CONNEQTOR
API Operation Manual
For Market Makers

(Updated on November.5, 2024)

Contents

1. Introduction

We appreciate your interest in CONNEQTOR, which is a newly developed TSE's platform designed for trading ETFs faster and at better price.

This manual is intended as a reference for market makers operating through APIs. This manual covers an outline of APIs including what to be prepared to use APIs, sample messages, and some tips. Read this manual with the API specifications on TSE's website which contains all API messages and responses.

Also, Reading "CONNEQTOR GUI Operation Manual For Market Makers" first is recommended to understand the procedures of trade on CONNEQTOR.

2. Information

CONNEQTOR's URL and hours of availability are as follows.

Production environment (for trading)

URL: *https://conneqtor.tse.or.jp/*

Available Time: Weekdays 7:30 a.m-6:30 p.m

Time for investors to send a new RFQ: Weekdays 8:20 a.m-5:30 p.m.

Until when should I wait for execution?

Brokers are allowed to send execution notice to CONNEQTOR until 6:30 p.m. By that time, you will get to know whether your orders have been executed on ToSTNeT. If no execution notice is sent by 6:30 p.m., your order is not filled.

For testing and demonstration experience, the demo environment is available as below. Transactions on the environment is not legally valid.

Demo Environment

URL: *https://conneqtor.tse.or.jp/stg/*

Available Time: Weekdays 7:30 a.m-9:00 p.m

During the time, an investor stub is running. It sends an RFQ about every five minutes to facilitate market makers' testing.

3. Preparations

(1) Subscription Key

First of all, getting a subscription key is required. A subscription key is a unique key for each market maker. It is used for CONNEQTOR to identify market makers. Only one subscription key is issued to each firm. Any market makers who wish to use APIs on CONNEQTOR need to request TSE to issue subscription keys in advance.

The subscription key should be set in the Ocp-Apim-Subscription-Key in the header every time you send an API. Otherwise the API would be rejected.

(2) IP Address Whitelisting

In addition to a subscription key, applying for an IP address which your system sends messages from is required for security. The IP address should be reported on a form designated by TSE.

Do I need to have my IP Address whitelisted for the testing environment?
No, you can use APIs without fixed global IP addresses in the testing environment.

(3) Rate limits and usage quotas per subscription

The maximum number of API calls is 36,000 per hour. And the bandwidth quota is 2,250MB in total per hour. When the either limit is reached per subscription, the caller receives a 403 Forbidden response status code.

(4) Frequency of quotes update and getting RFQs per second

The total number of quote updates will be limited to "1 transaction per second (per RFQ)" and the limit for getting RFQ is set to "1 transaction per second". When the either limit is reached, the caller receives a 429 Forbidden response status code.

(5) Tools for sending and receiving webAPI messages

It is recommended to install some webAPI tool for testing. Some common free tools suffice.

(6) API specifications

The latest API specifications is available on the CONNEQTOR website. This manual is written based on the version 1 of the API. Make sure to check the latest version before start developing your system.

4. Sample Messages

(1) Getting RFQs

First, send the following URL to get RFQs.

GET *https://conneqtor.tse.or.jp/api/v1/mm/rfqs*

For the testing environment, add “stg/” before “api/. The same hereinafter.
Then, details of RFQs are retrieved including those which have closed and expired, like this.


```
[
  {
    "id": 1,
    "notional": 1.0E8,
    "quantity": null,
      “estimatedNotional”: null,
      “estimatedQuantity”: 49252,
    "quotes": [],
    "expiresAt": "2020-11-08T05:37:49.668Z",
    "settlementTPlusDays": [
      2,
      3
    ],
    "status": "waitingForQuotes",
    “statusDetail”: “Waiting for quotes”,
    "ticker": {
      "code": 1306,
      "fundAdministrator": "野村アセットマネジメント",
      "nameEn": "TOPIX Exchange Traded Fund",
      "nameJa": "TOPIX 連動型上場投資信託",
      "tradingUnit": 10
    },
    "createdAt": "2020-11-08T05:32:49.668Z",
    "trade": null
    “isNearlyLimitOrder”: false,
    “investorName”: “-”
  }
]
```


