

Semantic Web TOOLS Update



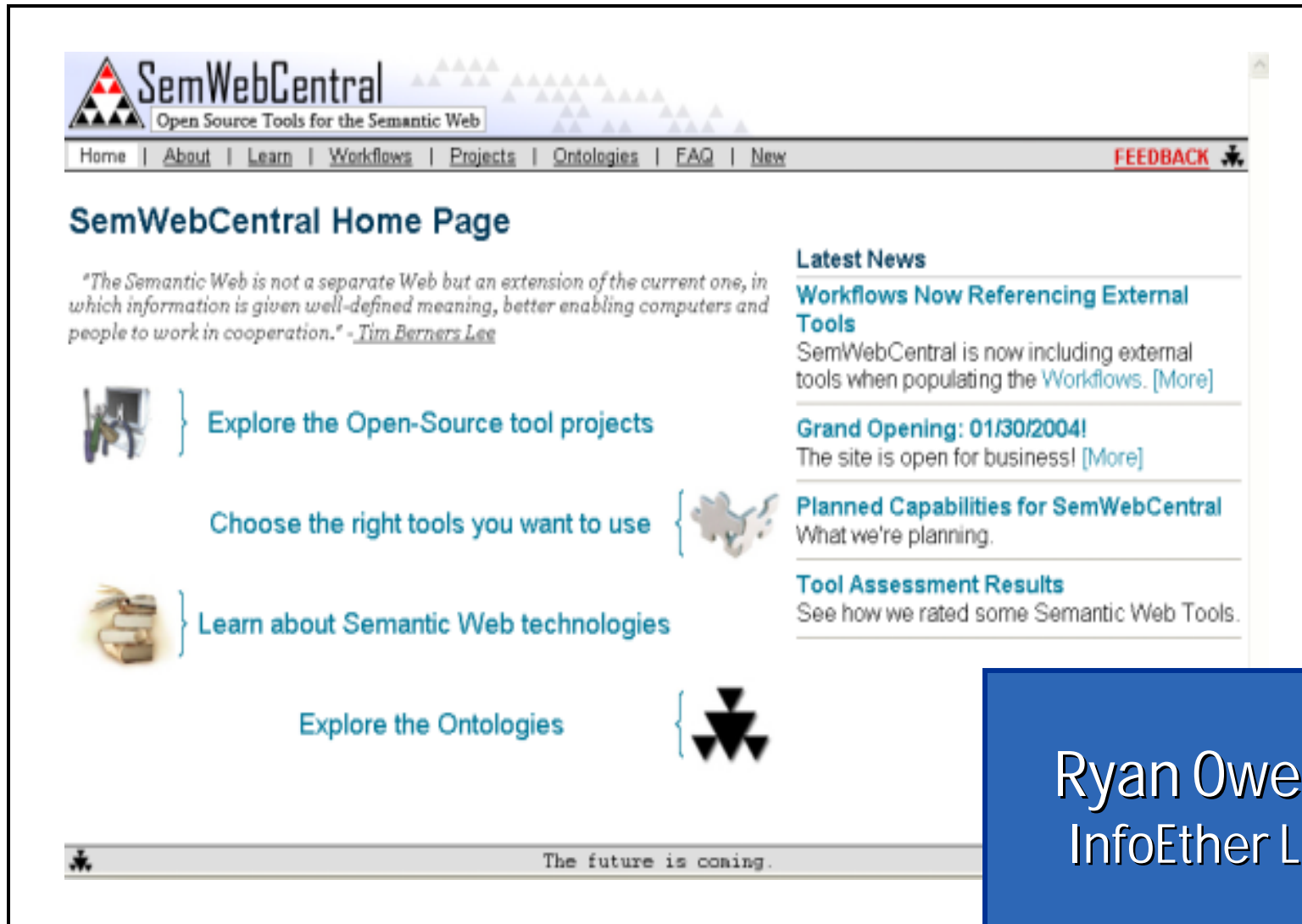
Presented at the
DARPA DAML PI Conference
25 May 04
By

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Ryan Owens
InfoEther

- **Semantic Web Central**
Ryan Owens – InfoEther
- **Semantic Web Development Environment**
Troy Self & Jeremy Lerner – BBN
- **Semitar**
Rich Kilmer - InfoEther







SemWebCentral
Open Source Tools for the Semantic Web

Home | About | Learn | Workflows | Projects | Ontologies | FAQ | New [FEEDBACK](#) 


SemWebCentral Home Page

"The Semantic Web is not a separate Web but an extension of the current one, in which information is given well-defined meaning, better enabling computers and people to work in cooperation." - Tim Berners Lee

-  } Explore the Open-Source tool projects
- Choose the right tools you want to use { 
-  } Learn about Semantic Web technologies
- Explore the Ontologies { 

Latest News

- Workflows Now Referencing External Tools**
SemWebCentral is now including external tools when populating the Workflows. [\[More\]](#)
- Grand Opening: 01/30/2004!**
The site is open for business! [\[More\]](#)
- Planned Capabilities for SemWebCentral**
What we're planning.
- Tool Assessment Results**
See how we rated some Semantic Web Tools.

 The future is coming.

Ryan Owens
InfoEther LLC

- What is SemWebCentral?
- Site Architecture
- Project Capabilities
- Site overview
- Why use SemWebCentral?

