#FIXEMEA2023

FIX TRADING COMMUNITY
– Market Model Typology (MMT)

Revised Data Standard FIX MMT v4.0

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WHAT IS THE RATIONALE FOR USING FIX MMT?

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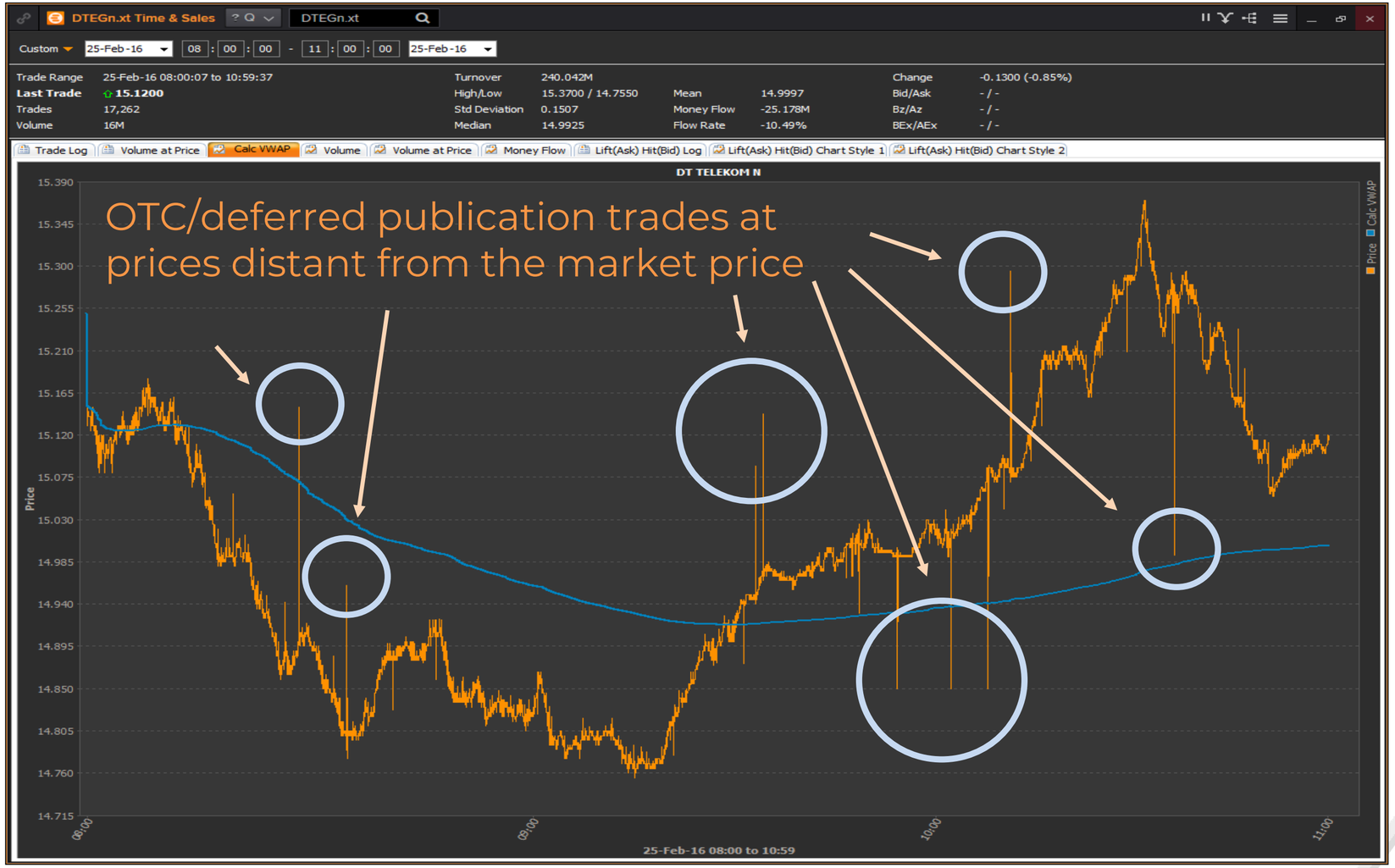
Improving post-trade transparency



Source: Refinitiv

Sensitivity: C2 Internal

Why do we have FIX MMT?

- **Purpose:** MMT is an efficient operational solution for fulfilling trade flagging, incl. respective regulatory requirements.

  It became a de facto standard for trade reporting across all equity and part of non-equity markets, predominantly in Europe.

- **Benefits:** MMT delivers unambiguous post trade transparency information, that is created at the source, and which may flow (e.g. STP) along the full market data value chain.

  MMT supports fully electronic processing of consistently flagged data points without the need for local reinterpretation/mapping of the same events across different sources. It improves data quality and reduces cost.

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Post-trade transparency typically informs about …

- the **validity of the transaction information** (e.g. a cancellation).
- the **trading venue** the execution took place on.
- the type of **market mechanism** used to perform liquidity pooling.
- the type of interaction between the buyer(s) and seller(s), and if it was of a **bilateral or multilateral** nature.
- the level of **pre-trade transparency** which was available before the execution.
- the level of **timestamping** accuracy is available for determining the exact sequence of executions.
- the **immediacy or deferral of the trade publication**.

