

Extending the Kernel with Practices to Create Methods



Brian Elvesæter
SINTEF, Oslo, Norway

Outline



- Scrum Practice – Reference Example
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- Defining the Scrum Practice



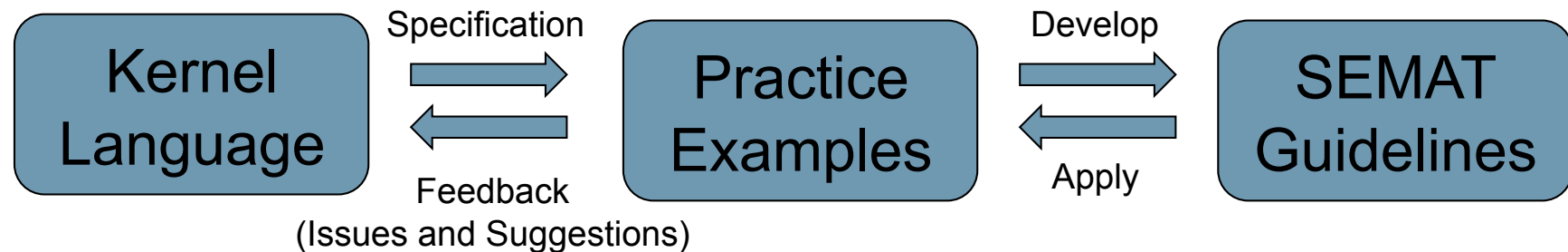
- Authoring the Practice in the EssWork Practice Workbench



- Questions

Objective

- Exercise the SEMAT Kernel and Language



- Illustrate the SEMAT approach
 - One example of how the Scrum practice may be mapped to the SEMAT Kernel and Language
- Develop and apply methods for projects
 - Agile requirements with User Stories and/or Use Cases practices
 - Agile project management with Scrum or "Scrum-like" practices

About Scrum

- Scrum consists of Scrum Teams and their associated roles, events, artifacts, and rules.
- Scrum's roles, artifacts, events, and rules are immutable and although implementing only parts of Scrum is possible, the result is not Scrum.
- Source
 - K. Schwaber and J. Sutherland, "The Scrum Guide", Scrum.org, October 2011.
 - http://www.scrum.org/storage/scrumguides/Scrum_Guide.pdf

Scrum Concepts

- Scrum team (roles)
 - Product Owner
 - Development Team (of developers)
 - Scrum Master
- Scrum artifacts
 - Product Backlog
 - Sprint Backlog
 - Increment
- Scrum events
 - The Sprint
 - Sprint Planning Meeting
 - Daily Scrum
 - Sprint Review
 - Sprint Retrospective

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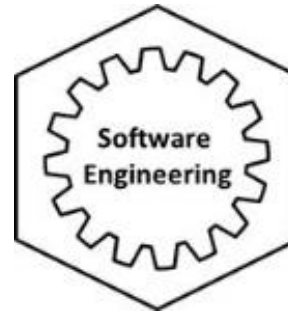
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Step 0: SEMAT Kernel & Essence Language Concepts

- A standard **Kernel** provides a baseline starting point – a "map" of the software development endeavour.
- **Practices** add details and provide specific guidance on particular aspects of the software development
- Key language concepts: **Alpha**, **Activity Space**, **Work Product** and **Activity**



