MEMORANDUM

To: File No. S7-34-10

From: Yvonne Fraticelli

Date: April 22, 2011

Subject: Meeting with ISDA

On April 21, 2011, representatives from the Securities and Exchange Commission ("SEC") and the Commodity Futures Trading Commission ("CFTC") met with representatives from the International Swaps and Derivatives Association, Inc. ("ISDA"). The SEC representatives at the meeting were Tom Eady, Adam Glass, Scott Bauguess, Craig Lewis, Matt Carruth, and Yvonne Fraticelli. The CFTC representatives at the meeting were David Taylor, Irina Leonova, Jeff Steiner, Andy Tathai, John Rogers, and George Pullen. The ISDA representatives at the meeting were Robert Pickel, Chris Young, and Karel Engelen.

At the meeting, the ISDA representatives discussed ISDA's April 14, 2011, white paper (a copy of which is attached) regarding product identifiers for standardized swaps and security-based swaps.

[No agenda available for this meeting.]

Product Representation for Standardized Derivatives

White Paper

April 14, 2011

ISDA Safe, Efficient Markets

Product Representation for Standardized Derivatives

White Paper

Contents

1. Executive Summary

For standardized OTC derivatives i.e. broadly speaking those derivatives that will be centrally cleared or electronically executed, a marketplace infrastructure similar in certain respects to the one in place for securities markets and futures and listed options markets could be developed if all processes forming part of the lifecycle workflow (buy/sell trades; post-execution clearing and settlement activities; reports to marketplace regulators) can use product identifiers that link to the full set of product economics abstracted as reference data. Such an approach is much simpler than the contractual workflow currently in place for OTC derivatives, where each of the lifecycle events needs to carry a full representation of the contract economics.

In this white paper we examine how this can be achieved for the standardized portion of the OTC derivatives markets. The first part of the paper contains a proposed approach, details the main fundamentals for the approach and describes the benefits of this change in market infrastructure. In the second part of the paper we examine a set of use cases and describe the next steps.

The central infrastructure change that is proposed consists of establishing a Derivatives Product Registry facility that will:

- Maintain a reference data representation for standardized derivatives;
- Issue product identifiers that will be associated with each of those derivatives;
- Disseminate this reference information to all market participants.

The implementation of such a central Derivatives Product Registry is built around two main concepts:

- Leverage the FpML data representation protocol for OTC derivatives in order to provide an electronic reference (a.k.a. canonical) representation in the form of XML documents for each of the distinct derivatives products that are eligible for clearing or electronic execution through marketplace facilities.
- Associate unique identifiers to each of those canonical representations. This will allow for the transactional data to carry those identifiers, which in turn point to referential databases that will contain the economic details of those derivative products.

As a result, the following benefits will be achieved:

- Simplification of the trade processing and reporting architecture across the marketplace for the standardized products, as market participants will be able to abstract the trade economics through reference data instead of having to specify them as part of each transaction.
- Better support for the regulatory reform initiatives:
    - Price transparency reporting: unambiguous relationship between the price and the full trade economics, via the Product Identifier.

- Electronic trading platforms' relationships with participants: the "reference data" approach will facilitate usage of and interoperability with other industry protocols. Participants reporting to the Data Repositories: eased through the reporting of Product Identifiers instead of full trade economics.
- Regulatory transparency: better aggregation & analysis of positions with the same Product Identifier.

This proposal partly relates to the Unique Product Identifier (UPI) concept specified by the CFTC through its proposed regulation in application of the Dodd-Frank Act. It goes beyond some of the objectives assigned by the Commission.

The proposed CFTC regulation 17 CFR Part 43 indicates that "*Unique product identifier means* a unique identification of a particular level of the taxonomy of the asset class or sub-asset class in question." Although the Product representation solution that is developed in this white paper is not aimed at providing a taxonomy solution, this paper identifies the need for a taxonomy that will be used to navigate the products available in the Derivatives Product Registry. Furthermore, this paper stresses the benefits associated with leveraging a common data representation protocol (FpML) across the standardized and bespoke derivatives for the purpose of having a unique aggregation taxonomy across those. To this effect, ISDA has proposed to work with regulators in order to review the taxonomy developed through FpML over the past 10 years and enhance where needed.

CFTC proposed regulation 17 CFR Part 43 also indicates that "The Commission envisions that the reporting of the data fields in appendix A to proposed part 43 may eventually be reported in the form of a consolidated ticker, particularly for the more standardized swaps that are traded on swap markets. Additionally, the Commission believes that when unique product identifiers emerge they will be publicly disseminated, increase uniformity and transparency across real-time disseminators and ultimately lead to greater transparency and price discovery." Example of such price tickers are developed as part of this text: **16:20:47 IRS 10 TXIIIL 2.53 @0 G21** for a fixed-float interest rate swap, and **16:20:47 IRS 1 0 TXIIIL S/1W 2.53 @0.07 G21 EMBED1 EU 2.53PF@–.04 LOG12** for an interest rate swaption. (See here for more details about this ticker approach.)

For the standardized derivatives that will be executed on an electronic platform or centrally cleared, the solution proposed in this white paper supports such price transparency reporting more effectively than the proposed price ticker, because of the Product Identifier which points to the complete set of derivatives economics, i.e. an unambiguous specification of the product. We however recognize that, by focusing on the products that are executed and/or cleared on electronic markets, this leaves open the question as to how prices would be published for more bespoke derivatives that are transacted OTC and are not cleared.

2. The Value Proposition

The proposal is to develop a normalized product representation, with associated product identifiers, for swaps and other derivatives instruments which are listed or cleared through marketplace facilities. Such a normalized representation and product identifiers are expected to yield the following benefits:

1. **Facilitation of the transparency reporting** that is mandated as part of the financial reform: a standardized trade can be reported as a combination of certain transaction characteristics (such as notional), the identifier (which refers to the product economics) and a price.
2. **Simplification of the trade processing flows**, both at the marketplace level (where the respective participants will exchange transactional data which references those product identifiers) and as part of the internal processing for each of the participants (where the trade economics will be positioned as reference data, accessible through the unique product ID).
3. **Greater flexibility among participants**, who will be able to exchange information and move positions on instruments more easily among themselves, either vertically throughout the flow lifecycle (from execution facilities, all the way through to the trade repositories); or horizontally between respective participants (e.g. by allowing an easier transfer of positions between clearing agents).
4. **Greater usability of and interoperability with other industry protocols**[1], such as FIX in the trade execution space for financial products, which are more geared toward supporting simpler products with an associated product identifier or with few normalized data elements (like FX).

