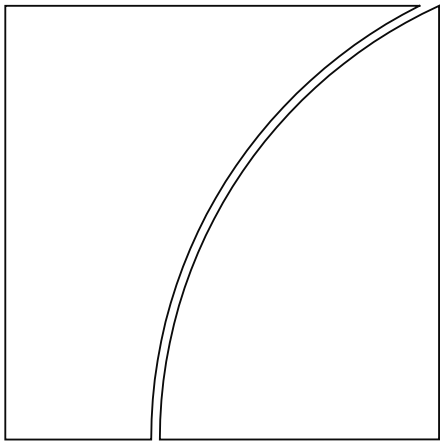
Committee on Payments and Market Infrastructures

Board of the International Organization of Securities Commissions

Technical Guidance



Harmonisation of the Unique Product Identifier

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Contents

Executive summary

The G20 Leaders agreed in 2009 that all over-the-counter (OTC) derivatives contracts should be reported to trade repositories (TRs) as part of their commitment to reform OTC derivatives markets in order to improve transparency, mitigate systemic risk and protect against market abuse. Aggregation of the data reported across TRs is necessary to help ensure that authorities can obtain a comprehensive view of OTC derivatives market and activity.

This document (the Technical Guidance) provides authorities with technical guidance on a uniform global Unique Product Identifier (UPI).[1] A number of reports[2] have identified OTC derivatives data elements – including the UPI – that are critical to many aspects of regulatory work. This report envisions a system under which a unique UPI code would be assigned to each distinct OTC derivative product and each UPI code would map to a set of data comprised of reference data elements with specific values that together describe the product. The collection of reference data elements and their values for each product would reside in a corresponding UPI reference data library.

The role of the UPI is to uniquely identify each OTC derivative product involved in a transaction that an authority requires, or may require in the future, to be reported to a TR. When used in this report, the term "UPI" refers to both the UPI code and the associated UPI reference data and the term "UPI System" refers to the UPI code, the reference data and process of assigning a UPI code to a set of reference data elements.

Conducted by the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO), this work aims to produce clear technical guidance to authorities on the principles for the UPI, the granularity of the UPI reference data and the structure of the UPI code that meets the needs of UPI users. The work is global in scale, takes account of relevant international technical standards where available, including applicable ISO technical standards, and is jurisdiction-agnostic.

This work included extensive internal discussions among authorities that are members of the CPMI and IOSCO, multiple discussions between these authorities and the industry and workshops in which industry experts shared their views. In addition, the CPMI and IOSCO also published two consultative reports on the UPI in December 2015[3] and August 2016[4] and solicited written responses from the interested parties to detailed questions on the topic of UPI. This Technical Guidance is a result of these careful deliberations.

This Technical Guidance covers:

– the technical principles applicable to the UPI;

– the UPI reference data elements required for each OTC derivatives asset class;

[1] Besides this Technical Guidance, the CPMI and IOSCO have published a Technical Guidance on the Unique Transaction Identifier (UTI) (https://www.bis.org/cpmi/publ/d158.htm) and continue to work on the harmonisation of critical data elements other than UTI and UPI that are essential for meaningful aggregation of data on OTC derivatives transactions on a global basis.

[2] The 2012 CPSS-IOSCO *Report on OTC derivatives data reporting and aggregation requirements* (www.iosco.org/library/pubdocs/pdf/IOSCOPD366.pdf), the 2013 CPSS-IOSCO report *Authorities' access to trade repository data* (www.bis.org/cpmi/publ/d110.pdf) and the 2014 FSB *Feasibility study on aggregation of OTC derivatives trade repository data* (www.financialstabilityboard.org/wp-content/uploads/r_140919.pdf).

[3] CPMI-IOSCO *Consultative report, Harmonisation of the Unique Product Identifier* www.iosco.org/library/pubdocs/pdf/IOSCOPD519.pdf, http://www.bis.org/cpmi/publ/d141.pdf.

[4] CPMI-IOSCO *Second consultative report, Harmonisation of the Unique Product Identifier* www.iosco.org/library/pubdocs/pdf/IOSCOPD541.pdf, www.bis.org/cpmi/publ/d151.pdf.

– the identification of underlying assets and benchmarks of OTC derivative products (underliers); and

– the UPI code structure.

This Technical Guidance does not address the work concerning the governance arrangements or the implementation of the UPI.

1. Introduction

1.1 Background

The G20 Leaders agreed in 2009 that all OTC derivative contracts should be reported to TRs as part of their commitment to reform OTC derivatives markets in order to improve transparency, mitigate systemic risk and protect against market abuse. To date, approximately 26 TRs in 16 FSB member jurisdictions are either operational or have announced that they will be authorised and operating, for at least some asset classes. In five jurisdictions, government authorities or other TR-like entities are currently collecting reports on OTC derivative transactions.[5] Aggregation of the data reported across these TRs is necessary to help ensure that authorities can obtain a comprehensive view of the OTC derivatives market and activity.

In September 2014, the FSB published a study[6] of the feasibility of options for a mechanism to produce and share global aggregated data (the Aggregation Feasibility Study). One of the study's conclusions was that "it is critical for any aggregation option that the work on standardisation and harmonisation of important data elements be completed, including in particular through the global introduction of the Legal Entity Identifier (LEI), and the creation of a Unique Transaction Identifier (UTI) and Unique Product Identifier (UPI)."

The FSB asked the CPMI and IOSCO to develop global guidance on the harmonisation of data elements that are reported to TRs and are important for the aggregation of data by authorities. The FSB also said it would work with the CPMI and IOSCO to provide official sector impetus and coordination for the further development and implementation of uniform global UTIs and UPIs.[7]

In November 2014, the CPMI and IOSCO established a working group on the harmonisation of key OTC derivatives data elements (the Harmonisation Group), in order to develop such guidance, including for UTIs and UPIs.

The Harmonisation Group's mandate is to develop guidance regarding the definition, format and usage of key OTC derivatives data elements, including UTIs and UPIs. In doing so, the Harmonisation Group takes into account other relevant data harmonisation efforts and encourages the use of internationally agreed global standards for reporting financial transaction data, such as relevant standards developed by the International Organization for Standardization (ISO), including the Legal Entity Identifier (LEI).

The responsibility for issuing requirements for the reporting of OTC derivative transactions to TRs falls within the remit of the relevant authorities. The mandate of the Harmonisation Group does not include addressing issues that are planned or are already covered by other international workstreams, such as the

5 Swaps and security-based swaps in the United States.

6 FSB, *Feasibility study on approaches to aggregate OTC derivatives data*, www.fsb.org/wp-content/uploads/r_140919.pdf.

7 A UTI is unique to a particular OTC derivative transaction. By contrast, a UPI is unique at the product level, meaning that there is a unique UPI code for each OTC derivative product. A UTI cannot be re-used to represent more than one unique transaction, while a UPI is expected to be reused whenever a particular OTC derivative product is part of an OTC derivatives transaction.

governance and legal issues related to the UTI and UPI, or the legal, regulatory and technological issues related to the implementation of a global aggregation mechanism.

As the CPMI and IOSCO made progress in this work, the FSB established the Group on UTI and UPI Governance (GUUG) in early 2016. The GUUG's primary objective is to propose recommendations to the FSB for governance arrangements for the UTI and UPI, while working closely with the Harmonisation Group. As part of developing its recommendations, the GUUG is expected to consult publicly on governance considerations for these identifiers. The timing of such consultation and subsequent recommendations are related to the finalisation of the CPMI and IOSCO Harmonisation Group's technical guidance for the UTI and UPI. The FSB has issued a public consultation on the governance of the UTI and expects to consult on the governance of the UPI after the publication of the respective technical guidance document.[8]

The CPMI and IOSCO issued two consultative reports on proposals and options for guidance on UPIs in December 2015 and August 2016 (UPI Consultative Reports).[9] Written submissions in response to the UPI Consultative Reports are publicly available.[10] In addition, the Harmonisation Group held workshops with stakeholders to discuss the UPI (and other items) on 5 March 2015 (in Basel, Switzerland), 10 February 2016 (in Washington DC, USA) and 13 July 2016 (in Toronto, Canada). The CPMI and IOSCO are aware of a number of private sector initiatives regarding product identification and have taken those into consideration in developing this Technical Guidance.

1.2 UPI

Since the mandate of the Harmonisation Group's work on the UPI is to further the G20 Leaders' agreement from 2009 that all OTC derivative transactions be reported to TRs and to facilitate the global aggregation of these data, this Technical Guidance addresses what technical requirements for a UPI for OTC derivatives would be appropriate. However:

– since the scope of OTC derivatives reportable to a TR varies across jurisdictions, the Harmonisation Group provides guidance for a UPI that will work in a context even when certain of the differences between jurisdictions are unlikely to be harmonised (see Section 3);[11]

– furthermore, as the scope of derivatives transactions reportable to TRs extends beyond OTC derivatives in certain jurisdictions (eg exchange-traded derivatives), the Harmonisation Group has taken into account the adaptability of the UPI to accommodate a broader range of financial products than just OTC derivatives as relates to principles for the UPI (see Section 3).

The CPMI and IOSCO intend only to define the technical requirements for a UPI for the unique identification of OTC derivative products in transactions reported to TRs and the eventual global aggregation of these data. The CPMI and IOSCO are conscious that a UPI could serve purposes other than this, such as other forms of regulatory reporting specific to particular jurisdictions, or pre- and post-trade processes performed by market participants and financial market infrastructures. These other uses could imply an identifier with more granular reference data than that required for the regulatory use cases. Therefore, the UPI could be leveraged to create other more granular identifiers for other purposes, without

8 www.fsb.org/wp-content/uploads/Proposed-governance-arrangements-for-the-unique-transaction-identifier-UTI.pdf.