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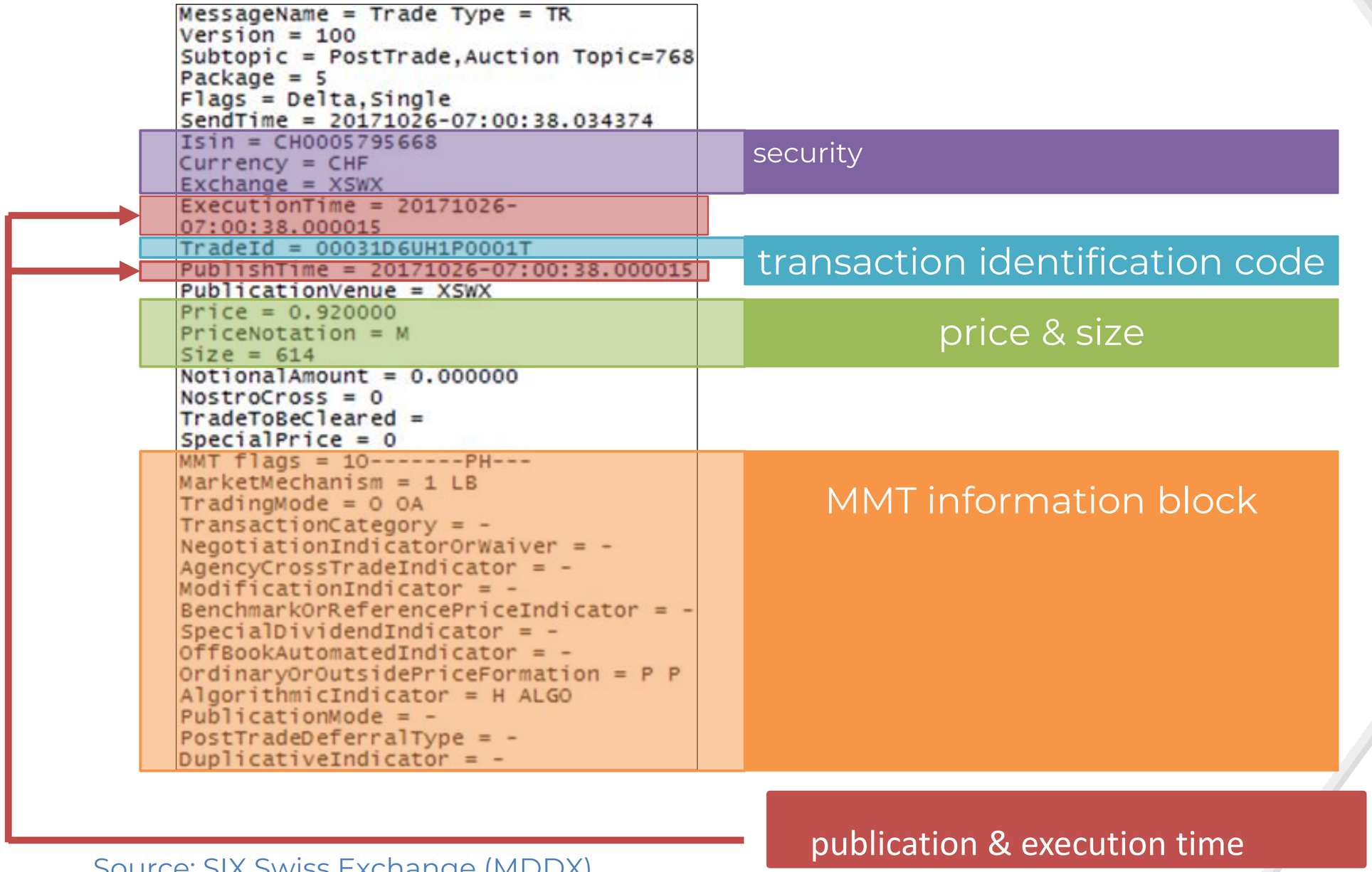
Components of post-trade transparency



Source: SIX Swiss Exchange (MDDX)

Sensitivity: C2 Internal

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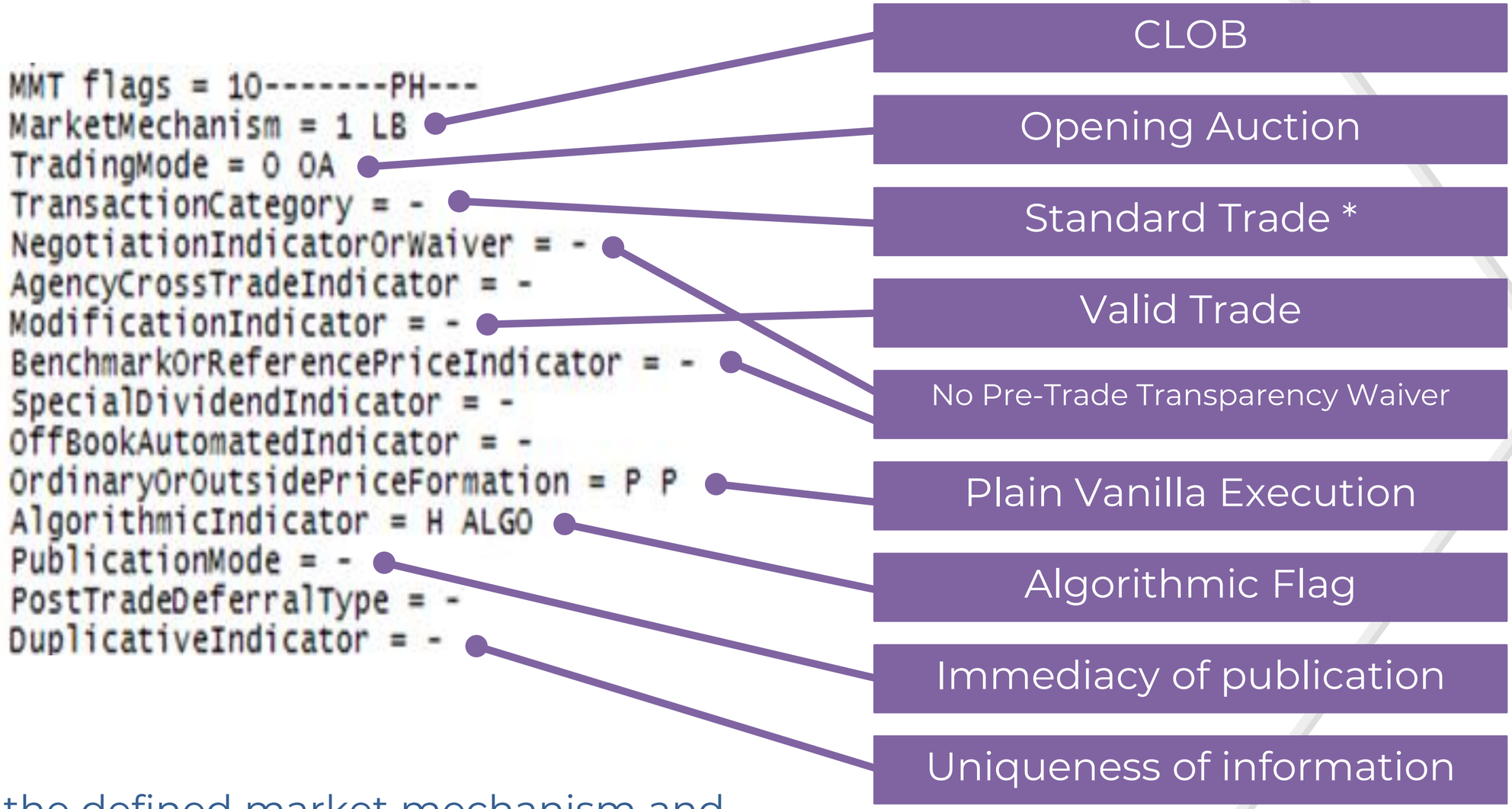
MMT Components



* for the defined market mechanism and trading mode

Source: SIX Swiss Exchange (MDDX)

Sensitivity: C2 Internal

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WHO HAS ADOPTED MMT?

