ISDA CDM 2.0
CFTC Technology Advisory Committee – 27 March 2019

ISDA
Safe,
Efficient
Markets

Why the ISDA CDM™ ?

Catalyst

- Over time, each firm has established its own systems and its own unique set of representations for events and processes that occur during the life of a trade.
- There is no commercial advantage to organizations maintaining their own representations. It results in firms having to continually reconcile their trades to make sure they have the same information – a big drain on resources. It also curtails the potential for greater automation, and results in increased operational risk.
- New technologies offer the potential for greater automation and efficiency, reducing complexity and costs. But effective automation can only be built on standardization.

Opportunity

- Derivatives market participants are looking at ways to reduce costs and improve the efficiency of back-office processes.
- An opportunity exists to create standards that support innovation and promote the adoption of new technologies.
- ISDA has a 30-year track record in developing industry standards.

ISDA CDM is a machine-readable and machine-executable data model for derivatives products, processes and calculations.
The objective of ISDA CDM is to standardise how derivatives are traded and managed through their lifecycle.
This should reduce costs associated with current manual processes, especially in the areas of:

- trade affirmation and trade management,
- collateral management,
- regulatory reporting,
- reconciliations,
- exercises and settlements,
- porfolio compression,
- novation and transfers.

ISDA CDM is provided in several languages to aid deployment on many new and existing technology platforms.
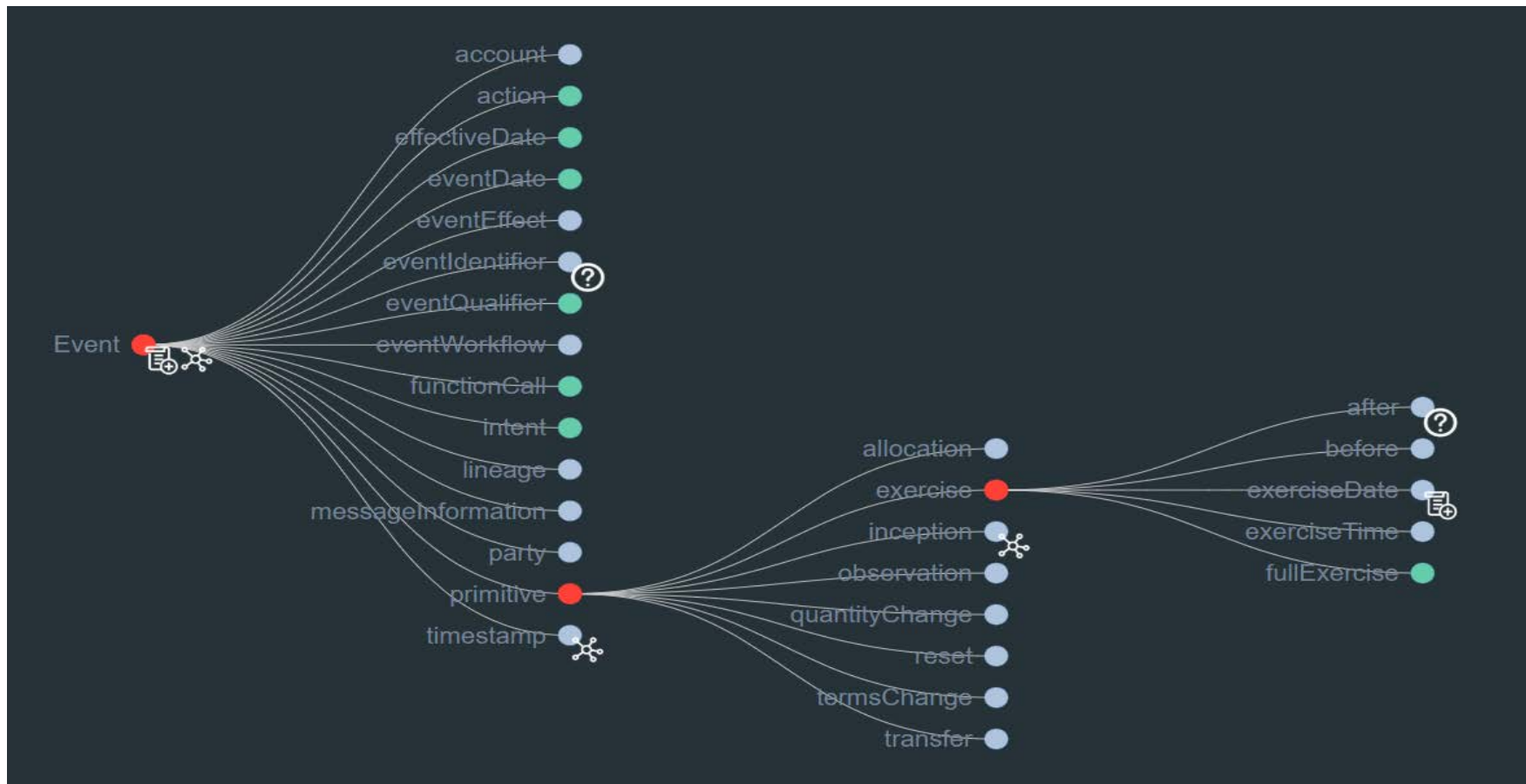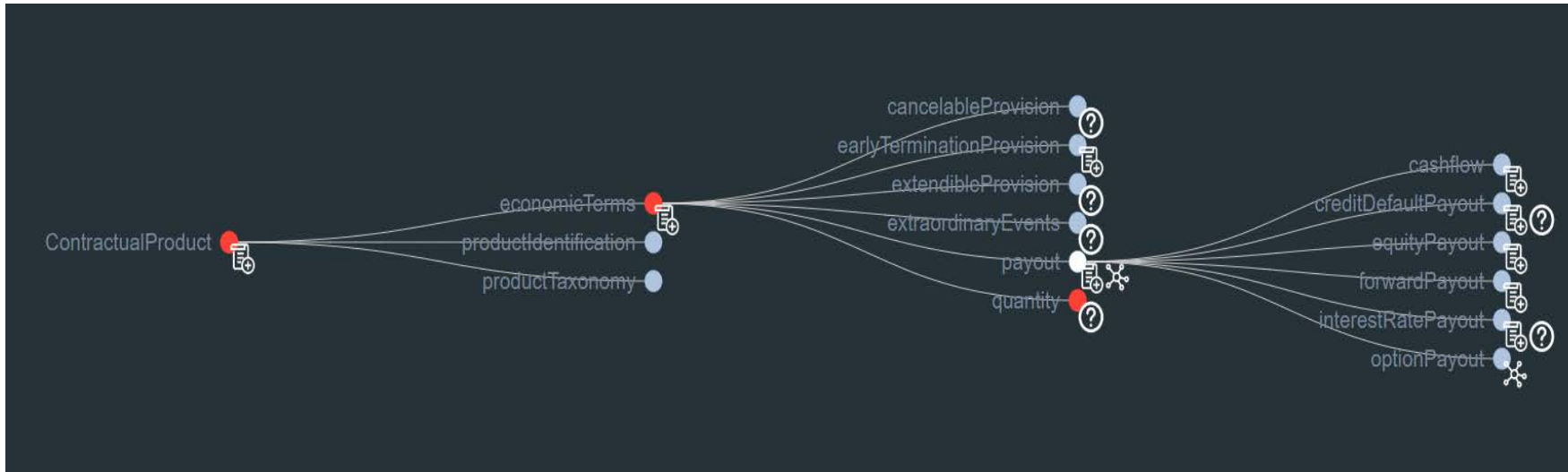