This initiative focuses on the standardized derivatives instruments that are electronically executed and/or centrally cleared. This market segment is expected to grow rapidly as a result of regulatory reforms currently under way. The reason for such scope limitation is twofold: (i) the proposed workflow requires that the product be centrally available before clearing or electronic execution, and (ii) the focus on standardized derivatives corresponds with the scope of electronic trading platforms and CCPs. [2]

As part of the development of this white paper, it has been suggested that OTC participants should be allowed to make use of registered products if there are cases for them to be traded OTC or processed outside of central clearing. Similarly not all electronic execution will necessarily require the use of Product IDs. The exact scope will require further detailed discussions and might change over time.

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[1] ISDA/FpML promotes the use of existing open industry standards leveraging the different strengths of existing standards where appropriate. ISDA/FpML is actively involved in ISO 20022 and working towards FpML and ISO 20022 convergence on the level of the business model. FpML currently supports several ISO standards such as BIC and currency codes and will support emerging standards such as LEI.

[2] The scope is limited to traditional OTC products that become subject to central clearing or become listed or traded on electronic platforms. This initiative is not aimed at futures or listed options products which traditionally have been and still are transacted through exchanges and clearing facilities. Such products are generally simpler in representation and already benefit from a well developed central market infrastructure.

3. The Derivatives Product Registry

A. The working principles

a. Central administration

In order to guarantee that (i) no redundant products are created, and (ii) the information dissemination to the marketplace takes place efficiently, the Derivatives Product Registry should be centrally administered

- The need for a centralized model to ensure the uniqueness of derivatives products stems from the following two considerations. First, the registration of derivatives products that are cleared or electronically executed on a central platform is not driven by the issuer agent. Whereas in the securities space the issuer's agent knows when a product is 'new' and needs to be registered, in the derivatives space the registration is triggered by a decentralized set of actors who may not have complete knowledge as to whether a product with a given set of economics has already been created. Hence the benefit of having a centralized model to act as a central coordination agent to avoid such product duplication. Second, there is a concern that decentralization of the derivatives product creation at the venue level might lead to a situation where distinct products with same economics would coexist and as a result may be perceived as not equivalent (i.e. would the same product, created by two distinct execution venues, be deemed fungible if cleared by the same facility?). Having a centralized registry process eliminates this concern by focusing exclusively on the economics of those products.
- While we expect the creation of new products to be initiated by the execution and clearing venues, they will have to be propagated to all participants in order to be usable. As a result, the possible benefits associated with a faster turnaround in the creation process would be mitigated by the increased latency (everything being equal) in the dissemination process.

However, a decentralized approach for parts of the process will be further considered as part of the implementation considerations.

b. Full set of economics

The Derivatives Product Registry will maintain the full set of economics for each of the products. As mentioned above, this will not include a qualification of the execution and clearing venues where such products are eligible. We expect those venues to link such information to the trades as part of the execution and clearing stages, respectively.

The Derivatives Product Registry will be responsible for ensuring that no duplicate product economics exist in the registry.

c. FpML compliant representation

The Derivatives Products will be represented through FpML Product Schemas that will form part of the FpML standard. ISDA/FpML will develop a formal process for issuing appropriate schema representations for such products.

As part of the registration process, the Derivatives Products Registry will ensure that those products will conform to the FpML schema.

d. Marketplace access to the registry

The Derivatives Product Registry will make the registry available to the marketplace in a non-restricted fashion. In order to do so, a navigation tool should be provided that allows open access to:

- The FpML schema library; which we expect to be actively used by the execution and clearing venues to determine if a schema is available to support a new product or tradable instrument (see section B below for the proposed distinction between those two concepts as part of the proposed data modeling). If a schema is not available, ISDA/FpML will be responsible for its creation.
- The product registry; which we expect to be accessed by all marketplace participants. This access will need to combine user-query tools to navigate the registry, as well as electronic APIs for the purpose of data dissemination.

e. Common product taxonomy with the OTC representation

One of the benefits associated with the usage of FpML to support the Derivatives Product representation is the ability to make use of a common protocol across the derivatives that are traded OTC and those that are traded through central execution and clearing venues and benefit from the product reference data representation.

This translates into a need for a common taxonomy, for the purpose of aggregating risks and positions across those two sets of representation.

f. Non-intelligent product identifier

We favor a 'non-intelligent' Product Identifier, because experience demonstrates that 'intelligent' identifiers make inherent assumptions relating to the structure of underlying products, and to the set of attributes required for unique identification. These assumptions can be rendered invalid over time as the complexity of product offerings increases. This would be of particular concern in the derivatives space, which is characterized by a dynamic product innovation.

For ease of identification and readability of Product Identifiers, aliases can be associated with the product identifiers. Price transparency reporting is an example where, given the preference for non-intelligent identifiers, the use of aliases could provide value.

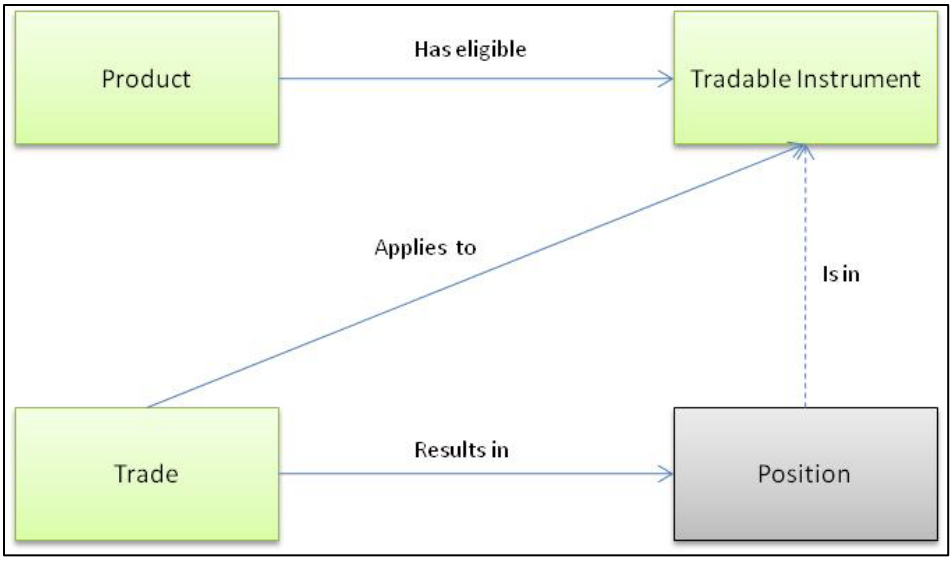
Note: A decentralized approach, as referred to under 3.A.a., would require the use of some form of intelligent identifier.

