FeedOS

The Market Data Operating System

FeedOS Client API 2009-10-21

Trade Conditions & other “context” flags

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Overview

This document describes how *FeedOS MarketData* feeds represent and send *Trade Conditions* (also known as *Trade Types*, *Trade Type Indicator*, etc). Actually Trade Conditions are only a subset of what we call the "context" of a Trade Event. Other flags may be used to provide additional details about an event.

API versions

Trade Conditions are supported in the following versions of the FeedOS APIs:

API kind	**version**	**DMA values**	**FIX protocol values (5.0)**	**Other vendor values**
C++	>= 3.5.1.4	Yes	Yes	Yes
Java	>= 3.5.0.1	Yes	Yes	Yes
C#	not yet supported	**No**	**No**	**No**
FIX protocol	4.3	**No**	Yes	**No**

DMA means Direct Market Access (feed received directly from the exchange).
Values from other vendor feeds may be present when using a non-DMA feedhandler.
It should be noted that the FeedOS server(s) may need some configuration to generate *Trade Conditions*. Check your server config, or ask the FeedOS support staff.

Connection via FIX protocol

Trade Conditions are sent in a MultipleValueString in tag 277 `TradeCondition`.
This tag may appear in MarketDataFullRefresh messages.
See appendix for the list of values.

NB: *Quote Conditions* are not supported.

Connection via proprietary FeedOS APIs

In the callback associated to message TradeEventExt, there is a field called *context*.
The "context" is a list of values which give details about the event (a trade or a quote).
Trade Conditions are part of the context.
The details can be expressed using different syntaxes which could be both complementary and redundant:

FIX protocol values, in tag `TradeCondition`.
DMA values. Specific tags are used (see below).
Other vendors values. Specific to the vendor and/or the exchange.

When it makes sense, FIX protocol values may be transmitted along with values from DMA or other vendors.
When the "context" is empty, it should be assumed that there's nothing special about the event: it's a regular trade or quote event.

NB: Actually *Trade Conditions* are only a subset of what we call the "context".
Other indicators and flags may be transmitted. New values can be added without notice.

List of DMA values for Trade Conditions

The lists of values are provided with no guarantee. New values may be added at the discretion of each exchange, and can change in the future because of migrations in Exchanges' infrastructures or protocols. All values are of type "string".

CME, NYMEX-COMEX & CBOT (through MDP)

http://www.cmegroup.com/

Value will be sent as a string, in dedicated *tag* **`TAG_MARKET_CME_TradeTypeIndicator`**

Trade Type (CME terminology)	Tag value	Remarks
Normal	0	This is the implicit value. **It will NOT be sent.**
NormalForLeg	2	Trade comes from a multileg (spread)
ExPit	3	Off Exchange
ExPitForLeg	4	Off Exchange

LIFFE (through LiffeConnect)

http://www.liffe.com/

Value will be sent as a string, in dedicated *tag* **`TAG_MARKET_LIFFE_TradeTypeIndicator`**

Indicator (LIFFE terminology)	Tag value	Remarks
Block	1	
Basis	2	
AgainstActual	3	
ExternalMatch	4	
ExchangeForSwap	5	
ExchangeForPhysical	6	
Conventional	7	This is the implicit value. **It will NOT be sent.**
GuaranteedCross	8	
Professional	9	
AssetAllocation	10	

Xetra, Frankfurt, Dublin (through CEF Core)

http://deutsche-boerse.com/

Value will be sent as a string, in dedicated *tag* **`TAG_MARKET_CEF_IndexTypeIndicator`**

IndexTypeIndicator (CEF Core terminology)	Tag value	Remarks	XETR	XFRA	XDUB
Indicative	I		X	X	X
Representative	R		X	X	X
Official	A	This is the implicit value. **It will NOT be sent.**	X		X
NotVerified	U		X		X
FixingIndex	K		X		X
FuturesSettlementIndex	F		X		
OptionsSettlementIndex	O		X		
PreliminarySettlement	V		X		

Value will be sent as a string, in the dedicated *tag* **`TAG_MARKET_CEF_TradeTypeIndicator`**

