

# OTC Product Identification, Classification, and Registration

**FIX**PROTOCOL  
INDUSTRY-DRIVEN MESSAGING STANDARD™

A proposal toward a simple solution using readily available, well proven, and industry implemented standards and technologies





## Agenda

- Principles and recommendations
- FIX/FIXML Business Processes that support a financial products registry
- FIX/FIXML Integration with FpML
- An approach for a federated identifier based upon the DOI
- Longer term vision for standards evolution



## Principles

- Use existing technologies that are proven and fit for purpose
  - This does not mean 20 to 30 year old technology
  - We are building for the next 20 to 30 years
- Follow a standards based approach
  - preferably international where possible
  - leverage existing standards even those fit for purpose
- Make sure whatever choices are made now there is a clear path toward a longer term improved convergent model
- Minimize implementation costs and disruptions
- If possible the solution should readily integrate with existing systems
- There is an opportunity to improve the overall quality and address some chronic issues within the financial markets while adhering to the above constraints
- Concerned equally about the governance model and the business model
- This is an international – not a national issue – FIX, FpML, ISO 20022, DOI are global standards



## Recommendations: product definition and registration

- ISDA/FpML is the best source for definitions of OTC derivatives
- FIX/FIXML is the leading solution for the standardized dissemination of financial instruments reference data, especially for derivatives
- FIX/FIXML can be used separately or in conjunction with FpML
- FIX Protocol Ltd. is committed to the creation of a common business model for financial services, that model being managed by the ISO 20022 standard
- FIX/FIXML has proven and widely adopted messages for the definition and identifier assignment process, especially for multileg instruments (spreads, strategies)
- Avoid placing semantic modeling on the critical path of this important initiative
  - Technology and standards immaturity
  - Lack of practitioner knowledge and experience
  - Not required for product definition and identification



## Recommendations: classification

- The approach to create a classification encoding scheme, as best exemplified by the Classification of Financial Instruments (ISO 10962) standard, referred to the CFICode is of limited use by practitioners primarily due to the limitations in encoding and the difficulty in interpreting the encoding scheme
- Preferential approach is to create a set of attributes that can be used to identify the product
- Source of attributes
  - ISDA Terms and Definitions
  - ISDA Master Agreements
  - FpML Schemas
- Will serve as the basis for current and future semantics work



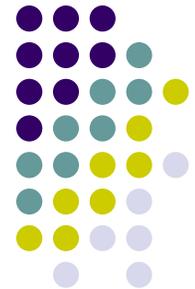
## Principles: Identifiers

- Federated assignment and management
- Globally resolvable identifier
- Non-intelligent identifier
- An identifier is much more than some numeric or alphanumeric value it is an ecosystem that includes a registration authority, a governance model, a business model

## **FIX/FIXML Business Processes that support a financial products registry**

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FIX has a mature set of business processes for financial product reference data





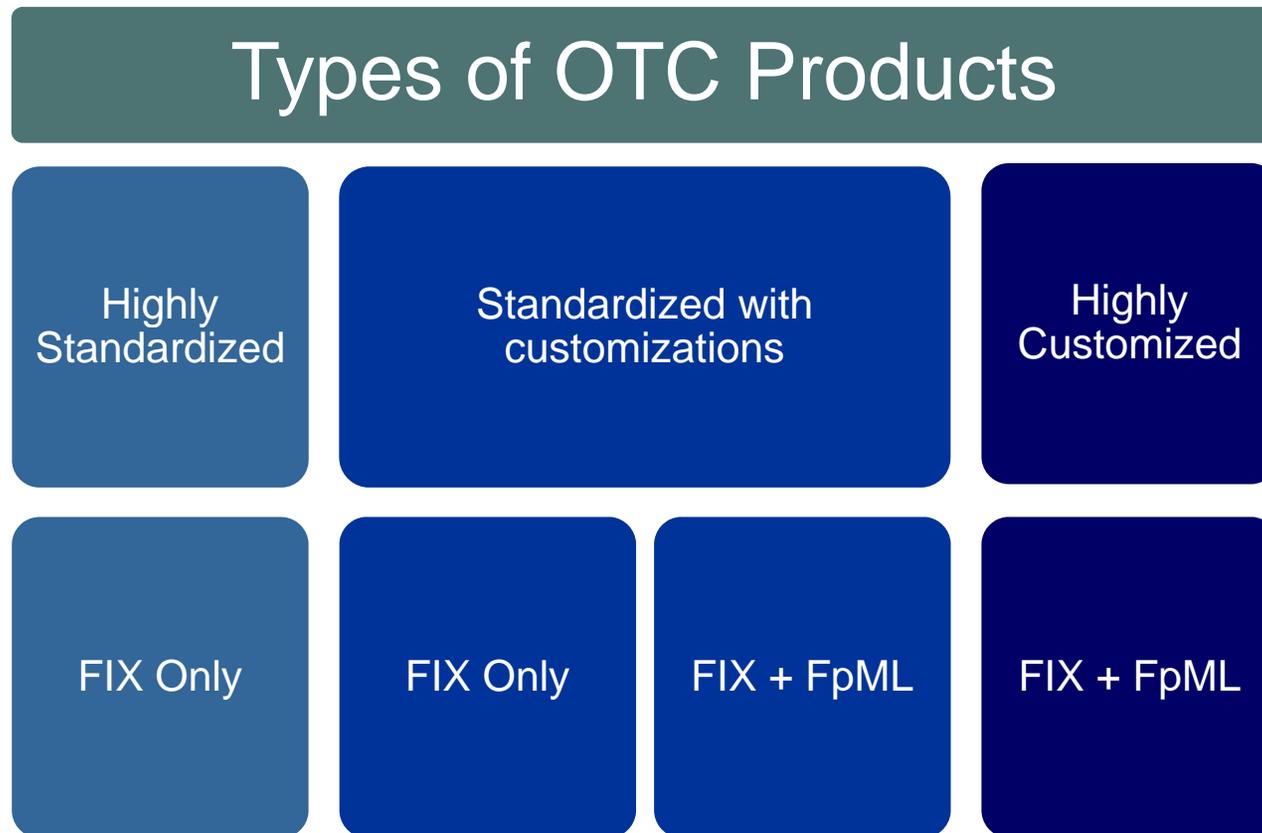
## FIX Instrument Component

- Flexible structure
- Can support multiple identifiers
- Supports an optional external XML product definition
- Optional support for underlying instruments
- Optional support for instrument legs (multileg instruments)
- Extensive attributes for Equities, Fixed Income, FX, Futures, Options, Forwards, Swaps, some OTC support