9 www.iosco.org/library/pubdocs/pdf/IOSCOPD519.pdf.

www.bis.org/cpmi/publ/d141.pdf.

www.iosco.org/library/pubdocs/pdf/IOSCOPD541.pdf.

www.bis.org/cpmi/publ/d151.pdf.

10 www.bis.org/cpmi/publ/comments/d141/overview.htm; www.bis.org/cpmi/publ/comments/d151/overview.htm.

11 For instance, in the United States this guidance would apply only to swaps and securities-based swaps.

hindering the use of the UPI as here defined for the reporting of OTC derivative transactions to TRs and global aggregation.

1.3 Purpose and structure of the UPI Technical Guidance

The CPMI and IOSCO have developed this guidance about the definition, format and usage of UPI codes and associated UPI reference data, together referred to as the UPI. The Technical Guidance is intended to be sufficiently flexible and extensible to accommodate the evolution of markets (such as the introduction of new products), regulatory regimes and messaging standards. Given that OTC derivatives are traded in markets globally, the CPMI and IOSCO envisage that the guidance is global in reach, makes use of relevant international technical standards where available, and is jurisdiction-agnostic.

In developing this Technical Guidance, the CPMI and IOSCO have:

- considered the technical principles for UPI that would meet authorities' needs, including characteristics relating to uniqueness, persistence, consistency and generation;
- consulted with authorities on their use cases for UPIs; and
- considered perceptions of and expectations that industry representatives have communicated regarding UPIs, as expressed in industry workshops and responses to the UPI Consultative Reports.

The key sections of this Technical Guidance are as follows: Section 2 sets out the purpose of the UPI and the key concepts; Section 3 describes technical principles for UPI; Section 4 describes the reference data elements that should be used to uniquely identify an OTC derivative product and which should be included in the UPI reference data; Section 5 addresses identifiers of underliers; and Section 6 presents the format and code structure of the UPI.

While part of the report is explanatory in nature, the guidance to authorities comprises Section 3 (on technical principles for UPI), Section 4.2 (on the granularity of UPI reference data), Section 5.2 (on identifiers of underliers) and Section 6.2 (on the UPI code format and UPI structure).

This Technical Guidance does not address the issues around the governance arrangements for the UPI that are expected to be addressed by the Financial Stability Board (FSB) and be the subject of further consultation. Such issues include the functions that the governance arrangements will carry out as well as the criteria that the arrangements will need to fulfil. This report also does not include the detailed infrastructure design, the form and manner of transmission of the reference data and the detailed UPI code, which are all elements of future work on UPI governance arrangements and implementation. Some further details regarding the structure of the code may also be elaborated upon in the UPI implementation phase.

This Technical Guidance also does not address the identification, potential selection or establishment of one or more UPI service providers.[12] Based on responses to the first UPI consultation report and discussion at industry workshops organised by the CPMI and IOSCO, the CPMI and IOSCO consider that industry-based potential solutions may exist that are consistent (or could be made consistent) with this Technical Guidance. The identification, potential selection or establishment of one or more UPI service providers is a governance matter and thus is, in particular, within the FSB's mandate and is being addressed by the GUUG. In support of this work, the CPMI and IOSCO will undertake a technical assessment of industry-based or other potential solutions to determine which one(s) are (or could become) consistent with this Technical Guidance. The FSB is expected to make the final designation of a UPI service provider(s).

[12] In this document, the entity or entities that would perform the operation and maintenance of the UPI reference data library and assign a UPI code to each OTC derivatives product are referred to as "UPI service providers."

2. Purpose of the UPI and key concepts

2.1 Purpose

The UPI's purpose is to uniquely identify any OTC derivative product that an authority requires to be reported to a TR. The UPI comprises a UPI code and UPI reference data. UPI reference data include a set of reference data elements relevant for any given OTC derivative instrument type and underlier. Each reference data element contains a set of values allowable for this reference data element (eg the data element "Asset class" may contain values representing "Credit", "Rates", "Commodities", "Equities" or "Foreign Exchange"). Further examples of reference data elements and their allowable values are provided in Section 4.2. It should be stressed that these are examples only and that the complete set of values will be determined when the UPI System is set up and operational. The combination of the UPI code, UPI reference data and the process of assigning a UPI code to a particular set of reference data represent the UPI System.

The UPI is meant to facilitate the global aggregation of data held in TRs in different jurisdictions and to help authorities obtain a global view of the OTC derivatives market. In particular, the UPI is designed to allow for flexibility in the aggregation of different types of derivative products, eg by grouping various UPI reference data element values that are of interest for a particular analysis. Aggregating transactions in OTC derivative products all of which refer to the same underlying asset (eg a particular currency/pair or currencies or a particular bond) is an example of how the UPI would be used.

2.2 The relationship between the UPI and other reported data

The UPI is not designed to uniquely identify an OTC derivative contract or OTC derivative transaction. OTC derivative contracts will be described in transaction data reported to a TR through a combination of the UPI and some other data elements (ie other than UPI reference data elements) pertaining to the transaction. OTC derivative transactions will be described in TR data through a wider combination of data elements and uniquely identified through the UTI.

The CPMI and IOSCO concur with the responses to the first UPI consultative report, which were in overwhelming agreement that the UPI should not identify whether or not a particular OTC derivative product is part of a package trade, as this is better captured through other data elements at the level of the transaction.[13]

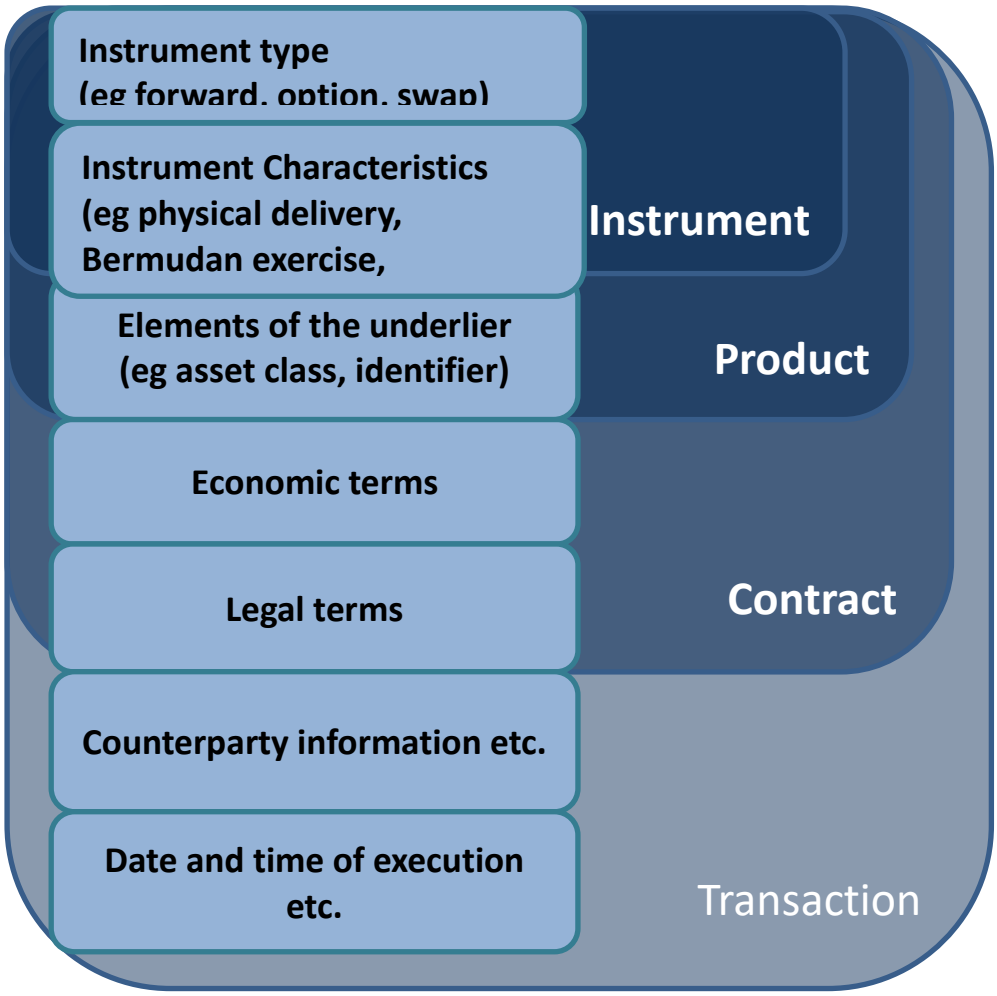
2.3 UPI reference data elements

An OTC derivative product can be uniquely characterised by various data elements ("UPI reference data elements") which can be grouped into three categories: (i) instrument type (eg swap); (ii) instrument characteristics (eg amortising notional); and (iii) information about the underlier(s) (eg rates index, three-month EUR LIBOR). (Section 4.2 sets out the guidance on the UPI reference data elements). Through a combination of those UPI reference data elements, the UPI will identify each OTC derivatives product as far as practicable.[14] Each separate UPI code will represent a set of UPI reference data elements and their values, which themselves represent a unique OTC derivatives product.

