Project Creation Review

Swordfish (SOA Runtime Framework)

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Executive summary of the Swordfish project proposal

- A state-of-the-art target architecture for a SOA Runtime Framework has been developed which leverages the OSGi component model for extensibility
- Both relevant SOA standards SCA and JBI will be supported
- The roadmap leverages a major contribution from Deutsche Post
- Beside the project initiator SOPERA, 9 more Eclipse members expressed interest to support the Swordfish project
- 3 Eclipse projects (OSEE, ALF, EclipseLink) plan to use Swordfish in the future
- The deployment framework developed within the SOA Tools Platform project (STP) plays an important role for the alignment of Swordfish and STP. STP will also use parts of the Swordfish project to support out-of-the-box usability for tools.

Goal of the Swordfish project proposal

- The goal of the Swordfish project is to provide an extensible service-oriented architecture (SOA) framework that can be complemented by additional open source or commercial components such as a service registry, a messaging system, a BPEL engine etc. to form a comprehensive open source SOA runtime environment based on both established and emerging open standards.

- The framework shall be usable for a wide range of applications — from embedded systems to enterprise environments.

- The Swordfish project will produce both the framework and exemplary plug-ins that demonstrate the framework's capabilities.

Swordfish high-level architecture leverages the OSGi component model for extensibility
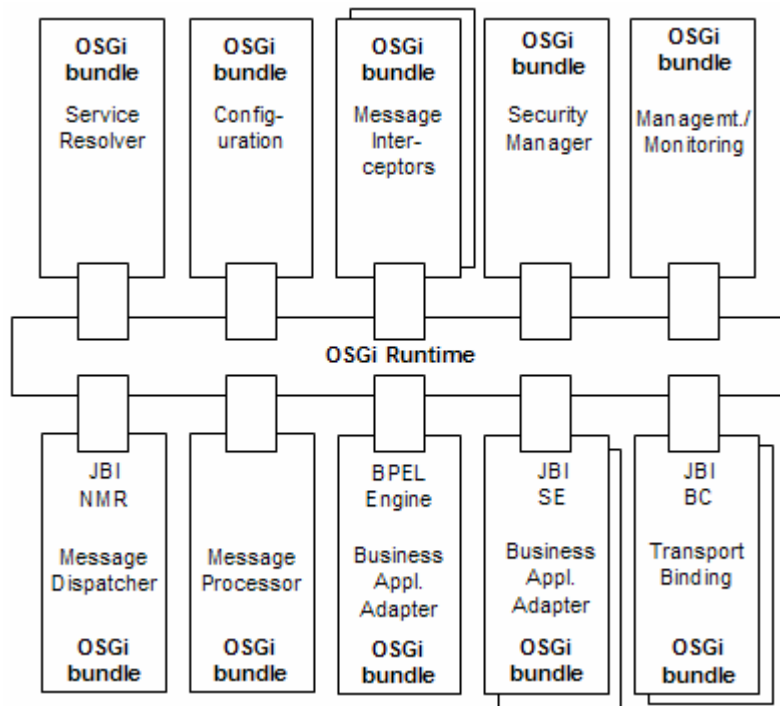
Business Application Adaptor (plug-in) Business application adaptors connect business application logic (the actual service implementation) to the other components within the framework.

Service Resolver (plug-in) The Service Resolver is reponsible for resolving logical service references into physically addressable communication endpoints.

Security Manager (core component & plug-in) The Security Manager is responsible for coordinating and supervising security-related tasks such as authentication, authorization, data confidnetiality and integrity protection within the framework.

Message Dispatcher (core component) The Message Dispatcher is responsible for decoupling message processing being performed inside the Message Processor from the Transport Bindings.

Transport Bindings (plug-in) Transport Bindings are reponsible for a) transforming messages from the canonical representation used within the framework into transport and protocol specific formats and b) communicating with remote source and target systems.

Message Processor (core component) The Message Processor is responsible for coordinating message processing between Business Application Adapters and Transport Bindings. The actual processing is performed within a chain of pluggable Interceptor components.

Message Interceptors (plug-in) A Message Interceptor is responsible for processing a message regarding (ideally exactly) one functional aspect such as transformation, validation or compression. Message Interceptors can be assembled into a chain to jointly perform more complex tasks.

Management/Monitoring (core component & plug-in) The Management/Monitoring component is responsible for recording and processing relevant events within the framework and provides management interfaces for monitoring and controlling the framework's components remotely.

Configuration (core component & plug-in) The Configuration component provides configuration data to all other components of the framework in a unified way.

