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Orchestra Assumptions…

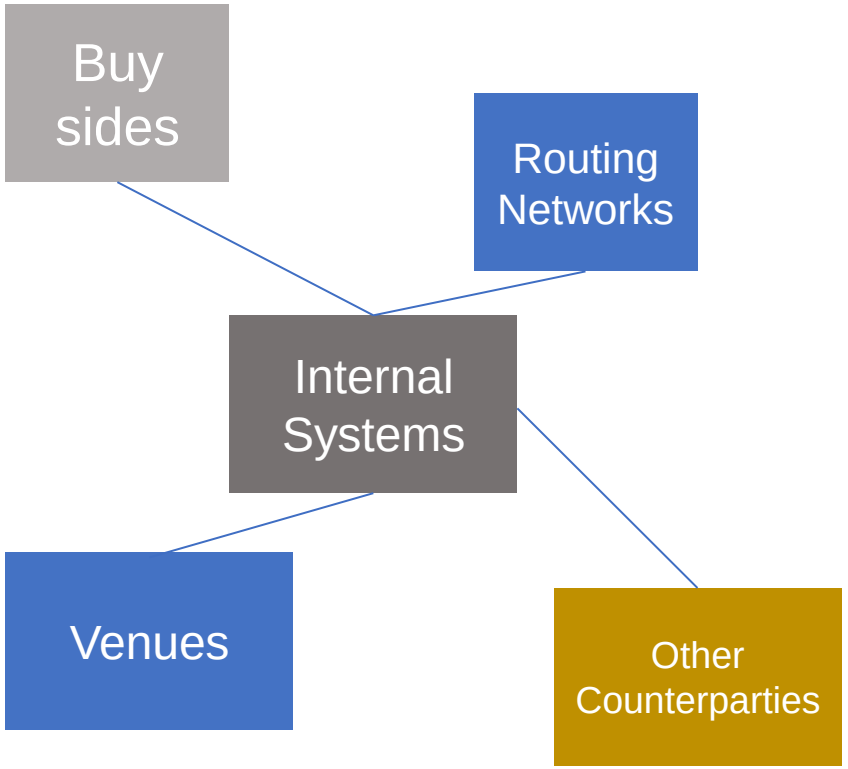
- Large **scale** investment in FIX infrastructure not likely
- Few firms are providing resources to address operational inefficiencies
- Therefore, any automation must be tactical and incremental
- MUST address key FIX operational challenges
  - FIXatdl configuration
  - Certificate deployment issues
- Any automation / process improvement must be applicable to non-FIX protocols
  - FIX now has multiple encodings and multiple session layers
  - Many venues have proprietary binary interfaces

However…

- Unmet needs
  - Operational inefficiencies
  - Operational risks
  - Takes to long to onboard trading partners
  - Translation / normalization effort

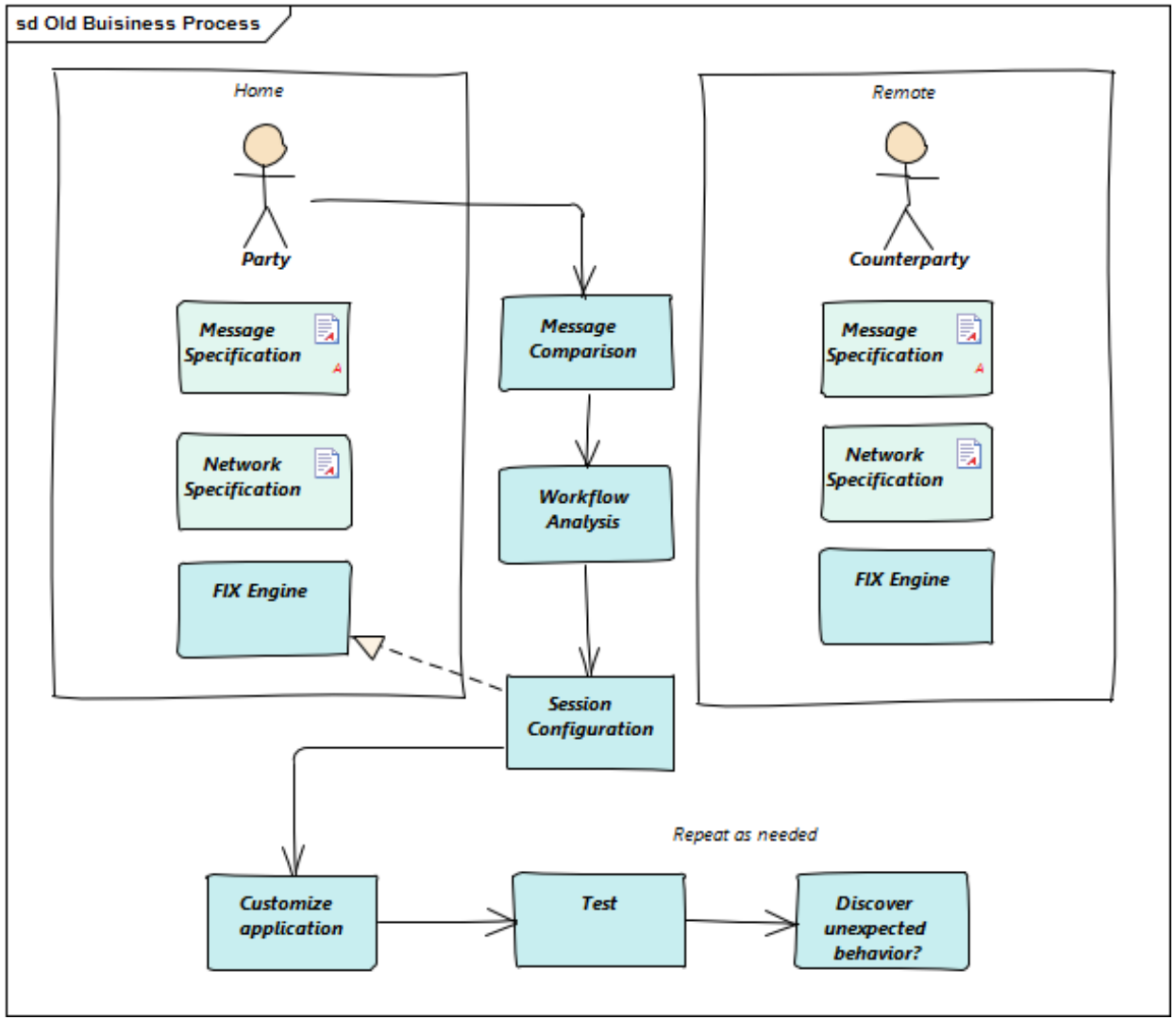
Where are the current pain points?