You see detailed information on an RFQ, such as RFQID in the “id” field, the amount or the number of units the investor wants to trade in the “notional” or “quantity” field, the time the RFQ expires in the “expiresAt” field, the settlement days the investor wants to settle on in the “settlementTPlusDays”, the current status of the RFQ in the “status” field or “statusDetail” field, and tickers of the RFQ in the “ticker” field.

Some parameters should be added along with the query to narrow down RFQs. Especially setting “status” in the query is important to reach active RFQs. With “waitingForQuotes” in the query, you get RFQs which you can quote right now.

GET *https://conneqtor.tse.or.jp/api/v1/mm/rfqs?status=waitingForQuotes*

You can also narrow down RFQs with time which they were sent by investors like this.

GET *https://conneqtor.tse.or.jp/api/v1/mm/rfqs?from=2020-11-08T01:00:00Z&to= 2020-11-08T01:07:00Z*

Send GET messages periodically to get the latest information.

Does connector push information when a new RFQ comes?
No, CONNEQTOR does not push any information. You need to poll information with GET messages at some intervals to get to know a new RFQ is coming.

Can I see the investors' name?
Brokers or market makers can now buy and sell ETFs as Investors on their own account.
In this case, market makers will be able to see the their name in "investorName" field.
The names of investors other than them will not be visible .

(2) Posting Quotes

To send back quotes, send a POST message with RFQID, side, settlement day, and the price.
To send offer quotes at 111.0 settled on T+2 to an RFQ whose id is 1, send messages as follows

POST *https://conneqtor.tse.or.jp/api/v1/mm/rfqs/1/quotes*

with the following body message.

```
{
        "side": "offer",
        "price": 111.0,
        "settlementTPlus": 2
}
```

To update prices, send another POST message with your updated price. Sending /quotes/cancel request specified below is not required to update your price.

You can also send the both sides of quotes with one POST message as "twoWayQuotes". To send bid and offer quotes at 111.0 settled on T+2 for bid and at 112.0 settled on T+3 for offer, send messages as follows

POST *https://conneqtor.tse.or.jp/api/v1/mm/rfqs/{rfqId}/twoWayQuotes*

with the following body message.

```
{
            "bidQuote": {
            "price": 111.0,
            "settlementTPlus": 2
            },
            "offerQuote": {
            "price": 112.0,
            "settlementTPlus": 3
            }
}
```

How can I know which of my quote is shown to the investor?
Send GET https://conneqtor.tse.or.jp/api/v1/mm/rfqs/1/quotes
You see a list of your quotes in the returned message. If you find a quote with status "open", that quote is active and is shown to the investor. Quotes with "overwritten" or "cancelled" are no longer shown to the investor.

Can I use GUI to overwrite or cancel my quotes from API?
A new price from GUI overwrites your price via API, and vice versa.
However, it is not possible to cancel your price sent via API on GUI. To cancel your price sent via API, send /quotes/cancel request.

Is there a check on CONNEQTOR when quoting?
There is a decimal point check and a notional check. If there are more than two decimal places, the input price is rejected by CONNEQTOR. If the notional amount calculated from input price exceeds the specified threshold, the input price is rejected by CONNEQTOR. And ToSTNeT has a price band however which only allows to execute ETFs within seven percent from the last market price.

(3) Cancelling Quotes

Send the following message to cancel your price previously posted to RFQ with RFQID 1.

POST *https://conneqtor.tse.or.jp/api/v1/mm/rfqs/1/quotes/cancel*

When you send GET https://conneqtor.tse.or.jp/api/v1/mm/rfqs/1/quotes after posting the request above, you see that the status of the quote changed from "open" to "cancelled".

