

S23M

Product Roadmap

1 March 2012

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Introduction

The S23M product roadmap covers the expectations that are associated with the S23M Cell Platform, and related products, such as the Natural Language Formalizer and the Visual Syntax Designer. This document outlines expectations related to functionality, to scalability of S23M-based solutions, and to the boundary between the Graph and the Cell Platform and further non-Graph products.

Product Family Management

The S23M product roadmap is updated on a monthly basis to reflect the latest insights into the needs and priorities that are articulated by S23M users and by potential users of S23M. On a quarterly basis the level of detail of the envisaged **use cases** that are scheduled for inclusion in the next **quarterly release** is elaborated to the extent of concrete user-system-interaction steps.

On a monthly basis the next five weeks of the product roadmap are translated into an iteration plan consisting of **use case scenarios** that are scheduled for realisation as part of the next **monthly release**. Use case scenarios are assigned to **solution developers** either as a whole, or may be broken down further into **tasks**, which by definition must be assignable to an individual solution developer.

On a weekly basis the **work in progress** on the monthly release is published in a **weekly release** that is intended for informal user acceptance testing by **modellers** who have a concrete need for the functionality under development.

Product Family Scope

S23M is the solution for **Conceptual Modelling** and **Data Management**

With the universal availability of computing power and the Internet as a ubiquitous information source, the sheer volume of data is overwhelming. Making sense of the flood of raw data, and translating it into relevant information requires powerful mechanisms for filtering, structuring, modelling, and aggregation. The number of tools to support the attempt of transforming data into valuable know-how is endless. Tools vary in their degree of formalisation, in basic concepts, and in representation formats. When immersed in the world of data and representations, it quickly becomes apparent that individual tools can be very useful, but that often there either is no – or only insufficient support for exchanging semantic information between tools. This is where S23M conceptual modelling and data management technology comes into the picture, as a semantic interoperability platform for any number of tools in any number of domains.

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Mathematical Foundation

S23M was designed from the ground up without any consideration for popular software modelling paradigms or modelling languages. The S23M kernel provides a universally and recursively applicable module concept that completely shields the user from the technical details of traditional databases, file systems, and programming languages (= implementation technologies). The kernel of S23M can be extended in a shell-like manner with an arbitrary set of user-defined domain-specific modelling languages. The implementation of the kernel is based on a small number of concepts that have their origin in model theory and denotational semantics, enabling the exploitation of proven mathematical theorems and transformations. Furthermore, the design of S23M guarantees that a large number of best practices for the construction of modular and scalable models are automatically enforced, not only by the kernel, but also by all user-defined extensions of the kernel:

- The domain to be modelled is partitioned into well-defined areas of knowledge, each of which relates to exactly one role.
- All work products (= artefacts) are based on information produced by a specific role as a result of a specific event.
- Each category of work products is expressed in a dedicated modelling language.
- Conversely, every modelling language defines exactly one category of work products.
- Variants of modelling language definitions and model instances are expressed as extensions of a common category.
- Work products are the granularity at which versioning and locking is applied.
- Language definitions (category models) are treated as work products as well.
- Circular or bi-directional dependencies between work products are not possible.
- Work products always contain a reference to the corresponding language definition (category model).
- Powerful work product modularisation and search mechanisms guarantee maintainability, even in geographically distributed organisations with millions of work products.

Advantages of Solutions Based on S23M

- S23M is the foundation of an enterprise-wide modelling philosophy with unique features:
- No limit to the levels of abstractions.
- Any model instance can be used in the role of a language definition (multi-level-instantiation).
- No limits to the number of user-defined notational styles and jargons.

