

Auction Extensions – Protocol Considerations

Introduction

This document discusses the effects Auction Extensions has on order book (symbol) state handling.

Baseline

The following TotalView-ITCH and GCF/TIP messages are used to communicate trading state:

- Start-of-day reference data:
 - (ITCH **Order Book Directory**. Provides the market segment ID for each order book.
 - GCF/TIP equivalent = Basic Data Tradable)
 - ITCH **Order Book Trading Action**. Indicates whether an order book is halted (Trading State = “H”) or available for trading (Trading State = “T”).
 - GCF/TIP equivalent = Trading Action, Trading Action [SRe] field. The message is sent for halted books.
- Market segment level session transitions:
 - ITCH **Market Segment State**. The market has transitioned to the indicated state (Event Code).
 - GCF/TIP equivalent = Market State, Market State Code [Ms] field.
- Order book level state transitions:
 - ITCH **Order Book Trading Action**. Indicates that an order book moves from trading according to the Market Segment State to: being halted (Trading State = “H”); into a halt or volatility guard release auction (Trading State = “Q”) or; back to the Market Segment State (Trading State = “T”).
 - GCF/TIP equivalent = Trading Action, Trading Action [SRe] field.
 - ITCH **Cross Trade**. Indicates that an auction has completed (with or without executed trades).
 - No GCF/TIP equivalent.

With Auction Extensions

In addition to the above, the following messages must be considered in order to capture auction extensions:

- An auction is extended:
 - ITCH **Net Order Imbalance Information (NOII)**. Indicates whether an auction is extended (Extension = “E”) or not (Extension = blank).

- GCF/TIP equivalent = Trading Action, Trading Action [SRe] = “3” – Auction Period. Further, the Stop Codes [STc] fields indicate that there is an extension. (Stop Code enumerations are made available through the Basic Data Table Entry message.)
 - An extension is terminated:
 - ITCH **Cross Trade**. Indicates that the auction has completed and that the book is back in the Market Segment State.
 - GCF/TIP equivalent = Trading Action, Trading Action [SRe] = “2” - Resumed.

The Market Segment State message, transitioning the market to the state following the auction is sent according to the below:

- When transitioning **from the opening auction to continuous trading**, at the scheduled time, i.e. after the uncrossing of all books except those subject to an extension. Books with extensions will uncross later (during continuous trading).
 - Cross Trade messages are sent for uncrossed books and NOII messages are sent for extended book before the market state changes.
- When transitioning **from the closing auction to post trade** - after all books are uncrossed, including extended auctions. I.e., the post-trade is deferred till all books are closed.
- (Auction extensions do not apply to intraday auctions.)

Examples

Start of day

Message Type	Market Segment / Order Book	State Field	Comments
...			
Order Book Directory	123 / ABC	N/A	
Order Book Directory	123 / DEF	N/A	
Order Book Directory	123 / GHI	N/A	
Order Book Directory	123 / JKL	N/A	
...			
Order Book Trading Action	ABC	Trading State = “T”	
Order Book Trading Action	DEF	Trading State = “T”	
Order Book Trading Action	GHI	Trading State = “H”	This book is trade halted
Order Book Trading Action	JKL	Trading State = “T”	

Message Type	Market Segment / Order Book	State Field	Comments
...			
Market Segment State	123	Event Code = "C"	The market is closed
...			

Opening Uncross

Message Type	Market Segment / Order Book	State Field	Comments
...			
Cross Trade	ABC		
Net Order Imbalance Indicator	DEF	Extension = "E"	An auction extension is triggered
Cross Trade	JKL		
...			
Market Segment State	123	Event Code = "T"	The market segment has transitioned to Continuous Trading
...			
Cross Trade	DEF		The extended book is uncrossed, the extension is terminated
...			

(Book = GHI is still halted.)

Closing Uncross

Message Type	Market Segment / Order Book	State Field	Comments
...			
Cross Trade	ABC		
Net Order Imbalance Indicator	DEF	Extension = "E"	An auction extension is triggered
Cross Trade	JKL		
...			
Cross Trade	DEF		The extended book is uncrossed, the extension is terminated
Market Segment State	123	Event Code = "S"	The market segment has transitioned to Post-Trade
...			

(Book = GHI is still halted.)