“Create a new and more professional open source site for program-developed software, including support for download, email lists, bug tracking, versioning, compilation, documentation, license management, sample application and so forth.”

“. . . make it easy for people who are not on the DARPA/EU payroll to test drive the semantic web . . . ”

- Community for Semantic Web tool developers
 - Manage tool development projects
 - Communicate with other developers
- Community for Semantic Web users
 - Find tools for tasks at hand
 - Get support for tools hosted on the site
 - Learn about the Semantic Web
- Real-World working Semantic Web examples
- Site Metrics
 - Launched 1-30-2004
 - Currently hosting 22 projects ; 59 registered users

- gForge-based Collaborative Development System (CDS)
 - SourceForge fork (2 years ago)
 - Active development community
 - Used by over 93 sites.
 - Scalable: over 47,000 users on one of these sites
- JSP/OWL Web site
- Hardware platform
 - Dual 2.4 GHz P4, RAID 5, daily + weekly backups, fractional T-3, RH Linux 9

- Communications tools
 - Web forums
 - Mailing lists
 - News publishing system
- Tracking tools
 - Bugs and patches
 - Support requests
 - Task and project management tools
- Information sharing tools
 - Versioning system (CVS)
 - Shared “code snippets”
 - Documentation manager & File release system
- Not just for open source projects