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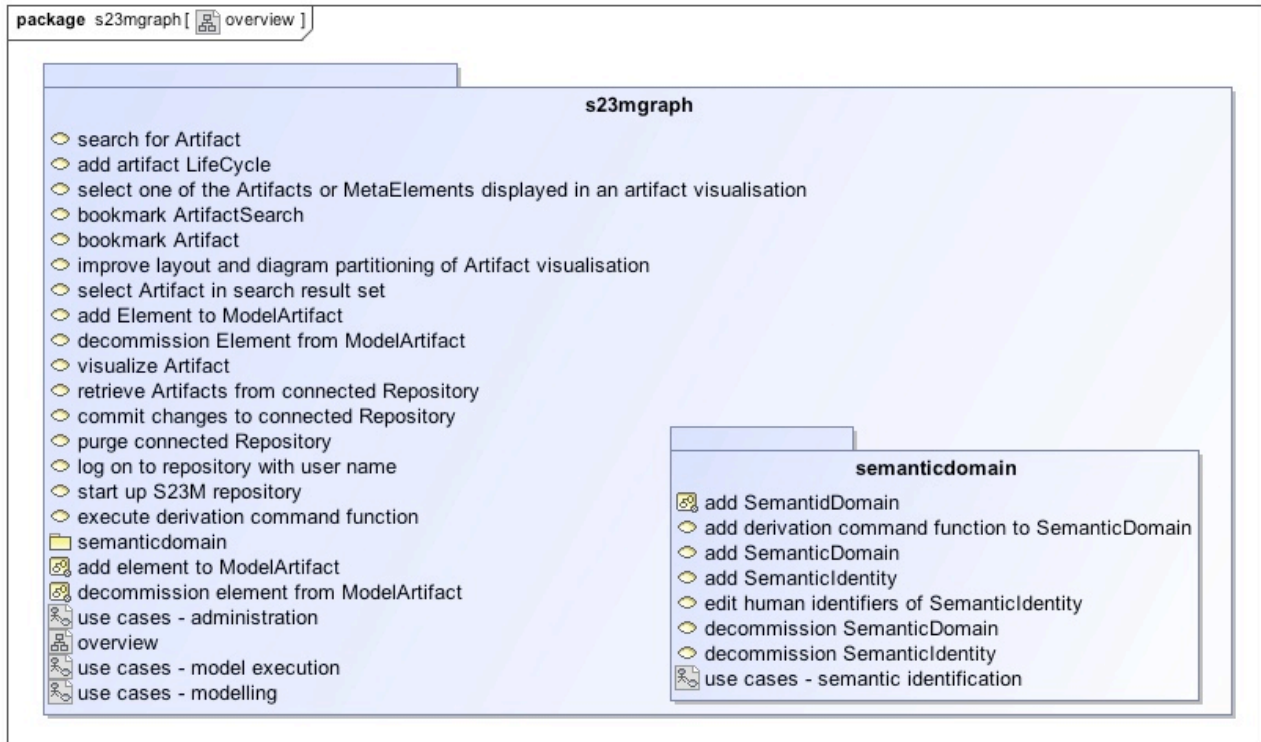
- Interoperability with any database or modelling standard (as long as a formal specification of the standard is available).
- Referential integrity across all modelling languages and work products.
- Precise definition of the commonalities and variabilities in product lines.
- Unlimited scalability of work products.
- Explicit scope management across all work products that are managed by the S23M repository.
- Universal content-management functionality that also extends to traditional file-based work products.
- Highly portable kernel based on a minimal Java implementation.
- Implementation/generation of derived work products (for example program code) on any technology stack.
- Adaptable to any business domain and any IT organisation.
- All work products are managed in a repository implemented with relational database technology (or alternatively, cloud-database technology).
- Web-based visualisation with multiple interface styles.
- Out-of-the-box integration with ECLIPSE.
- Open-source.

Since any data technology and any modelling language can be emulated with S23M, it is a universal interoperability platform for databases, data-warehouse solutions, and modelling tools

