Central Counterparty Scope & Product Offering

1. How does your architecture work or is proposed to work? Specifically:
   - Is it an intermediary/clearing member model? On an agency basis?
   - Who is primary regulator?
   - Who will clearing members be? What are eligibility criteria?
   - What documentation (e.g., ISDAs, FCM/clearing agreements, other) will govern relationships between:
     - Clearing members and CCP/clearinghouse?
     - Clearing members and customers?
     - What governing law?

   By serving as the counterparty to every transaction, CME Clearing becomes the buyer to every seller and the seller to every buyer. The US Commodity Futures Trading Commission (CFTC) acts as the primary regulator of CME Clearing.

   CME Clearing's CDS Solution is open to all market participants.

   Clearing Member Requirements
   - Clearing Member directly faces CME Clearing in each transaction
   - Minimum Adjusted Net Capital (ANC) of $300M
   - One time minimum membership requirement deposit of $5M
   - Security deposit requirement of $5M plus additional amount ≥ $2M to reflect CDS book of business
   - Verification of existing business, financial, and operational capabilities to support CDS market activity as well as CDS clearing member requirements

   Non Clearing Members directly face CME Clearing in each transaction through their relationship with a Clearing Member.

   Documentation
   - Clearing Members execute a Clearing Member agreement with CME Clearing
   - Clearing Members and non-Clearing Members execute a CMDX Participant Access Agreement

2. What CDS products will be supported by the clearing house? Outline what products are supported at launch and when support will be available for the various products (CDS index, index tranche, single name, standard single name). Highlight any differences with current CDS product

   CDX IG, HVOL, HY and XO Indices
   - 3, 5, 7 and 10 year tenors
   - Current and Previous 3 off-the-run series

   ITraxx Europe, HVOL and XO
   - 3, 5, 7 and 10 year tenors
   - Current and Previous 3 off-the-run series

   ITraxx Financial Senior and Financial Subordinate
   - 5 and 10 year tenors
   - Current and Previous 3 off-the-run series

   Single Name constituents of the CDX and iTraxx indices (over 500 reference entities)

- Standardized fixed coupons of 100 bps and 500 bps so that the risk profiles of the cleared contract match those of existing OTC contracts
- Quarterly maturities up to 10 years

Forthcoming product offerings (e.g. Sovereigns, Tranches, additional Indexes, and additional Single Names) will be based on recommendations of the CMDX Product Advisory Board

Our standardized contract terms for the cleared CDS contracts are designed to mirror the bilateral OTC contracts, and are consistent with ISDA definitions, adhere to ISDA determinations, and are eligible for participation in ISDA auctions

3. What is your approach to migrate existing positions into the clearing house? How will any product differences will be priced/ accounted for?

   The CMDX Migration Utility will convert existing non-standardized contracts into standardized contracts. For an index contract the Migration Utility will simply replace each bilateral contract with one standard contract facing the CME. For a single name contract, our Migration Utility will take an existing contract with a non-standard coupon and convert it into two contracts with standard coupons (one at 100 bps and one at 500 bps). The two new contracts are economically identical to the original non-standard contract; thus, participants can easily back-load their existing book from non-standard OTC contracts to the standard centrally cleared contracts.

4. What is your approach in regard to Restructuring Credit Events?

   The CME Cleared CDS contracts will adhere to credit event and succession event determinations made by ISDA. If the ISDA Determinations Committee resolves that a restructuring credit event has occurred but does provide a solution for settlement, the CME Determinations Board will make its best effort to allow for both cash and physical settlement.

5. Are there any restrictions in the legal entity that deals must be booked from to face the clearing house (e.g. US only, UK/EMEA only)?

   For firms anticipating clearing CDS within multiple internal divisions, CME Clearing offers an extremely flexible trade management and collateral account architecture. Firms may set up multiple accounts to facilitate trade management within distinct internal divisions, and may then choose to maintain one collateral pool with netting of cash flows, or to have separate collateral pools with separate banking.

6. How will the clearing house approach the differing requirements of regional regulators? Which regulators have approved your CDS solution? What legal analysis has been performed on the bankruptcy regime for your operating jurisdiction?

   The US Commodity Futures Trading Commission (CFTC) acts as the primary regulator of CME Clearing. CME Clearing has received the necessary approvals to begin clearing CDS contracts.

