



MMT Technical Committee
Market Model Typology (MMT)
Frequently Asked Questions

Pertaining to MMT v3.04 and earlier

Status: Final (29-Nov-2019)

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Table of Contents

3.1	MMT Encoding Options	7
3.2	MMT Display Code	7
3.3	Reference Price and Large-in-Scale Order Executions	8
3.4	Trade Type Inferences.....	8
3.5	Data format and encoding options.....	9
5.1	Central Limit Order Book vs. Periodic Auction.....	10
6.1	Trading Mode Differentiations.....	11
6.2	Applicability of the Trade Reporting (Systematic Internaliser) Trading Mode to non-MiFID II Transaction Reporting	12
7.1	MMT Level 3.2: Mutual Exclusivity of Negotiated Trade Flags PRIC, NLIQ and OILQ	12
7.2	MMT Level 3.3: Agency Cross Trades	15
7.3	MMT Level 3.6: Special Dividend Trades.....	15
7.4	MMT Level 3.7: Off Book Automated	16
7.5	MMT Level 3.8: Use of Plain-Vanilla Trade	16
8.1	MMT Level 4.1: Purpose of the Deferral for “Large in Scale”) Flag	17
8.2	MMT Level 4.1: Mutual Exclusivity of Post-Trade Deferral Flags	17
9.1	Euronext – ‘Agency Cross Trade’	20
9.1.1	Exception to the ‘Agency Cross Trade’ Rule	20
9.1.2	Date and Timestamps for the MMT Mappings.....	20
9.2	Budapest Stock Exchange – Different trading modes	21
9.2.1	Time-based differentiation of different trading modes	21
9.2.2	‘Off Book’ Market Mechanism	21
12.1	How to flag a trade executed under “RFQ” market mechanism?.....	24
12.2	Is “On exchange / Off exchange” terminology suitable for all kinds of trading venues?.....	24

Document History

Revision	Date	Revision Comments
1.0	26-Oct-2011	<ul style="list-style-type: none"> • First public draft for release
1.1	16-Jan-2012	<ul style="list-style-type: none"> • Minor correct to issue description Q6 in “Venue-Specific Issues”: changed “In rows 22 and 23” to “in two of the rows”. • Updated name of “MMT Initiative Trade Flag Mapping Guide” in “Additional Documentation”.
1.2	11-May-2012	<ul style="list-style-type: none"> • Added Q6 (Changes in Version 2.0 of the MMT Initiative Mapping Matrix) to the “General Issues” section.
1.3	15-May-2014	<ul style="list-style-type: none"> • Amended “Additional Documentation” section to include link to the MMT group on the FIX TC web site. • Updated wording in Q3 General Issues section to remove reference to Broker Crossing Networks. • Added questions 7, 8 and 9 to the General Issues section.
2.0	23-Nov-2016	<ul style="list-style-type: none"> • Completely revised to reflect existing and new questions that are or remain relevant to MMT v3.01.
2.01	12-Dec-2016	<ul style="list-style-type: none"> • Updated in response to MMT TC membership feedback.
2.02	19-Dec-2016	<ul style="list-style-type: none"> • Final version against MMT v3.01.
2.03	21-Feb-2018	<ul style="list-style-type: none"> • Encoding partial information • Flags mutual exclusivity further to ESMA Q&A update • Trade flagging for RFQ executions • On/Off exchange terminology
2.04	12-Dec-2018	<ul style="list-style-type: none"> • Pending (‘PNDG’) trade flagging
2.05	25-Feb-2019	<ul style="list-style-type: none"> • Give-up/in trade flagging
2.06	29-Nov-2019	<ul style="list-style-type: none"> • <i>Periodic Auction/Frequent Batch Auction trade flagging [New/Draft]</i>

Representations

Each question is represented with one of the following colour conventions, depending on whether or not the question has direct relevance to the MiFID II regulations (for example the application of a specific trade flag as stipulated within RTSs 1 or 2).

Q	A question that directly relates to some of the MiFID II regulatory text or the representation of ESMA mandated trade flags under RTS 1 or 2.
Q	A generic question about how to model a transaction in MMT.

1 Introduction

Market Model Typology (MMT) is a new trade type standard administered by the FIX Trading Community via the MMT Steering Committee and MMT Technical Committee working groups, membership of which includes representatives from regulated markets (RMs), multilateral trading facilities (MTFs), trade reporting venues including upcoming approved publication arrangements (APAs), sell side and buy side investment firms, and market data vendors.

MMT was founded in 2011 and has been built from a European market data perspective, but it has been designed to be equally applicable to markets operated in other regions. It fully encapsulates the trade flags mandated by the European Securities and Markets Authority (ESMA) within the Regulatory Technical Standards (RTSs) 1 and 2, for equities (and ETFs) and non-equities respectively within the Markets in Financial Instruments Directive II (MiFID II), which becomes law in member states of the European Economic Area (EEA) from January 3rd, 2018.

For more information on the structure and trade flag definitions for MMT, please reference the MMT Guide.

This document provides answers to some of the most commonly asked questions about MMT, raised within the membership of the MMT SC and MMT TC working groups as well as those that have been raised by users of MMT from outside of these working groups.

2 Glossary of Abbreviations

Revision	Revision Comments
ESMA	European Securities and Markets Authority, the umbrella organisation that encapsulates and collectively represents the regulatory authorities in each of the member states of the European Union (EU).
LIS	Large-in-Scale order, as defined by ESMA.
MMT	Market Model Typology trade type standard administered by the FIX Trading Community.
MTF	Multilateral Trading Facility, as defined by ESMA.
OTF	Organised Trading Facility, as defined by ESMA.
RM	Regulated Market, as defined by ESMA.
RTS	Regulatory Technical Standard produced by ESMA.
SI	Systematic Internaliser, as defined by ESMA.