- Ambiguity and incompleteness of rules of engagement
- Must support multiple flavors of FIX
- Multiple internal messaging applications
- Multiple venue gateways



How to engage a FIX counterparty without Orchestra

"In short, the information we have is sparse and not directly actionable…"



Not to mention errrror prone as well!

Remember early Computer Interfaces?

- Having to configure device drivers?
- Setting DIP Switches on interface cards?
- Each interface needed an expert to get operational
- Then came the magic of plug and play

The goal of Orchestra is to make financial messaging protocols more plug and play

FIX orchestra

What is Orchestra?

Two aspects of Orchestra

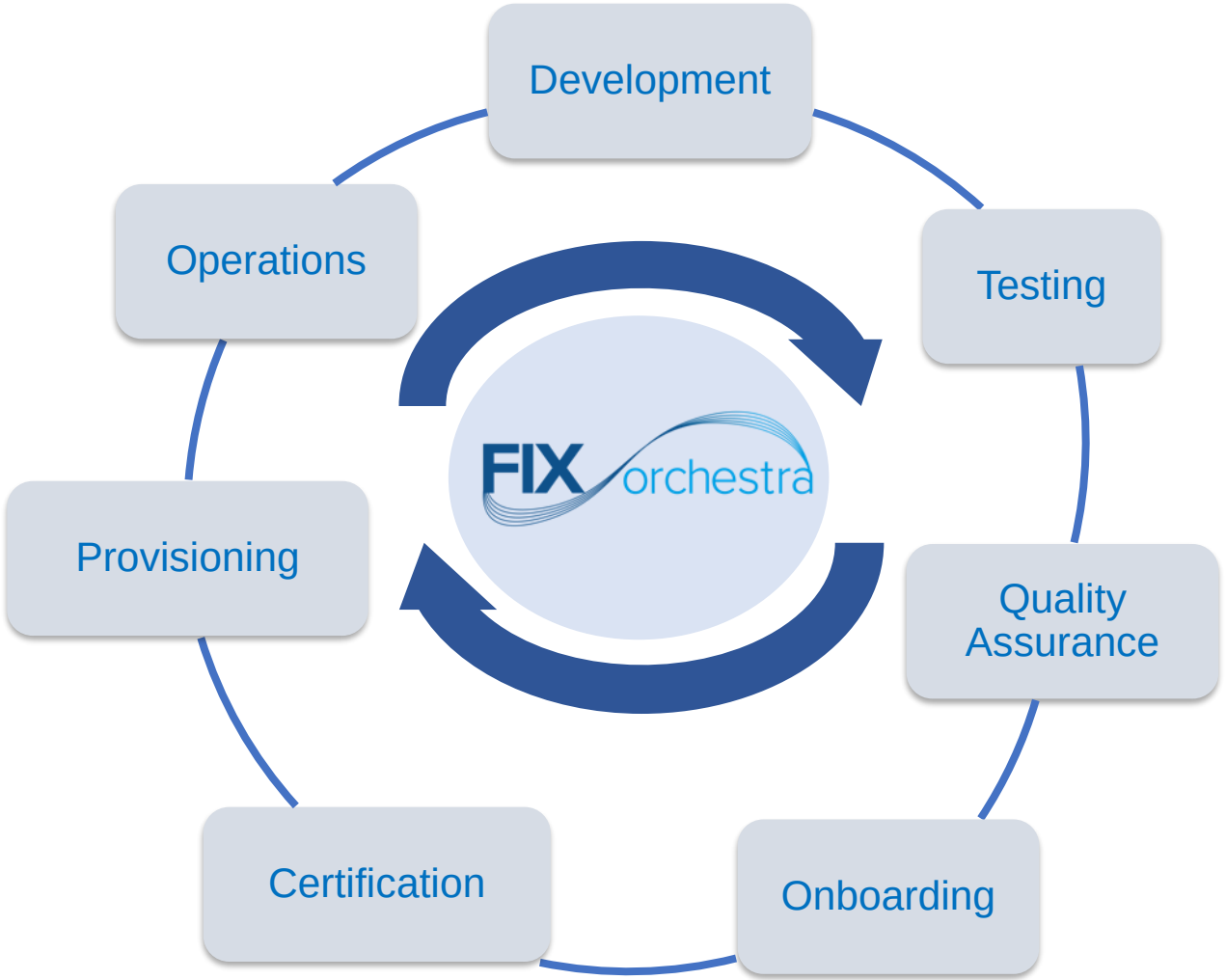