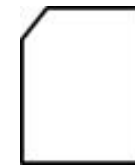
Kernel



Practice



Alpha



Work Product

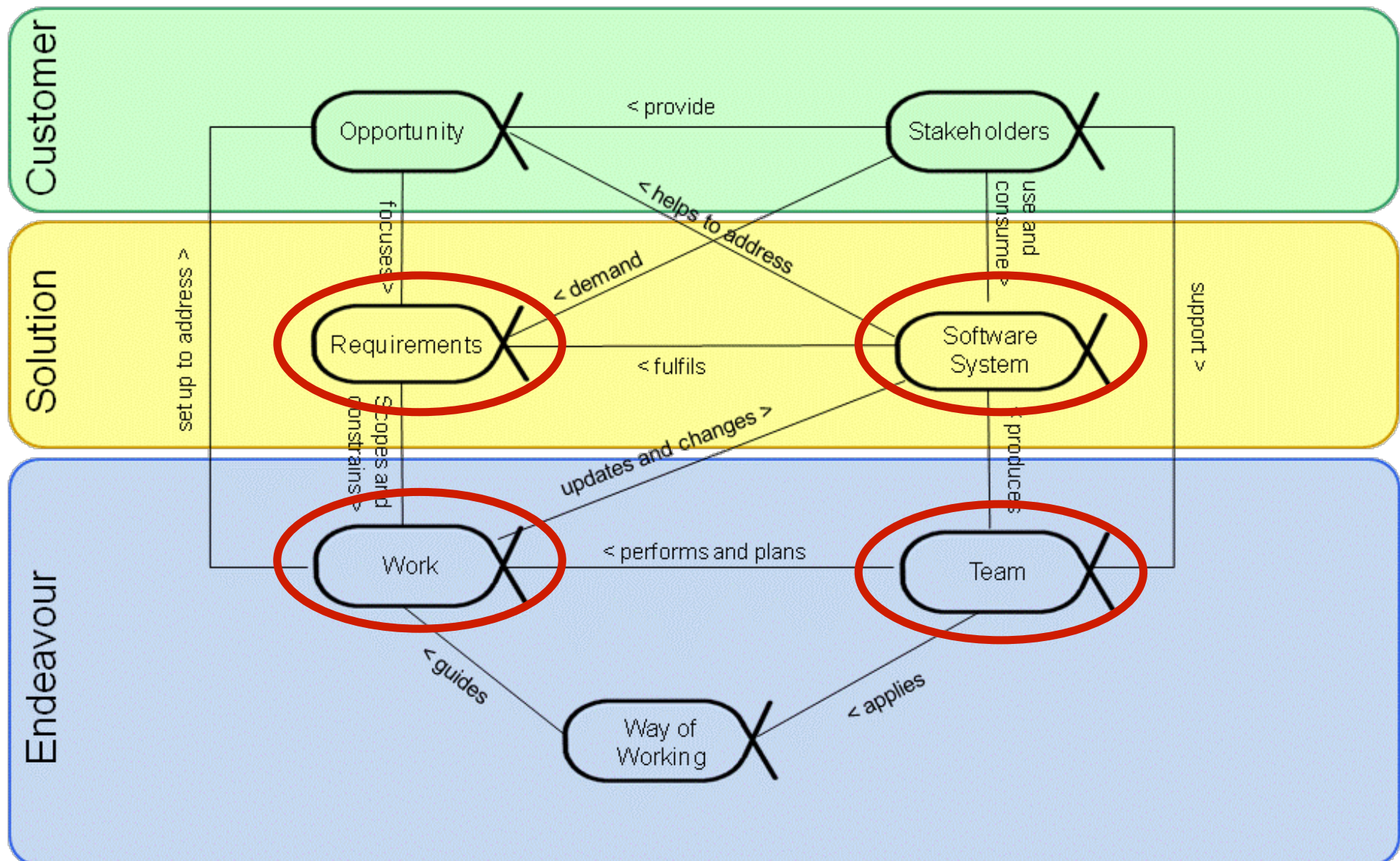


Activity Space

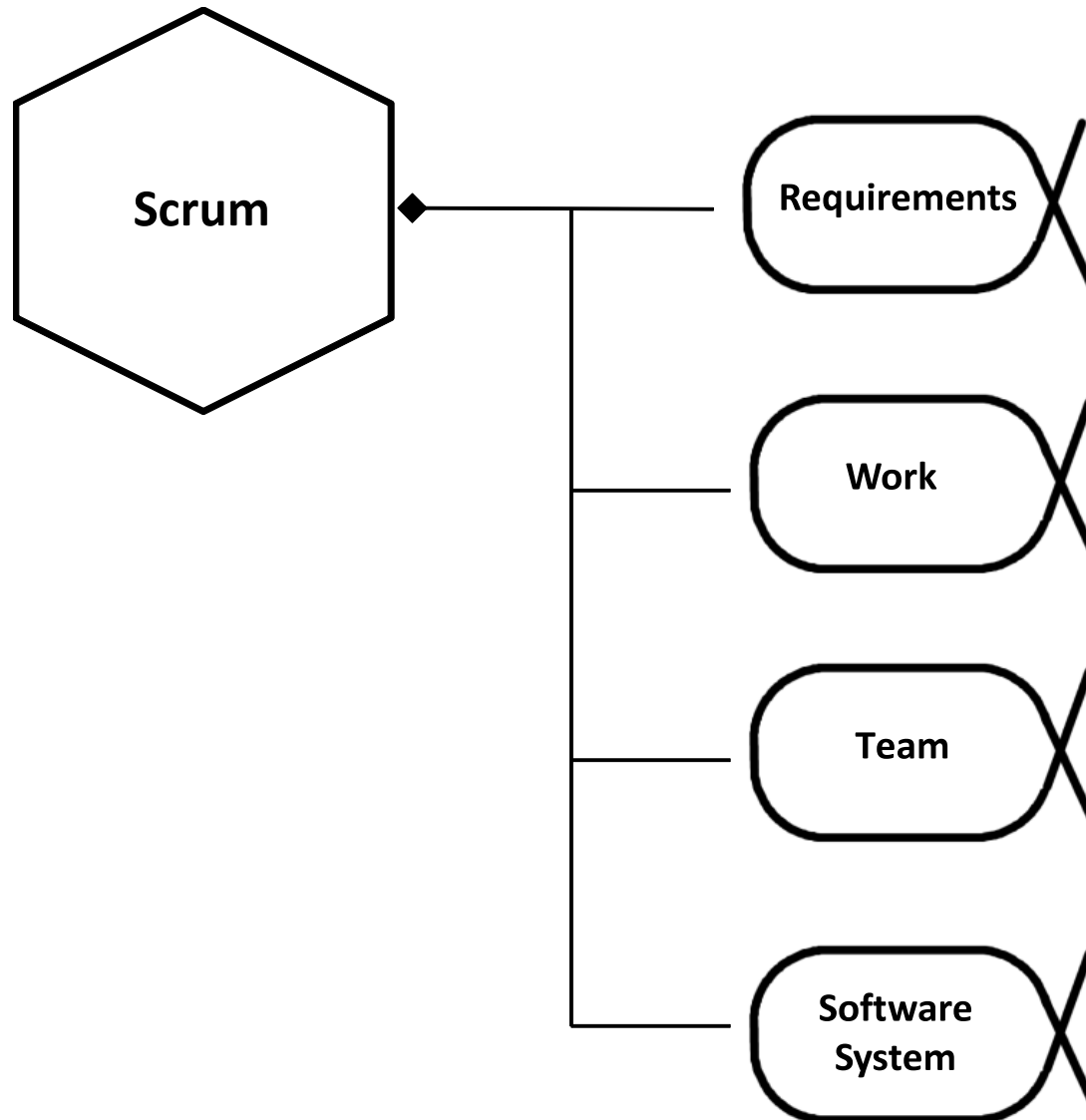


Activity

Step 1a: Identify relevant Kernel Alphas

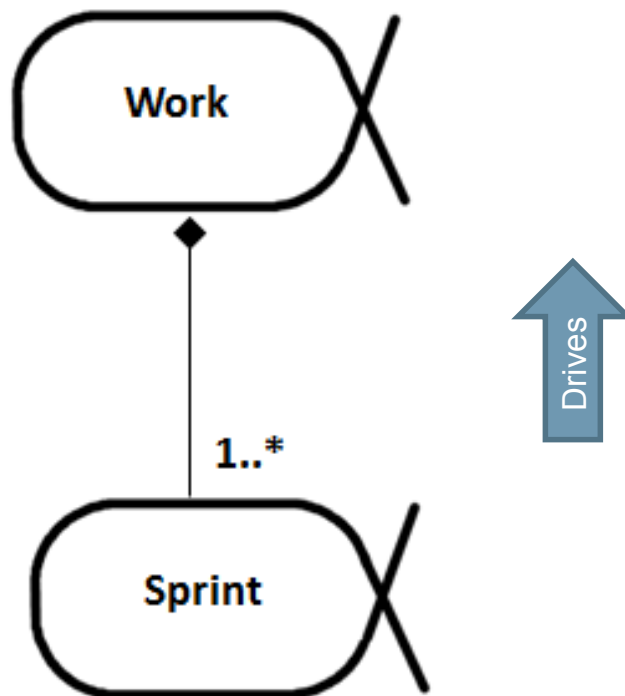


Step 1b: Outline the Scrum Practice