Visit <http://www.fixprotocol.org/FIXimate3.0>



## Level of product standardization





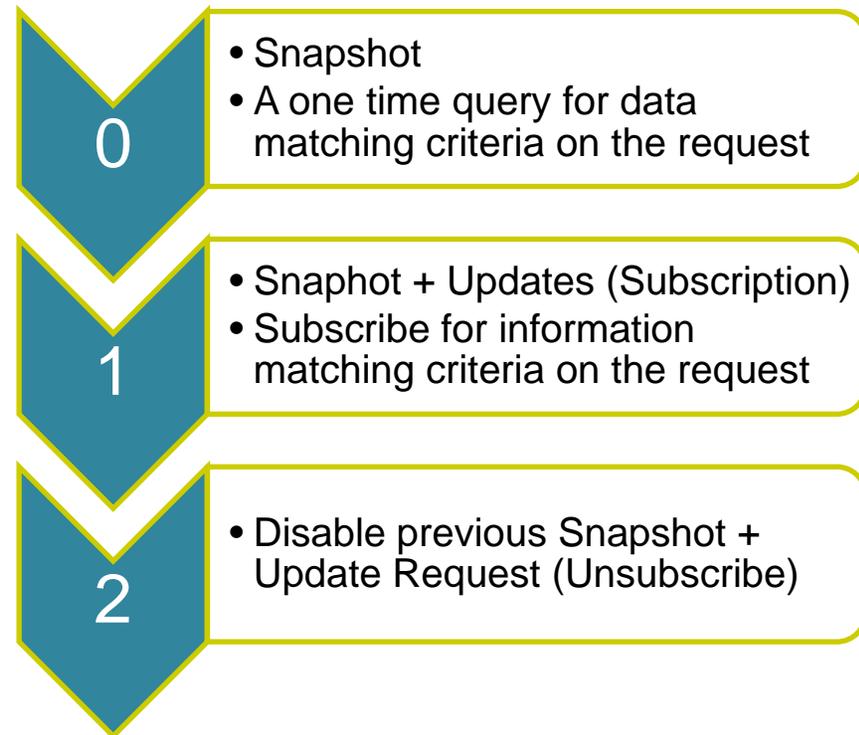
## FIX SecuritiesReferenceData Category

- Started in FIX.4.2 March 1, 2000
- Message Set as of FIX.5.0SP2
  - DerivativeSecurityList
  - DerivativeSecurityListRequest
  - DerivativeSecurityListUpdateReport
  - SecurityDefinition
  - SecurityDefinitionRequest
  - SecurityDefinitionUpdateReport
  - SecurityList
  - SecurityListRequest
  - SecurityListUpdateReport
  - SecurityStatus
  - SecurityStatusRequest
  - SecurityTypeRequest
  - SecurityTypes



## SubscriptionRequestType[263]

- Added in FIX.4.2 to support Subscriptions
- Added to several messages within FIX
- Especially Reference Data and Market Data





## SecurityDefinitionRequest / SecurityDefinition

	<h3>Added to FIX.4.2 in 2000</h3>	<ul style="list-style-type: none"><li>• Original use case was to define and request an identifier for a multileg instrument that may or may not have already been defined</li></ul>
	<h3>Adoption</h3>	<ul style="list-style-type: none"><li>• CBOE was the originator and initial adopter</li><li>• The Options Clearing Corporation</li><li>• Several other markets</li></ul>
	<h3>Applicability</h3>	<ul style="list-style-type: none"><li>• Can be used with or without FpML payload for the product identifier process</li><li>• Use to discover or create new product identifiers</li></ul>



