FIX Market Model Typology (MMT)

Introduction to MMT v3.04
November 2017







Why do we have FIX MMT?

- Industry Requirement: A requirement for standardisation of trade data, which is a prerequisite for efficient data consolidation.
- MMT Mission: Proactive and rapid adoption of a de facto standard for trade reporting across all equity and non-equity markets, especially in Europe.
- Benefit: There are huge operational, including financial, gains by having the same trade data standards flow through financial information systems.
- Scope: Gain industry support and implementation for the standard. Work with the industry to develop clear and specific guidelines for the consistent implementation of trade reporting standards in all markets.
- Neutral Industry Group: Aimed towards delivering a standard trade flagging solution. Leading stakeholders in the market data value chain are active contributors to FIX MMT work (trading venues, reporting venues, data vendors, investment firms, standards organisation).





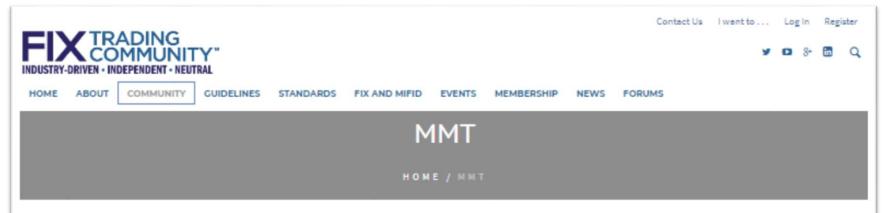
Mission Statement of FIX MMT

- FIX MMT has produced a MiFID II conformant trade flagging model.
- MMT already has broad acceptance among trading venues and data vendors (15 trading venues have already implemented MMT).
- FIX MMT engages in a constructive dialogue with regulator(s)
 and has obtained clarifications in order to make sure that the FIX
 MMT data model fulfills all trade flagging requirements for post-trade
 transparency purposes (RTS 1 and RTS 2).
- Cooperation with other FIX workstreams active in MiFID/MiFIR issues (the FIX Transparency Subgroup in particular).





MMT information available on the FIX website:



Market Model Typology

The MMT (Market Model Typology) Initiative is a collaborative effort established by a broad range of industry participants (trading/reporting venues, data vendors and buy/sell side participants). The initiative is committed to achieving a practical and common solution for standards on post-trade data across all asset classes subject to MiFID II. The initiative unites a variety of industry participants in the basic belief that we can and should act without any further delay to improve the consistency and comparability of data from different sources.

To achieve this goal, we have developed the Market Model Typology (MMT) project, which found its original inspiration in the 2010 CESR Technical Working Group recommendations. The latest MMT version delivers an efficient operational solution for fulfilling trade flagging requirements raised in MiFID II RTS 1 and RTS2. The model is available for immediate adoption and can be used by vendors and clients. In addition to the work on standards for RMs and MTFs, we continue to attract wide-ranging industry support for the standards and are working to expedite their broad implementation, notably to define OTC trading reporting rules.

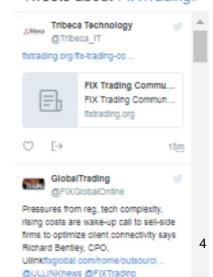
In order for the MMT standards to become more widely recognised and adopted, the MMT Steering Committee has voted to bring the initiative under the jurisdiction of the FIX Protocol Limited Trust (Trust). With its long-established and respected values and governance standards, the Trust will oversee the management and development of the standard.

