# Eclipse Modeling Platform
## Vision White Paper V1.0
## February 17, 2010

**Executive Summary**

The Eclipse Modeling Platform (EMP) is an industrial quality integrated software platform to enable a complete tool chain of model-centric tools used by organization focused on model driven development. The requirements for EMP are being set by some of the largest companies using model driven development. EMP will be developed as an Eclipse Industry Working Group supporting a collection of open source projects and encouraging a commercial ecosystem of value-add tools and services. The platform will be based on existing Eclipse modeling technologies but focus on better integration, quality, scalability and usability for modeling professionals.

**Introduction**

Many large companies use model driven development to manage the complexity of large scale application and systems development. Companies in industries such as telecommunication, banking, automotive, aerospace and transportation deploy modeling tools to hundreds, if not thousands, of professionals in their organizations. Unfortunately, the existing tools are not keeping pace with the requirements of these large-scale users. A more integrated approach is required to allow organizations to expand their model-driven development approach to the next level. This presents a unique opportunity for the Eclipse open source community .

The Eclipse modeling community has created a large number of open source projects that support different aspects of model driven development. Many of these projects such as the Eclipse Modeling Framework (EMF) and Graphical Modeling Framework (GMF), have been widely adopted by software vendors and corporate IT departments. However, to-date there has not been a coordinated effort to create a unified modeling platform that serves as the foundation for to enable a tool chain for model drive development across the life-cycle. The objective of Eclipse Modeling Platform (EMP) will be to establish an industrial strength platform to meet this need.

The EMP will take a model-centric view of application development. Many of the existing modeling tools are code-centric and quickly limit the usability and capability required by professional modelers. The goal of the EMP will be to enable an integrated tool-chain of model centric tools for large-scale model-based projects.

**Developing a Sustainable Platform for the Future**

The Eclipse Modeling Platform (EMP) will become a platform for long-term modeling innovation. Similar to the Eclipse Platform, we will encourage an ecosystem of companies, open source projects, universities, research institutes, and consultants to build value added tools and technology for EMP. The user community will benefit from the selection and choice offered by the diverse ecosystem of

value-added contributors.

The EMP will be developed as an Eclipse Industry Working Group supporting a collection of open source projects licensed under the Eclipse Public License (EPL). Major corporate adopters will support the platform through 1) direct investment in the platform and 2) procurement of value-added products and services from the commercial community. We expect the commercial vendors will also support the platform through direct investment in the platform to support their commercial offerings.

# Requirements for Eclipse Modeling Platform

The following is an list of requirements identified by the initial corporate participants. It is expected this list will be refined and extended as the project evolves.

**Flexible Content Support**

EMP will support a number of different content formats, including:
- General purpose models based on industry standards like UML, BPMN and SYSML
- Textual models
- Domain Specific Models
- Unstructured content
- Content types will be extensible to allow for new content formats to be added in the future.

Different model content will also be support through:
- M2M transformations
- Consistency checking across various modeling languages

**Life-cycle Support**

EMP will provide core services to support the model lifecycle, including:

- Managing versions on various model granularity, meta-model and instances
- Auditing of model changes
- Merging of different models and version of models
- Change analysis to identify root cause and impact analysis for changes to all levels of model content.
- Traceability to identify connection between model elements.
- Support for meta-model change and update to appropriate instances.
- Support for automation and workflows on model repository content.
- Overall end-to-end life cycle management / model governance (elements can be in different 'review' states)

**Tooling Support**

EMP will provide core services to support the creation of modeling tools, including:
- Ability to query models and model elements

- Capture behavior of a model with an action language (potentially use OMGUAL/ALF specification)
- Debug support on various model elements
- Tools need to provide different views for different roles working on the same 'resource'
- Tools can be customizable
- Tools can provide different views for different roles
- Tools for troubleshooting model implementation, things like tracing, debug at the model level with a real system.

**Core Platform Features for Enterprise Use**

- Support for large models, including lazy loading, partial collection loading
- Ability to work offline and then merge changes back into a model
- Access control and privileges based on user role; specified at different levels of granularity
- Support for modeling standards and open formats. Lowest denominator is the EObject (ECore)
- Loosely coupled to different repository providers
- End-to-End project support from business architecture to code and testing

**Next Steps**

The EMP is in an early stage of conceptual definition. A kick-off meeting to identify requirements was held January 27. Participants in this meeting included representatives from UBS, Ericsson, Alcatel-Lucent, SBB, SAP, SWIFT, Fraunhofer FOKUS, Euranova and itemis. The next steps for the project include the following:

- Publishing vision white paper (this document) (Feb 2010)
- Initial participants gain commitment for further involvement (Feb 2010)
- Architecture document created (March 2010)
- Requirements document refined and expanded to include more detail (March 2010)
- Project plan created, including resource estimation (April 2010)
- Commitment to proceed with development and formal creation of Eclipse Industry Working Group (May/June 2010)
- Release 1.0 of EMP (June 2011)
- Release 2.0 of EMP (June 2012)