## SecurityDefinitionRequest

- Simple request reply protocol



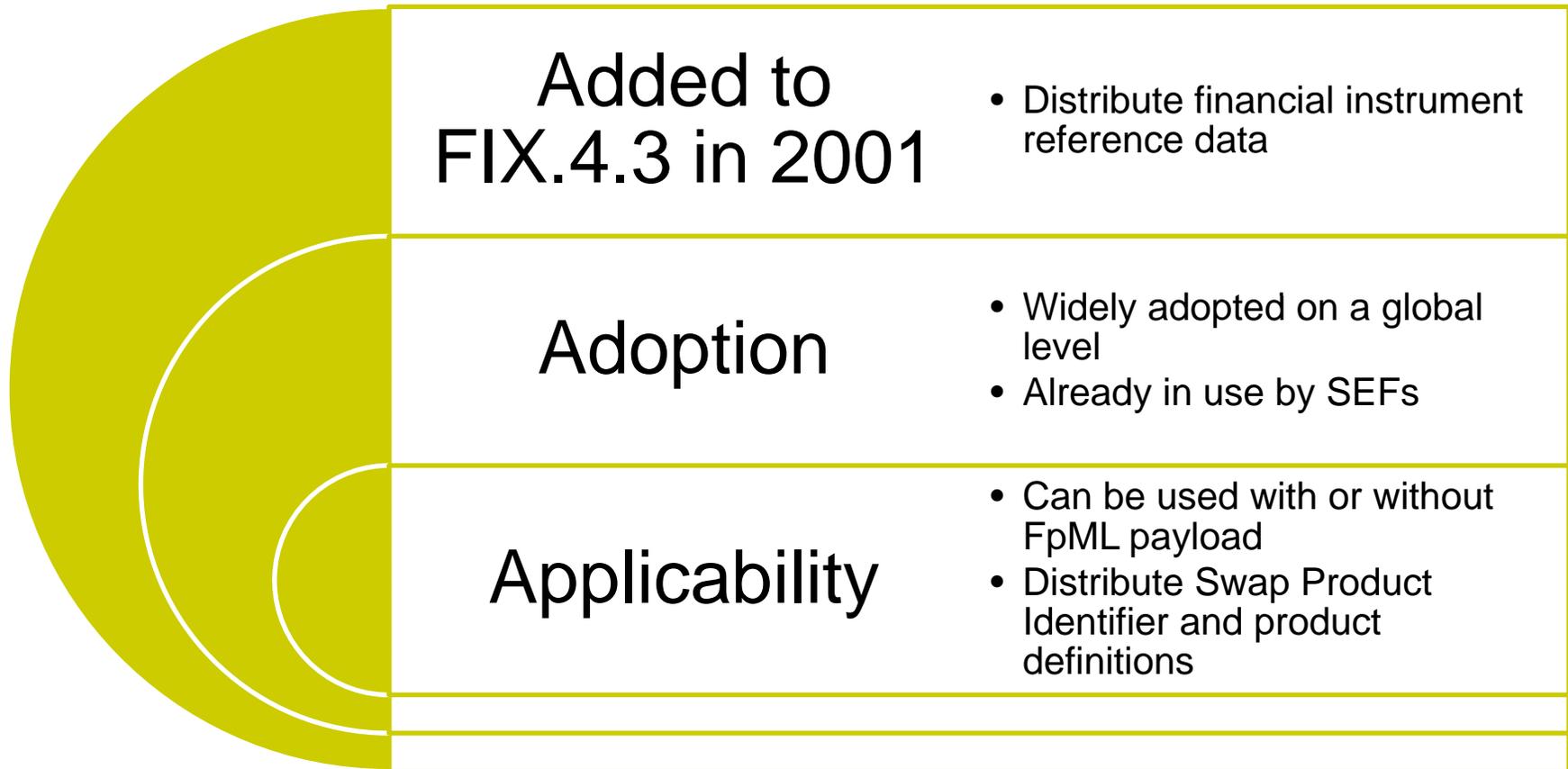


## SecurityDefinition Standard Usage

- Request an identifier for a financial instrument and the assignment of an identifier based upon the attributes of the financial instrument provided in the request
- Responses
  - Match the request to an existing product definition and return the product identifier and the definition
  - Create a product definition and identifier and return the product identifier and the definition
  - Reject the request for failing business rules
- Protocol supports the normalization of definitions
  - Product definition rules are defined outside the protocol for matching product definitions. This is often referred to normalizing the product definition
  - The Protocol supports returning the identifier and a normalized (standardized) product definition



## SecurityListRequest / SecurityList





## SecurityList

- Snapshot query or subscription





## SecurityList Standard Usage

- Subscribe or query for a list of financial instruments and its reference data

## FIX/FIXML Integration with FpML

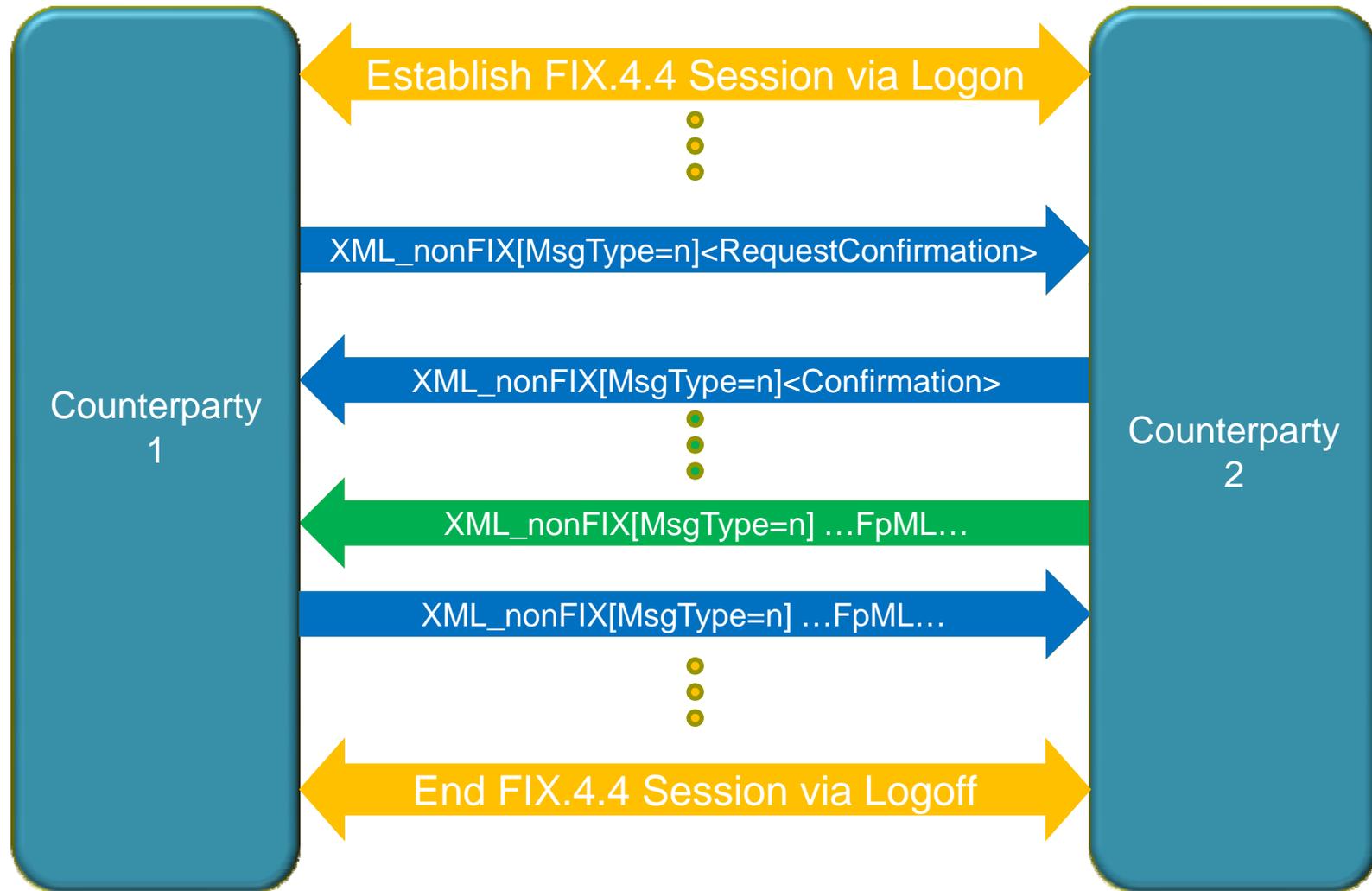
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FIX and FpML have been used together for  
more than a decade





## TRANSPORT ONLY: FpML using FIX Session Layer Only





## FpML message transmitted via FIX using XML\_nonFIX

```

8=FIX.4.4^9=7718^35=n^34=41^49=PROTRD^52=20100920-
23:06:17.536^56=ALUNO02212=7660^213=<?xml version="1.0" encoding="utf-8"?>
<!--View is confirmation-->
<!--Version is 5-0-->
<!--NS is http://www.fpml.org/FpML-5/confirmation-->
<!--
== Copyright (c) 2002-2010. All rights reserved.
== Financial Products Markup Language is subject to the FpML public license.
== A copy of this license is available at http://www.fpml.org/license/license.html
-->
<requestConfirmation xmlns="http://www.fpml.org/FpML-5/confirmation"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" fpmlVersion="5-0"
xsi:schemaLocation="http://www.fpml.org/FpML-5/confirmation ../fpml-main-5-0.xsd">
  <header>
<!--FpML 5.0 conversationId is removed. correlationId is to be used instead-->
    <messageId messageIdScheme="http://www.example.com/messageId">MS/2006/04/02/15-
12</messageId>
    <sentBy>PARTYABICXXX</sentBy>
    <sendTo>PARTYBBICXXX</sendTo>
    <creationTimestamp>2006-04-02T15:38:00Z</creationTimestamp>
  </header>
<!--5.0 Messaging: added