(4) Checking whether quotes are picked up by the investor

After sending your quotes, send GET https://conneqtor.tse.or.jp/api/v1/mm/rfqs periodically to know the status of the quotes. If the status of the RFQ changed from "waitingForQuotes" to "tradingAppointment", your quote is picked up. Make sure you can trade the ETF at the price, and approve or decline the offer. Note that you only have 20 seconds to decide approving or declining the offer. If 20 seconds elapses without sending approval message, you can no longer trade the RFQ.

After your quote is picked up, you see detailed trade information on an RFQ in the "trade" field, such as the current status of trade in the "status" field, the quote information the investor pick up in the "selectedQuote" field, the time when the investor pick up your quote in the "createdAt" field, and the time the offer expires in the "expiresAt" field, like this.


```
[
  {
    "id": 1,
     :
     :
    "createdAt": "2020-11-08T05:32:49.668Z",
    "trade": {
      "id": 1,
      "status": "waitingForApprove",
      "selectedQuote": {
        "id": 3,
        "rfqId": 1,
        "side": "offer",
        "notional": 9.999072E7,
        "price": 1760.4,
        "quantity": 56800,
        "settlementTPlus": 2,
        "status": "selected",
```

```
            "createdAt": "2020-11-08T05:33:47.539Z",
            "invalidatedAt": null
        },
        "reason": null,
        "createdAt": "2020-11-08T05:34:02.245Z",
        "executedAt": null,
        "expiresAt": "2020-11-08T05:35:02.245Z"
    }
  }
]
```


Can I see details of quotes that are not picked by the investors?
You can see in the "statusDetail" field.

(5) Approving the offer

Send the following message to approve to trade RFQ whose RFQID is 1.

POST *https://conneqtor.tse.or.jp/api/v1/mm/rfqs/1/trade/approve*

After approving it, the status of the RFQ changes to "trading". When the order is executed on ToSTNeT, the status changes further to "executed". If the status is "executed", congratulations! Your order is done. It is settled by JSCC on the specified settlement day. If the status is "closed", your order is rejected by either investor's broker or your broker.

(6) Declining the offer

If you can no longer trade the ETF at the price due to sudden fluctuation of the market, send the following message.

POST *https://conneqtor.tse.or.jp/api/v1/mm/rfqs/1/trade/decline*

The status of the RFQ changes to "closed".