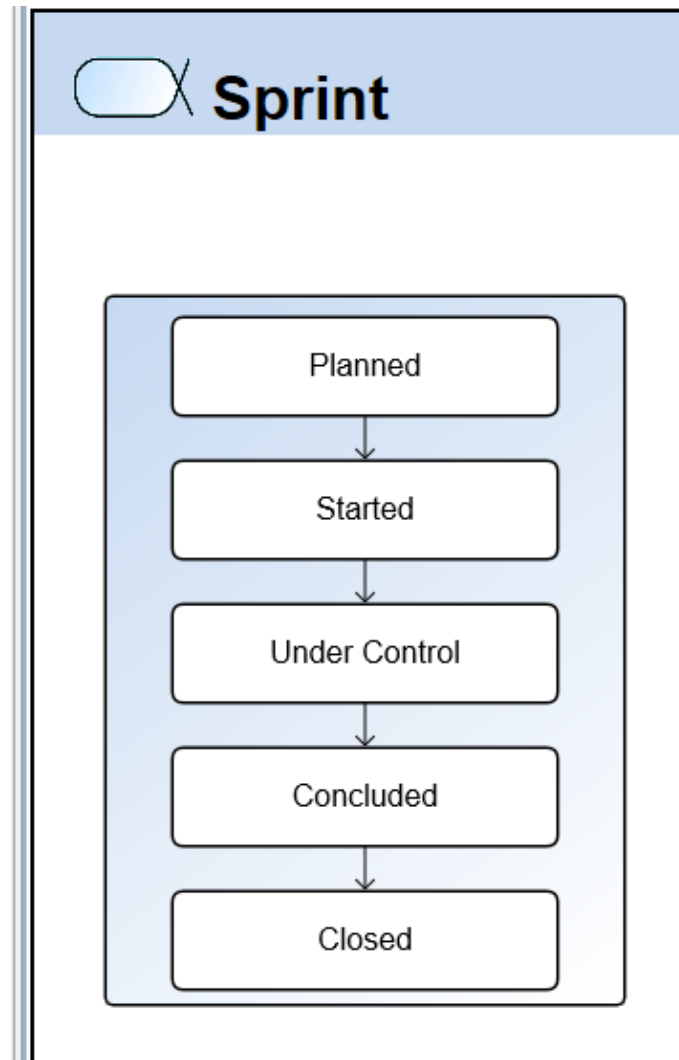
Step 2a: Add sub-alphas

- Extending the Work Alpha

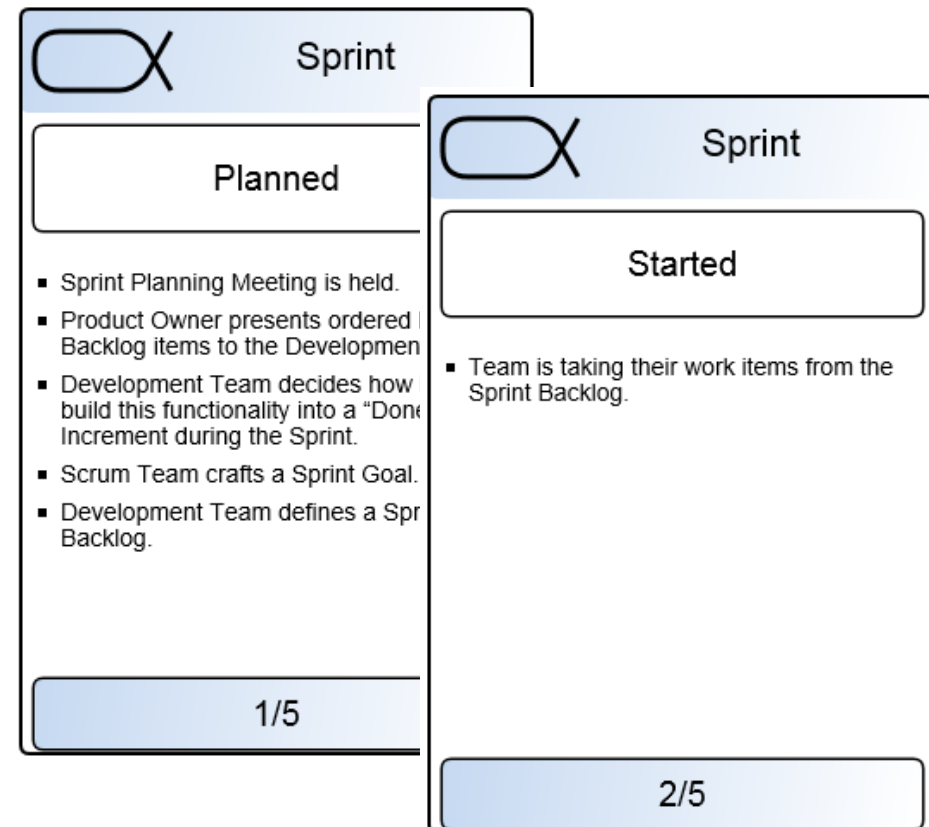


- The Work alpha is typically used for the duration of a development project that may cover a number of sprints.
- Thus we define a new sub-alpha called **Sprint**.
- Sub-alphas drive their parent alphas