```

■ ■ ■ ■

2011-06-17 <sup>10</sup>=200<sup>^</sup>



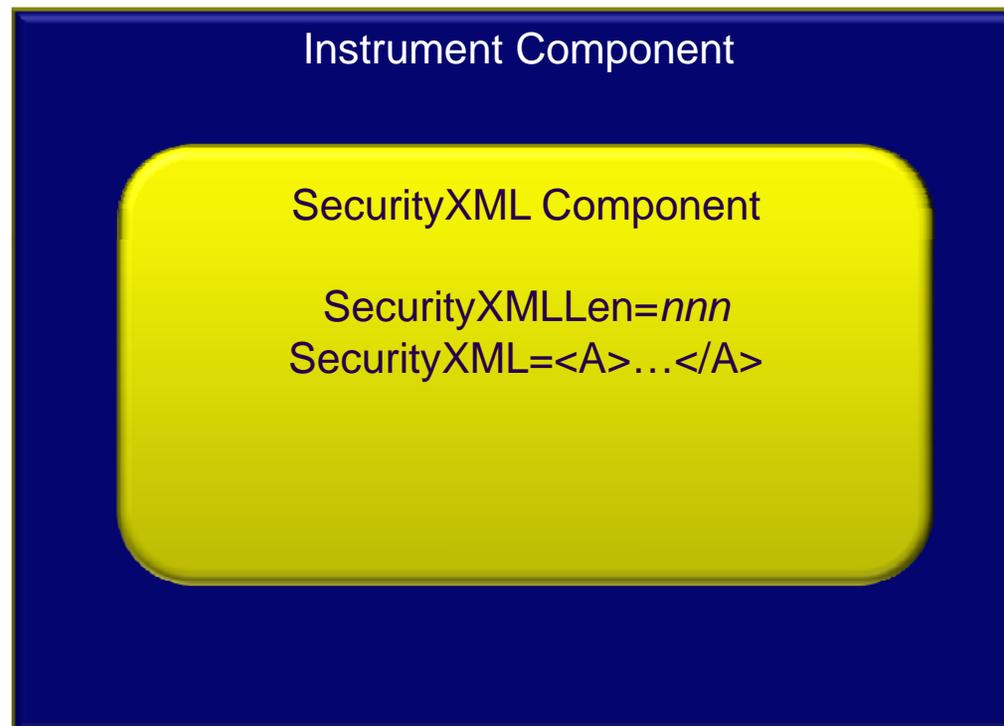
## FpML encapsulated in FIXML

```
<?xml version="1.0" encoding="UTF-8"?>
<FIXML xmlns="http://www.fixprotocol.org/FIXML-5-0-SP1"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
>
<TrdCaptRpt ReqID="C092CBTEOD20061006" RptID="102994" LastQty="4"
TrdDt="2006-10-06" MtchStat="0" TxnTm="2006-10-06T00:00:00-05:00"
BizDt="2006-10-06" PxTyp="18" TrdTyp="0" MtchID="0000182185" MsgEvtSrc="REG"
LastPx="0.59375">
<Instrmt MatDt="2006-11-21" MMY="200612" StrkPx="111.00" Mult="1000"
Exch="CBT" CFI="OPAXPS" ID="17">
<SecXML Schema="http://www.fpml.org/2004/FpML-4-1">
<FpML version="4-1" xsi:type="DataDocument" xmlns="http://www.fpml.org/2004/FpML-4-1"
xmlns:dsig="http://www.w3.org/2000/09/xmldsig#" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://www.fpml.org/2004/FpML-4-1 ../Examples/fpml/fpml-main-4-
1.xsd">
<trade>
<tradeHeader>
....
</tradeHeader>
<swap>
<!-- Loyalty Investments pays the floating rate every 6 months, based on 6M EUR-EURIBOR,
on an ACT/360 basis -->
<productType>IRS</productType>
...

</swap>
...
</FpML>
</SecXML>
</Instrmt>
...
</RptSide>
</TrdCaptRpt>
</FIXML>
```