   The CFTC regulatory framework will be used to underpin the financial safeguards package for CDS products. We are seeking a CFTC order permitting CME to hold customer funds in segregated 4d accounts. If clearing of CDS positions begins before a CFTC order is issued and effective, customer funds will be accorded 30.7 “secured” treatments on Day 1, with Customer segregation treatment subsequently. CME’s goal is to ensure legal and regulatory certainty to financial safeguards to all market participants, which includes sell-side and buy-side.

The use of 4d segregated accounts will enhance customer protections by protecting account balances against a clearing member bankruptcy as customer funds held in respect of a “commodity contract” under the Bankruptcy Code. This approach will also require clearing firm collection of collateral from customers and clearing firm capital treatments, as well as disclosure of large position information, enhancing market oversight and risk management.

CME’s initial use of 30.7 secured accounts, if required, will address customer protection from a bankruptcy perspective by requiring that clearing members account for customer positions and property separately from the positions and property of the firm, and allow clearing members flexibility in collecting collateral from their customers and in calculating capital requirements.

7. If multiple Central Counterparts exists, how will clearing members agree which platform is being used at trade execution? How will the clearing house address a situation in which there is interest by a given counterparty to clear through CCP 1, but the other counterparty to the same trade has an interest to clear through CCP 2?

   The decision to clear trades through CME Clearing should be decided and agreed by both counterparties at the point of execution.

8. Describe the various ways clearing participants could access the clearing house: CCP clearing members, non-members etc. What would happen to the trades / positions and collateral of a non-CCP clearing member if their clearer were to fail?

   Clearing Members directly face CME Clearing in each transaction. Non Clearing Members directly face CME Clearing in each transaction through their relationship with a Clearing Member. The positions and collateral are recorded at the customer account level, and held in a customer segregated performance bond account at the Clearing Member firm as well as CME Clearing.

   In the event of a Clearing Member default, the non-Clearing member’s positions and collateral are maintained and ported to a new clearing member.

9. Under your solution, is it possible to "unclear" transactions and revert back to a bilateral contract?

10. What, if anything, in your offering guarantees zero rated Risk Weighted Assets (RWA)?

Basel I - US Broker-Dealers and FCMs

Collateral deposited for security deposit and performance bond and mark-to-market gains are allowable for capital (less SEC haircuts on collateral based on type and maturity date)

The proprietary haircut for a CDS of a:

- CSE broker-dealer is calculated using its VAR haircut formula
- Non-CSE broker-dealer which is a CDS buyer is zero
- Non-CSE broker-dealer which is a CDS seller is calculated per SEC Rules for Nonconvertible Debt Securities if the underlying debt obligation is rated in one of the four highest rating categories by at least two NRSROs. This haircut varies between 2% to 9%. If the underlying debt obligation is not so rated by a NRSRO, the haircut is 15%.

Basel I - US Bank

Cash and cash equivalents deposited with CME Clearing for security deposit and performance bond are subject to a risk-weighting of 100% in the capital adequacy formula. Other collateral is subject to risk-weighting based on type of collateral and maturity date.

An assessment for market risk of the CDS, along with the bank's other proprietary derivative positions, is included in the bank's capital adequacy formula.

11. What is your long term strategic view with regard to intra-day clearing, supporting future contracts, CDS give-up, compressions and interaction with the Trade Information Warehouse (TIW) etc.?

    CME Clearing processes trades real-time, throughout the day, every day provided trades are submitted directly to CME Clearing on trade date. Trades submitted to CME Clearing from the DTCC TIW will be cleared through the migration utility post bi-lateral settlement of the upfront payment.

    The Migration Utility serves two functions: (i) it allows participants to migrate (or backload) existing trades to CME Clearing, and (ii) it allows participants to execute and confirm new trades through their current technology (e.g. DTCC Deriv/SERV, DTCC TIW, T:Zero, etc), then migrate these trades to CME Clearing after the trade is confirmed in the Trade Information Warehouse (TIW) and the upfront payment is settled bi-laterally.

    CME Clearing has established direct connectivity to DTCC and the Trade Information Warehouse (TIW) for the purposes of trade migration, exit messaging, and post-trade information exchange to send and receive all data files.

