

TURQUOISE

FIX Platform Release Notes

**Version 1.0
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1. Introduction

This document accompanies the release of the FIX technical specifications and presents the new functionalities provided as a result of the Turquoise FIX platform enhancement.

Using the Turquoise FIX platform, inbound FIX protocol messages from participants to Turquoise are converted to EMAPI; this is the protocol native to the Turquoise platform. Conversely, outbound EMAPI messages from Turquoise to FIX protocol participants are converted to FIX.

Each participant's FIX session connects to a uniquely assigned dedicated port and only one session can connect to a port at a time.

2. Protocols

The Turquoise FIX platform supports functionality the following versions of the FIX protocol:

- 4.2
- 4.4

Versions 4.1 and 4.3 may also be supported upon request.

Turquoise aims to minimise the differences between the FIX 4.2 and FIX 4.4 and where applicable provide flexibility via adopting FIX 4.2 tags to assist emulation of the functionality provided in FIX 4.4.

The key differences between the versions are that FIX 4.2 contains additional proprietary tags, and certain message types will not be supported.

3. Additional Functionality

3.1 Global Additional Message Types

3.1.1 News

Turquoise has implemented for both protocols, FIX 4.2 and FIX 4.4, the ability to disseminate News messages distributed by the Turquoise Market Operations. The News message provides information on events & activities and operations regarding the trading platform, this functionality is only enabled upon request.

3.1.2 Security Definition/ Security Definition Response

Security Definition is primarily added since the Security List message is not a supported message type in FIX 4.2. The behaviour of the Security Definition message functions in a similar manner as the Security List message with the addition of proprietary tags and is available within both protocols.

3.1.3 Order Status Request

The Turquoise FIX platform now provides the ability to request the status of orders currently active on the system either globally or for a specific instrument.

3.2 Proprietary Tags

Proprietary tags have been introduced to provide a higher level of functionality that currently exists within the FIX environment; all tags greater than 9000 are considered as proprietary tags for both FIX 4.2 and FIX 4.4 protocols.

Additionally this also includes tags that were not previously present within FIX messages. This is to ensure that an existing FIX participant can connect to the FIX platform without having to implement immediate modifications. An example of this includes the MaxShow tag which is not proprietary in New Order Single messages but is proprietary in the Security Definition to indicate visibility of instruments.

Proprietary tags are optional and should participants not wish to receive these tags, the tags can be disabled at Turquoise from being disseminated on a participant's session. For a more detailed view of the proprietary tags available please refer to the FIX specifications.

3.3 Non-proprietary Tags within FIX

In general, tags that are not part of the proprietary group defined within Turquoise are not part of the messages outgoing from Turquoise; new tags are only incoming, therefore it is optional if these are adopted. An example of this includes the SecurityExchange tag; this enables a participant to filter on an exchange with certain request messages.

3.4 Instrument Identification within FIX

Previously, in order to uniquely identify an instrument at Turquoise via FIX, only a combination of ISIN and Currency with Symbol always set to [N/A] could be adopted.

The enhanced FIX protocol allows an option of either adopting this functionality or merely specifying the Symbol instead. If a symbol is adopted, the currency is then returned on Execution Report messages and the use of ISIN is not required.

3.5 Quotes

Turquoise has now introduced Quoting functionality within the trading system, for more information please refer to our FIX Specifications. To ensure FIX has similar performance to our native interface, multiple quote inserts may be returned on the same quote acknowledgement message.

3.6 Turquoise Security Information

With the enhanced FIX specification, Turquoise disseminates a greater level of information with regards to the tradable instruments on Turquoise, this includes:

- An indication of the visibility of an instrument by implementing the MaxShow tag within the Security List response.
- Highlighting whether an instrument is a test instrument by implementing the proprietary tag TestInst (tag 9000).
- Displaying the Large In Scale limit for each individual instrument by adopting the proprietary LisLimit (tag 9001).

3.7 Broadcast Messages

As mentioned in section [3.1.1 News](#); Turquoise now disseminates News messages to participants distributed by Turquoise Market Operations in relation to activities and operations of the trading platform.

3.8 Business Message Reject

In the previous FIX protocol version, Turquoise provided a Business Message Reject message in order to indicate a rejected request. This functionality has now been removed from the Turquoise FIX platform. An Order Cancel reject will provide more detailed information thereby rendering a Business Message Reject obsolete.

3.9 Username and Password

Upon logon, the Username and Password tags are now no longer mandatory. These tags can be used if requested; alternatively only a combination of IP address, Port and SenderCompID is used to validate the session.

3.10 Cancel on Disconnect

With this functionality, three options are available:

- Select cancel on disconnect and cancellation messages will queue until the FIX session is resumed and established.
- Do not select this option and upon disconnect allow the queuing of executions until the session is resumed and executions can be disseminated on the session.
- If a participant has more than one port available, move the executions so they are disseminated via another port to the same SenderCompID; this can be performed by contacting Market Operations should a disconnect occur.

3.11 Drop Copy

The Turquoise FIX platform offers drop copy functionality where by a FIX session can receive all partial fills and fills for a particular participant.

4. Compatibility

In developing the FIX platform, focus has been directed towards implementing the enhanced FIX 4.4 protocol as similar to the current Turquoise FIX 4.4 specification as technically feasible. Whilst additional functionality has been implemented, where needed any messaging standard adopted is accepted within the enhanced FIX 4.4 protocol.

Rather than mandatory, the platform has been developed in a manner such that it is optional to adopt the new functions. For example, as well as defining the Security Definition message within FIX 4.4, Turquoise has retained the Security List as a message type so no immediate modifications are required.

Additionally, if FIX 4.2 is adopted, Turquoise accepts any integrated FIX 4.4 functionality that may be implemented as part of the FIX 4.2 protocol.

5. Initial Requirements

As well as the networking configuration, Turquoise is required to gather information to customise participant sessions accordingly; details include:

- Username and Password functionality. If adopted, values are stored internally within the Turquoise platform.
- Whether the session will accept Broadcast messages, i.e. News.
- Whether proprietary tags are used. Note: this is not implemented on a tag by tag basis; it is essentially an “all or none” approach.
- Turquoise is able to configure the session to always specify the Cancel on Disconnect option for all orders. Alternatively, FIX 4.4 participants can specify this option on an order by order basis via the ExecInst tag as part of the New Order Single message.
- The SenderCompID used for the session, this can be specified by the participant.
- The FIX protocol version being adopted.
- The Heartbeat interval.

6. Conclusion

The Turquoise FIX platform can be tailored on a participant by participant basis and is designed to simplify the implementation process by providing flexibility and ease of use.

Further information on both FIX protocols versions 4.2 and 4.4 can be found within the Turquoise FIX technical specifications. Please contact Turquoise for more information on configuring a FIX connection.