Project Creation Review

Tools Services Framework (Corona)

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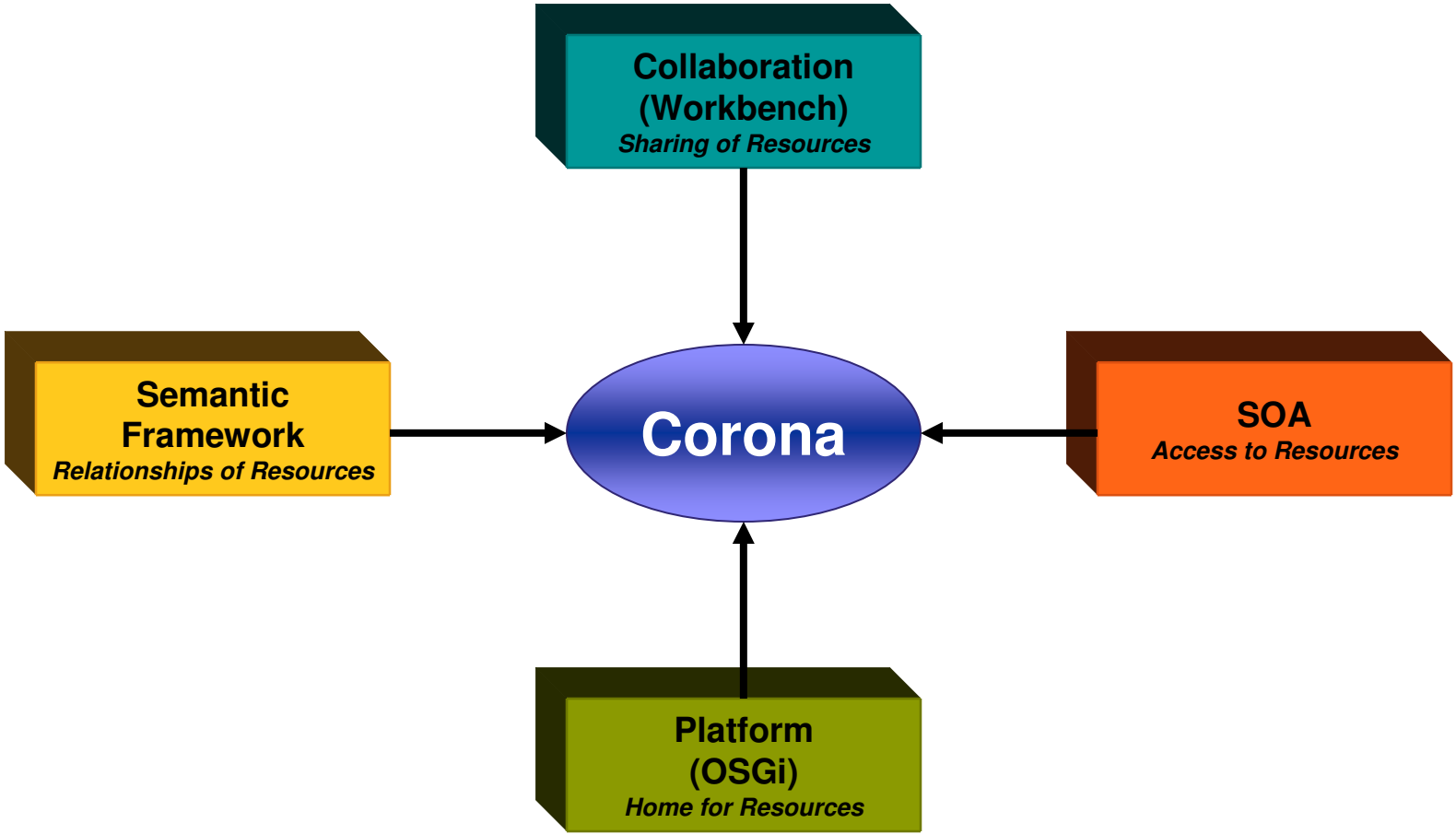
Corona Proposal

- The Corona proposal stated the following goal…
  - Corona will provide the frameworks required for collaboration among instances of Eclipse based clients as well as clients that exist outside the Workbench environment. The Corona project will include:
    - A service plug-in model based on OSGi and hosted within a generic ESB container. The initial deployment targets are the ones supported by the SOA Tools Project.
    - Extension points that facilitate the creation a wide variety of plug-ins.
    - An implementation of extensions for collaboration concepts that are analogous to applicable Workbench concepts such as Projects and Natures.
      - example, a shared Project would implement a container for associated Project repositories and would host ad hoc collaboration via ECF between project members as defined by Higgins.
- The original goal of a server-side Eclipse environment for SOA plug-in deployment remains intact. However, the initial scope included hosting within an ESB container. This has been deferred due to advancements in Equinox's implementation in OSGi as well as the lack of adoption of specifications such as JBI.