If you have any questions regarding the MMT or would like to submit technical changes (please use the downloadable MMT Change Request submission form, see below), please email: mmt@fixtrading.org

MMT Steering Committee MMT Technical Committee

FIX on Twitter

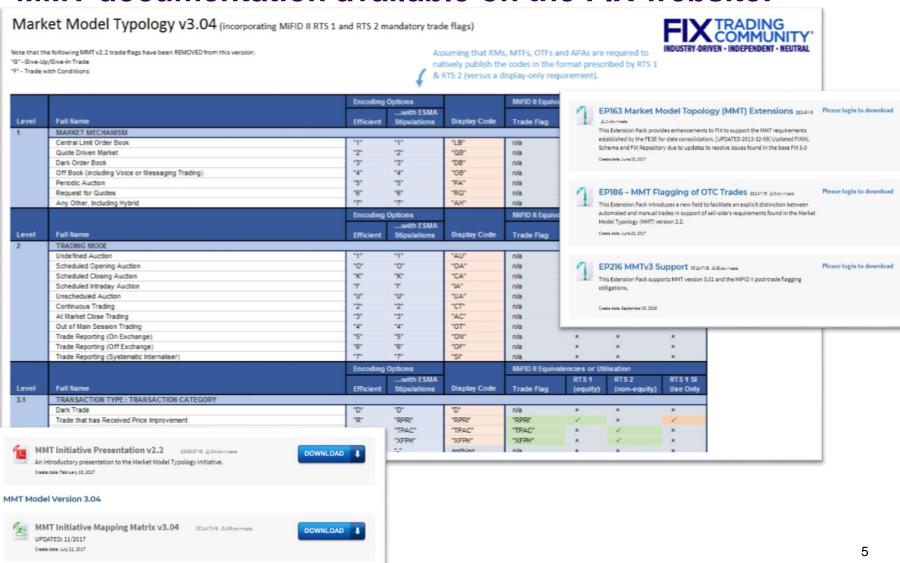
Tweets about FIXTradinge







MMT documentation available on the FIX website:







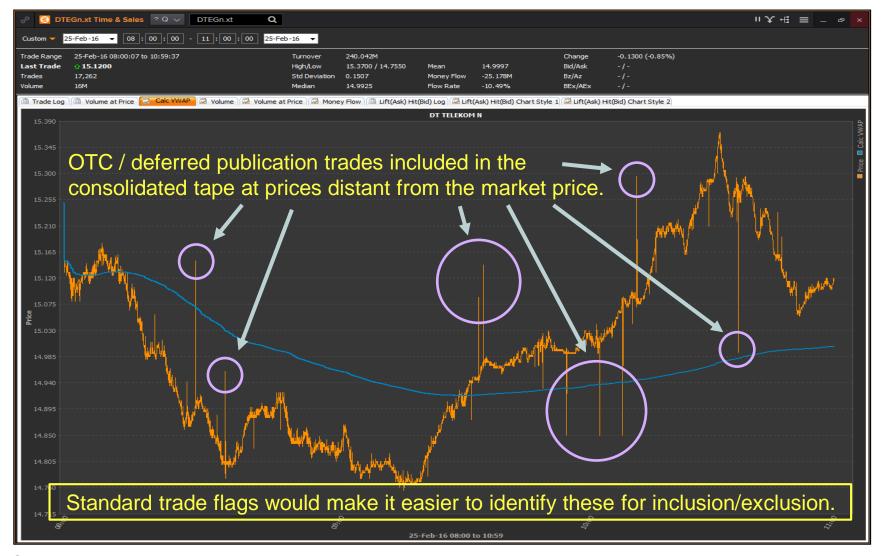
How to use the FIX MMT documentation

- MMT Matrix v3.04: overall data model and data hierarchy.
- MMT Guide: definitions instrumental for the proper interpretation and application of the MMT standard.
- MMT FAQ: leveraging questions raised by the industry with regards to MMT.





FIX MMT rationale – post trade transparency



Source: Thomson Reuters





Our goal:

- To update the Market Model Typology trade flags standard to v3.04, which accommodates the applicable MiFID II Regulatory Technical Standards (RTS's):
 - The trade flags stipulated within RTS 1 for equities and equitylike financial instruments.
 - The trade flags stipulated within RTS 2 for non-equity financial instruments.
- Bring structure to the RTS 1 & 2 trade flags.

