

CME GROUP CUSTOMER FORUM

November 2019

Agenda

1. **CME Specific Topics**
 - **iLink 3 Update**
 - **Reminder on Tag 1031**
 - **Smart Stream via Cloud Link on GCP**
 - **Bitcoin Update**
 - **SOFR Options Launch**
2. BrokerTec Stream Update & RV Curve
3. BrokerTec US & EU Integration with CME Globex
4. EBS Integration with Globex

iLink 3 Binary Order Entry: Summary

Currently available in New Release. Will launch in production with new parallel channels for futures and options, phased in over 4 weekends, beginning **March 29, 2020**.

Simple Binary Encoding

- Provides more efficient delivery of order entry messaging; faster encoding/decoding
- Standard message size, fixed positions and fixed length fields

FIX Performance (FIXP) Protocol

- New session layer to establish and maintain connectivity between customers and CME Globex
- Lean messages moves administrative information out of critical path for order entry
- Improved performance and simplicity

iLink 3 : Business Messages

Optimized Business Semantics

- More efficient messages, ability to remove administrative information from the order entry path
- Administrative information includes:
 - Account, Account Type, SenderComp, CTI Code and Self-Match Prevention
- Two forms of submitting administrative information:
 - 1. Pre-registered administrative information**
 - Customers pre-register administrative information in the new Service Gateway weekly
 - Omit from order entry by using tag 1505-PartyDetailsListReqID to reference the registered information
 - 2. On-demand administrative information**
 - Customers send the administrative information to the Market Segment Gateway (MSGW) with every business message (New Order Single, Mass Quote, etc.), and use tag 1505-PartyDetailsListReqID = 0
- Drop Copy messages will have full details of both the administrative and business information

iLink 3 Binary Order Entry: Schema Update

New Schema Release: Version 2

Addition of new fields to the body or repeating group of a message without changing the Template ID

- Message enhancements for BrokerTec Markets
 - Security Definition Request and Response – new template IDs, old IDs removed
 - PartyDetailsDefinitionRequest and PartyDetailsDefinitionRequestAck
 - New ExecutionAck template for bilateral trade reject
 - New fields for MiFID reporting
- NULL value to the following data types:
 - uInt64NULL
 - Decimal64NULL
- Added PossRetransFlag (9765) to MassQuoteAck, OrderMassActionReport, QuoteCancelAck and RequestForQuoteAck

iLink 3 for Futures and Options: Rollout Plan

New Release Environment

- **Available Now** - Majority of iLink 3 functionality to start the customer testing window
 - e.g. FIXP, Order/Modify/Cancel, Pre-registered administrative messages
- **November 25**
 - All remaining iLink 3 functionality (e.g. Mass Quotes, RFC, RFQ, On-demand administrative messages)
- **January 2020 AC+** Certification test suite available

Production Environment

- **Production launch** will be rolled out starting **March 29, 2020** through **May 17, 2020**, over 4 launch weekends.
- **Production parallel:** Support both iLink 2.0 & 3.0 MSGW sessions for 6 months after the final launch weekend
- **Customer mock trading sessions** will be held prior to the launch in production environment
 - Must be certified for iLink 3 to participate

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Reminder: Tag 1031-CustOrderHandling

- Collaboration with FIA to provide trading and clearing firms a more effective means to reconcile executing broker fees
- Tag 1031 will be validated for presence and values on all iLink 2 business messages; iLink 3 will include and validate in the party details administrative message.
 - W - Desk
 - Y - Electronic
 - C - Vendor-provided platform
 - G – Sponsored Access via Exchange API
 - H – Premium Algo Trading Provider
 - D – Others
- Validation Launch:
 - FIA white paper available now!
 - New Release – August 26, 2019
 - **Production – November 17, 2019**
- **iLink messages without 1031 or with an invalid value will be rejected**
- **CME Group recommends you update your GTC and GTD orders now – no impact to priority!**

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CME Smart Stream on GCP

CME SBE Market Data Globally Available in All GCP Regions

- Access CME Group market data through the new CME Smart Stream via Google Cloud Platform (GCP)
- MDP 3.0 Channels, Streamlined, Data Insights and BrokerTec US Treasury data available
- Key Benefits
 - Real-time market data
 - Leverages existing CME Group Simple Binary Encoded (SBE) data formats
 - Google Pub/Sub Transport to all 19 Google Regions
 - Provides low cost on-demand, pay as you go model
 - No long-term commitment – quickly turn access up or down as needed
 - No need to provision servers, install network or manage infrastructure
 - Lower costs for existing, day-to-day operational processes, like Dev, QA, settlements, etc
 - Easy onboarding for new customers
- Signed ILA and certification required
- New Release: **Available**
- Production Launch: **November 17, 2019**



Google Cloud Platform



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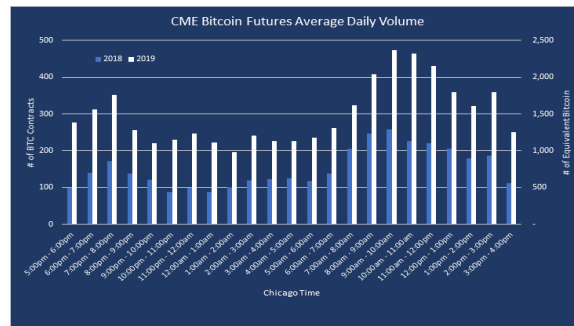
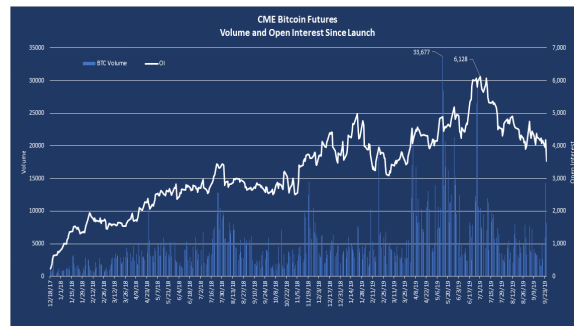
Strong Growth in Bitcoin Futures