## New Component to contain XML product definition





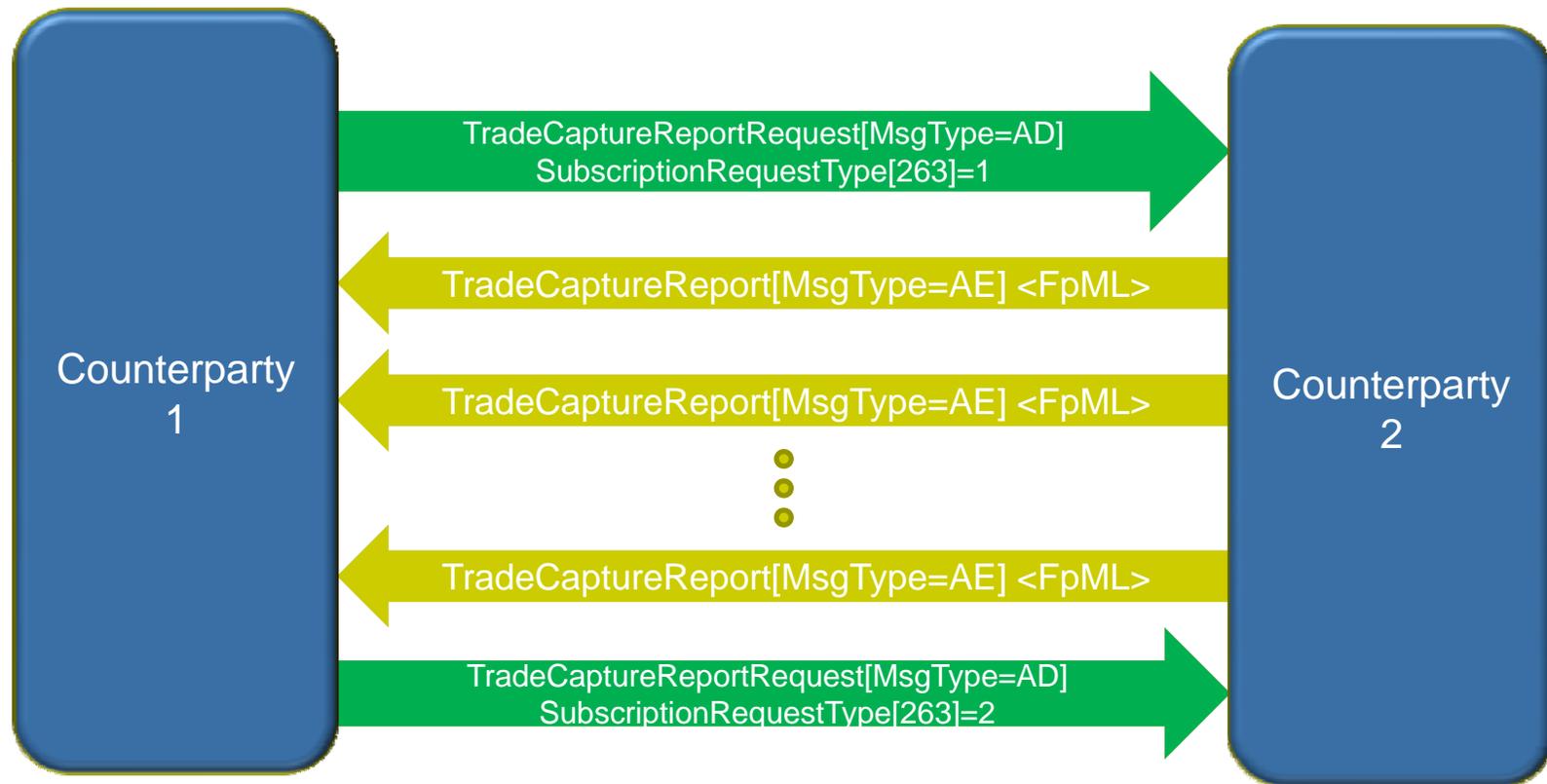
## SecurityXML Component in FIX.5.0x

Tag	Field	Description
1184	SecurityXMLLen	Must be set if SecurityXML field is specified and must immediately precede it
1185	SecurityXML	XML payload or content describing the Security information.
1186	SecurityXMLSchema	XML Schema used to validate the XML used to describe the Security.



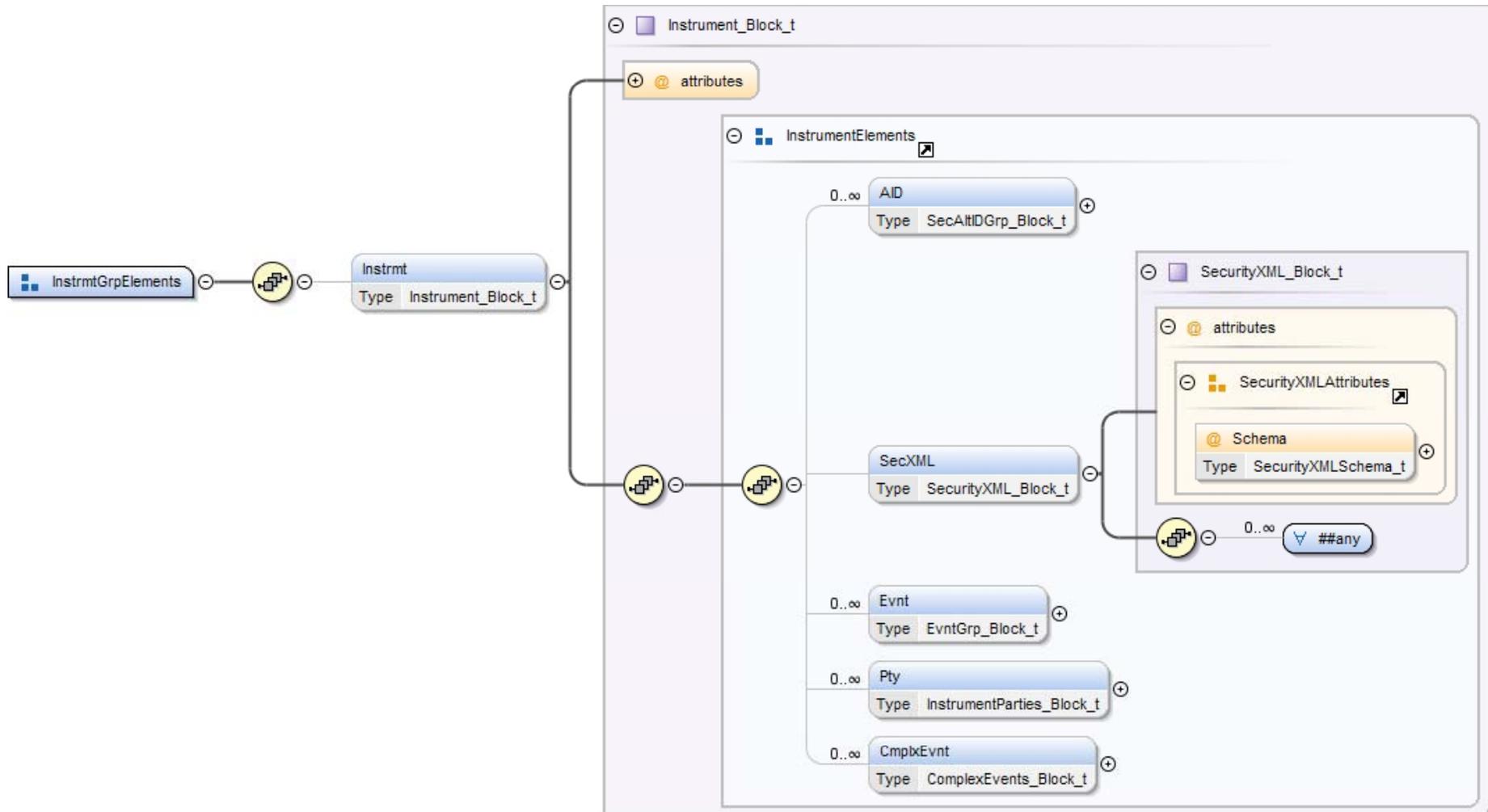
## FpML encapsulated in FIX business messages

- FIX.4.4 and later support inclusion of FpML messages





# FIXML SecurityXML Component





## FIXML Schema to include an arbitrary XML document

```

<xs:attributeGroup name="SecurityXMLAttributes">
  <xs:attribute name="Schema" type="SecurityXMLSchema_t" use="optional"/>
</xs:attributeGroup>
<xs:complexType name="SecurityXML_Block_t">
  <xs:annotation>
    <xs:appinfo>
      <fm:Xref Protocol="FIX" name="SecurityXML "
ComponentType="XMLDataBlock"
      Category="Common"/>
    </xs:appinfo>
  </xs:annotation>
  <xs:sequence>
    <xs:any minOccurs="0" maxOccurs="unbounded" processContents="skip"/>
  </xs:sequence>
  <xs:attributeGroup ref="SecurityXMLAttributes"/>
</xs:complexType>

```



## Further Integration

- ISO 20022 v1.5 is a significant improvement in technology usage and should facilitate integration of FIX and FpML business processes, entities, and attributes
- Extend FIXML Schema to be able to be the target for Party identification from within FpML payload
- Extend FIXML Schema to be able to be the target for transaction identifier from within FpML payload
- Adopt FpML 5.0 some schema improvements – especially namespace conventions

