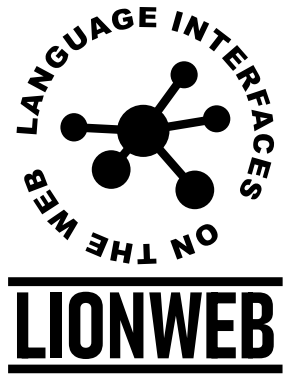


The LionWeb Initiative

Strumenta Community Panel, January 2024
Niko Stotz & Jos Warmer

LionWeb Project Overview

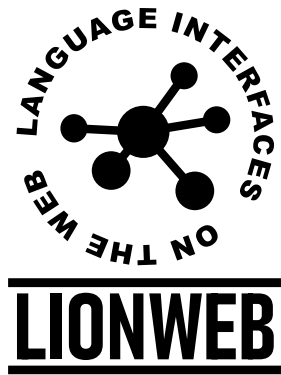


Mission

To create an ecosystem of interoperable components for building language-oriented modeling tools on the web.

- Adopt language engineering
- Reduce technology/vendor lock-in
- Mix and match components
- Foster innovation and incremental improvements

<https://lionweb.io>
info@lionweb.io



Why – Rationale

Most mature LWBs desktop-based

- ⇒ Everything needs to be web
- ⇒ Huge re-engineering effort

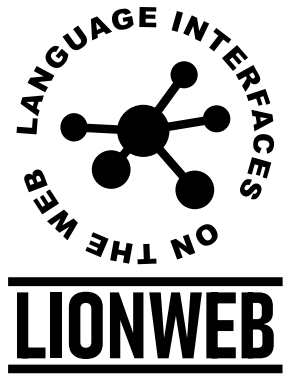
Language Engineering landscape is fragmented

- ⇒ Strong tool lock-in
- ⇒ Many interesting tools/component that you would like to use
... but ... you cannot
- ⇒ Everybody has to keep reinventing the wheel

Our community is too small to afford this, we can only grow if we can benefit from each others work

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LionWeb: Language $\left\{ \begin{array}{l} \text{Interfaces} \\ \text{Interoperability} \\ \text{Integration} \end{array} \right\}$ on the Web



How – Principles

LionWeb as boring, reliable base

⇒ Innovate on top

Rough consensus & Running code

⇒ Yoyo approach

Everything is a model

⇒ Markus Voelter's [Whitepaper](#)
“A Platform for Systems and Business Modeling”

Business-friendly Open Source

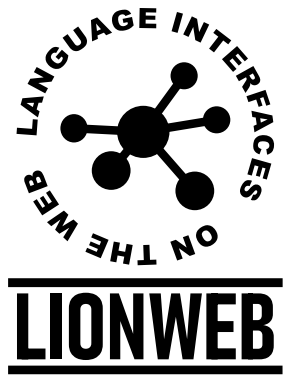
⇒ Apache 2.0 license

Spec



Code

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What are we working on

Interoperability

- ⇒ meta-metamodel
- ⇒ serialization format

2023.1 Release

Protocols

- ⇒ Bulk protocol
- ⇒ Delta protocol

Next release(s)