SemWebCentral





SemWebCentral



HOME

- Quick Links
- News

ABOUT

- What we offer
- Why we're here
- Who we are
- How you start

FAQ

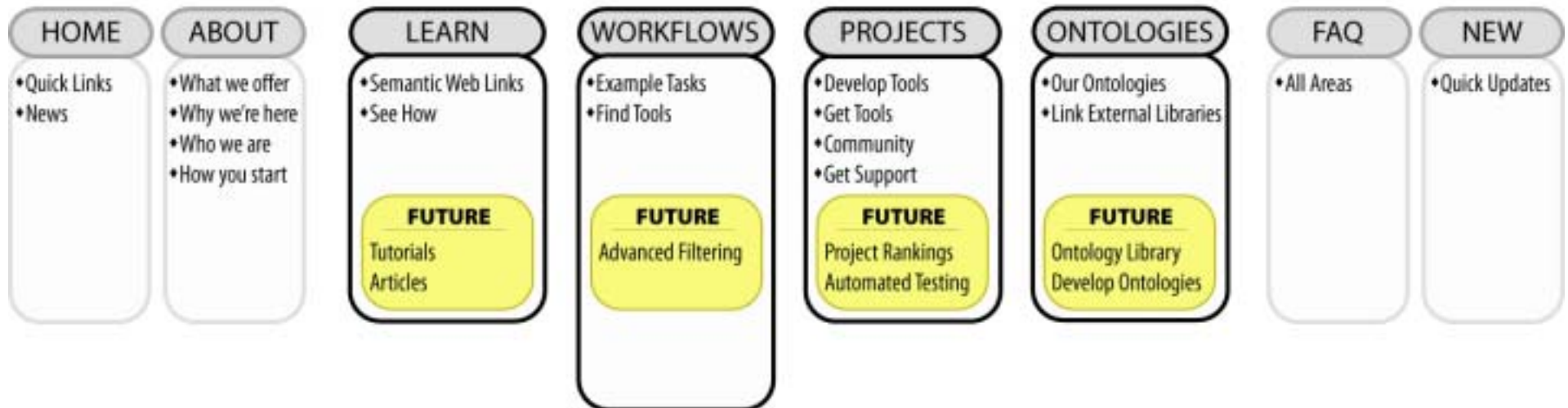
- All Areas