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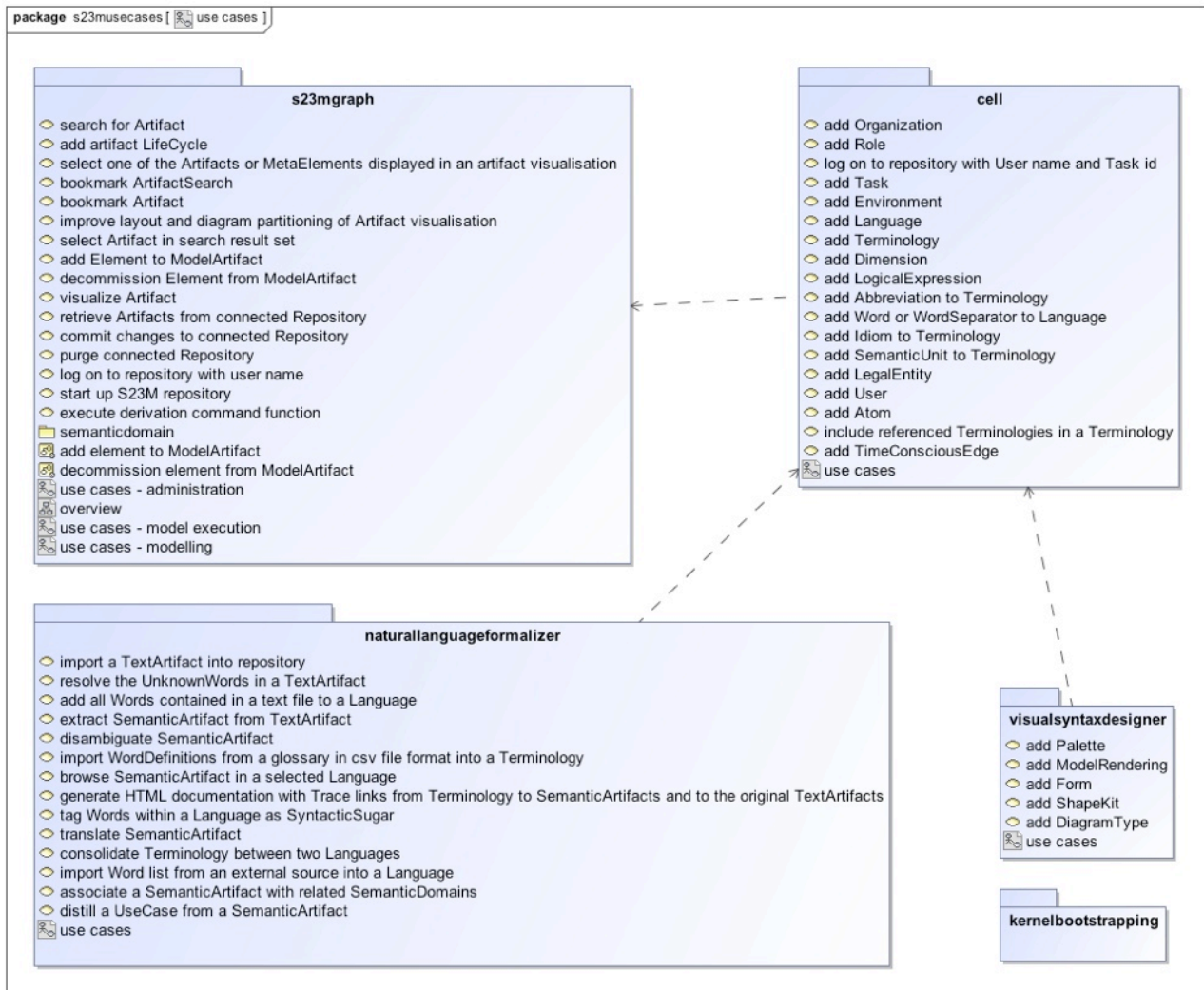
Scope of the S23M Graph Platform

The following diagram illustrates the scope of the S23M kernel.

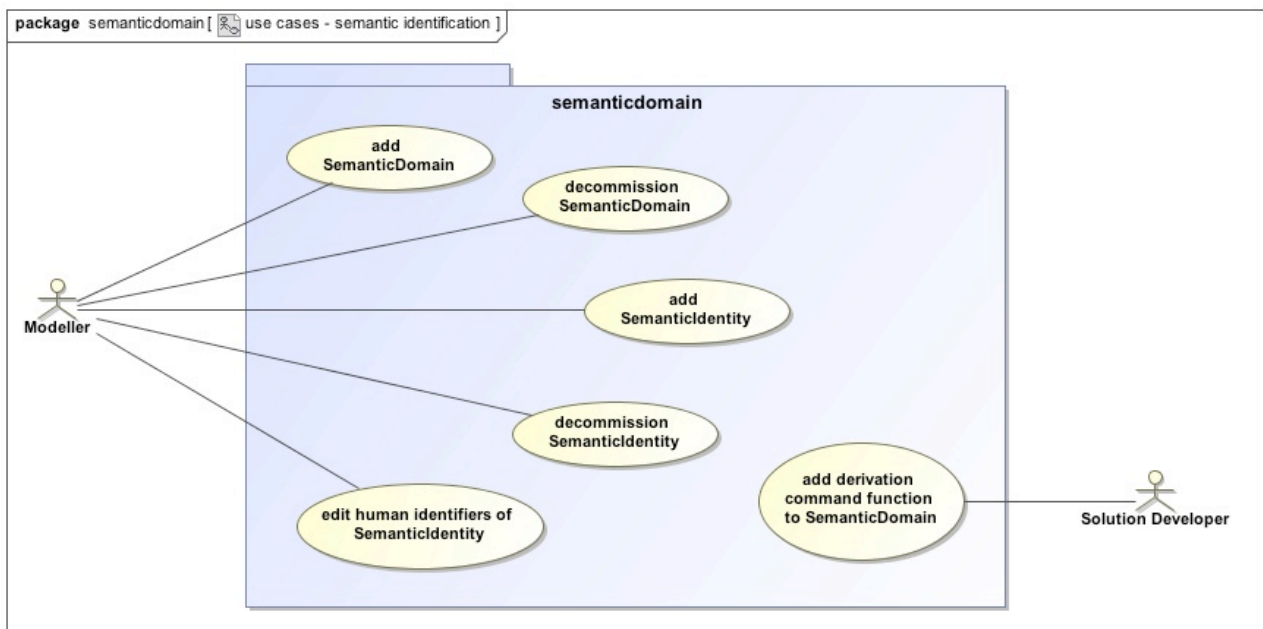
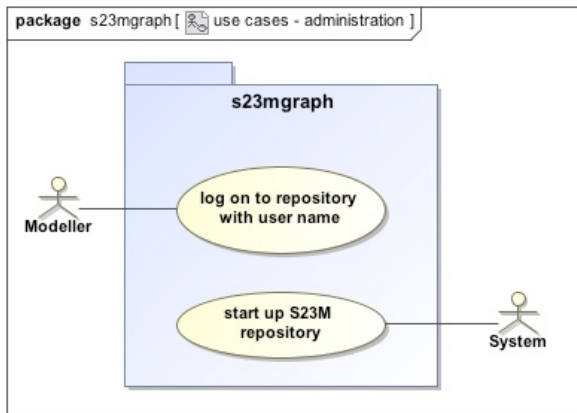