B. The two-tiered data model

For scalability purposes, it is proposed to have a two-tiered data model to present derivatives products:

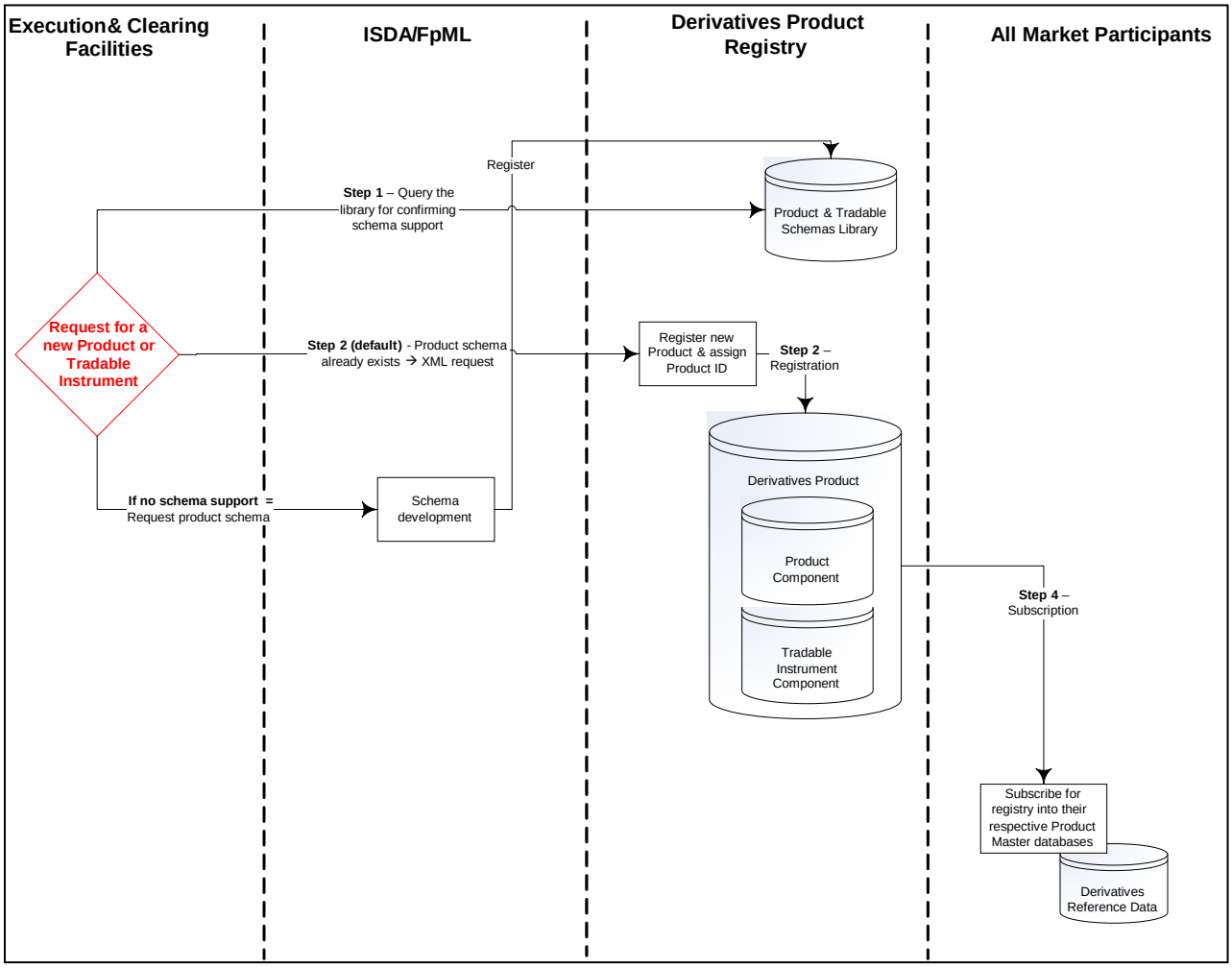
- The 'product' level, which captures the attributes which are relatively static in nature.
- The 'tradable instrument' level, which incorporates the economic attributes that are more dynamic in nature. The tradable instrument represents the executable instance of the product.

The figure below illustrates those relationships. The Product and Tradable Instrument entities will both be used as part of the Derivatives Product Registry to represent the product reference data. A Trade consists of transactional data that accesses product and tradable instrument data through an identifier.


Product
Has eligible
Tradable Instrument
Applies to
Is in
Trade
Results in
Position

C. The marketplace workflow

The below diagram illustrates the high-level workflow that is envisioned for the marketplace.



Observations:

- We expect the requests for new derivatives products to be initiated by the marketplace facilities (whether execution or clearing venues) that will list /clear those derivatives. As discussed in the scope section, the reason for excluding the OTC market is twofold: (i) there will be some level of latency as part of the product creation process, and (ii) the intent is to focus on standardized products. However, this would not prevent marketplace participants from making use of those derivatives products as part of their OTC activity.

- ISDA/FpML will be a critical participant in the workflow, responsible for (i) making the product schemas available to the Derivatives Product Registry, and (ii) evolving the taxonomy across the whole FpML spectrum jointly with market participants, marketplace facilities (such as SDR) and regulators. Formal Service Level Agreements (SLA) will need to be defined in relation to the production/availability of Product and Tradable Instrument schemas.
- We expect the registration process to be completely automated, as long as the supporting schema exists. As a result, we expect new product requests to be processed intra-day, using a messaging infrastructure among participants.
- As mentioned in other parts of this document, the navigation tool into the Derivatives Products Registry will be a critical component of the infrastructure.

