

FIX TRADING COMMUNITY

Nordic Trading Briefing 2022

– Global Technical Committee Update –

Thursday 9th June 2022

Hanno Klein

GTC EMEA Co-Chair

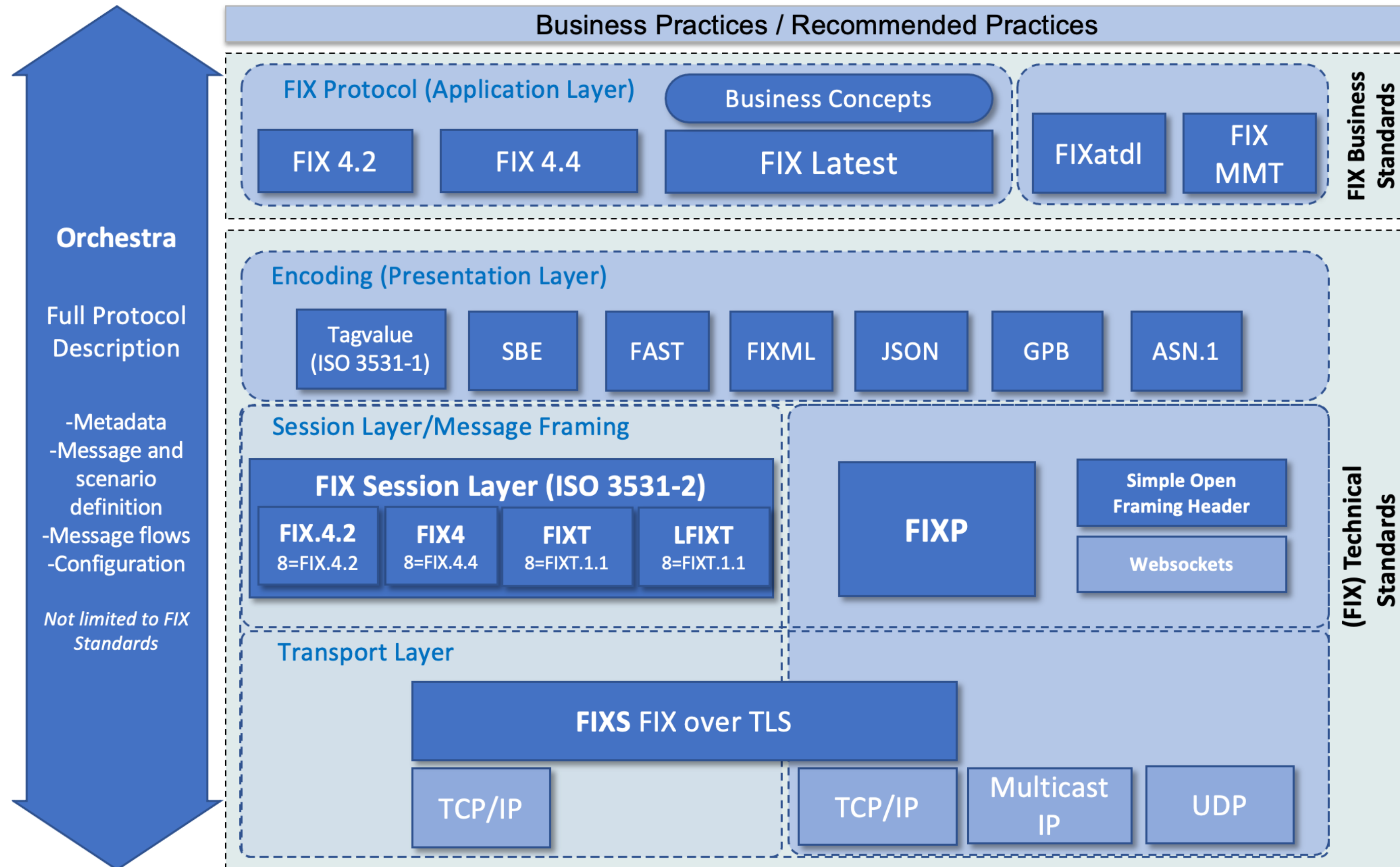
Senior Standards Advisor, FIXdom



Agenda

- **FIX Protocol Extensions**
 - BeginString(8) for FIX Latest
 - Errors & Omissions
 - Extensions approved by the GTC
 - Extensions in progress
- **FIX Technical Standards**
 - ISO 3531 – FIX TagValue and FIX Session Layer
 - Orchestra v1.1
- **FIX Tools**
 - FIXimate4
 - Log2Orchestra
 - Playlist
 - Tablature