3 General Topics

3.1 MMT Encoding Options

Q	The MMT v3.01 Matrix document shows three encoding options: an efficient encoding; an encoding with ESMA stipulations, and a FIX Protocol encoding. Which should I use?
A	<p>MMT supports two protocol neutral encoding options in order to cater for two competing use cases:</p> <ul style="list-style-type: none">• The need for efficient encoding on feeds that are designed to provide data to consumers as efficiently and expeditiously as possible.• The need to provide trade flags that match exactly the 4-character trade flags stipulated by ESMA for MiFID II regulated securities. <p>MMT can be encoded/represented via either of the two schemes. Consumers of MMT should be aware that either format may be published.</p> <p>MMT can also be encoding via the FIX Protocol using specific FIX tags and values, as prescribed in the documents that describe MMT v3.01 and the 'EP216 - MMT v3 Support' for 'FIX Trading Community/FIX 5.0 SP 2 - Extension Pack'.</p> <p>If the consumer of the MMT flags wishes to publish MMT with the 4-character flags stipulated by ESMA, but the original publisher of the MMT flags has used the efficient or FIX encoding of MMT to supply the trade flags, then the consumer should translate the efficient encoding into the MMT Display Code or the encoding with the ESMA stipulations, whichever is deemed to be most appropriate.</p>

3.2 MMT Display Code

Q	What is the purpose of the 'Display Code' in MMT? Why have this as well as the encoding options?
A	<p>While the MMT encoding formats are efficient for data transportation purposes, they are not necessarily intuitive to a human reader on a display-based market data service, for example. Consequently, each MMT value has a corresponding 'Display Code'.</p> <p>The purpose of the 'Display Code' is to provide a human readable representation of MMT that each market data vendor will use in common. This will mean that the same trade shows the same MMT display codes regardless of the market data vendor display-based solution. A market data vendor may also choose to use the 'Display Code' instead of the encoded representations of MMT on their own market data feed solutions.</p>

3.3 Reference Price and Large-in-Scale Order Executions

Q	How should 'reference price' and 'large-in-scale' (LIS) order executions be flagged in MMT?
A	<p>In original guidance from ESMA prior to drafting the MiFID II regulations, it was clear that both reference price and LIS hidden order executions should be flagged as a 'Dark trade' at MMT Level 3.1. However, the MMT TC agreed that there is a need to further differentiate the pre-trade environment that facilitates these executions.</p> <p>The LIS orders may interact with lit or iceberg orders on a Central Limit Order Book (CLOB), whereas mid-point or reference price dark orders interact only with equivalent orders on a dedicated or virtual dark book. The differentiation between the two types of books will be made at MMT Level 1 (Market Mechanism) as follows:</p> <ul style="list-style-type: none">• 'Dark Order Book' for mid-point or reference price dark order executions;• 'Central Limit Order Book' for LIS hidden order executions. <p>In both instances the 'Dark Trade' flag should be specified at MMT Level 3.1. Note however that RTS 1 and RTS 2 no longer explicitly mandate the flagging of dark transactions under MiFID II.</p>

3.4 Trade Type Inferences

Q	In order to identify some of the MMT trade flags on a market it may be necessary to infer them from other attributes or events on the execution venue data feed. For example, in order to differentiate an auction trade from a continuous trade one must also reference messages that inform of a trading phase change. How should the execution venue indicate this via the MMT mappings provided via the MMT Questionnaire?
A	The overwhelming preference is that the MMT trade flags are indicated explicitly on the data feed published by the execution venue. However, if this is not possible then the MMT trade flags should be specified as mappings from the bespoke trade flags to the equivalent MMT trade flags via the MMT Questionnaire document. If additional inferences are required on the basis of other message and/or field attributes, then these should be indicated in the MMT Questionnaire document so that the mappings to the MMT trade flags can be successfully implemented by consumers of the execution venue's data feed.

3.5 Data format and encoding options

Q MiFIR Art. 6 requiring to make transaction public as close to real-time as is technically possible. RTS 1 and RTS 2 require some overly long text strings for trade flags that appear hardly suitable for binary digital feeds. In this context how should trading venues and investment firms handle these conflicting requirements?

In addition point 103 of ESMA final report indicates that “no specific technical format, like XML, is required for the publication of data”.

A *Background*
MiFIR art. 6(1) / 20(1), complemented by RTS 1 and RTS 2, require to make transaction public as close to real-time as is technically possible. It’s worth mentioning that the wider public consumes market data via services provided by data vendors and not directly by market operators. Trading venues, market operators and investment firms operating a trading venue route towards data vendors substantial amount of data at high speed and using efficient encoding (i.e. format that is instrumental to disseminate enormous quantities of data at high speed, to limit the bandwidth consumption and keep network costs at affordable levels).

Data vendors usually operate so-called “feedhandler” that convert binary information into human readable data points that are made available to the wider public via the vendors’ display services.

Considering that the latest technology upgrade of SIP for Tape C [See *Rosenblatt Securities, Oct. 30 2016*] in the US last August triggered a 300% drop in the data dissemination latency to some 20 micro seconds it looks obviously unwelcome to force inefficient data format in feeds in Europe that will slow down the speed of data transmission.

conclusion

The intention of the regulation is to allow end-consumers to receive unambiguous human readable representation of the information including the explicit flags requested by ESMA. Within the efficient data transmission sequence, it is requested that Trading venues, market operators and investment firms operating a trading venue efficiently disseminate unambiguous content. They are however not bound by any regulatory data format constraint.

- c) MiFIR and RTS 1 and RTS 2 intend to enable data-users to consume highly reliable and comparable sets of data in a fragmented market. This includes the trade flags and details defined by ESMA in Annex I of RTS 1 and Annex II of RTS 2. It is therefore important to ensure that trading venues, market operators and APAs efficiently disseminate unambiguous content.