    CME Clearing is working with DTCC to include the capability to allow two participants to specify a central counterparty on the trade when submitting it to clearing, which could then be sent on to that CCP when the trade matched. This would allow for more real-time trade submission of trades routed to CME Clearing through the DTCC TIW.

    Clearing Members will also have the ability to perform post trade processing functions on trades once they have been accepted for clearing.

    CME's CDS clearing solution provides true multilateral position netting both for indices and single-names every day. You can trade in and trade out of positions regardless of counterparty. Maximum netting benefit will be ensured by keeping all single-name positions at a standard 100 bps or 500 bps coupon rate, and using the ISDA "big bang" protocols (always accruing from previous quarterly date, effective date as a rolling 60 days previous to current date.)

Architecture / Workflow / Process Model:

1. Outline the infrastructure model for the clearing house. Which components of the existing OTC and ETD architecture will be leveraged and which will your CCP look to provide through other means? (Confirmation, Settlement, Margin Collection, Credit Event processing etc)

   CME Clearing will perform the downstream processing functions for all trades captured and cleared. This includes affirmation, confirmation, cash flow settlement (variation margin, accrued coupon, and upfront payments), initial margin settlement, and credit event processing.

   CME Clearing will report clearing member's end of day net position to the DTCC TIW at the participant's request.

2. Provide detailed workflow and trade flows from execution to clearing; for Day 1, for any interim states, for target end state. When exactly in the clearing cycle is a trade legally and physically cleared?

   See attached trade flows.

3. Will the clearing house net trades? When/ how will this occur? Explain exactly how members will be notified of trade terminations and new net trades.

   CME Clearing's offering provides multi-lateral netting naturally. This will occur each day as trades are cleared, and reconciled at the end of each day between CME Clearing and Clearing Members.

4. What scenarios can cause a trade rejection? How are these flagged and resolved?

   <u>CMDX Trade Submission</u>
   Managing Exceptions
   - The "My Trades" tab records the status of transactions
     - ✓ Transaction listed as 'Open' will remain in that status until the trade counterparties submit matching trade details
     - ✓ Participants will be responsible for managing the 'Open' trades with their trade counterparties
     - ✓ CME Clearing Trade Processing will monitor the 'Open' trades
   - If the counterparties' trade details do not match, then one or both of the counterparties will have to delete the originally submitted trade details and re-enter the corrected trade details
   - Trades are passed to CME Clearing after both counterparties have submitted matching trade details

<u>Migration Utility Submission</u>
Managing Exceptions
- Participants are able to view the migration process in real-time using the CMDX Migration Utility and monitor which of their counterparties has submitted matched trade details for migration
- If exceptions arise during the migration process, then CME Clearing will execute the following exception process:
  - ✓ Discussions are opened with the relevant participants to evaluate if the issue can be resolved without changing the composition of the submitted portfolio
  - ✓ If the composition of the submitted portfolios must change and this impacts additional counterparties, then these additional parties will be involved in further discussions
  - ✓ Once all issues have been resolved, one or more parties are allowed to resubmit portfolios for migration
  - ✓ As a last resort, CME Clearing may terminate the migration process to allow additional time for issues to be resolved

<u>CME ClearPort Submission</u>
Managing Exceptions
- Trades may be rejected or considered invalid due to faulty or incomplete data, or failure of risk acceptance parameters. This will result in a trade status of failed
- Failed trade status is reflected on the trade blotter of ClearPort website
- CME Clearing trade processing team will make a good faith effort to call the counterparties, however participants will be responsible for monitoring the trade blotter
- Clearing Members will be notified of risk acceptance parameter violations, and will require adjustments to be made by the Clearing Member before the trade can be re-submitted for clearing

Confirmation, Settlement & Margining:

1. Will the clearing house trades be traded under a standard ISDA agreement or under a propriety legal framework? Detail all differences between any elements of proprietary frameworks and a standard ISDA agreement and what steps have been taken to ensure this can be electronically confirmed.

   Participants may continue to execute transactions bi-laterally and submit for clearing. Once the trades are accepted by CME Clearing, the CME Group Rulebook will govern the transactions.

2. Where is the original bilateral trade and the new cleared trade legally confirmed? DTCC, Clearing House, offline? Paper or electronic? If electronic, will the clearing house support multiple matching platforms?

