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CPMI-IOSCO

Committee on Payments and Market Infrastructures	International Organization of Securities Commissions
CPMI Secretariat Bank for International Settlements Centralbahnplatz 2 4002 Basel Switzerland	General Secretariat International Organization of Securities Commissions (IOSCO) C/ Oquendo 12 28006 Madrid SPAIN

Re: CPMI-IOSCO – Harmonization of the Unique Product Identifier – Consultative Report – December 2015

Ladies and Gentlemen of the Authorities;

Bloomberg Open Symbolology thanks CPMI-IOSCO for the opportunity to respond to the Consultative Report covering the Harmonization of the Unique Product Identifier (UPI) published in December 2015.

In our view it is essential that agreement is reached on a consistent UPI framework to uniquely identify OTC derivatives. The agreed approach should then be adopted by all regulatory bodies. It is of concern that regulatory bodies are currently taking divergent approaches for the identification of derivative products, and in some cases are moving forward with solutions which are not appropriate. Generally we need to move towards a system capable of delivering maximum alignment for identifiers of derivative products across regulatory mandates (not just for trade repository reporting).

Our answers below point to an approach that not only satisfies the needs of Authorities, but facilitates the end to end trading lifecycle and actual operations of the global firms operating in this space. We believe such a holistic approach would ensure alignment between a firm's actual activities, their books and records, the books and records of their counterparties and clients, and the activity that is reported and provided to Authorities.

Without such alignment, it would remain possible, and indeed probable, that there would be misalignment between actual activities in the marketplace and what is reported to Authorities – not due to malfeasance or intention, but due to core data management issues that would arise.

We therefore welcome this consultation covering the UPI classification system, and look forward to the follow up covering the associated code, which we hope is not long delayed.

Bloomberg Open Symbology acts as the Registration Authority, and certified issuer, of the Financial Instrument Global Identifier (FIGI). FIGI is an established global standard of the Object Management Group (OMG) – an international non-profit technology standards consortium founded in 1989. FIGI covers more than 300 million financial instruments, including listed and OTC derivatives.

We have drawn on our experience of issuing and maintaining the FIGI, which covers financial instruments across asset class, including many OTC and listed derivatives products.

Please find our responses to the individual questions in the section below.

Bloomberg Open Symbology Response to Consultative Report Questions

Question 1: Are the above three OTC derivative instrument types sufficient to describe (in combination) all OTC derivatives? Which OTC derivatives would fall outside this approach?

We agree that the three OTC derivative instrument types quoted provide a high level description of the universe of relevant derivative products. We would, however, make the following observations:

- 'OTC' derivative instruments are becoming more standardized, either in their use or creation. The driver for this is the G20 requirements for more products to be centrally cleared and platform traded. This means that many instruments traditionally 'Over the Counter' traded will increasingly look more like listed instruments. When developing the UPI it is important to recognize that it will need to reflect this dynamic, and be flexible enough to cover the relevant financial instruments however they are traded.
- Given the evolution of clearing and trading practices currently in process in many derivatives markets, consideration should be given as to whether there is a significant enough change in risk between an instrument traded 'OTC' and the same, or similar instrument traded on a 'listed' venue to warrant a specific difference in treatment for the purposes of aggregation of data by authorities.
- We suggest that it would be useful to consider what would qualify as an 'asset class' definition, an 'instrument/product' definition and a trade-level definition? By this we mean in each case we think it useful to consider what data elements would need to be added or removed for an object to change from defining an asset classification to being specific enough to identify an instrument or product, or to specify a transaction only.
- It is possible that some new product type may be created that sits outside the scope of the stated definitions but, in spirit, should be captured.

- There exist classification systems today in the market. Additionally, any 'natural language' classification should be accompanied by a clear, meaningful definition that removes any ambiguity or leaves the concept to be interpreted multiple ways.

Based on the discussions on February 10, 2016, held in Washington D.C. at the CFTC offices, there has been increased clarity in what the Authorities mean by 'UPI.' We understand the current view by the Authorities is that the function of the "UPI" is to;

1. Provide for a high level classification system to 'group', at a high level, different types of instruments. By the nature of a 'classification,' there should be no inclusion of data that is subject to change, especially over time, but also due to economic events (valuation, counterparty changes/novations, etc)
2. Ability to use the classification system, in conjunction with Other Data Elements to aggregate transaction and position data such that the aggregation provides insight and transparency into risk and related information for a particular market or markets, potentially across jurisdictions.
3. Not provide for an instrument level identifier, as Authorities are not interested in the individual granularity at this level.

Based on these principles, we would urge that any classification system also take into account the instrument identification as a full framework. Any instrument identifier should incorporate the classification system, else Authorities may end up aggregating the same instrument in different ways depending on how the classification is assigned at the instrument level.

Additionally, as raised at the meeting, there exists at least two classification systems today that should be able to satisfy the needs of Authorities. The ISDA taxonomy and CFI both provide a classification system. While there are others, the ISDA taxonomy specifically exists for OTC Derivatives. CFI provides a higher level than the ISDA taxonomy, but does provide a hierarchy for grouping. Assuming that these existing 'classification systems' were utilized, the way forward could be enabled by integrating these with a viable identifier hierarchy capable of capturing instrument and other data elements.

We would, however, repeat our earlier comment that more clarity is needed on what data elements Authorities are hoping to capture at the level of the UPI, and how this in their view relates to other data pertaining to the instrument and to transactions.

Question 2: Is it valid to assume that a combination of data elements of the instrument and data elements of the underlier is sufficient to define a product? If not, please explain.

In practice it may be more complex than envisioned, depending on the purpose for which the instrument/product definition will be used. For example, in order to understand total exposure to a particular underlier, a limited set of data elements may be all that is needed. However, to calculate individual NAV and positions by time to maturity may require a more extensive set of data elements.