RTS 1 and 2 do not require the use of a specific technical format (such as XML) for transporting and making data public. Encoding data feeds, including using binary digital feeds, for transportation purposes is therefore possible as long as it contributes to keeping the speed of transmission as close to real time as possible. What matters for meeting the post-trade transparency requirements in MiFIR and RTS 1 and 2 is that post-trade data is published as soon as possible and that the details and flags specified in Annex II of RTS 1 and 2 are used.

Trading venues and APAs have to make sure that at the point of converting digital real-time feed into human readable data points the details and flags as specified in Annex I of RTS 1 and Annex II of RTS 2 are used.

4 Handling of incomplete MMT information

5 MMT Level 1: Market Mechanism

5.1 Central Limit Order Book vs. Periodic Auction

Q	Some execution venues operate a periodic auction via a CLOB. Which MMT Level 1 Market Mechanism value should be used, 'Central Limit Order Book' or 'Periodic Auction'?
A	<p>If the periodic auction is facilitated via a CLOB, which typically also means that the times of the 'uncrossings' are pre-determined, then the MMT Level 1 Market Mechanism should be set to 'Central Limit Order Book', together with the applicable MMT Level 2 Trading Mode for auctions.</p> <p>If the periodic auction is facilitated outside of a CLOB or via an order book that operates in parallel to a CLOB, then the MMT Level 1 Market Mechanism should be set to 'Periodic Auction', together with the applicable MMT Level 2 Trading Mode for auctions.</p>

Scenarios:

If a Central Limit Order Book is used to support the Periodic Auction, and that Central Limit Order Book does not support Continuous Trading, then the MMT Level 1 Market Mechanism should be Central Limit Order Book. The MMT Level 2 Trading Mode would be Scheduled Opening Auction, Scheduled Closing Auction, Scheduled Intraday Auction or Unscheduled Auction as appropriate and, for markets regulated by MiFID II, the 'periodic auction' pre-trade obligations would apply. **Example: low liquidity trading segments on regulated markets.**

If a dedicated order book is used to support the Periodic Auction, and/or the Periodic Auction operates in parallel to trading on a separate Central Limit Order Book, then the MMT Level 1 Market Mechanism should be specified as Periodic Auction. **Example: the Periodic Auction Book on BATS Europe.**

If a fixed income style of periodic auction is operated where there is no Central Limit Order Book, then the MMT Level 1 Market Mechanism should be specified as Periodic Auction. The MMT Level 2 Trading Mode would be Trade Reporting (On Exchange) or Trade Reporting (Off Exchange), as appropriate.

6 MMT Level 2: Trading Mode

6.1 Trading Mode Differentiations

Q Why does MMT stipulate the different trading modes or trading phases for execution venue transactions when this information isn't required by any regulations?

A While building MMT, the Trade Data Standards Working Group (TDSWG) and other representatives from the working groups within the FIX Trading Community and individual sell-side firms had identified the need to provide more granularity with respect to the trading phases in which trades had been executed, especially in terms of differentiating auction trade executions from continuous trading phase executions. It was also requested that auction phases be further differentiated by 'Scheduled Opening Auction', 'Scheduled Closing Auction', 'Scheduled Intraday Auction' and 'Unscheduled Auction'.

Where an execution venue is unable to provide these differentiations, a generic 'Undefined Auction' trading mode is also available in MMT. However, the aforementioned differentiations are much preferred.

MMT also has accommodations for transactions executed during 'At Market Close Trading' and 'Out of Main Session Trading' phases. The off-book or off-venue transactions are also differentiated via 'Trade Reporting (On-Exchange)', 'Trade

Reporting (Off-Exchange)' and 'Trade Reporting (Systematic Internaliser)'.

6.2 Applicability of the Trade Reporting (Systematic Internaliser) Trading Mode to non-MiFID II Transaction Reporting

Q For firms conducting business in an Systematic Internaliser capacity under MiFID II, what Trading Mode should apply to transactions executed on securities that are not regulated by MiFID II?

A To ensure consistency within the MMT trade type standard, it is recommended that firms who operate in an SI capacity should use the 'Trade Reporting (Systematic Internaliser)' trading mode even for transactions executed on securities that are not regulated by MiFID II.

7 MMT Level 3: Transaction Type

7.1 MMT Level 3.2: Mutual Exclusivity of Negotiated Trade Flags PRIC, NLIQ and OILQ

Q RTS 1 prescribes granular flagging of negotiated transactions. Are the three possible flags listed on table 4 of RTS 1, 'NLIQ', 'OILQ' and 'PRIC', mutually exclusive?

A The co-chairs of both the MMT SC and the MMT TC met with two representatives from ESMA in September 2016, and the representatives agreed with the MMT SC and MMT TC view that the flags are mutually exclusive.

According to MiFIR Article 4, competent authorities are able to waive the obligation for market operators and investment firms operating a trading venue to make public the information referred to in Article 3(1), for systems that formalise negotiated transactions. MiFIR Art. 4 (b) foresees three different constellations of negotiated transactions with different price formation constraints:

- (b) (i) price formation within lit book VWAS for liquid instruments (the required flag is 'NLIQ')
- (b) (ii) delta versus a suitable reference price set in advance by the market operator for illiquid instruments (the required flag is 'OILQ')
- (b) (iii) subject to conditions other than the current market price (the required flag is 'PRIC').

It is important to underline that trade flags 'NLIQ', 'OILQ' and 'PRIC', applicable to

negotiated transactions, are aimed at explaining the price formation process relevant for a specific transaction. The categorisation into liquid and illiquid securities is not the purpose of those three trade flags. This is the role of the static reference data master file run by ESMA.