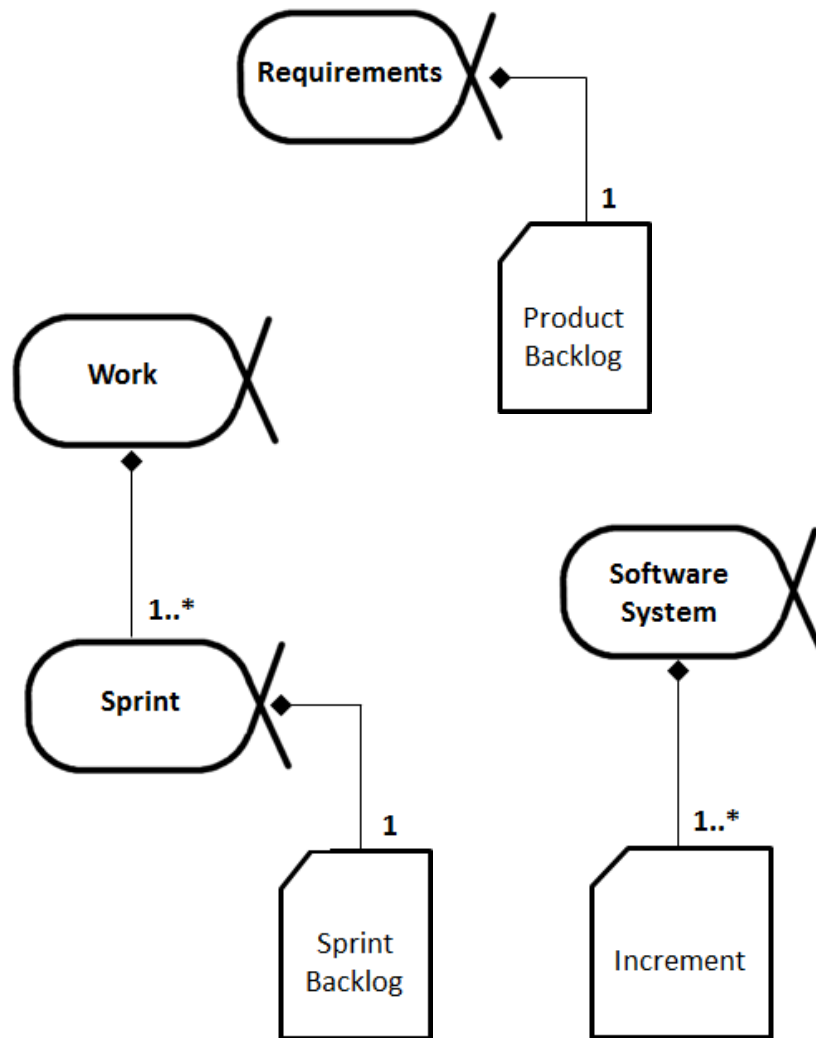
Step 2b: Define alpha states and checkpoints



- Specific Scrum rules are defined as part of the alpha state checkpoints.