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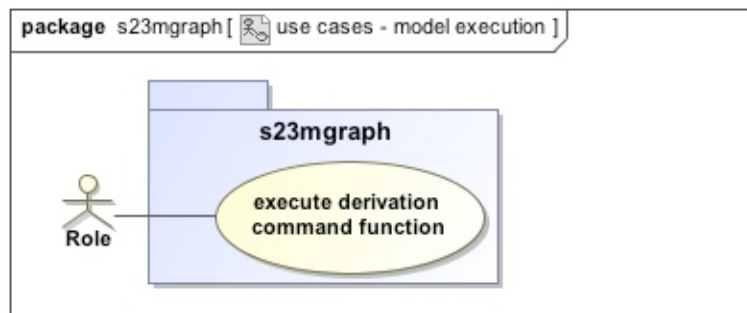
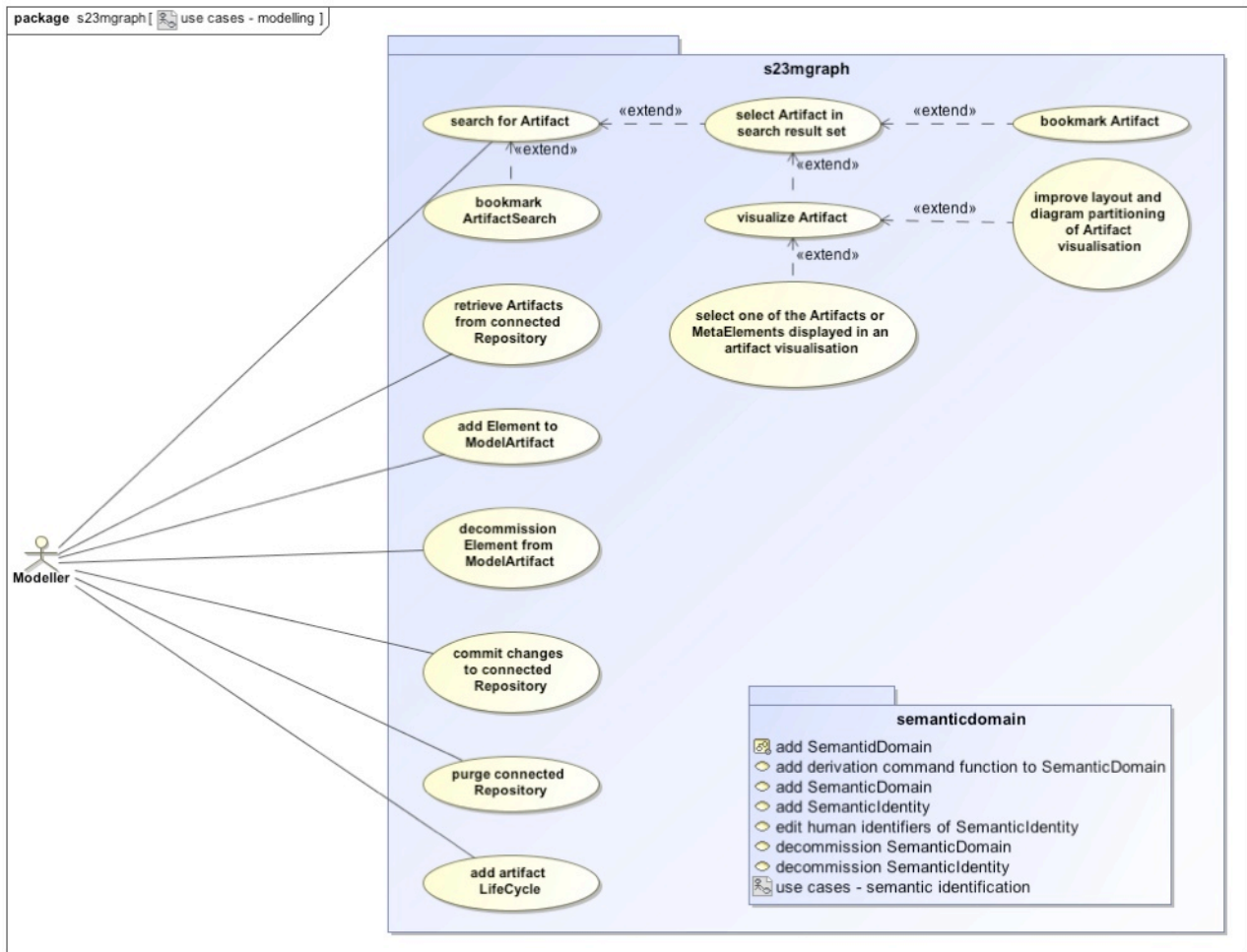
Wider S23M Product Family Context