D. Open issues

A few open issues have been identified, for which resolution goes beyond the scope of this white paper.

a. Flex instruments

Flex instruments are products (such as equity index, commodity and FX futures and options) which are listed and centrally cleared, while having certain attributes which are created 'on the fly' at the time of trading. Examples of such attributes include the option strike level, the product termination/expiry date, or even the underlying asset.

There is currently no standard way to process such instruments. While the vertically integrated exchanges may process them efficiently through their own infrastructure, issues tend to arise once there is a need to interface with market participants or third party clearing facilities.

With respect to this white paper, no conclusive assessment can be made at this point regarding those instruments. There is a need to develop a case-by-case analysis (which is beyond the scope of this document), as the modeling approach will depend on whether the attributes in question belong to the Tradable Instrument or the Trade level.

b. Corporate actions

How should the Derivatives Product Registry handle corporate actions? One approach would be to have a versioning process, whereby a new version of product or tradable instrument is created each time there is a corporate action. Another approach would be to create a new product (or tradable instrument) altogether.

Those different approaches need to be evaluated in the context of the respective use cases. As an example, how would CDS Index tradable instrument operate when there is a credit event on one of the index constituents? Today, a new Markit RED 9-code is generated for the index and its version increments, e.g. 1 to 2, and the 'annex date' changes. What is the timing of when the new Markit RED 9-code is generated? What do the CCPs do in these circumstances? (e.g. do they clear two distinct instruments?)

4. The FpML Representation of the Product & Tradable Instrument

Use Case #1 – Fixed-Float Interest Rate Swap

The modeling approach for the fixed-float interest rate swap consists of positioning the essential set of data elements in a cohesive fashion at the Product level.

The data elements that are considered as not belonging to the Product level representation are the following:

- The start/end dates of the swaps, for which new dates will typically be created every day. The approach for tackling those is to rather associate a tenor concept at the Tradable Instrument level, which we expect to be expressed in years (e.g. two years, five years, …). The start/end dates will then be deduced from the trade date (Trade level attribute), tenor (Tradable Instrument attribute) and spot date convention associated with the Floating Rate Index (Product attribute).
- The lag (if any) between the trade start date (which will be at the trade level) and the calculation start date (which would be the effective date of the trade in a contractual representation.

The following table recaps the proposed approach for the positioning of the respective data constituents:

Business Key	Sample Value	Modeling Approach
Fixed Start Date	2010-06-29	Trade (Implied)
Fixed Start Date Adjustment	NONE	Product
Fixed End Date	2012-06-29	Trade (implied)
Fixed End Date Adjustment	MODFOLLOWING	Product
Fixed End Date Business Days	GBLO USNY	Product
Tenor	2 Years	Tradable Instrument
Type	Spot	Tradable Instrument
Fixed Calculation Period End Dates Adjustment	MODFOLLOWING	Product
Fixed Calculation Period and Payment Business Days	GBLO USNY	Product
Fixed Calculation and Payment Frequency	Semi-Annually	Product
Fixed Payment Dates Adjustment	MODFOLLOWING	Product
Fixed Currency	USD	Product
Fixed Day Count Convention	30/360	Product

Business Key	Sample Value	Modeling Approach
Float Start Date	2010-06-29	Trade (Implied)
Float Start Date Adjustment	NONE	Product
Float End Date	2012-06-29	Trade (Implied)
Float End Date Adjustment	MODFOLLOWING	Product
Float End Date Business Days	GBLO USNY	Product
Float Calculation Period End Dates Adjustment	MODFOLLOWING	Product
Float Calculation Period and Payment Business Days	GBLO USNY	Product
Float Calculation and Payment Frequency	Quarterly	Product
Float Payment Date Adjustment	MODFOLLOWING	Product
Float Currency	USD	Product
Reset Frequency	Quarterly	Product
Fixing Date Determination	2 London Business Days prior to each Reset Date	Product
Floating Rate Index	3-Month USD-LIBOR-BBA	Product
Float Day Count Convention	ACT/360	Product

a) The Product Representation

As previously mentioned, the Product schema representation contains a cohesive description of the trade economics. Aside from the insertion of the productType and productId elements, the schema representation is consistent with the confirmation view.

```
<swap>
        <productType>InterestRateSwap</productType>
        <productId productIdScheme="http://newutility.com/code/product_id">789012</productId>
        <swapStream>
                <calculationPeriodDates id="fixedCalcPeriodDates">
                        <effectiveDate>
                                <dateAdjustments>
                                        <businessDayConvention>NONE</businessDayConvention>
                                </dateAdjustments>
                        </effectiveDate>
                        <terminationDate>
                                <dateAdjustments>
                                        <businessDayConvention>MODFOLLOWING</businessDayConvention>
```

```
                                        <businessCenters>
                                                <businessCenter>GBLO</businessCenter>
                                                <businessCenter>USNY</businessCenter>
                                        </businessCenters>
                                </dateAdjustments>
                        </terminationDate>
                        <calculationPeriodDatesAdjustments>
                                <businessDayConvention>MODFOLLOWING</businessDayConvention>
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                                        <businessCenter>GBLO</businessCenter>
                                        <businessCenter>USNY</businessCenter>
                                </businessCenters>
                        </calculationPeriodDatesAdjustments>
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                                <periodMultiplier>6</periodMultiplier>
                                <period>M</period>
                        </calculationPeriodFrequency>
                </calculationPeriodDates>
                <paymentDates>
                        <calculationPeriodDatesReference href="fixedCalcPeriodDates"/>
                        <paymentFrequency>
                                <periodMultiplier>6</periodMultiplier>
                                <period>M</period>
                        </paymentFrequency>
                        <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
                        <paymentDatesAdjustments>
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                                <businessCenters>
                                        <businessCenter>GBLO</businessCenter>
                                        <businessCenter>USNY</businessCenter>
                                </businessCenters>
                        </paymentDatesAdjustments>
                </paymentDates>
                <calculationPeriodAmount>
                        <calculation>
                                <notionalSchedule>
                                        <notionalStepSchedule>
                                                <currency
currencyScheme="http://www.fpml.org/ext/iso4217">USD</currency>
                                        </notionalStepSchedule>
                                </notionalSchedule>
                                <dayCountFraction>30/360</dayCountFraction>
                        </calculation>
                </calculationPeriodAmount>
        </swapStream>
        <swapStream>
                <calculationPeriodDates id="floatingCalcPeriodDates">
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                                <dateAdjustments>
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                                </dateAdjustments>
                        </effectiveDate>
                        <terminationDate>
                                <dateAdjustments>
```