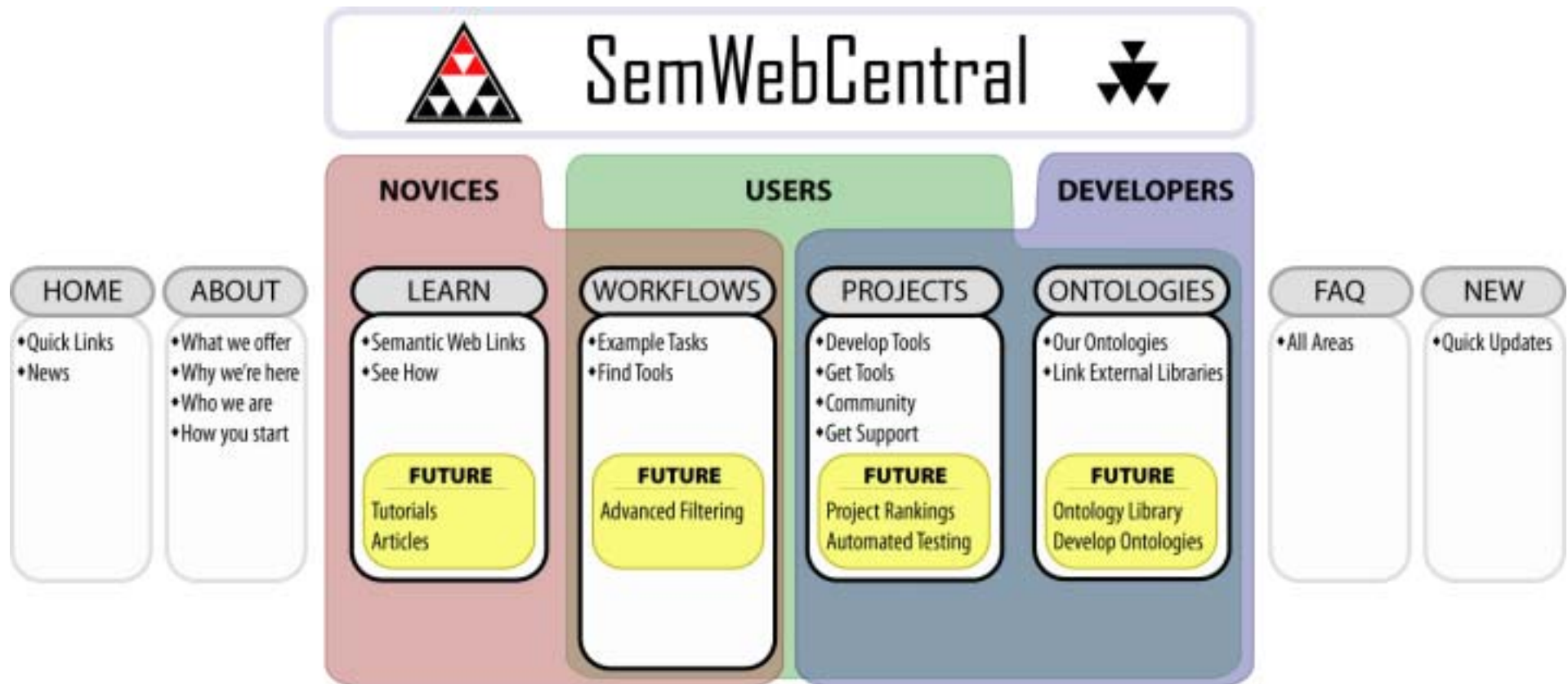
NEW

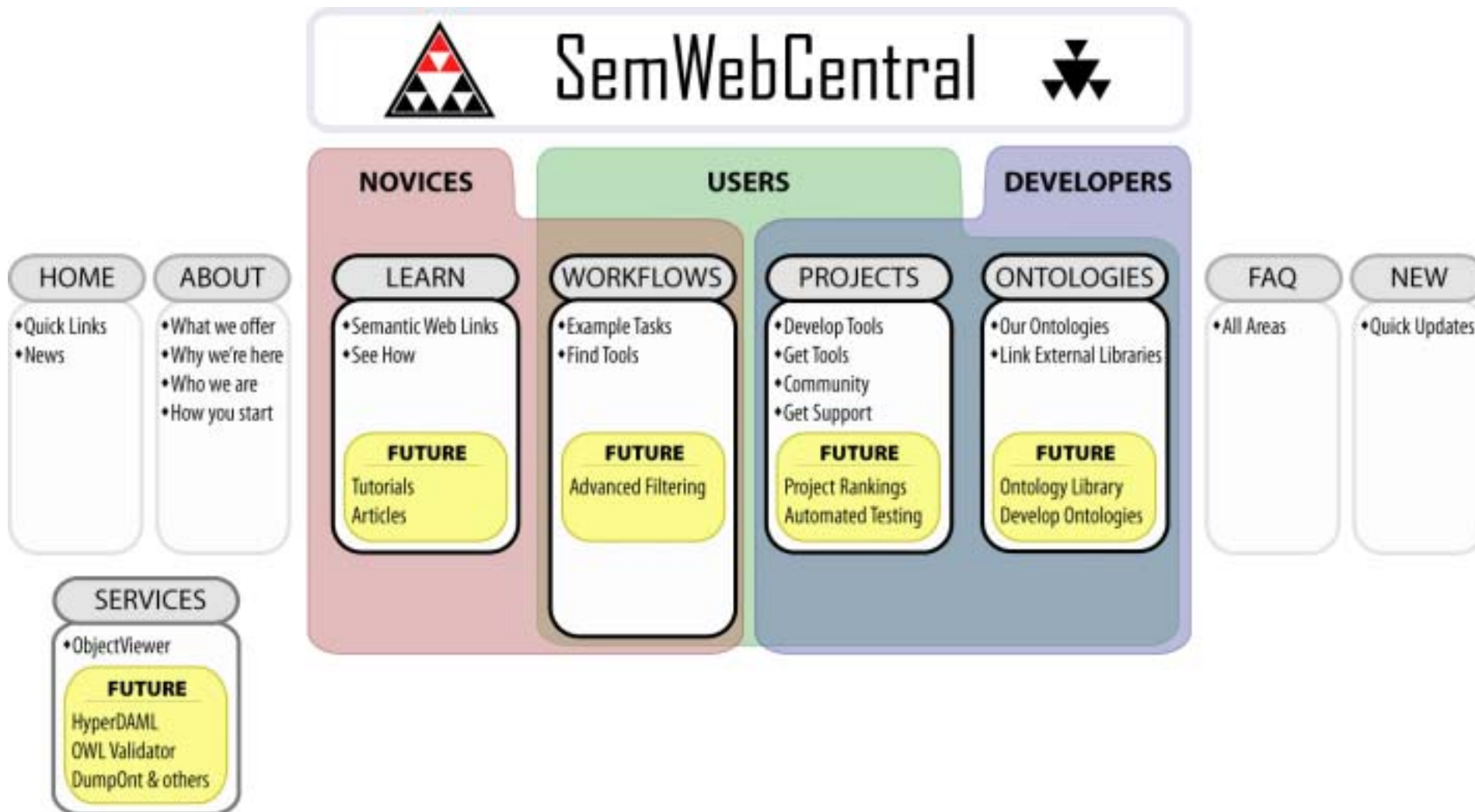
- Quick Updates

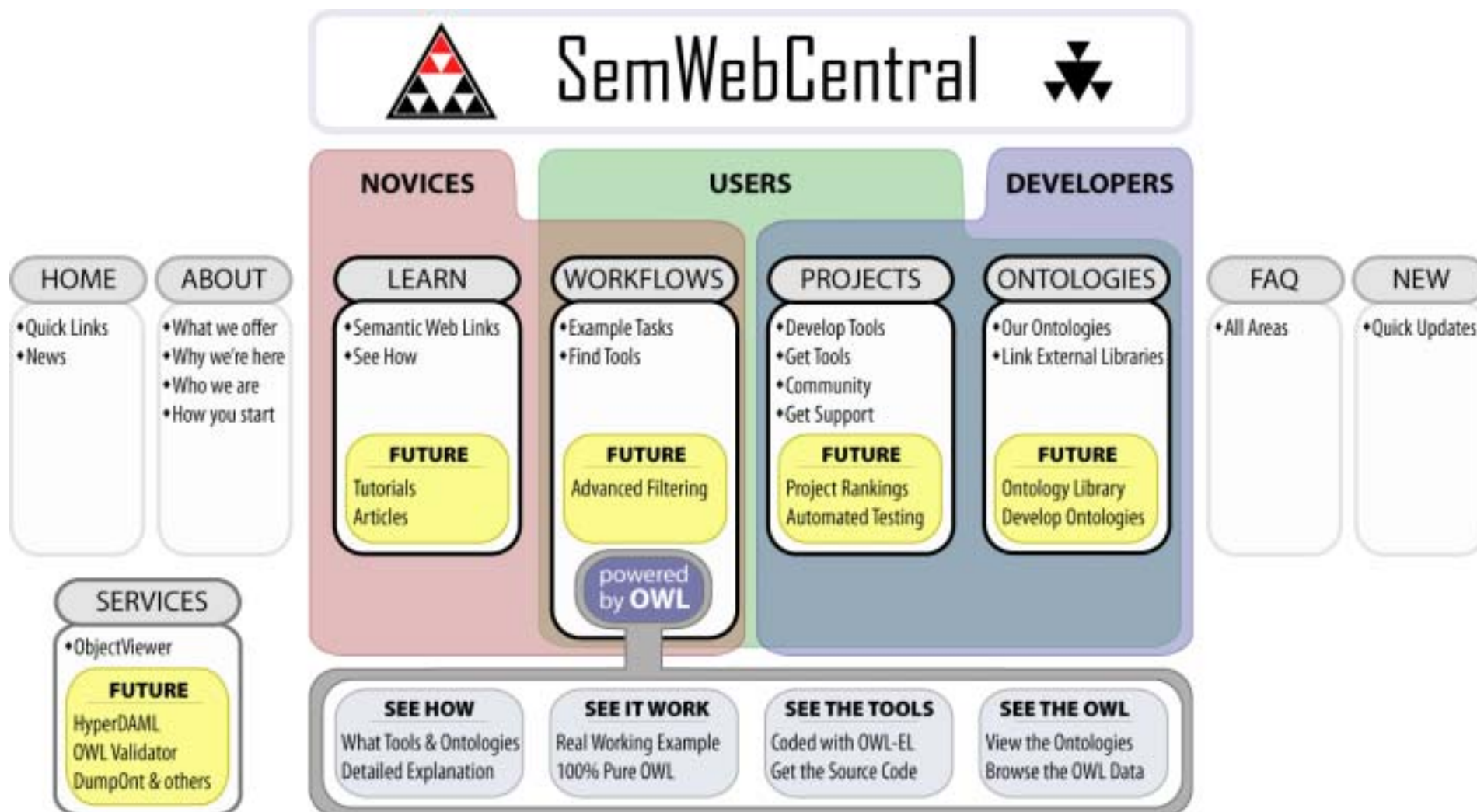


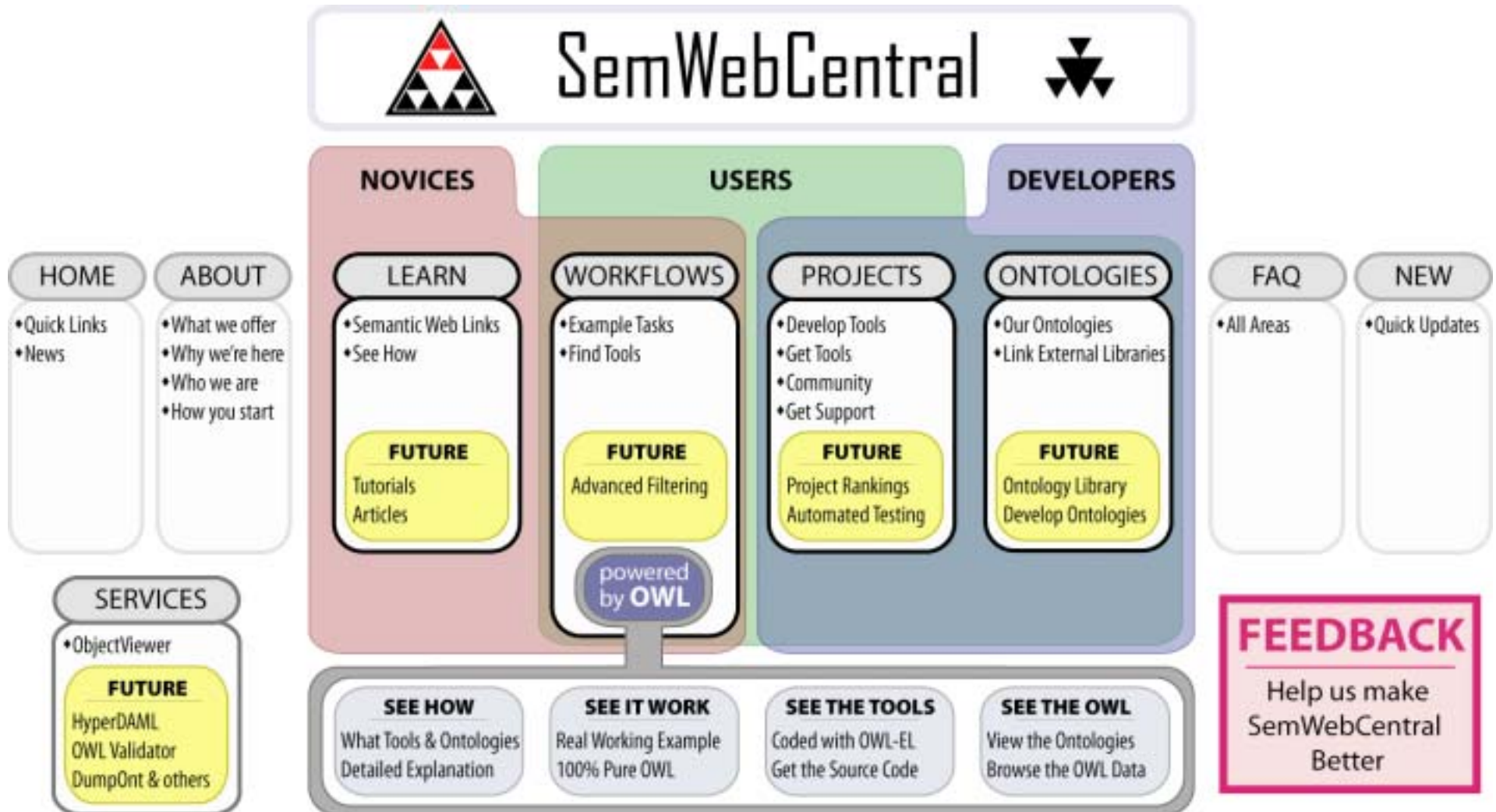
SemWebCentral