Project Goals

- Provide an OSGi-based SOA component framework for server-side Eclipse plug-in deployment
- Establish a collaboration event model used to propagate events across multiple Workbench instances
- Implement a mechanism for harvesting component and artifact relationships from collaboration events
- Provide manageability of component and resources used within the Corona framework

Factors Influencing Corona



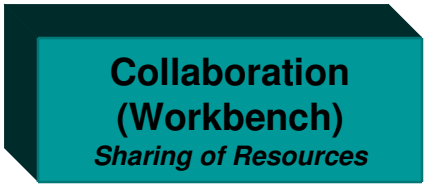
Platform

Corona is based upon Equinox to provide the basis for a SOA environment. Equinox has implemented the OSGi specification that is used for *bundle* deployment and management.

In addition to the OSGi runtime, Corona also leverages several Eclipse frameworks.

- Server-side environment
- Consistent Eclipse programming model
- Equinox: OSGi runtime
  - Bundles
  - Services
    - Event, HTTP
- Eclipse frameworks
  - EMF
  - ECF
  - Higgins

Collaboration



Eclipse defines constructs, such as Projects and Resources, that can be shared across plug-ins within a *single* Workbench instance. Corona will extend this model to a distributed environment by allowing these constructs to be shared across *multiple* Workbench instances. Thus enabling workgroup collaboration upon those particular Resources.

- Communication between multiple Workbench instances
- Shared access to common constructs
  - Projects, Resources, etc…
- Collaboration Events
  - Extends OSGi event model
  - Serializable events
  - Notifications to all interested parties
- Groupware features
  - Chat, newsgroups
- Based upon ECF

SOA

OSGi defines the basis for Corona's SOA model. *Bundles* can be managed as independent components.

Corona introduces a web services model that allows Eclipse plug-in extension points to be mapped to web service endpoints.

- Bundle Life Cycle
  - Installed, Resolved (Starting, Active, Stopping), Uninstalled
- OSGi Services
  - Registration, Service Tracker, Event Service, HTTP
- SOAP
  - Provide web service endpoints to Eclipse plug-in extension points
  - Leverage existing Eclipse features
    - org.eclipse.equinox.http
    - EMF ECore
  - Based upon standards
    - WSDL, WSRF, WSDM

Semantic Framework

The semantic framework ties everything together. It provides the persistent memory that describes Resource capabilities as well as relationships between Resources.

The in-memory model of the RDF/OWL knowledge definition will use EODM from the EMFT project.