   If both participants agree to submit a trade through CMDX to CME Clearing, the trade is affirmed through CMDX back to participants, and legally confirmed once CME Clearing accepts the trade and submits the clearing confirm to all applicable participants.

   If both participants agree to submit a trade through their existing infrastructure into DTCC TIW, and migrate the trade to CME Clearing, then the legal confirmation initially occurs in TIW for the bilateral trade, but is then re-confirmed by CME Clearing. When the trades have been migrated, CME Clearing generates and distributes clearing confirms to all applicable participants, which is then the legal confirm.

3. How will the clearing house allow for cashflow calculation, reconciling, netting and settlement? Describe the process for fees, coupons and credit event payments.

   CME Clearing publishes several files for participants to assist in the cash flow calculation, reconciliation, netting and settlement of transactions. These include, but are not limited to:
   Product Reference file
   Settlement Price file
   Margin risk array file
   Trade Register
   Index component breakdown

4. Will the clearing house leverage existing CLS central settlement infrastructure, settle bilaterally or other?

   CME Clearing will leverage it's existing settlement bank infrastructure to settle cash flows and margin pay/collects.

5. How are the prices collected and monitored on a daily basis in order to generate margin calls? Do you plan on offering cross product margining?

   Cross margining capability with other products is not currently planned for CME Clearing's day one launch.

   CME Clearing supports both intraday and end-of-day calculation and settlement of variation margin. To appropriately manage risk, CME Clearing will use three pricing data sources to determine price levels, both intraday and end-of-day, for CDS products.

   1) **Executed Prices**
      Executed prices are captured for all trades cleared with CME Clearing on a particular day, regardless of where the trade was executed.

2) **Quoted Prices**
   Founding Member Quotes. Dealer and Buy-Side Founding Members in CMDX are required to submit Price Levels for the full term structures for all indices and single-name reference entities by seniority, restructuring type, and currency eligible for clearing and where such Founding Member has a position.
   Dealer Quotes. CMA aggregates Price Levels submitted by dealers to 30 to 40 buy-side consortium firms. CMA receives ~100,000 anonymous aggregations of Price Levels throughout the day for Day 1 contracts eligible for clearing.
   Price Auction Quotes. For a small selected group of highly illiquid Credits, Dealer and Buy-Side Founding Members in CMDX may be required to participate in an interactive price auction protocol organized on regular basis. Front offices submit Price Levels for Required Tenors for the selected group of highly illiquid Credits.
3) **Position Marks**
   Aggregated marks from dealer's books and records are obtained through third party data providers

CMA aggregates the data collected for settlement price calculation throughout the day, including recovery rates. They will determine the weightings on the data, calculate price levels for the most liquid tenor, determine the term structure shape, and calculate price levels.

CME Group's philosophy regarding settlements is that methodologies are evolutionary, and not only do we welcome input from all of our customers, we encourage it. Nowhere is that more important than it is with CDS. With that in mind, CME Group will establish a CDS Settlement Advisory Group consisting of Founding Members, sell-side participants, buy-side participants, vendors, and CME Group staff that will review the CDS settlement methodology to formalize feedback in order to enhance procedures, calculations, and other settlement criteria.

6. Do you plan to provide a mechanism that provides for client collateral protection (ie. a Control Agreement)?

The CFTC regulatory framework will be used to underpin the financial safeguards package for CDS products. We are seeking a CFTC order permitting CME to hold customer funds in segregated 4d accounts. If clearing of CDS positions begins before a CFTC order is issued and effective, customer funds will be accorded 30.7 "secured" treatments on Day 1, with Customer segregation treatment subsequently. CME's goal is to ensure legal and regulatory certainty to financial safeguards to all market participants, which includes sell-side and buy-side.

The use of 4d segregated accounts will enhance customer protections by protecting account balances against a clearing member bankruptcy as customer funds held in respect of a "commodity contract" under the Bankruptcy Code. This approach will also require clearing firm collection of collateral from customers and clearing firm capital treatments, as well as disclosure of large position information, enhancing market oversight and risk management.

CME's initial use of 30.7 secured accounts, if required, will address customer protection from a bankruptcy perspective by requiring that clearing members account for customer positions and property separately from the positions and property of the firm, and allow clearing members flexibility in collecting collateral from their customers and in calculating capital requirements.

