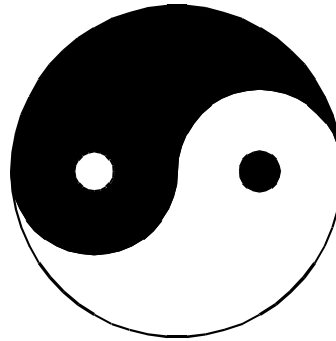


Gegensätze ziehen sich an



**Formale Anforderungsspezifikationen und
agile Softwareentwicklung unter einen (TFS)Hut bekommen**

Agenda

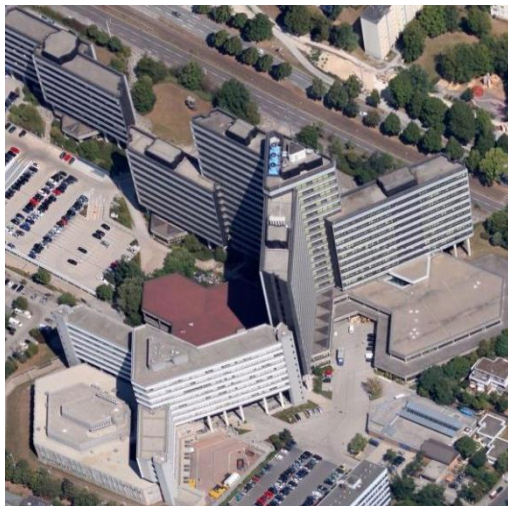
Gegensätze?

RE in der
agilen
Entwicklung

RE in der
klassischen
Entwicklung

Unterschiede
und
Gemeinsamkeiten

Integration



SGB II

IT
Verfahren
KG

IT
Verfahren
A2LL

SGB III

IT
Verfahren
COLIBRI

IT
Verfahren
EiBa



Wealth
Management

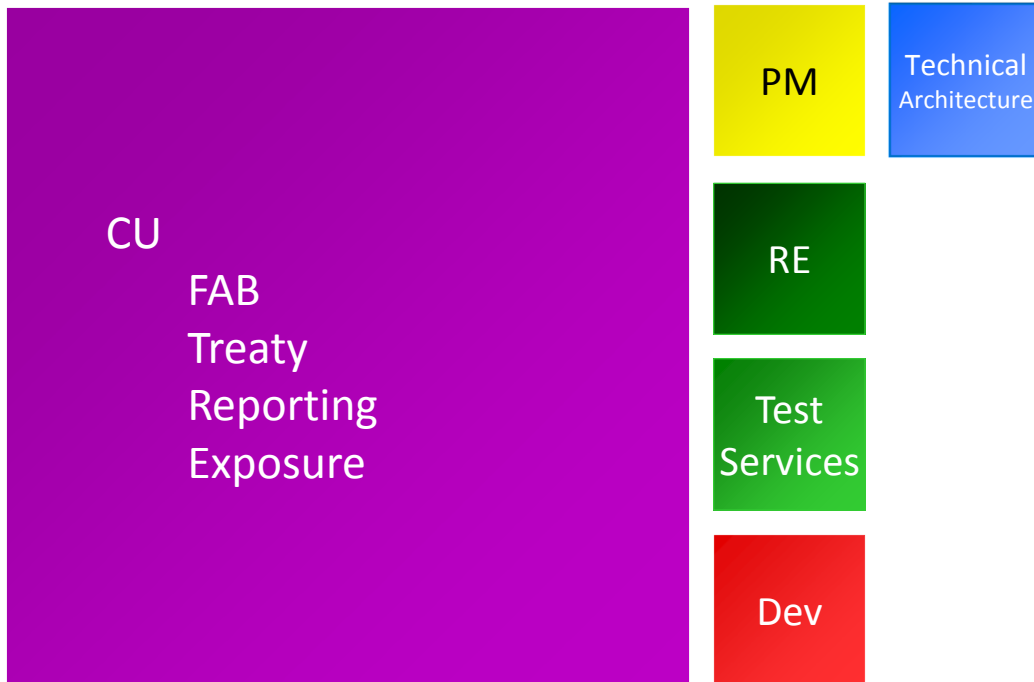
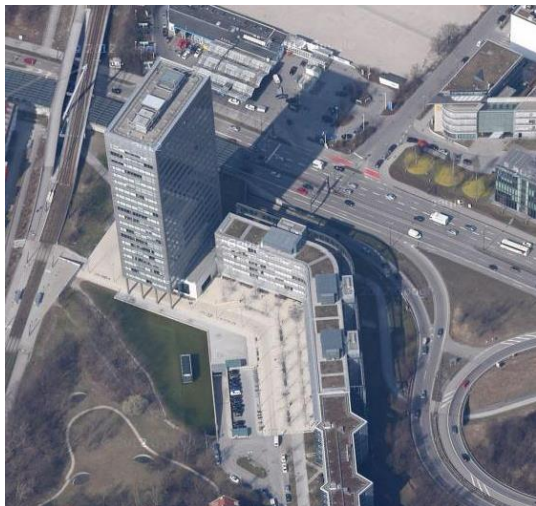
IT Projekt
Doc
Simplicity

