

Categorization and Data

CFTC Technology Advisory Committee
Subcommittee on Automated and
High Frequency Trading
Working Group #2

WG2 Agenda

- Team Members and Assignment
- WG1 Proposed Definition
- Categorization
- Data

Working Group #2 Team Members

WG2 Team Members

- **Keith Fishe**, Managing Partner, TradeForecaster Global Markets LLC, KHf@TradeForecaster.com
- **Chris Isaacson**, SVP, COO, BATS Global Markets, Inc., CIsaacson@BATSTrading.com
- **Paul Kepes**, Co-Founder, Chicago Trading Company, Paul@ChicagoTrading.com
- **Chris Lorenzen**, Founder and CEO, Eagle Seven, LLC, CLorenzen@EagleSeven.com
- **Jim Northey**, Partner and Co-Founder, LaSalle Technology Group, JimN@LasalleTech.com

Commission Staff

- **Harold Hild**, Economist, CFTC, HHild@CFTC.gov
- **Jorge Herrada**, Associate Director, CFTC, JHerrada@CFTC.gov

Additional Contributors

- **Jeromee Johnson**, VP Market Development, BATS Global Markets, Inc., JJohnson@BATSTrading.com
- **Christina Sciotto**, Executive Director, Chicago Trading Company, Christina.Sciotto@ChicagoTrading.com

Additional Meeting Participants Included: Andrei Kirilenko (CFTC), Ben Van Vliet (IIT), JonMarc Buffa (CFTC), Mark Smith (TFGM) and Tim Sargent (Markit)

Assignment

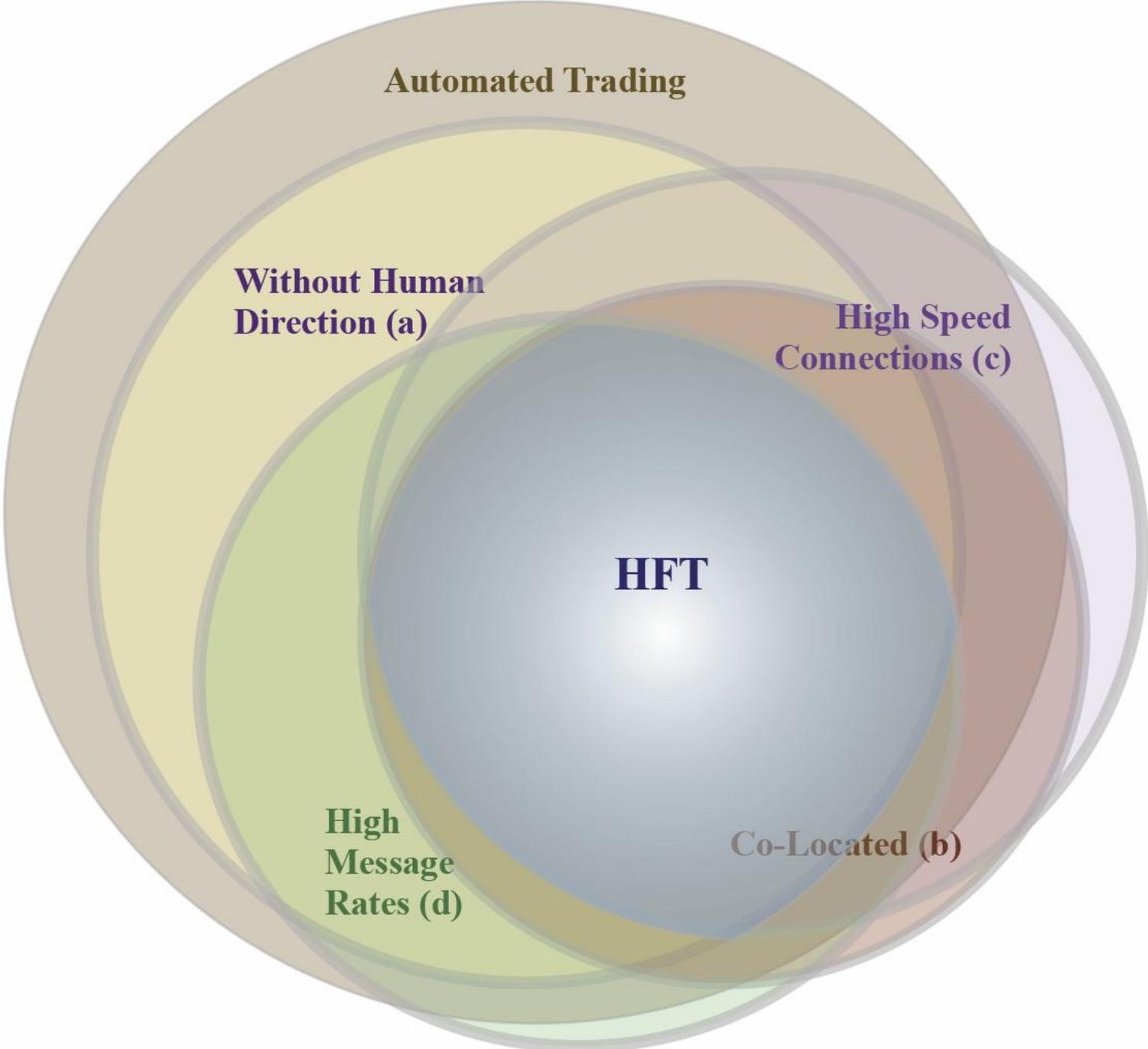
Should there be multiple categories of HFT, high frequency trading, (as defined) in the context of automated trading strategies? There is currently no consensus as to whether HFTs are primarily liquidity providers, aggressive liquidity takers or a combination of the two. Some HFTs may be very fast liquidity providers. Other HFTs may mostly take liquidity. Yet a third group of HFTs may provide about as much liquidity as they take.