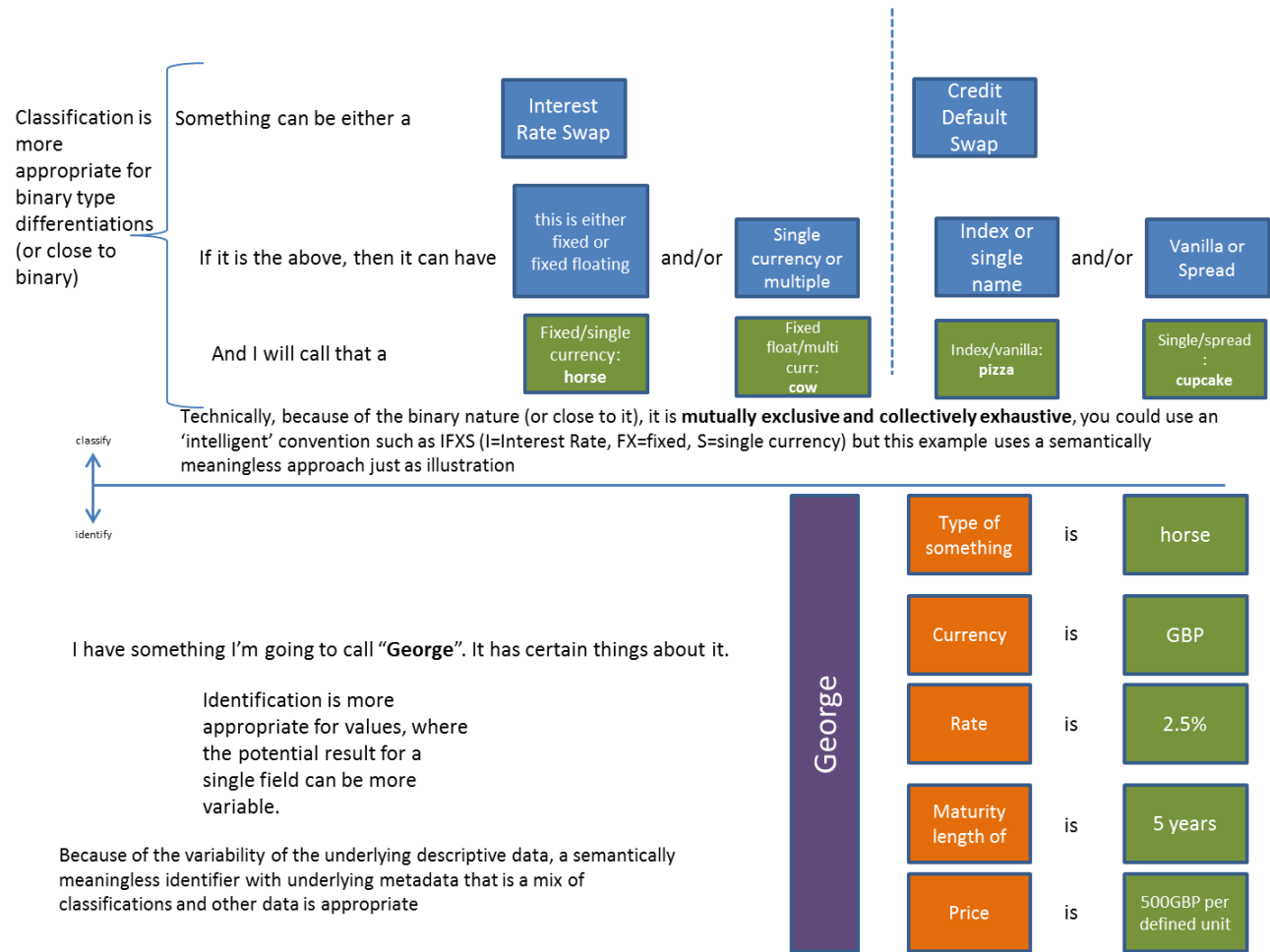
Where "defining a product" is kept simply at the purpose of classifying something into a high-level grouping, we agree, with some caveats. The statement "a combination of data elements of the instrument" is misleading.

Any product classification should be a core data element of an instrument, and influence the data elements of that instrument that are necessary. It would then create a data conflict for those elements of the instrument to inform, or otherwise define the classification system itself.

If there are additional data elements that belong to the instrument that would be of value to aggregate (such as maturity date), these should be considered outside the classification system.

For example, a classification system could define single or multiple currency, but not the actual currencies. The actual currency or currencies would be defined within the actual instrument, not the classification system. Clarity about what data elements are in, and what are out, in terms of aggregation needs will be crucial. The ability to integrate the classification into other data attributes is essential. As a rule, classification systems are based on the *mutually exclusive and collectively exhaustive* (MECE) principle.

(See below illustration to further clarify. Simply because ‘George’ is of type ‘horse’ and its currency is GBP, then ‘horse’ should not be modified to include ‘GBP’. However, to aggregate, you could query for all instruments or transactions that include a type of ‘horse’ AND have a currency of ‘GBP’.)



Question 3: Is it valid to assume that the combination/set of data elements in the UPI classification system may differ across asset classes? If not, please explain and state how a uniform set of data elements could be comprehensively applied across asset classes.

Yes, a different combination of extended data would be required when discussing a UPI system or framework, depending on asset class (referred to below as ‘instrument type’) – regardless of an instrument being a derivative or not. As above, however, any system focused on classification **alone** should apply to the MECE principle.

More generally we would like to expand upon the general issue of how to distinguish between the data elements representing instrument type/product and those needed for contract and transaction. The Consultation states on Page 7;”The UPI would contain information about the “instrument type” and “product” but not about the “contract” or the “transaction.””

In current industry discussion across many different working groups, there is a struggle on this specific point. At a high level, it relates to determining the point at which a set of data describes a classification of some type of asset, at which point adding data results in the transformation of that set of data into an actual ‘instrument’ that can be priced or otherwise actioned upon, and further to when additional data results in describing a trade as a single instance.

Bloomberg Open Symbology agrees with the need for the concept of a framework (as expressed during the aforementioned Feb 10 meeting) which defines the set of data elements needed at each “level” to provide meaningful product identification. There needs, however, to be greater clarity around the terms “instrument type”, “product”, and “contract”. Are these regarded by CPMI-IOSCO as distinctly different things with each having their own individual definitions, with specific relationships with each other?

Specifically, does CPMI-IOSCO assume a hierarchy where Instrument Type is parent to Product which is parent to Contract which in turn is Parent to Trade?

Depending on the depth of associated metadata assumed to apply to a particular definition, there may be more or less value to be found. There may be aspects of something defined as a ‘contract’ that would be important, or needed, for Authorities to be able to meaningfully aggregate that may not be available at a higher, ‘product’ level of identification, yet still be distinctly separate from any trade-related data.

Looking at pages 6 and 7 of the Consultation, and the descriptions of data elements representing; product, contract and transaction, it appears that there is a specific (or at least implied) hierarchy which we have interpreted in the table below:

Assumed ‘Level’	Data Set	Description	Comment
Classification	Instrument type	Indicates a high level classification that then implies a set of required data	Equivalent to an ‘asset class’ so may not provide any real actionable information other than high level bucketing (i.e. Equity v Fixed Income)
	Product	Adds identification of the underlying asset that the derivative is derived from	If the underlier is a currency, would this be captured at the instrument level? If so this will have implications for this structure / division of data
Identification	Contract	Includes specifics of the actual instrument; actual	Would the schedules not be identified at instrument level? (at least the

		rates, notional and payment amounts, all related schedules, and effective and termination dates	generic schedule; actual schedules would just be derived based on execution date). The contract may not be dependent upon an actual trade taking place, and could potentially be an aggregation level across multiple trades of a similar – or the same – instrument/contract.
Trade	Trade	Data associated specifically with the trade of a contract that is not specific to a contract; i.e. counterparty	Trade date and execution time are noted; but how would this differ from 'effective date'?

A further comment on this section is that on page 7 the Consultation talks about 'effective date' as being one of the data elements of an OTC derivatives contract. In the data elements for an OTC derivatives transaction the Consultation includes; 'trade date and execution time'. However, "effective date" and "trade date", within an Interest Rate Swap context are the same data point. (This is the same for other types of swaps).