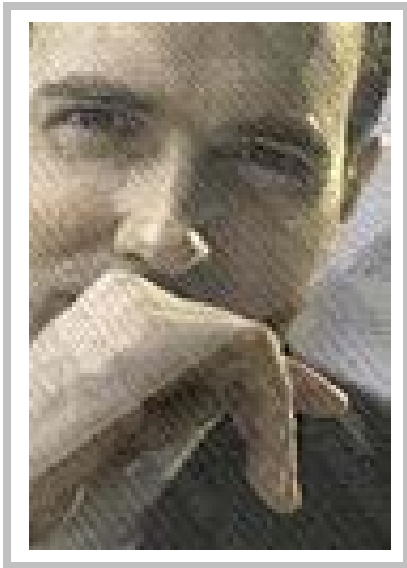




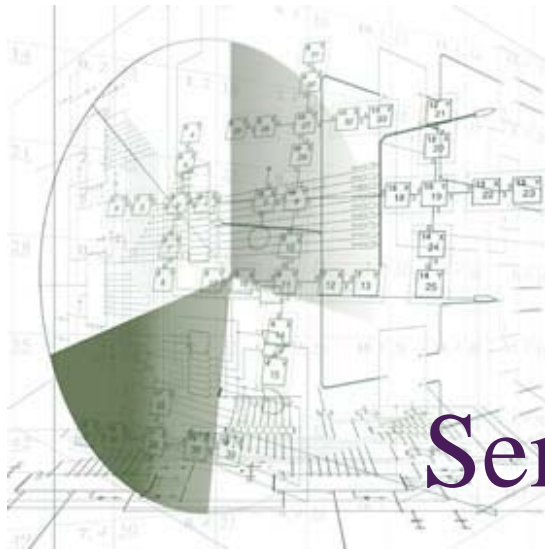








- Dedicated resource for the Semantic Web community
- Comprehensive capabilities
- Community effect
- Semantic Web extensions



