Background to the FX Market Architecture Group (MAG)

The Global Financial Markets Association (GFMA) joins together some of the world’s largest financial trade associations to develop strategies for global policy issues in the financial markets, and promote coordinated advocacy efforts. The member trade associations count the world’s largest financial markets participants as their members. GFMA currently has three members: the Association for Financial Markets in Europe (AFME), the Asia Securities Industry & Financial Markets Association (ASIFMA), and, in North America, the Securities Industry and Financial Markets Association (SIFMA).

The GFMA Global FX Division, headquartered at AFME in London, was formed in June 2010 to support efforts to promote an efficient global FX market, monitor regulatory developments that could affect the foreign exchange markets and assist the industry in building out the infrastructure of the future. Its members comprise 22 global FX market participants, collectively representing more than 90% of the FX market.

The MAG is a working group made up of volunteer FX Division member banks. On behalf of division members, it is fostering industry dialogue and discussion towards developing industry trade workflow standards in response to the new regulatory environment. This document is issued for discussion and comment by industry participants.

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1 Executive Summary

A key component of Dodd-Frank is the ability for regulators to identify individual transactions. As such the legislation has created a Universal Swap Identifier (USI) which acts as a unique identifier to the transactions. This document will not discuss the formatting of the USI, leaving it to the ISDA USI Working Group. This document will discuss the generation and subsequent trade workflows specific to the foreign exchange industry with respect to the global implementation and adoption of USI as discussed by the GFMA Global FX Division’s Market Architecture Group (MAG).

A key consideration of the MAG in deliberating the implementation of USI has been to leverage to the extent possible existing messaging infrastructure in place within the industry as this has been viewed as more cost effective than introducing new industry components in support of the trade workflow.

It is also important to note that the working group has based the trade workflow on the assumption that an FX trade repository or other global / multi-asset trade repository (FXTR or GTR) will not generate the USI but rather will require the data as part of any trade submission by a party reporting to the FXTR.

The following trade events are agreed as requiring the generation and assignment of a USI as part of the trade workflow – all of which are confirmable events:

- New trade and trade allocation
- Trade amendment
- Cleared trade (i.e. CCP assigns USI once the trade is accepted for clearing)
- Give-up
- Trade / Portfolio novation
- Rollover and Historic Rate Rollovers
- Partial termination (USI on the remaining leg)

It is recommended that options exercise not be USI forming, pending validation with regulators and determination of consistency across asset-classes.

The MAG has determined that there could be four potential points of communication of the USI within the market infrastructure:

- Platforms for electronically executed transactions
- The trade recap or affirmation
- The confirmation; and
- An ACK from the FXTR to a non-reporting party
The group has classified the method of communication as either recommended or mandatory. These should provide sufficient flexibility in the communication to make the receipt of USI accessible to all market participants without over-prescribing workflow and overly limiting firms choices as they determine appropriate means for their internal implementation.
2 Background

In exploring solutions for the USI, the Market Architecture Group explored three alternative solutions before settling on this proposal. The following will summarize the proposals and why the group ultimately determined that these would not be feasible as the industry solution.

2.1 Independently Derived USI

The first proposal was to create an algorithm for generating USI which would guarantee uniqueness and allow for each party to independently derive the same USI to a transaction. Intellectually, this is the preferred method as this would require no change to market infrastructure and impose the least amount of change to existing workflow.

The challenge was in determining how to derive the execution. There are two obvious elements for deriving the USI – the time of execution and the sequence at which we’ve executed between one another.

With respect to using time, there was concern on both the synchronization of the clocks amongst parties and the management of any drift, as well as the issues of latency in processing transactions and its ability to throw off the USI generation – particularly on voice traded trades where the time to key a trade may vary greatly from firm to firm and would introduce differences between the USI.

The second was the sequence at which each firm had executed with one another. Here, again there were issues as to processing sequence – where in the trade flow is USI assigned and what were to happen if trades were processed in parallel where the queuing scheme of parties may not match and thus the sequencing of trades may not match.

The third option was a hybrid, but this added complexity and imposes implementation and complexity on all market participants which the working group felt was too great a burden and uncertain to resolve the issues discussed on each standalone method.

