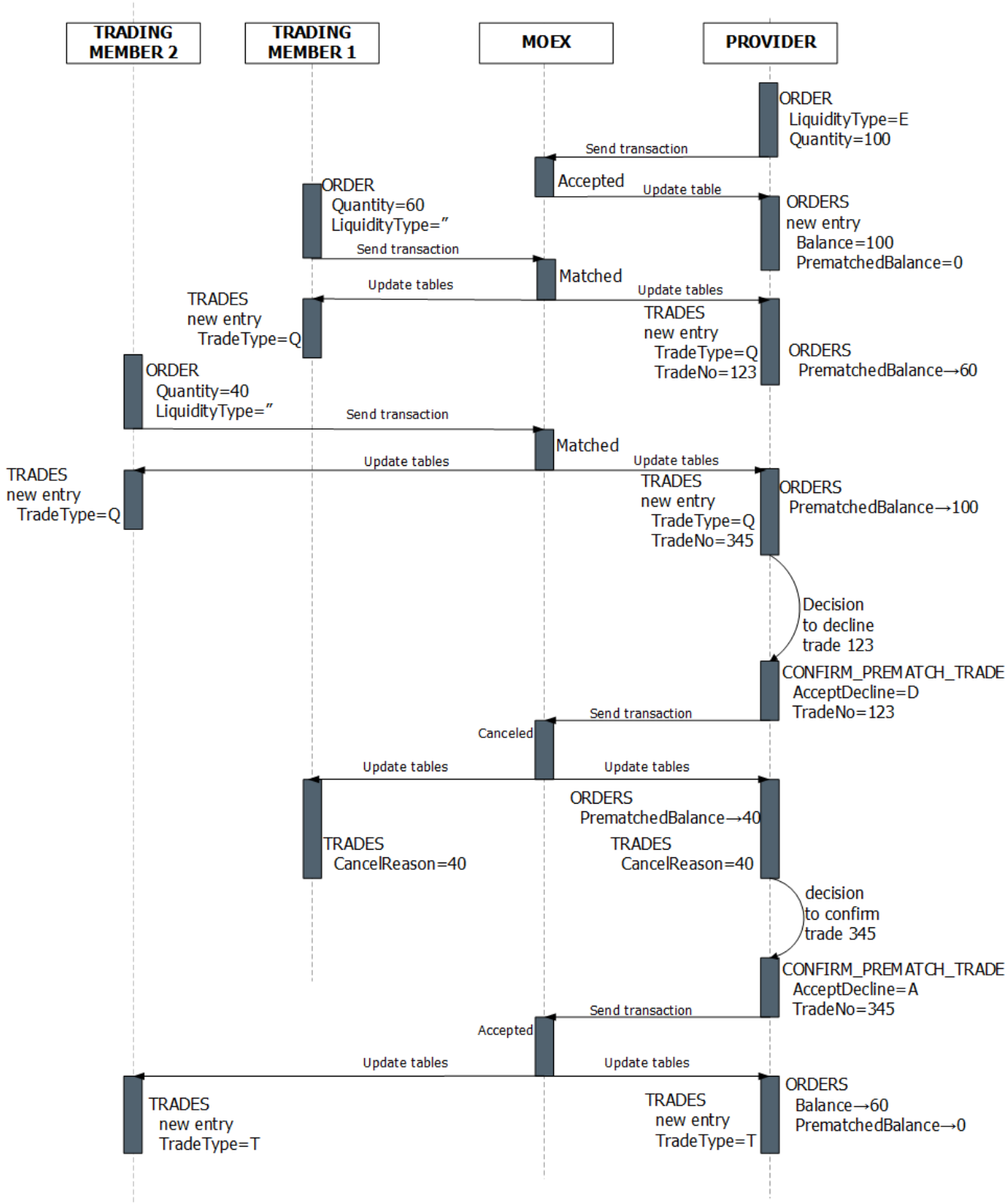
Additional liquidity order is pre-matched by full volume with two quotes. Provider declines actual trade.



If Consumer sends WITHDRAW_ORDERS transaction for order that volume is fully included in pre-matching trades and then Provider declines actual trade conclusion, order will be withdrawn by full volume and will not be returned into the order queue.

Confirmation of quote volume partially

Provider's quote is accounted in pre-matching trades with two consumers' orders. Provider decides to accept one of them.



If an actual trade conclusion based on a pre-matching trade is not occurred, its volume will not be returned into the order queue.

Actual trade will be concluded based on pre-matching trade by the volume which was accepted by provider.

Providers are able to withdraw unmatched part of their quote.

Changes in trade reports related to trading with Liquidity providers

The following trading reports will be supplemented with new attributes:

1. **SEM02** Order register

The RECORDS node of the report will be supplemented with LiqSource attribute. Attribute is specified for limit orders only.

Node	Attribute	Description	Required	Type	Length	Decimals
RECORDS		Element with data per order				
	LiqSource	Source of liquidity	No	string	1	

2. **SEM03** Trades register

The RECORDS node of the report will be supplemented with LiqSource attribute. Attribute is specified for trades based on limit orders only.

Node	Attribute	Description	Required	Type	Length	Decimals
RECORDS		Element with data per order				
	LiqSource	Source of liquidity	No	string	1	

Quote register

There is new report **SEM02Q** Quote register, similar to an Order register.

With Quote register MOEX provides information about all quotes entered by Liquidity provider.

SEM04 Transaction register also contains information about rejected quotes. As a quote rejection reason one of the following may be specified:

- Quote price levels are crossed with the opposite quote
- Inappropriate quote details
- Incorrect quote format
- Inappropriate combination of quote details for a specific board/period
- Inappropriate client code
- Rejection to accept a trade or time expiration for accepting
- Clearing organization reported about impossibility of the quote registration
- Clearing organization reported about collateral insufficiency for the quote
- Trading Member/Trading ID permission denied
- Maximum number of quotes volume has been reached
- The market is closed

The format of new SEM02Q report will be based on SEM02 report format. You may find specifications of securities market reports at the MOEX website.