Responses to questions in the *Second Consultation Document* regarding the *Governance arrangements for the unique product identifier (UPI)* (26 April 2018) from Tahoe Blue can be found below.

. ***Q1. Do you agree a public-private partnership model such as the one sketched above should be adopted for the UPI Governance Arrangements?***

Yes.

. ***Q2. Do you believe any governance functions in Annex 4 should be performed by a different body? If so, which ones and why?***

The list of functions described in Annex 4 is quite robust. Whether or not the number of distinct organizational bodies shown in Annex 4 is the optimal arrangement, including which functions are allocated to which entities, is a question that will require subsequent and additional study and review after more fundamental organizational questions are resolved.

. ***Q3 – Q11*** No response with this document.

. ***Q12. Should ownership of any intellectual property created by a UPI Service Provider be assigned to a third party in order to maintain and ensure continuation of open access in the event that the provider were to become insolvent or subject to administration or voluntarily withdraw? If so, how should that third party be structured?***

This question is predicated on a number of important precedent concepts and definitions.

What kind or type of intellectual property ? Copyright associated with publishing information ? Use and inclusion of product or industry sector codes from vendor code lists ? Identifiers of underlying issued securities ?

What kind of organizational framework or system, and is the 'third party' an existing member or participant in that framework or system, or external to it ?

The simple answer to this question is quite straightforward: Yes, some form of business continuity or availability of services provided by a UPI Service Provider should be made possible in the event of the termination of the operation of a UPI Service Provider.

This question could be viewed from the lens of just what informational content that is unique to the UPI Service Provider in question is not provided or replicated by other Service Providers, whether this informational content is claimed as intellectual property as opposed to open data, and finally whether this information is considered to be part of the core services and founding mandate of a UPI facility.

We would argue first that the only IP that a UPI Service Provider could claim as its own unique IP would be value-added content that a Service Provider had developed that went beyond the stated objectives and functions of a global UPI public utility system. As such, the Global UPI System (GUPIS ?) would not have made, and should not make, service level agreements that the GUPIS would support the continued availability of proprietary, 'value-added' content offered by a UPI Service Provider that is above and beyond the core mandate of the GUPIS.

With regard to informational content managed by a UPI Service Provider that is part of the core mandate of the functions and services of the GUPIS, we consider that this information is made up almost entirely of contract reference data submitted to the UPI Service Provider for the purpose of assignment of a UPI. Because the information and reference data needed to obtain a UPI is, or will required to be, standardized across the UPI system, this data can and should be transferable to other UPI Service Providers in the event of the termination of the operation of a UPI Service Provider. (This would be similar to the mechanism adopted by GLEIF to manage similar transfer of LEI reference data in the event that an LOU ceases to operate in the GLEIS).

. ***Q13. Should access to a vendor-proprietary identifier in the UPI Reference Data Library be limited to only those market participants who have a corresponding license agreement with the respective vendor? If so, how should that underlying asset or index be identified for non-licensees?***

We believe that vendor-proprietary identification codes (e.g., identification codes

of underlying securities) should be made available as part of the open reference data of the Global UPI System. This applies to the identifier code only, and not to the reference data that describes the security. A license agreement with a respective vendor would be needed to access the reference data that the identification code resolves. But the identification code by itself is a data element that should be part of the accessible UPI reference data. To require license agreements with vendors on the part of all parties accessing the UPI reference data in order to determine what subset of UPI reference data can be made available would be a very costly administrative and validation exercise, and greatly complicate the lookup process and operational infrastructure of every UPI Service Provider. To require some form of anonymous (and new) identifier of underlying securities would just compound the complexity of what would already be an unnecessarily complex operation.

. ***Q14. Do you believe that wherever possible elements within the Reference Data Library should use established International Data Standards?***

Yes, wherever possible – but *practical*. Ubiquitous standards for such frequently used elements as country codes and currency codes fit this qualification. Standards that address more robust or structured concepts (e.g., message formats or data schemas) should be standards developed and maintained by a data standards process under the organizational umbrella of the Global UPI System. This for no other reason than financial products undergo continual innovation, and a more agile data standards process is required to stay abreast of changes and additions.