- **Programming APIs**

- ⇒ Java
- ⇒ Kotlin
- ⇒ TypeScript
- ⇒ JavaScript

- **Tool integrations**

- ⇒ MPS
- ⇒ Starlasu
- ⇒ Freon
- ⇒ Ecore

- **Repository**

- ⇒ Reference implementation of protocols

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What not – Out of Scope

- Yet another Language Workbench



glamorous**toolkit**



Xtext

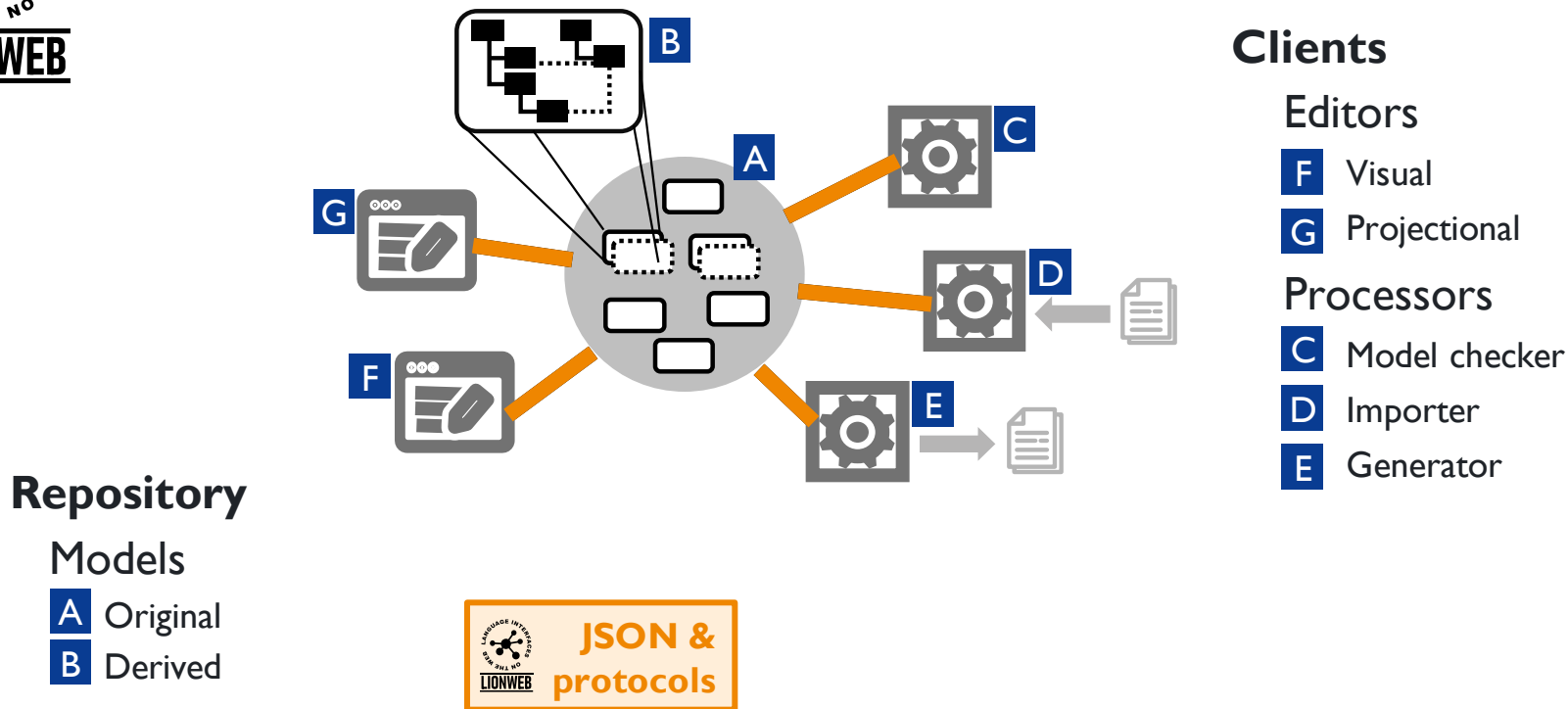


Etc. etc. etc.

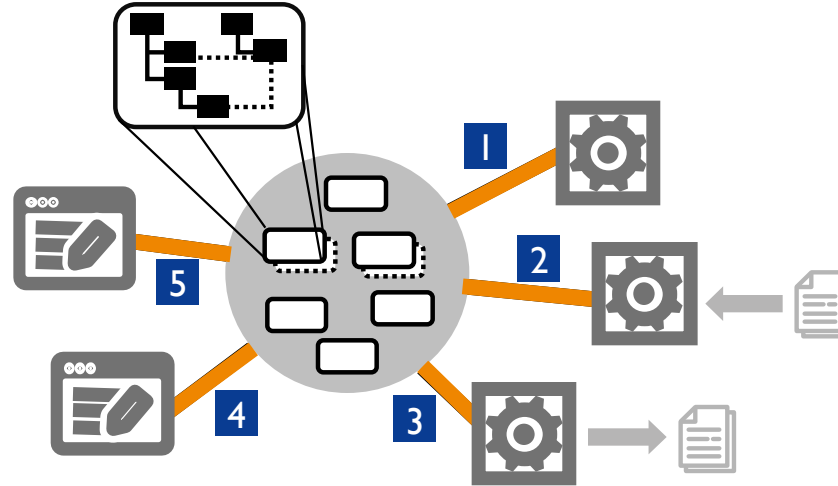
- Plug-and-play component system
- Deployment scheme