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Stakeholders that have adopted MMT

AQUIS EXCHANGE

Bloomberg

Cboe

DEUTSCHE BÖRSE GROUP

EURONEXT

ION MARKETS

London Stock Exchange

Nasdaq

REFINITIV

SIX

BME BOLSAS Y MERCADOS ESPAÑOLES a SIX company

Turquoise

UBS

wiener boerse

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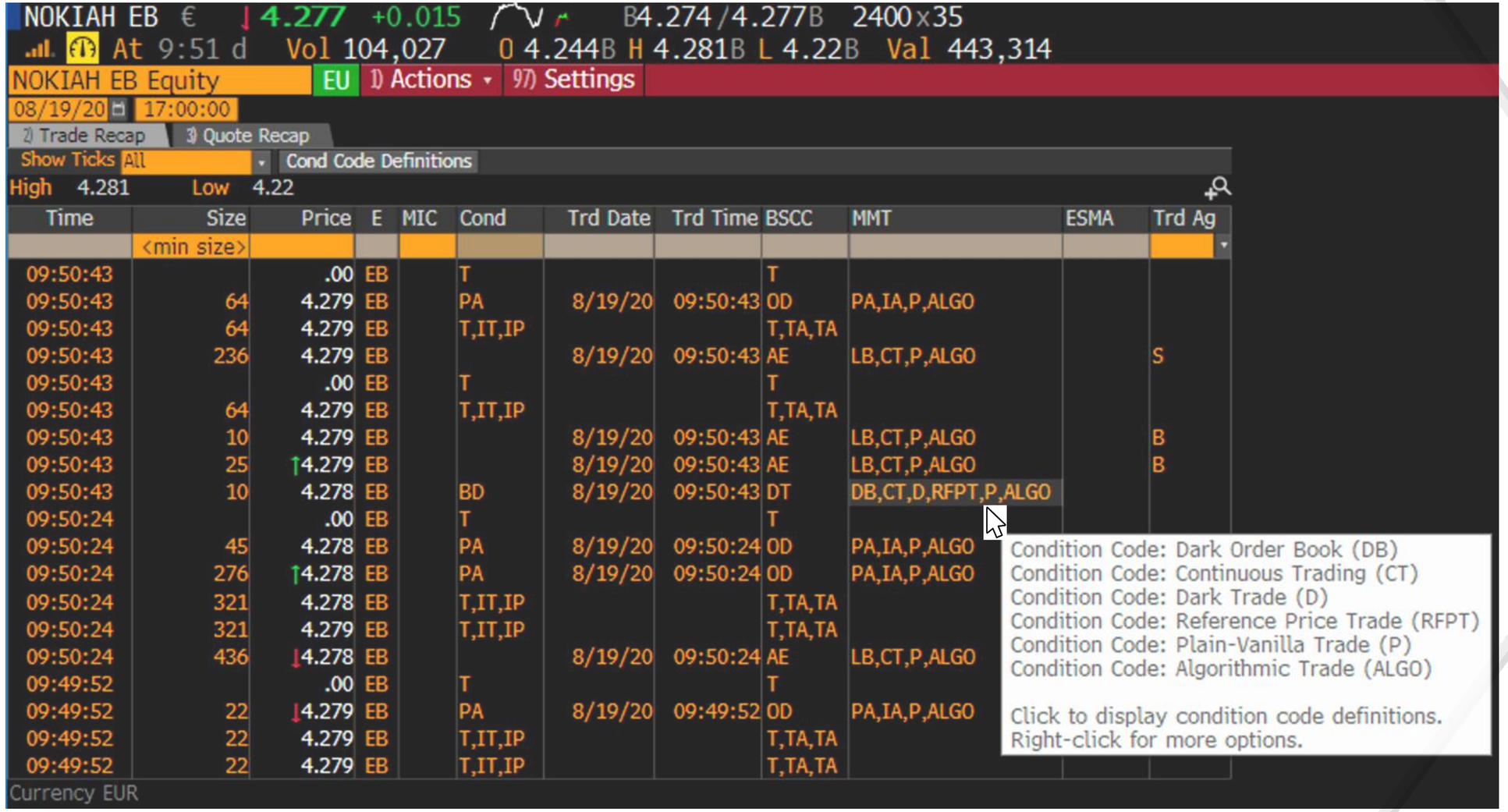
Bloomberg Desktop Terminal



Source: Bloomberg

Sensitivity: C2 Internal

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Bloomberg's Market Data Feed (B-PIPE)

```
MarketDataEvents = {
      MKTDATA_EVENT_TYPE     = TRADE
      MKTDATA_EVENT_SUBTYPE  = NEW
      EVT_TRADE_PRICE        = 18.318
      EVT_TRADE_SIZE_RT      = 1046
      ...
      EVT_TRD_MMT_LEVL_1_TRD_TYP_CD_RT  = "DB"
      EVT_TRD_MMT_LEVL_2_TRD_TYP_CD_RT  = "CT"
      EVT_TRD_MMT_LVL_3.1_TRD_T_CD_RT   = "D"
      EVT_TRD_MMT_LVL_3.2_TRD_T_CD_RT   = ""
      EVT_TRD_MMT_LVL_3.3_TRD_T_CD_RT   = ""
      EVT_TRD_MMT_LVL_3.4_TRD_T_CD_RT   = ""
      EVT_TRD_MMT_LVL_3.5_TRD_T_CD_RT   = "RFPT"
      EVT_TRD_MMT_LVL_3.6_TRD_T_CD_RT   = ""
      EVT_TRD_MMT_LVL_3.7_TRD_T_CD_RT   = ""
      EVT_TRD_MMT_LVL_3.8_TRD_T_CD_RT   = "P"
      EVT_TRD_MMT_LVL_3.9_TRD_T_CD_RT   = "ALGO"
      EVT_TRD_MMT_LVL_4.1_TRD_T_CD_RT   = ""
      EVT_TRD_MMT_LVL_4.2_TRD_T_CD_RT   = ""
      EVT_TRD_MMT_LVL_5_TRD_TYP_CD_RT   = ""
}
```

- Dark Order Book
- Continuous Trading
- Dark Trade
- Reference Price Trade
- Plain-Vanilla Trade
- Algorithmic Trade

Source: Bloomberg

Sensitivity: C2 Internal

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ION Fidessa

Source: ION Fidessa

Sensitivity: C2 Internal

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SIX Financial Information – Market Data Feed (MDF)