TradeTypeIndicator (CEF Core terminology)	Tag value	Remarks	XETR	XFRA	XDUB
BestValuationPriceWithoutTurnover	B	Best Valuation Price Without Turnove	X	X	X
MarketTradeCrossing	M	One Auction only			X
ExchangeTrade	X	This is the implicit value. **It will NOT be sent.**	X	X	X
LastMidpointOrderPrice	P	Last Midpoint order Price	X	X	X
XetraBestTrade	S	Xetra Best Trade	X	X	
BlockCrossingTrade	L	Continuous Auction (High Quotation Volume)	X		
OTC	O	Over the counter	X		X
Opening	2	Continuous Auction (Standard Volume)		X	
Variable	3	Block Crossing		X	
Fixing	5	Manual Auction Trading Model		X	
Closing	9	Indices only		X	

LSE, Milan, JSE (through Infolect)

http://www.londonstockexchange.com/

Value will be sent as a string, in dedicated *tags:*

- **`TAG_MARKET_LSE_TradeTypeIndicator`**
  This indicates the type of trade which has occurred.
  Latest LSE's trade types and their detailed definitions are provided by the exchange in the following document: TradElect Parameters Document

TradeTypeIndicator (LSE terminology)	Tag value	Remarks
Automatic Trade	AT	This is the implicit value. **It will NOT be sent.**
Uncrossing trade	UT	
Same day order book contra	CT	
order book contra not same day	PC	
Ordinary Trade	O	
Ordinary Trade - delayed publication requested	OK	
Negotiated Trade	NT	
Negotiated Trade - delayed publication requested	NK	
Cancellation of trade more than 3 days old	LC	
Not to Mark	NM	
OTC Trade	OT	
OTC trade - delayed publication requested	TK	
Inter fund cross -delayed publication requested	IF	
Cancellation of OTC trade more than 3 days old	OC	
SI trade	SI	
SI trade - delayed publication requested	SK	
Cancellation of SI trade more than 3 days old	SC	
JSE extra types:		
Asset Swap	AS	
JSE Block Trade	BT	
Corporate Finance Trade	CF	
Late Trade After Hours	LT	
Namibia Trade	NX	
Option Delta	OD	
Off Order Book Principal	OP	

Option Exercised	OX	
Portfolio Trade	PF	
Settlement Specified Trade	SS	
Test Security	TS	
Trade Option Exercised	TX	
Warrant Exercised	WX	

- **`TAG_MARKET_LSE_BargainConditionIndicator`**
  This indicates whether any bargain conditions apply to a trade report.

BargainConditionIndicator (LSE terminology)	**Tag value**	**Remarks**
No bargain conditions apply	N	This is the implicit value. **It will NOT be sent.**
Bargain conditions apply	Y	
UnknownForContraTrade	<space>	for "*system-generated Contra Trades*"

- **`TAG_MARKET_LSE_TradeTimeIndicator`**
  This indicates whether a reported trade was made outside a normal trade reporting period, whether it was reported 'late' or whether it was reported on time.

TradeTimeIndicator (LSE terminology)	**Tag value**	**Remarks**
Normal	N	This is the implicit value. **It will NOT be sent.**
Late	L	
Overnight	O	

- **`TAG_MARKET_LSE_ConvertedPriceIndicator`**
  This indicates whether the price and currency entered on a trade report is the price and currency in which the transaction was dealt, or whether conversion into the valid currency for the tradable instrument has occurred.

ConvertedPriceIndicator (LSE terminology)	**Tag value**	**Remarks**
Reported currency is traded currency	N	This is the implicit value. **It will NOT be sent.**
Price has been converted from different traded currency	Y	
UnknownForContraTrade	<space>	for "*system-generated Contra Trades*"

Euronext (through FIM)

http://www.euronext.com/

Values will be sent as a string, in dedicated *tag* `TAG_MARKET_EURONEXT_CrossOrderIndicator`

CrossOrderIndicator (Euronext terminology)	Tag value	Remarks
No	0	This is the implicit value. **It will NOT be sent.**
Yes	1	
YesBasket	3	
ValuationTrade	4	

Euronext (through UTP)

http://www.euronext.com/

Values will be sent, as string, in dedicated *tags*:

- `TAG_MARKET_EURONEXT_CrossOrderIndicator`
  European Market (Cross Trade Indicator)

CrossOrderIndicator (Euronext terminology)	Tag value	Remarks
No	0	This is the implicit value. **It will NOT be sent.**
Yes	1	
YesBasket	3	
ValuationTrade	4	

- `TAG_MARKET_EURONEXT_TradeOffExchangeFlag`
  Trades relates to a block or a negotiated deal following MiFID rules

BlockTradeCode (Euronext terminology)	Tag value	Remarks
Null	Null	Undefined This is the implicit value. **It will NOT be sent**
Block Trade	B	
Negotiated deal or Regular trade	N	

- `TAG_MARKET_EURONEXT_TradingVenue`
    - Identifies the Euronext market on which a security is traded by its Market Identification Code
    - Indicates the venue where the trade took place. Possible value:
        - BIC Code (ISO 9362)
        - OTC (Over the counter)
        - SI (Systematic Internalizer)
        - XSMP (SmartPool)

- `TAG_MARKET_EURONEXT_OpeningTradeIndicator`
  Indicates if the trade took place during the opening auction or during the core session.

OpeningTradeIndicator (Euronext terminology)	**Tag value**	**Remarks**
Session	S	This is the implicit value. **It will NOT be sent.**
Opening	O	

- `TAG_MARKET_EURONEXT_TradeTypeOfOperation`
  Indicates the type of operation for a TCS trade.

TradeType (Euronext terminology)	**Tag value**	**Remarks**
Null	Null	This is the implicit value. **It will NOT be sent.**
Delta neutral Liffe connect	D	
Market VWap operation	E	
Out of market	H	
Investment funds	I	
Secondary listing place	R	

Turquoise

http://www.tradeturquoise.com/

Value will be sent as a string, in dedicated *tag* `TAG_MARKET_TURQUOISE_TradeTypeIndicator`

TradeTypeIndicator (Turquoise terminology)	Tag value	Remarks
DARK_TO_DARK	3	
DARK_TO_TRANSPARENT	4	
TRANSPARENT_TO_TRANSPARENT	5	This is the implicit value. **It will NOT be sent.**
TRADE_REPORT	9	
MANUAL_LAST_TRADE_PRICE	10	
MANUAL_LAST_AUCTION_PRICE	11	
UPDATED_REFERENCE_PRICE	12	
TRADE_REPORT_AUCTION	102	
DARK_TO_DARK_AUCTION	103	
DARK_TO_TRANSPARENT_AUCTION	104	
TRANSPARENT_TO_TRANSPARENT_AUCTION	105	
AUCTION	2	
DARK_TO_DARK_OWN_MATCH	6	
DARK_TO_TRANSPARENT_OWN_MATCH	7	
TRANSPARENT_TO_TRANSPARENT_OWN_MATCH	8	

ICE Futures

http://www.theice.com/

Value will be sent as a string, in dedicated *tag* **`TAG_MARKET_ICE_BlockTradeType`**

BlockTradeType (ICE iMpact Multicast Feed terminology)	**Tag value**
Block Trade	K
EFP Trade	E
EFS Trade	S
Bilateral Off-Exchange Trade	V
NG EFP/EFS Trade	O
CCX EFP Trade	9
EFR Trade	J

When necessary, another value will be sent as a string in dedicated *tag* **`TAG_MARKET_ICE_SystemPricedLegType`**

SystemPricedLegType (ICE iMpact Multicast Feed terminology)	**Tag value**
System Priced Crack Spread Leg	C
System Priced Leg	S

Other vendor values

Values transmitted depend:

1. on the *source* (i.e. feed) the events come from,
2. configuration of FeedOS feedhandlers

You may want to perform some data mining on the feed to discover what values are actually sent. Use `feedos_cli.exe` for example to subscribe to trades and dump them in textual form.

You have to read documentation from other vendor to know the meaning of each value.

The same value may have different meanings on different *sources*.

New values may be added at the discretion of either other vendors or Exchanges.

Interactive Data (aka Comstock)

The FeedOS "Comstock FeedHandler" uses the CTF/XS API from Comstock (now Interactive Data).

Any token present in Comstock CTF feed can be forwarded as a tag in the context of the trade.