FIX Standards



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FIX Protocol Extensions



FIX Protocol Extensions

Tag	Field Name	Abbr Name	Data Type	Union Datatype	Description	Pedigree
8	BeginString	BeginString	String		Identifies beginning of new message and protocol version. ALWAYS FIRST FIELD IN MESSAGE. (Always unencrypted) Valid values: FIXT.1.1	Added FIX.2.7

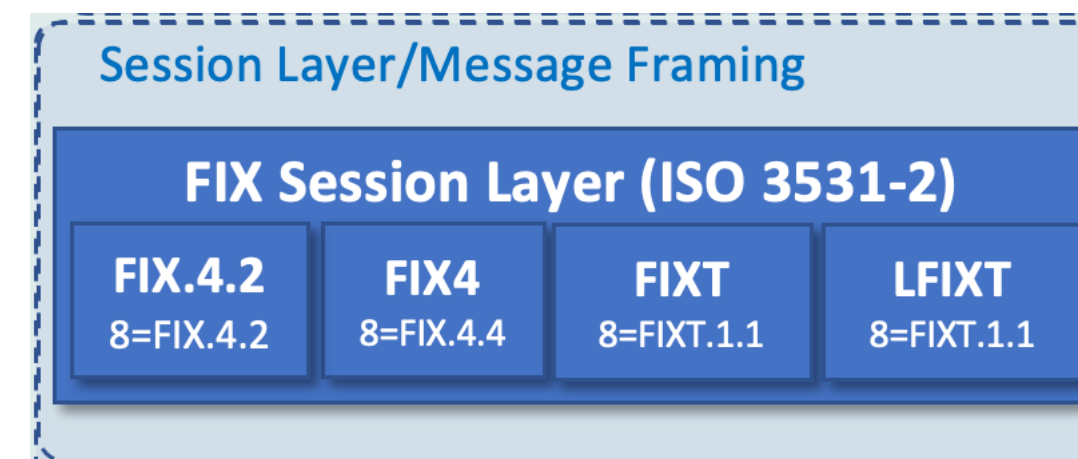
Used in components:
[StandardHeader]

BeginString(8) for FIX Latest

- Gap Analysis to add legacy values to BeginString(8) → EP270
- BeginString(8) identifies the FIX Session Layer, not the application version.
- AppVerID(1128) optionally specifies the application layer version (e.g. 10=FIXLatest)
- FIX Session Layer has so-called “profiles” that are added to the values of BeginString(8).
- BeginString(8) = “FIX.4.2” or “FIX.4.4” or “FIXT.1.1” with AppVerID(1128)=10 is now fully FIX compliant
- GTC policy supports the use of tags from higher versions, e.g. BeginString(8) = “FIX.4.2”, AppVerID(1128)=4 (FIX42) together with UPICode(2891)

Tag	Field Name	Abbr Name	Data Type
1128	AppVerID	AppVerID	String

AppVerIDCodeSet		
0	=	FIX27
1	=	FIX30
2	=	FIX40
3	=	FIX41
4	=	FIX42
5	=	FIX43
6	=	FIX44
7	=	FIX50
8	=	FIX50SP1
9	=	FIX50SP2
10	=	FIXLatest



FIX Protocol Extensions

- Errors and Omissions 2021 → EP270
 - Large Gap Analysis resolving many minor issues detected over time (<https://forum.fixtrading.org/t/public-comment-period-fix-protocol-gap-analysis-errors-and-omissions-2021/16386>)
 - Public comment period completed (February 18 – March 18, 2022)
 - Issues affecting datatypes and code sets
 - Issues in Orchestra XML files (FIX 4.2, FIX 4.4, FIX Latest)
 - Orchestra XML files for FIX 4.2 and FIX 4.4 are available in GitHub (<https://github.com/FIXTradingCommunity/orchestrations>)
 - Issues in FIXML Schema files
 - Typos in FIX Latest