(7) Refusing to quote

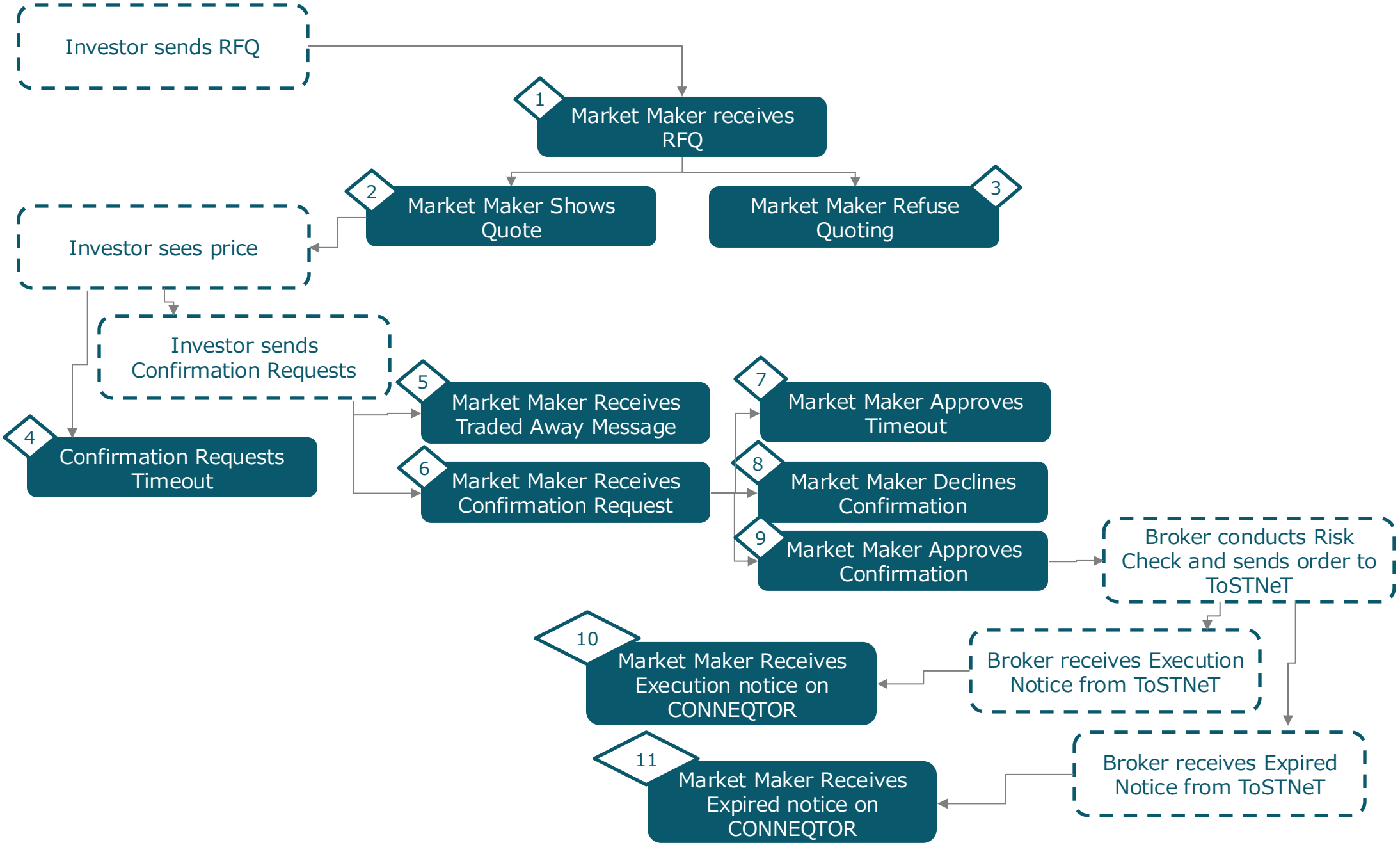
If you want to refuse to quote for instance such as no stock of the ETF, send the following message.