## An approach for a federated identifier based upon the DOI

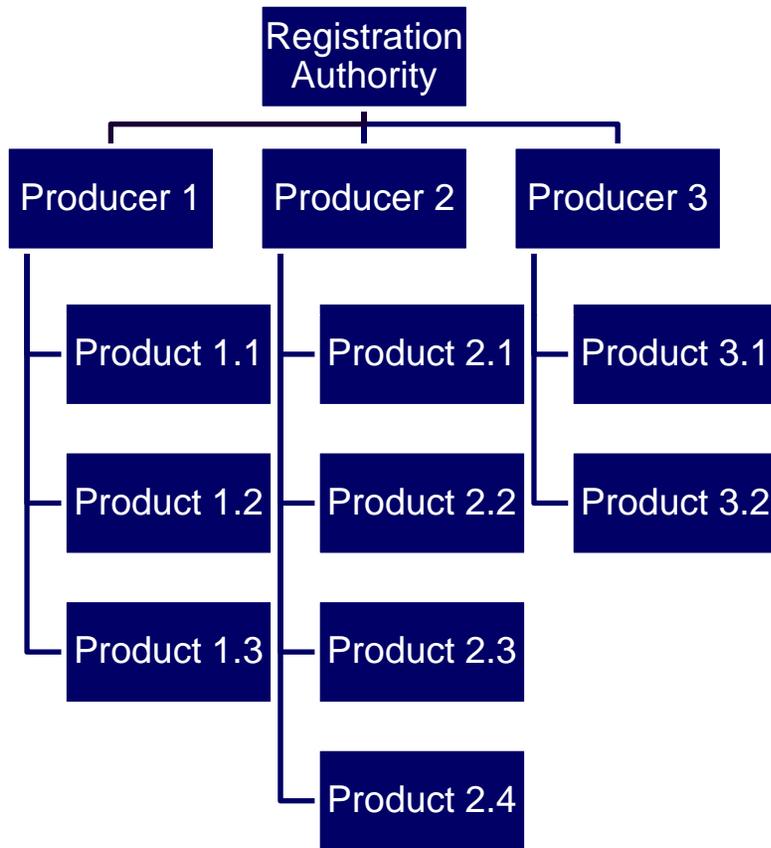
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The Digital Object Identifier is the most  
comprehensive standard available for  
managing identity-