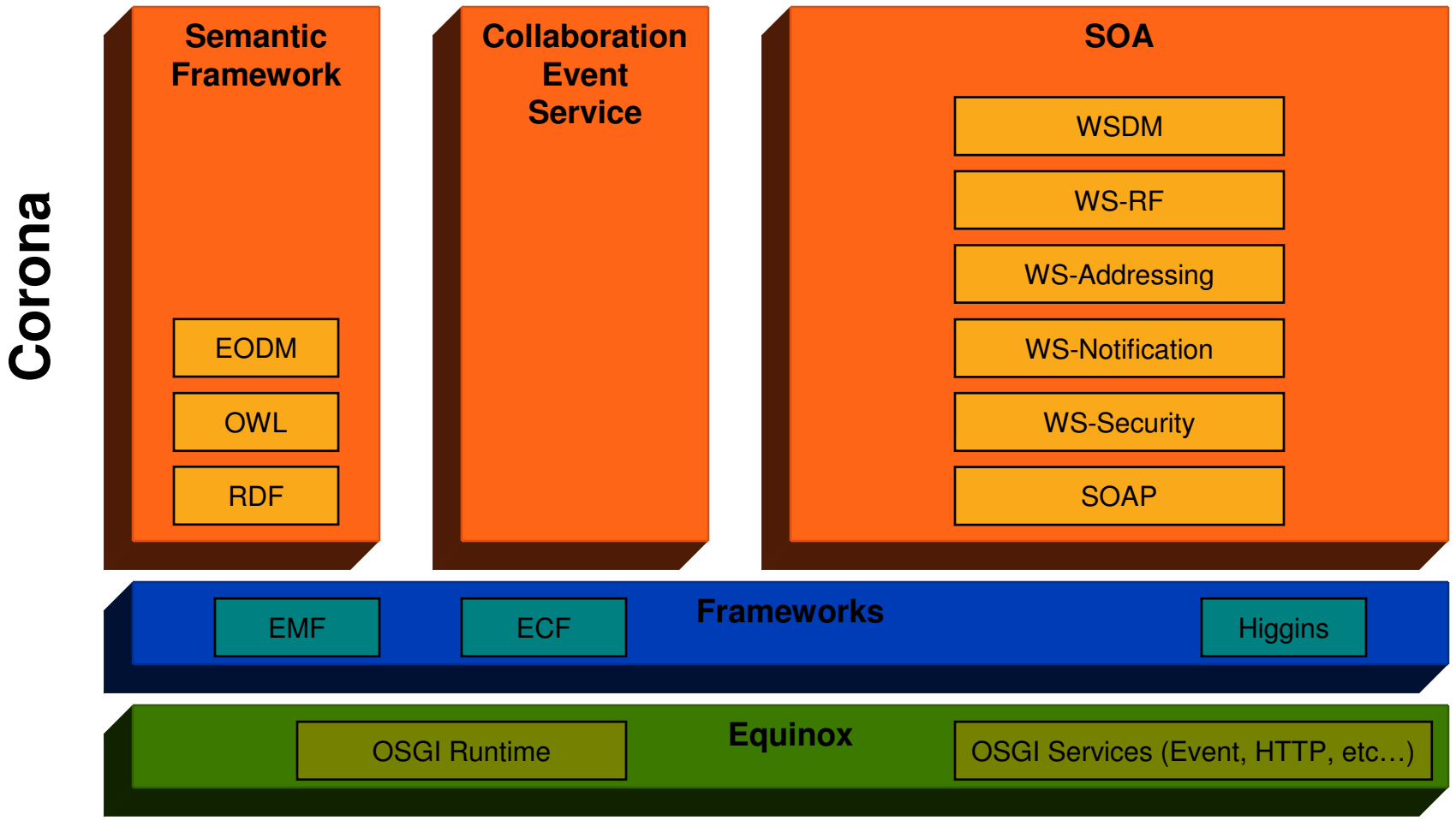
The semantic framework provides growth opportunities. The knowledge base can be extended to include additional relationships defined by plug-in providers.

- Information about the collaboration ecosystem, not just its individual members
  - The whole is greater than the sum of its parts
- Persistent memory
- History
- Relationships
- Extensibility
  - Bundles / Plug-ins are able to extend knowledge base
- Resource Description Framework (RDF)
- Web Ontology Language (OWL)
  - Builds on RDF and RDF Schema and adds more vocabulary for describing properties and classes