POST *https://conneqtor.tse.or.jp/api/v1/mm/rfqs/1/refuse*

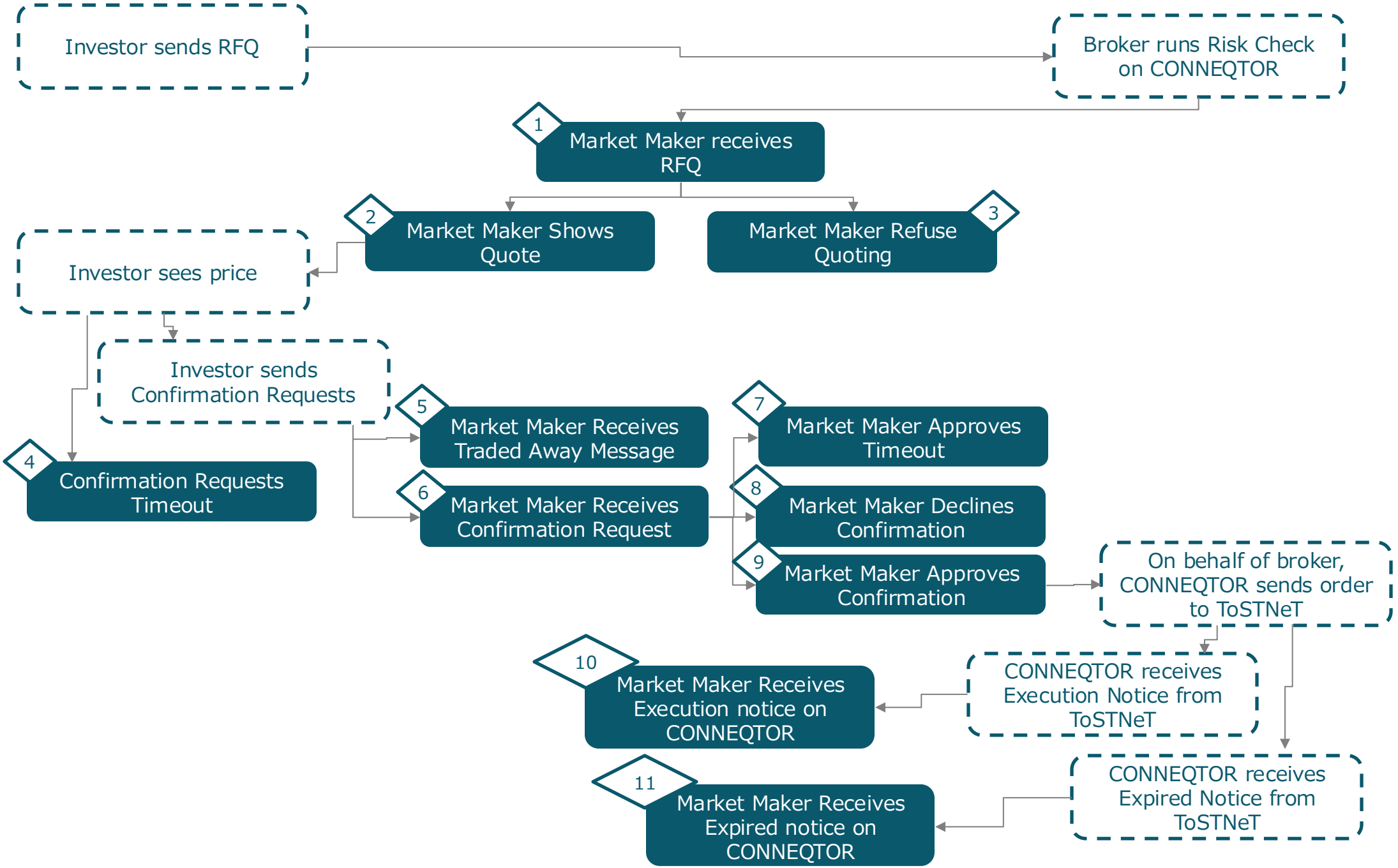
The status of the RFQ changes to "refused".

When can I send refuse message?
Refuse message is accepted only when the following two conditions are met:
- the status of the RFQ is "waitingForQuotes", and
- the none of your quotes are "open", i.e. your quotes should have been cancelled.

Flow of Trading Pattern Status (Broker type: FIX/GUI)



Flow of Trading Pattern Status (Broker type: Direct)



List of Pattern of API Status

CONNEQTOR

Flow No.	Status of RFQ	Status of Trade	Description
1, 2	waitingForQuotes	-	Quote can be sent
3	refused	-	Refusal of Market Makers to show Quotes (Refuse)
4	timeout	-	Timeout of RFQ
5	closed	-	Cancelation of RFQ Traded Away
6	tradingAppointment	waitingForApprove	Waiting for Market Makers to Approve
7	closed	timeout	Market maker approval timeout
8	closed	declined	Decline by Market Makers
9	trading	trading	Waiting for notification from securities companies
10	executed	executed	Execution was completed
11	closed	failure	Rejection of execution (non-execution)

- **Reference) Status of Quote**

Status	Valid / Invalid	Description
open	Valid	Quotes presented to investors
overwritten	Invalid	Quote invalidated due to quote presentation (update)
cancelled	Invalid	Quotes invalidated due to quote cancellation
rejected	Invalid	Quote that was in the process of being presented but has been invalidated for one of the following reasons ・Cancellation of RFQ ・Timeout of RFQ ・Traded Away
selected	Valid	Quotes selected by investor.