We would recommend a UPI framework that includes a level of identification somewhere between what is currently identified as "Product" and "Contract" that would act as an unambiguous "Instrument" level identifier. This would allow multiple functions to be performed across multiple underlying related contracts. An 'Instrument' level in the hierarchy would provide the economic 'template' for the pricing and execution of a contract, and provide a deeper level of specificity than 'Product', without needing the detailed economics of a specific contract.

Specifically to the hierarchy, Bloomberg advises extending the hierarchy from the table above as follows;

'Level'	Data Set	Description	Comment	Examples
Classification	<i>Instrument type</i>	Indicates a high level classification that then implies a set of required data	Akin to an 'asset class' for high level bucketing	The ISDA Taxonomy clearly defines these levels of classification. CFI code can provide some of this detail, but may need additional data elements to satisfy the full classification being envisioned.
	<i>Product</i>	Adds identification of the underlying asset that the derivative is derived from	Specifies, at a lower taxonomy level, the type of instrument being described, but without any specific economic terms. Still a classification system.	
Identification	<i>Instrument</i>	Provides the high level structure of the actual Product expected to be priced or transacted	Gives a structure, with basic economics and 'template' to effectively trade and aggregate multiple contracts, especially over time and reset dates (i.e. aggregating broken-dated contracts)	An instrument identifier would uniquely identify an actual product that could be priced and traded. One of the elements describing that instrument would be the 'classification'. FIGI, RED, and All are the only currently actively issued
	<i>Contract</i>	Includes specifics of the actual instrument; actual rates, notional and payment amounts, all related schedules,	Contract may not be dependent upon an actual trade taking place, and could potentially be an aggregation level across multiple trades	

		and effective and termination dates	of a similar – or the same – instrument/contract.	instrument identifiers in the OTC Derivatives space.
Trade	Trade	Data associated specifically with the trade of a contract that is not specific to a contract; ie counterparty	Trade date and execution time are noted; but how would this differ from 'effective date'?	As discussed at the Feb 10 meeting, UTI can be satisfied by a Mint/Value combination based on rules specifying the first point of contact/generation.

We have revised Annex 5 with an example as to how this might work at the end of this consultation.

Question 4: Do you agree with this approach to the UPI's treatment of package trades? If not, please explain and suggest alternatives.

Firstly we refer CPMI IOSCO to our answer to Question 3 above in terms of the overall framework approach we favour for UPI, with the four levels of hierarchy we have suggested. A key decision is how to associate the right set of meta-data to provide functional usability at each identified level. If, however, there is no plan to use a 'product' level identifier to inform specific operational or regulatory processes, it may not make sense to include that as a unique level, but instead the elements could be captured as part of other levels.

In terms of the specific question relating to package trades, we think that the issue is more complex than simply linking separate trades together as the examples below of scenarios that could also be regarded as 'package' trades seek to show:

1. Equity Index; an index is considered a representation in its own right, as opposed to individual transactions for each of the underliers. Each underlier is uniquely identified, and reporting for regulatory purposes may be required due to jurisdictional requirements, but as a unique instrument, the index is managed as a single 'thing.'
2. A spread, such as a USD Swap 5Y v 7Y, is defined by the difference between the two individual components, but again – it is a unique 'thing' in its own right that uses the 5Y and 7Y individual components.
3. A convertible bond, a convertible equity or even an ADR all have an underlying component significantly different than the instrument itself, but are defined as unique 'things' unto themselves, as opposed to being represented as a transaction for the underlying instrument.

Our recommendation on this point, then, would be to specify an Instrument Type under a Product family as a 'Package', which would then include types of packages further modeled under an Instrument with specific underliers and high level relationship based economics.

We do agree, however, that where 'package' refers simply to the linking of two separate trades the relevant identifier to show this would not be part of the data set which identifies a product and would not form part of the product hierarchy data to which we refer above. For example, it is not clear if such concepts as straddles, strangles, and butterflies would fall into the 'package trade' definition or not.

Therefore there should be a clear scope definition on how to determine if a set of related items constitutes a single 'instrument' or should be represented as a set of grouped, and linked, transactions. For example, if a group is transacted upon (priced, confirmed, and settled) as a single 'instance' between counterparties, it may be considered a single instrument with underliers, versus a set of individual transactions that may be linked together, but priced, confirmed and settled independently (even if they are linked for risk purposes).

Question 5: Are the principles and high-level specifications listed and described above comprehensive in representing the characteristics of a classification system? If not, are there other principles and high-level specifications that should be considered? Please list and explain.

We agree with the high level business principles for a classification system as set out in section three of the Consultation. As stated above we do have reservations about aspects of the specific 'structural concepts' covering 'instrument type', 'product', 'contract' and 'transaction,' which we have described above. Below we provide further commentary on each of the high level business principles, based upon our extensive experience in issuing and maintaining the Financial Instrument Global Identifier, including our work with firms globally that utilize identifiers throughout the trade lifecycle and for regulatory purposes. We also provide commentary on the requirements of the Aggregation Feasibility Study for 'product identification in order to achieve the objectives of data aggregation'.

Aggregation Feasibility Study Requirements

- ***"An identifier that is sufficiently precise for the purposes of the authorities using the data, although recognising that it may need to be supplemented by other reported data on the transactions."***

Bloomberg agrees that this is a key requirement and that is why it is important to ensure that there is clarity as to what the identifier represents – and the extent of the information associated with it. Identifiers need to be of practical use, and usable by market participants and Authorities alike. If there is not a shared reliance upon the same classification and identification schemes and related data, then there is a de facto mismatch between what Authorities are monitoring and what is actually happening in the marketplace. Given the focus on 'classification' versus an instrument identifier, it may be useful to amend the statement above to become: "... may need to be supplemented by other reported data on the transactions **or individual instruments**". This distinction is important, as there may be instrument level data elements not specific to a single transaction that would be useful for aggregation, but which are not part of a classification.

- ***"An identifier that either explicitly or implicitly (through reference data) includes a well-articulated and precise classification hierarchy, so that data aggregation and analyses that does not require precise detail of the traded product are possible."***

This is the inherent benefit of a meta-data driven hierarchical symbology structure. However, there may be cases where data related to a traded product (but not necessarily any related trade/transaction information) would be needed or useful.

- ***"An identifier that is open-source, available to all users and has open redistribution rights."***

Bloomberg believes this is a core principle. Furthermore, there is, unfortunately, liberal interpretation of 'open source' and 'open redistribution rights.' For example, there are solutions being offered that claim to provide an open source identifier, with no restrictions on redistribution. However, this applies to the identifier only, and perhaps one or two additional pieces of data which are not enough to actually be of value. To be usable by the market at large, or to be related to another identifier, there are links to proprietary and significantly restricted data. In this way, these offerings are much like crippled software that can be used for free as a teaser, but require full payment to provide any broader functional benefit.

- ***“A governance process for adding new values to the identification system, recognising that new products will come into being over time. Authorities should have some role in the governance process.”***

Bloomberg Open Symbology fully supports industry involvement and guidance for maintenance and growth of the Financial Instrument Global Identifier and Open Symbology offerings. We are in the process of establishing an Advisory Board to provide more formal and direct industry guidance for Open Symbology developments. We would be open to having Authorities involved in this activity and have plans in process to include Authorities. Therefore we fully support and would advocate a similar approach for the UPI.