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                                <businessCenter>USNY</businessCenter>
                        </businessCenters>
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        </terminationDate>
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                        <businessCenter>USNY</businessCenter>
                </businessCenters>
        </calculationPeriodDatesAdjustments>
        <calculationPeriodFrequency>
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                <period>M</period>
        </calculationPeriodFrequency>
</calculationPeriodDates>
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        <calculationPeriodDatesReference href="floatingCalcPeriodDates"/>
        <paymentFrequency>
                <periodMultiplier>3</periodMultiplier>
                <period>M</period>
        </paymentFrequency>
        <payRelativeTo>CalculationPeriodEndDate</payRelativeTo>
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                        <businessCenter>USNY</businessCenter>
                </businessCenters>
        </paymentDatesAdjustments>
</paymentDates>
<resetDates id="resetDates">
        <calculationPeriodDatesReference href="floatingCalcPeriodDates"/>
        <resetRelativeTo>CalculationPeriodStartDate</resetRelativeTo>
                                <fixingDates>
                <periodMultiplier>-2</periodMultiplier>
                <period>D</period>
                <dayType>Business</dayType>
                <businessDayConvention>NONE</businessDayConvention>
                <businessCenters>
                        <businessCenter>GBLO</businessCenter>
                </businessCenters>
                <dateRelativeTo href="resetDates"/>
        </fixingDates>
        <resetFrequency>
                <periodMultiplier>3</periodMultiplier>
                <period>M</period>
        </resetFrequency>
        <resetDatesAdjustments>
                <businessDayConvention>MODFOLLOWING</businessDayConvention>
                <businessCenters>
```

```
                                        <businessCenter>GBLO</businessCenter>
                                        <businessCenter>USNY</businessCenter>
                                    </businessCenters>
                                </resetDatesAdjustments>
                            </resetDates>
                            <calculationPeriodAmount>
                                <calculation>
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                                        <notionalStepSchedule>
                                            <currency
currencyScheme="http://www.fpml.org/ext/iso4217">USD</currency>
                                        </notionalStepSchedule>
                                    </notionalSchedule>
                                    <floatingRateCalculation>
                                        <floatingRateIndex>USD-LIBOR-BBA</floatingRateIndex>
                                        <indexTenor>
                                            <periodMultiplier>3</periodMultiplier>
                                            <period>M</period>
                                        </indexTenor>
                                    </floatingRateCalculation>
                                    <dayCountFraction>ACT/360</dayCountFraction>
                                </calculation>
                            </calculationPeriodAmount>
                        </swapStream>
</swap>
```

b) The Tradable Instrument Representation

The Tradable Instrument representation will contain the two sets of data attributes, which will be supported through a new schema construct:

- The forward terms of the swap, i.e. the lag between the trade date (which is represented at the trade level) and the start date for the calculation period. This is supported through the <type> node and, if a forward term is specified the <start> node. Note that further analysis is required to determine the most appropriate way of ensuring that the marketplace has a common way of calculating the start date when the <type> node contains a value of 'Spot'. For example, should the rules be parameterized and embedded as part of the product representation itself?
- The tenor of the swap, which is expressed through the <term> node.

Three examples are developed below, which present different use cases that have been identified: spot trade, forward starting trade, and forward starting IMM trade.

For the purpose of the forward starting IMM trade example we added a year field, the idea being to explicitly suggest fungibility by tenor across trades done on a given day. Another suggested approach consists in positioning the <year> as part of the trade data, which would result in a smaller number of tradable instruments.

Spot IRS

```
<tradableInstrument>
        <interestRateSwapInstrument>
                <tradableInstrumentType>USD-LIBOR-BBAIRSSpot</tradableInstrumentType>
        <tradableInstrumentId tradableInstrumentIdScheme="http:// http://newutility.com
/code/tradableInstrument_id">EFGHIJ</tradableInstrumentId>
                <productId productIdScheme="http://newutility.com/code/product_id">789012</productId>
                <calculationPeriodDatesMethod>
                        <type>Spot</type>
                        <term>
                                <periodMultiplier>2</periodMultiplier>
                                <period>Y</period>
                        </term>
                </calculationPeriodDatesMethod>
        </interestRateSwapInstrument>
</tradableInstrument>
```

Forward Starting IRS

```
<tradableInstrument>
        <interestRateSwapInstrument>
                <tradableInstrumentType>USD-LIBOR-BBAIRSForwardStarting </tradableInstrumentType>
                <tradableInstrumentId tradableInstrumentIdScheme="http:// http://newutility.com
/code/tradableInstrument_id">KLHEKJ</tradableInstrumentId>
                <productId productIdScheme="http://newutility.com/code/product_id">789012</productId>
                <calculationPeriodDatesMethod>
                        <type>ForwardStarting</type>
                        < start >
                                < offset >
                                        <periodMultiplier>1</periodMultiplier>
                                        <period>Y</period>
                                </ offset >
                         </ start >
                        <term>
                                <periodMultiplier>2</periodMultiplier>
                                <period>Y</period>
                        </term>
                </calculationPeriodDatesMethod>
        </interestRateSwapInstrument>
</tradableInstrument>
```

Forward Starting IMM IRS:

```
<tradableInstrument>
        <interestRateSwapInstrument>
                <tradableInstrumentType>USD-LIBOR-BBA IRSForwardIMM </tradableInstrumentType>
                <tradableInstrumentId tradableInstrumentIdScheme="http:// http://newutility.com
```

```
/code/tradableInstrument_id">KLDHIJ</tradableInstrumentId>
                    <productId productIdScheme="http://newutility.com/code/product_id">789012</productId>
                    <calculationPeriodDatesMethod>
                              <type>ForwardStarting</type>
                              < start >
                                        < monthYear >
                                                  <month>06</month>
                                                  <year>2011</year>
                                        </monthYear>
                                        <rollConvention>IMM</rollConvention>
                               </ start >
                              <term>
                                        <periodMultiplier>2</periodMultiplier>
                                        <period>Y</period>
                              </term>
                    </calculationPeriodDatesMethod>
          </interestRateSwapInstrument>
</tradableInstrument>
```

Use Case #2 – Basis Swap

Following analysis, it appears that the basis swap product representation follows very much the structure of the fixed-float interest rate swap representation, the only difference being that there are two float legs instead of one fixed and one float leg.

Use Case #3 – Cross-Currency swap

a) The Product Representation

Following analysis, it appears that the Product representation of the cross-currency swap with constant notional[3] has just one structural difference with respect to the interest rate swap: the addition of the principal exchange nodes:

```
<swap>
          <productType>InterestRateSwap</productType>
          <productId productIdScheme="http://newutility.com/code/product_id">456789</productId>
          <swapStream id="floatingLeg">
                    <!—Same structure as the interest rate swap-->
```

[3] The case of mark-to-market currency swaps where the principal exchange of one of the legs varies has not been evaluated as part of this white paper.