[13] CPMI-IOSCO, *Harmonisation of key OTC derivatives data elements (other than UTI and UPI) – first batch*, consultative report, September 2015, www.bis.org/cpmi/publ/d132.pdf, and second batch, October 2016, www.bis.org/cpmi/publ/d153.pdf.

[14] In some cases a UPI may represent more than one product either because a reference data element value has been assigned the value of "Other" or, as in the case of underlying basket of assets, the underliers are reported directly to the TR and are not included in the UPI reference data.

The distinction between an OTC derivative product, an OTC derivative contract, and an OTC derivative transaction is depicted in the diagram below:



2.4 UPI reference data library

The UPIs should be maintained in a reference data library accessible to authorities and market participants that will store the UPI codes and their related UPI reference data. This approach allows authorities and market participants to find any UPI code within the data library, to discover the UPI reference data elements and their values that pertain to that particular product, or to find UPI codes that relate to specific reference data elements and their values. Operation and maintenance of a reference data library, and assignment of the UPI code, should be done by a UPI service provider.

To obtain a new UPI code for a given OTC derivative product, a market participant (eg party to the trade, trading venue) would have to provide a UPI service provider with a relevant set of reference data element values that represent a unique combination of characteristics relating to the OTC derivative instrument and its underlier. An illustration of the suggested process for obtaining a UPI code is provided in Annex 1.

Thus, for a UPI service provider to generate UPI codes that can be used by authorities for such data aggregation purposes, a UPI reference data library should be created and operated by the UPI service

provider(s) to enable the assignment of UPI codes. The nature of the data values stored in the reference data library, as well as their quality, maintenance and organisation, will greatly determine the usefulness and reliability of the resulting UPI code for regulatory reporting purposes.

3. Guidance on Technical Principles for the UPI

To meet the needs of the authorities that use the data from TRs and, in particular, to facilitate the consistent global aggregation of OTC derivative transactions, the UPI is expected to satisfy the following principles. These principles incorporate feedback received in response to the two consultative reports. In general, respondents agreed with the principles presented, but in some cases suggested further clarification. Some of the principles have been revised to clarify their meaning or to capture specific desired characteristics of the UPI.

3.1 Jurisdiction neutrality

The harmonisation of the UPI should not, to the greatest extent practicable, depend on factors that are specific to a jurisdiction, but should be based only on the exhaustive inherent technical characteristics of products.

Explanatory rationale:

Jurisdiction neutrality helps ensure that the UPI System is globally applicable and therefore facilitates aggregation.

For the UPI to achieve jurisdiction neutrality, all values that are included in an OTC derivative product's reference data should be standardised among jurisdictions to the fullest extent practicable. The CPMI and IOSCO are developing the guidance on the standardisation of the data elements other than the UPI and UTI in parallel to the UPI guidance. Implementation of the UPI guidance should promote the standardisation of the elements in the UPI reference data, to the greatest extent practicable.

3.2 Uniqueness

At a given point in time, every reportable OTC derivative product should be identified by one distinct set of UPI reference data elements and their values. Different reportable OTC derivative products should have different sets of UPI reference data elements and their values and hence different UPI codes.

A distinct set of UPI reference data elements and their values should be associated with one UPI code; and, conversely, a UPI code should be associated with one distinct set of UPI reference data elements and their values.

Explanatory rationale:

The values associated with the UPI reference data elements should describe OTC derivative products with sufficient detail and precision so that a product is uniquely defined, but should not be so granular as to describe contracts or transactions.

To satisfy the adaptability principle (see Section 3.5), certain UPI reference data elements that contain generic values (such as "Other") might change over time to be replaced with a more descriptive value. Thus, the uniqueness principle has been clarified so that uniqueness applies to the UPIs assigned at a given point in time, ie the same product could be identified by different sets of UPI reference data

element values at different points in time (in case a change in the UPI reference data element values was needed, to satisfy the adaptability principle).

A particular UPI code should not be assigned to one OTC derivative product after that particular UPI code has already been assigned to another OTC derivative product.

3.3 Consistency

The UPI reference data should describe each OTC derivative product using a consistent set of UPI reference data elements. Different asset classes may utilise different sets of UPI reference data elements to represent different instrument and underlier characteristics specific to an asset class.

Explanatory rationale:

Products associated with a specific asset class may require a set of reference data elements that differ from the set of reference data elements for a product associated with another asset class (eg the UPI reference data should describe one particular interest rate derivative product using the same set of UPI reference data elements as any other interest rate derivative product, and should describe one particular credit derivative product using the same set of UPI reference data elements as any other credit derivative product, even though the set of UPI reference data elements used to describe all interest rate derivatives may differ from the set of UPI reference data elements used to describe all credit derivative products as well as differing from the set of UPI reference data elements used to describe commodity, equity or FX derivative products).

3.4 Persistence

An OTC derivative product, once described using the UPI reference data elements and assigned a particular UPI code, should keep the same UPI reference data element values and UPI code, as far as practicable.

Explanatory rationale:

A product should not be assigned different UPI reference data element values and UPI code, after the original assignment has taken place except as necessary to provide greater specificity.

The CPMI and IOSCO intend that UPIs for OTC derivative products persist over the life of the product, as far as practicable. As previously stated in Section 3.2, situations could arise where it would be advisable for the product description to be made more specific, as markets evolve or if previously bespoke products are traded more widely. This would be the case where an OTC derivative product has a reference data element with the value of "Other" as discussed in more detail in Section 3.5. The adjustment should be forward-looking and adhere to the "Adaptability" principle described in Section 3.5 below.

The UPI should not depend on data elements that tend to change over the life cycle of the product (eg residual maturity). Thus the UPI reference data element values should remain stable after the initial assignment of the UPI code, as otherwise any analysis of products over time would become very difficult or impossible.

3.5 Adaptability

The UPI reference data element values should be capable of adapting swiftly to market changes and innovations, including the introduction of new OTC derivative products as well as to the evolving aggregation needs of authorities in response to those changes. The allowable values for each UPI reference data element should be capable of readily incorporating required changes.

Explanatory rationale:

A versioning process would facilitate the incorporation of changes. The long-term management of UPI reference data element values should incorporate an approach that allows for comparisons across versions in a straightforward way, eg a mechanism for mapping new UPIs to older UPIs that represent similar products.

A version history should be maintained with, as far as possible, backward/forward compatibility across versions of UPI reference data element values, although some types of revision might not satisfy the backward compatibility criterion.

In order to meet the "Ease of assignment/retrieval/query" and "Comprehensiveness" principles described in Sections 3.7 and 3.11, respectively, it might be appropriate for some of the UPI reference data elements to be able to take the value "Other" in order to incorporate products with new and/or bespoke characteristics that await a more precise definition. In order to preserve the precision of the UPI over time, a system should be established to monitor products incorporating these "Other" values in order to prompt the addition of new values associated with the UPI reference data elements to help ensure that the volume of trades reported using the value "Other" does not exceed possible *de minimis* levels.

3.6 Clarity

The UPI should be clear and unambiguous, supported by comprehensive and freely available technical documentation, instructions and guidance to support market participants' understanding and use of the UPI (eg to provide the full range of acceptable values that can be taken by each data element in the UPI reference data library).

3.7 Ease of assignment/retrieval/query

It should be possible for a market participant to easily check whether or not a UPI already exists for a particular product and, if needed, have a new UPI code assigned by a UPI service provider, or retrieve an existing one in a timely manner so that it does not impede trading or impede the ability to report to a TR within the time frame specified in the rules of the jurisdiction(s) governing the transaction.

Explanatory rationale:

The need for assignment/retrieval/query of the UPI should not prevent the counterparty from executing the trade or from reporting the transaction in a timely manner. This applies particularly to new products which require the assignment of a new UPI code.

3.8 Long-term viability

The UPI should remain valid for a number of years. It should be practicable now and not be limited by technological or legal constraints that exist in 2017 but which could reasonably be expected to change in the future. In particular, the UPI should be independent with regard to changes in technology, market practice or legal setting that are reasonably likely to happen in the future.

Explanatory rationale:

While the adaptability principle refers to the ability of the UPI reference data to accommodate creation of new types of OTC derivative product, the long-term viability principle encompasses other factors that may influence the way of using the UPI, eg changes in technology, market practice or legal setting. The UPI should be independent of changes in those factors over the foreseeable future.

3.9 Scope neutrality

The UPI should work in a context where there are some differences in the scope of reporting regimes for OTC derivative products in different jurisdictions and some of these differences are unlikely to be harmonised.

Explanatory rationale:

The scope of OTC derivative products that are subject to a TR reporting requirement varies across jurisdictions and is not harmonised at a global level. Thus, the technical guidance for UPIs should not depend on the scope of OTC derivative products that fall within a particular jurisdiction's reporting mandate and would need UPIs for reporting purposes, but instead should be generally applicable to any OTC derivative product that might fall within a reporting mandate.

3.10 Compatibility

The UPI should rely on open standards that facilitate compatibility with existing automated systems of financial market infrastructures (eg TRs), market participants and authorities.

Explanatory rationale:

The use of data by financial market infrastructures, market participants and authorities is generally done through automated systems. It should therefore be possible to incorporate the UPI into a particular automated data system regardless of a specific data standard on which this system operates. At the same time, the compatibility principle does not require compliance with all possible standards and interfaces used by market participants, as this could prove impractical or could lead to the adoption of suboptimal technologies for the UPI.