- ***“An identifier that incorporates an approach which allows for historic data comparisons in a straightforward way, eg by not deleting or mapping old values. The approach would maintain a version history of the identifiers.”***

We agree that a non-changing identifier with associated meta-data allows for a historic data comparison. This approach is already used by Bloomberg for the FIGI. In regards to a classification system, this should be less of a concern, as dynamic values would not be included. This speaks to the inheritance issue described in the reply to Question 2. For example, the classification of an instrument as a “Convertible Bond” changes when it is converted to an “Equity”. This is reflected within the instrument’s metadata. The actual classification “Convertible Bond” does not change in its nature, or the elements used to determine that something is a Convertible Bond (i.e. the classification ‘convertible bond’ does not suddenly become replaced with the classification ‘equity’). The instrument changed, classifications do not.

Over time, classifications may be extended, but ‘older’ classifications typically do not cease to exist.

High Level Business Specifications

Specification	Commentary
Jurisdiction-neutrality	We agree that any classification system should not be tailored to a specific jurisdiction or regulation. Additionally, it should be focused on satisfying all functions within the lifecycle – of which aggregation is just one aspect.
Uniqueness	We agree with the principle that different products should have different UPI’s, and a distinct product should have a distinct set of data elements. As raised above we would suggest the addition of ‘instrument’ as a level in the framework and the inclusion of ‘contract’ within the UPI framework.
Consistency	This is a core principle of Open Symbology. While the associated data elements may differ across types, common elements should be represented in the same way (i.e. a currency or date should have the same format). Also, the principles for assignment, freedom of data, and all other principles should remain consistent across types.
Persistence	Agreed. Further, a code, once assigned, should not be re-used or re-assigned, even if the original product is defunct or otherwise no longer in existence. As noted above, this is more relevant to instrument identification as opposed to a classification system alone.
Adaptability	Agreed. There are different ways to handle the challenge of adding new ‘types’ over time without the use of ‘Other.’ One of the strengths of a meta-data approach is that meta-data can be grouped and aggregated without

	requiring a ‘type’ to formally exist. This prevents the breakage of backward compatibility, and enables traceable and easy transitions both forward and back, without the additional overhead needed for versioning. Historical records are preserved through the meta-data, and this allows for backfill without impacting historical or current data or interpretations.
Clarity	We agree that clarity is vital in the classification system and that this is aided by the availability of freely available supporting documentation. All of Bloomberg’s Open Symbology documentation is provided free of charge. There are no hidden or cost-recovery charges. Additionally, there is a dedicated support team that is accessible to support market participants’ understanding without any consulting or professional services fees, or mandate to purchase any commercial service. We would recommend that such levels of support are most important in achieving the clarity CPMI-IOSCO is seeking. Note that some so-called ‘Open Source’ standards (including ISO standards) quite often make a charge for documentation associated with the standard.
Ease of generation/acquisition/query	This is a key requirement to ensure data quality. Open Symbology operates OpenFIGI.com for this express purpose. Additionally, as noted within the Clarity principle above, there is a dedicated staff that supports this function.
Long-term viability	Bloomberg Open Symbology would caution against relying on any existing solution that requires fundamental changes to a combination of structure, coverage, governance, implementation methodology, and cost structures that support operations. With the rapid change of pace in technology and data science and theory, many existing classification systems are naturally entrenched in legacy methodologies, covering data assignment, technology, and commercial focus. We firmly believe that a meta-data approach, updated in line with industry requirements, provides the best way forward. This will ensure a long term solution that remains vastly more adaptable than any other existing classification scheme in financial services today. That being said, we have mentioned two classification systems that may be appropriate for use in any framework, and have indicated how FIGI can satisfy the identification role alongside those classification schemes. Bloomberg is one of the few firms in the world in financial services that staffs PhD – level Ontologists to remain on the cutting edge of data science and classification systems.
Scope-neutrality	Agreed. As noted earlier, we do recommend revising the approach to the term ‘OTC,’ for this point and others. The reality is that G20 requirements are moving more products from OTC to central clearing and platform trading. This needs to be factored in to the UPI as similar products may be trading on platform and OTC across different markets. Additionally, scope neutrality should not be limited to ‘OTC’ asset types, as we believe in a universal approach to classification and identification across asset types – listed and unlisted, derivative or not.
Compatibility	We fully support open standards. Again it is important to clarify and agree reasonable expectations for how an ‘open standard’ is defined and validated as such. An Open Standard should be freely available, without restrictions. This includes the identifier as well as the associated meta-data that is sufficient to identify the instrument in question such that it is unambiguous from a similar, but different instrument.

	The identifier and data must both be redistributable without costs or limitations, and not rely on proprietary data to be useful.
Comprehensiveness	We agree that there is a clear need for a framework that encompasses both a classification system and instrument identification methodology to be capable of multi-purposed operations. Symbol-based systems to date have tended to be single-purpose. Attempting to extend single purpose systems has inherent risks. An open framework, with specific rules, structure, and guiding principles provides the necessary flexibility to accommodate wide ranging asset coverage and to support multiple reporting and operational efficiency outcomes.
Extensibility	Related in part to scope-neutrality, we agree with this principle. As noted in Comprehensiveness, many classifications systems to date have been created to address a specific purpose (i.e. a system for a specific Exchange, or a specific market sector). The meta data approach allows unlimited extensibility.
Precision	Agreed.
Public Dissemination	Agreed. Additionally, all data in the public dissemination should be considered open and without any license restrictions on re-use (including for commercial purposes).

Question 6: Are the principles and high-level specifications listed and described above accurate and precise in their definitions? If not, are there changes you would suggest? Please list and explain.

The majority of comments have been included above. An additional term that should be added is a clear and accepted definition of ‘open source.’ As provided, Bloomberg uses the following;

“An Open Standard should be freely available, without restrictions. This includes the identifier as well as the associated metadata that is sufficient to identify the instrument in question such that it is unambiguous from a similar, but different instrument. The identifier and data both must be redistributable without costs or limitations, and not rely on proprietary data to be useful.”

Bloomberg also has concerns about non-audited, non-regulated ‘cost recovery’ or ‘RAND principled’ models that may be open to abuse without proper oversight, yet claim to support free and open distribution. In practice, many of these models have in place licensing restrictions and reliance on attached proprietary data that carries significant costs and restrictions on use.

We would also suggest that full allowance is made for the migration of OTC derivatives to trading platforms. Increasingly similar products may trade on platform and OTC, some OTC derivatives may move entirely to platform trading. So whilst we agree that the scope should certainly cover any product that ‘might be classified as an OTC derivative’ the UPI will increasingly cover products trading mainly on venues going forward.

Question 7: Could some of these principles and high-level specifications pose implementation challenges? Which ones and why?

The high level specifications represent the direction we need to move in with the UPI classification system. There will be implementation challenges (which we list below), however these can be overcome. What is less encouraging is that some markets, most notably the EU, are pushing ahead with proposals for identifier systems which fall well short of the high-level specifications CPMI – IOSCO have outlined. This needs to be addressed.