ESMA RTS 1 Trade Flags



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	_	•	_	•
_	_		_	

IN	DOZIKI-DK	(IVEN • INDEPENDENT • NEUTRAL			
	Code	Meaning	Efficient Code	Code	Accommodation in the MMT Hierarchy
	BENC	Benchmark transactions flag	В	BENC	3.5 Transaction Type: Benchmark or Reference Price Indicator
	ACTX	Agency cross transactions flag	х	ACTX	3.3 Transaction Type: Agency Cross Trade Indicator
	NPFT	Non-price forming transactions flag	Т	NPFT	3.8 Transaction Type: Ordinary/ Standard Trades or Trades Outside Price Formation/Discovery Process
	TNCP	Transactions not contributing to the price discovery process for the purposes of Article 23 of Regulation (EU) No 600/2014 flag	J	TNCP	3.8 Transaction Type: Ordinary/ Standard Trades or Trades Outside Price Formation/Discovery Process
	SDIV	Special dividend transaction flag	E	SDIV	3.6 Transaction Type: Special Dividend Indicator
	LRGS	Post-trade large in scale transaction flag	2	LRGS	4.1 Publication Mode / Post-Trade Deferral: Reason
	RFPT	Reference price transaction flag	S	RFPT	3.5 Transaction Type: Benchmark or Reference Price Indicator
	NLIQ	Negotiated transaction in liquid financial instruments flag	1	NLIQ	3.2 Transaction Type: Negotiation Indicator or Pre-Trade Transparency Waiver
)	OILQ	Negotiated transaction in illiquid financial instruments flag	2	OILQ	3.2 Transaction Type: Negotiation Indicator or Pre-Trade Transparency Waiver
	PRIC	Negotiated transaction subject to conditions other than the current market price flag	3	PRIC	3.2 Transaction Type: Negotiation Indicator or Pre-Trade Transparency Waiver
	ALGO	Algorithmic transaction flag	Н	ALGO	3.9 Transaction Type: Algorithmic Indicator
	SIZE	Transaction above the standard market size flag	4	SIZE	4.1 Publication Mode / Post-Trade Deferral: Reason
	ILQD	Illiquid instrument transaction flag	3	ILQD	4.1 Publication Mode / Post-Trade Deferral: Reason
	RPRI	Transactions which have received price improvement flag	R	RPRI	3.1 Transaction Type: Transaction Category
	CANC	Cancellation flag	С	CANC	3.4 Transaction Type: Modification Indicator
	AMND	Amendment flag	Α	AMND	3.4 Transaction Type: Modification Indicator
	DUPL	Duplicative trade reports flag	1	DUPL	5 Duplicative Indicator

MMT Transaction Type Codes (other codes also exist)





The core RTS 2 trade flags

Code	Meaning	Efficient Code	Code	Accommodation in the MMT Hierarchy
BENC	Benchmark transactions flag	В	BENC	3.5 Transaction Type: Benchmark or Reference Price Indicator
ACTX	Agency cross transactions flag	X	ACTX	3.3 Transaction Type: Agency Cross Trade Indicator
NPFT	Non-price forming transactions flag	Т	NPFT	3.8 Transaction Type: Ordinary/ Standard Trades or Trades Outside Price Formation/Discovery Process
LRGS	Post-trade large in scale transaction flag	2	LRGS	4.1 Publication Mode / Post-Trade Deferral: Reason
SIZE	Transaction above the standard market size flag	4	SIZE	4.1 Publication Mode / Post-Trade Deferral: Reason
ILQD	Illiquid instrument transaction flag	3	ILQD	4.1 Publication Mode / Post-Trade Deferral: Reason
CANC	Cancellation flag	С	CANC	3.4 Transaction Type: Modification Indicator
AMND	Amendment flag	Α	AMND	3.4 Transaction Type: Modification Indicator
TPAC	Package transaction flag	Z	TPAC	3.1 Transaction Type: Transaction Category
XFPH	Exchange for physicals transaction flag	Y	XFPH	3.1 Transaction Type: Transaction Category