This is similar to the definitions of the LEI Common Data Format (e.g., LEI-CDF 2.1) developed by GLEIF for the GLEIS in consultation with GLEIS stakeholders.

Such an arrangement does make it possible, and desirable, to use International Data Standards as part of the data standards of the GUPIS – wherever possible, and practical.

. ***Q15. Do you agree that, for similar reasons as were traversed in the UTI Consultation, the ISO is the most appropriate body to undertake the functions of an International Standardisation Body for the UPI?***

The lessons learned from the Global LEI System (GLEIS) are quite relevant here. It is appropriate for ISO to undertake a standard that applies to the format of the UPI code, as well as a degree of conceptual elements that would be resolved by the UPI code. This corresponds to the use of ISO 17442 to specify the format of the LEI code and the conceptual synopsis of the reference data associated with an LEI.

It is not appropriate for ISO to engage in any detailed specification or standard that applies to the data elements of OTC derivatives used to assign a UPI – and for that matter, the data elements of any other financial instruments that would or could eventually be assigned a UPI. This is far too complex an operation to be managed by ISO, and under the long time frames and processes required to maintain ISO standards.

. ***Q16. Do you think it desirable that all elements in the UPI Reference Data Library be subject to ISO standards?***

Absolutely not ! (See answer to Q15, above).

. ***Q17. Do you agree with the FSB's preliminary conclusions about codelists and related topics in section 5.3 above?***

Those preliminary conclusions are, in general, reasonable. Use of codes from external code lists, whether ISO, external, or GUPIS-managed code lists should be permitted along with the reference to the code list source or specification, as the namespace of the code. The syntax and format of code lists themselves should be outside the scope of the standards requirements of GUPIS, as there are too many existing and as yet new such lists. It may be possible to consider 'neutral' representations of code lists whose content is common to multiple messaging schemes, but care should be taken not to have this take on a life of its own that overly complicates the maintenance of UPI assignment and lookup functions.

. ***Q18. If you believe that the UPI data can and should be used for purposes other than solely regulatory reporting, describe in detail and provide specific examples of any such additional purposes.***

It is easy to conceive of a large number of potential third-party or value-added

uses of UPI data (e.g., market concentration analysis, risk management, etc), but the utility of UPI data is greatly limited by the fact that the UPI is ***only*** a classifier of relatively specific sub-classes of financial instruments that share a high degree of similarity (within discriminatory criteria), but for which there is no information whatsoever regarding positions (quantity), counterparty, notional amount or market price.

Hence, only by association with actual contractual data might the UPI be used for such additional purposes.

We would also like to point out that, even though the primary motivation for introducing the UPI was ostensibly to make it possible, or at least easier, for regulators to aggregate financial data using the hierarchical taxonomy of the UPI classification tree, this 'facilitation' for regulatory risk management purposes is only 'simplified' when using the static and rigid classification hierarchy of the UPI taxonomy. The UPI does not make aggregation using alternative hierarchies easy at all – in fact, such analysis and aggregation of financial products are more tortuous using the UPI, and analysis of this kind would be better served by simple standardization of the financial contract elements themselves without the need for a product classification code.

. ***Q19. Considering the pros and cons of each of the above-mentioned models (Single UPI Service Provider model or Competitive model), what would in your view be the most suitable? Please provide detailed reasoning.***

The 'competitive' model should really be called the *federated* model. There can and will be competition in a federated model, but a federated model would have an organizational entity that managed the data standards and operational integration of the service providers in the system.

This model is preferable to a Single Provider model for a number of reasons. Foremost are the problems associated with the very premise of having a *single provider*: concentration of power, influence, technology, services, pricing, access, data interface protocols, and performance. If the UPI is to be a truly global system and open data public good service under the auspices of the FSB on

behalf of independent sovereign countries and financial regulatory regimes, it is essential to not have a single source of service that could pose an issue of political biases or favoritism in the complex and evolving global economy.

The assessment of the purported advantages of having a single provider (e.g., consistency of UPI issuance) and the purported disadvantages of having multiple service providers (maintaining common standards and classification) have been inappropriately skewed in favor of the single provider approach, in our opinion.