2.2 Central USI disseminator

The central USI disseminator would act to take in trade submissions from parties and to assign a USI to the transaction. There are a number of concerns around this solution, not least of which are:

- The cost of establishing and maintaining a central USI disseminator
• The requirement for all FX market participants to connect to the USI disseminator
• The introduction of a single point of failure into the market place - today’s distributed architecture allows for firms to recover business processes across alternative providers should any single provider become impaired.

In addition, there were concerns that by creating a central entity within the FX ecosystem there are risks of a component of the ticket processing costs becoming fixed which work against the macro trend of overall ticket processing cost reduction.

2.3 FXTR for USI assignment and dissemination
When the legislation was first proposed, a number of firms considered that an FXTR as the creator and disseminator of the USI made the most sense.

From an FX TR perspective there are a number of issues:

• It creates a need for the trade repository to create a matching service in support of trade pairing and assignment of the USI
• There does not currently exist standard representation for a number of FX option products, to that extent there are risks of miss-pairing and therefore miss assignment of USI – which could have knock-on impacts when trade valuations are submitted if the valuations are very wide of one another
• It imposes greater service level requirements on an FXTR. Given that any FXTR is likely to be a newly created entity which is attempting to manage to the regulatory service requirements, imposing end-user service requirements as well creates the risk of greatly increasing the technical complexity as well as distracting from the end-goal of meeting regulatory reporting requirements.

There were additional issues in that it would require all market participants to connect to a single FXTR (see Central USI disseminator for discussion on risks to central connectivity) as well as violating the intent of the CFTC rules that single sided reporting exist so as not to create an undue burden on smaller market participants and end-users.
3 USI – generation and ownership

Key to the trade workflow is an understanding of who has responsibility for assigning the USI – thereby defining the party who will generate the USI and the party (or parties) that will become consumers of the USI.

The determination of where the USI should be generated begins with a discussion as to how the trade is executed. Specific to FX, there are two types of flow to consider – platform and voice. Within platform trades, there are several sub-categories - ECN or SEF flow (with the caveat that an ECN does not necessarily have the same capabilities as a SEF), e-commerce platforms and hybrid platforms – such as options brokers who may execute one side of the transaction via voice and the other over an e-commerce platform.

3.1 Mandatory and Recommended USI communication

Within the diagrams there are “mandatory” and “recommended” communication events for USI. The intent is to highlight where the Market Architecture Group believes it would be beneficial for the USI to be communicated – i.e. as close to execution as possible. However, there is recognition that there are various degrees of interaction and automation across the industry. The group has adopted the view that at confirmation there is a point where all market participants have an expectation of an external exchange of trade details. Accordingly, the group’s recommendation is that the USI communication becomes a mandatory field on the various confirmation protocols as a means of ensuring USI communication to all types of market participants. The field need not become a field for mandatory matching nor should it hold up the non-reporting party’s exchange of confirmation details.

3.2 Industry solution which is suitably flexible to accommodate most internal implementations

Unfortunately, all firms will be required to make changes to their trade workflow in order to support the use of universal identifiers on transactions. The working paper looks to define industry workflows which leverage existing market infrastructure and existing points of communication within the FX ecosystem whilst allowing for degrees of freedom in how firms implement. For instance, the workflows for bilateral trading allow for the non-reporting party to either gate their messages until they have received and
applied the USI or to submit all transactions as though they are the reporting party and to then amend the USI at a later date\textsuperscript{1}.

### 3.3 Standard Event Representation Versus Economic Equivalence

A major part of the discussion and the framework in support of the FX USI workflow was to do with the belief that all FX trade lifecycle events would require standard representation at an FXTR – particularly when valuations are submitted to the repository and/or there is a need for direct comparison by the regulator.

To illustrate the issue, take the trade record representation for an FX Swap. There are three ways in which the trade records can be represented by an FX system:

- As a single FX Swap record, encapsulating the near and far leg
- As two records, a near-leg and a far-leg with reference to one another
- As two records, a spot (or forward) and a forward without reference to one another

All three exist within the internal implementations of various firms across the FX ecosystem and all three have implications for how the USI should be handled – clearly the third booking method would require two independent USIs, while the other two could work with a single USI assignment. There cannot be a situation where one party attempts to assign a single USI to a transaction while the other party due to their own data model constraints attempts to assign multiple USI.