Implementation Challenges

- The first challenge is the need for a clear understanding of ‘open source’ in respect of identifiers. This is essential so that endorsement by Authorities cannot be leveraged for commercial gain by standards organizations, or designated Registration and Maintenance Authorities (or other such providers). Simple accreditation as a ‘standard’ does not immediately mean ‘open.’ Some solutions indicate an identifier is ‘open source,’ yet there are restrictions on the associated data required to understand that identifier in some way. This, in practice, is much like ‘free trial software’ that is crippled and requires some sort of payment to be useful in practice.

This leads to practical questions as to how to approach a ‘standard’ endorsed by a recognized standards organization, engaging with the reality that an acceptable standard may not yet exist within a standard organization’s regime, the need for the evaluation all relevant standards organizations and their relevant offerings , and how to approach seemingly conflicting or overlapping solutions.

- Given the need for the careful evaluation of standards offerings and standards organisations against the high level specifications, time to market may present the second challenge. This could particularly be the case if it is viewed as essential that the standard must have the endorsement of a specific organization, and that this is weighed more heavily than completeness. The implementation challenge would then be resolving the gaps in suitability of a solution.
- A third challenge is overcoming existing restrictions on instrument identifiers or any classification system deemed to be within a firm’s own ‘intellectual property,’ but which are nevertheless widely used in the market. There may be commercial objections which will need to be overcome to enable identification by any other means (e.g. by a standards body appointed Registration Authority). This is more relevant to identification as opposed to classification.
- A fourth challenge exists more generally in overcoming the embedded politicized environment and strong existing commercial interests within the instrument identification space. Jurisdictions have been forced to take action in this space more than once in the past 10 years. Endorsement of any one solution may have any number of impacts – from government-endorsed monopolies to commercial resistance. There also may be existing perceptions of various trade organization or providers that are more likely due to a disconnect that can be resolved, as opposed to any willful non-transparency.
- A fifth challenge will be ensuring any solution can adapt rapidly, without impacting current users and solutions. The majority of existing identification schemes employ rigid methodologies specific to current usage and needs. A semantically meaningless identifier with a set of associated meta-data provides the most flexible and future-proof methodology for classification and identification known today.
- Lastly, ensuring that any identification/classification scheme is not specific to regulatory usage. Ensuring any identification scheme is relevant to the processes of trading, valuation, position-taking and other functions ensures that there is clear alignment and relation between what is reported to authorities, and what is identified within the day to day processes and procedures of trading and financial services operations.

To this end it is essential that cooperation with industry, and the incorporation of relevant industry work on identifiers and classification systems, forms a key part of the way forward adopted by Authorities in this space. Attempts to impose identifier solutions which limit the changes required in Authorities reporting systems, but which don’t work in the industry, will lead to implementation problems and ultimately a lack of data quality. We believe that there are important lessons which should be learned

from the implementation of the LEI which should be taken into account in charting the way forward on instrument identification, particularly regarding the commercial model for issuance adopted for LEI. We also urge that existing classification work, such as the ISDA taxonomy, be considered.

Question 8: Providers of product classification systems are encouraged to provide a detailed response to Section 3 to set out how their prospective UPI solutions meet, or could be revised to meet, each of these principles and high-level business specifications. If the UPI solution does not meet a particular principle or high-level business specification, please describe planned or potential amendments that could satisfy it.

As mentioned earlier Bloomberg Open Symbology acts as the Registration Authority, and Certified Provider, of the Financial Instrument Global Identifier (FIGI). As the adopted standard of the Object Management Group for instrument identification, we believe that the FIGI provides an effective solution for the identification of instruments, including those within the scope of ‘OTC Derivatives.’ Below we provide more detail on how FIGI meets the high-level principles outlined by CPMI-IOSCO. We believe that FIGI can provide a key part of the instrument identification within the proposed Framework, in concert with existing classification systems.

Aggregation Study Principles	Alignment of the FIGI with UPI Harmonization requirements
Precise	The structure behind FIGI allows the creation of an identifier with an associated set of meta-data that can fit the required precision by authorities. Additionally FIGI can support a hierarchy which can satisfy different levels of precision (e.g. Instrument Type, Product, Contract etc.) as deemed necessary.
Classification Hierarchy	The methodology employed to assign a FIGI is in line with the ability to support a hierarchy of inter-related identifiers, as well as a metadata scheme that supports inheriting data based on a parent-child relationship.
Open Source and open redistribution rights	FIGI is the only open data based identifier in financial services. As defined elsewhere in this response, FIGI and the associated meta data is freely distributed and has no restrictions on reuse or on redistribution, regardless of firm type or purpose. Any classification or identifier scheme that claims to be open source should be subject to a veracity check on whether the related data, disambiguated information (for identifiers with embedded ‘intelligence’), or other related information required to effectively utilize the code for practical purposes is also free of costs and restrictions.
Governance process, inclusive of Authorities	The Open Symbology team that supports FIGI as the Registration Authority for the standard is establishing an Advisory Board, which would be open to participation by Authorities. In addition there is already an established standards maintenance process in place for FIGI, which is agreed with the Object Management Group, the international standards technology body.
Version history	As a basis for proper data governance and quality, there is an audit history for any and all changes to the meta data associated with a FIGI.
High Level Business Specifications	FIGI alignment with Business Specifications
Jurisdiction-neutrality	FIGI, by its nature is jurisdiction-neutral, starting with assignment based on core metadata principles. By offering a complete set of meta data, not just a limited set of fields or requiring parsing of concatenated fields, FIGI allows users to utilize those metadata elements that are applicable to the jurisdiction or operational need.