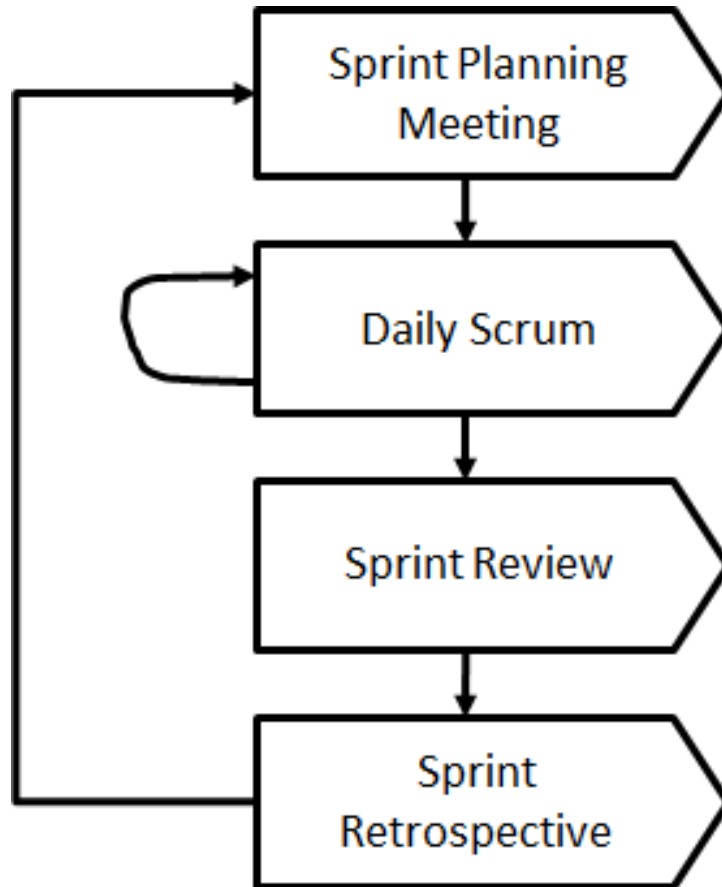


Step 3: Add Work Products



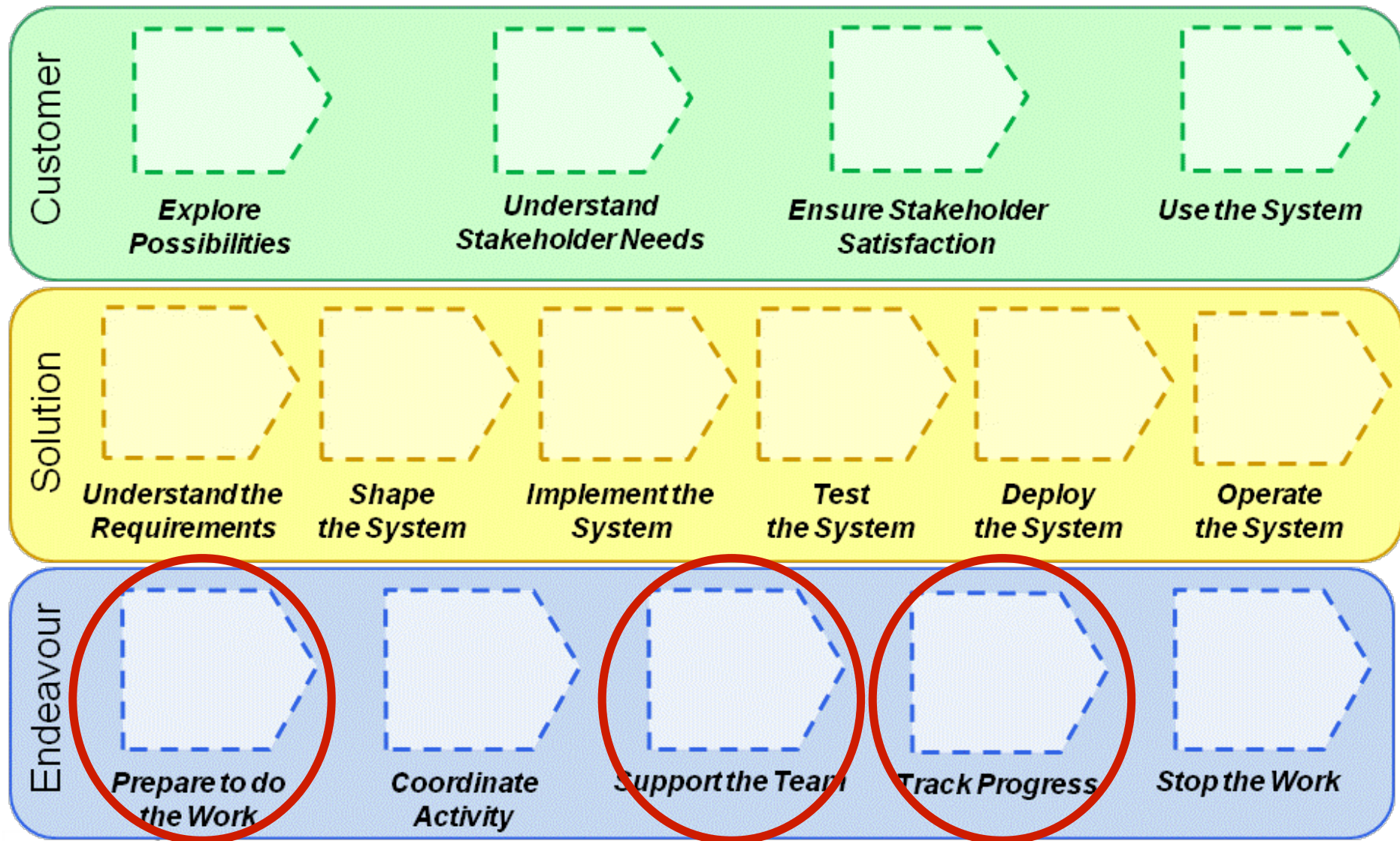
- "The **Product Backlog** is an ordered list of everything that might be needed in the product and is the single source of requirements for any changes to be made to the product."
- "The **Sprint Backlog** is the set of Product Backlog items selected for the Sprint plus a plan for delivering the product Increment and realizing the Sprint Goal."
- "The **Increment** is the sum of all the Product Backlog items completed during a Sprint and all previous Sprints."

Step 4a: Define Activities

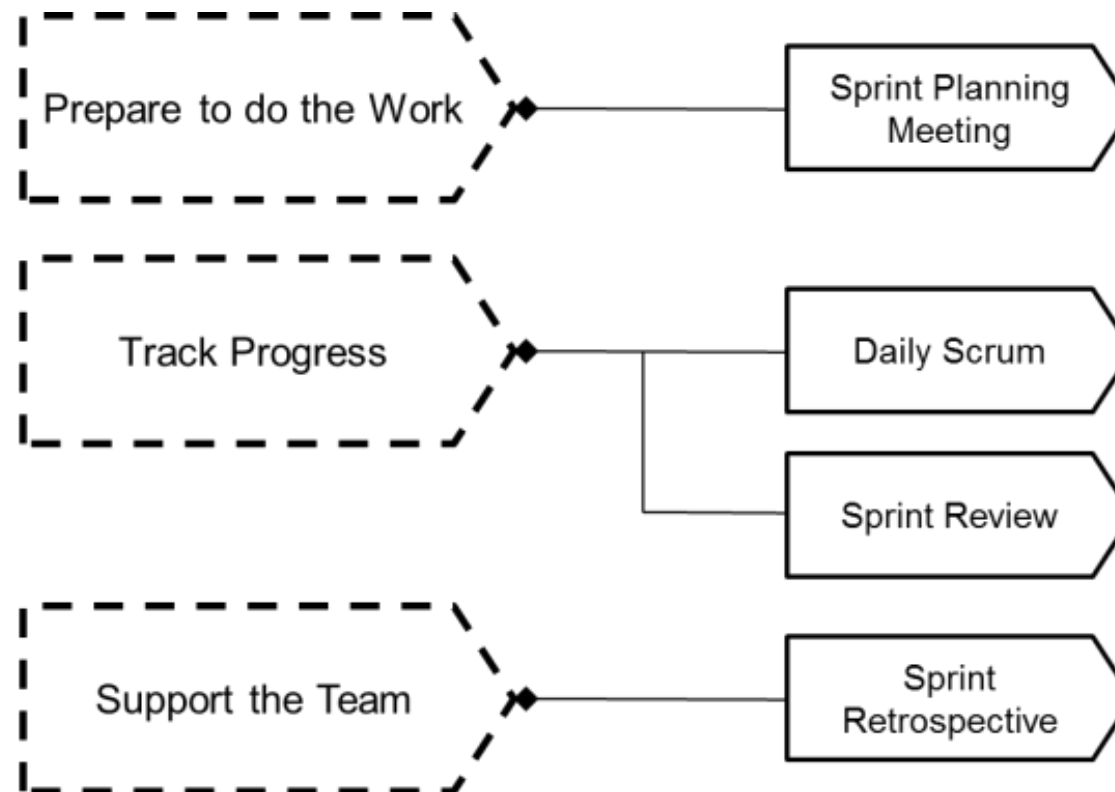


- "The work to be performed in the Sprint is planned at the Sprint Planning Meeting."
- "The Daily Scrum is a 15-minute time-boxed event for the Development Team to synchronize activities and create a plan for the next 24 hours."
- "A Sprint Review is held at the end of the Sprint to inspect the Increment and adapt the Product Backlog if needed."
- "The Sprint Retrospective occurs after the Sprint Review and prior to the next Sprint Planning Meeting."