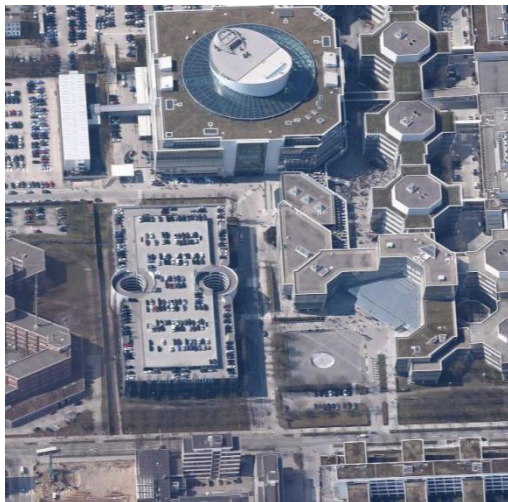
IT Projekt
Subitop
Cash

Investment
Banking

IT Projekt
CRCS

IT Projekt
AIDE







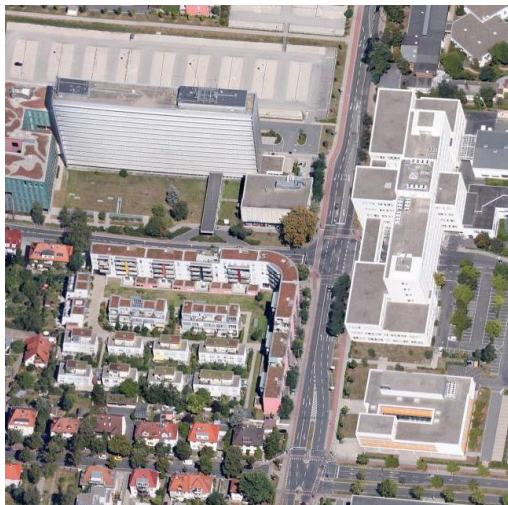
Projekt
Velaro

Projekt
Viaggio

Projekt
Desiro

Projekt
Avenio

Kraftfahrt Bundesamt
EN50128
TSI-Normen



BU
SY

BU
CT

BU
MR

BU
XP



Computerized Systems Used in Clinical Investigations

Additional copies are available from:
Office of Training and Communications
Division of Drug Information
Center for Drug Evaluation and Research (CDER)
FDA, 101-101-1173
<http://www.fda.gov/cder/guidance/index.htm>
or
Office of Regulatory Affairs, Training and
Manufacturing Assistance
Center for Biologics Evaluation and Research
<http://www.fda.gov/cber/guidance.htm>
FDA, 101-101-1173 or 101-101-1173
or
Office of Compliance, Education, and Research Programs
Division of Drug Information, Compliance, and Consumer Assistance
Center for Devices and Radiological Health
<http://www.fda.gov/cdrh/guidance.htm>
FDA, 101-101-1173
(21) Manufacturers and International Assistance: 101-101-1173 or 101-101-1173
Office of Food and Drug Policy
Center for Food, Safety and Inspection Inspection
FDA, 101-101-1173
<http://www.cfsis.fda.gov/guidance/index.htm>
or
Compliance Unit, RFP-11
Center for Veterinary Medicine
FDA, 101-101-1173
<http://www.fda.gov/cvm/guidance/published.htm>
or
Good Clinical Practice Program
Office of the Commissioner
U.S. Department of Health and Human Services
Food and Drug Administration
Office of the Commissioner (OCC)
May 2007

System Requirements
Specification

Component Requirements
Specification

Hazard Analysis

Medical Device Directive

Medical Device Report

Agenda

Gegensätze?

