



FIX Orchestra Technical Standard Proposal

Version 1.0 Draft Standard

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V0.1

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For Global Technical Committee Governance Internal Use Only

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Document History

Revision	Date	Author	Revision Comments
V0.1	Feb. 4, 2020	Don Mendelson Silver Flash LLC	Initial draft

1 Introduction

FIX Orchestra was conceived as **machine readable rules of engagement** between counterparties. As such, it is a standard for exchange of metadata about the behavior of FIX applications. Orchestra is intended to cut time to onboard counterparties and improve accuracy of implementations.

Orchestra does not change FIX protocol itself in any way, nor does it obsolete existing FIX engines or tools.

1.1 Roadmap

The working group believes that Orchestra version 1.0 Release Candidate 5 is ready for production use with relatively minor corrections that have been made.

1.2 Authors

Name	Affiliation	Contact	Role
Don Mendelson	Silver Flash LLC	donmendelson@silverflash.net	Working group co-chair
Jim Northey	GTC Co-chair, Americas and ISO TC68 Chair	jim.northey@fintechstandards.us	Working group co-chair

2 Requirements

2.1 Business Requirements

No new business requirements have been recognized since Release Candidate 5.

2.2 Technical Requirements

This section discusses enhancements to the Orchestra standard since Release Candidate 5.

2.2.1 Orchestra XML schema

2.2.1.1 Conditional rules for components

Release Candidate 5 provided a feature to specify rules for field references contained by messages or components. For example, a field could be specified as conditionally required based on an expression of when the condition applies. In version 1.0 Draft, a change was made to the repository schema to allow component and repeating group references to also be specified as conditionally required.

2.2.1.2 Updated namespaces

When development of Orchestra began, it was to be called FIX Repository 2016 Edition. The XML namespaces have been changed to recognize the Orchestra name and update the year to the release of this Draft Standard. The two schemas now have these namespaces:

<http://fixprotocol.io/2020/orchestra/interfaces>
<http://fixprotocol.io/2020/orchestra/repository>

XSD file names and folders have correspondingly changed.

2.2.2 Score DSL

2.2.2.3 Date-time format

A minor correction was made to the format of date-time literals to conform to the ISO 8601 standard.

2.2.3 Demonstration and utility projects

All demonstration projects have been updated to conform to the latest schema.

3 Issues and Discussion Points

3.1 Header and trailer

Traditionally, FIX Repository has included StandardHeader and StandardTrailer components on each message definition. However, those components are specific to tag value encoding. One complication is that StandardHeader spans application and session layers. In the future, consideration should be given to separating the layers. Also, special syntax could be proposed for inclusion of technical elements based on encoding or session protocols.

3.2 Authoring

While FIX Trading Community is developing tools for members to create and manage Orchestra files, some users have requested a simpler authoring environment that does not require a complex tool chain. In other words, an author should be able to open a plain text editor and express rules of engagement. Such an authoring method is under development. It requires no changes to the Orchestra standard.

4 References

Reference	Version	Relevance	Normative
None			

5 Relevant and Related Standards

Related Standard	Version	Reference location	Relationship	Normative
Dublin Core XML Schemas	2008-02-11	http://dublincore.org/schemas/xmls/	Dependency	Yes
XML Schema for FIX	2016		Technical guide	Yes
XML Schema	2012	https://www.w3.org/TR/xmlschema11-1/	Dependency	Yes
Namespaces	2006	https://www.w3.org/TR/xml-names11/	Dependency	Yes

6 Intellectual Property Disclosure

Related Intellection Property	Type of IP (copyright, patent)	IP Owner	Relationship to proposed standard

7 Definitions

Term	Definition
Pedigree	The recorded history of an artifact
Provenance	A record of ownership of an artifact

8 FIX Orchestra

8.1 Project milestones

Since Orchestra has many facets, features will be delivered in several release candidates rather than attempting a big-bang approach.

8.1.1 Version 1.0 Draft Standard deliverables

These artifacts will be delivered as v1.0 Draft Standard:

- The technical specification is a separate document “FIX Orchestra Technical Specification”. The document will be displayed in the Tech/Specs section of FIX Trading Community website as well as in GitHub project [FIXTradingCommunity/fix-orchestra-spec](https://github.com/FIXTradingCommunity/fix-orchestra-spec).

These resources have been published in GitHub project [FIXTradingCommunity/fix-orchestra](https://github.com/FIXTradingCommunity/fix-orchestra):

- XML schema (XSD) for repository of message definitions and workflow plus documentation of the schema
- XML schema (XSD) for interfaces and session configuration plus documentation of the schema
- Grammar and implementation of the Score DSL
- Scripts to populate Orchestra from Repository 2010 Edition and vice versa (message structure only)
- Example Orchestra files
- Demonstration projects:
 - Documentation generator
 - QuickFIX data dictionary and code generators
 - QuickFIX session configuration
 - Test generator

8.2 Members-only applications

Certain advanced applications should be considered premium and only be made available to FIX members. Complex applications require more development time and maintenance, and therefore should be made available to firms that contribute. At the same time, those applications will serve as a value-added to membership, providing an incentive for firms to join.

Premium applications currently in alpha testing are:

Orchid—Orchestra Editor

Log2orchestra—creates an Orchestra file from FIX message logs

8.3 Plan for EP production

In addition to standard development, a plan will be created to migrate the building of Extension Packs from Repository 2010 Edition to Orchestra. In addition to modernizing build facilities, this plan will need to account for the tools that consume Repository, including FIXimate, FIXML schema generation, and so forth.

Appendix A - Usage Examples

These example Orchestra files are posted in GitHub.

Example order entry file developed by MilleniumIT

[fix-orchestra/repository/src/test/resources/examples/](https://github.com/FIXTradingCommunity/fix-orchestra/blob/master/repository/src/test/resources/examples/)

Sample interface file

<https://github.com/FIXTradingCommunity/fix-orchestra/blob/master/interfaces/src/test/resources/SampleInterfaces.xml>

A non-FIX exchange API interpreted in Orchestra

<https://github.com/FIXTradingCommunity/orchestrations/tree/master/NYSE%20Pillar>

Appendix B – Compliance Strategy

The first level of compliance will be provided by existing XML tools that verify conformity of a file to its schema. A test is provided to validate that isolated DSL expressions conform to the grammar. However, a comprehensive compliance test has not yet been developed.