Define the service…

Fields
Messages
    Scenarios
Components and Groups
Codesets and values
Conditional Rules
Workflows
Actors and state transition

Deploy the service…

Application Layer
    Version
    FIXatdl
Encoding Layer
Session Layer
    counterparty identifiers
    security
Transport Layer
        Connection details

FIX Orchestra enables DevOps best practices



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What is FIX Orchestra?

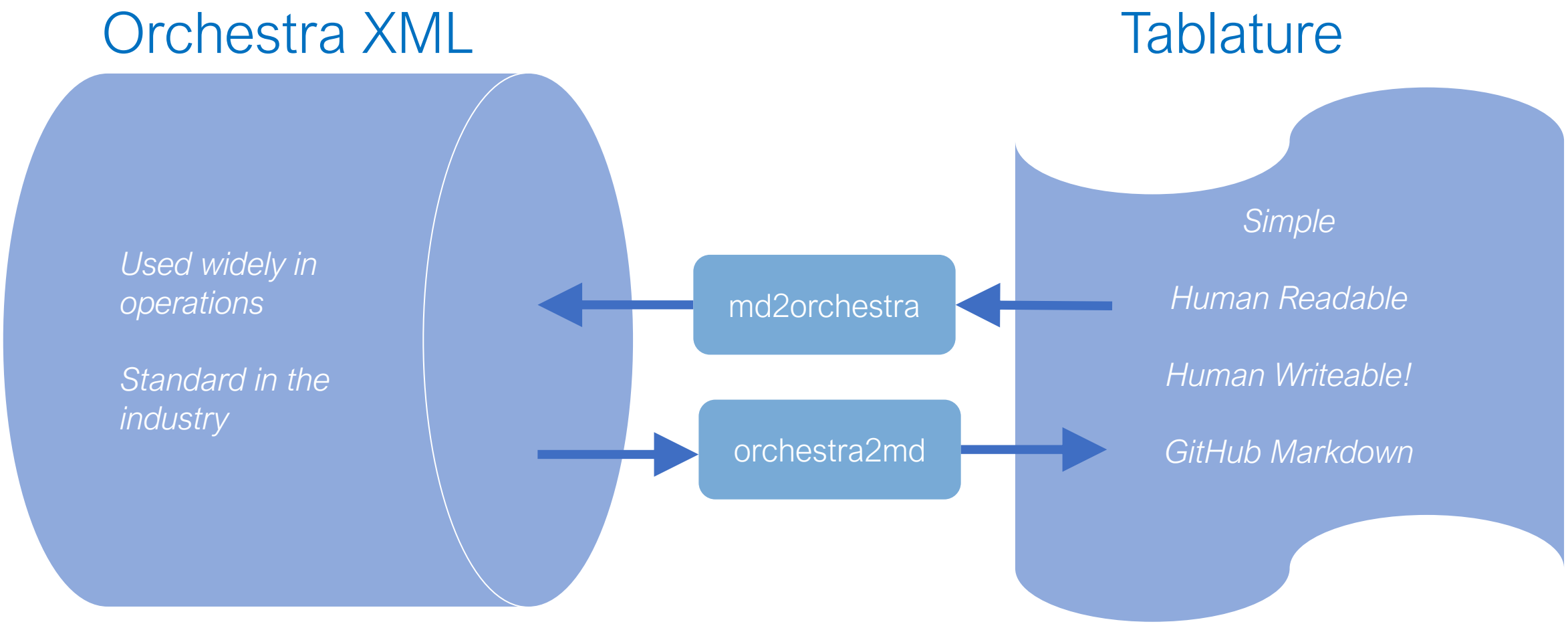
What it is

- A standard for exchanging machine-readable rules of engagement
- Describes your service offering
- How we deliver the standard
  - FIX Latest
  - FIX.4.2
  - FIX Session Layer
  - Recommended practices