SemWebCentral Demo

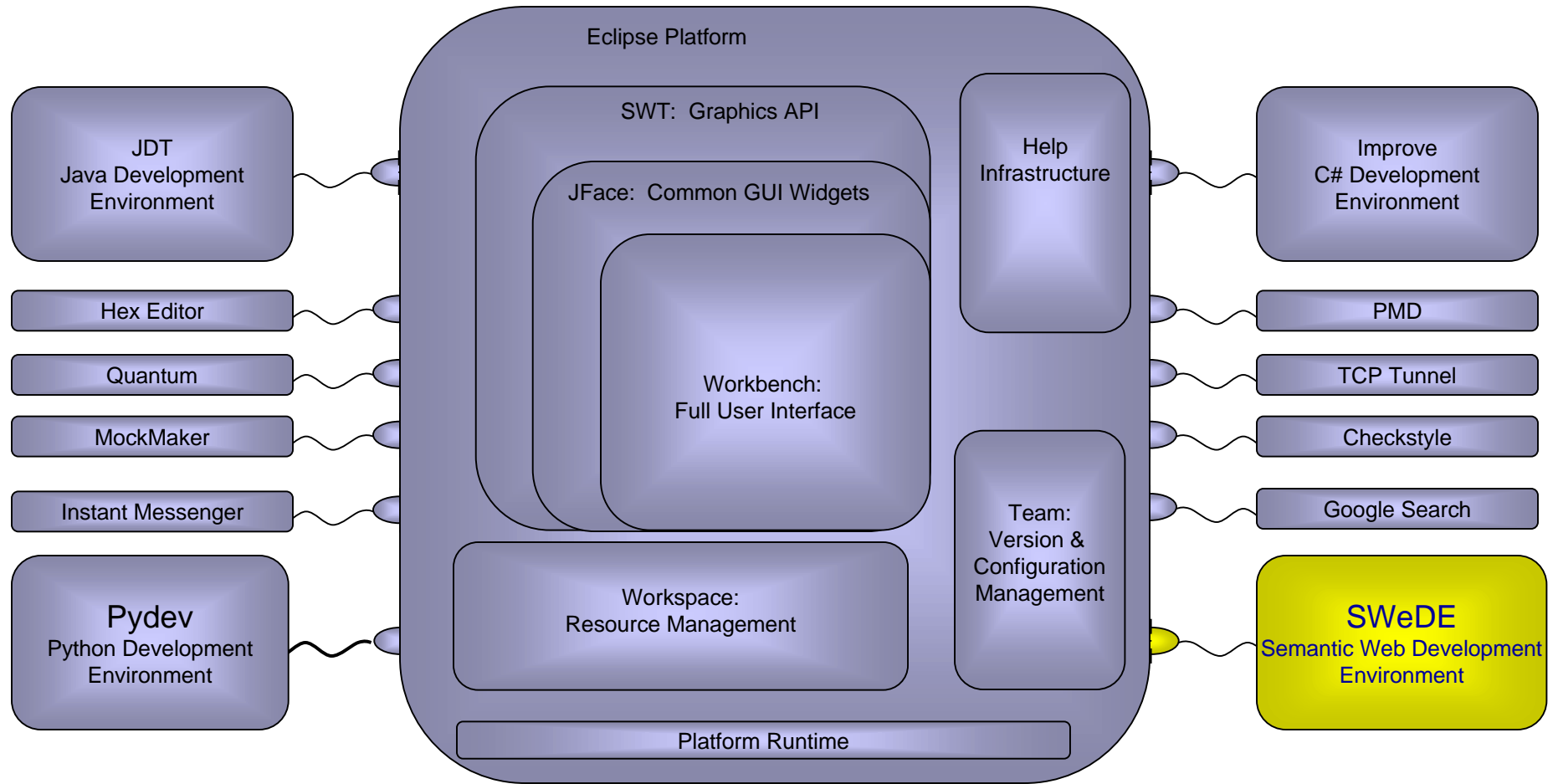
Semantic Web Development Environment (SWeDE)

Troy Self
Jeremy Lerner

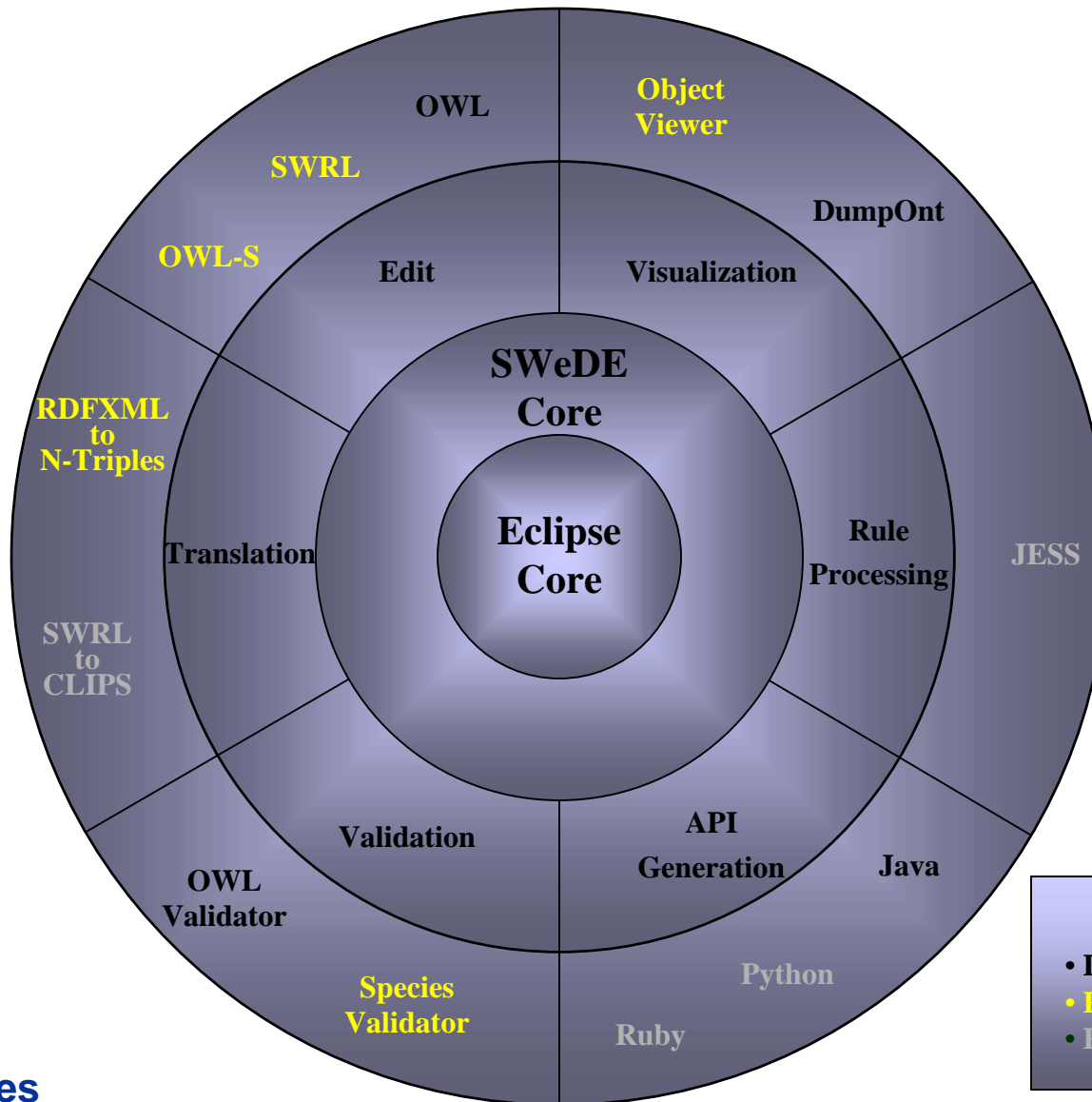
- Objectives
- Approach
- Current Progress
- Plans
- Summary