Further, the working group explored the trade workflow to understand how parties could move between the “event” (i.e. single record) model and the multi-record model. It was determined that for parties in multiple records it would be challenging to move to an event model (impossible if referential integrity is not maintained on the source system) but that it would be relatively straightforward for the event driven model to unpack its message into the multiple ticket representation.

Thus, the working group determined that:

- There needs to be standard representation for all trade and trade lifecycle events so as to ensure that all parties agree when and if a USI needs to be assigned

\textsuperscript{1}It should be noted that the transient state of non-reporting party USI applied to a trade being updated to reporting party USI will then create a condition where the trade may create an overstatement of exposure as the trade repository may treat each side of the trade to be independent trades until they share a common identifier at which point pairing can take place.
• This needs to be done to the ‘lowest common denominator’ i.e. as a series of trade tickets rather than leveraging an event driven model
• Failure to do so would impose a large cost to comply on those parties whose systems do not currently operate on the event driven model and thus would not meet the regulatory objectives of constraining costs, particularly for end-users².

Note the issue of structured products is still being discussed on a cross-asset basis as it is not a phenomenon unique to foreign exchange. As such, the MAG will seek to align the FX workflows and data representation to the extent possible.

### 3.4 Data Record Control

In developing the USI framework, the Market Architecture Group developed two core principles – one for data submitters the other for an FXTR which when taken together strongly influence the shape of the resulting workflows.

Fundamentally, the Market Architecture believes that the dealers retain ownership and responsibility for all data records which a party submits to an FX TR. The underlying assumption is that parties have a responsibility to ensure the accuracy and quality of the data they have submitted to the TR.

Working from the principle of reporting party data accuracy, the Market Architecture Group thus believes that for post-trade events a TR can not affect a referenced data record based on data submitted in a trade record as there are risks of the TR making an incorrect update to the referenced record and the protocol for the submitting party to verify the accuracy of data would be complex for both the TR and the submitting firm to implement.

An example of this would be the end-to-end workflow around block trade submission and allocation. Part 45 requires firms to submit the block trade and to submit the trade allocation, referencing the original block trade (for full allocation trade workflow see section 4.4.1). One potential workflow would be for an FXTR to receive only the allocation leg and use the reference to the block to update the status of the block. However, there are workflows (such as partial allocation where more legs are pending) which an FXTR would not have complete information and therefore may update the block record in a manner which is not consistent with the submitting firms records. Thus, the working group as a principle requires the submitting firm to update the status

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² The model will need to be discussed with the CFTC. However in previous discussions they have indicated that solutions that seek to contain implementation cost, particularly where firms may be required to re-engineer their systems rather than make minor modifications such as additional data field storage to their systems, may be acceptable.
of the original trade explicitly at the FXTR rather than allowing for an FXTR to infer and apply updates to previously submitted trade records.

**3.5 Dual sided reporting**

The Market Architecture Group recommends that dual-reporting (i.e. both parties to the trade reporting the details to an FXFXTR) be adopted as a market best practice and the workflows reflect that model. A functional assumption is made that an FXTR would employ logic to determine which is the reporting party to ensure that there is not dual reporting to the regulators or the ticker and in the case of bilateral trades, to determine from whom the USI should be generated.

**3.6 Referential integrity**

The working group recommends that as a best practice referential integrity be maintained between the originating trade and any subsequent changes to the trade (either through trade modification or business event processes such as allocation). However, the working group recognizes that this may be a challenge for some firms and thus has not made referential integrity a required component of the proposed trade workflows.

As the working group is focused on developing a global framework, referential integrity is only recommended as there may be reporting jurisdictions for which there is no regulatory requirement to maintain a linked audit history. However, in the context of the CFTC 17 CFR 45 Swap Data Recordkeeping and Reporting Requirements, the working group notes that there is a requirement for an FXTR to maintain the linkage between trades and thus the submitting party should be obligated to provide the necessary data to enable an FXTR to fulfill its requirement to link the records.
4 Trade Workflows

4.1 Platform trades

For transactions which are executed electronically on a registered SEF, the SEF on which the trade is executed is responsible for assigning the USI. If subsequent events occur on the platform which are USI creating, then the platform is also responsible for assignment of USI (such as block and allocation processing).