Swordfish's future directions include support for Service Component Architecture (SCA)
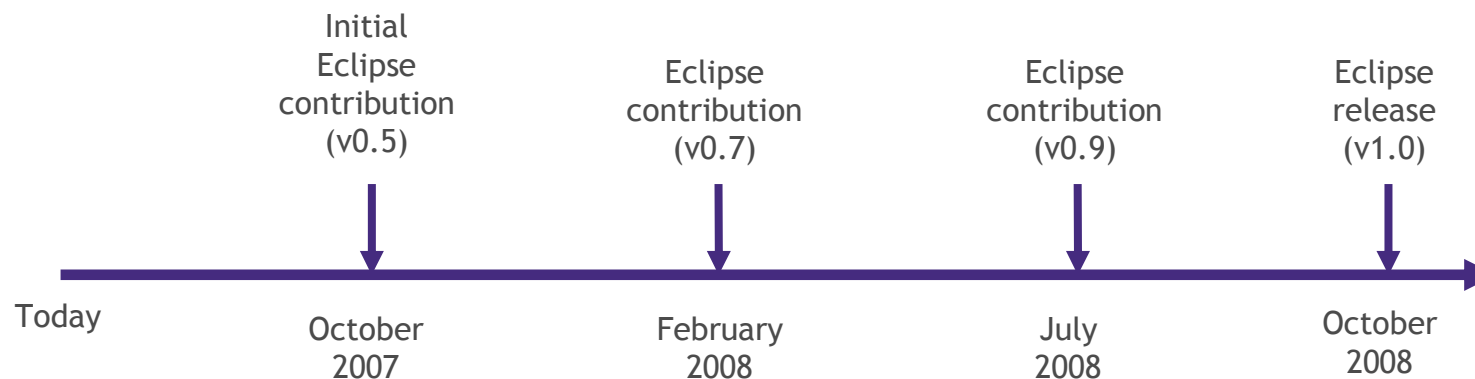
- In addition to the JBI standard that is already supported by the initial implementation we plan to add comprehensive support for the provisioning of SCA assemblies in the future.

- As the JBI standard evolves towards version 2.0 we'll keep Swordfish aligned with the work done within the JCP expert group (JSR 312), eventually providing one of the spec's first implementations.

- At the same time, we're closely monitoring the proceedings of the OSGi Enterprise Expert Group and intend to incorporate the results into Swordfish.

The initial implementation will focus on laying the ground

- The existing code base needs to be transformed and restructured into an OSGi-based extensible runtime framework and exemplary plug-ins.
- Emerging technologies such as the new Equinox provisioning facility need to be evaluated and incorporated into Swordfish's architecture
- We'll strive to align our priorities with the potential users, both within the Eclipse community and beyond.

Tentative timeline

	Initial Eclipse contribution (v0.5)	Eclipse contribution (v0.7)	Eclipse contribution (v0.9)	Eclipse release (v1.0)
Today	October 2007	February 2008	July 2008	October 2008

The community response to our proposal was positive and encouraging

contacted Eclipse members	Response/future involvement
BEA	(Open)
Cognos	Supporter
Compeople	Supporter
EADS	Supporter, User (OSEE)
IBM	(Open)
Intalio	Supporter
Innopract	Supporter
IONA	Supporter, Contributor, User (STP)
MicroDoc	Supporter
Oracle	Supporter, User, Provider (EclipseLink)
Serena	Supporter, User (ALF)
SOPERA	Project initiator & leader

Swordfish intends to collaborate with a growing number of projects within the Eclipse ecosystem

Projects that benefit from Swordfish

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   ALF      OOSE    EclipseLink    OHF
                                   SODA