A snapshot of the ISDA CDM event classes with primitive events which are used to compose more complex business processes. Events are expressed as before and after state.

What is the ISDA CDM™ ?

A snapshot of the ISDA CDM product classes with payouts which are used to compose products
e.g. interestRatePayout + equityPayout = Equity Swap

```
10559  calculation FixedAmount <"2006 ISDA Definition Article 5 Section 5.1. Calculation of a Fixed Amount: The
           Fixed Amount payable by a party on a Payment Date will be: (a) if an amount is specified for the Swap
           Transaction as the Fixed Amount payable by that party for that Payment Date or for the related
           Calculation Period, that amount; or (b) if an amount is not specified for the Swap Transaction as the
           Fixed Amount payable by that party for that Payment Date or for the related Calculation Period, an
           amount calculated on a formula basis for that Payment Date or for the related Calculation Period as
           follows: Fixed Amount = Calculation Amount × Fixed Rate × Day Count Fraction.">
10560  {
10561      fixedAmount = calculationAmount * fixedRate * dayCountFraction
10562
10563      where
10564          calculationAmount   : InterestRatePayout -> quantity -> notionalSchedule -> notionalStepSchedule ->
                   initialValue
10565          fixedRate           : InterestRatePayout -> rateSpecification -> fixedRate -> initialValue
10566          dayCountFraction    : InterestRatePayout -> dayCountFraction
10567  }
```

A snapshot of the ISDA CDM calculation syntax, used to express machine executable ISDA definitions.
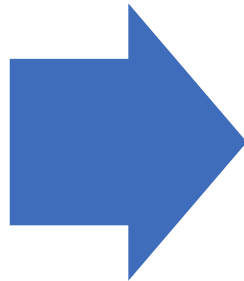
ISDA CDM™ 2.0

What is the ISDA CDM 2.0?