Note that the platform assigns the USI at the point of execution and this is then referenced by all parties to the trade at the trade repository.

Also note that the SEF is required to report the transaction directly to the FXTR.

In the case of an ECN or other platforms who do not wish to implement full SEF functionality, the flow would appear as:
It is assumed that bank labeled e-commerce platforms will follow this workflow (i.e. assign and notify of USI). However, should the platform fail to provide the USI, any FXTR NRP ACK and the trade confirmation should also convey the USI.

### 4.2 Bilateral trades

For voice trades (inclusive of trades done via an inter-dealer broker) the reporting party\(^3\) rules will apply in determining whose responsibility it is to assign USI, with the caveat that a counterparty who is not technologically capable of generating USI may request of their counterpart to assist in fulfilling their obligation.

\(^3\) Pending final rules and definitions of Swap Dealer and MSP as the extent to which a participant with limited FX technology will end up classified as a Swap Dealer and therefore bear reporting requirements on majority of trades remains to be seen.
4.2.1 Proposed Workflow for New Bilateral Trade

In this flow the reporting party assigns the USI immediately after execution. The USI is then recommended to be communicated during the trade recap (either during trade STP via middleware or as part of an email or chat based message in order to transmit the USI as close to execution as possible). However, it is recommended that the USI be communicated as part of any FXTR NRP ACK – thereby providing a second means of communicating the USI between the counterparties. Finally, it is recommended that the USI be communicated as a mandatory field on the trade confirmation. This provides the non-reporting party three opportunities to capture the USI – at the point of capture of the recap, at the point of verification that reporting duty has been carried out, and at the point of confirmation.
Note that this workflow requires an FXTR to allow an update to the USI of a non-paired trade as part of the transaction flow. It should also be noted that there is a dependency on the confirmation platform to provide a means by which the USI can be communicated.
4.2.2 Bilateral flow – trade amendments (exceptions flow)

For the case of trade amendments where the parties have agreed that the original USI on the trade can not be maintained, an exceptions flow has been created that follows a cancel and replace protocol, but provides guidance for maintaining the reference to the original transaction.

It should be stressed that while the workflow indicates a new USI is created, parties may agree to retain the original USI to create more effective processing and record management with the FXTR, making this use case an exception case for counterparty interactions where a new USI is required by one side and not a primary workflow.
During the course of the amendment notification to the FXTR, the original transaction will be cancelled by referencing the original USI, the amendment or correction leg will then be communicated using a newly assigned USI – which must be communicated to the counterparty to the transaction. It should be noted that this workflow does not prevent the parties from agreeing to retain the original USI from the amend – in which case the cancel would become superfluous and both parties could update their trade record directly (thereby creating a more efficient message flow).

A secondary benefit of this workflow is that allows for a common workflow, even in the instance of a trade booked under the wrong counterparty identifier. The alternative would have been to have a modify workflow which maintained the original USI but which implemented a cancel and new for the instance where the counterparty to the trade was changed.

4.3 Brokered trades

In the case of brokered trades, there were several discussions as to if and how voice brokers should or could own USI generation. Consideration was given to the method of execution by the broker and to the degree of STP between brokers and trading parties. The method of execution ended up being the crucial piece for determining that brokers should own the USI generation. Specifically because brokers may access liquidity on platforms (either SEFs, ECNs or bank branded e-commerce platforms) and because the other side of the transaction will have no knowledge or visibility into how the price was derived it was determined that the broker should provide the USI to the trade.

In the case where the broker used the price from a platform, the broker will pass through the USI from the platform to the counterparty. In the case where the trade was voice brokered the USI will be generated and passed by the broker – thereby ensuring anonymity of price sourcing by the broker and preventing the platforms from differentiating USI workflow based on the type of party executing on their platform.
For reporting party / non-reporting party the USI is then exchanged following platform workflow (i.e. exchanged on confirmation referencing the USI provided by the broker).