BOURSE_CODE	ISIN	VALOREN	ISSUER	TPCURR	REPTTPRI	REPTRADE	REPTBATE	TRTIME	REPTTIMEMICROSEC	REPTRADEMMT
SWX	US0231351067	645156	AMAZON.COM RG	CHF	1430	1430	TRA	9:04:21	908154	2O-------P----
SWX	FI0009000681	472672	NOKIA RG	CHF	5.562	5.562	TRA	9:02:57	251950	2O-------P----
SWX	LU0838782315	20028815	XTR DAX IN U 1D	CHF	126.08	126.08	TRA	9:55:20	248608	22-------PH---
SWX	CH0200252812	20025281	1.125 AUSNET 19	CHF	101.69	101.69	TRA	9:33:29	877116	22-------PH---
SWX	CH0197841551	19784155	4 EDP FINANCE 18	CHF	103.15	103.15	TRA	10:18:58	392087	22-------PH---
SWX	CH0194958986	19495898	1.375 SVENSKA 22	CHF	106.25	106.25	TRA	10:22:02	463622	22-------PH---
SWX	CH0194836364	19483636	SCOR OPEN	CHF	101.35	101.35	TRA	9:36:20	945431	22-------PH---
SWX	CH0194695190	19469519	SWISS LIFE -S FRN	CHF	102.4	102.4	TRA	10:08:56	771250	22-------PH---
SWX	IE00B88DZ566	19328353	ISHS S&P 500 CHF-AC	CHF	48.62	48.62	TRA	9:37:24	514382	22-------PH---
SWX	IE00B88BVCK12	19328350	ISHS WORLD CHF-ACC	CHF	44.79	44.79	TRA	9:11:13	921785	22-------PH---
SWX	LU0641007421	19204552	XTR2 GI-LBD 4DHD	CHF	107.32	107.32	TRA	10:40:23	55060	22-------PH---
SWX	CH0187695553	18769555	2 LGT BANK 19	CHF	103.39	103.39	TRA	9:52:49	457909	22-------PH---
SWX	IE00B3XXRP09	18575508	VAN S&P 500 ETF USD	CHF	49.355	49.355	TRA	9:48:35	365637	22-------PH---
SWX	CH0184305016	18430501	SBIDSPF1-5-CHF ADIS	CHF	26.73	26.73	TRA	10:00:20	298157	22-------PH---
SWX	IE0086TLBW47	18425202	ISHS JPM EM BD USD	CHF	94.36	94.36	TRA	9:39:21	462216	22-------PH---
SWX	CH0183136057	18313605	ZKBPLATETF -AA CHF-	CHF	281.45	281.45	TRA	10:54:39	743508	22-------PH---
SWX	CH0183136024	18313602	ZKBSILVERETF-AAHCHF	CHF	40.445	40.445	TRA	10:40:29	720312	22-------PH---
SWX	IE00B7452L46	14969108	SPDR UK ALL GBP-ACC	CHF	63.44	63.44	TRA	10:47:33	575424	22-------PH---
SWX	CH0146698425	14669842	1.25 EIB 19	CHF	102.95	102.95	TRA	10:28:41	158033	22-------PH---
SWX	IE00B6R52036	13937387	ISHS GLD PRD USD-AC	CHF	8.486	8.486	TRA	10:48:13	323796	22-------PH---
SWX	CH0139101601	13910160	ZKB GOLDETF-AAH CHF	CHF	368.3	368.3	TRA	10:46:50	77625	22-------PH---
SWX	CH0139101593	13910159	ZKB GOLD ETF-AA CHF	CHF	380.2	380.2	TRA	10:25:30	82817	22-------PH---
SWX	IE00B4613386	12931546	SSGA SPDR BL BD USD	CHF	72.43	72.43	TRA	10:47:30	464005	22-------PH---
SWX	NL0009739416	12871311	POSTNL BR	CHF	3.767	3.767	TRA	9:02:57	243776	22-------PH---
SWX	CH0122526608	12252660	2.625 ENAG 23	CHF	104	104	TRA	9:44:35	385007	22-------PH---
SWX	CH0120743346	12074334	2 HSBC SFH 19	CHF	102.91	102.91	TRA	9:30:52	92445	22-------PH---
SWX	CH0118923918	11892391	UBSETF SBID715CHFAD	CHF	146.94	146.94	TRA	9:45:22	474127	22-------PH---
SWX	CH0118923876	11892387	UBSETF SBID13CHF AD	CHF	82.9	82.9	TRA	9:58:55	656608	22-------PH---
SWX	DK0060252690	11784376	PANDORA RG	CHF	95.66	95.66	TRA	9:04:28	274810	22-------PH---
SWX	CH0116015352	11601535	CMCIOILSFCHADIS	CHF	27.285	27.285	TRA	10:10:51	951472	22-------PH---
SWX	CH0116014934	11601493	UBSETFPLTN-USD ADIS	CHF	89.23	89.23	TRA	9:45:37	142768	22-------PH---
SWX	FR0010869438	11202645	LY SMI D2I ETF A	CHF	9.428	9.428	TRA	10:29:51	218117	22-------PH---
SWX	FR0010871145	11145933	AM SWITZ UC ETF CHF	CHF	288.85	288.85	TRA	9:12:56	22781	22-------PH---
SWX	LU0488317701	11058258	COMS NY A GOLD ID	CHF	16.25	16.25	TRA	9:56:22	323735	22-------PH---
SWX	LU0480132876	10920548	UBSETF MSCIEM USDAD	CHF	110.6	110.6	TRA	9:31:25	308734	22-------PH---
SWX	LU0411075376	10804968	XTR LEVDAX DS 1CC	CHF	133.2	133.2	TRA	9:36:36	608267	22-------PH---
SWX	IE00B4L5ZG21	10608422	ISH EUR CO EX-F EUR	CHF	134.08	134.08	TRA	9:28:15	554881	22-------PH---
SWX	CH0106027128	10602712	UBSETF GLD HCHF A D	CHF	116.56	116.56	TRA	9:54:10	909437	22-------PH---
SWX	CH0104136285	10413628	ISHSGOCHFHETFCH -A-	CHF	113.5	113.5	TRA	10:54:38	169723	22-------PH---
SWX	LU0392496690	4878674	COMS ATX ID	CHF	47.01	47.01	TRA	10:20:09	651976	22-------PH---
SWX	CH0048265513	4826551	TRANSOCEAN RG	CHF	9.05	9.05	TRA	9:34:39	782141	22-------PH---

Source: SIX Financial Information (visualisation of the Market Data Feed)