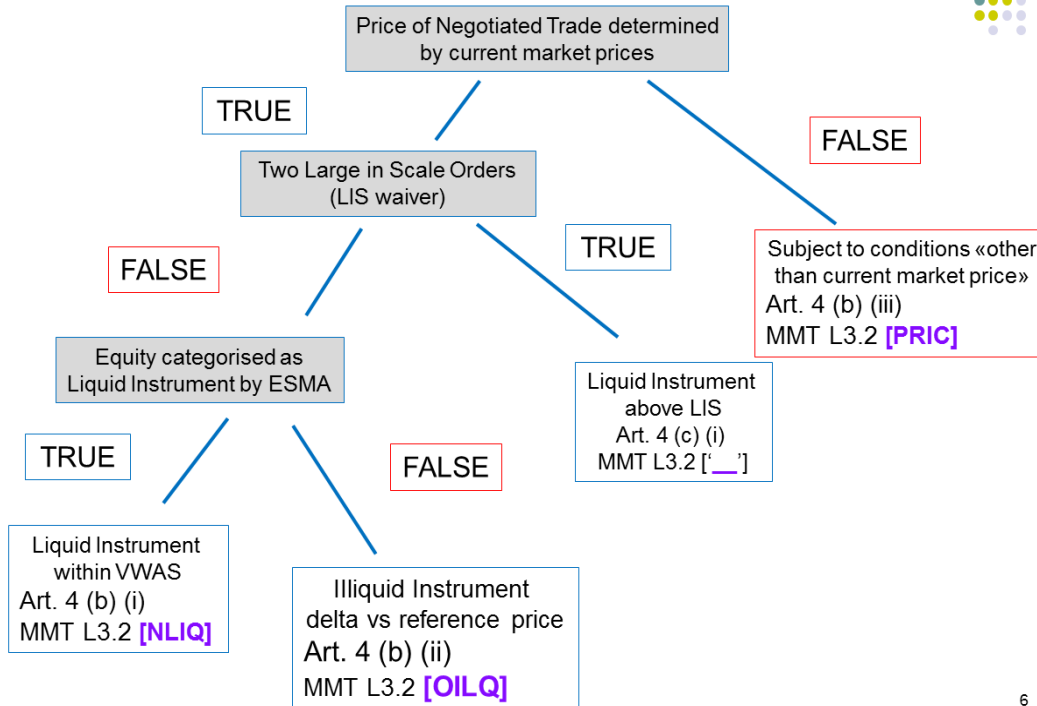
That being said, whatever the categorisation of a security by ESMA as either a liquid or an illiquid instrument, in the case of the exercise of an option or a give-up transaction, the trade message will only transport the 'PRIC' flag. All 3 flags 'NLIQ', 'OILQ' and 'PRIC' are consequently mutually exclusive.

The following process can be followed when evaluating which of the flags may be relevant when reporting the applicable waiver for the negotiated transaction:

- If the price of the negotiated trade has not been determined by current market prices, then the PRIC trade flag may be used.
- Otherwise, if the negotiated trade has been executed via two large in scale orders, whereby the LIS waiver can be applied, then no trade flag needs to be specified.
- Otherwise, if the negotiated trade has been executed on an equity that has been categorised by ESMA as being a liquid instrument, then the NLIQ trade flag may be used.
- Otherwise, the OILQ trade flag may be used.

This can be further illustrated in the following diagram:

Negotiated Trades and LIS waivers



6

The PRIC, NLIQ and OILQ trade flags relate to the following MMT Level 3.2 Negotiation Indicator or Pre-Trade Transparency Waiver values:

- 'Negotiated Trade in Liquid Financial Instruments' (NLIQ)
- 'Negotiated Trade in Illiquid Financial Instruments' (OILQ)
- 'Negotiated Trade Subject to Conditions Other Than The Current Market Price' (PRIC).

See ESMA Q+A, p.11, 03 October 2017 | ESMA70-872942901-35

- iii. Pre-trade waiver flags: 'RFPT', 'NLIQ', 'OILQ' and 'PRIC'. Those flags should only be used in case of the effective use of the reference price waiver or the negotiated transaction waiver. Transactions benefitting from a LIS waiver are not flagged as such. All pre-trade waivers flags are mutually exclusive. Pre-trade waiver flags can be combined with the flags under i), ii) and iv),

7.2 MMT Level 3.3: Agency Cross Trades

Q	Should the 'Agency Cross Trade' be used to flag coincidental crosses via an execution venue operated order book?
A	<p>The definition of an 'Agency Cross Trade' is:</p> <p>"Transactions where an investment firm has brought together clients' orders with the purchase and the sale conducted as one transaction and involving the same volume and price."</p> <p>This represents a deliberate cross and thus excludes coincidental crosses on a CLOB, as these do not represent a deliberate matching of the two orders by the investment firm.</p>

7.3 MMT Level 3.6: Special Dividend Trades

Q	Is it expected that 'Special Dividend Trade' will be reported for execution venue facilitated transactions, or would it only need to be reported for off-venue transactions?
A	<p>The 'Special Dividend Trade' is expected to be flagged wherever the circumstances for the execution differ from the standard circumstances. It should be flagged specifically for transactions that are either:</p> <ul style="list-style-type: none">• executed during the ex-dividend period where the dividend or other form of distribution accrues to the buyer instead of the seller; or• executed during the cum-dividend period where the dividend or other form of distribution accrues to the seller instead of the buyer. <p>It is assumed that non-standard circumstances would typically only apply to off-venue transactions. However, if an on-venue transaction meets either of these criteria then it</p>

should be flagged accordingly.

7.4 MMT Level 3.7: Off Book Automated

Q MMT v2.2 introduced a new MMT Level 3.7 to indicate whether an off-book transaction was automated or non-automated. Under what circumstances do either of these apply?

A The 'Off Book Automated' and 'Off Book Non-Automated' flags are intended to provide additional context to the circumstances that gave rise to an 'Off Book' transaction. The 'Off Book Automated' flag would apply when there has been a concurrence of two key attributes of the 'Off Book' transaction, both of which must be met:

- A computerised process makes the decision to simultaneously match and execute the two sides that comprise the trade; and
- At least one side of the trade represents liquidity with which an external client could have interacted.