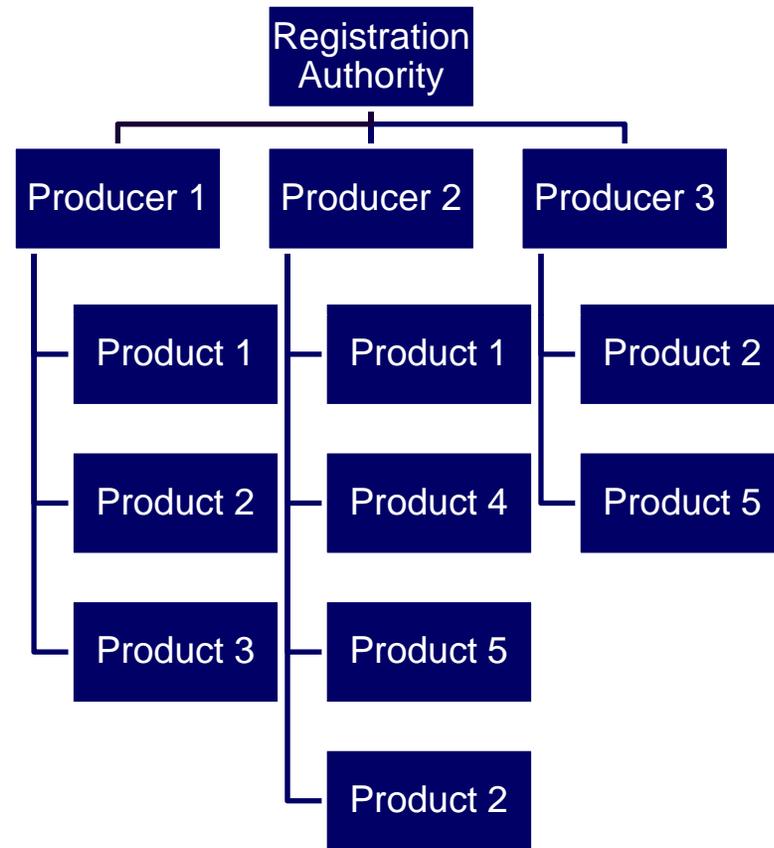




## Two models for distribution of identification



Easily addressed by prefix approach

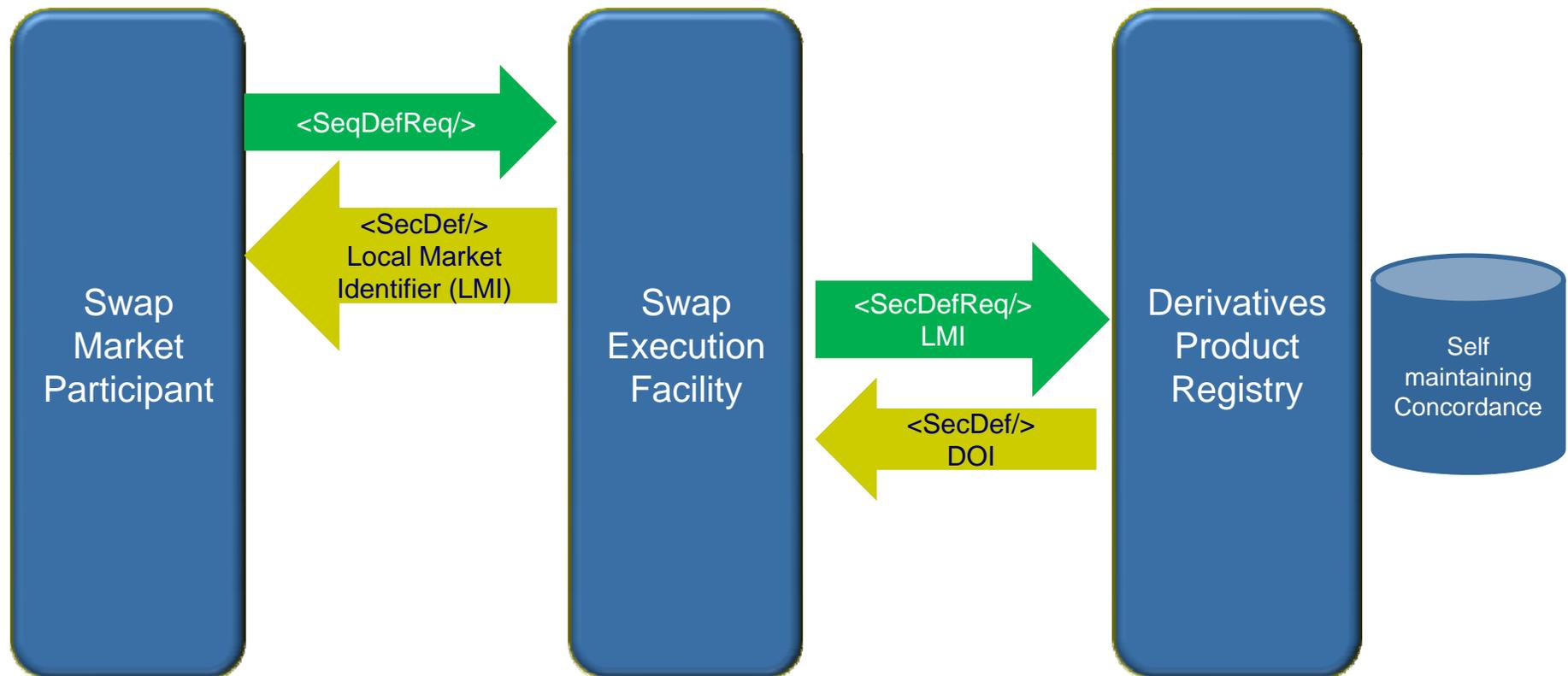


Requires central registry but can still support alternative identifiers



## Federated Request

- Identifier assignment infrastructure should support the ability for existing systems to continue assigning identifiers





## Distributed Object Identifier

- Digital Object Identifier is not a code – it is a complete extremely well thought out and complete system (including business process, governance alternatives)
- ISO 26324
  - ISO 26324:2010 specifies the syntax, description and resolution functional components of the digital object identifier system, and the general principles for the creation, registration and administration of DOI names (where DOI is an acronym for “digital object identifier”).
  - ISO 26324:2010 defines the syntax for a DOI name, which is used for the identification of an object of any material form (digital or physical) or an abstraction (such as a textual work) where there is a functional need to distinguish it from other objects.
  - The DOI name does not replace, nor is it an alternative for, an identifier used in another scheme, such as the schemes defined by ISO/TC 46/SC 9. ISO 26324:2010 describes how the DOI system can be used in conjunction with another identifier scheme (for example, to provide additional functionality, such as resolution, where this is not already available), and how the character string of that other scheme can be integrated into the DOI system through the DOI metadata record and/or the DOI syntax.
  - ISO 26324:2010 does not prescribe specific technologies to implement the syntax, description and resolution functional components of the digital object identifier system.
- Does support the notion of a schema or semantic representation for product definition
- Built upon a modern distributed technology platform that is internet technology based



## Excerpts from Digital Object Identifier

- "Like any other piece of infrastructure, an identifier system (especially one which adds much value like metadata and resolution) must be paid for eventually by someone. The DOI name is designed to work with any business model, ranging from free assignment to assignment on a commercial basis."



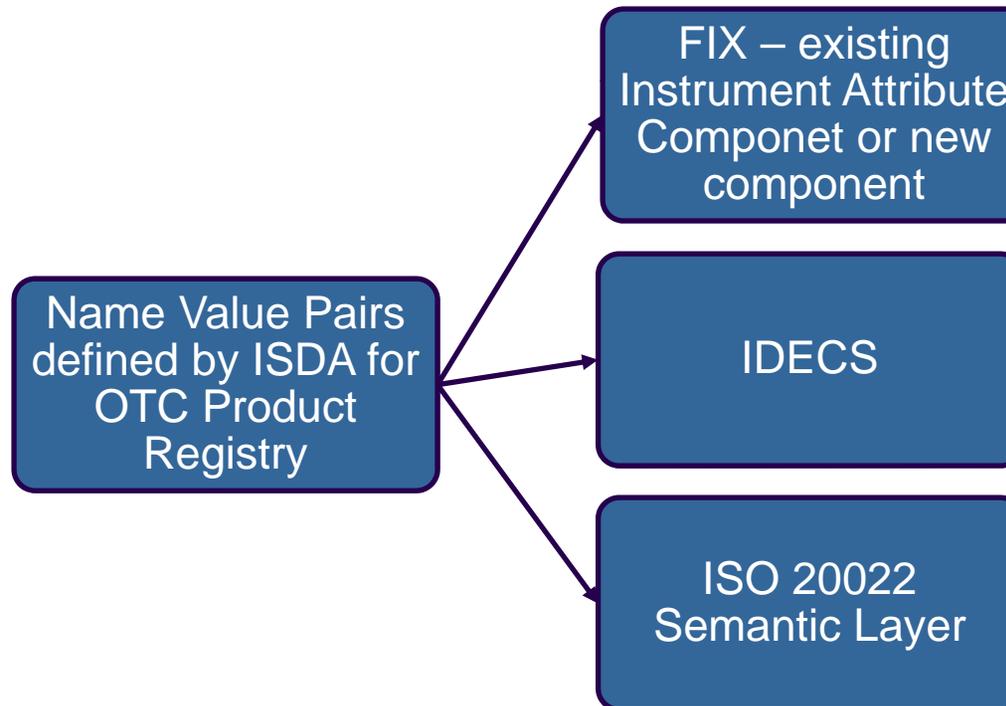
## Issues with the DOI

- "Recommendation on the use of the native resolution protocols (HDL) in applications in preference to proxy server implementations" 8.2.3 RA technical requirements