```
            <principalExchanges>
                  <initialExchange>true</initialExchange>
                  <finalExchange>true</finalExchange>
                  <intermediateExchange>true</intermediateExchange>
            </principalExchanges>
      </swapStream>
      <swapStream id="floatingLeg2">
            <!—Same structure as the interest rate swap-->
            <principalExchanges>
                  <initialExchange>true</initialExchange>
                  <finalExchange>true</finalExchange>
                  <intermediateExchange>true</intermediateExchange>
            </principalExchanges>
      </swapStream>
</swap>
```

b) The Tradable Instrument Representation

The Tradable Instrument Representation will be similar to the interest rate swap: the principal exchange amounts will be part of the trade representation, as it results from the actual notional of the trade.

Use Case #4 - Single Name Credit Default Swap

The proposed approach is to respectively position the Product and Tradable Instrument representation along the lines of the physical settlement Matrix Transaction Types. With some exceptions, the Product level contains the specifications as can be found in the physical settlement matrix, while the Tradable Instrument contains the additional elements that would lead to fungible trades. (For more information on the Credit Physical Settlement Matrix: http://www.isda.org/c_and_a/oper_commit-usefuldocs.html#cd)

Credit-Derivatives-P
hysical-Settlement-Ma

Given the central role of the settlement matrix, the credit example has been worked out in two different ways. The first is with an explicit reference to the physical settlement matrix without replicating any of the elements defined in the settlement matrix. For the second approach, the settlement matrix elections have been replicated in the product representation without explicit reference to the matrix.

a) The Product Representation for case 1 – Reference to the matrix

This corresponds to the approach where the schema includes an explicit reference to the physical settlement matrix, while not including any of the elements that are part of it. To this effect, a <matrixTerm> element is introduced as part of the product definition to host this reference.

The following table shows the approach of an explicit reference to the physical settlement matrix:

Business Key	Sample Value	Modeling Approach
Effective Date	2010-06-20	Not present. Implied by the trade date
Effective Date Business Day Convention	NONE	Product
Scheduled Termination Date	2012-06-20	Tradable Instrument
Scheduled Termination Date Business Day Convention	NONE	Product
Business Day Convention	FOLLOWING	Product
Fixed Rate	1.00%	Tradable Instrument
Fixed Rate Payer Payment Dates Frequency and Payment Day	Quarterly on the 20th of the month	Product
Floating Rate Payer Calculation Amount Currency Denomination	USD	Product
Reference Entity Identifier	Markit RED Entity ID 3H98A	Tradable Instrument
Reference Entity Name	Ford Motor Company	Tradable Instrument
Reference Obligation	ISIN US345370BX76 (also RED could be used)	Tradable Instrument
Matrix Type	CreditDerivativesPhysicalSettlementMatrix	Product
Matrix Term	StandardNorthAmericanCorporate	Product

```
<creditDefaultSwap>
        <productType>SingleNameCreditDefaultSwap</productType>
        <productId productIdScheme="http://newutility.com/code/product_id">123456</productId>
        <generalTerms>
                <effectiveDate>
                        <dateAdjustments>
                                <businessDayConvention>NONE</businessDayConvention>
                        </dateAdjustments>
                </effectiveDate>
                <scheduledTerminationDate>
                        <dateAdjustments>
                                <businessDayConvention>NONE</businessDayConvention>
                        </dateAdjustments>
                </scheduledTerminationDate>
                <dateAdjustments>
                        <businessDayConvention>FOLLOWING</businessDayConvention>
                </dateAdjustments>
```

```
        </generalTerms>
        <feeLeg>
                <periodicPayment>
                        <paymentFrequency>
                                <periodMultiplier>3</periodMultiplier>
                                <period>M</period>
                        </paymentFrequency>
                        <rollConvention>20</rollConvention>
                </periodicPayment>
        </feeLeg>
        <protectionTerms>
                <calculationAmount>
                        <currency>USD</currency>
                </calculationAmount>
        </protectionTerms>
        <contractualMatrix>
                <matrixType>CreditDerivativesPhysicalSettlementMatrix</matrixType>
                <matrixTerm>StandardNorthAmericanCorporate</matrixTerm>
        </contractualMatrix>
</creditDefaultSwap>
```

b) The Tradable Instrument Representation for case 1 – Reference to the matrix

We expect a Tradable Instrument to be created for each combination of:

- Reference entity
- Reference obligation
- Termination date (i.e. each quarter, for each of the standard 20th roll dates)
- Fixed Rate

```
<tradableInstrument>
        <creditDefaultSwapInstrument>
                <tradableInstrumentId instrumentIdScheme="http:// http://newutility.com
/code/tradableInstrument_id">ABCDF</tradableInstrumentId>
                <productId productIdScheme="http://newutility.com/code/product_id">123456</productId>
                <generalTerms>
                        <scheduledTerminationDate>
                                <unadjustedDate>2012-06-20</unadjustedDate>
                        </scheduledTerminationDate>
                        <referenceInformation>
                                <referenceEntity>
                                        <entityName>Ford Motor Company</entityName>
                                        <entityId entityIdScheme="http://www.ext.org/entity-id-RED-1-
0">3H98A</entityId>
                                </referenceEntity>
                                <referenceObligation>
                                        <bond>
                                                <instrumentId instrumentIdScheme="http://www.ext.org/instrument-
```