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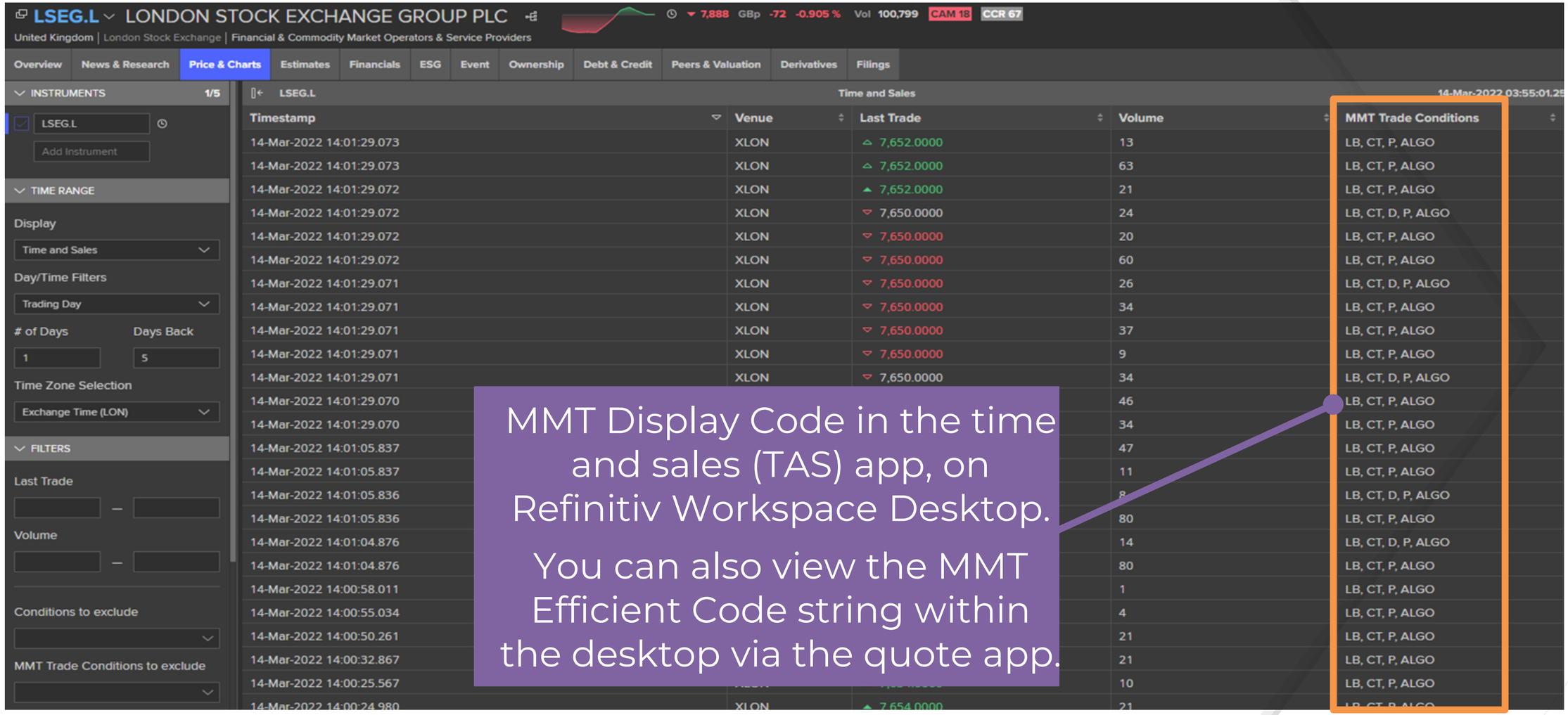
LSEG Refinitiv – Desktop



Source: Refinitiv

Sensitivity: C2 Internal

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LSEG Refinitiv – Realtime Feed

LSEG.L	Market Price	2022-03-14T14:00:08.058601045Z	0	Raw	UPDATE	TRADE			
				FID	178		TRDVOL_1	105	
				FID	13432		TR_TRD_FLG	1	OB
				FID	3859		SEQ_NO	361251	
				FID	3885		ORDBK_TRD	7658	
				FID	8582		MMT_CLASS	12-------PH---	
				FID	6581		TRVOL_ONBK	105	
				FID	3900		TRADE_ID	5.03534E+14	
				FID	4465		TRD_IND_1	A	
				FID	8519		TRD_P_XID	XLON	
				FID	11		NETCHNG_1	218	
				FID	32694		LTNOV_UNS	804090	
				FID	14		PRCTCK_1	2	#FE#
				FID	14266		SALTIM_NS	14:00:08.011	
				FID	14312		SRC_ES_NS	14:00:08.011	
				FID	6		TRDPRC_1	7658	
				FID	12840		ELIGBL_TRD	1	Y
				FID	4756		LSTSALCOND	0	
				FID	56		PCTCHNG	2.93	
				FID	1021		SEQNUM	361251	

Efficient MMT string in Refinitiv Realtime feed using MMT_CLASS field (available in desktop too).

Refinitiv uses "?" in a position of the string where the value is not known from the venue.

Source: Refinitiv

Sensitivity: C2 Internal

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WHAT HAS CHANGED WITH THE LATEST RTS 1 / RTS 2 REVIEW?

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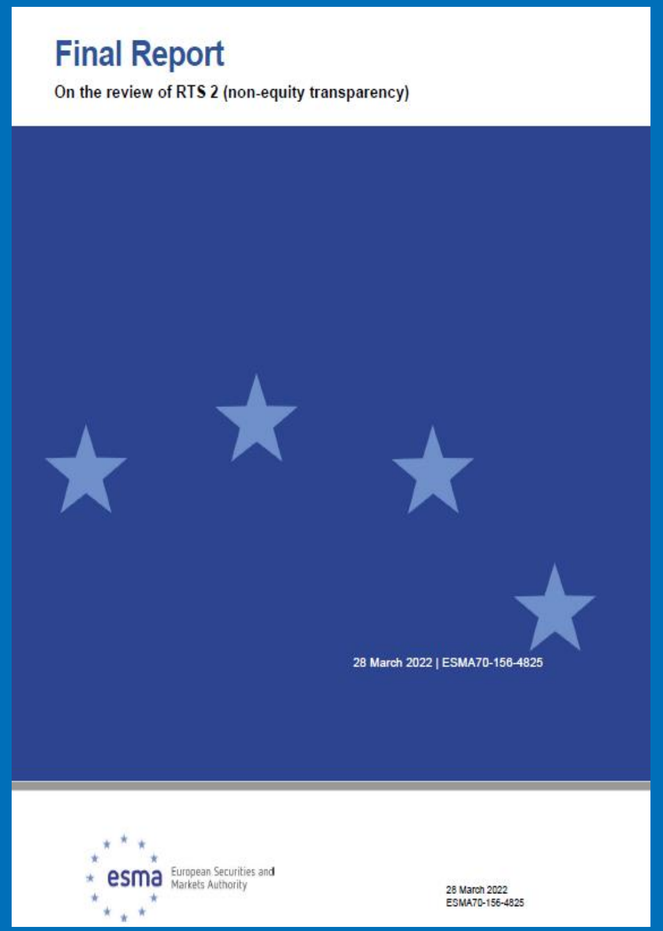
Trade Flagging modifications driven by regulation



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Amended EU RTS 1 and RTS 2 provisions for MMT v4.0

- New Market Mechanism “Hybrid System” (RTS 1 and RTS 2)
- ‘CONT’ flag to be added (RTS 1)
- ‘PORT’ flag to be added (RTS and RTS 2)
- Combinations of ‘PRIC’, ‘CONT’, ‘PORT’ permitted
- Combination with ‘NPFT’ is excluded
- Amended “NPFT” definition (RTS 1 and RTS 2)
- ‘TNCP” flag to be deprecated (RTS 1)

See ESMA70-156-4944

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New separate Market Mechanism “Hybrid System”

	5	Hybrid system	A system falling into two or more of the types of trading systems referred to in rows 1 to 4 of this table.	For hybrid systems that combine different trading systems at the same time, the requirements correspond to the pre-trade trade transparency requirements applicable to each type of trading system that forms the hybrid system. For hybrid systems that combine two or more trading systems subsequently, the requirements correspond to the pre-trade transparency requirements applicable to the respective trading system operated at a particular point in time
	6	Any other trading system	Any other type of trading system not covered by rows 1 to 5.	Adequate information as to the level of orders or quotes and of trading interest in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments traded on the trading system; in particular, the five best bid and offer price levels and/or two-way quotes of each market maker in that instrument, if the characteristics of the price discovery mechanism so permit.