ESMA RTS 2 Trade Flags

MMT Transaction Type Codes (other codes also exist *)

TY[™] RTS 2 (non-equities) → MMT v3.04



The RTS 2 trade flags that indicate the application of a post-trade deferral 'type'

Code	Meaning	Efficient Code	Code	Accommodation in the MMT Hierarchy
LMTF	Limited details flag	1	LMTF	4.2 Post-Trade Deferral: Type
DATF	Daily aggregated transaction flag	2	DATF	4.2 Post-Trade Deferral: Type
VOLO	Volume omission flag	3	VOLO	4.2 Post-Trade Deferral: Type
FWAF	Four weeks aggregation flag	4	FWAF	4.2 Post-Trade Deferral: Type
IDAF	Indefinite aggregation flag	5	IDAF	4.2 Post-Trade Deferral: Type
VOLW	Volume omission flag	6	VOLW	4.2 Post-Trade Deferral: Type

ESMA RTS 2 Trade Flags

MMT Transaction Type Codes (other codes also exist *)





The RTS 2 trade flags that indicate the subsequent provision of 'full details' following an earlier application of a post-trade deferral 'type'

Code	Meaning	Efficient Code	Code	Accommodation in the MMT Hierarchy
FULF	Full details of Earlier "Limited Details Trade (LMTF)"	7	FULF	4.2 Post-Trade Enrichment: Type
FULA	Full details of Earlier "Daily Aggregated Trade (DATF)"	8	FULA	4.2 Post-Trade Enrichment: Type
FULV	Full details of Earlier "Volume Omission Trade (VOLO)"	9	FULV	4.2 Post-Trade Enrichment: Type
FULJ	Full details of Earlier "Four Weeks Aggregation Trade (FWAF)"	V	FULJ	4.2 Post-Trade Enrichment: Type
COAF	Full Details in Aggregated Form of Earlier "Volume Omission Trade, Eligible for Subsequent Enrichment in Aggregated Form (VOLW)"	w	COAF	4.2 Post-Trade Enrichment: Type

ESMA RTS 2 Trade Flags

MMT Transaction Type Codes (other codes also exist *)





MMT v3.04 hierarchical model (relative to MMT v2.2)

- Market Mechanism (extended or amended)
- 2. Trading Mode
- 3. Transaction Type: *(extended or amended)*
 - 1. Transaction Category (extended or amended)
 - 2. Negotiation Indicator (extended or amended)
 - 3. Agency Cross Indicator
 - Modification Indicator
 - Benchmark or Reference Price Indicator (extended or amended)
 - 6. Special Dividend Indicator
 - Off Book Automated Indicator
 - 8. Contribution to Price Formation or the Price Discovery Process (new)
 - 9. Algorithmic Indicator (new)
- 4. Publication Mode / Post-Trade Deferral (extended or amended)
 - 1. Publication Mode / Post-Trade Deferral: Reason (extended or amended)
 - 2. Post-Trade Deferral or Enrichment Type (new)
- 5. Duplicative Indicator (new)





Display representations of MMT

 OPTION 1: concatenation of the 'physical' or 'efficient' codes at each MMT Level.

OPTION 2 : comma-separated MMT 'display' codes.