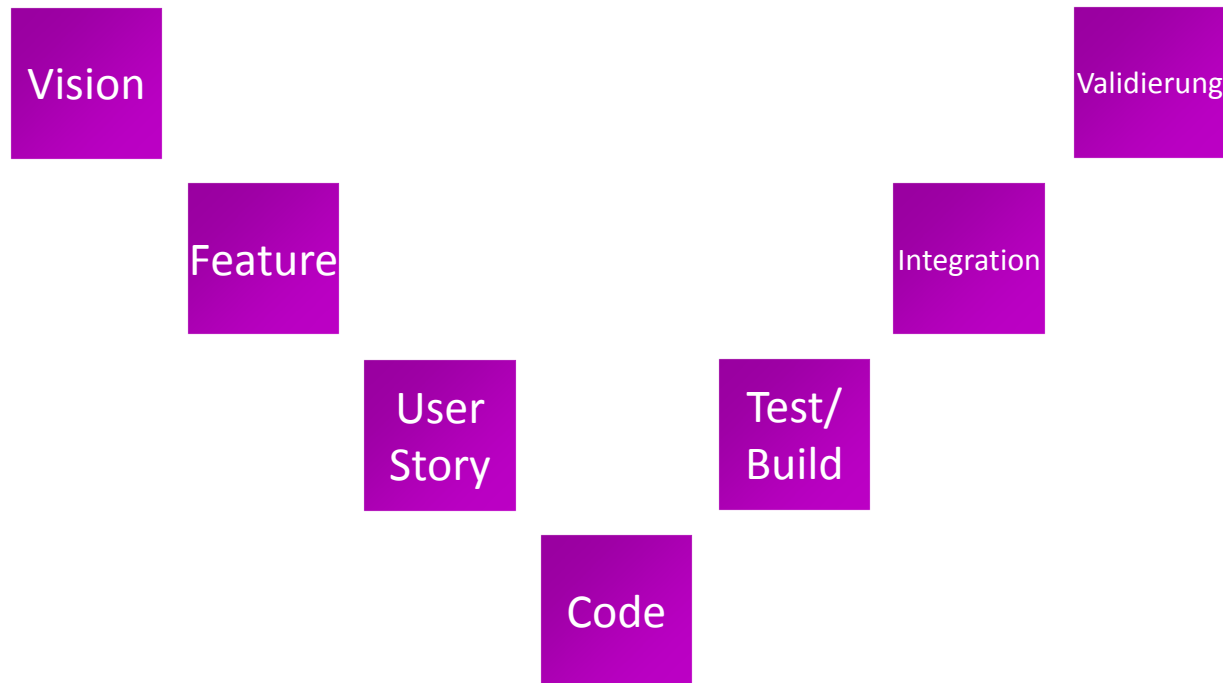
RE in der
agilen
Entwicklung

RE in der
klassischen
Entwicklung

Unterschiede
und
Gemeinsamkeiten

Integration

RE in der agilen Entwicklung



RE in der agilen Entwicklung



RE in der agilen Entwicklung



RE in der agilen Entwicklung



RE in der agilen Entwicklung

Vision -> Features -> User Stories



Software Produkt

RE in der agilen Entwicklung

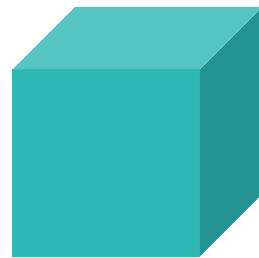
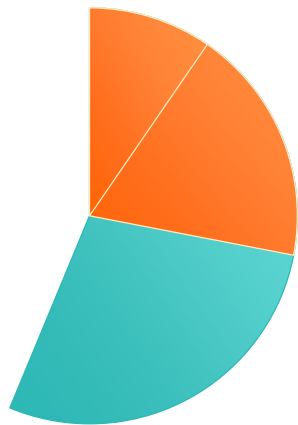
Vision -> Features -> User Stories



Software Produkt

RE in der agilen Entwicklung

Vision -> Features -> User Stories



Software Produkt

RE in der agilen Entwicklung

Vision -> Features -> User Stories



Software Produkt

RE in der agilen Entwicklung

Vision -> Features -> User Stories



Software Produkt

Agenda

Gegensätze?