If one or neither of these are met for the transaction, then a value of 'Off Book Non-Automated' should be used. Alternatively, if the transaction is not an 'Off Book' trade, or the automated vs. non-automated differentiations are not presently feasible, then a value of 'Unspecified or does not apply' should be used.

7.5 MMT Level 3.8: Use of Plain-Vanilla Trade

Q The MMT Level 3.8 options of 'Non-Price Forming Trade' (NPFT) and 'Trade not Contributing to the Price Discovery Process' (TCNP) do not apply, which suggests that a value of 'Plain-Vanilla Trade' (P) should be specified. Is this correct?

A Yes, this would be correct. A 'Plain Vanilla Trade' (P) is defined in MMT as being "an ordinary/standard trade for the specified MMT Level 1 Market Mechanism or MMT Level 2 Trading Mode".

It's therefore a trade typical of the defined market mechanism and trading mode, and for which the values of 'Non-Price Forming Trade' (NPFT) and 'Trade not Contributing to the Price Discovery Process' (TCNP) do not apply.

8 MMT Level 4: Publication Mode / Post Trade Deferral or Enrichment

8.1 MMT Level 4.1: Purpose of the Deferral for “Large in Scale”) Flag

Q	RTS 1 and RTS 2 prescribe specific flagging of transactions subject to publication deferral. What is the exact purpose of the ‘LRGS’ flag?
A	<p>According to RTS 1 art. 15 and RTS 2 art. 8, competent authorities may authorise the deferred publication of the details of transactions. Details of publication deferral provisions, in particular the admitted length of the deferral, are listed by individual asset classes in the annex tables of RTS 1 and RTS 2. Trade flagging requirements in case of publication deferral are more granular for non-equities (RTS 2).</p> <p>We must bear in mind that publication deferral is an option and not an obligation.</p> <p>At the point in time of their publication, trade messages subject to publication deferral are by nature indicating an execution price that is not aligned to the current market price (which is usually a lit book price). The trade flagging obligation, in case of publication deferral, aims at alerting the investor that this specific trade price deviates from the current market price for good reasons in accordance with RTS 1 and RTS 2.</p> <p>The ‘LRGS’ flag has to appear in a symmetric fashion for equities and non-equities for trades published in case of <u>the effective use of publication deferral</u>. The ‘LRGS’ flag is not a filter for all trades above the large in size threshold. Otherwise it would disseminate a misleading information for LIS trades published immediately and thus miss its primary goal of indicating misalignment versus the current market price.</p>

8.2 MMT Level 4.1: Mutual Exclusivity of Post-Trade Deferral Flags

Q	RTS 2 prescribes granular flagging of the transaction publication deferral reasons. Are the three possible flags listed on table 3 ‘LRGS’, ‘ILQD’ and ‘SIZE’ mutually exclusive?
A	<p>The co-chairs of both the MMT SC and the MMT TC met with two representatives from ESMA in September 2016, and the representatives agreed with the MMT SC and MMT TC view that the flags are mutually exclusive.</p> <p>Where the competent authority authorises the deferred publication of the details of transactions, RTS 2 requires an indication of which of the reasons listed in art. 8 (a), (b) and (c) had triggered the publication deferral.</p> <ul style="list-style-type: none">• 8 (a) The transaction is large in scale compared with the normal market size, as specified in Article 9 (the required flag is ‘LRGS’)• 8 (b) The transaction is in a financial instrument or a class of financial

instruments for which there is not a liquid market, as specified in accordance with the procedure set out in Article 13 (the required flag is 'ILQD')

- 8 (c) The transaction is executed between an investment firm dealing on own account other than on a matched principal basis, as per article 4(1)(38) of MiFID, and another counterparty and is above a size specific to the instrument, as specified in Article 10 (the required flag is 'SIZE').

The 'LRQS', 'ILQD' and 'SIZE' trade flags inform about the reasons of publication deferral. The categorisation into liquid and illiquid securities is not the purpose of the three trade flags. This is the role of the static reference data master file run by ESMA.