Recognizing that the distinctions between trading activities and regulatory obligations (including compliance with exchange rules), representatives of the Subcommittee on Automated and High Frequency Trading will consider assigning additional categories to a broad class of ATS traders defined as HFTs and make recommendations as to embedding these categories into message tags for identification in, among other things, reference databases utilized by exchanges and the Commission for oversight and enforcement purposes.

Working Group #1 Proposed Definition of HFT

High frequency trading is a form of automated trading that employs:

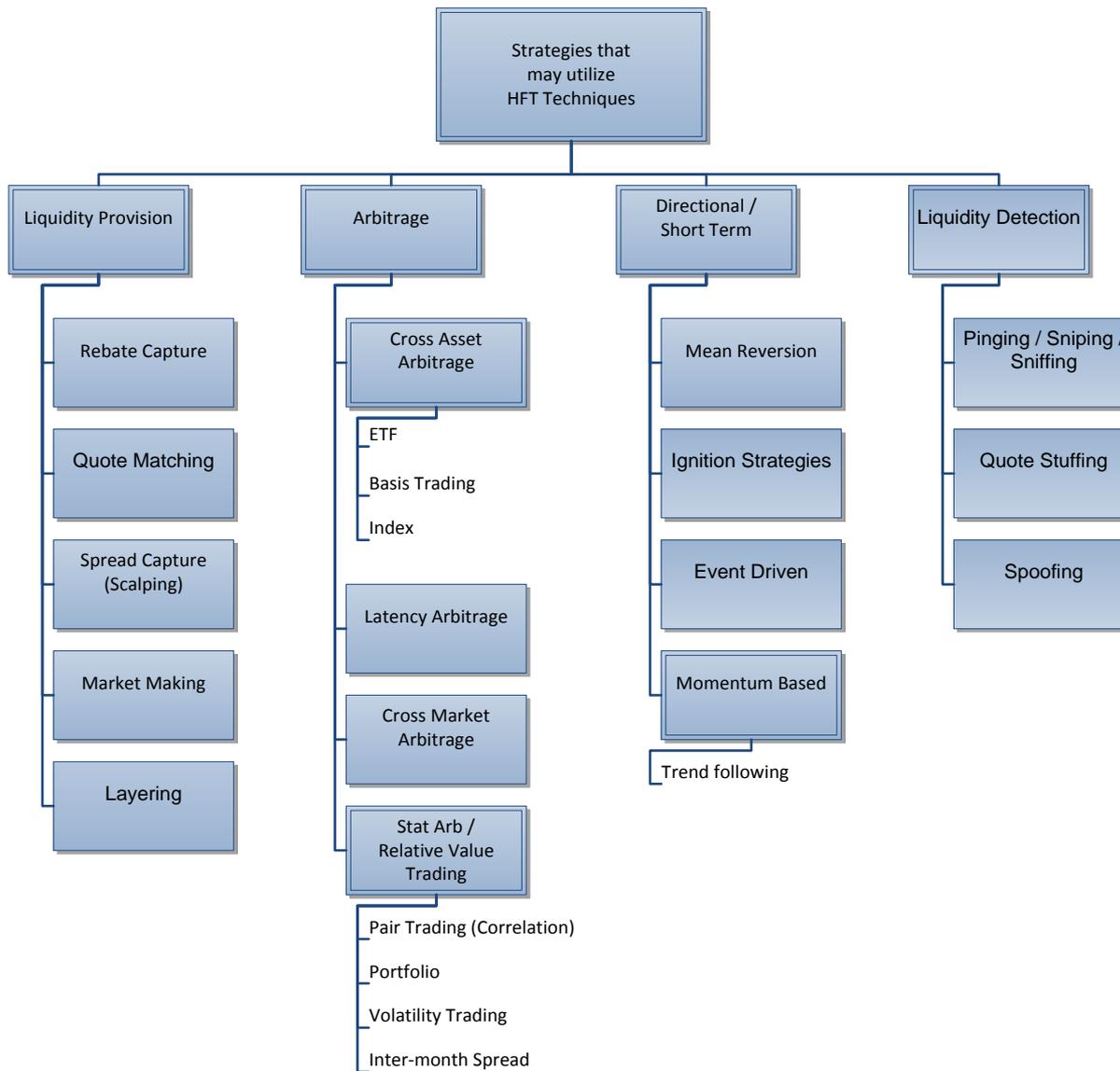
- (a) algorithms for decision making, order initiation, generation, routing, or execution, for each individual transaction without human direction;*
- (b) low-latency technology that is designed to minimize response times, including proximity and co-location services;*
- (c) high speed connections to markets for order entry;
and*
- (d) high message rates (orders, quotes or cancellations).*