What it is *NOT*

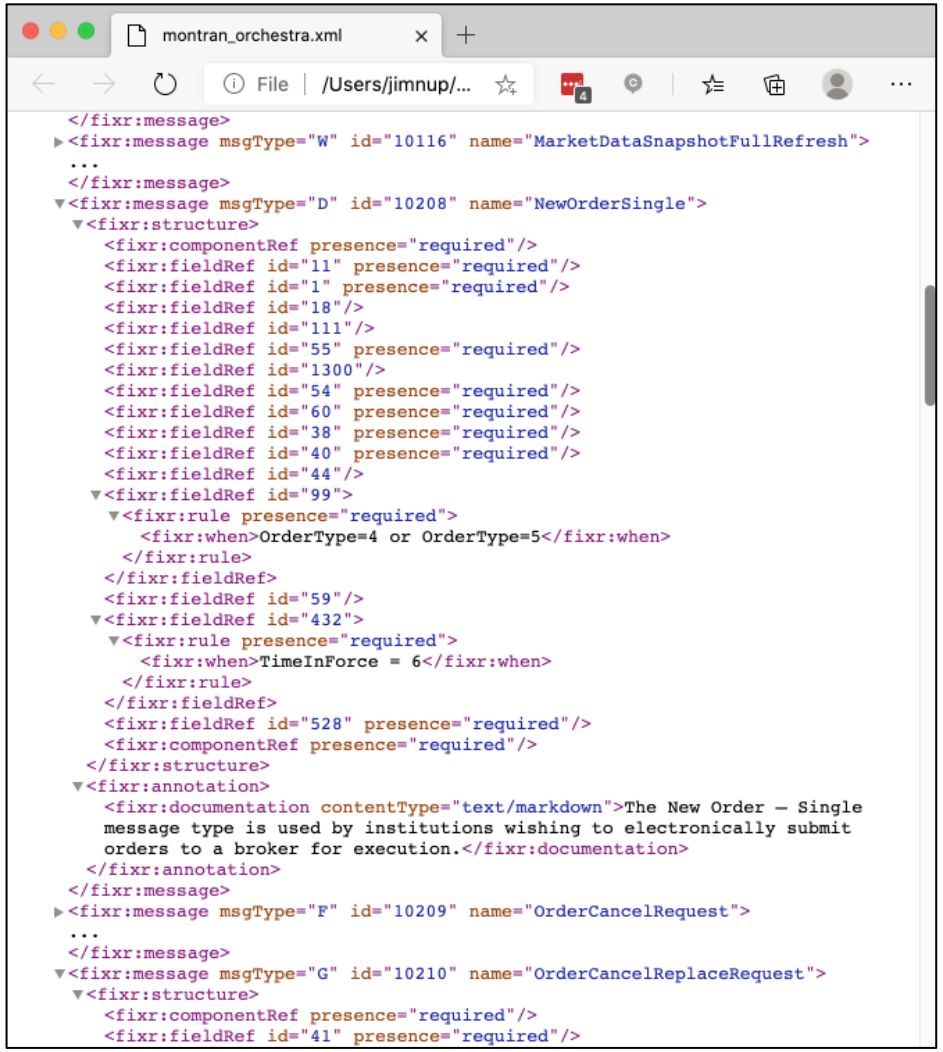
- A product
- A wire protocol
- A replacement for your existing infrastructure
- A FIX version