Uniqueness	FIGI can be structured to be assigned in the manner described. As raised elsewhere, the inclusion of 'contract' within the classification system may be beneficial, if not necessary for various reasons and should not be explicitly excluded. Additionally, a level of assignment between 'Product' and 'Contract' is also in our plans. FIGI assignment today is aligned with the instrument level. We expect to be able to satisfy industry assignment level requirements within 6 months of a final requirement being agreed.
Consistency	This is a core principle of our Open Symbology. FIGI is assigned across multiple asset classes; including Equity, Fixed Income, ETD's, Bank Loans, and more. Assignment and associated meta-data are consistently applied.
Persistence	A FIGI, once assigned, is not re-used or re-assigned, even if the original product is defunct or otherwise no longer in existence.
Adaptability	One of the strengths of a meta-data approach, as adopted in the FIGI, is that metadata can be grouped and aggregated without requiring a 'type' to formally exist (and hence avoiding the creation of something called 'Other' and the related complexities that causes). Historical records are preserved through the metadata audit trail.
Clarity	All of the Open Symbology documentation for FIGI is provided free of charge. There are no hidden or cost-recovery charges. Additionally, there is a dedicated support team that is accessible to support market participants' understanding without any consulting or professional services fees, or need to purchase any commercial service.
Ease of generation/acquisition /query	This is a key requirement to ensure data quality and improved user experience. Bloomberg Open Symbology operates OpenFIGI.com to enable easy identifier creation requests, look-up and mapping. In addition, as noted for the Clarity principle, there is a dedicated staff that supports this service. Where possible, FIGI assignment is also performed pro-actively, so that users receive classification prior to need of use.
Long-term viability	We firmly believe that a metadata approach (as adopted by Bloomberg for the FIGI) provides the best long term approach. We believe this is far more adaptable than any other identification scheme in financial services today, and integrates seamlessly with multiple classification methodologies, without sacrificing data quality. Bloomberg uses the latest techniques in data science to ensure our approach to symbology is always up to date with developments in technology. Bloomberg is one of the few firms in the world in financial services that staffs PhD – level Ontologists to remain on the cutting edge of data science and classification systems.
Scope-neutrality	FIGI is based on the associated metadata and therefore, just as it is jurisdictionally neutral, it is also scope-neutral. At the same time, the metadata flexibility allows FIGI to cover particular needs and requirements, without impacting other areas of coverage.
Compatibility	We fully support open standards, and FIGI is the financial industry's only truly open data standard for instrument identification. Many classification schemes existing today claim 'open source' status, but are encumbered by any combination of; • Ties to commercial terms for identifiable, usable related data; • Redistribution restrictions based on intended use; • Cost recovery claims that are not audited; • Protectionist behavior via closed Trade Association status; • Data that requires parsing and/or restrictions to make concatenated data usable; • Barriers to access through technology restrictions (e.g. lack of bulk

	access on a free non-commercial basis, required and monitored registration, access to only single and manual one-by-one queries requiring manual copy and paste of data, restriction of higher level extraction and data services to users of commercial services etc.) • None of the above applies to FIGI.
Comprehensiveness	FIGI, has been built from the core to provide comprehensive support for products across asset class. As such it can and does support a variety of regulatory purposes, and indeed is already used for regulatory compliance in a number of markets and industry sectors.
Extensibility	The metadata approach underlying FIGI allows unlimited extensibility, with minimum implementation time, as existing rules do not need to be enhanced, and existing infrastructure in place is tailored to be extensible in minimal timeframes. There is no other identification system today that has the flexibility and extensibility of FIGI. Many other current identification systems are encumbered by legacy processes and procedures that would need to be fixed, with associated timing and cost implications. FIGI, as an already open data standard, does not have these limitations or bottlenecks.
Precision	This is inherent in the standard for FIGI.
Public Dissemination	FIGI, and its associated metadata, as an open data standard can be redistributed and disseminated publically by any party, including any Authority for any jurisdiction.

Question 9: As discussed in Section 3.5, should a classification system allow one or more of its data elements to take the value “Other” in order to incorporate new and/or highly bespoke products that do not yet have a more precise definition within the classification system? Why or why not?

On principle, the use of a ‘catch-all’ such as ‘Other’ lends itself to abuse and misuse. Depending on the solution chosen, the addition of unforeseen products or highly bespoke products can be incorporated more quickly and the need to use ‘other’ reduced. If MECE principles are followed in regards to building a classification, there should be less possibility for occurrence of situations or products coming into existence that would require ‘Other’.

Within the FIGI standard, there is flexibility to extend data elements to accommodate variability requirements, without resorting to generic non-descriptive data points such as ‘Other’.

If not, how would the bespoke/non-standard products be treated within the classification system?

Through a defined set of metadata, a bespoke or non-standard product can be classified. There are multiple methods to accomplish the goal – from use of a unique additional metadata field, to a direct parent-child classification that “fills in for” or “skips” the specific classification level until industry guidance directs the proper classification or standardization.

A primary question to ask is; does ‘bespoke’ refer to a unique “product” in its own right, or does it simply refer to customized economics of an otherwise standard product, instrument or contract?

What should be the criteria and processes for moving one or more data elements from “Other” to a more specific bucket?

Using a metadata approach, a data element isn't "moved." Individual metadata fields can be added, or changed, under certain rules and process, with an audited history. Values within a metadata field can also be changed, under certain rules of assignment and maintenance, with an audited history.

Should the volume of transactions that can be reported using these "Other" values be capped in order to maintain the precision of the classification system? If so, what would an appropriate cap be?

This should not be necessary depending on approach, however if 'Other' has to be used then the use of this should be very strictly limited. In short CPMI-IOSCO should prioritise a UPI scheme capable of removing, or at the very least, severely limiting the need for 'Other' values.

Question 10: The results from the study presented in Annex 4 suggest that data elements that describe the instrument together with data elements that describe and identify the underlier may provide an optimal level of granularity for product classification. For informational purposes, beyond the use of a derivatives product classification system for the global aggregation of data reported to trade repositories, are you aware of product classifications for other purposes where this level of granularity is applicable?

It is highly dependent upon the function and purpose of any 'aggregation' being performed, as the clarifying question posed below indicates. This includes operations, position reporting, pricing, and operations functions.

A first issue is lack of a maturity date or term until a contract level, as defined in this Consultation. For example, MiFID II RTS requirements indicate aggregation based on 'time to maturity', so the level of granularity is not deep enough. It is questionable to expect that this data point be part of a classification system, however. Over time, this would force the re-classification of a large amount of instruments (or positions or trades) as those individual 'things' move from one time to maturity bucket to the next. Such 'reclassification' on a large scale can severely impact data quality due to maintenance issues. It is though important that Authorities move towards a consistent approach as to what data elements they wish to identify and at what level these elements are bucketed. At the same time adjacent regulatory mandates such as MiFID and EMIR in the EU should take a coherent approach to identifiers, ideally in line with global recommendations. If MiFID requires identifiers covering a wider range of data elements than the trade reporting under EMIR, the system of identifiers covering the data required should in each case be cohesive such that product classification and instrument identifiers work together.

Is the purpose of the classification solely to resolve the needs as detailed in Annex 3? There may be issues specific to Credit Default Swaps, being used as an example, that does not take into account variabilities and needs related to other products such as IRS or Equity swaps, due to the more standardized nature of CDS and the associated market.

Market exposure, and the kind of market exposure which it is important to be aware of, will differ by product type notwithstanding concentration risks.

For example, what level of granularity is used for aggregating transactions to calculate a position, or to determine various risk exposures to a particular product? What level of granularity is used to aggregate transactions for the purposes of compression or netting operations?

Compression or netting would require Maturity Date (or term plus execution date, or time to maturity) as well as specific values such as rates and fixing dates, in order to determine if positions are offsetting.

Aggregation based on risk exposure can take multiple dimensions. Sector of underlier may have a multi-to-multi relationship with risk across currency, or by jurisdiction or specific market. Rate type, or basis may be influenced by any number of related factors.

Pricing and collateral management via the margining process should not be forgotten, as well.

Question 11: Do the options presented above appear operationally feasible? If not, please explain why.

The options, with the noted feedback and concerns, do appear feasible. Identified issues must be addressed, and there may be other concerns, as noted, that impact operations within and between firms, outside of regulatory functions and reporting, that are important to consider for a smooth and transparent functioning market.