Technical Overview

Reference Architecture: Parts



Reference Architecture: Protocols



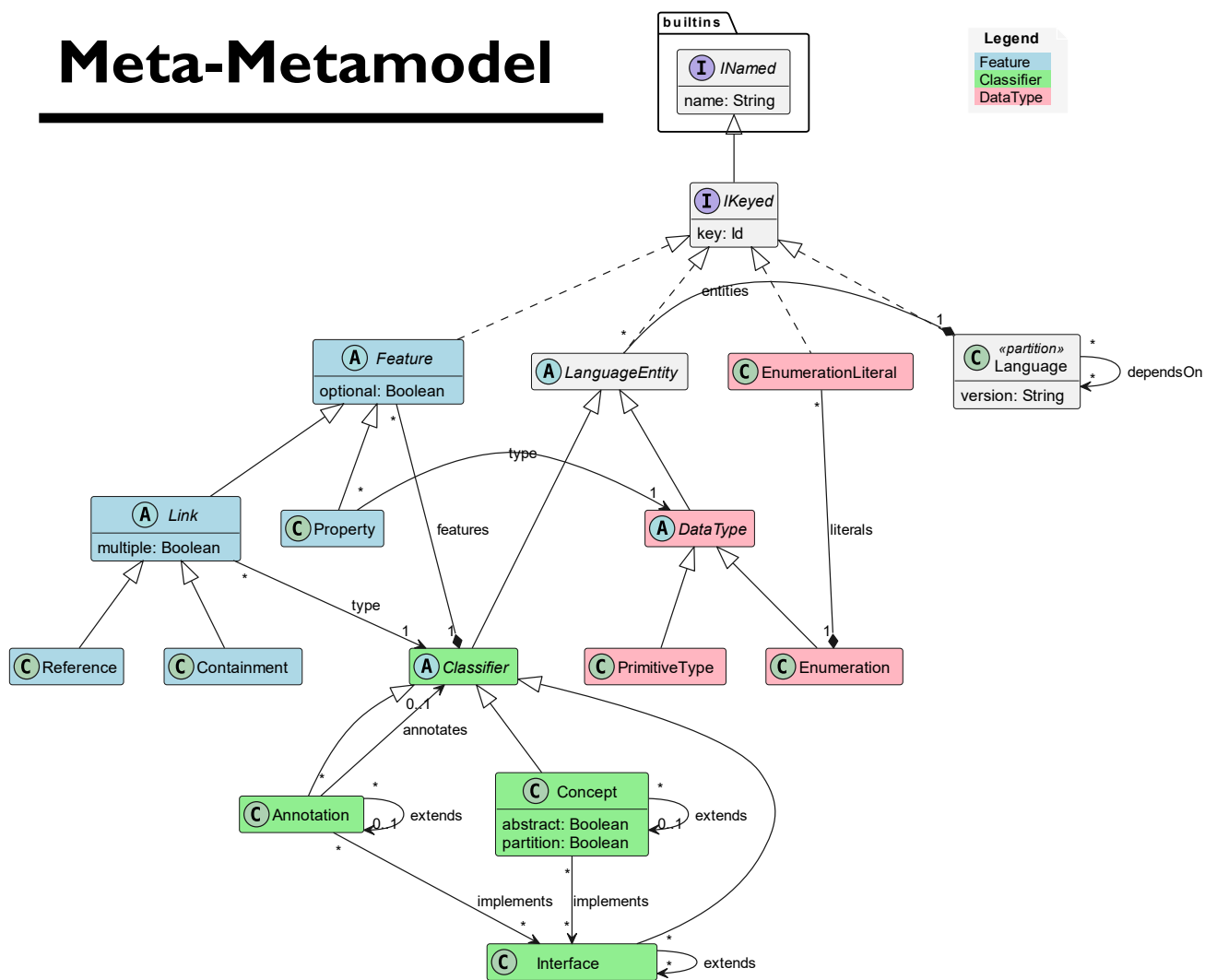
Bulk

- 2** **5** Load model, modify, store it back
- 3** Load, derive something else

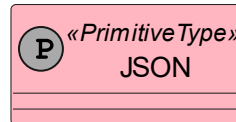
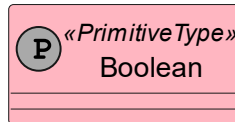
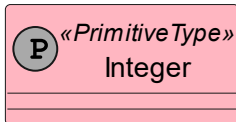
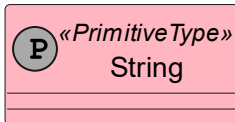
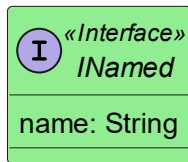
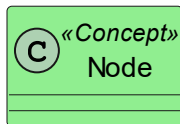
Delta

- 1** **4** Initialise with model, get notified of changes, write back changes continuously