Step 4b: Identify relevant Kernel Activity Spaces



Step 4c: Relate activities to Kernel Activity Spaces



- NB! Just one possible suggestion. The organization depends amongst others on how one interpret and define the completion criteria of the Activities.

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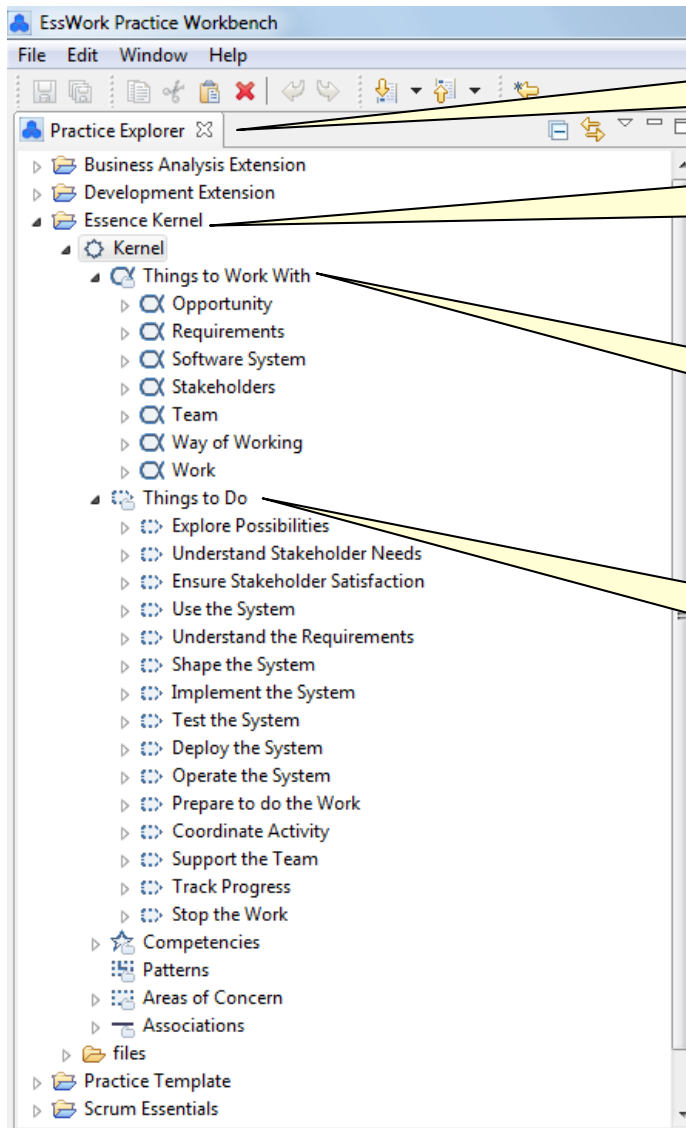


- Authoring the Practice in the EssWork Practice Workbench
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Practice Explorer



The Practice Explorer shows Practice Workbench projects

The Essence Kernel project contains the elements defined in the OMG Essence specification

Alphas that represent the essential things to work with

Activity Spaces that represent the essential things to do

ETextile, Guideline and Card views

The screenshot displays the EssWork Practice Workbench interface. On the left is the Practice Explorer tree, which is highlighted by a callout box. The main area shows three overlapping windows:

- ETextile Source:** Shows the raw text of a guideline for a 'Team' element, including sections like 'Introduction', 'Justification: Why Team?', and 'Progressing the Team'. A callout box points to this window.
- Guideline Preview:** Shows the rendered HTML version of the same guideline, with a table of contents and a flow diagram of team states (Seeded, Formed, Collaborating, Performing, Adjourning). A callout box points to this window.
- Overview Card Preview:** Shows a compact card view of the guideline content, including a title, a brief description, and a list of related elements. A callout box points to this window.

A callout box at the bottom left explains that the Practice Explorer allows switching between these views. A footer at the bottom of the screenshot lists copyright information for 2012, including Ivar Jacobson International AB, Florida Atlantic University, Fujitsu, Impet Technology, Metaspixim Ltd., PEM Systems, Stittelen SINTE.

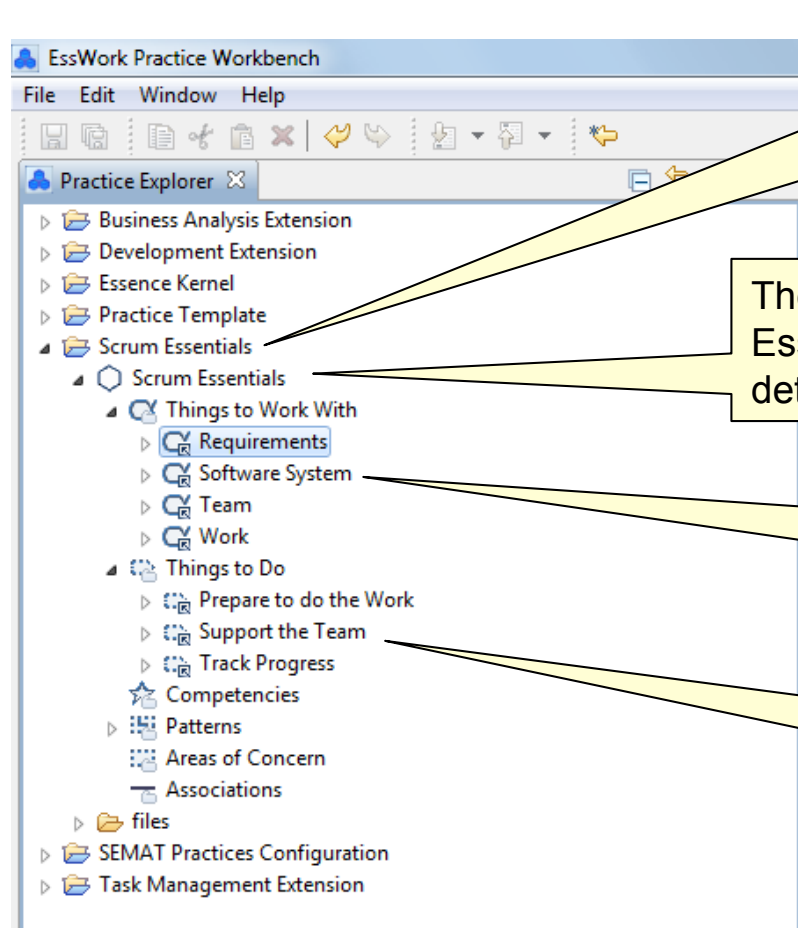
The ETextile Source view provides the main editor for authoring the practice using plain text and annotations