Example from SIX Swiss Exchange MDDX data feed message

On-book opening trade:

```
0: 54 52 00 64 00 00 03 0a 00 00 05 00 00 01 02 TR.d.....
                                                                      MessageName = Trade Type = TR
10: 00 05 5c 6d ba c2 37 c6 43 48 30 30 30 35 37 39 ..\m..7.CH000579
                                                                      Version = 100
20: 35 36 36 38 43 48 46 58 53 57 58 00 05 5c 6d ba 5668CHFXSWX..\m.
                                                                      Subtopic = PostTrade, Auction Topic=768
30: c1 b1 8f 30 30 30 33 31 44 36 55 48 31 50 30 30 ...00031D6UH1P00
                                                                      Package = 5
40: 30 31 54 00 05 5c 6d ba c1 b1 8f 58 53 57 58 00 01T..\m....XSWX.
                                                                      Flags = Delta.Single
50: 00 00 00 00 0e 09 c0 4d 00 00 02 66 00 00 00 00 ......M...f....
                                                                      SendTime = 20171026-07:00:38.034374
60: 00 00 00 00 00 20 00 31 4f 2d 2d 2d 2d 2d 2d ..... .10------
                                                                      Isin = CH0005795668
70: 50 48 2d 2d 2d
                                                                      Currencv = CHF
                                                                      Exchange = XSWX
                                                                      ExecutionTime = 20171026-
                                                                      07:00:38.000015
                                                                      TradeId = 00031D6UH1P0001T
                                                                      PublishTime = 20171026-07:00:38.000015
                                                                      PublicationVenue = XSWX
                                                                      Price = 0.920000
                                                                      PriceNotation = M
                                                                      Size = 614
                                                                      NotionalAmount = 0.000000
                                                                      NostroCross = 0
                                                                      TradeToBeCleared =
                                                                      SpecialPrice = 0
                                                                      MMT flags = 10-----PH---
                                                                      MarketMechanism = 1 LB
                                                                      TradingMode = 0 OA
                                                                      TransactionCategory = -
                                                                      NegotiationIndicatorOrWaiver = -
                                                                      AgencyCrossTradeIndicator = -
                                                                      ModificationIndicator = -
                                                                      BenchmarkOrReferencePriceIndicator
                                                                      SpecialDividendIndicator = -
                                                                      OffBookAutomatedIndicator = -
                                                                      OrdinaryOrOutsidePriceFormation = PP
                                                                      AlgorithmicIndicator = H ALGO
                                                                      PublicationMode = -
                                                                      PostTradeDeferralType = -
                                                                      DuplicativeIndicator = -
```

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Example representation of MMT display codes on a vendor terminal





Source: Bloomberg LP





Pop-up hint that briefly translates the MMT display codes for the selected trade

DB,CT,D	2/23/16	09:51:49
OB,ON,P,N	2/23/16	09:51:47
LB,CT,P	Condition Code: Off Book (OB) Condition Code: Trade Reporting	(On Eychanga) (ON) 50:34
LB,CT,P	Condition Code: Plain-Vanilla Trad	de (P) 09: 50:34
LB,CT,P	Condition Code: Negotiated Trade	^(N) 09:49:46
LB,CT,P	Click to display condition code de Right-click for more options.	efinitions. 09: 49:45
LB,CT,P	2/23/16	09:49:45
LB,CT,P	2/23/16	09:49:44
OB,ON,P,N	2/23/16	09:49:36
LB,CT,P	2/23/16	09:49:35

Source: Bloomberg LP





1. Market Mechanism

Efficient Code	Display Code	Meaning
1	LB	Central Limit Order Book (CLOB)
2	QB	Quote Driven Market
3	DB	Dark Order Book
4	ОВ	Off Book New
5	PA	Periodic Auction
6	RQ	Request for Quotes
7	AH	Any Other, Including Hybrid

The codes above are mutually exclusive (only one code will apply).





2. Trading Mode

Efficient Code	Display Code	Meaning
1	AU	Undefined Auction
0	OA	Scheduled Opening Auction
K	CA	Scheduled Closing Auction
1	IA	Scheduled Intraday Auction
U	UA	Unscheduled Auction
2	CT	Continuous Trading
3	AC	At Market Close Trading
4	OT	Out of Main Session Trading
5	ON	Trade Reporting (On Exchange)
6	OF	Trade Reporting (Off Exchange)
7	SI	Trade Reporting (Systematic Internaliser)

The codes above are mutually exclusive (only one code will apply).