3.11 Comprehensiveness

The UPI, in conjunction with other critical data elements, should be able to accommodate any OTC derivative product falling under a reporting requirement and be capable of meeting diverse regulatory needs, by supporting regulatory functions including market surveillance, risk analysis, public dissemination of market information, and regulatory research. The UPI could also support enhanced market transparency, improved risk management and increased operational efficiency.

Explanatory rationale:

The main objective of the UPI is to allow an OTC derivative product to be identified by its instrument type and underlier and thereby help authorities to aggregate OTC derivatives data. Consequently, authorities' needs remain the primary use case which the UPI addresses. In addition, the UPI could be utilised to create other, more granular derivatives identifiers for other purposes, provided that this does not hinder the use of the UPI as here defined for the reporting of OTC derivative transactions to a TR or for regulatory use.

3.12 Extensibility

Some jurisdictions could require the reporting of transactions in derivative products that are not OTC derivatives (eg exchange-traded derivatives) through the same channels (ie using the same reporting formats and rules and/or the same TRs) as for OTC derivative products. Accordingly, compatibility with or adaptability to accommodate a broader range of financial products (including derivative products traded on exchange) should be supported by the UPI.

3.13 Precision

The UPI should be well articulated, and have sufficient detail and level of granularity to enable authorities to fulfil their regulatory responsibilities.

Explanatory rationale:

The UPI should, as far as practicable, describe relevant reference data with sufficient distinctiveness and specificity to meet authorities' needs, including the efficient and effective aggregation of data. The level of distinctiveness and specificity could be determined separately by asset class.

3.14 Public dissemination

The UPI should support the public dissemination of OTC derivatives data as may be required by a particular jurisdiction.

Explanatory rationale:

For jurisdictions that have a requirement for public dissemination of OTC derivative transactions, the UPI can make public dissemination more efficient. Instead of having to disseminate numerous data element values that pertain to a product that is transacted, the UPI code could be disseminated instead. Market participants could then consult the product's reference data element values in the reference data library in order to readily and efficiently achieve transparency and price discovery.

3.15 Representation

The format and representation (eg character sets) of the UPI code should be such that the UPI code can be transmitted through generally accepted communication means for financial transactions and be legible and visible on computer displays.

The UPI System should include a single, globally applicable format and representation of the UPI code.

4. UPI reference data

In order to assign a UPI code to an OTC derivative product, there needs to be a UPI System to, in particular, associate that product with reference data elements that are properly organised and maintained in a reference data library. Section 2 introduced the concept of a reference data library and explained its purpose with respect to the reference data elements, their allowable values and the UPI codes. Several technical aspects of the UPI reference data itself should be considered, including considerations of the level of granularity of the reference data (Section 4.1) and specifications of aspects of the reference data elements (Section 4.2).

4.1. Considerations on the level of granularity of the UPI reference data

The level of granularity of the UPI is a key aspect of this guidance. The first consultative report sought comment on this issue, and specifically on whether to include an identifier for the underlying asset or assets ("underliers") in the UPI reference data elements, and on the pros and cons associated with each option. OTC derivatives products are based on some underlying asset or assets. Identification by product

for meaningful regulatory aggregation should include identification of the underlier. For regulatory data aggregation purposes, the risk associated with an OTC derivative varies with the underlier.

Comments generally suggested that an identifier for the underlying asset(s), or benchmark(s)[15] including indices should be included as part of the UPI reference data. This would mean that otherwise similar products but with different underliers would have different UPIs.[16]

Based on the feedback received in consultations and industry workshops, the CPMI and IOSCO believe that a limited set of information about the underlying assets (eg benchmark, basket, reference entity) should be reflected in the UPI. Therefore, a list of UPI reference data elements describing possible underlying assets that should be included in the UPI has been defined by the CPMI and IOSCO.

The second consultative report sought additional comment on various challenges in connection with the consequential level of granularity of UPI reference data through the inclusion of an identifier for the underlier. These include a lack of formally recognised identifiers for underliers in some asset classes, maintenance and verification of the means of identifying underliers, and the appropriateness of using proprietary codes or benchmarks to identify the underlier in either publicly available reference data or as part of a publicly disseminated UPI. The second consultative report also sought comment on whether having the identifier for the underlier being accompanied by identification of its source would address some of these challenges.

Based on the feedback received in response to consultations and thoughts expressed by market participants in industry workshops regarding the identification of underliers, the CPMI and IOSCO believe that the identifier of an underlying asset, or benchmark of an OTC derivative product, should be compatible with the regulatory requirements for the identification of the given asset or benchmark in a particular jurisdiction where this UPI is used for regulatory reporting purposes. While it is understood that currently available identifiers for underlying assets and benchmarks can be a mix of proprietary and non-proprietary offerings, the uniqueness principle of the UPI (principle 3.2) does not prevent the use of different identifiers pertaining to the same underlier, as far as it is practicable and mandated by the respective jurisdiction. Thus, if more than one identifier is used for the same underlying instrument, this should be clearly specified, mapped and included in the UPI reference data library. It is not intended that the use of more than one identifier for the same underlier should give rise to more than one UPI code for what would otherwise be the same derivative product. Instead, the different identifiers should be regarded as alternative representations of the underlier for the same UPI.

The availability and technical management of reference data (including identifiers for underlying asset(s) and benchmark(s)) are likely to pose significant challenges to the implementation of the UPI. This is particularly the case for identifiers of underliers, since there is a lack of standardised or formally recognised identifiers for underliers in some asset classes (eg commodities) and it would have to be clarified how identifiers for underliers would be verified and maintained. Additionally, currently available identifiers for underlying assets and benchmarks are a mix of proprietary and non-proprietary offerings.

[15] The IOSCO Principles for Financial Benchmarks (www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf) define a benchmark as prices, estimates, rates, indices or values that are:
a) made available to users, whether free of charge or for payment;
b) calculated periodically, entirely or partially by the application of a formula or another method of calculation to, or an assessment of, the value of one or more underlying interests; and
c) used for reference for purposes that include one or more of the following:
- determining the interest payable, or other sums due, under loan agreements or under other financial contracts or instruments;
- determining the price at which a financial instrument may be bought or sold or traded or redeemed, or the value of a financial instrument; and/or
- measuring the performance of a financial instrument.

[16] As an example, single-name credit default swaps with different reference entities would be assigned different UPI codes.

Such issues arising from the proprietary nature of these identifiers go beyond mere technical discussion and are left for consideration by the FSB's GUUG.

Some comments favoured a much higher level of granularity than was proposed in the consultative reports in order to fit with industry use cases such as the compression and calculation of positions and risk. In considering whether such industry use cases should be included in the technical guidance for the level of granularity to be addressed by the UPI, the CPMI and IOSCO concluded that addressing specific use cases outside the regulatory use cases related to aggregation was beyond the scope of the Harmonisation Group's mandate. However, it might still be possible for the UPI to serve as a foundation on which other use cases (beyond regulatory global data aggregation) could be based, although this might require higher levels of granularity through the addition of the appropriate reference data elements.[17] Determination of what reference data elements would be needed to address such use cases, and how the UPI reference data library could be extended to cover such additional use cases, are outside the scope of this Technical Guidance.

4.2 Technical Guidance on the reference data elements

The OTC derivatives markets are generally structured around the asset class concept. While there might be commonality among the asset classes, it is important to provide an accurate view of the product classification by asset class. Thus, the following tables are organised around the concept of asset class.

The UPI should include the UPI reference data elements listed in the tables below. Table 4.2.1 provides a generic description of each UPI reference data element across different asset classes that will be needed to provide an accurate view of the product description by asset class. The tables in Section 4.2.2 each provide further detailed description of these UPI reference data elements and possible values for each asset class. It is expected that the list of allowable values will be further refined during implementation. Further specifications on the identification of underliers are provided in Section 4.3.

4.2.1 Descriptions of UPI reference data elements (across asset classes)

Data element name	Data element description
Asset class	Indicates whether the asset, benchmark or another derivatives contract underlying a derivatives contract is, or references, an equity, rate, credit, commodity or foreign exchange asset.
Currency pair	A currency pair underlying a foreign exchange derivative.
Delivery type	Indicates whether a derivatives contract will deliver a physical asset or a cash equivalent at settlement.
Instrument type	Indicates whether an instrument is a swap, option or forward etc.
Notional schedule	Indicates whether a notional schedule is constant, amortising, accreting or custom.
Option style	Specifies when an option can be exercised. The value "European" specifies that an option can only be exercised on the expiration date; "American" specifies that an option can be exercised any time up to and including on the expiration date; and "Bermudan" specifies that an option can be exercised only at specified times during the life of the contract. Bermudan-style options include variations such as Canary- and Verde-style options.

[17] For example, calculation of positions would require information about the counterparties to each transaction. Once that information is added, the UPI could be used to calculate the position of every counterparty in question but it then would not be a UPI in the sense used in the rest of this document.