One concern is that for certain aggregation, a single classification code may not be appropriate to assign, as for aggregation purposes, it would be more flexible, less costly, and more sensible to pair a higher level classification code with specific data elements that are more variable (i.e. such as actual values or ranges of values) that would pull from the reference data of the actual instruments or even the individual trades.

Question 12: What are the pros and cons that you see in each considered level of granularity (one with an identifier for the underlier, one without an identifier for the underlier)?

In the context of a classification system, inclusion of an underlier presents potential data quality issues and begins to further blur the line between classification and identification. It also could impact the flexibility of any aggregation. To illustrate this we can use the example of an Equity Swap where Ford is the underlier;

- With multi-listed equities, the Ford currency exposure may be in a currency other than USD. If the underlier 'FORD' is an integral part of the classification system, a new identifier would need to be created for all currency instances, and then also potentially venue-level variations of the officially listed instances of FORD.
- If FORD participates in more business sectors than automotive, the ability to differentiate and aggregate on market sector could be more complex than it needs to be.
- When FORD goes through a corporate action, especially one that changes its status as a firm, there is significant impact to the classification system, the identification system, and transaction information. This introduces unnecessary risk in data quality, traceability, and linkages across transactions and positions. Limiting these changes to the identification level of a framework would provide better quality and flexibility. Therefore our recommendation is to avoid the inclusion of the underlier in the data associated with pure classification.

As presented previously, any instrument identification should encompass an associated classification of that instrument, as well as all associated underliers.

When discussing identification (as opposed to classification), use of an identifier for the underlier should be standard practice. Use of a descriptive solution, such as FIGI, would allow for the use of a single data point – the FIGI that corresponds to the associated underlier. This is because the FIGI for the underlier can then be used as a key to any required metadata required to identify the underlier – including asset class and other descriptive information. FIGI is assigned regardless of asset class, and therefore covers equity, fixed income, listed and OTC derivatives, indexes, and other assets. Where a dependent data point is a company, the LEI can be used.

Question 13: A classification system that includes identifiers for underliers in all asset classes would require identifiers that are open-source and freely available to all users with open redistribution rights. Looking at the example of classification systems provided in this section and in Annex 5, do such identifiers exist for all asset classes? If not, please specify where you foresee implementation challenges in this regard and any suggested solutions.

FIGI covers all asset classes that would be required to identify underliers. Where an entity may be required, it is expected that an LEI would be used. There is no cost for access to, use of, or redistribution of FIGI identifiers.

Question 14: For the identifiers in each asset class, are there corresponding reference data that are open-source and freely available to all users with open redistribution rights?

FIGI Open Symbology data includes the associated metadata required to identify the instrument, regardless of asset class. FIGI provides a single identifier, as opposed to individual pieces of data, to identify underliers. This provides better data quality and less potential for errors by removing the need to resolve any translation or derivation of the actual underlier. In short although the metadata associated with the FIGI could be used for the underlier, we would recommend that the UPI scheme focus on the use of an instrument identifier for the underlier within the discussed framework concept, and the FIGI would fit this role perfectly.

In regards to classification systems, Bloomberg Open Symbology also has an open ontology available, which can provide structure for any classification system, or resolve and link existing classification systems. Both the ISDA taxonomy and the CFI have already been mentioned in this reply, as well, in regards to classification, and both are relevant.

As of this reply, there are over 300,000,000 FIGIs assigned to instruments across equity, fixed income, futures and options, bank and other syndicated loans, interest rate and other swaps, indexes, commodities, currencies, and other asset types.

Question 15: For a classification system that does not include an identifier for underliers in all asset classes, what classification systems are available that are open-source and freely available to all users with open redistribution rights? What are the data elements included in these systems?

In regards to classification systems, Bloomberg Open Symbology also has an open ontology available, which can provide structure for any classification system, or resolve and link existing classification systems.

Both the ISDA taxonomy and the CFI have already been mentioned in this reply, as well, in regards to classification, and both are relevant.

Question 16: Based on the examples provided in this section and in Annex 5, do you have comments on how the allowable values would be technically managed or/and how they are technically managed in the case of existing classification system solutions?

A classification code can be managed by a designated trade association or standards organization through a maintenance authority. However, it should have representation from independently vetted industry and regulatory representatives with subject matter expertise in the area.

ISDA currently maintains the taxonomy through a standing working group. It should be expanded to include regulators and non-ISDA interested industry members, especially any providers of instrument identifiers.

CFI no longer has a Registration Authority, but it would make sense to create an internationally representative group of industry and regulators to define best practices for assignment and use, akin to current Securities Market Practice Groups (SMPG) or Standards Evaluation Groups (SEGs) currently in existence.

The core standard for an instrument identifier, which we believe is also needed with the classification system, should be managed by a Registration Authority, based upon the clear assignment rules as per the written standard. FIGI is the only international, asset-class independent, open data standard in financial services that has clear, publically published and available rules regarding how assignment by asset class is determined, and how new assignment requirements are handled.

The technical infrastructure required to assign and maintain high data quality is not simple. This requires a significant investment in systems, connectivity with primary and secondary sources of data, and people to continuously and proactively ensure good data governance and quality.

Bloomberg L.P., as Registration Authority for the FIGI, has already committed significant resources to this end. The firm has already re-affirmed its commitment to providing FIGI to the industry and world at large in line with open data principles. Our work with the Object Management Group, our application to ISO to be accepted as an ISO standard, and our continued engagement with the industry through industry groups and consultations such as this UPI Harmonization Consultation should clearly illustrate this commitment.

We respectfully submit these responses, and welcome any clarifying questions to be directed to Richard Robinson and Richard Young of our Open Symbolology group.

Addendum relating to Section 5 and Annex 5 examples;

We have below offered alternatives to one of the examples provided in Section 5, and a further example taken from Annex 5, with accompanying reasoning for the recommended adjustments. In each case the example number relates to that assigned in the consultation paper.

An overview of Identifier Assignment;

When viewing a hierarchy, it is important to understand that a unique identifier is assigned at each level, where the parent identifier becomes an integral part of the child's metadata.

For the tables below, the following applies;

1. Where there is an identifier example given beginning with 'NNG', this indicates an identification level. Bloomberg, as Registration Authority, could issue such an identifier to correspond to the indicated level. The actual prefix could be any combination allowable by the FIGI specification, and 'NNG' is simply used as a convenience for illustrative purposes
2. In our examples, we associate data with our 'instrument' level that the Authorities had previously associated with 'Product' within the consultation – specifically for the purposes of providing a flexible structure for aggregation needs without impacting market operational requirements.
3. The goals of the hierarchy structure we suggest are;
 - a. Highlighting at what points the addition of additional metadata forces a 'transition' between a set of metadata being able to identify a 'classification' or taxonomy, an actual 'instrument' that can be priced and actioned upon in various operational and reporting functions, and at what point the granularity is at a transactional level.
 - b. Illustrating the functional assignment of an identifier at different levels so that a single ID hierarchy can be constructed to represent a large set of data without needing to transport that data
4. Where appropriate ISIN has been replaced with LEI. Reference Entities should be identified using an Entity Identifier, as opposed to a Security Identifier. Additionally, in any cases where an asset identifier is required for an underlier, FIGI would have broader coverage than ISIN, regardless of asset type.
5. *Italics – represents fields present in original paper*
6. **Bold – represents additional fields recommended by us for inclusion for hierarchy**

We also point to an example just made available through the TC68/SC4/SG2 meeting held Feb 23, 2016. While we do not include it in this response, we would recommend that CPMI-IOSCO request the example from the ISO convenors to review. It does, we believe, align in many ways with the examples we provide below.