3.1. Transaction Category

Efficient Code	Display Code	Meaning	
D	D	Dark Trade	
R	RPRI	Trade that has Received Price Improvement	
Z	TPAC	Package Trade (excluding Exchange for Physicals)	/
Υ	XFPH	Exchange for Physicals Trade	
-	nothing	None apply (a standard trade for the Market Mechanism and Trading Mode)	

New

The codes above <u>are understood by the MMT SC & TC</u> to be mutually exclusive (only one code will apply).





3.2. Negotiation Indicator or Pre-Trade Transparency Waiver

Efficient Code	Display Code	Meaning
N	N	Negotiated Trade
1	NLIQ	Negotiated Trade in Liquid Financial Instruments
2	OILQ	Negotiated Trade in Illiquid Financial Instruments
3	PRIC	Negotiated Trade Subject to Conditions Other Than The Current Market Price
-		No Negotiated Trade
4	ILQD	Pre-Trade Transparency Waiver for Illiquid Instrument on an SI (for RTS 1 only)
5	SIZE	Pre-Trade Transparency Waiver for Above Standard Market Size on an SI (for RTS 1 only)
6	ILQD,SIZE	Pre-Trade Transparency Waivers of ILQD and SIZE (for RTS 1 only)

New

The codes above <u>are considered by the MMT TC</u> to be mutually exclusive (only one code will apply).





3.2. Negotiation Indicator or Pre-Trade Transparency Waiver

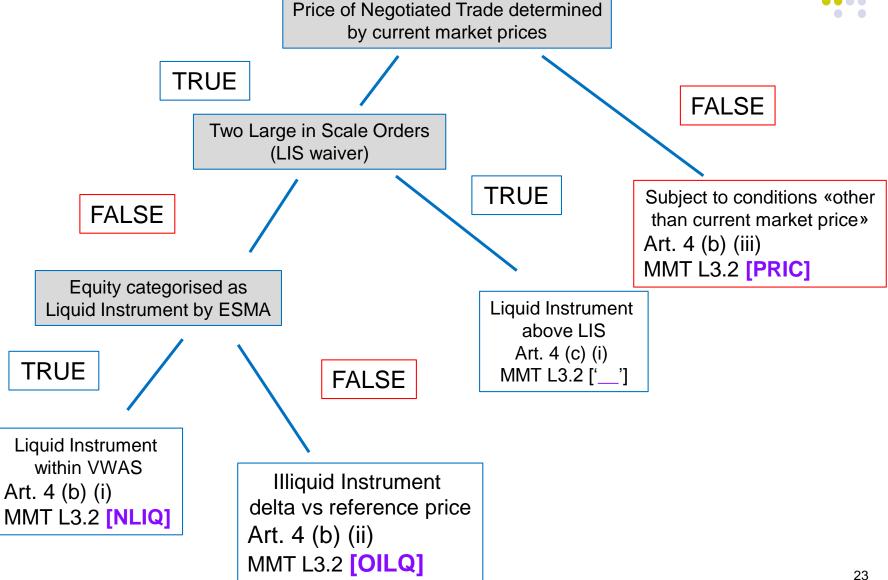
Efficient Code	Display Code	Meaning
N	N	Negotiated Trade
1	Most indu	ustry experts – including the MMT SC & TC – consider
2	"ILQD,SI	ZE" to be an invalid combination of RTS 1 trade flags.
3	The cor	nbination has been added to the model to give APAs
		to adopt MMT in the event that one of their contributors ses to attach both of the flags to their trade report.
4	ILQU	on an SI (for RTS 1 only)
5	SIZE	Pre-Trade Transparency Waiver for Above Standard Market Size on an SI (for RTS 1 only)
6	ILQD,SIZE	Pre-Trade Transparency Waivers of ILQD and SIZE (for RTS 1 only)

The codes above <u>are considered by the MMT TC</u> to be mutually exclusive (only one code will apply).



Negotiated Trades and LIS waivers









3.3. Agency Cross Indicator

Efficient Code	Display Code	Meaning
X	ACTX	Agency Cross Trade
-		No Agency Cross Trade
		Changed

The codes above are mutually exclusive (only one code will apply).