- Develop an extensible framework for Semantic Web tool integration
- Develop an initial toolkit that supports various Semantic Web workflows
 - Create Ontology
 - Manually Create Instance Data
 - Programmatically Interact with OWL

- Leverage an existing OpenSource IDE by extending it with OWL tools and awareness
 - Minimize development resources
 - Minimize training & support requirements
 - Maximize productivity, flexibility & interoperability
- Eclipse
 - “Provides plug-in based framework that makes it easier to create, integrate, and utilize software tools, saving time and money” – eclipse.org
 - Allows developers to leverage platform reuse and concentrate on developing the core capabilities



An Open Source integration framework for end-to-end Semantic Web solutions



- Develop an Integrated Development Environment (IDE) for OWL
 - Provide features analogous to features found in programming language IDEs
 - Resource Organization (Projects)
 - Syntax Highlighting
 - Code Auto-completion
 - Multiple Views of Content
 - Wizard User Interfaces
 - Error Detection
 - Etc...



SWeDE Screenshot



OWL - hybrid-ont.owl - Eclipse Platform

File Edit Navigate Search Project Run Window Help

URI Explorer

- Demo
 - hybrid-ont.owl
 - Hybrid
 - milesPerGallon
 - vehicle-ont.owl
 - Automobile
 - Car
 - FuelType
 - FuelType
 - Truck
 - Vehicle
 - wheelCount
 - .project
- Project2
 - food.owl
 - wine.owl
 - Wine
 - .project

hybrid-ont.owl

```
xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
xmlns:owl="http://www.w3.org/2002/07/owl#"
xmlns:veh="http://owl-eclipse.projects.semwebcentral.org/owl/vehic
xml:base="http://owl-eclipse.projects.semwebcentral.org/owl/hybrid

<owl:Ontology rdf:about="">
  <rdfs:comment>Expands vehicle-ont with information about gas/electr
</owl:Ontology>

<owl:Class rdf:ID="Hybrid">
  <rdfs:subClassOf rdf:resource="http://owl-eclipse.projects.semwebce
  <rdfs:subClassOf>
  <owl:Restriction>
    <owl:onProperty rdf:resource="#GasElectric"/>
    <owl:hasValue rdf:resource=
  </owl:Restriction>
  </rdfs:subClassOf>
</owl:Class>

<veh:FuelType rdf:ID="GasElectric">
  <rdfs:label>Gas/Electric</rdfs:label>
</veh:FuelType>

<owl:DatatypeProperty rdf:ID="milesPerGallon">
</owl:DatatypeProperty>
</rdf:RDF>
```

Outline

- rdf:RDF
 - xmlns:rdf="http://www.w3.o
 - xmlns:rdfs="http://www.w3.o
 - xmlns:owl="http://www.w3.c
 - xmlns:veh="http://owl-eclipse
 - xml:base="http://owl-eclipse.
 - owl:Ontology
 - owl:Class
 - rdf:ID="Hybrid"
 - rdfs:subClassOf
 - rdf:resource="http://
 - rdfs:subClassOf
 - owl:Restriction
 - owl:onProperty
 - owl:hasValue
 - veh:FuelType
 - owl:DatatypeProperty

Tasks (1 item)

✓	!	Description
⚠		Use of this property implies that object is of type http://www.w3.org/1999/02/22-rdf-syntax-ns#Property. (Object is declared type [http://owl-eclipse.p