Meta-Metamodel

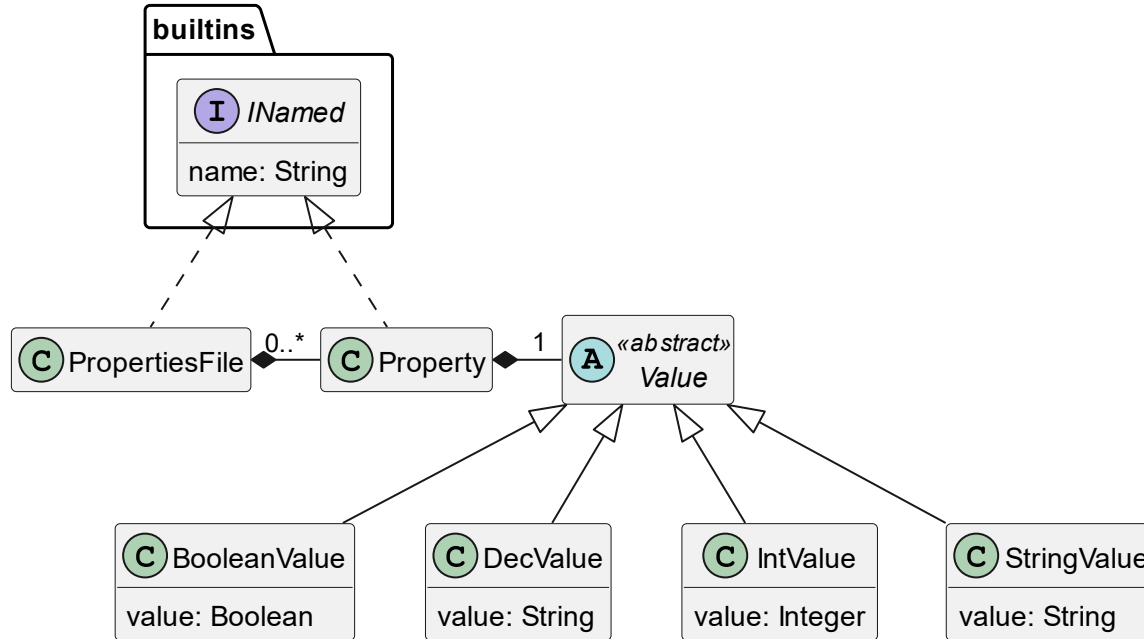


Built-in Meta Model Standard Library

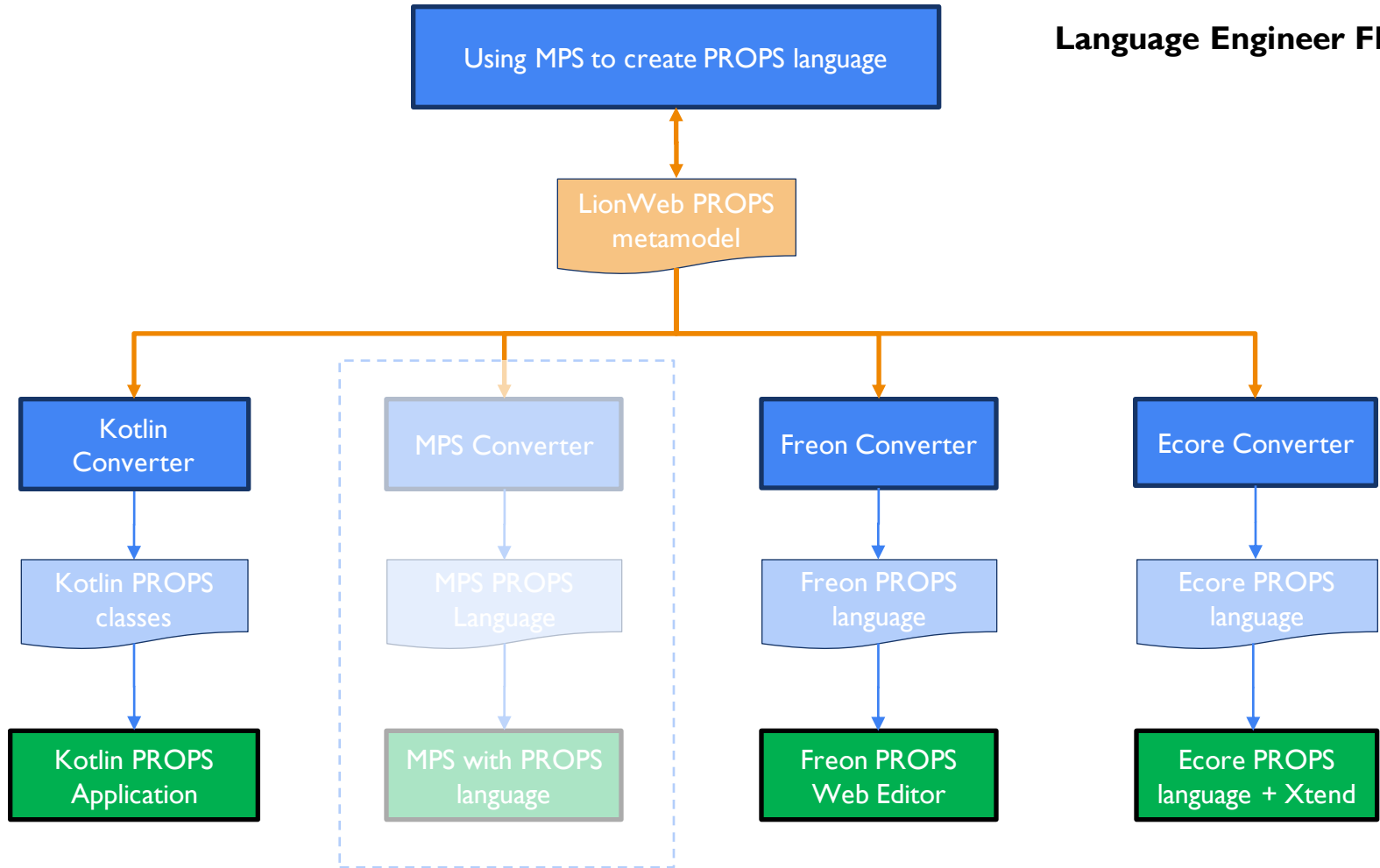


Showtime

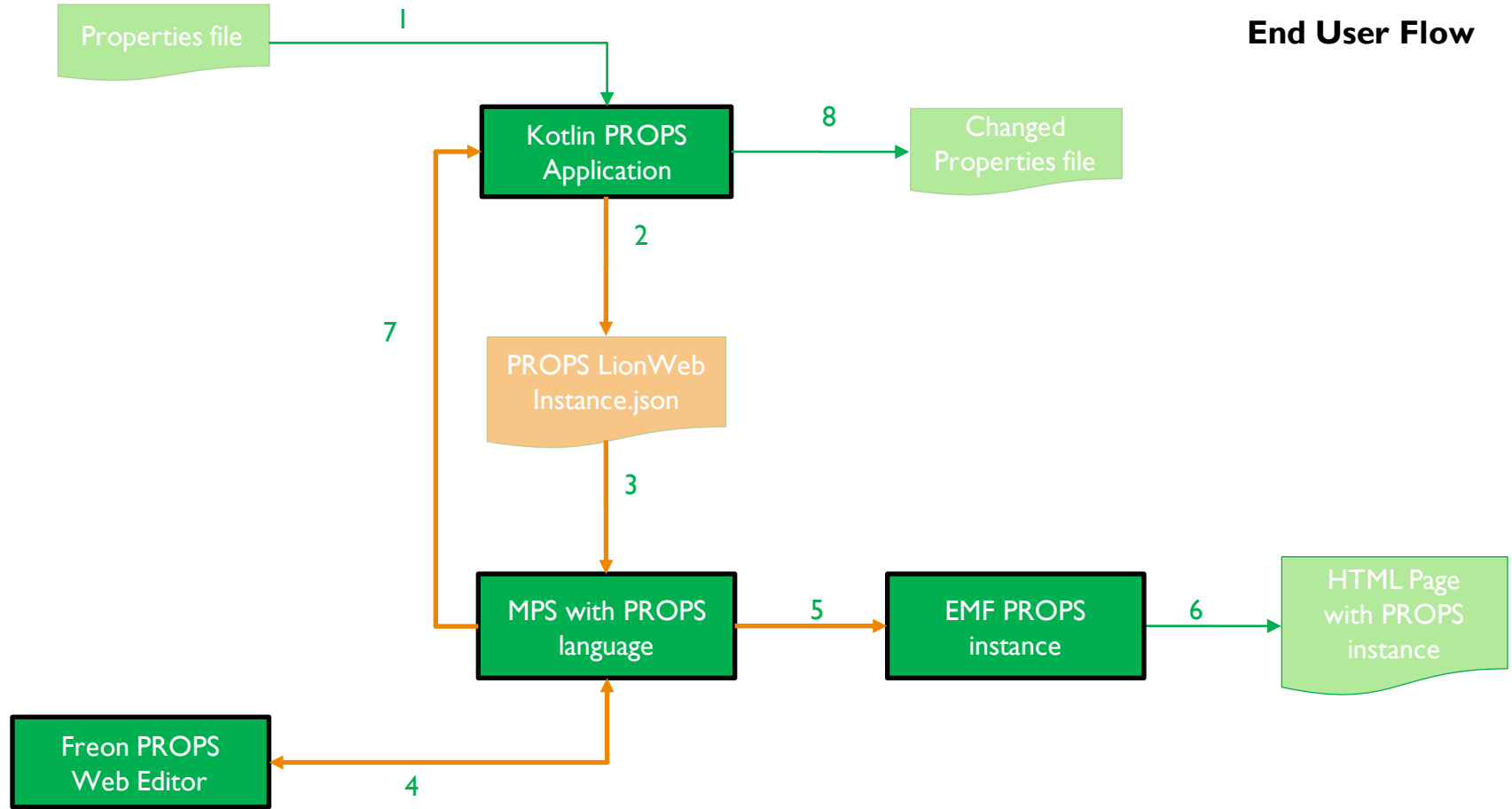
Example Metamodel: PROPS Language



Language Engineer Flow



End User Flow



LionWeb Team

Meinte Boersma	Freelancer
Norman Koester	itemis (modelix)
Sergej Koscejev	Freelancer
Sascha Lisson	itemis (modelix)
Eugen Schindler	Canon Production Printing
Alex Shatalin	Jetbrains (MPS)
Niko Stotz	FIRE
Federico Tomassetti	Strumenta (Starlasu)
Markus Voelter	Freelancer
Jos Warmer	Freelancer (Freon)

Want to join and work with us:

info@lionweb.io

Want to follow us or use or **implement** LionWeb:

https://join.slack.com/t/lionweb/shared_invite/zt-lzltq8eqv-QJmtsZA8_oscCrO8HOOp3FA





Near Term Focus

- Finalize Bulk Protocols and document them
- Start Work on delta protocols / collaboration
- Refine meta-metamodel
- Improve reference implementations and examples
- Support integration with more tools