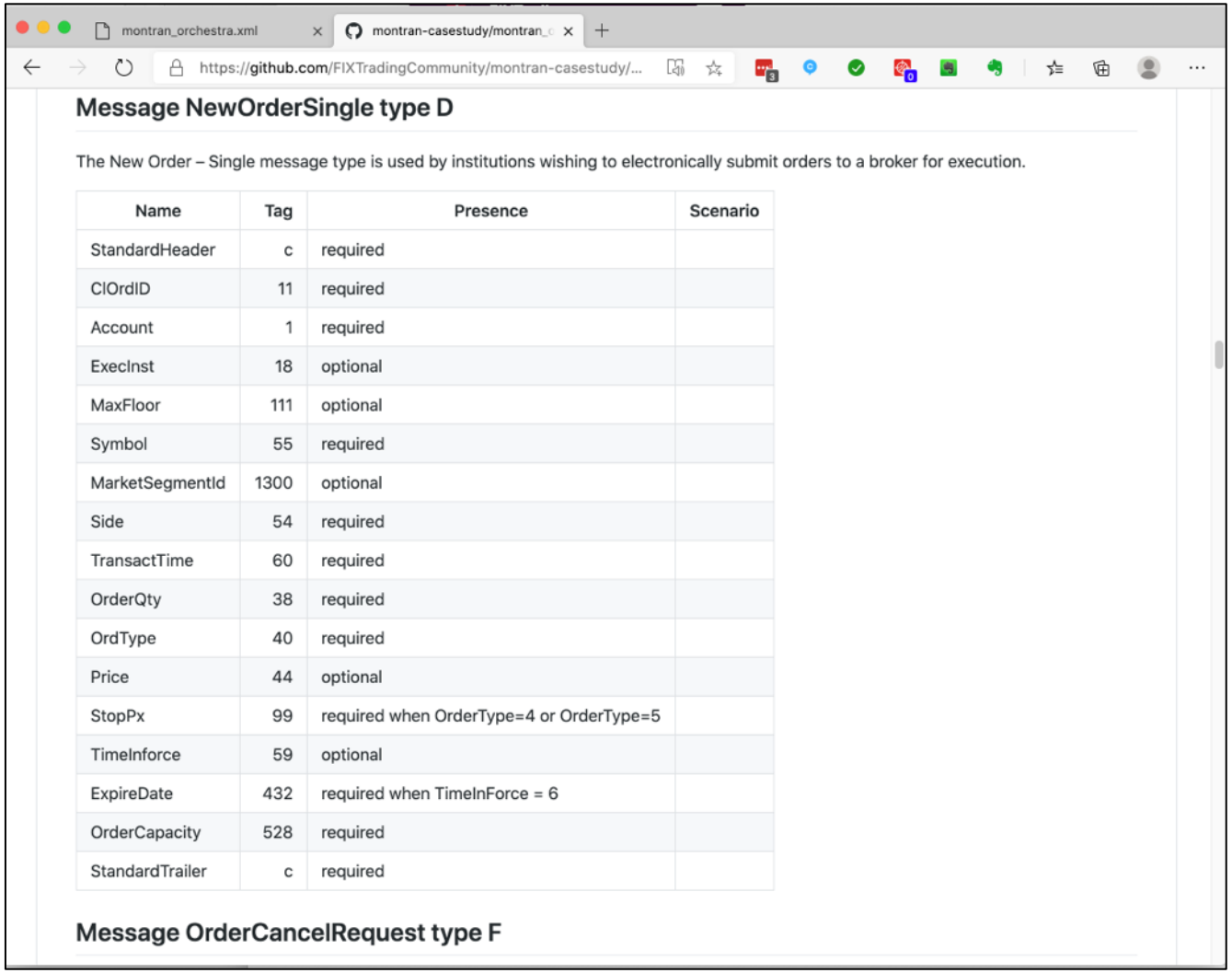
Two interchangeable representations of Orchestra



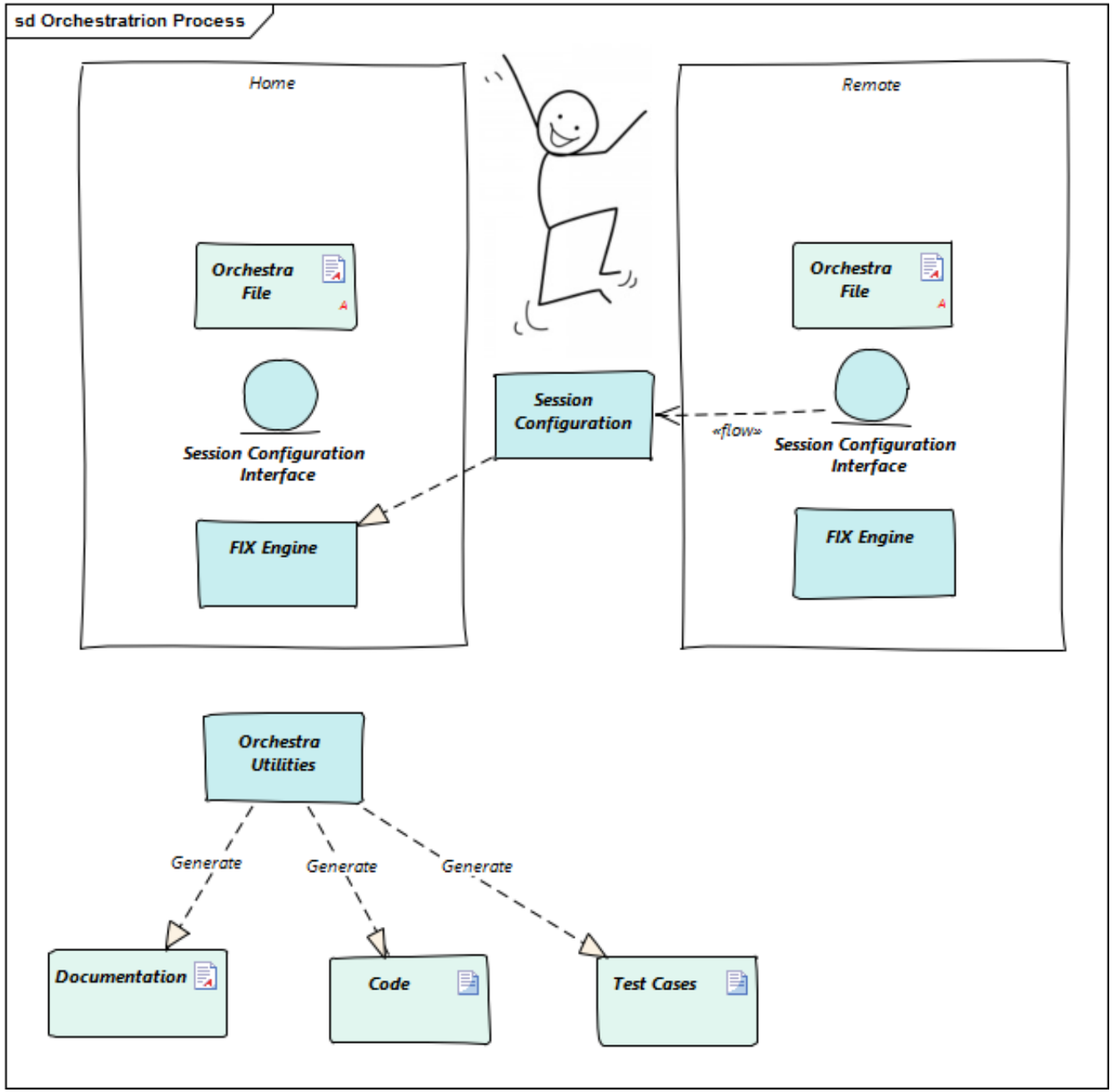
Both are machine readable!