### 4.3.1 Cleared Trades

The cleared trade workflow introduces a workflow which has been somewhat prescribed by the regulator and for which there are a few questions as to what best practice should be.
Derived from the CFTC part 45 trade reporting rules, the bilateral trade is assigned a USI by the reporting party and submits the trade to the trade repository. During the trade matching / trade pairing process at the CCP a “confirmation” of the trade is created and the ACK to the match is used to communicate the reporting party’s USI to the non-reporting party – following the USI communicated on confirmation logic for bilateral trades.

At the point where the CCP steps into the trade, the old bilateral USI is destroyed and each leg of the trade to the CCP is assigned a new USI (i.e. Reporting Party – CCP and
Non-Reporting Party – CCP). These are communicated to the firms during the clearing notification. In response, the parties need to send a “cancel” or “exit” to the bilateral transaction to the trade repository and in keeping with the dual-submission model submit “new” transactions for their transaction facing the CCP.

It is assumed the CCP will also report the transactions to the trade repository.

Note that regardless of the CCP reporting to the TR, there are potential scenarios whereby the CCP may not register a transaction within the regulatory reporting timeframes specified by the CFTC. As such, the workflow documents a flow that will enable a firm to fulfill their obligation independent of the actions taken by the CCP.

### 4.3.2 Clearing Broker Trade Flow

In the case of the clearing broker, there are two places where the CB may be notified of the execution – either pre-clearing or post-clearing, depending on the clearing house and customer arrangement. Because this is an evolving market structure, the flow is flexible to allow freedom as to how and when the workflows develop.

Prime Brokerage flows are covered later in the document.
4.4 *Post trade USI forming events*

There are four post-trade events which are viewed as being USI forming:

- Trade allocation
- Give-up
- Partial termination
- Trade roll-over and historic rate roll-over (HRRO)

4.4.1 *Trade Allocation*

Following the principle of trade record ownership by the submitting / owning party, the trade allocation workflow requires both the submission of the individual allocation legs as well as a submission to indicate change in status of the original block trade. It is noted again, that within a global trade repository framework that referential integrity between the block and allocation may not be required, but that it is required under the US CFTC regulations.
Within the CFTC 17 CFR 45, there is specific text and language in discussion of the block and allocation:

(e) Allocations. For swaps involving allocation, required swap creation data shall be reported to a single swap data repository as follows.

(i) Initial swap between reporting counterparty and agent. The initial swap transaction between the reporting counterparty and the agent shall be reported as required by §§ 45.3(a) through 45.3(d) of this part. A unique swap identifier for the initial swap transaction must be created as provided in § 45.5 of this part.

(ii) Post-allocation swaps.

(A) Duties of the agent. In accordance with this section, the agent shall inform the reporting counterparty of the identities of the reporting counterparty’s actual counterparties resulting from allocation, as soon as technologically practicable after execution, but not later than eight business hours after execution.

(B) Duties of the reporting counterparty. The reporting counterparty must report all required swap creation data for each swap resulting from allocation, to the same swap data repository to which the initial swap transaction is reported, as soon as technologically practicable after it is informed by the agent of the identities of its actual counterparties. The reporting counterparty must create a unique swap identifier for each such swap as required in § 45.5 of this part.

(C) Duties of the swap data repository. The swap data repository to which the initial swap transaction and the post-allocation swaps are reported must map together the unique swap identifiers of the original swap transaction and of each of the post-allocation swaps.

It should also be noted that the block trade itself may not have been reportable, but any number of allocation legs may be (in the case of forward rolls). The working group determined that imposing different data submission standards based on the child based on data submission actions for the parent would create a workflow complexity on the submitting parties that doesn’t necessarily provide benefit to any party. Thus the workflows intentionally treat the allocation submission as independent of the action taken on the parent – in full recognition that an allocation leg may be submitted with either a block reference ID which isn’t registered in the TR or an empty or null block reference ID depending on how firms have implemented their USI generation.
Flow accounts for both IM who have Submitting Party responsibility as well as IM who decide to dual-submit to an FXTR regardless of legal requirement.

Note, block exit and new allocation leg submission should be allowed to occur independently in any sequence or as an autonomous transaction.

