NIST's Semantic Mediation and Validation Tool Kit

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Goals

Target domain: Manufacturing Production Networks

Information flow between many companies from diverse industries based on different exchange schemata and schema languages.

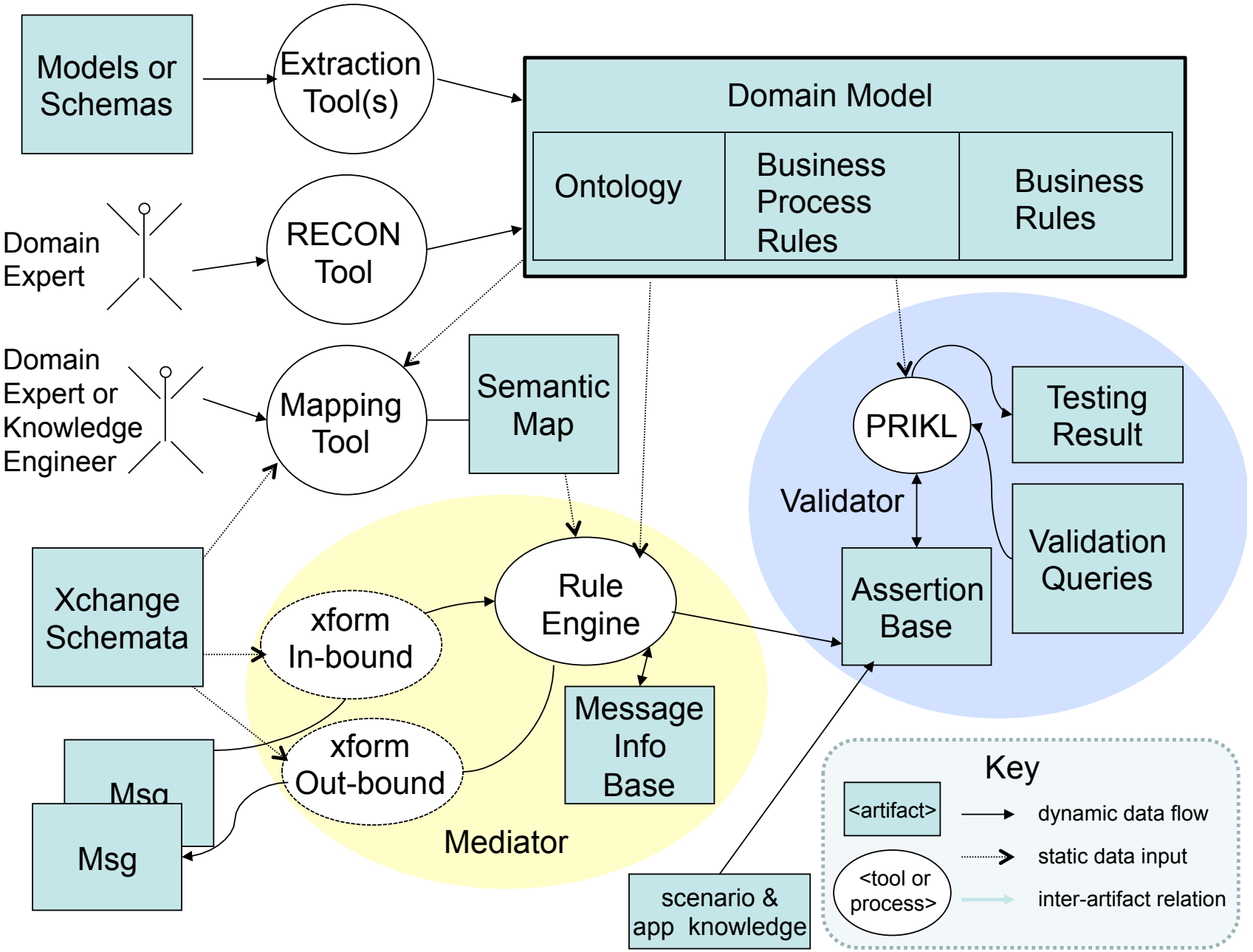
Mediation

Goal: enable seamless communication within production network without pairwise translations

Validation

Goal: catch errors in information flow before they become disruptive (includes message choreography and content)

Architecture



Expressivity vs. User Friendliness

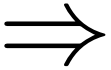
No knowledge representation language meets these requirements

- Semantically unambiguous
- Highly expressive
- Easy to learn and use

RECON to PrIKL

RECON

- (**R**estricted **E**nglish for **C**onstructing **On**tologies)
- well-defined syntax & semantics based on English



PrIKL

- (**Pr**over for **I**kris **K**nowlege **L**anguage)
- Optimized for reasoning with ontologies

DEMO

(α-versions – keep fingers crossed)

Example: "Each shipment consists of 5000 gallons of gasoline."

People

NIST Engineering Lab

- Ed Barkmeyer
- Antoine Gerardin
- Don Libes
- Fabian Neuhaus
- Severin Tixier
- Evan Wallace
- Martin Weber

NIST Information Technology Lab

- Harold Booth
- Paul Cichonski