Example 3 (from Section 5)

Note that LEI is used and an ‘Underlier sub-type’ and ‘Underlier type’ is not provided. It is assumed that the metadata associated with the LEI would indicate if it is a Sovereign or Corporate, or Single Name. For Index. FIGI may be a potential solution unless existing proprietary solutions remove redistribution restrictions. Underlier would be expected to be a repeatable metadata field.

	Hierarchy Level	Data Element	Data Content
	<i>Instrument Type Level</i>	<i>Asset Class</i>	<i>Credit (based on ISDA or CFI)</i>
		<i>Instrument Type</i>	<i>(based on ISDA or CFI)</i>
<i>UPI Level 1; ie CFI or ISDA</i>	<i>Product Level</i>	<i>Instrument Sub-Type</i>	<i>Forward (based on ISDA or CFI)</i>
A unique code (an ‘instrument level ID’) would be assigned and the 11 metadata fields here would be associated with that code (UPI – Level 2). i.e. NNGCCCCCCCCC	Instrument Level NNGCCCCCCCCC	Product Level ID	CFI or ISDA
		Exchange Symbol	N/A
		<i>Single or multiple currency</i>	<i>Single</i>
		<i>Underlying asset/contract type</i>	<i>N/A</i>
		<i>Option Style</i>	<i>N/A</i>
		<i>Return, pricing method or payout trigger (‘Option Model’)</i>	<i>Spread</i>
		<i>Single or multiple tenor</i>	<i>N/A</i>
		<i>Delivery type</i>	<i>Cash</i>
		<i>Underlier source ID</i>	<i>LEI</i>
		<i>Underlier ID</i>	<i>XXXXXXXXXXXXXXXXXX, YYYYYYYYYYYYYYYYYYY</i>
		Effective/Forward Term/Tenor	
		Expiration/Termination Term and Tenor	
A unique code (a ‘contract level ID’) would be assigned and the 4 metadata fields here would be associated with that code. The additional 11 ‘instrument level’ metadata fields would be inherited through metadata associated with “Instrument Level ID” meta data field associated with the specific Contract ID. (UPI - Level 3) i.e. NNGC3C3C3C3C. Multiple Contract ID’s could be associated with a single Instrument ID	Contract Level NNGC3C3C3C3C	Instrument Level ID	NNGCCCCCCCCC
		<i>Notional Schedule</i>	<i>Constant</i>
		Ticker or Exchange Symbol	
		Ticker or Exchange Symbol Source	
A UTI would be assigned to a Transaction, referencing a specific Contract that was actually traded	Transaction Level	Contract ID	NNGC3C3C3C3C
		<i>Option Type</i>	<i>N/A</i>
		Effective/Forward Date	
		Expiration/Termination Date	

Example 4 (from Annex 5)

Example 4; Core Example: USD 5Y Vanilla Swap				
	Hierarchy Level	Data Element	Data Content	EXAMPLE
	ID Level	<i>Instrument Type</i>	<i>Swap (ISDA or CFI based)</i>	<i>Swap</i>
<i>Product level / UPI Level 1; ie ABCDEF / CFI ; OIS / ISDA</i>	<i>Product Level</i>	<i>Instrument Sub-Type</i>	<i>eg Basis swap, fixed – floating, fixed – fixed, inflation, OIS, zero coupon, other etc. (ISDA or enhanced CFI based)</i>	<i>fixed – floating</i>
A unique code (an ‘instrument level ID’) would be assigned and the 11 metadata fields here would be associated with that code (UPI – Level 2). i.e. BBG009HXZSV5	Instrument Level BBG009HXZSV5	Product Level ID	UPI Level 1 / ISDA / CFI	ABCDEF / Swap OIS
		Exchange Symbol	N/A	N/A
		FIGI Instrument Level	value	BBG009HXZSV5
		Currency		
		Single or Multiple Currency	Single-currency cross-currency	ISO currency code
		Underlying Asset/Contract Type	N/A	N/A
		Underlier ID Source	eg Issuer name, code provider etc.	FIGI
		Underlier ID(s)	eg Index name, code etc.	BBG002SBS5T7
		Delivery Type	eg Cash, physical etc.	Cash
		Option Model	N/A	N/A
		Effective/Forward Term/Tenor	effective term & tenor	T+2
		Expiration/Termination Term & Tenor	maturity tenor	5 Year
		Single or Multiple Tenor	N/A	N/A
		Day Count Convention Leg 1	eg ACT/ACT, ACT/360,30I/360, etc.	30I/360
		Day Count Convention Leg 2	eg ACT/ACT, ACT/360,30I/360, etc.	ACT/360
		Pay Frequency Leg 1	eg Annual, SemiAnnual, Quarterly, etc.	SemiAnnual
		Pay Frequency Leg 2	eg Annual, SemiAnnual, Quarterly, etc.	Quarterly
		Reset Frequency	eg Annual, SemiAnnual, Quarterly, etc.	Quarterly
A unique code (a ‘contract level ID’) would be assigned and the 4 metadata fields here would be associated with that code. The additional 11 ‘instrument level’ metadata fields would be inherited through metadata associated with “Instrument Level ID” meta data field associated with the specific Contract ID. (UPI - Level 3) ie. NNGD4D4D4D4D. Multiple Contract ID’s could be associated with a single Instrument ID	Contract Level NNGD4D4D4D4D	FIGI Instrument Level	value	BBG009HXZSV5
		FIGI Contract Level	value	NNGD4D4D4D4D
		Ticker	Ticker + Yellow Key	
		Notional Schedule	eg constant, accreting, amortising , custom etc.	Constant
		Full Exchange Symbol	N/A	N/A
		Option Style	N/A	N/A

A UTI would be assigned to a Transaction, referencing a specific Contract that was actually traded	Transaction Level	FIGI Contract Level	value	NNGD4D4D4D4D
		UTI ID	value	
		Option Type	N/A	N/A
		Execution Date	date	
		Effective/Forward Date	date	
		Expiration/Termination Date	date	
		Return, pricing method or payout trigger	N/A	N/A
		Notional	value	
		Clearing (tied to physical delivery type)	venue	
		Roll Convention Leg 1	eg backward_end_of_month, etc.	
		Fixing Calendar Leg 1	eg EN, NA, etc.	
		Shift Convention Leg 1	eg modified, etc.	
		Roll Convention Leg 2	eg backward_end_of_month, etc.	
		Fixing Calendar Leg 2	eg EN, etc.	
		Shift Convention Leg 2	eg modified, etc.	
		Collateral Currency	Currency	