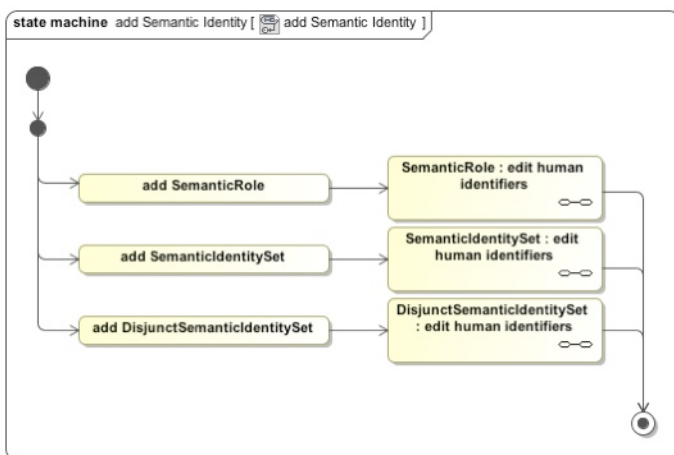
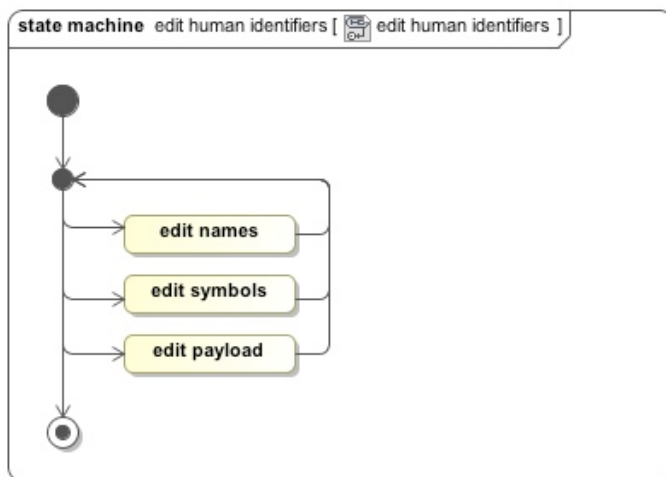
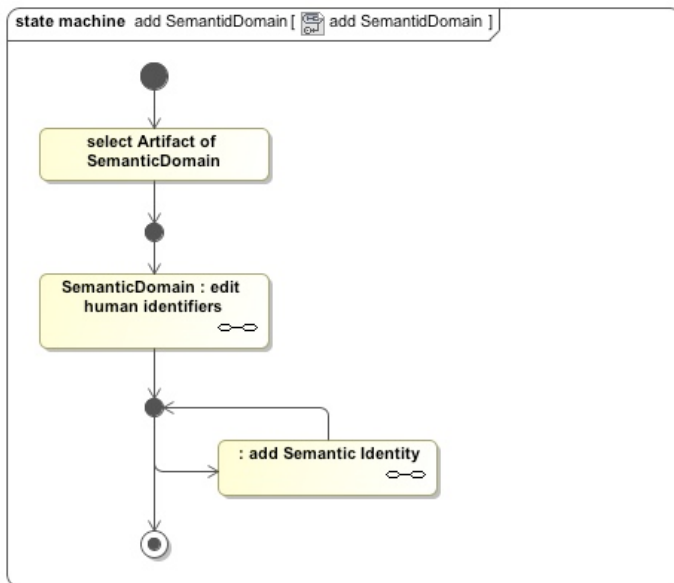
Use Case Model - Kernel