3.4. Modification Indicator

Efficient Code	Display Code	Meaning
C	CANC	Trade Cancellation
Α	AMND	Trade Amendment
-		New Trade
		Changed

The codes above are mutually exclusive (only one code will apply).





3.5. Benchmark or Reference Price Indicator

Efficient Code	Display Code	Meaning	Changed		
В	BENC	Benchmark Tra	ide		
S	RFPT	Reference Pric	e Trade		
-		No Benchmark	or Reference	Price Trade	
					New

The codes above <u>are considered by the MMT TC</u> to be mutually exclusive (only one code will apply).



3.8. Ordinary/Standard Trades or Trades Outside Price Formation/Discovery Process

	Efficient Code	Display Code	Meaning Relocated
	Р	Р	Plain-Vanilla Trade
	Т	NPFT	Non-Price Forming Trade
	J	TNCP	Trade not Contributing to the Price Discovery Process
/	N	PNDG	Price is Currently Not Available but Pending

New

The codes above <u>are considered by the MMT TC</u> to be mutually exclusive (only one code will apply).





3.9. Algorithmic Indicator

Efficient Code	Display Code	Meaning
Н	ALGO	Algorithmic Trade
-		No Algorithmic Trade

New

The codes above are mutually exclusive (only one code will apply).





4.1 Publication Mode / Post-Trade Deferral: Reason

Efficient Code	Display Code	Meaning
-		Immediate Publication
1	NI	Non-Immediate Publication
2	LRGS	Non-Immediate Publication: Deferral for "Large in Scale"
3	ILQD	Non-Immediate Publication: Deferral for "Illiquid Instrument" (for RTS 2 use only)
4	SIZE	Non-Immediate Publication: Deferral for "Size Specific" (for RTS 2 use only)
5	ILQD,SIZE	Non-Immediate Publication: Deferrals of "ILQD" and "SIZE" (for RTS 2 use only)
6	ILQD,LRGS	Non-Immediate Publication: Deferrals of "ILQD" and "LRGS" (for RTS 2 use only)

New

The codes above <u>are considered by the MMT TC</u> to be mutually exclusive (only one code will apply).





4.1 Publication Mode / Post-Trade Deferral: Reason

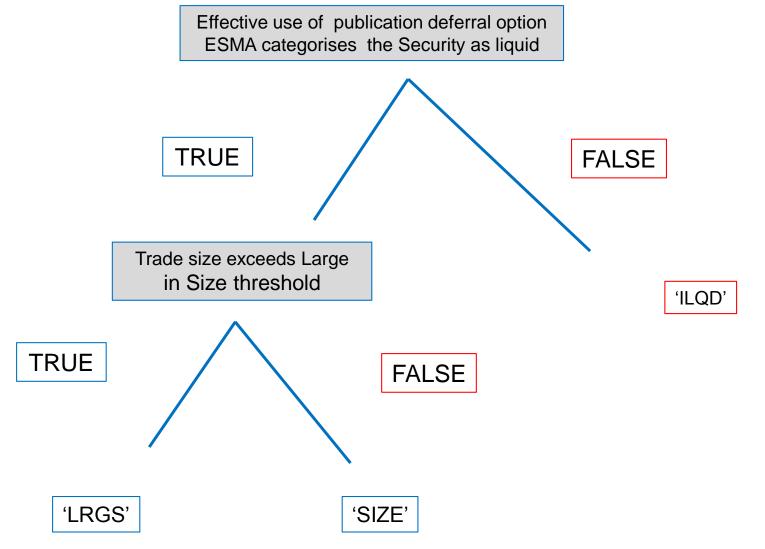
Efficient Code	Display Code	Most industry experts – including the MMT SC & TC – consider	
-		"ILQD,SIZE" and "ILQD,LRGS" to be an invalid combination o RTS 2 trade flags.	
1	NI		
2	LRGS	They have been added to the model to give APAs confidence to adopt MMT in the event that one of their contributors	
3	ILQD	chooses to attach both of the flags to their trade report.	
4	SIZE	Non-Immediate Publication: Deferral for "Size Specific" (for RTS 2 use only)	
5	ILQD,SIZE	Non-Immediate Publication: Deferrals of "ILQD" and "SIZE" (for RTS 2 use only)	
6	ILQD,LRGS	Non-Immediate Publication: Deferrals of "ILQD" and "LRGS" (for RTS 2 use only)	

The codes above <u>are considered by the MMT TC</u> to be mutually exclusive (only one code will apply).