The Guideline Preview renders how the guideline will be presented in HTML

When selecting an element in the Practice Explorer you can switch between different views

The Overview Card Preview renders the card presentation

Scrum Essentials



The screenshot shows the 'EssWork Practice Workbench' application. The 'Practice Explorer' pane on the left displays a hierarchical tree structure. The 'Scrum Essentials' project is expanded, showing sub-projects like 'Things to Work With' and 'Things to Do'. Callout boxes provide context for the Scrum practice's relationship to the Essence Kernel and how it is extended.

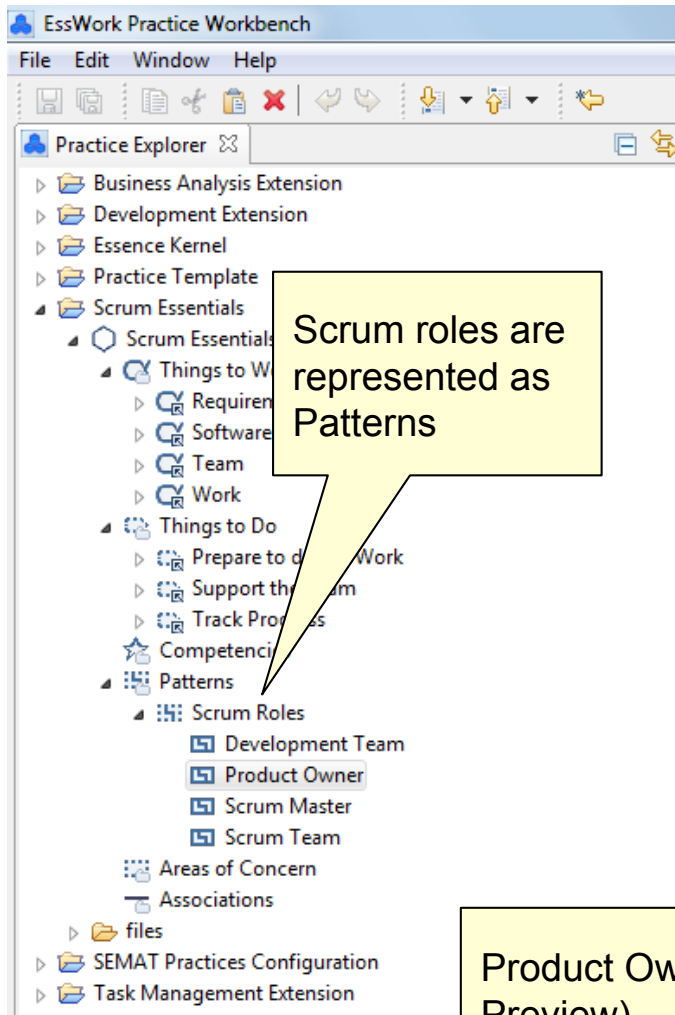
The Scrum practice is created as a separate practice project in the Practice Workbench

The Scrum practice extends the Essence Kernel by providing more detailed guidance.

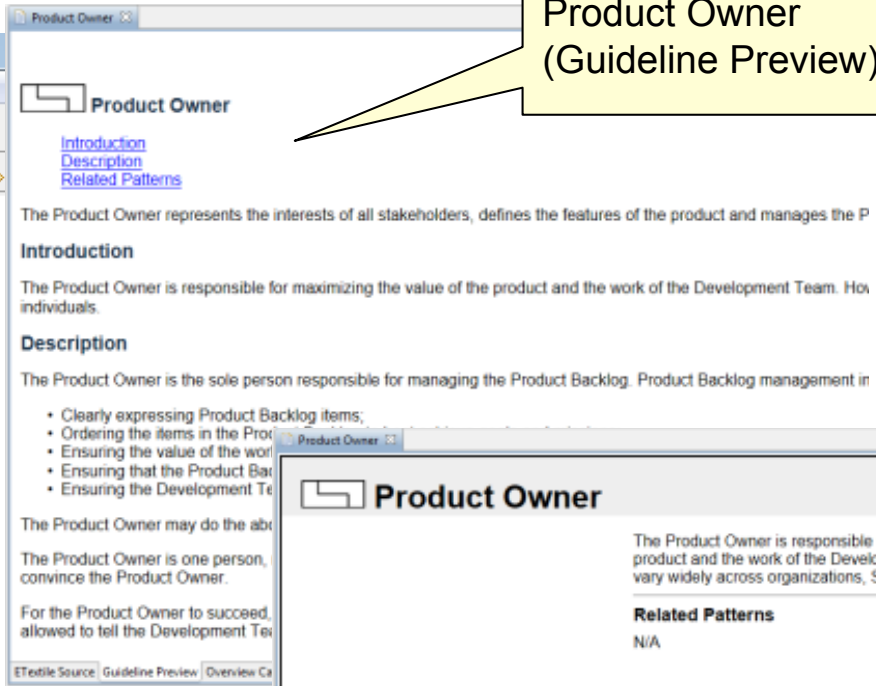
Drag and drop the relevant Alphas to extend from the Essence Kernel into the Scrum practice project

Drag and drop the relevant Activity Spaces to extend from the Essence Kernel into the Scrum practice project