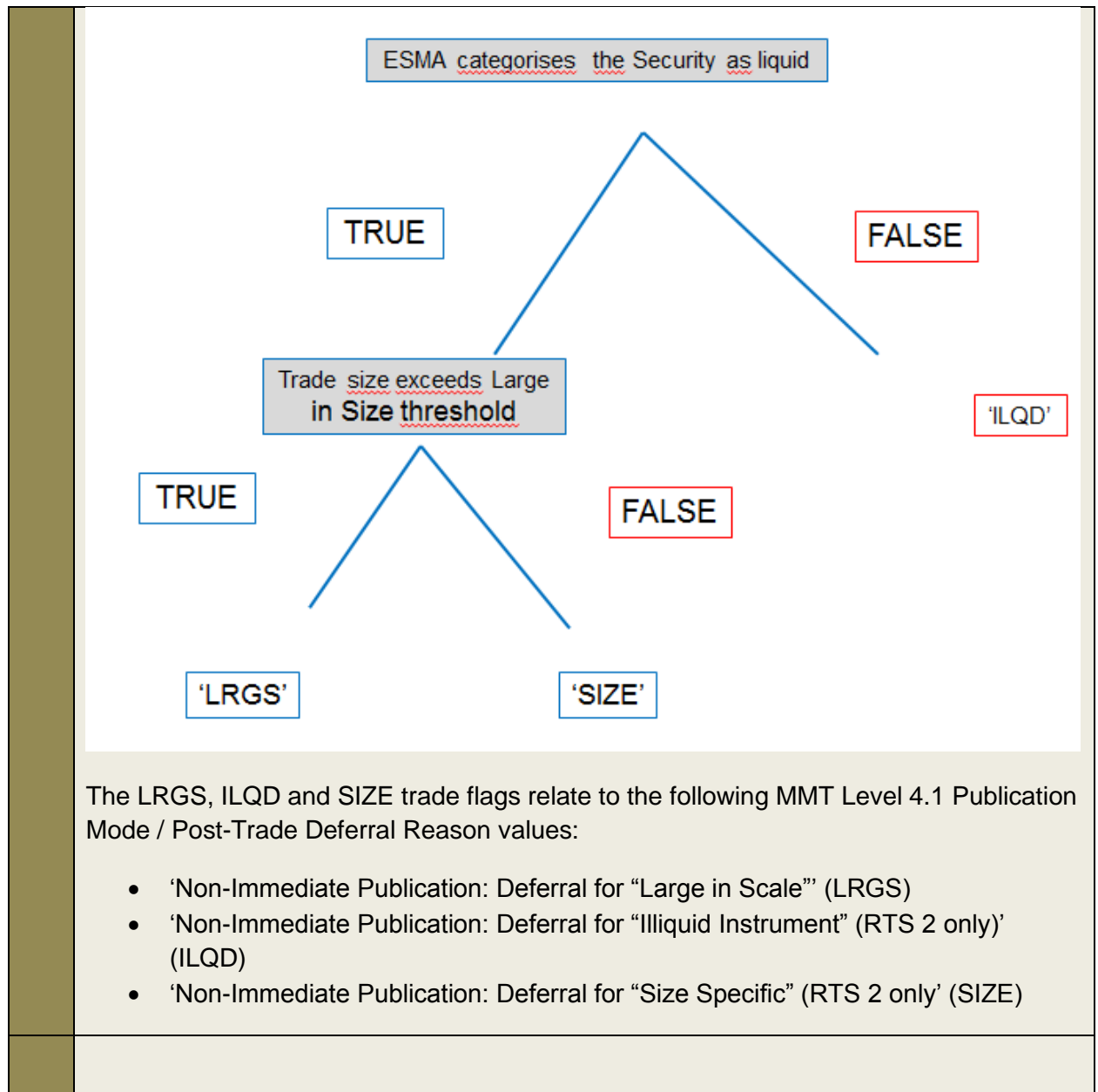
It is in addition worth mentioning that the publication deferral is an option and not an obligation. **In case a transaction meets any one (or more) of the criteria for deferral due to “large in scale”, “illiquid instrument”, or “size specific to instrument” but the publication is immediate, there will be no allocation of either the 'LRGS', 'ILQD' or 'SIZE' flag.** The trade flag indicates the effective use of the publication deferral and not the existence of the publication deferral option.

The trade flag provides an unambiguous indication about the prevailing reason why the deferred publication takes place. All three flags 'LRGS', 'ILQD' or 'SIZE' are consequently mutually exclusive.

The following process can be followed when evaluating which of the flags may be relevant when reporting the applicable publication deferral flag:

- If the security has been categorised by ESMA as being an illiquid instrument, then the ILQD trade flag may be used.
- Otherwise, if the trade size exceeds the Large in Size threshold, then the LRGS trade flag may be used.
- Otherwise, the SIZE trade flag may be used.

This can be further illustrated in the following diagram:



See ESMA Q+A
 ESMA70-872942901-35, p.11

Equity flags specified in Table 4 of Annex 1 of RTS 1

- i. Descriptive flags: 'BENC', 'ACTX', 'NPFT', 'TNCP' and 'SDIV'. They can be combined with each other, with the exception of ACTX which cannot be combined with NPFT, and with the flags under ii), iii), iv), v) and vi).
- ii. Post-trade flag: 'LRGS'. The application of the deferred publication is an option and not an obligation, therefore the 'LRGS' flag has to be used only in case of the effective use of the deferred publication. It can be applied alone or in combination with the flags under i), iii), iv), v) and vi)

9 Execution Venue Specific Topics

9.1 Euronext – ‘Agency Cross Trade’

9.1.1 Exception to the ‘Agency Cross Trade’ Rule

Q	Euronext do not flag a coincidental cross on their CLOB for equities and ETFs. However, Euronext does offer the possibility for a client to enter guaranteed cross trades (Rule 4402 of Euronext’s rule book: a transaction originating from buy and sell orders from the same member which does not interact with orders in the CLOB but whose price is constrained by prices of such orders).
A	An ‘Agency Cross Trade’ would not be regarded as occurring via the CLOB. However, Euronext will report guaranteed cross trades with an MMT Level 1 Market Mechanism of ‘Central Limit Order Book’ and an MMT Level 3.3 Agency Cross Trade Indicator of ‘Agency Cross Trade’.

9.1.2 Date and Timestamps for the MMT Mappings

Q	In the MMT v1 mappings, Euronext provided two entries for transactions published via the Euronext 242 message, one of which had a ‘Non-Immediate Publication’ while the other had an ‘Immediate Publication’ value at MMT Level 4 (or MMT Level 4.1 in MMT v3.01). How should a market data vendor distinguish the two?
A	It is possible to use the date and timestamps to differentiate the two. Euronext has added two extra columns to the MMT mappings to indicate the original date and time the trade was declared (“DateOriginalDecl” and “TimeOriginalDecl”), therefore enabling the consumer to determine that the trade report was delayed. The consumer should

compare the date and time the trade was declared and the time the message was received by the consumer. If the difference is greater than three minutes (180 seconds) then the trade should be identified as a 'Non-Immediate Publication', otherwise it should be identified as an 'Immediate Publication'.

9.2 Budapest Stock Exchange – Different trading modes

9.2.1 Time-based differentiation of different trading modes

Q When mapping their bespoke trade types to MMT v1, Budapest Stock Exchange had not provided mappings to the different trading modes at MMT Level 2. Instead, the Exchange recommended that the timestamp on the trade message be consulted to differentiate the different types of execution.