Here is an example in both XML and Markdown





How to engage a FIX counterparty with Orchestra



FIX orchestra

How can you use Orchestra?

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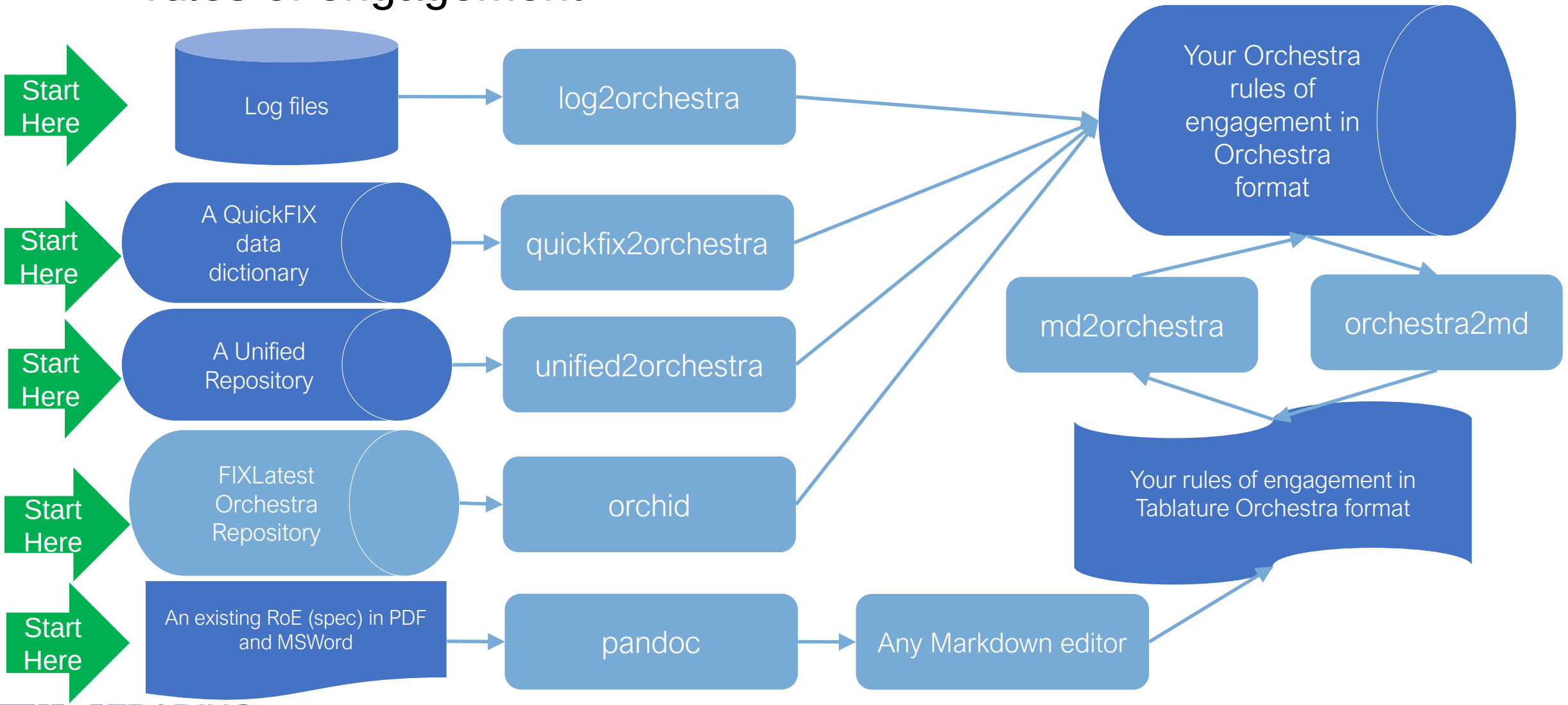
How can you benefit from Orchestra right now?