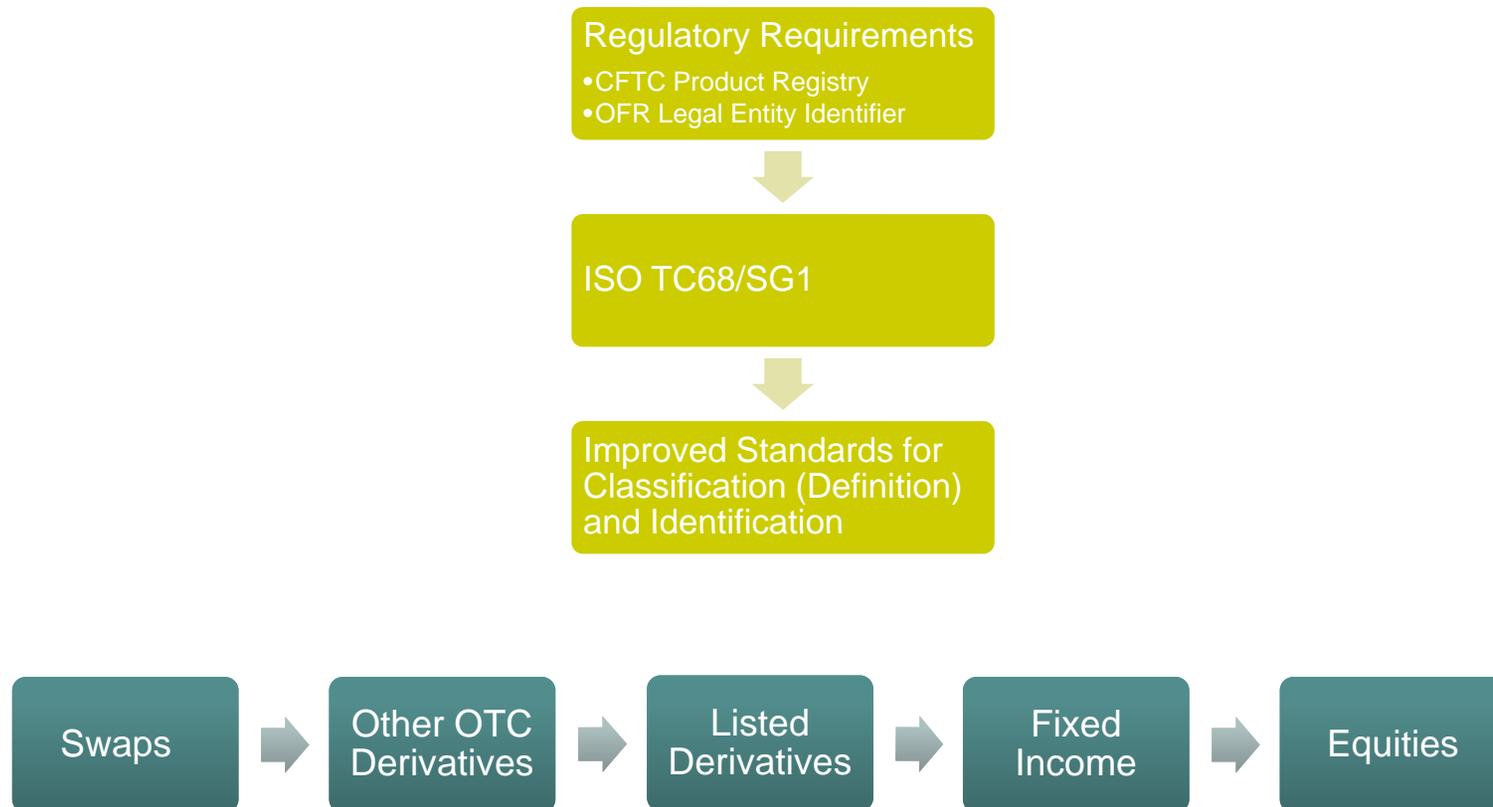
## Name Value Pairs for Product Definition

- Candidate approach to complement or likely replace the CFICode (ISO 10962)
- Data format and technology neutral



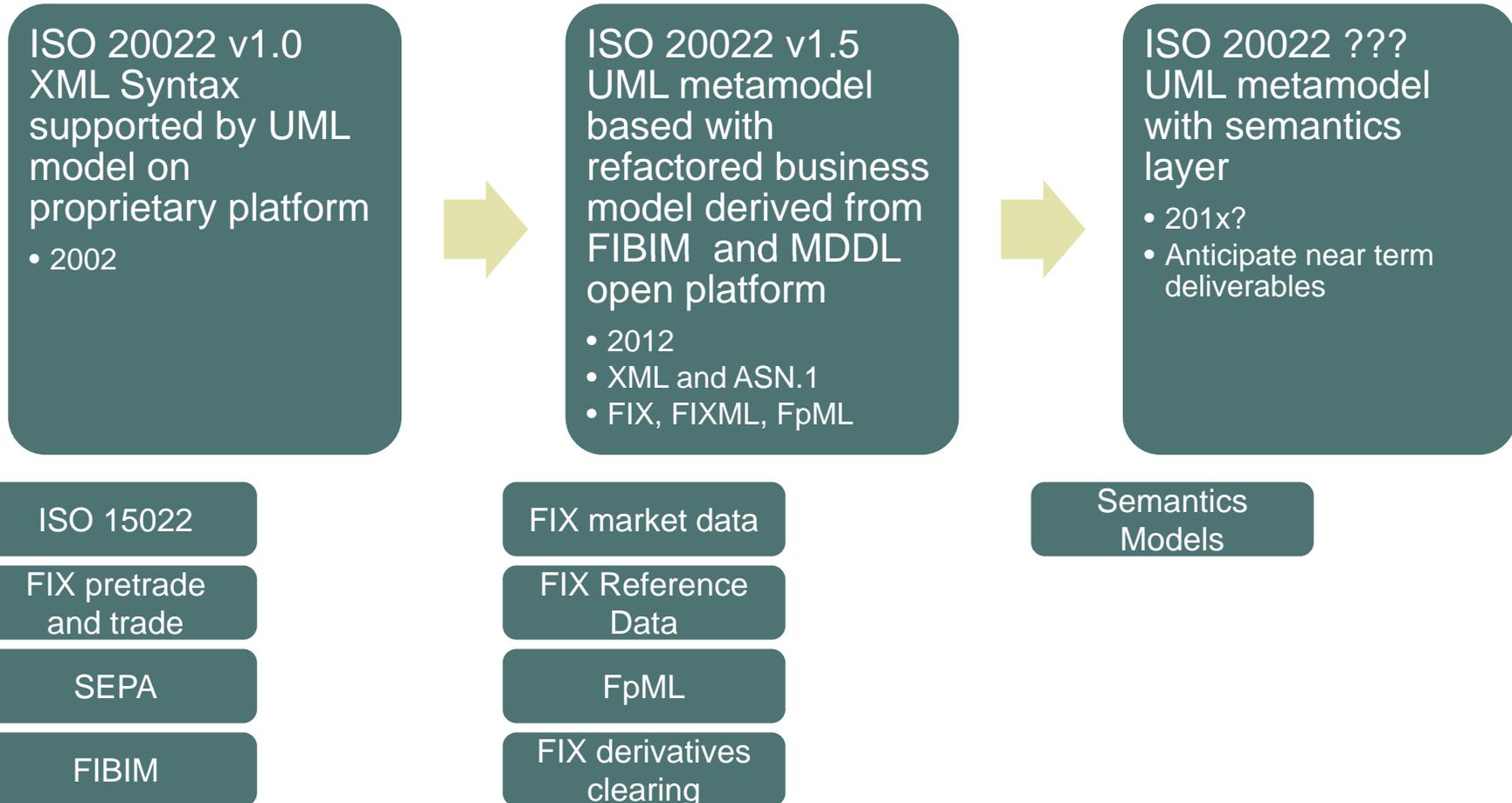


## Impact of regulatory requirements





## International Standards Directions





## Conclusion

- Existing industry standards and technology can readily address the OTC Products Registry
  - FIX, FIXML
  - FpML
  - DOI
  - Web Services, FIX Session Layer, AMQP, MQ Series
- Biggest issue is governance and business model for the registry operator
- Good choices now will lead to improved standards and practices far beyond the CFTC product registry