CATEGORIZATION

Category Concepts

- Trading strategies
- Trading methods
- Latency
- Holding periods
- Order durations
- Economic value of speed
- Quantitative measures
- Market quality



The Working Group does not and cannot opine on the legality of any of the above strategies. Their inclusion does not constitute or imply endorsement by the Working Group or the CFTC.

Trading Methods

- Hedging
- Execution algorithms
 - Participation-based (e.g., VWAP)
 - Time-based (e.g., TWAP)
 - Multi-leg (e.g., exchange implied spread)
 - Single execution - smart routing / transaction cost reduction
- Liquidity detection
 - Pinging / snipping / sniffing

DATA

Observations

- Not always possible to associate an order with a specific strategy
 - Intent may change over life of order
 - May be part of multiple trading strategies
- Difficult to analyze market participant behavior within a specific market
 - Necessity to hedge
 - Cross market arbitrage

Available Data

- Exchanges already capture information for regulatory and operational analysis
- Data sources
 - Fields (tags) in API messages to and from exchange
 - Exchange enrichment to API messages
 - “Book data”
 - Exchange connection configuration information
 - How firms are connected
 - Speed of connection, bandwidth, latency
 - Information provided to exchanges when firm connects to the exchange

API Information

Data Item	Description and usage	Usual FIX Field (Tag)
Trader identifier	This information is captured within the exchange APIs on a message level basis.	SenderSubID(50)
Firm identifier	Identifies the firm	SenderCompID(49)
Trading computer software and version	The name and version of the computer product or application that is being used to generate orders. The CME requires this information on the logon message. The ICE collects information during conformance testing.	
CTI Code	The CFTC Customer Type Indicator 1 – Member trading for their own account 2 – Clearing firm trading for its own prop account 3 – Member trading for another member 4 – Any other http://www.nfa.futures.org/news/newsNotice.asp?ArticleID=1362	CustOrderCapacity(582)
Automatic order generation	Exchanges require that firms identify orders as being generated by an automated system vs. being entered into the system manually by a user.	ManualOrderIndicator (1028)
Aggressor indicator	Exchanges report whether or not the firm was the aggressor in the trade.	AggressorIndicator(1057)

Derived Information

Statistic	Aggregation Level	Unit	Description
Order Chain Duration	Per Order	Microseconds	Length of time order remained in book before being filled or cancelled
Order Duration	Per Order	Microseconds	Length of time order remained in book before being modified, filled, or cancelled
Average Order Duration	Per Trader Per Firm Per Instrument	Microseconds	Average order duration for all orders for a specific instrument.
Order to Fill Ratio	Per Trader SenderSubID(tag 50) Per Firm Per Instrument	Count	Number of orders entered to number of orders filled.
Order Efficiency	Per Trader Per Firm Per Instrument	Count	Execution Quantity or Notional Value (rather than execution count) to Quantity/Value entered/modified
Order Aggressiveness	Per Trader Per Firm Per Instrument	Count	Orders that are on/near the Top of the Book are more valuable/subject to more risk than those that are away from the market
Reject/Order Ratio	Per Trader Per Firm Per Instrument * by reject Reason	Count	Can indicate systems issues or risk issues

Challenges

- In general
 - Volume of information
- Cross market analysis
 - System clock synchronization across markets
 - Nonstandard identification of market participants across markets

Disclaimer: The statements made herein represent the collective views of the members of the CFTC Technology Advisory Committee, Subcommittee on Automated and High Frequency Trading, Working Group #2 (the “Working Group”) and are not necessarily the views of each member’s firm or any one member individually. While the Working Group has made every effort to present accurate and reliable information in this material, this material is currently in draft form and is subject to change at any time without notice in the sole discretion of the Working Group. The Working Group does not guarantee the accuracy, completeness, efficacy, or timeliness of the information contained herein. Reference herein to any product, process or service does not constitute or imply endorsement by the Working Group.