A For informational purposes, the Budapest Stock Exchange has added a field in the proprietary area of the MMT mappings for MMT v1 to include a timestamp method of differentiating between the different types of trade.

The four CLOB entries in the mappings will default to the majority case of trade reports, this being:

- MMT Level 1: Central Limit Order Book
- MMT Level 2: Continuous Trading
- MMT Level 3.1: Plain-Vanilla Trade
- MMT Level 3.2: No Negotiated Trade
- MMT Level 3.3: No Crossing Trade
- MMT Level 3.4: New Trade

9.2.2 'Off Book' Market Mechanism

Q In the MMT v1 mappings, the Budapest Stock Exchange provided a trade with an MMT Level 1 Market Mechanism of 'Off Book' and an MMT Level 2 Trading Mode of 'Continuous Trading', which seems illogical.

A These trades are considered by the Budapest Stock Exchange to be 'Off Book' because they are not executed on the CLOB. A separate order book is available for such orders, while the trades are included in the trading list. Negotiated deal orders can be entered continuously, parallel with the main trading session on the CLOB, and the negotiated deal orders are matched automatically in the trading system.

10 How to encode partial information?

Q Although FIX MMT encourages the delivery of the full range of MMT information, either as explicit code or as fixed/default value setting information in the specification documentation, we understand that trade report messages may transport incomplete information under certain circumstances. How should then the consumers of incomplete trade typology information such as APAs or vendors flag the missing piece of information in the MMT field(s)?

A The MMT Technical Committee recommends to refrain downstream consumers to make own educated guess on missing information, as this would lead to multiple diverging interpretations and flagging solutions for the same trade.

We recommend the use of the question mark character ["?"] for indicating the partial absence of MMT information

[See MMT Initiative Mapping Matrix 3.04 / MMT v3.04 Display Option / Row 141](#)

Character for Missing/unspecified MMT Level	ASCII decimal	ASCII hexadecimal
?	63	3F

11 How to encode concurring post trade publication deferral situation under the supplementary deferral regime?

Q In the supplementary deferral regime the full information about a trade is published in multiple sequences at different points in time. You'll find more information in ESMA RTS 2 and in ESMA Q +A on transparency topics published on Dec. 18 2017 (see ESMA70-872942901-35)

ESMA restricts the concurring usage of post-trade publication deferral flags (MMT L4.1: 'LRGS', 'ILQD', 'SIZE') with the supplementary deferral flags (MMTL4.2: 'LMTF', 'DATF', 'VOLO', 'FWAF', 'IDAF', 'VOLW') in the first publication sequence.

How should we properly encode the message for the first sequence in order to provide unambiguous information and comply with ESMA requirements (see point .iv hereafter)?

- ~~i), ii) and v).~~
- iv. Supplementary deferral flags: 'LMTF', 'DATF', 'VOLO', 'FWAF', 'IDAF', 'VOLW' and 'COAF'. These flags are mutually exclusive. They cannot be combined with ~~descriptive flags, post trade deferral flags or full detail flags~~ flags under i), ii), iii) and v). For components of a package transactions, only the supplementary deferrals providing for volume omission under Article 11(3)(a) and (b) of MiFIR should be used. In case a package transaction benefitted from a deferral, all components should use the applicable flags under ii) and iv) (except DATV, FWAF and IDAF) regardless of whether those components would have qualified for such a deferral if they had been traded outside a package.

A FIX MMT TC recommends the use of the non-specific publication deferral flag in field MMT L4.1 to indicate there is a publication deferral in the first sequence of a trade message published under the supplementary deferral regime ['1' for efficient use and 'NI' for display use]. This solution provides clarity and is compliant with ESMA Q&A provisions.

Level	Full Name	Encoding Options		Display Code	MiFID II Equivalencies or Utilisation			
		Efficient	...with ESMA Stipulations		Trade Flag	RTS 1 (equity)	RTS 2 (non-equity)	RTS 1 SI Use Only
4.1	PUBLICATION MODE / POST-TRADE DEFERRAL : REASON							
	Immediate Publication	"1"	"1"	nothing	n/a	x	x	x
	Non-Immediate Publication	"4"	"4"	"NI"	n/a	x	x	x
	Non-Immediate Publication: Deferral for "Large in Scale"	"2"	"LRGS"	"LRGS"	"LRGS"	✓	✓	x
	Non-Immediate Publication: Deferral for "Illiquid Instrument" (for RTS 2 only)	"3"	"ILQD"	"ILQD"	"ILQD"	x	✓	x
	Non-Immediate Publication: Deferral for "Size Specific" (for RTS 2 only)	"4"	"SIZE"	"SIZE"	"SIZE"	x	✓	x
	Non-Immediate Publication: Deferrals of "ILQD" and "SIZE" (for RTS 2 use only)	"5"	"ILQD,SIZE"	"ILQD" & "SIZE"	"ILQD" & "SIZE"	x	✓	x
	Non-Immediate Publication: Deferrals of "ILQD" and "LRGS" (for RTS 2 use only)	"6"	"ILQD,LRGS"	"ILQD" & "LRGS"	"ILQD" & "LRGS"	x	✓	x

1

12 RFQ trades and regulatory regime

12.1 How to flag a trade executed under “RFQ” market mechanism?

Q	A trade executed under a Request For Quote (RFQ) Market mechanism trade flagging solution is explicitly featured on MMT market model L1. What about proper flagging recommendation for L2?
A	Considering RFQ is a bilateral price finding mechanism with some manual sequence, the appropriate flagging is either Trade reporting (on exchange) or trade reporting (off exchange) at L2.