▼ RTS 1 & RTS 2 (versus a display-only

Level	Full Name	Options		MiFID II Equivalencies or Uti		
		ESMA Stipula	Display Code	Trade Flag	RTS 1 (equity)	(nor equ
1	MARKET MECHANISM					
	Central Limit Order Book	"1"	"LB"	n/a	×	×
	Quote Driven Market	"2"	"QB"	n/a	×	×
	Dark Order Book	"3"	"DB"	n/a	×	×
	Off Book (including Voice or Messaging Trading)	"4"	"OB"	n/a	×	×
	Periodic Auction	"5"	"PA"	n/a	×	×
	Request for Quotes	"6"	"RQ"	n/a	×	×
	Any Other, Including Hybrid	"7"	"AH"	n/a	×	×

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New flags: Portfolio (PORT) and Contingent Transaction (CONT)

Table 2 SUMMARY OF ESMA'S PROPOSALS REGARDING THE VARIOUS LISTS OF NON-PRICE FORMING TRANSACTIONS

Short name	Types of transactions	Art 2 of RTS 1 (STO)	Art 6 of RTS 1 (NT3)	Art 13 of RTS 1 / Art 12 of RTS 2
Benchmark transactions	the transaction is executed by reference to a price that is calculated over multiple time instances according to a given benchmark, including transactions executed by reference to a volume-weighted average price or a time-weighted average price;	**Exempted from STO** (no change proposed)	**Eligible for NT3 transactions** (no change proposed)	**Not exempted from OTC post-trade transparency** (no change proposed)
Portfolio trade	the transaction is part of a portfolio trade	**Exempted from STO** (no change proposed)	**Eligible for NT3 transactions** (no change proposed)	**Not exempted from OTC post-trade transparency** (no change proposed)
Contingent trade (1)	the transaction is contingent on the purchase, sale, creation or redemption of a derivative contract or other financial instrument where all the components of the trade are to be executed only as a single lot	**Exempted from STO** (no change proposed)	**Eligible for NT3 transactions** (no change proposed)	**Not exempted from OTC post-trade transparency** (no change proposed)

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Removal of Flag: Trade Not Contributing to Price Discovery (TNCP)

CONTEXT	ESMA/MMT FLAG	BACKGROUND
Price Discovery Process	**Remove existing flag [TCNP]** **MMT Level 3.8** Will be deprecated, but will remain in the model for backward compatibility purposes	Overlap and confusion with the existing flag NPFT (Non-Price Forming Trade)

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Amended FIX Recommended practices

- ‘IGRP’ new flag for Intra-Group transactions executed for administrative or position management purposes
- ‘GIVE’ new flag for RFMD give-ups transactions
- ‘XBDT’ new flag for trades reported more than once due to overlapping regulatory reporting rules in different jurisdictions

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Main features of FIX MMT v4.0 data model

- Enlargement of data model beyond v3.04 data structure
- Decoupling of display and efficient encoding data structures
- Efficient Encoding data structure keeps the existing 14 positions of the MMT string

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New Matrix for v4.0 Efficient encoding

(see excel file, Tab «Efficient encoding» on FIX website)

- The efficient encoding for MMT v4.0 is backwards compatible with the efficient encoding for the preceeding version, MMT v3.04.

Position	Value	Applicable to MMT v3.04	Applicable to MMT v4.0	total number of display codes	Level 1	Level 2	Level 3.1	Level 3.2	Level 3.3	Level 3.4	Level 3.5	Level 3.6	Level 3.7	Level 3.8	Level 3.9	Level 3.10	Level 3.11	Level 3.12	Level 3.13	Level 4.1	Level 4.2	Level 4.3	Level 4.4	Level 5.1	Level 5.2	Level 5.3
4	7	Y	Y	1				NTLS																		
5	X	Y	Y	1					ACTX																	
5	-	Y	Y	0																						
6	C	Y	Y	1						CANC																
6	A	Y	Y	1						AMND																
6	-	Y	Y	0																						
7	B	Y	Y	1							BENC															
7	S	Y	Y	1							RFPT															
7	-	Y	Y	0																						
7	P	N	Y	1												PORT										
7	C	N	Y	1													CONT									
7	Y	N	Y	2							BENC					PORT										
7	M	N	Y	2							BENC						CONT									
7	N	N	Y	2												PORT	CONT									
7	O	N	Y	3							BENC					PORT	CONT									

Sensitivity: C2 Internal

Regulatory Initiatives in Progress

- The EU Commission to endorse the ESMA recommendations published on March 28 2022 → done with ESMA opinion on Dec. 19 2022 and adoption of the proposed amendments to MiFID Technical Standards by EC on Jan. 17 (formal Objection Period for European Parliament and EU Council until April 2023)

- ESMA plans a second wave of trade flagging requirements amendments within the next two years → out of scope for v4.0

- FCA has plans to review trade flagging requirements as well but has not communicated any timeline → out of scope for v4.0

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WHAT YOU SHOULD REMEMBER ABOUT FIX MMT

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What you should remember about FIX MMT

- FIX MMT delivers an operational solution for fulfilling trade flagging regulatory requirements raised by ESMA. Have a look!
- FIX MMT is suitable for all asset classes subject to MiFID/MiFIR.
- FIX MMT is an off-the-shelf industry solution and can be freely used without any licensing constraint.
- FIX MMT is protocol agnostic. It is supported in the FIX Protocol.
- FIX MMT v4.0 has been adapted to the latest trade flagging requirements further to MiFID/MiFIR RTS 1 and RTS 2 review.
- FIX MMT is a collaborative initiative; additional expertise is always welcome.
- Please submit your questions/comments to:

fix@fixtrading.org

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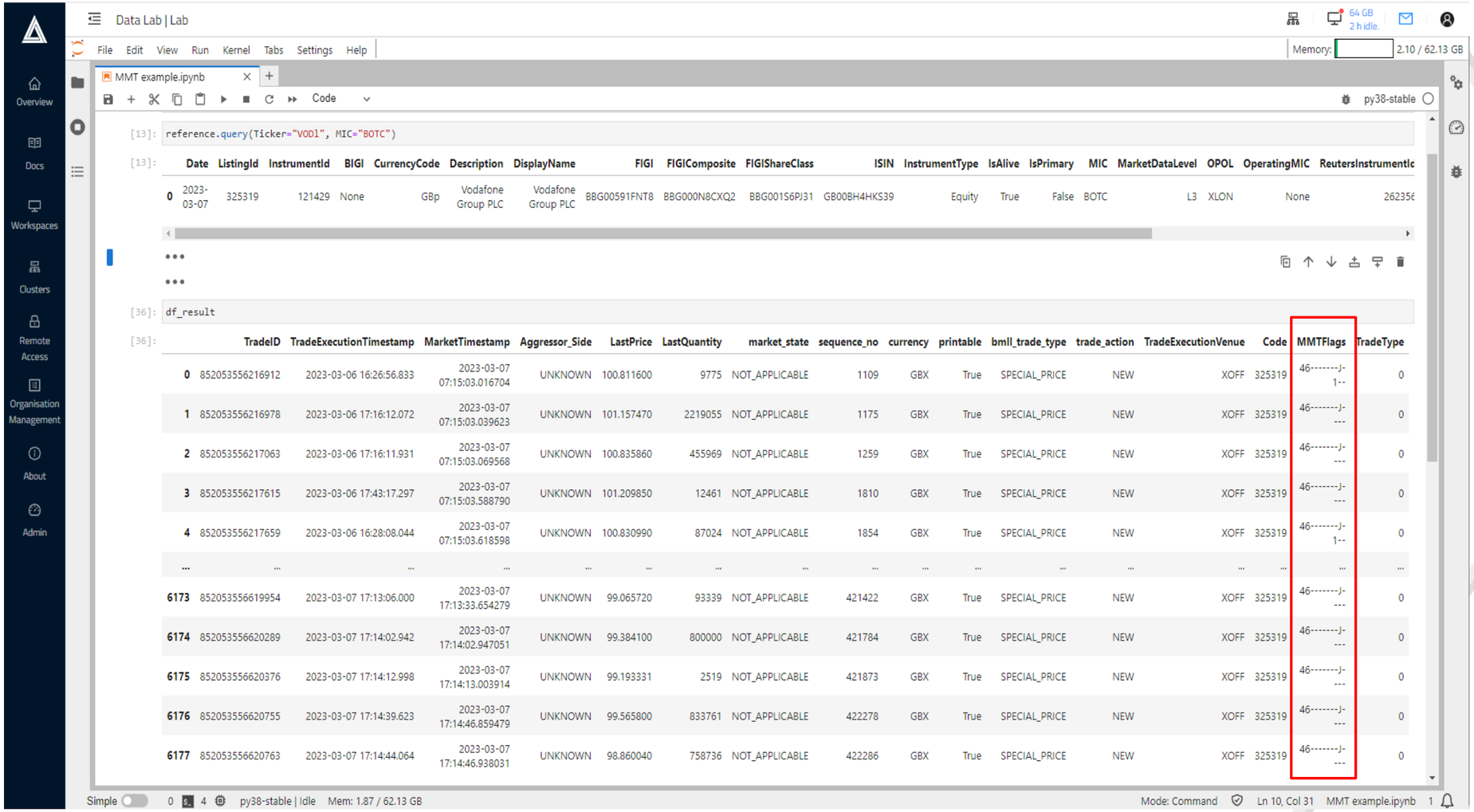
Using MMT: BMLL Example



	Date	ListingId	InstrumentId	BIGI	CurrencyCode	Description	DisplayName	FIGI	FIGIComposite	FIGIShareClass	ISIN	InstrumentType	IsAlive	IsPrimary	MIC	MarketDataLevel	OPOL	OperatingMIC	ReutersInstrumentIc
0	2023-03-07	325319	121429	None	GBp	Vodafone Group PLC	Vodafone Group PLC	BBG00591FNT8	BBG000N8CXQ2	BBG001S6PJ31	GB00BH4HKS39	Equity	True	False	BOTC	L3	XLON	None	26235€

	TradeID	TradeExecutionTimestamp	MarketTimestamp	Aggressor_Side	LastPrice	LastQuantity	market_state	sequence_no	currency	printable	bmll_trade_type	trade_action	TradeExecutionVenue	Code	MMTFlags	TradeType
0	852053556216912	2023-03-06 16:26:56.833	2023-03-07 07:15:03.016704	UNKNOWN	100.811600	9775	NOT_APPLICABLE	1109	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-1--	0
1	852053556216978	2023-03-06 17:16:12.072	2023-03-07 07:15:03.039623	UNKNOWN	101.157470	2219055	NOT_APPLICABLE	1175	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-----	0
2	852053556217063	2023-03-06 17:16:11.931	2023-03-07 07:15:03.069568	UNKNOWN	100.835860	455969	NOT_APPLICABLE	1259	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-----	0
3	852053556217615	2023-03-06 17:43:17.297	2023-03-07 07:15:03.588790	UNKNOWN	101.209850	12461	NOT_APPLICABLE	1810	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-----	0
4	852053556217659	2023-03-06 16:28:08.044	2023-03-07 07:15:03.618598	UNKNOWN	100.830990	87024	NOT_APPLICABLE	1854	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-1--	0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6173	852053556619954	2023-03-07 17:13:06.000	2023-03-07 17:13:33.654279	UNKNOWN	99.065720	93339	NOT_APPLICABLE	421422	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-----	0
6174	852053556620289	2023-03-07 17:14:02.942	2023-03-07 17:14:02.947051	UNKNOWN	99.384100	800000	NOT_APPLICABLE	421784	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-----	0
6175	852053556620376	2023-03-07 17:14:12.998	2023-03-07 17:14:13.003914	UNKNOWN	99.193331	2519	NOT_APPLICABLE	421873	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-----	0
6176	852053556620755	2023-03-07 17:14:39.623	2023-03-07 17:14:46.859479	UNKNOWN	99.565800	833761	NOT_APPLICABLE	422278	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-----	0
6177	852053556620763	2023-03-07 17:14:44.064	2023-03-07 17:14:46.938031	UNKNOWN	98.860040	758736	NOT_APPLICABLE	422286	GBX	True	SPECIAL_PRICE	NEW	XOFF	325319	46-------J-----	0