The ISDA CDM 2.0 is the full version of the ISDA Common Domain Model for interest rate and credit derivatives, made available to market participants and technology providers to adopt, implement and deploy in their own production projects.

This version of the CDM is **open to all market participants under an open license**, allowing firms to use the model **without charge**.

ISDA CDM 1.0

- Products:
  - Vanilla CDS and interest rates swaps and option
- Calculation code:
  - One day-count fraction for interest calculation
- Events:
  - 11 basic lifecycle events

ISDA CDM 2.0

- Products:
  - A complete representation of interest rate and credit derivatives products and an initial representation of equity swap products
- Calculation code:
  - A complete representation of the most commonly used ISDA-defined day-count fractions, and the fixed amount and floating amount calculations, represented as machine executable ISDA definitions.
- Events:
  - A representation of a comprehensive set of 20+ lifecycle events on derivatives products, such as allocation and clearing, with associated lineage features for traceability purposes.
- An initial representation of the ISDA Credit Support Annex for initial margin.
- A comprehensive set of examples, default implementation components (including apps to convert external data to CDM form, calculate interest amounts and establish lineage between sets of events), and documentation. These all facilitate CDM on-boarding by market participants, service providers and technology firms

What can the ISDA CDM do?

Enhance interoperability & straight through processing: The ISDA CDM is a key enabler for interoperability between systems and services, removing the burden of setting up connections to different systems and entities, laying the groundwork for straight through processing.

Deliver better regulatory oversight: The ISDA CDM promotes transparency and alignment between regulators and market participants. For example, regulatory obligations, such as reporting or stress testing, could be met by specifying via code that certain CDM components or transaction data should be collected and presented in a certain way. This will drastically improve fidelity and integrity of regulatory data, removing regulatory and interpretation risk.

Creates an environment for innovation in financial markets: Use of the ISDA CDM will speed up the development of new technology solutions for the derivatives market by allowing providers to focus on what they specialize in – the technology – rather than requiring them to interpret and represent derivatives market events and processes individually. The resulting technology solution will also be interoperable with other offerings which are using ISDA CDM.

What can the ISDA CDM do?

Enhance interoperability & straight through processing:

1. Clearing: Entities could transfer trades from one central counterparty (CCP) to another using a transparent, uniform process set out in the ISDA CDM. This would allow all stakeholders to implement the transfer identically, mitigating the need for multiple post-transfer reconciliations.
   - ISDA has been working with some of the major CCPs to ensure ISDA CDM contains a model for the clearing process which works across CCPs.
2. Collateral management: An ISDA Credit Support Annex might be shared with two collateral management systems, each responsible for different parts of the margin/collateral process. If the data and processes are defined in the ISDA CDM, it allows for portability and frictionless interchange of information.

Deliver better regulatory oversight:

3. Reporting: ISDA is working with regulators on a pilot to develop reporting rules into ISDA CDM as code, this formal expression of the reporting rule, in the same code as the transaction data, will allow a uniform implementation of the reporting rules. Multiple interpretations of when and what to report will be eliminated in this implementation.

What next for ISDA CDM?

Already planned additional enhancements for 2019 include:

o A full model for data and processes within collateral agreements, which will integrate the ISDA CDM with ISDA Create and other collateral services. ISDA Create is a new platform that allows users to negotiate and execute ISDA documentation online.

o An expansion in product scope to cover:
   - Forwards and the foreign exchange asset class,
   - Equity asset class (equity/portfolio swap products initially),
   - Securities for collateral exchange and financing transactions,
   - Basic commodity products (contingent on use cases).

Further integration of ISDA CDM with technology providers working on solutions for financial markets.

Implementation of reporting rules to demonstrate power of ISDA CDM to improve data quality and remove interpretation risk in regulatory implementations.