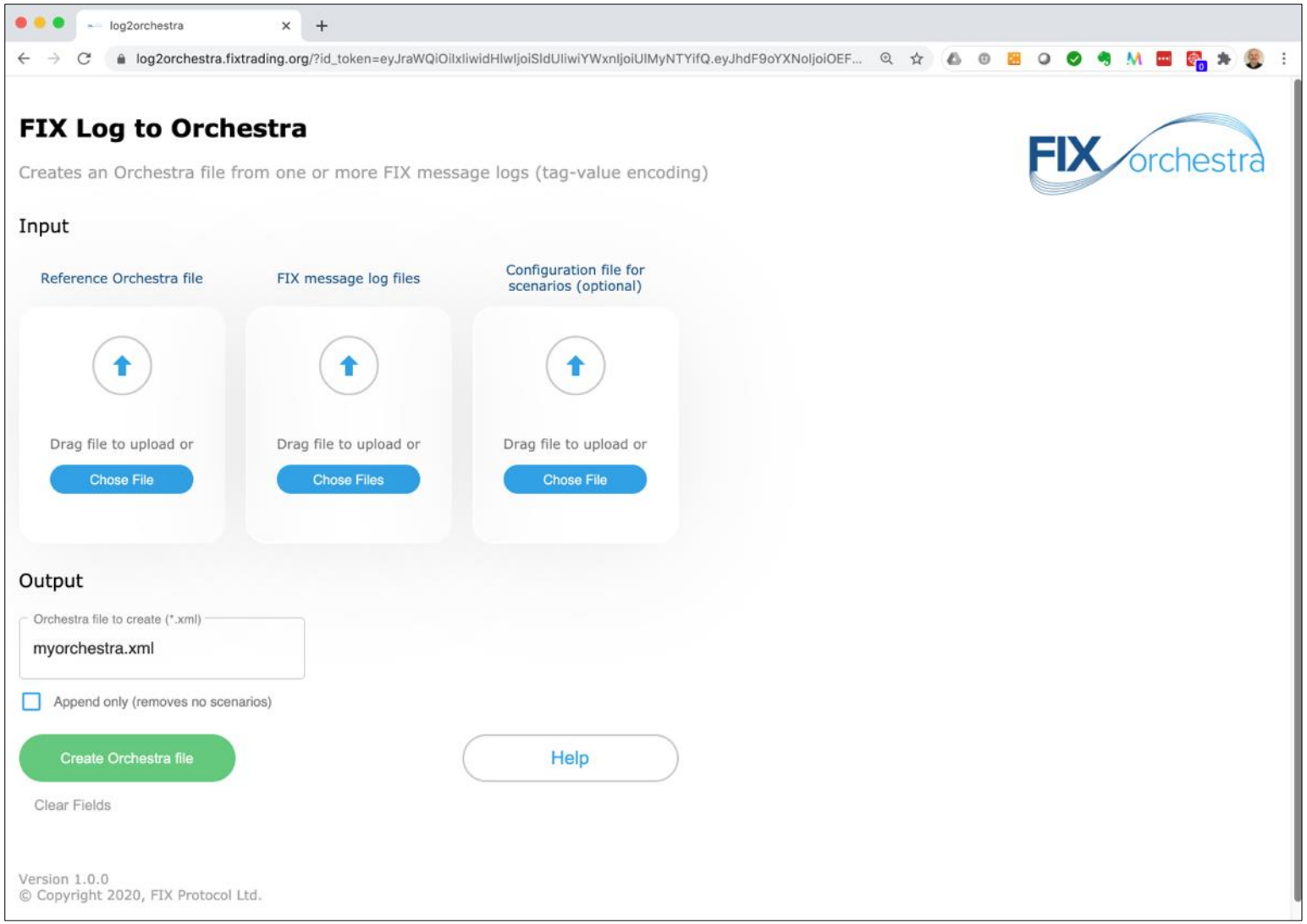
- Looking for a simpler way to create a richer and less ambiguous rules of engagement document?
- Need to document and understand your internal electronic trading infrastructure better?
- Just want to share message definitions and conditional fields?
- Want to extend to describe message responses, scenarios, and basic states?
- Want to fully model in detail the FIX service?

We can do it! let's start today!