FIX Protocol Extensions

- Extensions approved by the GTC
 - Extension proposals are submitted to the GTC based on a standard process
 - Extensions Packs (EPs) are sequentially numbered and enhance FIX Latest
 - EP267 – Market Data Extensions
 - New MDEntryType(269) values for threshold limits, financing values, TWAP
 - EP268 – Market Model Typology (MMT) v3.5 Support
 - Mapping of MMT extensions to FIX (portfolio, LIS negotiated, inter-affiliate, clearing only, out-of-hours)
 - EP269 – Extension for Trade Compression
 - Support both multilateral and bilateral compression for netted and portfolio trades
 - See <https://www.fixtrading.org/extension-packs/> for details

FIX Protocol Extensions

- Extensions in progress
 - EP270 – BeginString(8) for FIX Latest
 - EP271 – Errors and Omissions 2021
 - EP272 – Code set extensions 2021
 - SecurityType(167), BenchmarkCurveName(221), RelativeValueType(2530)
 - EP273 – Extensions for Digital Asset Trading
 - Extensions for the trading of digital assets which specifically include their identification (ISO 24165).
- Recommended Practices in progress
 - BCAN ID using FIX for HKIDR
- Gap analysis and recommended practice documents are made available for public review in the FIX discussion forum
 - See <https://forum.fixtrading.org/search?q=publicreview> for details

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FIX Technical Standards



FIX Technical Standards

- ISO 3531 – FIX TagValue and FIX Session Layer
 - Status
 - FIX TagValue and FIX Session Layer have been approved as ISO standards Jan 19, 2022
 - They remain FIX Technical Standards governed by the FIX Trading Community
 - History
 - Standalone version of FIX Session Layer (a.k.a. FIXT 1.1) created with FIX 5.0 in Dec 2006
 - Refactored FIX Session Layer specification published in Aug 2020
 - Standalone version of FIX TagValue specification published in June 2020
 - FIX started the submission process mid-2020 (<https://www.iso.org/stage-codes.html>)
 - ISO standards require a review process every 5 years to confirm their validity

FIX Technical Standards

- Orchestra v1.1 under development
 - Orchestra is a meta-data standard and v1.0 was published in Feb 2021
 - FIX Latest published as XML file compliant with Orchestra v1.0 since EP255
 - Comprehensive set of features provided with Orchestra v1.0
 - Messages, groups, components, fields, code sets, code values, datatypes
 - Scenarios for messages all the way down to code sets
 - Conditional rules for field presence
 - Actors, workflows and state machines
 - FIX Orchestra Working Group currently discussing enhancements for v1.1
 - Scenario identification and correlation to incoming messages
 - Scenarios for datatypes
 - ...
- Contact the FIX Program Office (fix@fixtrading.org) if you would like to join!

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FIX Tools



FIX Tools – FIXimate

- FIXimate4 – fourth generation of FIXimate released
 - FIXimate is the visualization tool for the FIX Repository, which contains the meta-data for the FIX application and session layer.
 - Strong search capabilities, including regular expressions and the ability to search for FIXML abbreviations
 - Drop down lists for components, fields and code sets
 - Pedigree information from messages all the way down to code values for additions, updates and deprecations
 - Permanent URLs to support referencing from within your documents, e.g. <https://fiximate.fixtrading.org/en/FIX.Latest/msg14.html> to reference NewOrderSingle(35=D).
 - ...and the best of all, it is free and publicly available!