It is important to remember that the UPI is not an identifier of a unique thing, like an entity (LEI) or transaction (UTI). Rather, it is a code associated with a node in a classification hierarchy in which a number of similar but not equal instruments and contracts are grouped as a result of a set of classification rules. The UPI classification rules, when eventually finalized in the first release, are the true specification of the UPI system. Any service provider that can demonstrate the ability to perform the classification processing stipulated by the UPI classification rules will arrive at the same UPI for the same input for the same version of the classification rules.

Accreditation of a UPI service provider would consider other aspects of a proposed operation, of course – resources, facilities, funding, business plan, etc. The governance process of overseeing the operational standards (e.g., data submission formats, adherence to the classification rules) as well as the management and maintenance of the classification rules (which will undoubtedly undergo revision and subsequent versions) can and should be handled by an organizational entity that is similar to the role that the Global LEI Foundation has vis-à-vis the LEI service providers (i.e., 'LOUs').

Because the UPI is essentially a classification algorithm that returns a UPI code given a set of financial contract inputs, it is easy to verify that service providers are producing the same UPI given the same inputs: initial accreditation and ongoing data quality checks can exercise service providers with test sets that sample the tree.

The classification rules should be maintained and published in an algorithmic specification that should be part of the non-IP, open source public good that is provided by a Global UPI System. This algorithmic specification should also be

able to be executed, or readily translated or compiled to an executable form.

In fact, there is no reason why a UPI could not be issued by any one with the ability to process the classification rules. In this context, UPI Service Providers would essentially become validators of UPI classification. The systemic result of the availability and transparency of the UPI classification rule set would increase the efficiency and reduce the costs of broader use and uptake of the UPI, and would avoid the problems associated with a single provider model that performed all functions for the entire global economy.

. ***Q20. Do you believe that there should be a single UPI Reference Data Library if multiple UPI Service Providers coexist in the UPI System? Why or why not?***

A 'UPI Reference Data Library' could be interpreted as one of two things:

1. A compilation of the instance data of all financial transactions or contracts for which a UPI has been requested; or,
2. A fully elaborated tree of all of the classification nodes of the UPI System with the classification criteria associated with each node made available as "reference data"

If the first alternative is what is intended by a UPI Reference Data Library, there are many operational and information security issues that are raised, whether there is a single provider or multiple providers. In our opinion, it would not be wise to attempt this level of data collection and archiving.

If, on the other hand, the second interpretation is what is intended, then a UPI Reference Data Library would simply be derived by projecting the UPI classification rules as a network graph that generated the classification criteria for each node in the graph. A 'lookup' into the reference data of this 'library' could either access the elaborated and instantiated graph of the hierarchy, or could even be dynamically produced on demand.

Even if the first interpretation was the intent, a consolidation of data from multiple service providers could easily be collected and maintained by the organizational entity responsible for overseeing the operation and integration of the Global UPI System as a federated network (much like the GLEIF and the GLEIS).

. ***Q21. What would be the value added in having competing UPI Service Providers if there was a single entity centrally managing the UPI Reference Data Library?***

The benefits of 'competing' UPI Service Providers derive from the importance of having a federated system of service providers that meet the needs of a system of cooperating sovereign jurisdictions, and which can provide a variety of different services in addition to UPI classification as value-added services that relate to, but are priced separately and distinct from UPI classification. This diversity and level of innovation would not occur with a single provider. Regardless of how many UPI service providers there are, the compilation, consolidation and availability of a 'reference data library' should not be an asset managed, or owned, by a single provider. The terms of becoming a UPI Service Provider should stipulate that this data is a public-good, open data asset of the Global UPI System, not an operational service provider.

. ***Q22. How could the applicable technical principles and governance criteria mentioned in section 6.1 be followed if there were multiple UPI Service Providers?***

This is not nearly as difficult as it is made to appear. The GLEIS / GLEIF model very clearly shows how this can be done. As we are quite familiar with this approach, we would be quite happy to engage in further dialogue and discussion on how the multiple service provider model can work very successfully.

Thank you for the opportunity to provide feedback to this consultation.

Sincerely,

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