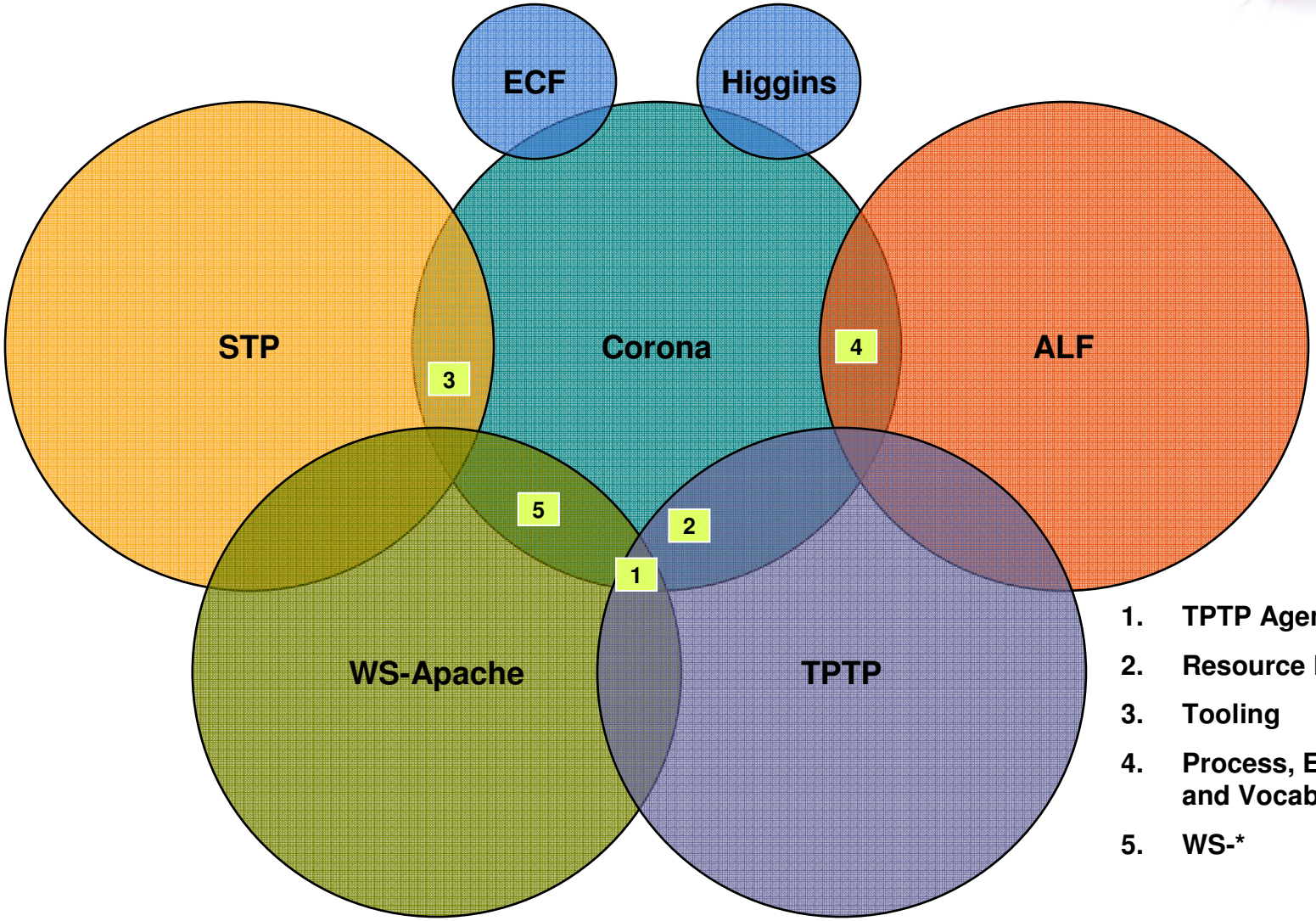
Standards

- OSGi r4
- WSDL v1.1, v2.0
- WSRF v1.2
- WSDM v1.0
- RDF (W3C 20040210)
- OWL (W3C 20040210)