In 2019, 6,980 ADV (34,450 eq. BTC; \$260M notional), +96% YoY

- Over 3,400 global accounts have begun trading BTC futures since launch
- CAGR: ~200% annual growth rate on ADV
- Average daily OI 4,382 contracts (~22k equivalent bitcoin), an increase of 92.5% higher over 2018 (through Q3)
- Additionally, the average number of LOIHs (Large Open Interest Holders) during Q3 2019 reached a record high of 47 holders, 38% higher than Q3 2018
- Markets are liquid ~24 hours a day, with volume spread out across the trading day. 51% of volume occurs before the U.S. trading day begins in 2019
- Due to increased client adoption of our existing bitcoin futures and growing demand for additional hedging tools, **CME will launch European style Options on BTC Futures* on January 13, 2020**

*Pending Regulatory Approval

CME BTC Futures Volumes and OI since Launch



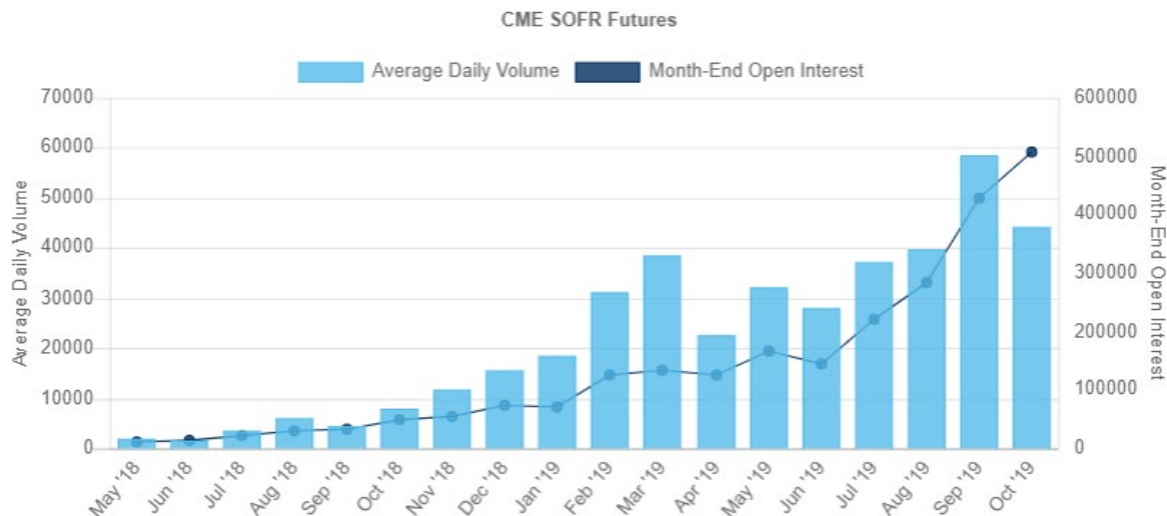
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SOFR Futures Liquidity Developments



SOFR Futures at a glance

- **Open Interest:** 508K+ contracts (\$1.9 trillion notional equiv.)
- **Average Daily Volume:** 44K contracts (\$137B notional)
- **Participants:** Since launch, 300+ global firms including banks, asset managers, hedge funds, and proprietary trading firms.

	3-Month SOFR Futures	1-Month SOFR Futures
Contract Unit	Compounded daily interest during contract Reference Quarter	Average daily interest during contract delivery month
Contract Size	\$25 per basis point per annum	\$41.67 per basis point per annum
CME Globex Symbol	SR3	SR1
Bloomberg Symbol	SFR	SER

SOFR Options Launch

January 6th, 2020

CME Group will launch options on 3-Month SOFR futures for first trade date January 6, 2020

- CME SOFR Options as the first options (non-linear) product will further assist with the market's adoption of SOFR as the alternative reference rate, and in its' usefulness as a Treasury Repo Index
- Client feedback during 3-Month SOFR options validation;
 - Eurodollar options are essentially perfect and no reason to deviate from design
 - With open interest across multiple years and expirations it was suggested we fully replicate ED options suite to let market get familiar and build strategies
- Listings and contract design will closely mimic deeply liquid Eurodollar and Mid Curve options
 - Listing rules, strike increments and price increments will be identical to the current options on ED futures
 - CME SOFR options will be available to trade in all venues; Open Outcry, Globex, and Clearport for Blocks
- Capital Efficiencies: Eurodollar Options will have margin offsets with SOFR Options
- Operational Efficiencies: CME will provide ICS between ED and SOFR Options on Globex

Eurodollar Options Open Interest by Expiry	As of Oct. 8 th
Year 1 – White	33,305,442
Year 2 – Red	8,244,044
Year 3 – Green	2,054,024
Year 4 – Blue	13,105
Mid Curves*	12,978,569
Total	56,595,184

*Expirations under 15 months