Data element name	Data element description
Option type	Specifies whether an option gives the buyer the right to buy the underlying, ie "Call", the right to sell the underlying, ie "Sell", or the right to choose whether to buy or sell the underlying at the time of exercise, ie "Chooser".
Return, pricing method or payout trigger	Return values indicate how a contract's payout is determined; Pricing Method values indicate how a contract is valued; Payout Trigger values indicate an event that would result in a contract paying out.
Seniority	Indicates the seniority of the debt security, or debt basket or index underlying a derivative.
Settlement currency	For a cash-settled contract, the currency to be delivered at the time of settlement.
Single or multiple currency	Indicates whether a single or multiple currencies underlie a derivative.
Single or multiple tenor	Indicates whether a single or multiple tenors of an index underlie a derivative.
Standard Contract Specification	The name of an existing document or reference that provides standard terms and conditions to be applied to the contract having the underlying asset or benchmark identified by the Underlier ID and Underlier ID source for which the UPI is assigned.
Underlier ID	An identifier that can be used to determine the asset(s), index (indices) or benchmark underlying a contract.[18]
Underlier ID source	The origin, or publisher, of the associated underlier ID.
Underlying asset or underlying contract type	A high-level description of the characteristics of an asset, index or contract underlying a derivative.
Underlying asset subtype or underlying contract subtype	A lower-level description of the characteristics of an asset or contract underlying a derivative.
Underlying credit index series	A number reflecting the constituents of an index for a given period of time.
Underlying credit index version	A number reflecting any changes to the constituents of an index during the lifetime of the series.
Underlying rate index tenor period	The unit of time for the tenor of an index (eg day, week, month).
Underlying rate index tenor period multiplier	The number of time units for the tenor of an index.
Underlying contract tenor period	The unit of time for the tenor of an underlying contract.
Underlying contract tenor period multiplier	The number of time units for the tenor of an underlying contract.
Underlier tenor period	The unit of time for the tenor of an underlying asset (eg bond).
Underlier tenor period multiplier	The number of time units for the tenor of an underlying asset (eg bond).

[18] In the case of products with more than one underlying instrument, multiple values for fields related to the underlying instrument may be represented in the reference data.

4.2.2 UPI reference data elements and possible values (by asset class)

4.2.2.1 Asset class: Credit

Suggested UPI reference data element	Suggested UPI reference data element values			
Asset class	Credit			
Instrument type	Swap	Option	Forward	Other
Option style	N/A[19]	European, American, Bermudan etc	N/A	
Option type	N/A	Put/receiver, Call/payer, Chooser etc.	N/A	
Return, pricing method or payout trigger	Credit Default, Total Return, First to Default, Nth to Default, Contingent, Recovery etc.	Vanilla, Lookback, Other Path-Dependent etc.	Spread, Forward price of underlying instrument etc.	
Delivery type	Cash, Physical etc			
Underlying asset/contract type	Single name (CDS), index (CDS), (CDS on) index tranche etc.			
Underlying asset/contract subtype	Sovereign, Municipal, Corporate, Loan pools etc.			
Seniority	Senior, Subordinate etc.			
Standard Contract Specification (if applicable)	Standard North American Corporate, Standard European Corporate, Standard Subordinated European Insurance Corporate, Standard Western European Sovereign, CDX EM Untranched Terms, iTraxx® Europe Tranched Transactions Standard Terms Supplement, iTraxx® Asia/Pacific Untranched Standard Terms Supplement etc.			
Underlier ID source	*The origin, or publisher, of the associated underlier ID.*			
Underlier ID	*An identifier that can be used to determine the asset(s) or index (indices) underlying a contract.*			
Underlying credit index series	eg 1, 2, 3, 4, …			
Underlying credit index version	eg 1, 2, 3, 4, …			

4.2.2.2 Asset class: Rates

Suggested UPI reference data element	Suggested UPI reference data element values			
Asset class	Rates			
Instrument type	Swap	Option	Forward	Other
Option style	N/A	European, American, Bermudan etc.	N/A	
Option type	N/A	Put, Call, Chooser etc.	N/A	
Return, pricing method or payout trigger	N/A	Vanilla, Asian, Digital (Binary), Barrier, Digital Barrier, Lookback,	Spreadbet, Forward price of underlying instrument, Forward rate of	

[19] Throughout these tables, "N/A" denotes "not applicable".

		Other Path-Dependent, Cap, Floor, Other, etc.	underlying X notional, Contract For Difference, etc.	
Notional schedule	Constant, Accreting, Amortising, Custom etc.	N/A	N/A	
Single or multiple currency	Single Currency, Cross-Currency	N/A	N/A	
Single or multiple tenor	N/A	N/A	Single, Multiple etc.	
Delivery type	Cash, Physical etc.			
Underlying asset/contract type	Basis swap, Fixed – Floating, Fixed – Fixed, Inflation, OIS, Zero Coupon, Other etc.	Interest Rate Index, Swaps – Basis swap, Swaps – Fixed/ Floating, Swaps – Fixed/Fixed, Swaps – Inflation, Swaps – (OIS), Options, Forwards, Futures, Other etc.	Interest Rate Index, Options, Single Name, Basket, Other etc.	
Underlier ID source	*The origin, or publisher, of the associated underlier ID.*			
Underlier ID	*An identifier that can be used to determine the asset(s) or index (indices) underlying a contract.*			
Underlying rate index tenor period	Day, week, month, year, term etc.			
Underlying rate index tenor period multiplier	eg 1, 2, 3, 4, …			
Currency associated with an underlying index (may be repeated for cross currency swaps)	ISO 4217 Currency Code (eg EUR, USD, JPY)			

4.2.2.3 Asset class: Commodities

Suggested UPI reference data element	**Suggested UPI reference data element values**			
Asset class	Commodities			
Instrument type	Swap	Option	Forward	Other
Option style	N/A	European, American, Bermudan etc.	N/A	
Option type	N/A	Put, Call, Chooser etc.	N/A	
Return, pricing method or payout trigger	Contract for Difference, Total Return, Excess Return, Loan/Lease, Physical Commodity, Value of underlying asset, Location Basis, Quality Basis, Calendar Basis etc.	Vanilla, Asian, Digital (Binary), Barrier, Digital Barrier, Lookback, Other Path-Dependent, Cap, Floor, Other etc.	Spreadbet, Forward price of underlying asset, Contract For Difference etc.	
Delivery type	Cash, Physical, Elect at Settlement etc.			

Underlying asset/contract type	Energy, Precious Metals, Non-Precious Metals, Agriculture, Environmental, Freight, Polypropylene Products, Paper, Fertiliser, Index, Multi Commodity, Other etc.
Underlying asset/contract subtype	Aluminium, Azuki Beans,Baltic Exchange – Dry Bulk Routes, Baltic Exchange – Wet Bulk Routes, Barley, Benzene, Butter, Canola, Coal, Cobalt, Cocoa, Coffee, Containerboard, Copper, Corn, Cotton, Crude Oil, Diesel Fuel, Electricity, Emissions, Ethanol and Biofuels, Fertiliser, Fluff, Fuel Oil, Gas Oil, Gasoline, Gold, Heating Oil, Iridium, Iron Ore, Jet Fuel/Kerosene, Lead, Livestock, Lumber, Methanol, Milk, Molybdenum, Naphtha, NaturalGas, NaturalGasLiquids, Newsprint, Nickel, Oats, Orange Juice, Palladium, Palm Oil, Plastics, Platinum, Platts Clean Tankerwire, Platts Dirty Tankerwire, Pulp, Rapeseed, Recovered Paper, Rhodium, Rice, Rubber, Ruthenium, Silver, Sorghum, Soybeans, Steel, Sugar, Sunflower Seeds, Tin, Uranium, Wheat, Wool, Zinc, Other.
Underlier ID source	The origin, or publisher, of the associated underlier ID.
Underlier ID	An identifier that can be used to determine the asset(s) or index (indices) underlying a contract.

4.2.2.4 Asset class: Equities

Suggested UPI reference data element	**Suggested UPI reference data element values**			
Asset class	Equities			
Instrument type	Swap	Option	Forward	Other
Option style	N/A	American, European, Bermudan etc.	N/A	
Option type	N/A	Put, Call, Chooser etc.	N/A	
Return, pricing method or payout trigger	Price, Dividend, Total Return, Variance, Volatility, Contract for Difference (CFD) etc.	Vanilla, Asian, Digital (Binary), Barrier, Digital Barrier, Lookback, Other Path-Dependent, Other etc.	Spreadbet, Forward Price of underlying instrument etc.	
Delivery type	Cash, Physical, Elect at Settlement etc.			
Underlying asset/contract type	Single name, Index, Basket etc.	Single name, Index, Basket, Options, Forwards, Futures etc.	Single name, Index, Basket, Options, Futures etc.	
Underlier ID source	*The origin, or publisher, of the associated underlier ID.*			
Underlier ID	*An identifier that can be used to determine the asset(s) or index (indices) underlying a contract.*			

4.2.2.5 Asset class: FX

Suggested UPI reference data element	**Suggested UPI reference data element values**			
Asset class	FX			
Instrument type	Swap	Option	Forward	Other
Option style	N/A	American, European, Bermudan etc.	N/A	
Option type	N/A	Put, Call, Chooser etc.	N/A	

Return, pricing method or payout trigger	N/A	Vanilla, Asian, Digital (Binary), Barrier, Digital Barrier, Lookback, Other Path-Dependent, Other etc.	CFD, Spreadbet, Forward Price of underlying instrument etc.	
Delivery type	Cash, Physical, Elect at Settlement etc.			
Underlying asset/contract type	Spot-forward, Forward-forward etc.	Forwards, Futures, Spot, Volatility etc.	Spot, Forward, Options, Futures etc.	
Currency pair	eg ISO 4217 currency code			
Settlement currency	eg ISO 4217 currency code			

5. Identifiers of underliers

This section sets forth technical guidance for identifiers regarding assets that might underlie an OTC derivative product and should be included in the UPI reference data library.