Source: BMLL Data Lab

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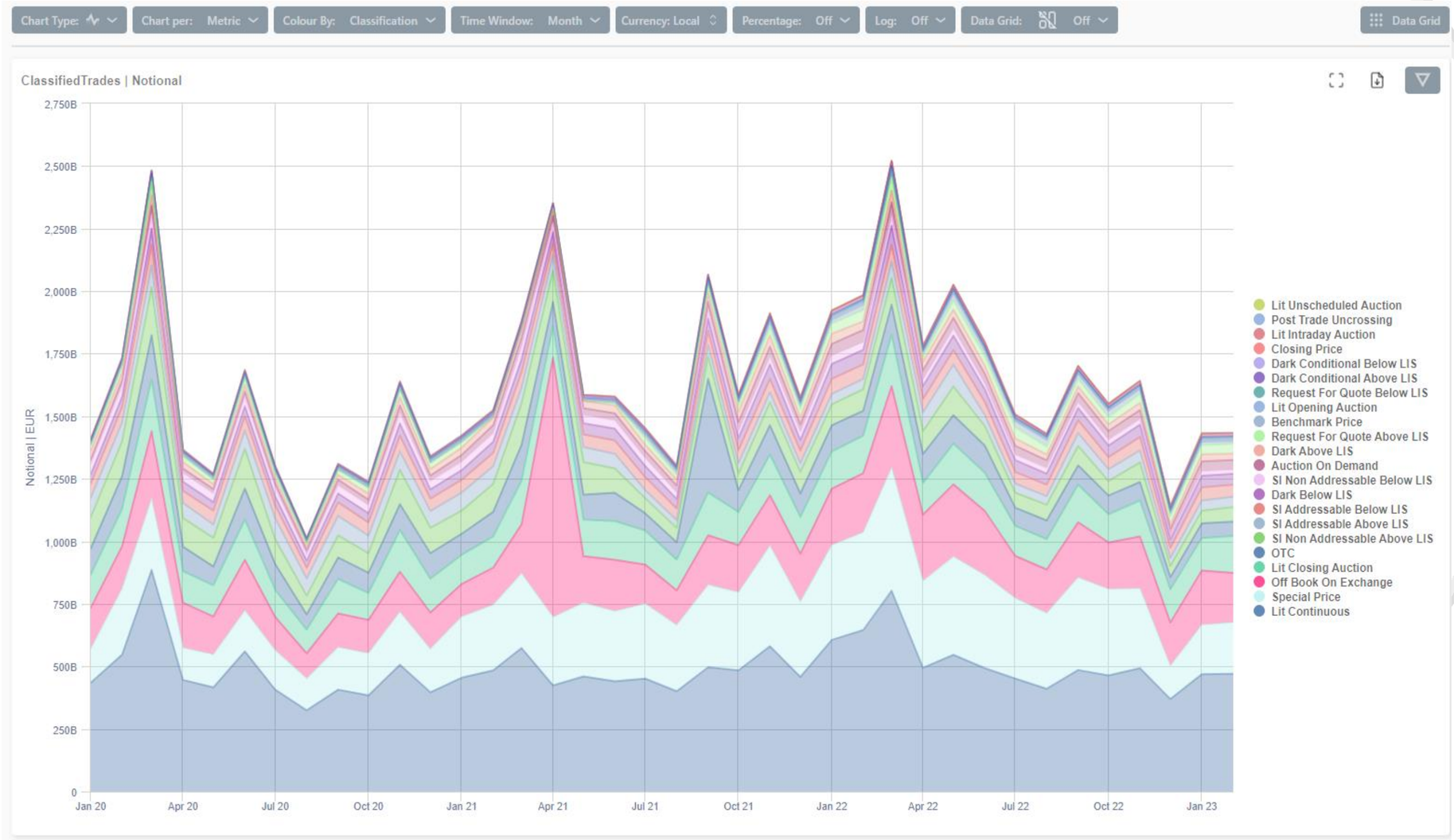
Sensitivity: C2 Internal

Using MMT for analytics: European classified trades



Source: BMLL Vantage

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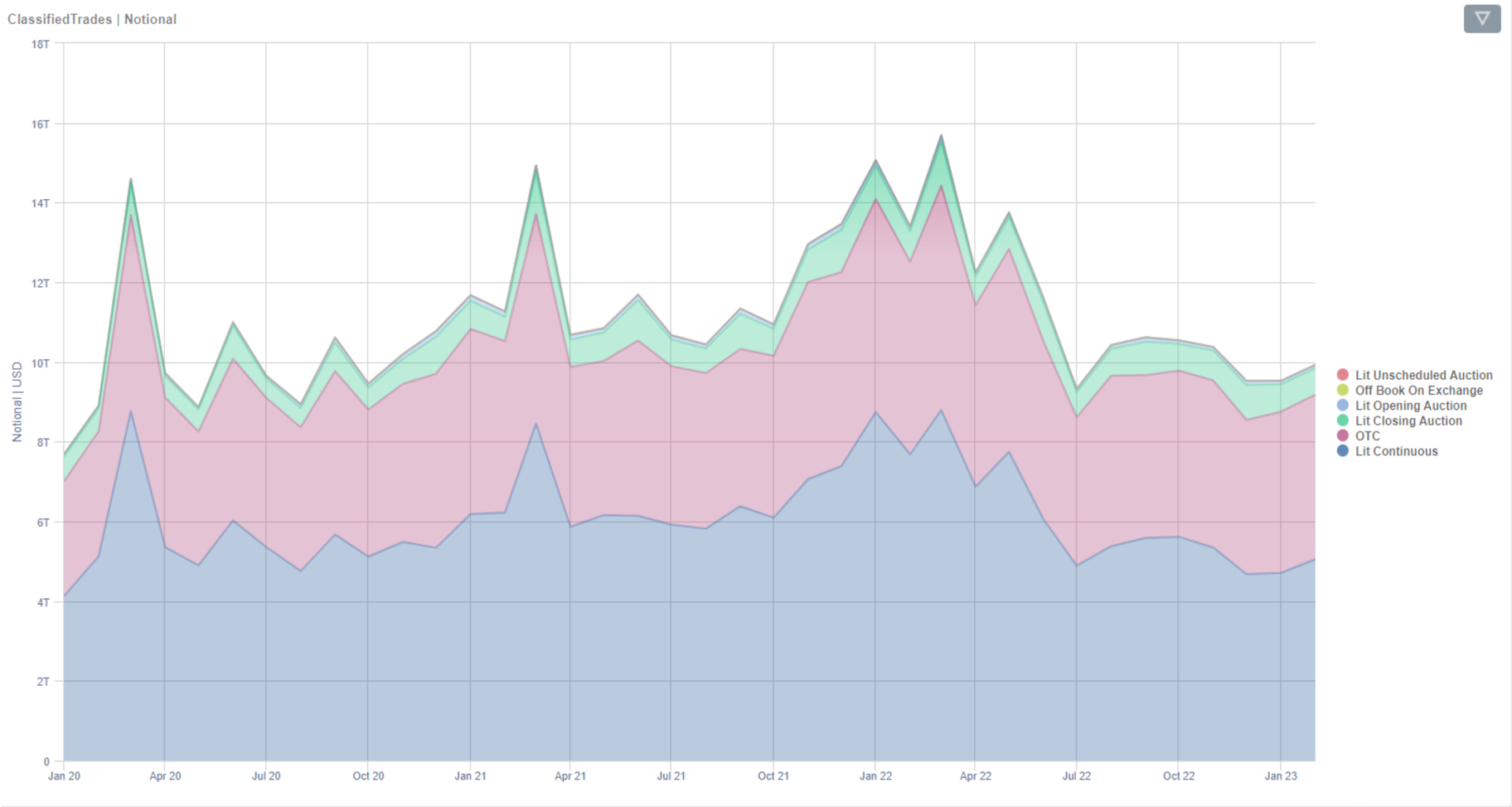
Classifying trades without MMT: US example



Source: BMLL Vantage

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