              →  Swordfish  ←
   STP  ←→

        EclipseLink   Higgins    ALF
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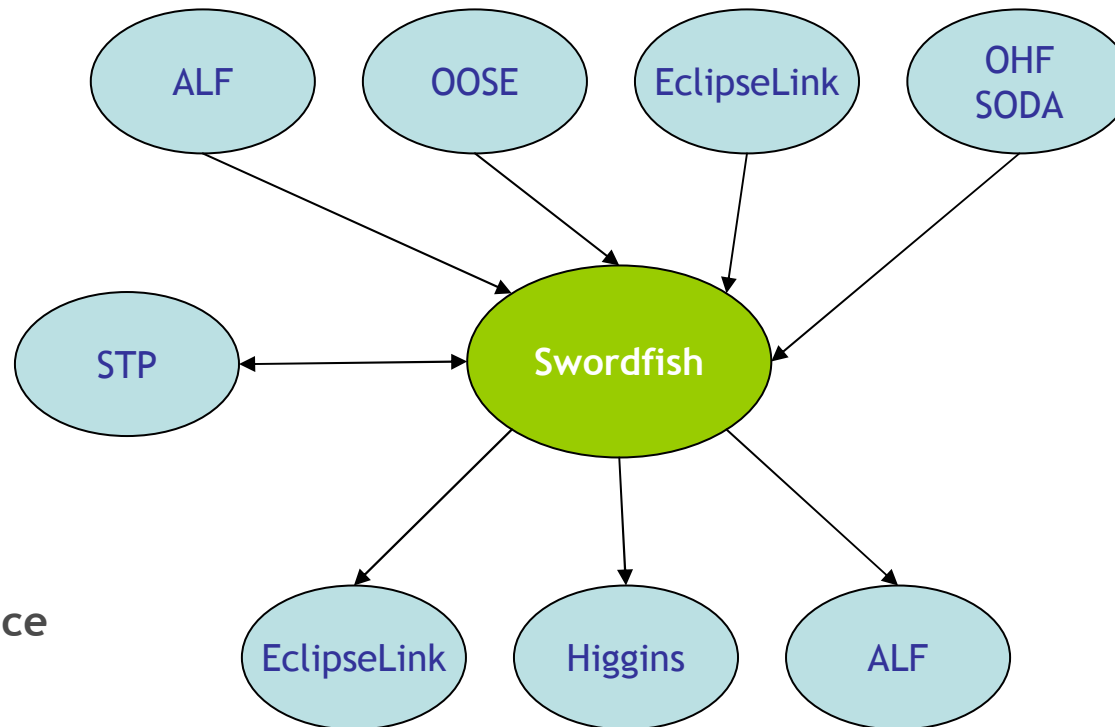
Projects that produce artifacts we intend to leverage

Close collaboration with the SOA Tools Platform project (STP) is crucial for Swordfish's success

- Swordfish and STP are complementary: Swordfish is focused on the runtime aspects of an SOA while STP provides appropriate tooling
- Swordfish relies on the deployment framework developed within the STP project
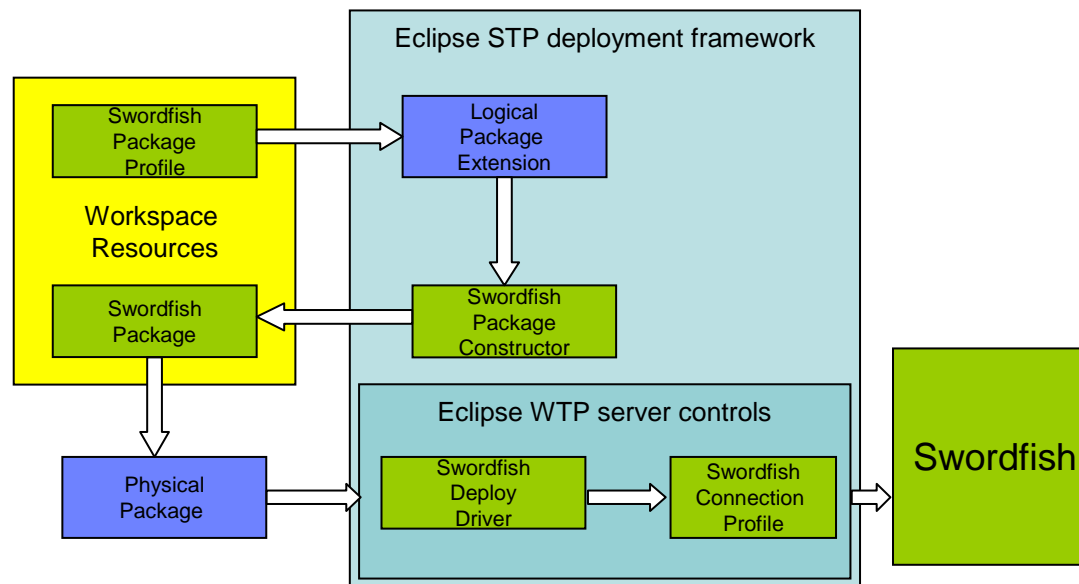
Swordfish is a true multi-organization effort

- Deutsche Post, the world's largest logistics company, started development on Swordfish's ancestor as early as 2001 and stays involved to date.