Design



Related Projects



1. TPTP Agents
2. Resource Explorer
3. Tooling
4. Process, Events, and Vocabularies
5. WS-*

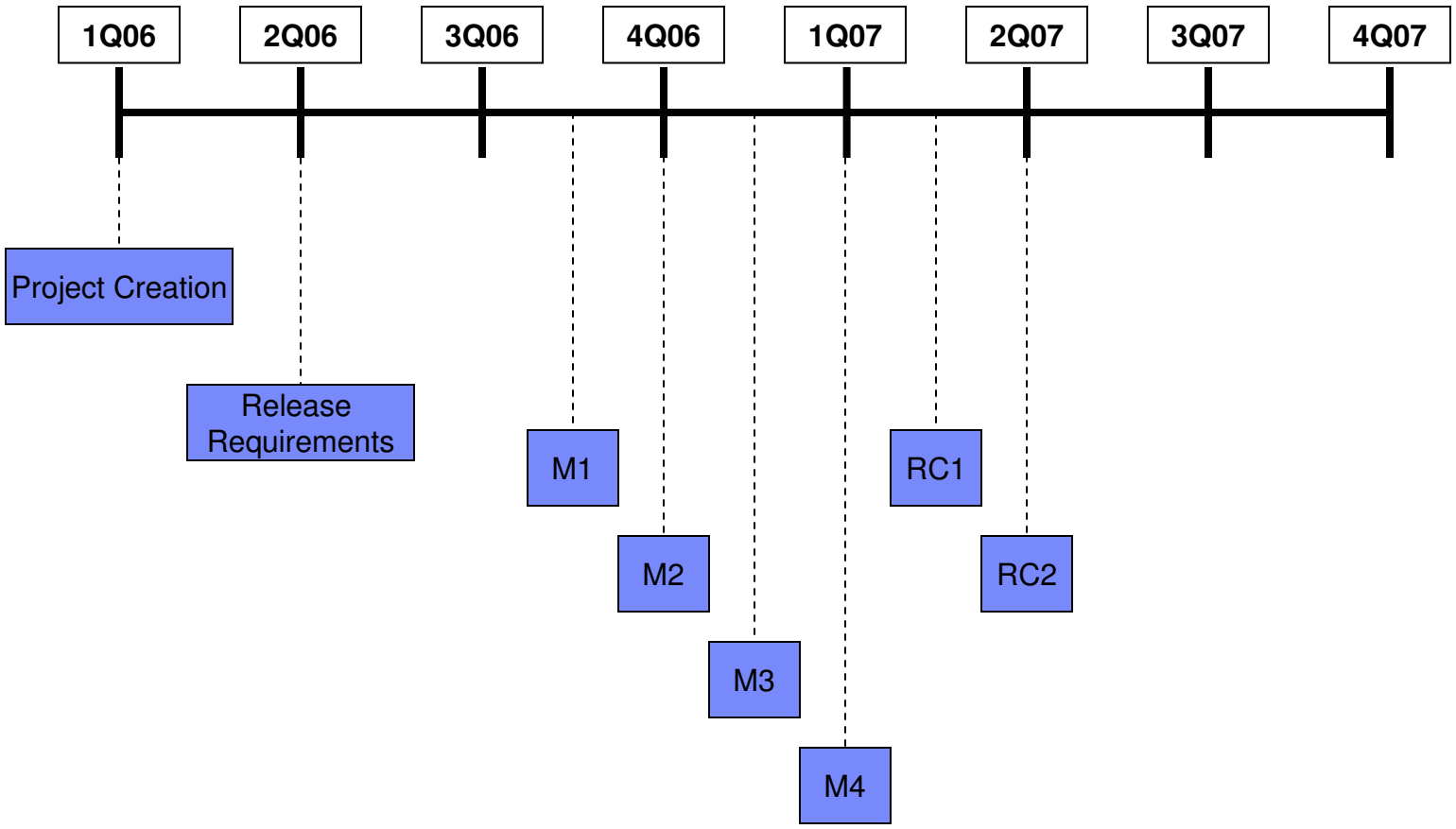
Proposal Feedback

- ALF
  - Synergies with ALF Event and Service Vocabularies
  - Possible deployment of ALF Event Manager and Service Flows
  - Leverage ALF Framework to orchestrate tools across the application lifecycle process
- ECF
  - ECF API enhancements
  - Possible deployment of ECF ‘generic’ server
- Higgins
  - Utilization of WS-Security
- Muse (Apache)
  - Axis2 based WSDM runtime (Muse++)
- TPTP
  - Possible deployment of TPTP agents
  - Utilization of WS-Security
  - Possible donation of Management Resource Explorer

Project Participation

- Initial committers
  - Don Ebright , Compuware
  - Glenn Everitt , Compuware
  - Joel Hawkins , Compuware
  - Dennis O'Flynn, Compuware
  - Jim Wright , Compuware
- Community technical advisors
  - Sal Campana, HP
  - Brian Carroll, Serena
  - Ali Kheirolomoom, Serena
  - Steve Loughran, Apache
  - Mark Weitzel, IBM
  - Sanjiva Weerawarana, Apache

Roadmap



Status

- Past
  - Participation in related project newsgroups, etc…
  - 3 meetings w/ ALF
  - 2 meetings w/ TPTP
  - 1 meeting w/ ECF
- Future
  - Demo at EclipseCON
  - Face-2-face meetings during EclipseCON
    - TPTP, ALF, ECF, Equinox
  - Apache Muse participation
  - Ongoing community building