5.1. Considerations relating to identification of underliers

Varying practices and regulatory requirements exist across jurisdictions with respect to identification of underlying assets. The CPMI and IOSCO believe that the UPI should be developed in such a way that the identifiers used for underliers are compatible with applicable regulatory requirements (in any given jurisdiction).

In practice, the UPI reference data library will need to accommodate multiple identifiers pertaining to the same underlying asset or benchmark if certain means of identification are required or preferred in one jurisdiction but those means are not allowed in other jurisdictions. Consistent with the principle of UPI uniqueness (see Section 3.2), the use of different identifiers for the same underlier should not lead to the assignment of different UPI codes. Instead, the UPI reference data elements for a given UPI may need to include multiple identifiers pertaining to the given underlier in order to satisfy regulatory requirements relating to the identification of underliers in each jurisdiction where the UPI is used for reporting purposes.

As part of the consultation undertaken by the CPMI and IOSCO, comments were expressed that open access to the identifiers for underliers was an important criterion to be considered. However, disposition of this issue for all underliers and asset classes is beyond the scope of this Technical Guidance and final determination on this issue is left to the FSB's GUUG.

For assets and benchmarks where pricing or event information (eg corporate action, default) is publicly available, the identifier for such an asset or benchmark underlying an OTC derivative should enable market participants, authorities, and the general public to view or retrieve the asset's price or event information, or the benchmark's value from a freely available public source that will be used when computing the price, valuation or payout associated with the OTC derivative contract.

Based on these considerations, the CPMI and IOSCO have developed technical guidance for the identification of underlying assets (falling within the five asset classes specified in Section 4.2) below. Additionally, Section 5.3 further discusses considerations relating to identification of a custom basket underlying an OTC derivative product.

5.2. Guidance on identification of underlying assets and benchmarks

5.2.1 Exchange-listed asset

For an underlying asset that is listed on an exchange (eg an equity, future, option or spot commodity), the identifier used for each such asset should allow for the symbol assigned by the exchange on which the asset is listed and the exchange listing the asset to be inferred.

5.2.2 Bond

For an underlying asset that is a bond, the asset should be identified within the UPI reference data library in a manner consistent with the rules applicable in a given jurisdiction so that the issuer, seniority and economics of the bond could be viewed or retrieved.

5.2.3 Legal entity

If an OTC derivative product references a legal entity such as a corporation, the legal entity or, if appropriate, a reference obligation for that legal entity should be identified within the UPI reference data library in a manner consistent with the rules applicable in a given jurisdiction so that information about the legal entity that is pertinent to the pricing, valuation and payout determination of the OTC derivative contract can be identified.

5.2.4 Publicly traded loan

If an OTC derivative product references a publicly traded loan, the asset should be identified within UPI reference data library in a manner consistent with the rules applicable in a given jurisdiction so that the lender, borrower, seniority, term and publicly available economics of the loan can be viewed or retrieved.

5.2.5 Private loan

If an OTC derivative product references a private loan, the asset should be identified within UPI reference data library in a manner consistent with the rules applicable in a given jurisdiction.

5.2.6 Spot commodity not traded on an exchange

For an underlying asset that is a spot commodity not traded on an exchange, the commodity should be identified within the UPI reference data library in a manner consistent with the rules applicable in a given jurisdiction so that the full name used by the pricing source for that commodity and the name of pricing source for that commodity can be identified in a manner consistent with the rules applicable in a given jurisdiction.

5.2.7 Natural or environmental event

If an OTC derivative product references a natural or environmental event, the event should be identified within the UPI reference data library in a manner consistent with the rules applicable in a given jurisdiction so that the event, relevant measures of the event, relevant geographic information or other information pertinent to the pricing, valuation and payout determination of the OTC derivative contract can be identified.

5.2.8 Currency

For an underlying asset that is a spot currency or currency pair, the ISO 4217 currency code(s) should be used and, if applicable, the pricing source used for the currency (or currencies). If an ISO 4217 currency code does not exist for a particular currency, the currency should be identified in such manner consistent

with the rules in a given jurisdiction so that the currency, and if applicable the pricing source used for the currency, can be identified.

5.2.9 Sovereign

If an OTC derivative product references a sovereign country as its underlier, the country should be identified by its ISO 3166 Country Code.

5.2.10 Other Assets

If an OTC derivative product references an asset not addressed in this guidance, that asset should be identified within the UPI reference data library in a manner consistent with the rules applicable in a given jurisdiction so that, to the extent practicable, information about the asset that is pertinent to the pricing, valuation and payout determination of the OTC derivative contract can be identified.

5.2.11 Benchmarks

For an underlying benchmark, the benchmark should be identified within the UPI reference data library in a manner consistent with the rules applicable in a given jurisdiction so that the trademarked name of the benchmark, the name of the publisher or administrator of the benchmark and, if applicable, version and series, designated maturity or other information pertinent to the pricing, valuation and payout determination of the OTC derivative contract can be identified.

5.3. Custom basket underlying an OTC derivative

OTC derivatives based on custom baskets raise particular challenges for the UPI. However, based on information about OTC derivatives currently available to the CPMI and IOSCO, OTC derivatives based on a custom basket of assets constitute a relatively small share of the market.

Authorities have an interest in getting information about any custom basket of assets underlying an OTC derivative product in order to understand the economics of the product. In that respect, some jurisdictions currently require information about custom baskets that underlie OTC derivatives to be reported to a TR and such information may include the weight of each constituent of the custom basket. The CPMI and IOSCO have considered whether the UPI should be extended to each product that is based on a different custom basket.

An extensive discussion on how baskets should be reported and their relation to the UPI was held at an industry workshop organised by CPMI-IOSCO. Among the points discussed were the relatively small share of OTC derivatives based on a custom basket and specific challenges raised by including identifiers for underlying custom baskets within the UPI reference data. These challenges include inefficiency and labour-intensiveness. An additional and important factor is that information publicised (via the UPI reference data library) about custom baskets underlying OTC derivatives could betray the identity or business strategies of counterparties to transactions involving such thinly traded products.

Based on the above points, the CPMI and IOSCO consider that there is no need to include identifiers for custom baskets in the list of UPI reference data elements at this time. As participants in the industry workshop commented, only a small percentage of all OTC derivatives involve such baskets. Most industry participants at the industry workshop on this issue persuasively observed that undertaking the complex and difficult task during the initial implementation of the UPI System would be too burdensome and slow down implementation. The issue of further identifying basket constituencies could always be taken up at a later stage after initial implementation of the UPI System. Instead, UPI code and associated UPI reference data elements pertaining to an OTC derivative product based on a custom basket should

only include generic information about the characteristics of such an underlier.[20] Authorities and governing bodies may reassess such position in line with the principle on adaptability (see Section 3.5), depending on developments of the market and authorities' evolving needs.

6. Structure and format of the UPI code

6.1 Considerations on the UPI code

As noted above in Section 1.3, the UPI encompasses both UPI reference data and UPI codes for identifying specific OTC derivative products. The term "UPI code" denotes a unique set of characters that represents a particular OTC derivative product. As stated in the principle on uniqueness (Section 3.2), each OTC derivative product should have its own UPI code, and each OTC derivative product should have a UPI code that differs from the UPI code of every other OTC derivative product.

In its Second Consultative Report on UPI, the CPMI and IOSCO sought public comment about whether the UPI should consist of "dummy codes" or "intelligent codes". A "dummy code" is a code whose content has no inherent meaning: the meaning is contained only in the associated reference data. A UPI System using dummy codes therefore requires a UPI reference data library so that each UPI code can be found in the library and reveal the reference data elements and their values of the OTC derivative product having a particular UPI code.

An "intelligent code", by contrast, would represent any characteristic common to different products in the same way in each product's UPI code.[21] Thus, the characteristics of the OTC derivative product identified by an intelligent code could be inferred from the different characters (or groups of characters) that constituted that code.[22] The intelligent code would presumably have to be of variable length (to accommodate both the fact that different products have different sets of UPI reference data elements and because the definition of the underlier(s) would require a variable set of data).

Taking into consideration feedback to the consultative reports and at industry workshops, the CPMI and IOSCO believe that the most practical solution is for the UPI code to be semantically meaningless, ie to be a dummy code.[23] Use of a semantically meaningless code will greatly improve efficiency and reduce errors in TR data aggregation by product through associating the transactions in a TR with the reference data in the UPI reference data library. A user would be able to retrieve the UPI codes associated with a desired set of UPI reference data element values from the UPI reference data library and use those codes to aggregate TR data. To find out the UPI reference data element values of an OTC derivative product associated with a particular UPI code, a user would use the UPI code to retrieve the UPI reference data element values associated with that product in the UPI reference data library.

In order to promote transparency of OTC derivatives or to represent the product in other contexts where there is human involvement, some jurisdictions might see benefits in also having humanly readable aliases for these semantically meaningless UPI codes. For example, a trading platform that permits

[20] Characteristics of an underlier may include its asset class, investment grade and whether it is a sovereign or corporate issue etc.

[21] By way of a very simple and stylised example, a UPI code system could use the first character of each code to denote the asset class of the underlier (eg C = credit, E = equity, R = rates, K = commodity, F = foreign exchange and X = other).

[22] Thus, using the stylised example from the previous footnote, any UPI code beginning with the letter "E" would denote some type of OTC derivative product that is based solely on an equity security.