- In early 2007, Deutsche Post decided to release large parts of the code base under an open source license and handed over development to SOPERA, a newly founded independent service company.

- In summer 2007, SOPERA and IONA, a renowned vendor of integration products, agreed to collaborate and push development of Swordfish in a joint effort.

- Any other interested organization is invited to join in!

We're happy to enjoy the mentorship of two seasoned Eclipse members

- Oisín Hurley (IONA)
  - PMC lead of the SOA Tools Platform Project (STP)
  - Member of the Architecture Council

- Jochen Krause (innoopract)
  - Member of the Eclipse Board of Directors
  - Member of the Architecture Council

We propose to elect eight initial committers to get Swordfish up to speed quickly

- Oliver Wolf — Project Lead (SOPERA)
    - Oliver Wolf is the Project Lead for Swordfish. He has been involved with the code contribution from Deutsche Post/SOPERA for 3 years, both as a developer and architect. His focus has mostly been on core messaging functionality, JBI compliance, and security. He is experienced in Java development using agile methodologies (esp. Scrum) and both technical and business aspects of service-oriented architectures. In addition to that, Oliver has a strong background in IT security.

- Klaus Kiehne — Committer (Deutsche Post)
    - Klaus Kiehne acts as the Lead architect for Swordfish. Klaus has been involved with the code contribution from Deutsche Post for 6 years, both as a developer and architect. He has been working on nearly all parts of the code base, with a special focus on J2EE integration, transport protocols and setting up an integration testing framework. Coming from a Smalltalk background, he is experienced in Java development and both technical and business aspects of service-oriented architectures. Klaus is a member of the JSR 312 expert group within the Java community Process and helps drive forward the next version of the JBI specification.

- Gerald Preissler — Committer (SOPERA)
    - Gerald Preissler has been involved with the code contribution from Deutsche Post for 5 years, both as a developer and architect. He has predominantly been working on management integration based on JMX and WSDM. Gerald will also be be a contributor to the Eclipse STP project. He is an experienced Java developer with a strong background in distributed systems and a growing interest in dynamic languages.

- Dietmar Wolz — Committer (SOPERA)
    - Dietmar Wolz has been involved with the code contribution from Deutsche Post/SOPERA for 2 years. His activities have been focused on component configuration and BPEL process engine integration. Dietmar is an experienced Java developer and architect with a special interest in sophisticated algorithmical problems.

All committers hereby confirm that they have read and understand the Eclipse Development process and their responsibilities towards the community, especially in regards to IP issues.

We propose to elect eight initial committers to get Swordfish up to speed quickly (cont'd)

- James Strachan — Committer (IONA)
  - James Strachan is an Apache Member and a founder & active contributor to several open source projects such as ActiveMQ, Camel, dom4j, Geronimo, Groovy, Jaxen, and ServiceMix.

- Guillaume Nodet — Committer (IONA)
  - Guillaume Nodet has extensive experience within the open source community and is a highly regarded Committer across several projects, including Apache ServiceMix, Apache Active MQ, Apache Geronimo, Apache Ode, Apache CXF and Codehaus XFire. Also, as a member of JSR 312 at the Java Community Process (JCP), Guillaume is contributing to the development of the Java™ Business Integration (JBI 2.0) technical specification to address new requirements.

- Adrian Co — Contributor (Individual, via IONA)

- Jonas Lim — Contributor (Individual, via IONA)
  - Jonas and Adrian are committers in the Apache Active MQ, Apache ServiceMix and Apache Camel projects. Their involvement in these projects testifies their to their experience and skills in creating SOA Runtime Infrastructure software, and their current roles in providing technical support in training for FUSE ESB indicates their commitment to ensuring customer success.

All committers hereby confirm that they have read and understand the Eclipse Development process and their responsibilities towards the community, especially in regards to IP issues.

Other participants will start working on Swordfish after the initial code contribution

- Zsolt Beothy-Elo — Contributor (SOPERA)
- Anubhav Sharma — Contributor (SOPERA)
- Andreas Mattes — Contributor (SOPERA)
- Jörg Drescher — Contributor (SOPERA)
- Georg Voutsinos — Contributor (SOPERA)
- Carsten Biermann — Contributor (SOPERA)
- Torsten Reimers — Contributor (SoftQuadrat)
- Ramtin Mesbahipour — Contributor (Individual, via Detecon)
- Jeffrey Ricker — Contributor (Individual, via OHF/SODA)

Bugzilla is open for your comments and votes

https://bugs.eclipse.org/bugs/show_bug.cgi?id=198977