FIX Tools – FIXimate

FIX.Latest_EP269 - English

Find all: [Search](#)
 Regex match: ^=start, \$=end, .=any char
 Match abbreviated name only

Message type: [Lookup](#)

Component: [Lookup](#)

Field tag: [Lookup](#)

Field name: [Lookup](#)

Code set: [Lookup](#)

- About this orchestration
- Message Summary
- Components
- Fields
 - Sorted by Tag Number
 - Sorted by Field Name
 - Sorted by Datatype
 - User Defined Fields
- Code Sets
- Datatypes
- Message Layouts**
- Session
- PreTrade
- Trade
 - SingleGeneralOrderHandling
 - DontKnowTrade
 - ExecutionAck
 - ExecutionReport
 - NewOrderSingle
 - OrderCancelReject
 - OrderCancelReplaceRequest
 - OrderCancelRequest
 - OrderStatusRequest
 - ProgramTrading
 - OrderMassHandling
 - CrossOrders
 - MultilegOrders
- PostTrade
- Infrastructure

NewOrderSingle [type 'D']

<Order>

The new order message type is used by institutions wishing to electronically submit securities and forex orders to a broker for execution.

The New Order message type may also be used by institutions or retail intermediaries wishing to electronically submit Collective Investment Vehicle (CIV) orders to a broker or fund manager for execution.

Pedigree Added FIX.2.7

[Expand Components](#) | [Collapse Components](#)

Field or Component	Field Name	Abbr Name	Req'd	Comments	Pedigree
Component	StandardHeader	BaseHeader	Y	MsgType = D	Added FIX.2.7
11	ClOrdID	ID	Y	Unique identifier of the order as assigned by institution or by the intermediary (CIV term, not a hub/service bureau) with closest association with the investor.	Added FIX.2.7
2422	OrderRequestID	OrdReqID			Added EP188
526	SecondaryClOrdID	ID2			Added FIX.4.3
583	ClOrdLinkID	LnkID			Added FIX.4.3
2829	DuplicateClOrdIDIndicator	DupClOrdIDInd			Added EP253
Component	Parties	Pty		This is party information related to the submitter of the request.	Added FIX.4.3 Updated EP131

Tag	Field Name	Abbr Name	Data Type	Union Datatype	Description	Pedigree
11	ClOrdID	ClOrdID / ID in SingleGeneralOrderHandling	String		Unique identifier for Order as assigned by the buy-side (institution, broker, intermediary etc.) (identified by SenderCompID (49) or OnBehalfOfCompID (5) as appropriate). Uniqueness must be guaranteed within a single trading day. Firms, particularly those which electronically submit multi-day orders, trade globally or throughout market close periods, should ensure uniqueness across days, for example by embedding a date within the ClOrdID field.	Added FIX.2.7

Used in messages:

[CollateralAssignment][CollateralInquiry][CollateralInquiryAck][CollateralReport][CollateralRequest][CollateralResponse][Email][ExecutionAck][ExecutionReport][MultilegOrderCancelReplace][NewOrderMultileg][NewOrderSingle][OrderCancelReject][OrderCancelReplaceRequest][OrderCancelRequest][OrderMassActionReport][OrderMassActionRequest][OrderMassCancelReport][OrderMassCancelRequest][OrderStatusRequest][QuoteRequest][QuoteResponse][RegistrationInstructions][RegistrationInstructionsResponse][SettlementInstructions][TradeCaptureReportRequest]

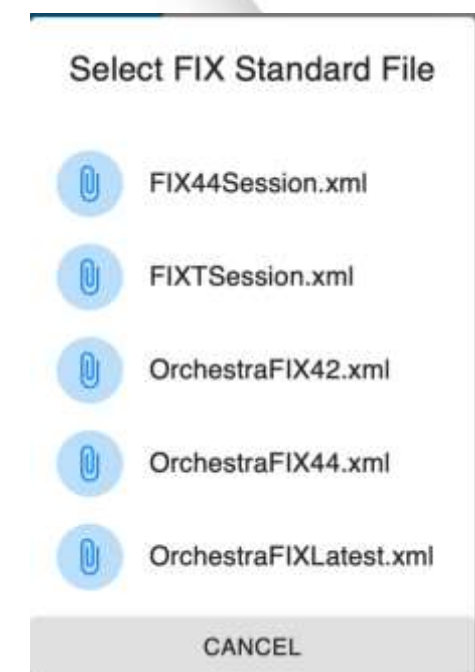
Used in components:

[InstrmtStrkPxGrp][ListOrdGrp][OrdAllocGrp][OrdListStatGrp][OrderAggregationGrp][OrderEntryAckGrp][OrderEntryGrp][SideCrossOrdCxlGrp][SideCrossOrdModGrp][TradeReportOrderDetail]

FIX Tools – Log2Orchestra

- Log2Orchestra Version 1.1 released (FIX members only)
 - Automatic creation of an Orchestra XML file with FIX engine logfiles as input
 - Logfiles encoded in FIX TagValue with automatic detection of delimiter
 - Orchestra XML reference file to retrieve meta-data from tag number
 - Integrated access to public GitHub project for official reference files from FIX <https://github.com/FIXTradingCommunity/orchestrations>
 - Optional creation of message scenarios with JSON configuration file

```
{
  "keys": [
    {
      "msgType": "D",
      "fieldIds": ["40"]
    },
    {
      "msgType": "8",
      "fieldIds": ["150", "39"]
    }
  ]
}
```



FIX Tools – Log2Orchestra

```
8=FIX.4.4|9=463|35=8|49=ET_OMS|56=OMPP|34=12|52=20200302-11:14:36.492|
37=UUKO20030200001g|11=IREACH_t182_LLOYLN.nx83e.j#a1|17=TTN-200302045107-
00000012|60=20200302-11:14:36.490|150=8|39=8|55=LLOYLN|48=LLOY.L|22=5|
167=CS|15=GBP|151=0|14=0|6=0.0|54=1|44=59.73|38=1000|32=0|31=0.0|58=[Order
Limit price deviates from reference price by 21.08 pct (> limit 10 pct)]|
103=0|59=0|40=2|207=LSE|10=205|
```

```
...
<fixr:message id="9" name="ExecutionReport">
  <fixr:structure>
    <fixr:componentRef id="1024" presence="required">
      <fixr:fieldRef id="37" presence="required"/>
      <fixr:fieldRef id="11"/>
      <fixr:fieldRef id="17" presence="required"/>
      ...
      <fixr:fieldRef id="39" presence="required"/>
      <fixr:componentRef id="1003" presence="required"/>
      <fixr:fieldRef id="15"/>
      <fixr:fieldRef id="151" presence="required"/>
      <fixr:fieldRef id="14" presence="required"/>
      <fixr:fieldRef id="6"/>
      <fixr:fieldRef id="54" presence="required"/>
      <fixr:fieldRef id="44"/>
      <fixr:fieldRef id="38"/>
      <fixr:fieldRef id="32"/>
      <fixr:fieldRef id="31"/>
      <fixr:fieldRef id="58"/>
      <fixr:fieldRef id="103"/>
      ...
    <fixr:componentRef id="1025" presence="required"/>
  </fixr:structure>
  <fixr:annotation>
    <fixr:documentation contentType="text/markdown">Relay fill information on a
working order.</fixr:documentation>
  </fixr:annotation>
</fixr:message>
...
```

FIX
TagValue




Orchestra
XML

FIX Tools – Log2Orchestra

FIX Log to Orchestra

Creates an Orchestra file from one or more FIX message logs (tag-value encoding)

Input

Reference Orchestra file	FIX message log files	Configuration file for scenarios (optional)
 Drag file to read or Choose File FIX Standard	 Drag file to read or Choose Files	 Drag file to read or Choose File
Clear Input Files		

Output

Orchestra file to create (*.xml)

Append only (removes no scenarios)

[Create Orchestra file](#)

[Terms of Service](#)

[Help](#)

FIX Tools – Playlist

- First release of Playlist (FIX members only)
 - Generate base Orchestra XML file by selecting what you need from an input Orchestra reference file loaded into your local browser
 - Web-based visualisation of input reference file with check boxes for selections of messages, groups, components, their fields and values of these fields
 - Export of selected subset into a new Orchestra XML file
 - Automatic selection of nested elements
 - Read-only sections for fields and datatypes (automatically selected)
 - Automatic addition of StandardHeader and StandardTrailer to messages
 - However, Playlist does not have knowledge of FIX semantics, e.g. StopPx(99) being conditionally required when selecting OrdType(40)=3 (Stop)