- **Core**

Project Orientation	Done
OWL Nature (SWeDE Perspective)	Done
OWL Project Wizard	Done
OWL Document Wizard	Done
OWL Document imports	Done
OWL Resource Management	Done
OWL Document Abstract Syntax Tree	Done
URI Explorer	Done
Jena Library Plug-In	Done

- **Editor**

-OWL Source Editor	
• Syntax Highlighting	Done
• Auto-Completion	In Progress
• Content Outline	Done
• Content Assist	In Progress
• Code Formatting	Planned
• Multi-Page Editor Extension Point	Done

- **Visualization**

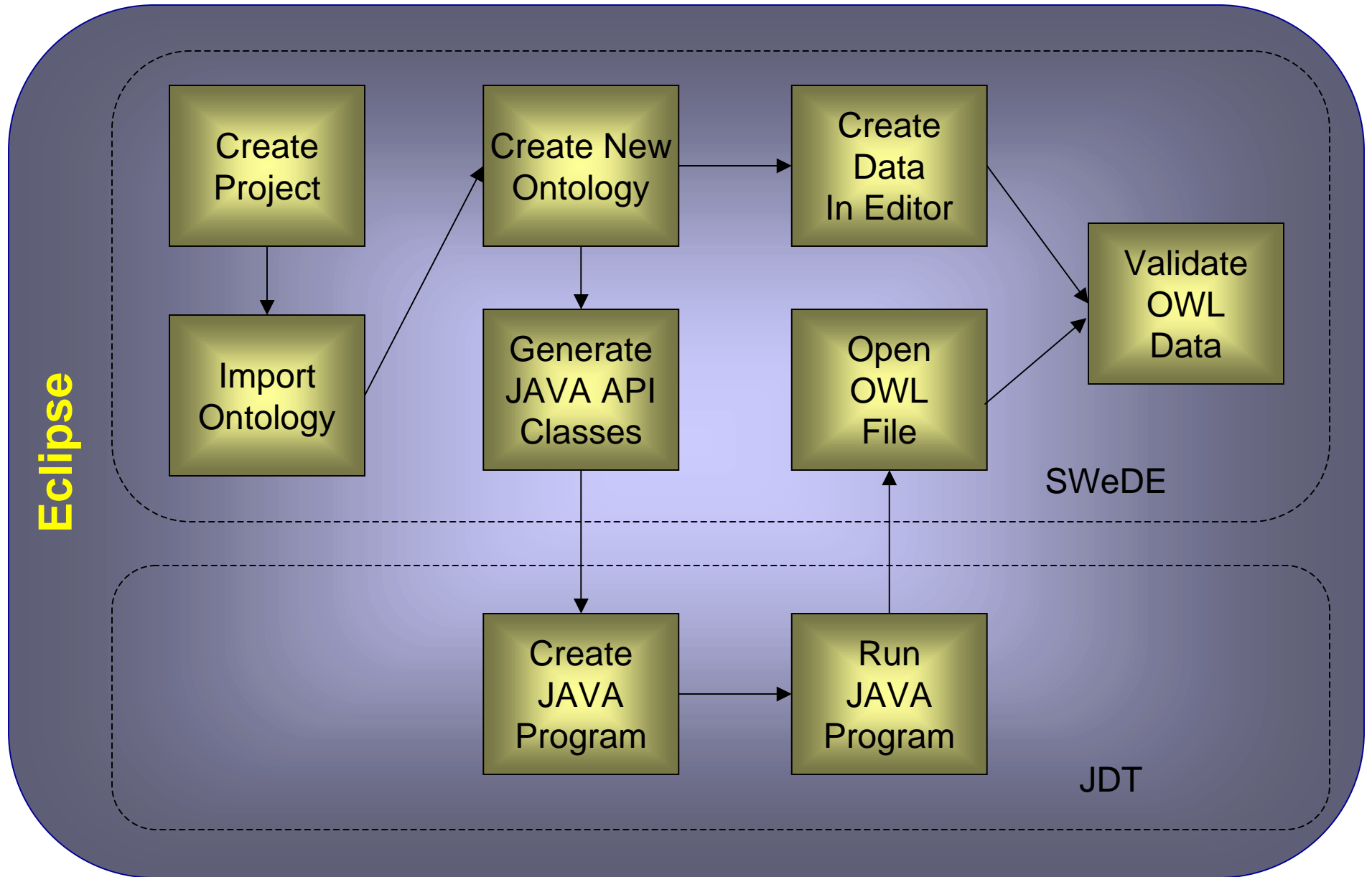
DumpOnt	Done
Object Viewer	Planned

- **Validation**

Syntax checking	Planned
OWL Validator	Done

- **Code Generation**

Extension point	Done
Schemagen Vocabularies	Done
Interface Generation (kazuki)	Done
Markup Generation Wizards	Done
Refactoring	Planned
Visual editing	Planned
Translation	Planned
Ontology Library Plugins	Planned
SWRL and OWL-S support	Planned
Quick Fix support	Planned
Preference pages	Planned



- Custom perspective in Eclipse for managing and sharing Semantic Web resources between plug-ins
- OWL Development toolkit to support
 - generation, editing & validation of ontologies & instance data
 - automatic generation of Java API classes
- Extension points for integration of tools for completing more Semantic Web workflows.
- It's available at SemWebCentral.org

**These tools are for you . . .
Your feedback will help make them better!**



See you at the demonstrations tonight!!!