[23] Certain commenters objected to the term "dummy code" because that term is sometimes used to refer to temporary or null entries. The CPMI and IOSCO agree with those comments, and henceforth will use the term "semantically meaningless code" to refer to a code which carries no embedded intelligence.

interaction by human traders might wish to utilise humanly readable aliases to identify the particular OTC derivative products that appear on particular screens or limit order books. In addition, some of the jurisdictions that require public dissemination of OTC derivatives transactions may find it helpful to utilise humanly readable aliases to make the disseminated information more intelligible. To further the goal of human readability of the UPI alias, the CPMI and IOSCO anticipate that local conventions, such as the ticker symbol of an individual corporate underlier in that jurisdiction, could be used. Insofar as humanly readable aliases for certain OTC derivative products are developed to satisfy the needs of particular jurisdictions or industry stakeholders, the CPMI and IOSCO do not believe that such aliases need to be of uniform length.

The CPMI and IOSCO are not proposing a standard way of constructing a humanly readable alias at this stage.[24]

The CPMI and IOSCO also sought public comment on issues relating to the format, representation, length and check digit of UPI codes and considered them for issuing the guidance. In particular, a number of comments were expressed in favour of a length of 12 characters for semantically meaningless UPI codes, which is an observed practice for some existing codes.

6.2 Guidance on the UPI code structure

The CPMI and IOSCO have concluded that the UPI code should be a semantically meaningless code for the reasons stated in the previous section. Additionally, a human readable alias may be mapped to each UPI code in order to facilitate public dissemination.

The length of the semantically meaningless UPI codes should be such that the number of possible code combinations can accommodate any new OTC derivative products that may be developed in the foreseeable future, but the UPI codes should also be short enough so that manual entry of a UPI code into data systems is practical. A 12-character code (including a check character or digit) would be consistent with this guidance.[25] Although the specific length of the semantically meaningless UPI codes can be left for the future work addressing implementation, all semantically meaningless codes issued by a UPI service provider(s) should be of the same length. This will avoid any confusion that might arise from having certain codes that are shorter than others; in such case, a user might question whether a shorter code is in fact correct or whether this is a longer code that has been accidentally truncated.

The semantically meaningless UPI code should be constructed of alphanumerical characters only.

More specific technical rules of code construction (including for humanly readable aliases) that are reasonably designed to facilitate ease of use and/or to reduce confusion would need to be further addressed in the course of future work by CPMI-IOSCO and FSB.

The UPI code should include a check digit, or another means, in order to provide a check against errors such as those introduced during transcription.

[24] The CPMI and IOSCO are aware of at least one current effort by market participants to construct a humanly readable alias.

[25] The use of a 12-character code is consistent with industry practice for some identifiers.

Annex 1 – Suggested UPI assignment process

In order to obtain a UPI code for a given OTC derivative product, an entity that utilises a UPI would have to provide a UPI service provider with a relevant set of OTC product reference data element values that represent a unique combination of the instrument's and underlier's characteristics for this product:

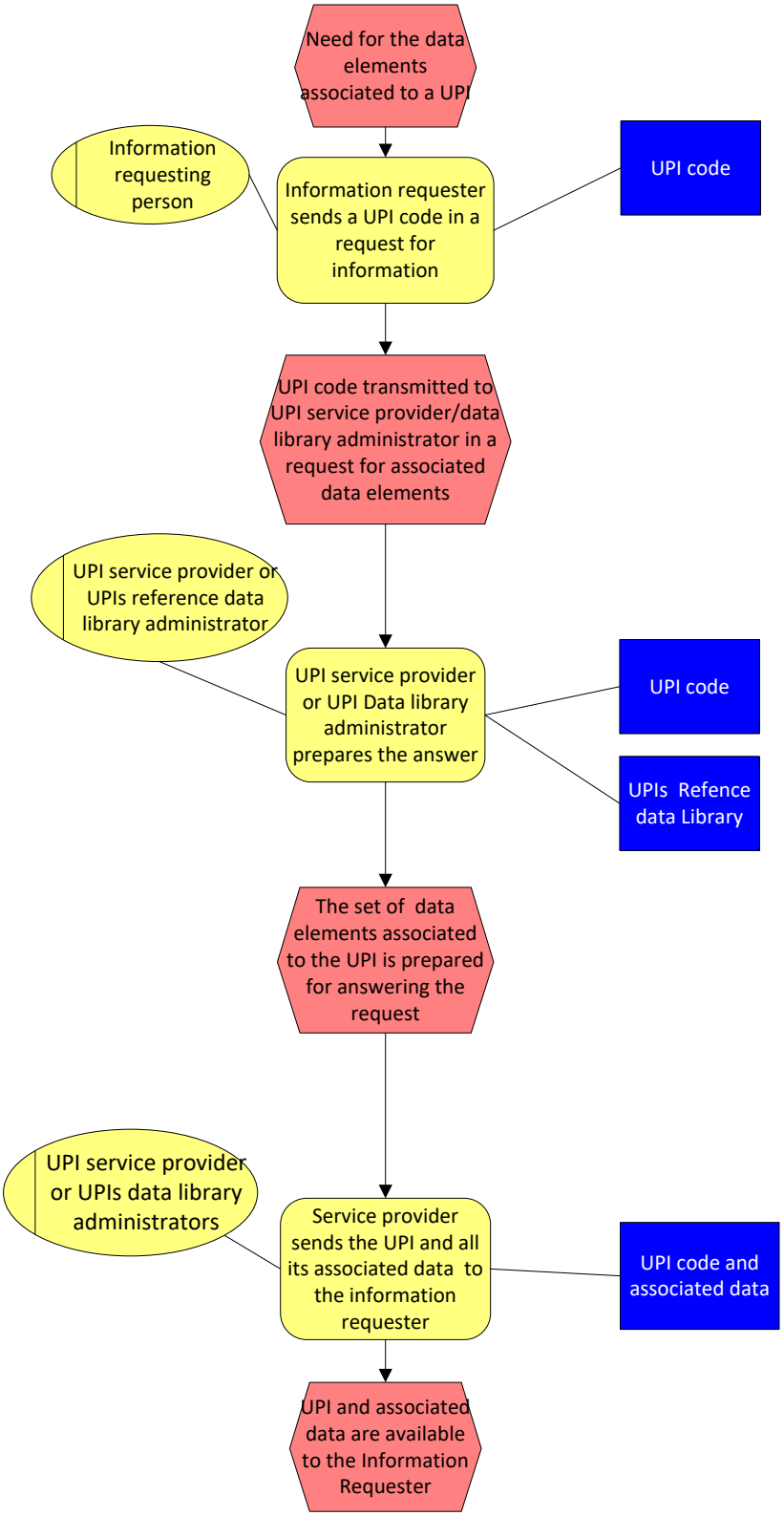
- If a UPI code already exists for the combination characteristics relating to that instrument and underlier, the UPI service provider will be expected to inform the requesting entity about the UPI code already assigned to this set of reference data element values. Two subcases arise from the proposed approach to underliers (see Section 5.1):
  - The underlier(s) supplied as part of the reference data are already included in the UPI reference data for this product using the identifier(s) supplied for these underlier(s). In this case, the UPI service provider does not need to supplement the UPI reference data.
  - One or more of the underliers supplied as part of the reference data element values are identified using alternative identifiers not yet included in the UPI reference data for the given UPI code. In this case, the service provider needs to add the new identifier(s) of the underlier(s) to the UPI reference data pertaining to this UPI code.
- If a UPI does not yet exist for the combination of characteristics relating to that instrument and underlier, the UPI service provider will be expected to include the received set of reference data element values into the UPI reference data library and assign a UPI code to it.

The reference data library will be maintained by the UPI service provider(s). It will be the responsibility of the UPI service provider(s) to ensure its quality, completeness and accuracy.

Acquisition of UPI code based on the submission of reference data to a UPI service provider

This diagram to illustrate the technical process of UPI distribution does not preclude any UPI governance to be issued by the FSB GUUG

Consultation of UPI reference data based on the existing UPI code



Annex 2 – Example reference data element values by asset class

Values used for Underlier ID and Underlier ID Source in these examples are for illustrative purposes and do not imply a particular preference for how underliers should be identified. Allowable values for Underlier ID and Underlier ID Source may vary by jurisdictional authority.