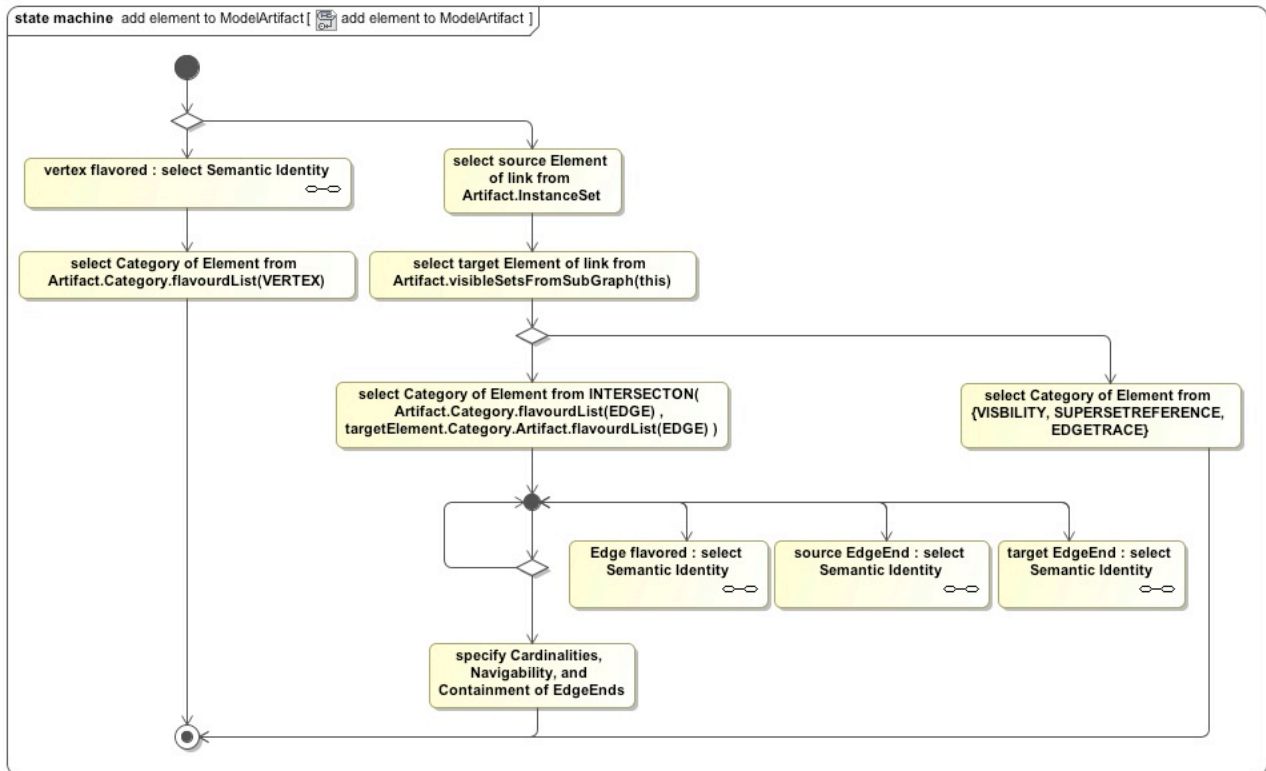
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Use Case Descriptions