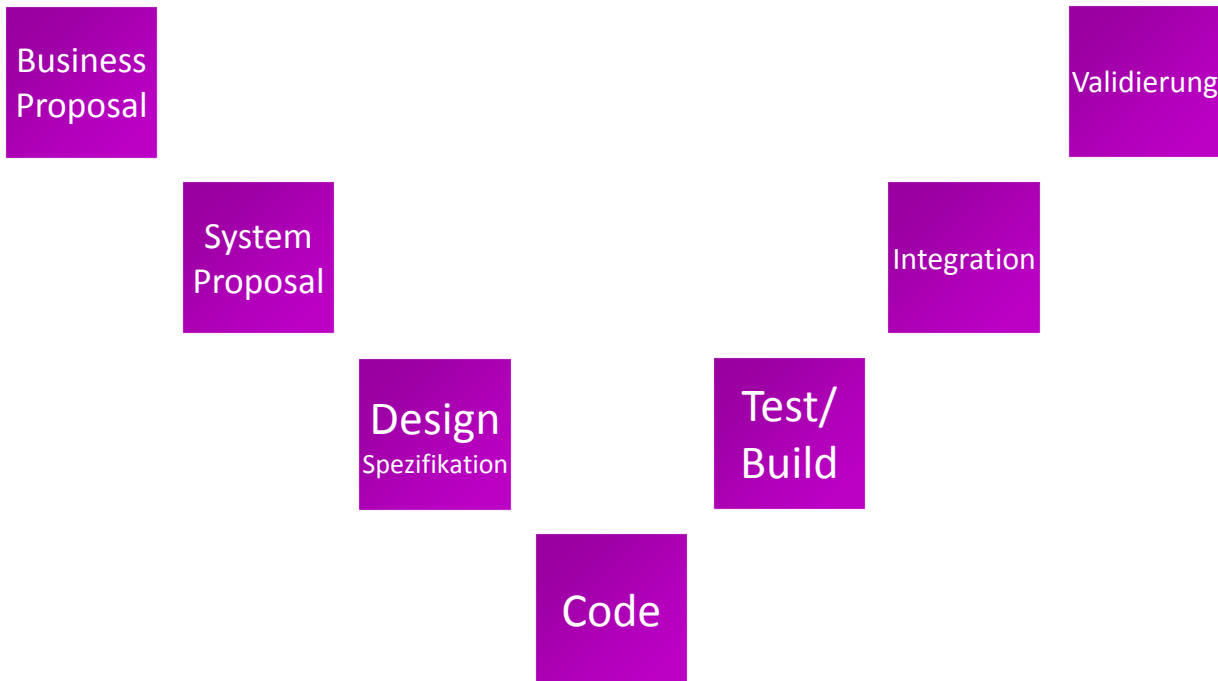
RE in der
agilen
Entwicklung

RE in der
klassischen
Entwicklung

Unterschiede
und
Gemeinsamkeiten

Integration

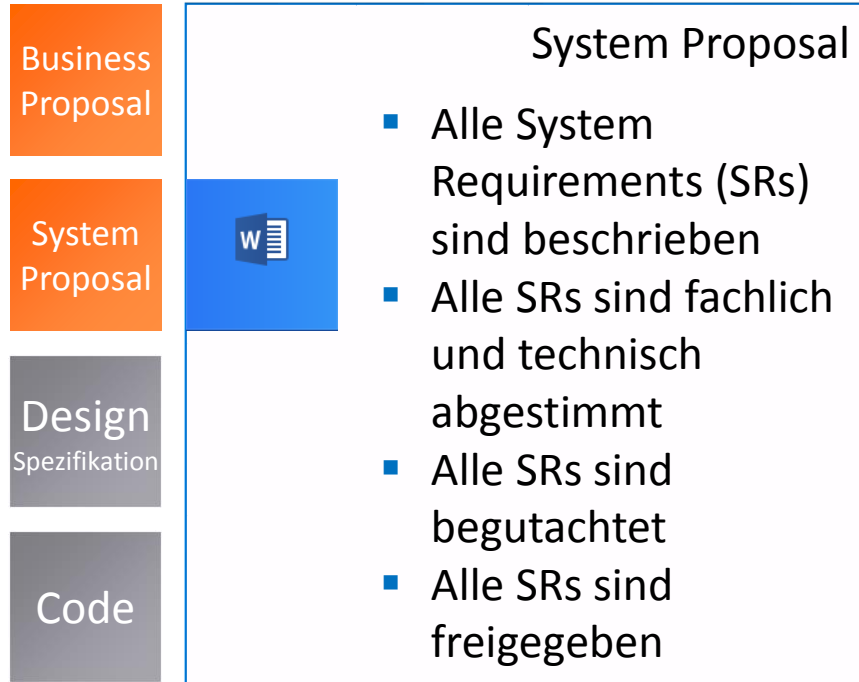
RE in der klassischen Entwicklung



RE in der klassischen Entwicklung



RE in der klassischen Entwicklung



RE in der klassischen Entwicklung

Business
Proposal

System
Proposal

Design
Spezifikation

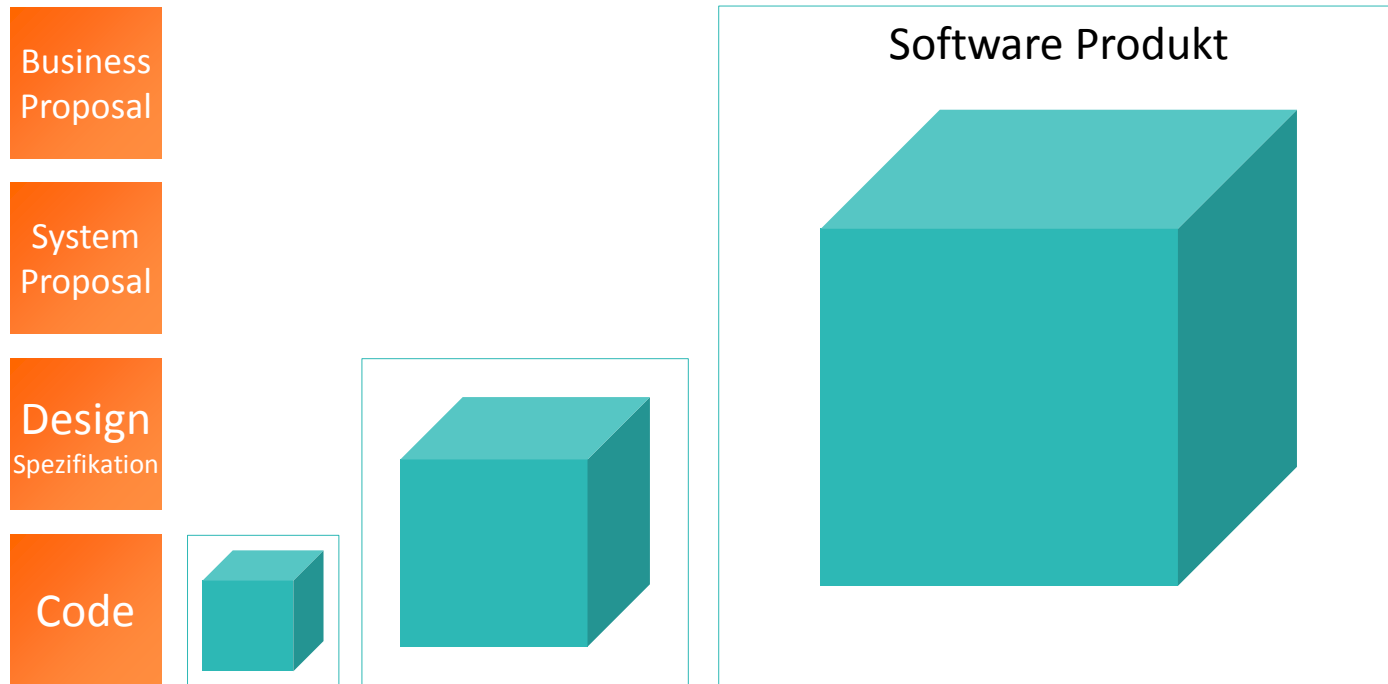
Code



Design Spezifikation

- Alle Design Requirements (DRs) sind beschrieben
- Alle DRs sind technisch abgestimmt
- Alle DRs sind begutachtet
- Alle DRs sind freigegeben

RE in der klassischen Entwicklung



Agenda

Gegensätze?