Event Processing:

1. Outline the detailed process flow for handling credit events: determination; adherence; re-versioning of contracts; calculation and fees, rebates and future coupons. Will you abide by the ISDA Determinations Committee decisions or will your approach differ?

CME Clearing shall, as a general rule, ratify and act in accordance with an International Swap Derivatives Association ("ISDA") credit event definition and/or determination of the occurrence of a credit event. In the extraordinary situation where there is no ISDA determination forthcoming, the CME Determinations Board, comprised of dealer and non-dealer market participants is empowered to render a determination.

Event Management Overview

- The CME Cleared CDS contracts will adhere to credit event and succession event determinations made by ISDA
- CME cleared contracts are cash settled at the Final Price from the relevant ISDA auction
- CME cleared contracts also provide contract holders the option to access the relevant ISDA auction for physical settlement in a manner consistent with today's OTC market
- If ISDA does not conduct an auction, the CME Determinations Board will make its best effort to allow for both cash and physical settlement
- CME Clearing will handle the processing of credit events and succession events

Processing of a Credit Event by CME Clearing

- CME Clearing will publish a clearing advisory notice to all clearing participants outlining CME Clearing's credit event processing
- All open positions held by a clearing participant will be collapsed into a single "delivery contract," and any net coupon obligations through the date of the credit event will be paid or collected
- New version of the index will be created in accordance with Markit
- Positions held in the index contract(s) containing affected names will be transferred to the new version of the index as part of the credit event processing done by CME Clearing
- Trading in the post credit event contract will be allowed during the period following the declaration of a credit event up to the day of the auction

2. Outline the same process for successor events, both a rename scenario and a split (e.g. 2-for-1) scenario.

Processing Succession Events

- CME Clearing will modify the RED code and legal name in the contract definition for a simple rename of a reference entity
- CME Clearing will transfer positions in the original entity into positions in each of the two successor entities on a 50-50 notional basis for a 50-50 split of a reference entity

3. Outline the same process for mergers / acquisitions of clearing house members (e.g. bank A merges with bank B, both of whom are clearing members).

CME Clearing works with the Clearing Members to transfer/merge positions as required.

- What happens upon a clearing member failure/default?
    - Will other clearing members be responsible for the failed clearing member's losses/shortfall facing CCP/clearinghouse? What about customers of failed clearer?
    - Will positions of customers of the failed clearing member be transferred to a solvent clearing member? If so will collateral be transferred as well?
    - What customer remedies and protections – both for positions and collateral - will exist if a customer's clearing member fails?
    - What rights will a customer have vis-à-vis collateral posted by the failed clearing member at the CCP/clearinghouse?

- o What legal process will govern recovery of client assets/collateral from a failed clearing member?

Defaulting member's positions

- Market access is restricted
- Collateral is captured
- Portfolios are smoothly liquidated, in part due to liquidity on the trading facility

Customer protection

- Collateral is held in a segregated account
- Positions are maintained and moved to a new clearing member

<u>Technology, Testing & Implementation:</u>

1. How will participants interface with the clearing house? Messaging, uploads, internet, application?

   Participants, IDBs, and electronic platforms can interface to CME Clearing through a web-based interface or a direct-access API. CME Clearing promotes the use of industry standard protocols for messaging.

2. What is the maximum volume the clearing house will be able to handle? Daily transactions, overall portfolio size etc.

   CME Clearing's best in class clearing infrastructure handles over $1.2 quadrillion in notional value traded a year, and manages approximately $100 billion in collateral and approximately $50 trillion in open interest.

3. Explain clearing house testing requirements and operational sign off process for clearing to commence. What period of testing is available for bank validation of margin calculations?

   - Project manager schedules meeting with stakeholders prior to deployment
   - Test metrics and key results/outputs reviewed
   - Open risks/issues discussed
   - Go/No-Go decision is rendered

   CME Clearing has been performed extensive back testing and stress testing on its margin methodology. In addition, we have run 50+ migration exercise scenarios on various portfolios for participants to evaluate and test our margin methodology.

4. How will the clearing house manage the implementation of new processes or products? How will timelines and requirements be agreed?

   CME Clearing has well established procedures for implementing new processes and/or products.