FIX Tools – Playlist

FIX Playlist

Creates a subset of an Orchestra file



Input

Reference Orchestra file

100%

Drag file to read or

Choose File

OrchestraEP269.xml

Clear Input File

Output

Orchestra file to create (*.xml)

myorchestra.xml

Create Orchestra file

Terms of Service

Version 1.0
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Select Your Content

(All elements sorted alphabetically. Greyed out items are deprecated)

- MESSAGES
- GROUPS
- COMPONENTS
- FIELDS
 - Tags 1-999
 - Tags 1000-1999
 - Tags 2000-2999
 - Tags 40000-49999
- CODESETS
- DATATYPES

- NewOrderSingle(35=D)
 - Account(1) - Type String
 - AccountType(581) - Type AccountTypeCodeSet
 - AcctIDSource(660) - Type AcctIDSourceCodeSet
 - AffiliatedFirmsTradeIndicator(2525) - Type Boolean
 - AllocID(70) - Type String
 - AuctionAllocationPct(1804) - Type Percentage
 - AuctionInstruction(1805) - Type AuctionInstructionCodeSet
 - AuctionType(1803) - Type AuctionTypeCodeSet
 - BookingType(775) - Type BookingTypeCodeSet
 - BookingUnit(590) - Type BookingUnitCodeSet
 - CancellationRights(480) - Type CancellationRightsCodeSet
 - CashMargin(544) - Type CashMarginCodeSet
 - ClOrdID(11) - Type String
 - ClOrdLinkID(583) - Type String
 - ClearingAccountType(1816) - Type ClearingAccountTypeCodeSet
 - ClearingFeeIndicator(635) - Type ClearingFeeIndicatorCodeSet
 - CommissionData - Component
 - CommissionDataGrp - Group
 - ComplianceID(376) - Type String
 - ComplianceText(2404) - Type String
 - ContraOrderOrigination(2882) - Type OrderOriginationCodeSet
 - ContraRoutingArrangementIndicator(2884) - Type RoutingArrangementIndicatorCodeSet
 - CopyMsgIndicator(797) - Type Boolean
 - CoveredOrUncovered(203) - Type CoveredOrUncoveredCodeSet
 - Currency(15) - Type Currency

FIX Tools – Tablature

- Tablature – open-source conversion tools (Apache 2.0 licence)
 - Orchestra XML files should not be edited manually – use as read only
 - Tablature converts Orchestra XML files to and from markdown
 - FIX has defined syntax rules for markdown headings and tables, supporting the capabilities of the Orchestra Technical Standard v1.0
 - Log2Orchestra and Playlist provide initial Orchestra XML files that can be converted to Tablature markdown for enhancements such as scenarios, conditional rules, workflows etc.
 - Using Tablature markdown as master source for your machine-readable Rules of Engagement also allows you to convert it to a DOCX/PDF document with other open-source tools such as Pandoc (<https://www.pandoc.org>).
 - Tablature is available in GitHub (<https://github.com/FIXTradingCommunity/tablatore>)

FIX Tools – Tablature

...
Message ExecutionReport type 8 (9)

The execution report message is used to...

Name	Tag	Presence	Implmaxlength	Values
StandardHeader	component	required		
ApplicationSequenceControl	component	optional		
OrderID	37	required		
OrderRequestID	2422	optional		
MassOrderRequestID	2423	optional		
SecondaryOrderID	198	optional	20	
SecondaryClOrdID	526	optional	20	
SecondaryExecID	527	optional		
ClOrdID	11	optional	20	assign in.ClOrdID
QuoteMsgID	1166	optional		

...

Tablature
markdown

Message ExecutionReport type 8 (9)

The execution report message is used to...

Name	Tag	Presence	Implmaxlength	Values
StandardHeader	component	required		
ApplicationSequenceControl	component	optional		
OrderID	37	required		
OrderRequestID	2422	optional		
MassOrderRequestID	2423	optional		
SecondaryOrderID	198	optional	20	
SecondaryClOrdID	526	optional	20	
SecondaryExecID	527	optional		
ClOrdID	11	optional	20	assign in.ClOrdID
QuoteMsgID	1166	optional		

Standard
Pandoc