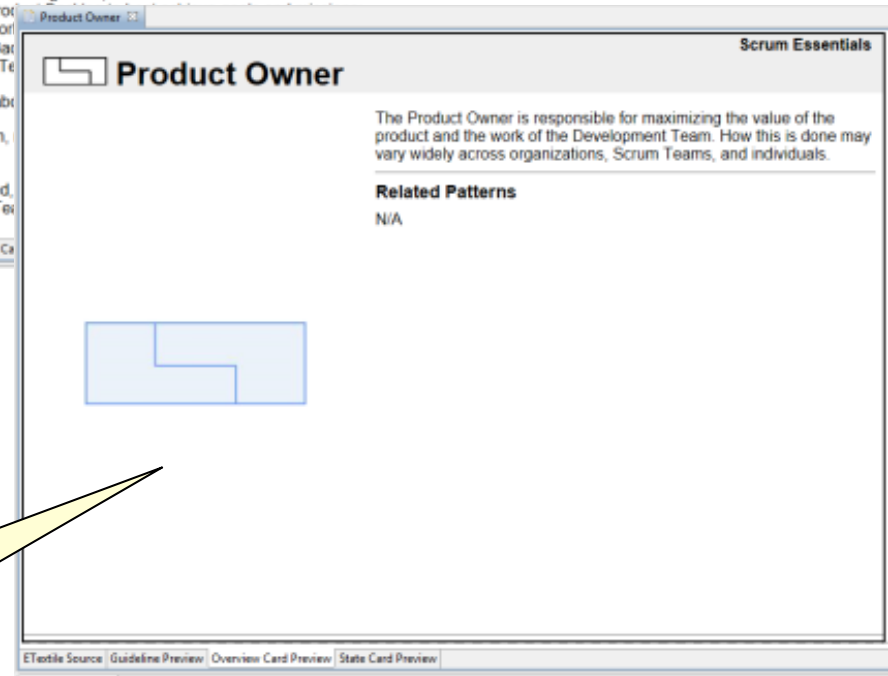
Scrum Roles



Scrum roles are represented as Patterns



Product Owner (Guideline Preview)



Product Owner (Card Preview)



Scrum Sprint

Sprint (Card Preview)

EssWork Practice Workbench

File Edit Window Help

Practice Explorer

- Business Analysis
- Development
- Essence Kernel
- Practice Template
- Scrum Essentials
 - Scrum Essentials
 - Things to Watch out for
 - Requirements
 - Software System
 - Team
 - Work
 - States
 - Sprint
 - States
 - Planned
 - Started
 - Under Control
 - Concluded
 - Closed
 - Sprint Backlog
 - Related
 - Related
 - Do
 - to do the Work

Sprint is represented as a sub-alpha of Work

The Sprint has States with Checkpoints

Sprint in Under Control State (Card Preview)

The Sprint has associated the Work Product Sprint Backlog that contains the set of Product Backlog items selected for the Sprint, and the plan for delivering the product Increment

Sprint

The heart of Scrum is a Sprint, a time-box of one month or less during which a "Done", useable, and potentially releasable product increment is created. Sprints have consistent durations throughout a development effort. A new Sprint starts immediately after the conclusion of the previous Sprint.

Sprints contain and consist of the Sprint Planning Meeting, Daily Scrums, the development work, the Sprint Review, and the Sprint Retrospective.

During the Sprint:

- No changes are made that would affect the Sprint Goal;
- Development Team composition remains constant;
- Quality goals do not decrease; and,
- Scope may be clarified and re-negotiated between the Product Owner and Development Team as more is learned.

Essential content
N/A

Described by
• [Sprint Backlog](#)

Related alphas
• [Work](#) (Parent)

Planned

Started

Under Control

Concluded

Closed

Sprint

The work is going well, risks are under control, and productivity levels are sufficient to achieve a satisfactory result.

The alpha is in this state when:

- Daily Scrum optimizes the probability that the Development Team will meet the Sprint Goal.
- Every day, the Development Team should be able to explain to the Product Owner and Scrum Master how it intends to work together as a self-organizing team to accomplish the goal and create the anticipated increment in the remainder of the Sprint.

Under Control

Under Control

3/5

Under Control (State Card Preview)

Scrum Activities

The Scrum events (except the Sprint which is represented as an Alpha) are represented as Activities

- Business Analysis Extension
- Development Extension
- Essence Kernel
- Practice Template
- Scrum Essentials
 - Scrum Essentials
 - Things to Work With
 - Things to Do
 - Prepare to do the Work
 - Sprint Planning Meeting
 - Sprint is planned
 - Support the Team
 - Sprint Retrospective
 - Team is Performing
 - Track Progress
 - Daily Scrum
 - Sprint is Under Control
 - Sprint Review
 - Sprint is Concluded
 - Competencies
 - Patterns
 - Areas of Concern
 - Associations
 - files
 - SEMAT Practices Configuration
 - Task Management Extension

Sprint Planning Meeting

The work to be performed in the Sprint is planned at the Sprint Planning Meeting. This plan is created by the collaborative work of the entire Scrum Team.

Sprint is planned

This activity is complete when the Sprint is planned. This includes achieving the following:

- [Sprint Planned](#)

This activity contributes to achieving N/A

There are no required competencies.

Requirements

Sprint

Sprint Planning Meeting (Card Preview)

The Sprint Planning Meeting activity provides guidance on how to achieve the Planned state of the Sprint.

Properties:

Property	Value
Element	
Brief Description	
Minimal	false
Name	Sprint is planned
Optional	false
Order	0
Partial	false
Reached State	Scrum Essentials / Sprint / Planned
Extension	
Extends	

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References

- **OMG Essence specification**
 - OMG, "Essence – Kernel and Language for Software Engineering Methods", OMG Document ad/2013-02-01, 18 February 2013.
 - http://semat.org/wp-content/uploads/2013/02/Essence_final_submission_18Feb13.pdf
- **Scrum Guide**
 - Ken Schwaber and Jeff Sutherland, "Scrum Guide", October 2011.
 - http://www.scrum.org/Portals/0/Documents/Scrum%20Guides/Scrum_Guide.pdf
- **Practice authoring tool**
 - EssWork Practice Workbench
 - http://www.ivarjacobson.com/EssWork_Practice_Workbench/

Questions



- Email:
 - brian.elvesater@sintef.no
- OMG website:
 - <http://www.omg.org>
- SEMAT website:
 - <http://www.semat.org>