By default the feedhandler is configured to send the following tags:

- `COMSTOCK_ENUM_SRC_ID` (30003)
  This gives the source number the event comes from.
  Sent as a string although it is always a numerical value.
- `COMSTOCK_f79` (32500)
  This transports the actual value, that is usually specific to the exchange.
  Sent as a string.

Bloomberg B-pipe

As for Comstock feed, the FeedOS "B-pipe FeedHandler" forwards context flags as they occur on B-pipe feed.

Values heavily depend on the source. Check B-pipe documentation for details.

The following tags are used:

- `(type: string) BPIPE_TradeAction`
- `(type: string) BPIPE_TradeCondition`
- `(type: string) BPIPE_TradeTypeIndicator`
- `(type: string) BPIPE_QuoteConditionBid`
- `(type: string) BPIPE_QuoteConditionAsk`
- `(type: string) BPIPE_QuoteCondition`

Miscellaneous tags (i.e. not Trade Conditions)

The following tags are used to provide various details about a Trade Event.
Their utilization depends on the Exchange.

- `(type: string) OriginOf_LastPrice`
- `(type: string) OriginOf_BestBid`
- `(type: string) OriginOf_BestAsk`
- `(type: MarketId) OriginFOSMarketIdOf_LastPrice`
- `(type: MarketId) OriginFOSMarketIdOf_BestBid`
- `(type: MarketId) OriginFOSMarketIdOf_BestAsk`
- `(type: string)Text`
- `(type: string)Buyer`
- `(type: string)Seller`
- `(type: FIXScope) Scope`

`See C++ client API (file framework/api/tags_quotation_context.hpp) for an exhaustive list.`

APPENDIX

FIX protocol values

Here is an excerpt of
http://fixprotocol.org/FIXimate3.0/?sel_language=en&sel_version=FIX.5.0SP1

TradeCondition

Values from FIX v4.4	A - Cash (only) Market B - Average Price Trade C - Cash Trade (same day clearing) D - Next Day (only)Market E - Opening/Reopening Trade Detail F - Intraday Trade Detail G - Rule 127 Trade (NYSE) H - Rule 155 Trade (AMEX) I - Sold Last (late reporting) J - Next Day Trade (next day clearing) K - Opened (late report of opened trade) L - Seller M - Sold (out of sequence) N - Stopped Stock (guarantee of price but does not execute the order) P - Imbalance More Buyers (cannot be used in combination with Q) Q - Imbalance More Sellers (cannot be used in combination with P) R - Opening Price	
Values from FIX v5.0	S - Bargain Condition (LSE) T - Converted Price Indicator U - Exchange Last V - Final Price of Session W - Ex-pit X - Crossed Y - Trades resulting from manual/slow quote Z - Trades resulting from intermarket sweep a - Volume Only b - Direct Plus c - Acquisition d - Bunched e - Distribution f - Bunched Sale g - Split Trade h - Cancel Stopped i - Cancel ETH j - Cancel Stopped ETH k - Out of Sequence ETH l - Cancel Last ETH m - Sold Last Sale ETH n - Cancel Last o - Sold Last Sale p - Cancel Open q - Cancel Open ETH r - Opened Sale ETH s - Cancel Only t - Cancel Only ETH u - Late Open ETH v - Auto Execution ETH w - Reopen x - Reopen ETH y - Adjusted z - Adjusted ETH	AA - Spread AB - Spread ETH AC - Straddle AD - Straddle ETH AE - Stopped AF - Stopped ETH AG - Regular ETH AH – Combo AI - Combo ETH AJ - Official Closing Price AK - Prior Reference Price 0 - Cancel AL - Stopped Sold Last AM - Stopped Out of Sequence AN - Offical Closing Price AO - Crossed AP - Fast Market AQ - Automatic Execution AR - Form T AS - Basket Index AT - Burst Basket
Extra values from FIX v5.0 sp1		AV - Outside Spread 1 - Implied Trade

This is the list of values, as described by the FIX 5.0 sp1 protocol. Only a few of them (or none at all) are available for a given exchange.

Scope

```
1 - FIXScope_LocalMarket
2 - FIXScope_National
3 - FIXScope_Global
```