```
id-ISIN-1-0">US345370BX76</instrumentId>
                                        </bond>
                                    </referenceObligation>
                                </referenceInformation>
                            </generalTerms>
                            <feeLeg>
                                <periodicPayment>
                                    <fixedAmountCalculation>
                                        <fixedRate>0.01</fixedRate>
                                    </fixedAmountCalculation>
                                </periodicPayment>
                            </feeLeg>
                        </creditDefaultSwapInstrument>
</tradableInstrument>
```

c) The Product Representation for case 2 – Inclusion of the matrix terms as part of the Product definition

The following table shows the approach of incorporating the matrix terms as part of the Product definition (second case):

Business Key	Sample Value	Modeling Approach	Specified in Matrix
Effective Date	2010-06-20	Not present. Implied by the trade date	N
Effective Date Business Day Convention	NONE	Product	N
Scheduled Termination Date	2012-06-20	Tradable Instrument	N
Scheduled Termination Date Business Day Convention	NONE	Product	N
Business Day Convention	FOLLOWING	Product	N
Business Days	London and New York	Product	Y
Fixed Rate	1.00%	Tradable Instrument	N
Fixed Rate Payer Payment Dates Frequency and Payment Day	Quarterly on the 20th of the month	Product	N
Floating Rate Payer Calculation Amount Currency Denomination	USD	Product	N
Reference Entity Identifier	Markit RED Entity ID 3H98A	Tradable Instrument	N
Reference Entity Name	Ford Motor Company	Tradable Instrument	N
Reference Obligation	ISIN US345370BX76	Tradable Instrument	N
All Guarantees	False	Product	Y
Publicly Available Information	Applicable	Product	Y
Bankruptcy	True	Product	Y
Failure To Pay – Applicable	True	Product	Y
Restructuring – Applicable	True	Product	Y
Restructuring – Type	ModR	Product	Y
Obligations – Category	BorrowedMoney	Product	Y

Business Key	Sample Value	Modeling Approach	Specified in Matrix
Physical Settlement Period – Maximum Business Days	30	Product	Y
Deliverable Obligation Category	BondOrLoan	Product	Y
Deliverable Obligations – Not Subordinated	True	Product	Y
Specified Currency – Applicable	True	Product	Y
Not Contingent	True	Product	Y
Assignable Loan – Applicable	True	Product	Y
Consent Required Loan – Applicable	True	Product	Y
Transferable	True	Product	Y
Maximum Maturity	30 Y	Product	Y
Not Bearer	True	Product	Y
Escrow	True	Product	Y
60 Business Day Cap on Settlement	False	Product	Y
Calculation Agent Business Center	New York	Product	Y

```
<creditDefaultSwap >
  <productType>SingleNameCreditDefaultSwap</productType>
        <productId productIdScheme="http://newutility.com/code/product_id">123456</productId>
        <generalTerms>
              <effectiveDate>
                    <dateAdjustments>
                          <businessDayConvention>NONE</businessDayConvention>
                    </dateAdjustments>
              </effectiveDate>
              <scheduledTerminationDate>
                    <dateAdjustments>
                          <businessDayConvention>NONE</businessDayConvention>
                    </dateAdjustments>
              </scheduledTerminationDate>
              <dateAdjustments>
                    <businessDayConvention>FOLLOWING</businessDayConvention>
                    <businessCenters>
                          <businessCenter>GBLO</businessCenter>
                          <businessCenter>USNY</businessCenter>
                    </businessCenters>
              </dateAdjustments>
              <referenceInformation>
                    <allGuarantees>false</allGuarantees>
              </referenceInformation>
        </generalTerms>
        <feeLeg>
              <periodicPayment>
                    <paymentFrequency>
                          <periodMultiplier>3</periodMultiplier>
                          <period>M</period>
                    </paymentFrequency>
                    <rollConvention>20</rollConvention>
              </periodicPayment>
```

```
        </feeLeg>
        <protectionTerms>
                <calculationAmount>
                        <currency>USD</currency>
                </calculationAmount>
                <creditEvents>
                        <bankruptcy>true</bankruptcy>
                        <failureToPay>
                                <applicable>true</applicable>
                        </failureToPay>
                        <restructuring>
                                <applicable>true</applicable>
                                <restructuringType>ModR</restructuringType>
                        </restructuring>
                        <creditEventNotice>
                                <publiclyAvailableInformation>
                                        <standardPublicSources>true</standardPublicSources>
                                </publiclyAvailableInformation>
                        </creditEventNotice>
                </creditEvents>
                <obligations>
                        <category>BorrowedMoney</category>
                </obligations>
        </protectionTerms>
        <physicalSettlementTerms>
                <physicalSettlementPeriod>
                        <maximumBusinessDays>30</maximumBusinessDays>
                </physicalSettlementPeriod>
                <deliverableObligations>
                        <accruedInterest>false</accruedInterest>
                        <category>BondOrLoan</category>
                        <notSubordinated>true</notSubordinated>
                        <specifiedCurrency>
                                <applicable>true</applicable>
                        </specifiedCurrency>
                        <notContingent>true</notContingent>
                        <assignableLoan>
                                <applicable>true</applicable>
                        </assignableLoan>
                        <consentRequiredLoan>
                                <applicable>true</applicable>
                        </consentRequiredLoan>
                        <transferable>true</transferable>
                        <maximumMaturity>
                                <periodMultiplier>30</periodMultiplier>
                                <period>Y</period>
                        </maximumMaturity>
                        <notBearer>true</notBearer>
                </deliverableObligations>
                <escrow>true</escrow>
                <sixtyBusinessDaySettlementCap>false</sixtyBusinessDaySettlementCap>
        </physicalSettlementTerms>
        <calculationAgentBusinessCenter>USNY</calculationAgentBusinessCenter>
</creditDefaultSwap>
```

d) The Tradable Instrument Representation for case 2 – Inclusion of the matrix terms as part of the Product definition

The Tradable Instrument Representation for case 2 is identical to case 1.

Use Case #5 – Index Credit Default Swap

The index credit default swap representation follows the same principles as the single name credit default swap. The resulting Product representation is however more limited, as a result of the fact that the index specifies a number of the terms that are part of the single name Product definition.

Another difference relates to the Tradable Instrument definition, which incorporates the Start Date, the reason being that for a given index series the Start and Termination dates are fixed, irrespective as to when it is traded.

Business Key	Sample Value	Modeling Approach
Start Date	2010-09-20	Tradable Instrument
Scheduled Termination Date	2015-12-20	Tradable Instrument
Fixed Rate	1.00%	Tradable Instrument
Floating Rate Payer Calculation Amount Currency Denomination	USD	Product
Index Family	CDX.NA	Product
Index Name	CDX.NA.IG.15	Tradable Instrument
Index Identifier	Markit RED ID Pair ID 2I65BYCL7	Tradable Instrument

a) The Product Representation