12.2 Is “On exchange / Off exchange” terminology suitable for all kinds of trading venues?

Q	<p>“On exchange” means that the trade reported and published does comply with the rules of the trading venue (in particular the pre-/post-trade transparency rules) that ultimately publishes the execution details. The trading venue is expected to have performed the relevant checks to enforce its rules.</p> <p>“Off exchange” means that the APA/venue that ultimately publishes the execution details has only a pass-through function and performs no action to check the data quality of the reported trade.</p> <p>Is the “On Exchange / Off Exchange” terminology also suitable for trading venues outside the Regulated Market space?</p>
A	The terminology “On Exchange / Off exchange” needs to be understood in a broader sense as it generically indicates whether the ultimate trading venue publishing the trade enforced some data quality rules or not. This terminology therefore applies to trades executed on any kind of organized market such as RM (so not specific to trades on

	RMs) MTF or OTF.

13 How can we deal with the insertion of an alphanumeric entry ('PNDG') into a numerical field (price field)?

Q	<p>If the final price of a transaction is not available, RTS 1 (see table 3, p. 28) and RTS 2 (see table 2 , p. 68) require to insert the flag 'PNDG' (for pending) into the Price field. ESMA however specifies that the data format for the price field should logically be numerical, either as {DECIMAL-18/13} in case the price is expressed in numeric format or as {DECIMAL-11/10} in case the price is expressed in percentage.</p> <p>From a data management best practices point of view it therefore looks inefficient to require an alphanumeric entry in a numerical field. Using "PNDG" in a numeric price field is likely to cause issues for the vast majority of actors in the trade lifecycle (investment firm, APA/trading venue, vendors and possibly other actors such as CCPs and CSDs).</p> <p>Vendors point out that receiving an alphanumeric value in a numerical field would make this information challenging to process.</p>
A	<p>The purpose of the 'PNDG' flag is to point out that additional price information will complement the current trade message at a later stage. The price field and the trade flag field are both available on each individual trade message. Inserting the 'PNDG' flag in the trade flag field is consequently a solution that supports transparency requirements raised in RTS 1 (see p. 28). When 'PNDG' trade flag is set, the price field will either contain '0' or any value that will be of indicative nature only. This solution is instrumental to address the challenge of shaping data fields supporting multiple formats.</p>

14 How should give-up/-in trades be flagged?

Q	<p>Complementing existing RTS 1 provisions, ESMA published an update of its Q&A on Transparency topics on Jan. 4 2019.</p> <p>Q&A on MiFID II and MiFIR transparency topics [ESMA70-872942901-35]</p> <p>Question 4 [Last update: 04/01/2019] <i>*new*</i></p> <p><i>When an executing broker executes a risk trade following the receipt of a request for market data (RFMD) from a client and then gives up that risk trade to another broker (e.g. a prime broker), how should this RFMD give-up be reported?</i></p> <p>Answer 4</p> <p>An RFMD give-up/give-in trade flow is characterised by being executed as a VWAP trade. As such, the trade should be defined as a transaction not contributing to the price discovery process as defined in Article (2)(a) of Commission Delegated Regulation 2017/587. Therefore it should be reported using 'XOFF' as the Venue of Execution field and using the 'TNCP' flag.</p>
A	<p>ESMA Q&A clarifies the way give-up/give-in trades need to be reported:</p> <ul style="list-style-type: none">- Give-up/give-in trades must be printed (Published) despite their potentially duplicative nature- MIC code: "XOFF"- MMT Trade Flag: L1['4' or 'OB'], L2['6' or 'OF'], L3.8 ['J' or 'TNCP'] <p>Existing FIX MMT data model v3.04 supports these latest ESMA clarification.</p>

15 How to flag Periodic/Frequent Batch auction trades?

Q Trades executed during periodic auctions (=“Frequent Batch Auction” referring to ESMA recent terminology) convey unambiguous MMT flag at L1 Market Mechanism. We however face diverging flags at L2 Trading Mode considering the various trading venues here after. While L1 is already unambiguous, the presence of diverging enumerators at L2 for the same purpose in the MMT string might trigger some unwelcome confusion.

As of October 2019 we find the following L2 Trading Mode flavours in use for the same type of executions originating from a Periodic Auction mechanism. As stated L1 Market Mechanism “5” or “PA” is already unambiguous for the identification of such trades.

Quick summary of known Periodic Auction/Frequent Batch Auctions of similar nature

TV Operator	L1 Market Mechanism	L2 Trading Mode	L2 Description
Cboe Equity Europe	[“5” or “PA”...]	[“I” or “IA”...]	Scheduled Intraday Auction
Nasdaq Nordic	[“5” or “PA...]	[“U” or “UA”..]	Unscheduled Auction
ITG Virtu POSIT	[“5” or “PA...]	[“U” or “UA”..]	Unscheduled Auction
UBS MTF	[“5” or “PA...]	[“1” or “AU”..]	Undefined Auction
GS Sigma X	[“5” or “PA...]	[“U” or “UA”..]	Unscheduled Auction

Status as of Nov. 2019

A Referring to already existing and fully validated FIX MMT v3.04 documentation (see *TAB MMT v3.04 with Definitions, row 39*), the conformant MMT best practices for trades originating from Periodic Auction/Frequent Batch Auction mechanism refer to “Unscheduled Auction” as L2 Trading Mode. The appropriate trade flagging is therefore:

- MMT L1 Market Mechanism: “5” [Efficient Encoding option] or “PA” [Display Code]
- MMT L2 Trading Mode: “U” [Efficient Encoding option] or “UA” [Display Code]

Unscheduled Auction	"U"	"U"	"UA"	n/a	x	x	x
<p>A trade, or an aggregation of trades, executed at the conclusion of an unscheduled auction call. An unscheduled auction call may be triggered by factors such as a volatility interruption, or to facilitate an orderly resumption of trading following a market halt. Alternatively the executions may be triggered by specific conditions having been satisfied on the order book, for example during Periodic Auctions without pre-determined uncrossing (execution) times during the defined hours of operation. Reference the definition for "Undefined Auction" above for a general definition of an auction call.</p>							
Continuous Trading	"Z"	"Z"	"CT"	n/a	x	x	x