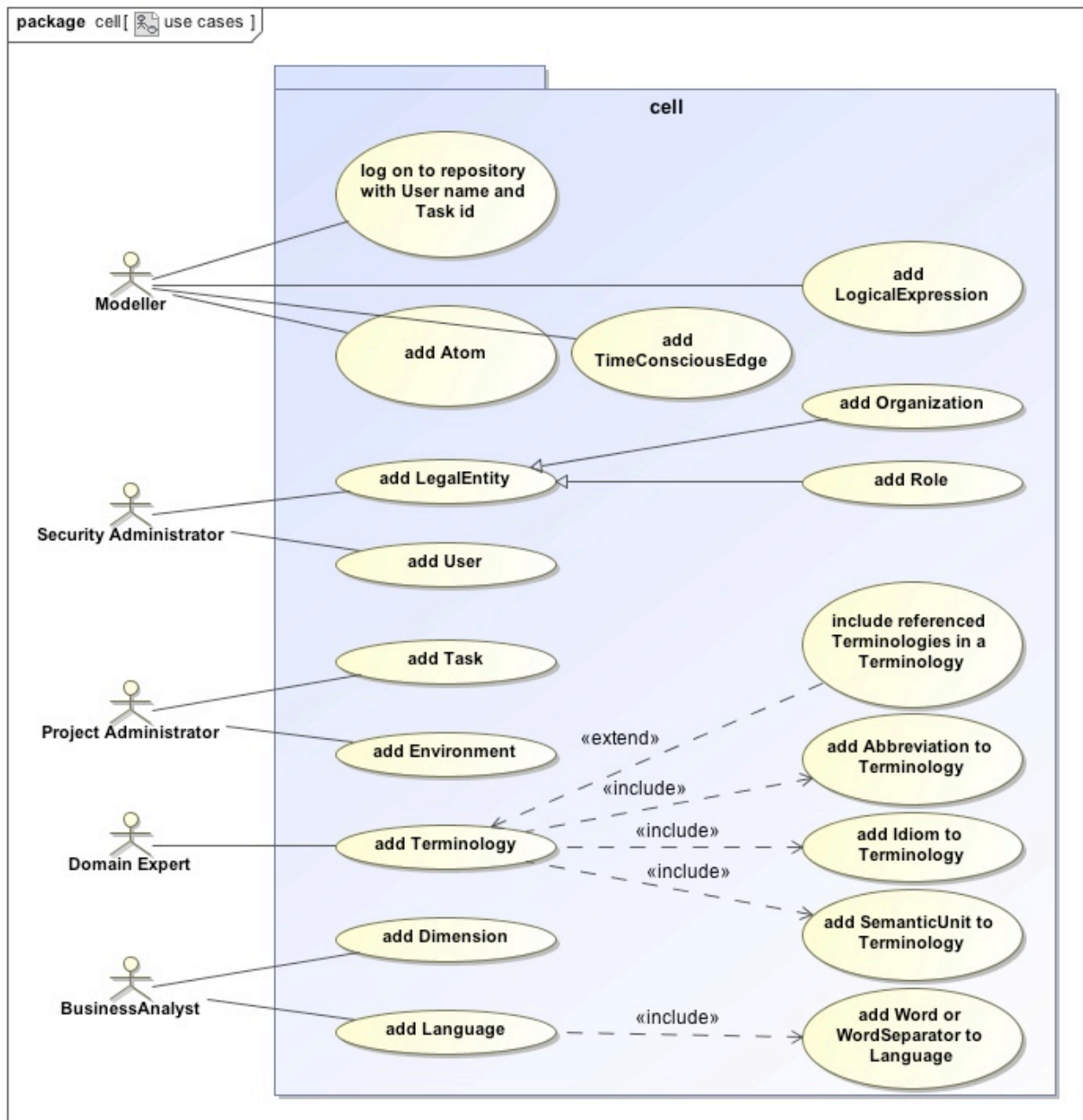


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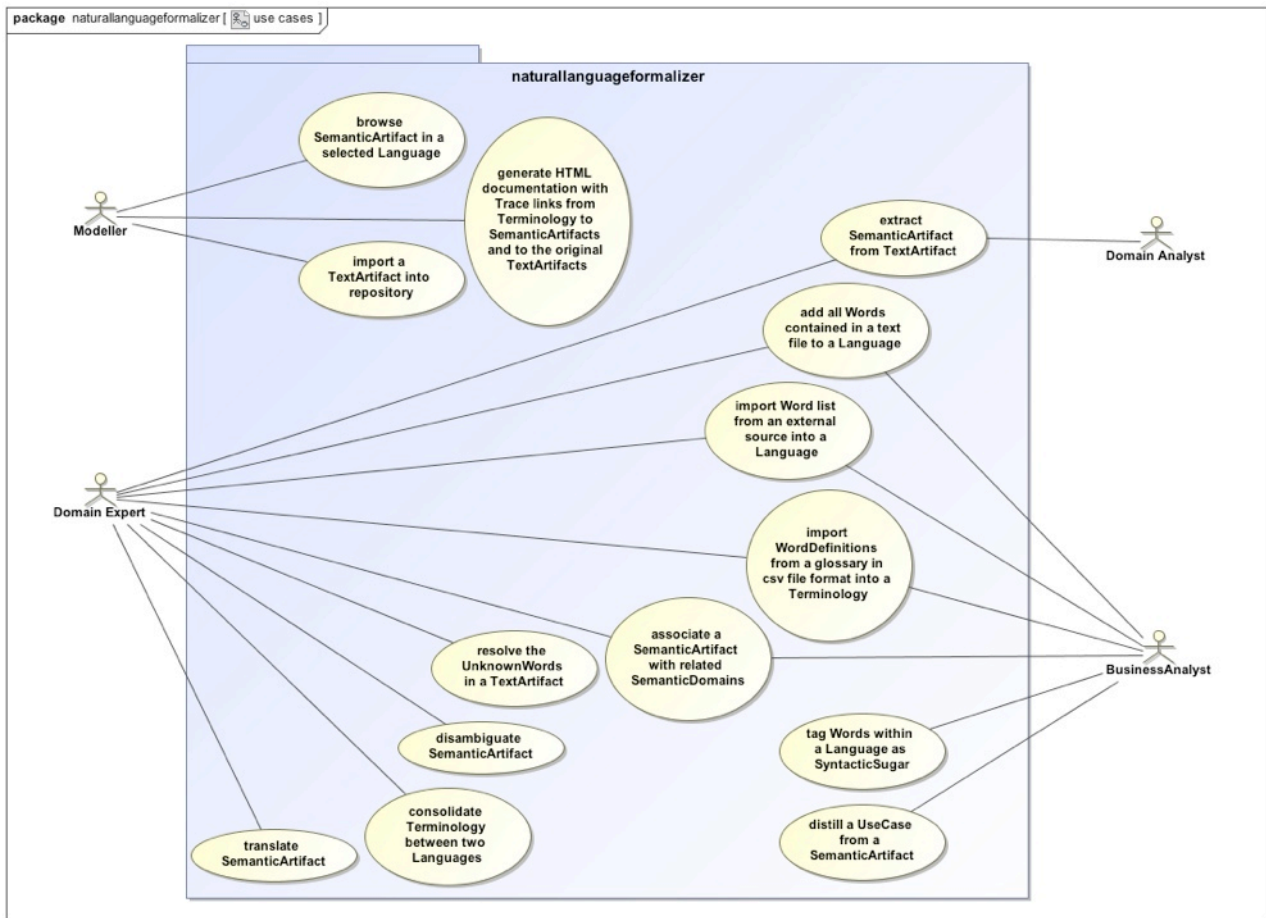
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Use Case Model - Cell Platform

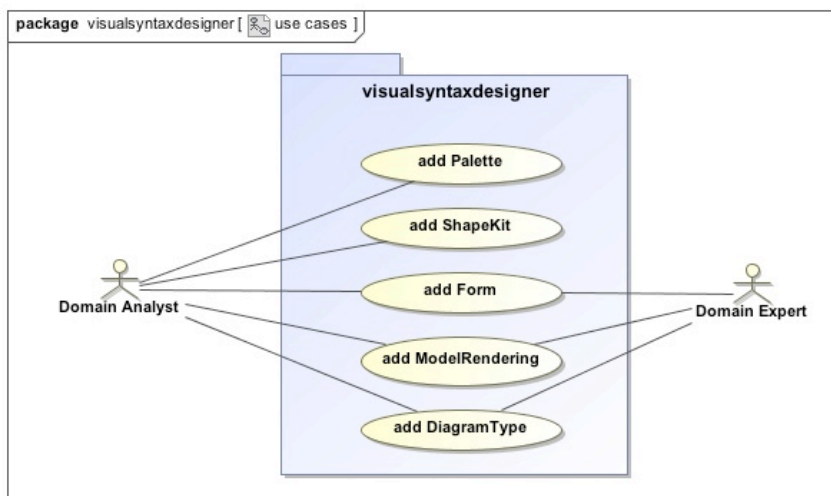


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Use Case Model - Natural Language Formalizer



Use Case Model - Visual Syntax Designer



Release Schedule

Version 0.x.2, monthly release, delivery 1/12/2010

Version 0.x.3, monthly release, delivery 1/01/2011

Version 1.0.0, quarterly release, delivery 1/02/2011

Version 1.0.1, monthly release, delivery 1/03/2011

Version 1.1.0, quarterly release, delivery 1/04/2011

...

Release Content

S23M Graph Platform

Release	User	Feature
OS 1	DE	<to be agreed>
SX 1	DE	<to be agreed> • ... • ...

S23M Cell Platform

- A. Multi-language and multi-jargon
[Q1 2012]
- B. Time conscious artefacts (versioning, branching etc.)
[Q1 2012]
- C. Web based generic model editor (incremental delivery of more and more advanced features)
[Q2 2012]
- D. Role based access control
[Q2 2012]
- E. Task management
[Q2 2012]
- F. Support for environments (dev, test, int, uat, prod, etc.)
[Q2 2012]
- G. Change impact analysis functionality
[Q3 2012]
- H. Derivation management console
[Q3 2012]
- I. Model refactoring functionality (incremental delivery)
[Q4 2012]

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Natural Language Formalizer

See separate Natural Language Formalizer document

Visual Syntax Designer

to be done