4.4.2 Give-up

During the give-up, it is proposed that the executing broker (EB) will report the trade to an FXTR referencing the prime broker (PB) as the counterparty (it is recommended that PB client is represented as beneficiary to the trade in the trade message). The EB will generate the trade USI – thus over riding any trade reporting rules should a prime brokerage client also be deemed a Swap Dealer in the US and potentially have equal reporting hierarchy and therefore reporting requirements from the CFTC.
At the point where the PB steps into the trade, the EB-PB leg will retain the USI originally assigned by the EB, but the PB will assign a new USI to the PB-Client leg of the transaction. The PB-Client leg should then follow the bilateral trade flow in terms of assignment and communication of USI between the PB client and their prime broker (i.e. USI included on any trade recap as best practice and included on the confirmation as a mandatory field).

Should the PB choose to report the EB-leg of the step-in, then the trade should be reported with reference to the EB USI. Note that from a workflow perspective the PB will have an EB-PB leg which will follow the “platform” workflow and a PB-Client leg which will follow the “bilateral” workflow.
4.4.3 PB- trade rejection

Should the prime broker reject the trade due to a failure to meet the terms of the designation notice, then the following will occur:

Upon notification of the rejection, the execution broker and client can either determine to submit to another prime broker following the give-up workflow or the trade will be treated bilaterally (either by staying on the books or by being terminated). If the trade is to remain bilateral, the executing broker will notify the FXTR of the change of counterparty name (i.e. specify the PB client as their counterparty) if the trade is to be terminated it will then follow the termination workflow.
4.4.4 Partial Termination / Roll-over / HRRO

In the case of change of terms later in the life of the transaction (partial term\textsuperscript{4}, roll-over and HRRO) it was determined that the event should follow the lowest common denominator which would mean a reporting model which cancels the original transaction at the FXTR and replaces it with a new transaction which represents the results of the activity.

It should be noted that the workflow documents the scenario whereby one or both parties are unable to retain USI due to system limitations or booking model preferences – which is viewed as an exception case. In the instance where this is not the case, both parties would retain the original USI and submit as such to an FXTR.

\textsuperscript{4} Note that there is an issue with termination and partial termination in that as part of Part 43 – real time reporting rules – the activity is viewed as price forming and therefore needs to be reported in real-time (for NDF and options). Thus a “cancel” and “new” are misleading as the termination event should be reported as a single “new” event. However, there is a dependency on standard representation of the termination event within the confirmation protocol before the industry will be in a position to fully support the regulatory requirement.
Terminations require a standard representation at the SDR (due to real-time reporting requirements). Recommendation is to use trade amend workflow

Rollovers and HRRO will follow the cancel and new workflow as this is the lowest common booking model

In this instance, the parties agree the rollover of termination event. As there is principal remaining the original transaction is cancelled at the FXTR and a new trade with a new USI and reference to the original transaction (recommended) is reported representing the remaining position.

4.4.5 Options Exercise

When reviewing options exercise, the working group determined that it could either be a USI forming event or not. The group preference was that it not be a USI forming event using the following logic:
1) It was determined that an options exercise should not produce a real-time price report – particularly because a deep in-the-money option would likely print a price outside the daily range and would be misleading for anyone consuming publicly tradable prices.

2) In order to suppress any real-time price feed market participants will necessarily need to identify the trade tickets which are produced as a result of an options exercise (referred to in this document as the “exercise ticket”).

3) Given that the exercise ticket has a requirement to be identified, it is therefore reasonable to discuss if these tickets require a different workflow – specifically if they should be treated as settlement events on the option (i.e. reported as part of the continuation data) or if they should be reported as separate transactions.

4) The working group determined that for the FX market the preferred workflow would be that the options exercise appear in the continuation data and that the exercise maintain the USI from the options contract from which it originated.
   a. There is on-going discussion on how UPI should be treated as the trade moves from option to underlying, this will be taken up in the UPI workflows document.
   b. This workflow needs to be validated with the other asset classes to ensure FX are consistent in our representation.
   c. This workflow needs to be validated with the regulators.

4.4.6 Other post-trade events

Other post trade events are currently viewed as non-price forming and non-USI generating. This means that they will be conveyed to the FXTR at the end of each day as part of the continuation data submission. This includes events such as options exercise, barrier option knocks, binary option touches, NDF fixings and other such activities which can occur during the life of a transaction.