Publication deferral flag

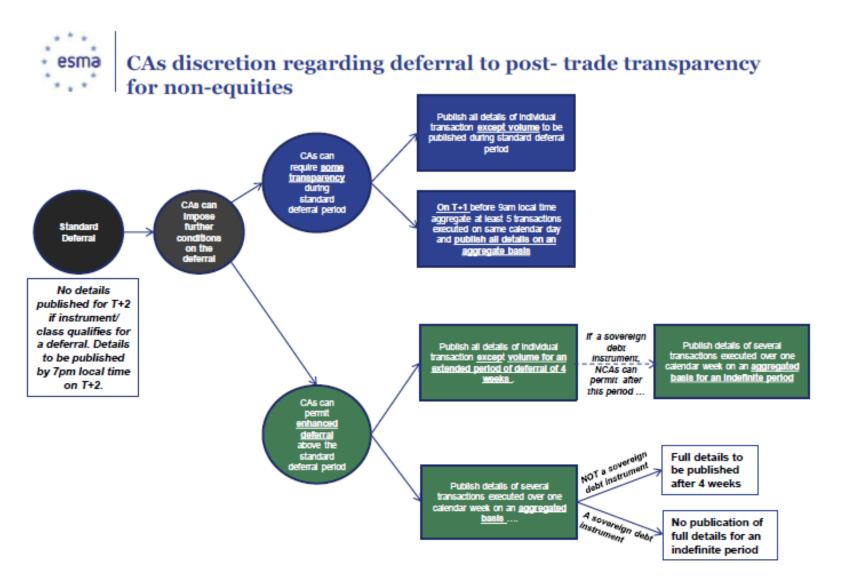








Supplementary deferral regime (Appendix II)







4.2 Post-Trade Deferral or Enrichment Type

Efficient Code	Display Code	Meaning
1	LMTF	Limited Details Trade
2	DATF	Daily Aggregated Trade
3	VOLO	Volume Omission Trade
4	FWAF	Four Weeks Aggregation Trade
5	IDAF	Indefinite Aggregation Trade
6	VOLW	Volume Omission Trade, Eligible for Subsequent Enrichment in Aggregated Form

...continued on the next slide

New

The codes above – and on the next slide - <u>are understood by the MMT SC & TC</u> to be mutually exclusive (only one code will apply).





4.2 Post-Trade Deferral or Enrichment Type

...continued from the previous slide

Physical Code	Display Code	Meaning
7	FULF	Full Details of Earlier "Limited Details Trade"
8	FULA	Full Details of Earlier "Daily Aggregated Trade"
9	FULV	Full Details of Earlier "Volume Omission Trade"
V	FULJ	Full Details of Earlier "Four Weeks Aggregation Trade"
W	COAF	Full Details of Earlier "Volume Omission Trade, Eligible for Subsequent Enrichment in Aggregated Form"
-		Not Applicable / No Relevant Enrichment Type

New

The codes above – and on the previous slide - are understood by the MMT SC & TC to be mutually exclusive (only one code will apply). 34





What you should remember about FIX MMT

- FIX MMT delivers an operational solution for fulfilling trade flagging regulatory requirements raised by ESMA
- FIX MMT is an off-the-shelf collaborative industry solution and can be freely used without any licensing constraints
- The MMT Technical Committee is happy to provide assistance; please submit your questions to:

mmt@fixtrading.org