Realizing your own orchestra machine readable rules of engagement



log2orchestra



A group of tooling to support Orchestra

log2orchestra

Ability to derive an orchestra file from

md2orchestra
orchestra2md
md2interface
Interface2md

Converts between tablature and orchestra

Atom/VS Code/ ZettIr/GitHub

Editors for tablature

FIXimate

Ability to generate custom FIXimate

docgen

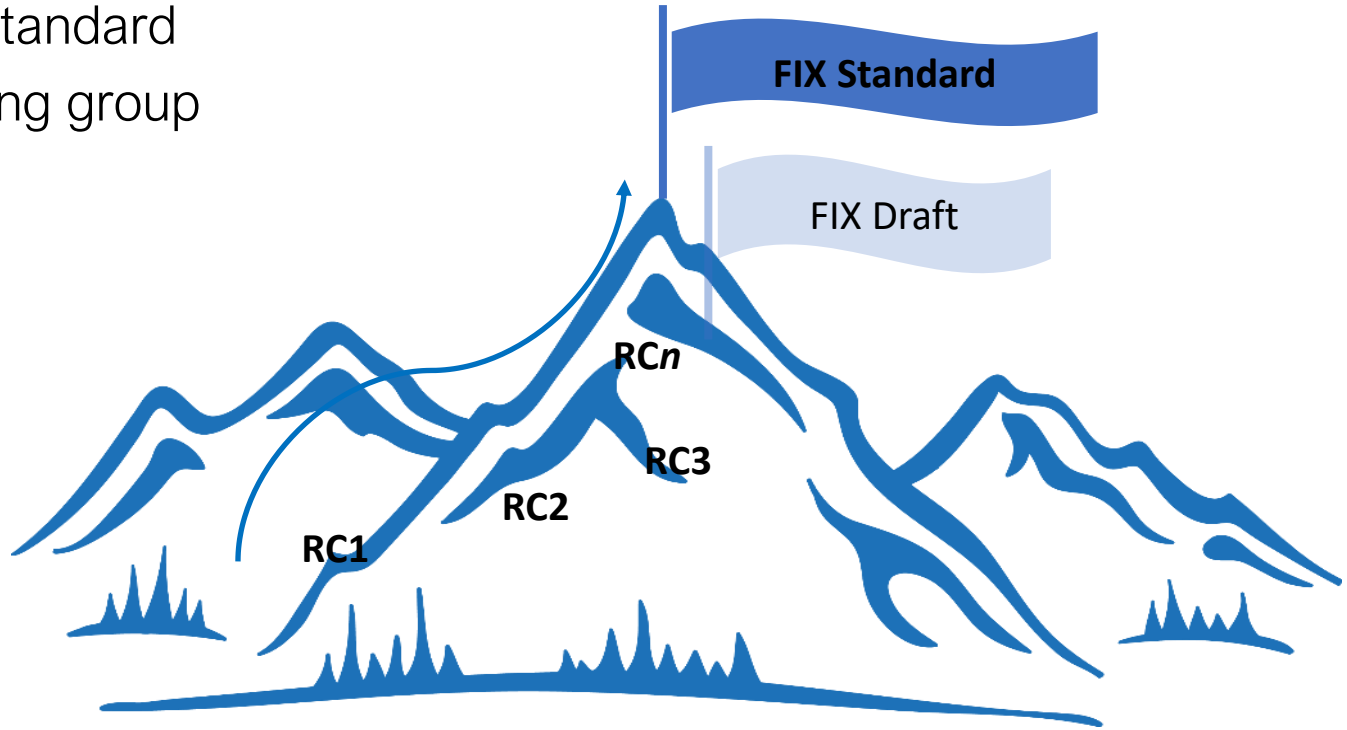
Generates an HTML version of specification with workflow diagrams and state diagrams

FIX Orchestra supports innovation

- Possible uses and tools
  - Generate and run conformance tests
  - Capture best practices as an Orchestra file instead of text
  - Regulate internal flows within a large organization as well as between counterparties
  - Orchestra is a contract for behavior – use it to generate an emulator for testing
  - Analyze FIX logs for conformance to specified behavior
  - Let's go further…
    - Generate Execution Management, Order Management, Smart Order Routing, Order Matching behavior based upon exchange of state machine descriptions contained within FIX Orchestra files

FIX A New Level of Openness

- FIX develops technical standards in an open manner
- Technical Standards Process
  - Anyone can propose a technical standard
  - Anyone can work on a technical standard
  - Work is done by a technical working group
  - Available to everyone on GitHub



In conclusion…

- Orchestra is a standard to define an interface for service offerings
- You don’t need to modify the internals of your applications
- Orchestra can be used to define your service in one place within *version control*
- Simple scripts can be created to read Orchestra files and update configuration files for various services
- You can start to benefit from Orchestra immediately with minimal investment

FIX orchestra

How can you get involved?

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Want to get more involved?

FIX Orchestra Working Group

MOST Monitoring, Onboarding, Software Testing Working Group

Create your specification

Test open source and member based tools and services