```
<creditDefaultSwap>
        <productType>IndexCreditDefaultSwap</productType>
        < indexFamily > CDX.NA </indexFamily>
        <productId productIdScheme="http://newutility.com/code/product_id">789101</productId><protectionTerms>
                <calculationAmount>
                        <currency>USD</currency>
                </calculationAmount>
        </protectionTerms>
</creditDefaultSwap>
```

b) The Tradable Instrument Representation

```
<tradableInstrument>
    <creditDefaultSwapInstrument>
                        <tradableInstrumentType>IndexCreditDefaultSwap</tradableInstrumentType>
        <tradableInstrumentId tradableInstrumentIdScheme="http:// http://newutility.com
/code/tradableInstrument_id">EFGHIJ</tradableInstrumentId>
        <productId productIdScheme="http://newutility.com/code/product_id">789101</productId>
        <generalTerms>
            <effectiveDate>
                <unadjustedDate>2010-09-20</unadjustedDate>
            </effectiveDate>
            <scheduledTerminationDate>
                <unadjustedDate>2015-12-20</unadjustedDate>
            </scheduledTerminationDate>
            <indexReferenceInformation>
                <indexName>CDX.NA.IG.15</indexName>
                <indexId indexIdScheme="http://www.ext.org/entity-id-RED-pair-1-
0">2I65BYCL7</indexId>
                <indexSeries>15</indexSeries>
                <indexAnnexVersion>1</indexAnnexVersion>
                <indexAnnexDate>2010-09-20</indexAnnexDate>
            </indexReferenceInformation>
        </generalTerms>
        <feeLeg>
            <periodicPayment>
                <fixedAmountCalculation>
                    <fixedRate>0.01</fixedRate>
                </fixedAmountCalculation>
            </periodicPayment>
        </feeLeg>

    </creditDefaultSwapInstrument>
</tradableInstrument>
```

Use Case #6 –Strategies

Two approaches can be considered for representing ‘strategy products’, i.e. products that result from the combination of several individual trades (e.g. collar and curve products, which combine two individual trades; butterfly products, which combine three individual trades):

1. Specify a Product that combines those multiple legs, leveraging the Strategy concept in FpML. One of the important benefits associated with this approach relates to the price transparency reporting, as the executed price can then be effectively associated with the resulting identifier.
2. Combine several product identifiers, with one resulting identifier associated with each of the product components. The downside associated with such an approach relates to the issues for exposing the pricing information.

There is a strong bias in favor of the first of these two approaches. Further analysis during implementation will need to confirm that this is indeed a viable approach.

5. Next Steps and Migration Considerations

As a follow up on this paper, we will work on an implementation plan that will focus in more detail on the practical aspects of putting the proposed infrastructure in place. Besides the establishment of the Derivative Product Registry, careful consideration will need to be given to migration questions, such as the population of the initial set of products and the impact the existence of the Registry will have on existing message flows and how to adapt those.

For the migration of the existing set of products to the new model, one possible approach would be to apply the workflow that is being proposed as part of this white paper during an initial conversion period in order to populate the product registry. For this approach to be successful, the following high level steps need to be taken:

- The respective execution and clearing facilities will work with ISDA/FpML and the new Derivatives Product Registration Facility to create the appropriate set of schemas to support the new Products and Tradable Instruments.
- Once those are in place, those execution and clearing facilities will send queries to the Derivatives Product Registration Facility to register their existing products.
- The market participants will load those trade economics in their respective systems and confirm applicability as part of marketplace test phase.

It is clear that the rollout of such infrastructure will have profound impacts on the marketplace. Changing existing system and operational workflow for standardized products that use contractual representations to a much simplified representation that relies on the use of unique identifiers will have multiple impacts and as such will need to be carefully considered.

ISDA Safe, Efficient Markets

26th Annual General Meeting
April 12-14, 2011
Prague

Opening Remarks

Robert G. Pickel
Executive Vice Chairman
ISDA

9:00am
Thursday, April 14, 2011

OTC Derivatives Market Structure

Characteristic	OTC Swaps	Listed Futures
Trading Counterparties	< 1,000	>> 100,000
Retail Participation	None	Significant
Daily Trades	< 20,000	> 1,000,000
Tradable Instruments	>> 100,000	< 1,000
Trade Size	Very Large	Small
Market Structure	Bilateral (OTC)	Exchange

ISDA

OTC Derivatives Market Structure: IRS

5500 Daily Trades

- 3600 swaps
- 1900 caps, floors, etc.

1200 USD and 830 EURO IRS are traded daily

Less than 50% of daily swaps trading is standardized

- Most liquid standardized swap (10y USD) trades 200x per day

ISDA

OTC Derivatives Market Structure: CDS

6700 Daily Trades

- 4900 single-names
- 1800 indices

13 out of 3000 single-names trade 20 or more contracts per day

- 99% of single-name CDS trade less than 20x per day

5 CDS indices comprise 60% of daily CDS index trading

ISDA

Trading Facility Issues

OTC derivatives markets distinctly different than futures market

Regulation should not reduce liquidity

Why should trading facilities be mandatory for cleared trades?

- Clearing will lead to voluntary development and usage of trading facilities

Real-time reporting should be done with care

- Effect on equity markets
- High speed trading

Need to preserve market-making/client involvement for large trades

Phase-in of trading facility requirements needed

ISDA

Trading Facility Issues

Current pricing extremely competitive

Recent blind test of IRS market

- Executable quotes were 0.001% over mid-market

Benefits

- Participants should be able to decide when and if using trading facilities provides benefits.
- Mandate locks in one way of trading, reducing flexibility.

Costs

- Higher prices on block trades
- Cost of linking to facilities
- Start-up and operating costs of facilities
- Regulatory costs

ISDA

Market Structure Issues

"All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate"
- G20, 2009

“It is appropriate to trade standardised derivatives contracts with a suitable degree of liquidity on “exchanges or electronic trading platforms,” provided that a flexible approach encompassing a range of platforms… for derivatives trading is taken”
- IOSCO, February 2011

“Our idea [in Europe] is not to disturb existing business models for trading of OTC derivatives”
- Maria Velentza, head of the securities market unit at the Commission, March 2011

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