Asset class: credit

Example 1: a Standard European corporate credit default swap on a reference entity having the Legal Entity Identifier 5493XXXXXXXXXXXXXXX could have the following reference data element values:

Reference data element	***Value***
Asset class	Credit
Instrument type	Swap
Return, pricing method or payout trigger	Credit default
Underlying asset type	Single name
Underlying asset sub-type	Corporate
Seniority	Senior
Delivery type	Auction
Standard Contract Specification	SEC
Underlier ID source	LEI
Underlier ID	5493XXXXXXXXXXXXXXX

Example 2: a physically settled European vanilla credit default call (payer) swaption on the 10-year CDS on the 10-year senior bond issued by the German government could have the following reference data element values:

Reference data element	***Value***
Asset class	Credit
Instrument type	Option
Option style	European
Option type	Call
Return, pricing method or payout trigger	Vanilla
Underlying contract type	Single-name CDS
Underlying contract subtype	Sovereign
Underlying contract tenor period multiplier	10
Underlying contract tenor period	Y
Seniority	Senior
Delivery type	Physical
Underlier ID source	ISO 3166
Underlier ID	DE
Underlier tenor period multiplier	10
Underlier tenor period	Y

Example 3: a credit forward agreement specifying a 2% spread between the five-year bond of corporation Z, with ID ABCDEF123456 issued by ID provider XXXXX, and a US Treasury bond with the same maturity, could have the following reference data element values:

Reference data element	*Value*
Asset class	Credit
Instrument type	Forward
Return, pricing method or payout trigger	Spread
Underlying1 asset type	Single-name
Underlying1 asset subtype	Corporate
Underlying2 asset type	Single-name
Underlying2 asset subtype	Sovereign
Delivery type	Cash
Underlier1 ID source	XXXXX
Underlier1 ID	ABCDEF123456
Underlier2 ID source	ISO 3166
Underlier2 ID	US

Asset class: rates

Example 4: an interest rate swap on the EONIA index could have the following reference data element values:

Reference data element	*Value*
Asset class	Rates
Instrument type	Swap
Underlying asset type	OIS
Notional schedule	Constant
Single or multiple currency	Single
Delivery type	Physical
Underlier ID source	ISO 20022
Underlier ID	EONA

Example 5: a cap on three-month USD Libor could have the following reference data element values:

Reference data element	*Value*
Asset class	Rates
Instrument type	Option
Underlying asset/contract type	Interest rate index
Option style	European
Option type	Call
Return, pricing method or payout trigger	Cap
Delivery type	Cash
Underlier ID source	ISO 20022
Underlier ID	LIBO
Underlying rate tenor period multiplier	3
Underlying rate tenor period	Month
Currency associated with the underlying index	USD

Example 6: a forward rate agreement against an interpolated three-month/six-month LIBOR curve could have the following reference data element values:

Reference data element	*Value*
Asset class	Rates
Instrument type	Forward
Underlying asset/contract type	Interest rate index
Return, pricing method or payout trigger	Forward rate of underlying X notional
Single or multiple tenor	Multiple
Delivery type	Cash
Underlier ID source	ISO 20022
Underlier ID	LIBO
Underlying rate tenor1 period multiplier	3
Underlying rate tenor1 period	Month
Underlying rate tenor2 period multiplier	6
Underlying rate tenor2 period	Month
Currency associated with the underlying index	USD

Asset class: commodities

Example 7: a cash-settled electricity swap on PJM AEP Dayton Hub Day Ahead Locational Marginal Pricing could have the following reference data element values:

Reference data element	*Value*
Asset class	Commodities
Instrument type	Swap
Underlying asset type	Energy
Underlying asset subtype	Electricity
Return, pricing method or payout trigger	Value of underlying asset
Delivery type	Cash
Underlier ID source	PJM
Underlier ID	PJM AEP Dayton Hub

Example 8: a European call Asian option on the Central Illinois US 2 Yellow Corn with cash delivery could have the following reference data element values:

Reference data element	*Value*
Asset class	Commodities
Instrument type	Option
Underlying asset type	Agriculture
Underlying asset subtype	Corn
Option style	European
Option type	Call
Return, pricing method or payout trigger	Asian
Delivery type	Cash
Underlier ID source	USDA
Underlier ID	Central Illinois US 2 Yellow Corn

Example 9: a three-month forward on gold bullion with physical delivery could have the following reference data element values:

Reference data element	*Value*
Asset class	Commodities
Instrument type	Forward
Underlying asset type	Precious metals
Underlying asset subtype	Gold
Return, pricing method or payout trigger	Forward price of underlying asset
Delivery type	Physical
Underlier ID	Gold

Asset class: equities

Example 10: a total return swap on the S&P 500 Index could have the following reference data element values:

Reference data element	*Value*
Asset class	Equities
Instrument type	Swap
Underlying asset type	Index
Return, pricing method or payout trigger	Total return
Delivery type	Cash
Underlier ID source	S&P Dow Jones Indices
Underlier ID	S&P 500 Index

Example 11: a Bermudan put option with cash delivery on a basket consisting of Euronext Paris-traded (ISO 10383 Market Identifier Code (MIC): XPAR) shares of AB Science (AB), Biophytis (ALBPS), Cellectics (ALCLS), Dixonhit (ALEHT), and Genfit (GNFT) could have the following reference data element values (basket constituents would not be submitted):

Reference data element	*Value*
Asset class	Equities
Instrument type	Option
Underlying asset type	Basket
Option style	Bermudan
Option type	Put
Return, pricing method or payout trigger	Vanilla
Delivery type	Cash

Example 12: a CFD on Frankfurt Stock Exchange-traded (MIC: XFRA) shares of Deutsche Telekom AG could receive the following classification:

Reference data element	*Value*
Asset class	Equities
Instrument type	Forward
Underlying asset type	Single-name
Return, pricing method or payout trigger	CFD
Delivery type	Cash
Underlier ID source	XFRA
Underlier ID	DTE

Asset class: FX

Example 13: a standard spot-to-forward FX swap on the currency pair USD/JPY, with the physical delivery of respective currencies could have the following reference data element values:

Reference data element	*Value*
Asset class	FX
Instrument type	Swap
Underlying contract type	Spot-forward
Return, pricing method or payout trigger	N/A
Delivery type	Physical
Currency pair	USD/JPY

Example 14: a EUR cash-settled American barrier call option on the currency pair EUR/USD could have the following reference data element values:

Reference data element	*Value*
Asset class	FX
Instrument type	Option
Underlying contract type	Spot
Option style	American
Option type	Call
Return, pricing method or payout trigger	Barrier
Delivery type	Cash
Currency pair	EUR/USD
Settlement currency	EUR

Example 15: a non-deliverable forward (NDF) settled in USD on the currency pair EUR/JPY could have the following reference data element values:

Reference data element	***Value***
Asset class	FX
Instrument type	Forward
Underlying contract type	Spot
Return, pricing method or payout trigger	Forward price of underlying asset
Delivery type	Cash
Currency pair	EUR/JPY
Settlement currency	USD

Annex 3 – List of members of the Harmonisation Group

This report was produced for the CPMI and IOSCO by the working group on the harmonisation of key OTC derivatives data elements (Harmonisation Group).

Co-chairs:	Marc Bayle European Central Bank
	John Rogers (until May 2017) US Commodity Futures Trading Commission
	Dan Bucsa (since May 2017) US Commodity Futures Trading Commission
Vice-chairs:	Markus Mayers European Central Bank
	Srinivas Bangarbale (until May 2017) US Commodity Futures Trading Commission
	Tom Guerin (since May 2017) US Commodity Futures Trading Commission
Members:	
Canada	Steve Badra-Quirion Autorité des Marchés Financiers
	Shaun Olson Ontario Securities Commission
	Yani Wu Ontario Securities Commission
China	Haibo Cheng (until May 2016) China Securities Regulatory Commission
	Hailong Li (since May 2016 to July 2016) China Securities Regulatory Commission
	Xueqian Wang (since August 2016 to December 2016) China Securities Regulatory Commission
	LiuRui (since January 2017) China Securities Regulatory Commission
France	Franck Lasry Autorité des Marchés Financiers
	Claudine Hurman Bank of France
	Laurent Kersenbaume Bank of France
Germany	Olaf Kurpiers Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)
Hong Kong SAR	Pansy Pang Hong Kong Monetary Authority
Italy	Carlo Bertucci Bank of Italy
Japan	Daisuke Yamazaki Financial Services Agency
Mexico	Roberto Toledo-Cuevas Bank of Mexico
Netherlands	Marinus Jeuken Netherlands Bank
Russian Federation	Ekaterina Abasheeva Central Bank of the Russian Federation

Singapore	Justin Wong (until December 2016) Monetary Authority of Singapore
	Gael Soon (since January 2017) Monetary Authority of Singapore
United Kingdom	Michael Yoganayagam (until June 2016) Bank of England
	John Tanner Bank of England
United States	Celso Brunetti Board of Governors of the Federal Reserve System
	Erik Heitfield (since October 2016) Board of Governors of the Federal Reserve System
	William Traecy (since May 2016) Board of Governors of the Federal Reserve System
	Kate Dolan Commodity Futures Trading Commission
	Kate Mitchel Commodity Futures Trading Commission
	Esen Onur Commodity Futures Trading Commission
	Robert Stowsky Commodity Futures Trading Commission
	Kim Allen (until February 2017) Securities and Exchange Commission
	Michael Gaw Securities and Exchange Commission
	Carol McGee Securities and Exchange Commission
	David Michehl (since November 2015) Securities and Exchange Commission
	Narahari Phatak (until March 2017) Securities and Exchange Commission
European Central Bank	Christine Jozet
	Malgorzata Osiewicz (until September 2016)
	Olgerd Unger
	Grzegorz Skrzypczyński
	Francesco Vacirca (since September 2016)
European Securities and Markets Authority	Giulia Ferraris (until October 2016) Joanna Lednicka
	Olga Petrenko

Observers:

United States	Thomas Brown Office of Financial Research Cornelius Crowley (until April 2016) Office of Financial Research William Nichols Office of Financial Research Paul D'Amico Office of Financial Research Justin Stekervetz (since January 2016) Office of Financial Research
European Insurance and Occupational Pensions Authority	Patrick Hoedjes
European Banking Authority	Giuseppe Cardi Gabriel
European Systemic Risk Board	Roberto Stok (since October 2016)
FSB Secretariat	Pietro Franchini (until December 2015) Mark Chambers (since January 2016 to June 2016) Laurence White (since July 2016)

Secretariats:

Committee on Payments and Market Infrastructures	Cristina Picillo Philippe Troussard
International Organization of Securities Commissions	Verinder Sharma (until December 2016) Tim Pinkowski (since January 2017)