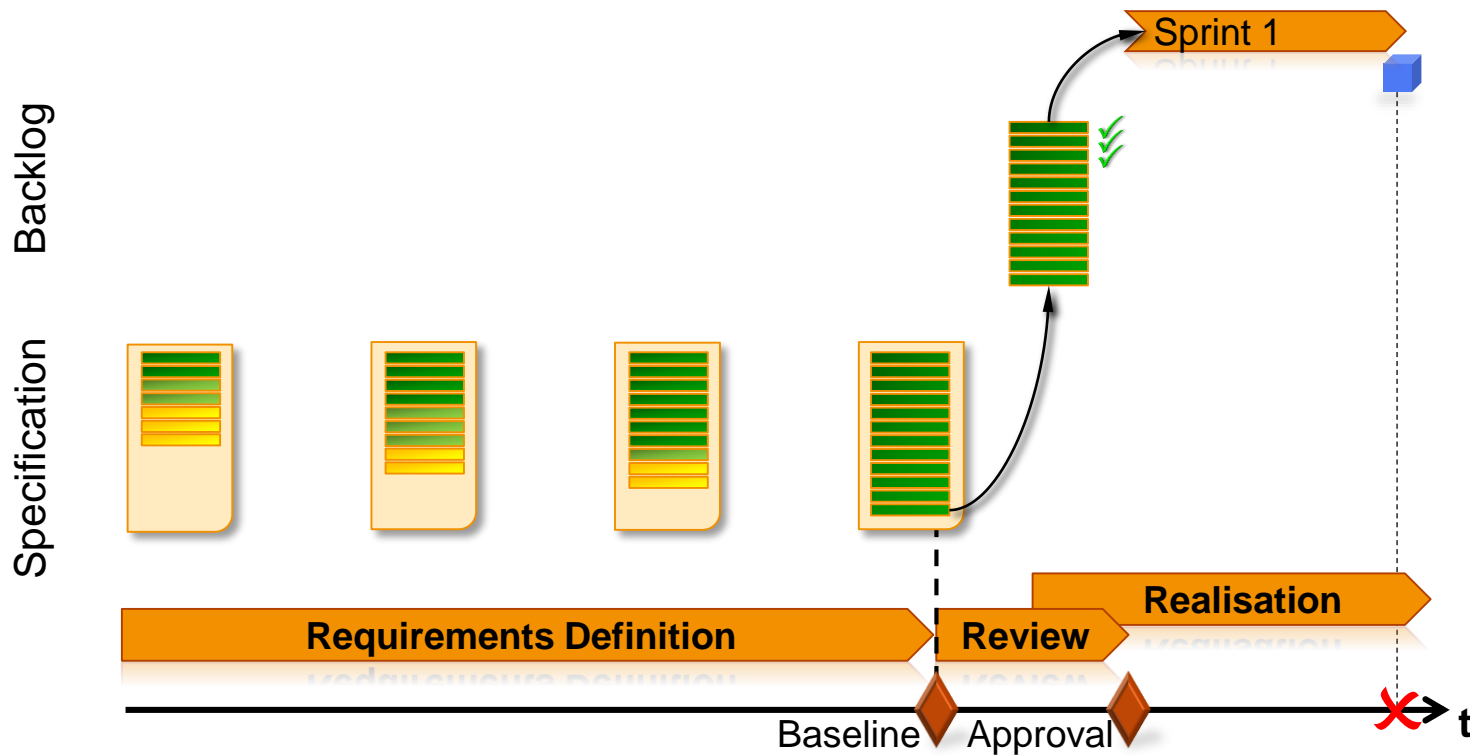
RE in der
agilen
Entwicklung

RE in der
klassischen
Entwicklung

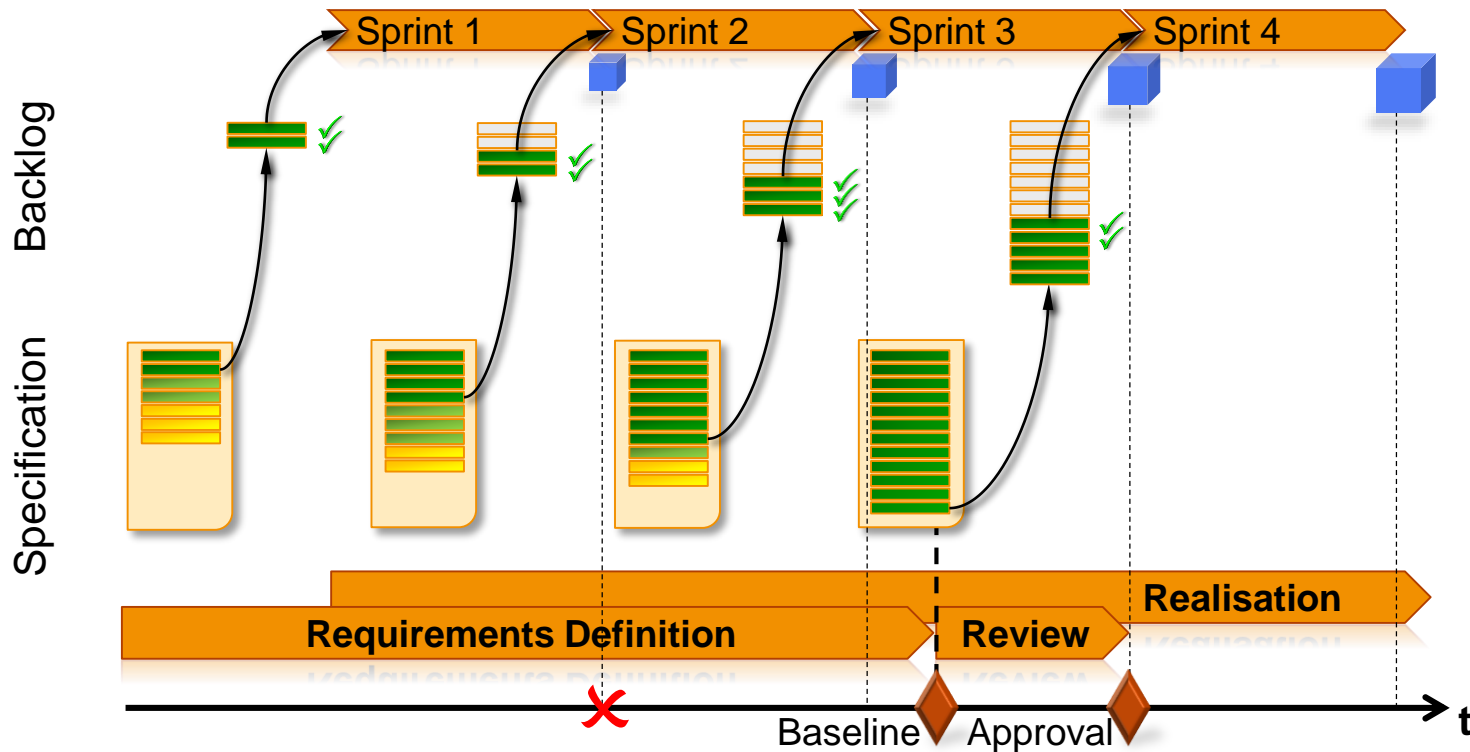
Unterschiede
und
Gemeinsamkeiten

Integration

„Wasserfallsprint“



Iterativ und Inkrementell



Agenda

Gegensätze?

RE in der
agilen
Entwicklung

RE in der
klassischen
Entwicklung

Unterschiede
und
Gemeinsamkeiten

Integration

Artefakte in einem Repository

Save Save & Close State Diagram

New Requirement (Modified): Field 'Title' cannot be empty. Close Editor

Title:

Status:

Owner:

Assigned To:

State:

Reason:

Classification

Area:

Iteration:

Tags:

Subtype:

Planning

Priority: Value: Story Points:


Stack Rank: Project Risk:

Effort (Days)

Original Estimate: Completed: Remaining:

Details All Links Attachments

Description with Acceptance Criteria:

Font Font Size B I U A- A+ 

Caliber Context Transfer History

Requirement Header

Requirement Key:

ID: Requirement Status: Version:

Entry Type: Charm ID:

Risk Analysis

Hazard:

Initial Risk Assessment:

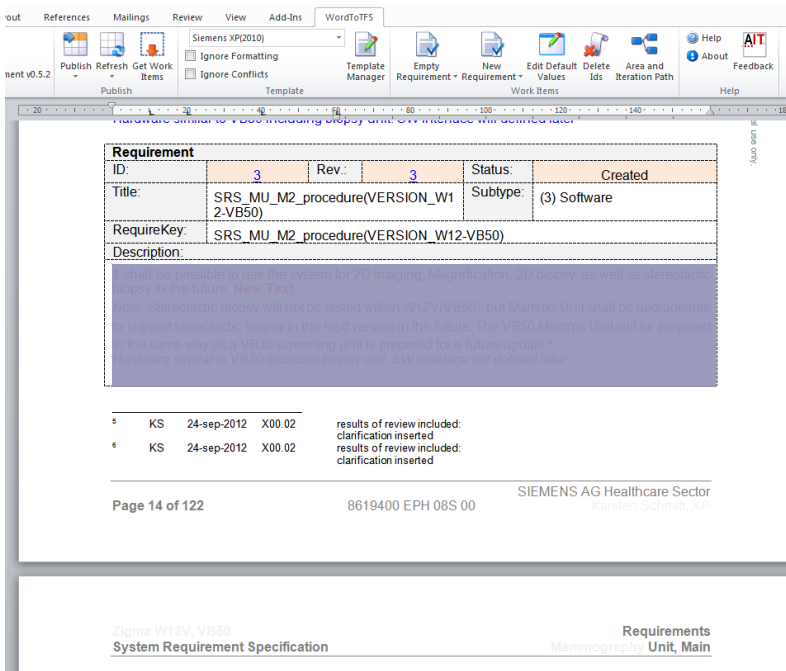
Residual Risk Assessment:

Partition

System S1:

Target Release S1:

Dokumentensicht – Autorenumgebung



Requirement

ID:	3	Rev.:	3	Status:	Created
Title:	SRS_MU_M2_procedure(VERSION_W12-VB50)		Subtype:	(3) Software	
RequireKey:	SRS_MU_M2_procedure(VERSION_W12-VB50)				
Description:	<p>Screening in Mammography to use the system for 2D imaging, Magnification, 2D display, as well as stereotactic biopsy in the future. New Text</p> <p>etc. Stereotactic biopsy will not be tested within W12(VB50), but Mammography Unit shall be upgraded to support stereotactic biopsy in the next version in the future. The VB50 Mammography Unit will be prepared in the same way as a VB50 screening unit is prepared for a future update.</p> <p>Hardware similar to VB50 including display unit. SW interface will defined later.</p>				

Page 14 of 122 8619400 EPH 08S 00 SIEMENS AG Healthcare Sector
Karsten Schmitt, XP

Zigma W12V, VB50 Requirements
System Requirement Specification Mammography Unit, Main



Dokumentensicht – Autorenumgebung

The screenshot displays the HOOD Requirements Management software interface. The top menu bar includes options like 'References', 'Mailings', 'Review', 'View', 'Add-Ins', 'WordToTFS', 'Design', and 'Layout'. Below the menu is a ribbon with various icons for document management, including 'Publish', 'Refresh', 'Get Work Items', 'Ignore Formatting', 'Ignore Conflicts', 'Template Manager', 'Empty Requirement', 'New Requirement', 'Edit Default Values', 'Delete Values', 'Area and Iteration Path', 'Help', 'About', and 'Feedback'.

The main workspace shows a requirement document with the following details:

- Requirement ID:** 3
- Rev:** 3
- Status:** Created
- Title:** SRS_MU_M2_procedure(VERSION_W12-VB50)
- Subtype:** (3) Software
- RequireKey:** SRS_MU_M2_procedure(VERSION_W12-VB50)
- Description:** (The description text is partially obscured by a blue selection box)

Below the requirement details, there is a table with the following data:

ID	KS	Date	Version	Comments
5	KS	24-sep-2012	X00.02	results of review included: clarification inserted
6	KS	24-sep-2012	X00.02	results of review included: clarification inserted

At the bottom of the document, the page number is 'Page 14 of 122'. The footer includes the text 'SIEMENS AG Healthcare Sector' and 'Klausen Schmidt, XP'.



Dokumentensicht – Autorenumgebung

The screenshot displays the HOOD software interface in the Document View (Autoren-Umgebung). The top ribbon includes tabs for File, Home, Insert, Page Layout, References, Mailings, Review, View, WordToTFS, Design, and Layout. Below the ribbon are several toolbars: Disconnect, Publish, Refresh, Get Work Items, Template Manager, Empty Requirement, New Requirement, Edit Default Values, Delete Ids, Area and Iteration Path, Help, About, and Feedback. The main workspace shows four requirement documents side-by-side. Each document has a header section with fields like ID, Title, Name, Status, and Details. The first document shows a complex flowchart. The second document shows a flowchart with decision points. The third document shows a flowchart with a 'Created' state and a 'Not created' state. The fourth document shows a flowchart with a 'Created' state and a 'Not created' state.

Artefakte in einem Repository

Home Save Save & Close Refresh Tools

Requirement #3: SRS_MU_M2_procedure(VERSION_W12-VB50) Close Editor

Title: SRS_MU_M2_procedure(VERSION_W12-VB50) Subtype: (3) Software

Status

Owner:

Assigned To: TFS Administrator

State: Created

Reason: Request accepted

Classification

Area: Siemens XP Agile Software Development v0.5.2

Iteration: Siemens XP Agile Software Development v0.5.2

Tags:

Planning

Priority: Value: Story Points:


Stack Rank: Project Risk:

Effort (Days)

Original Estimate: Completed: Remaining:

Details All Links Attachments

Description with Acceptance Criteria:

Font Font Size B I U 

It shall be possible to use the system for 2D imaging, Magnification, 2D biopsy, as well as stereotactic biopsy in the future.
Note: Stereotactic biopsy will not be tested within W12(VB50), but Mammo Unit shall be upgradeable to support stereotactic biopsy in the next version in the future. The VB50 Mammo Unit will be prepared in the same way as a VB30 screening unit is prepared for a future update. [1]

Hardware similar to VB30 including biopsy unit. SW interface will be defined later

[1] KS 24-sep-2012 X00.02 results of review included:
clarification inserted

Caliber Context Transfer History

Requirement Header

Requirement Key: SRS_MU_M2_procedure(VERSION_W12-VB50)

ID: Requirement Status: Version:

Entry Type: Charm ID:

Risk Analysis

Hazard:

Initial Risk Assessment:

Residual Risk Assessment:

Partition

System S1:

Target Release S1:

Artefakte in einem Repository

The screenshot displays the HOOD Requirements Management software interface. The main window is titled "Requirement #3: Class diagram for meta model of process template". The interface is divided into several sections:

- Top Bar:** Contains buttons for "Save", "Save & Close", "Refresh", "Send as Email", and "State Diagram".
- Title:** "Class diagram for meta model of process template".
- Status:** Includes fields for "Owner", "Assigned To" (TFS Administrator), "State" (Created), and "Reason" (Request accepted).
- Planning:** Includes fields for "Priority", "Value", "Story Points", "Stack Rank", and "Project Risk".
- Classification:** Includes fields for "Area" (Interface_InnovatorZTF5_for_Siemens_XP_v0.1_Draft01), "Iteration" (Interface_InnovatorZTF5_for_Siemens_XP_v0.1_Draft01), and "Tags".
- Effort (Days):** Includes fields for "Original Estimate", "Completed", and "Remaining".
- Details:** A tabbed section with "All Links" and "Attachments". The "Details" tab is active, showing a description with acceptance criteria: "Following is the meta model diagram of the process template, especially the work item type definition:". Below this is a complex class diagram with many nodes and relationships.
- Innovator Context:** A tabbed section with "Caliber Context", "Transfer", and "History". The "Innovator Context" tab is active, showing fields for "Diagram Header" (Innovator Link: http://www.mid.de, Diagram Status: created, Diagram Name: WITD Meta Model, Diagram Type: Class Diagram), "Innovator Transfer" (Innovator Last Import Date: 10/22/2012, Innovator Last Changed By: Jens Donig).

Artefakte in einem Repository

Requirement #8: Class diagram for meta model of workflow rules

Save Save & Close Refresh Send as Email State Diagram Close Editor

Title: Class diagram for meta model of workflow rules Subtype:

Status: Owner: TFS Administrator Assigned To: Created Reason: Request accepted

Planning: Priority: Value: Story Points: Stack Rank: Project Risk:

Classification: Area: Interface_InnovatorZTF5_for_Siemens_XP_v0.1_Draft01 Iteration: Interface_InnovatorZTF5_for_Siemens_XP_v0.1_Draft01 Tags:

Effort (Days): Original Estimate: Completed: Remaining:

Details All Links Attachments

Description with Acceptance Criteria:

Following is the meta model diagram of the process template, especially the WIT workflow rules definition:






Innovator Context: Caliber Context Transfer History

Diagram Header: Innovator Link: http://www.mid.de Diagram Status: created Diagram Name: WITD Workflow Rules Diagram Type: Class Diagram

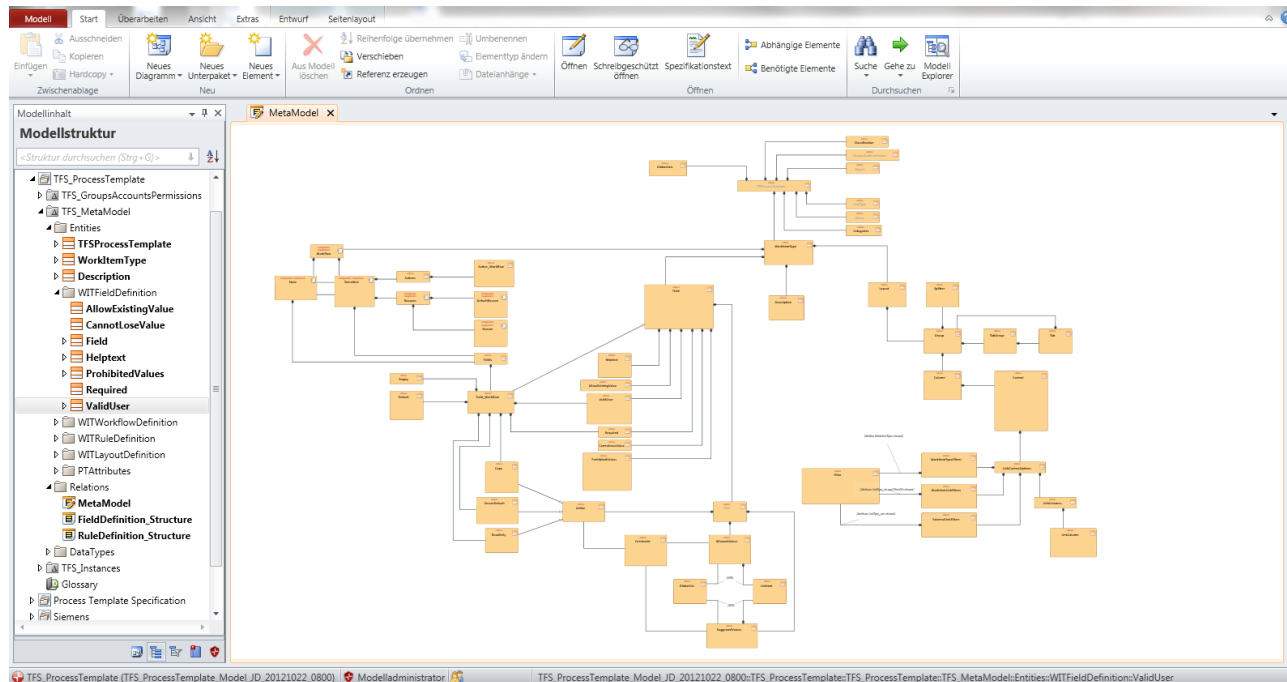
Innovator Transfer: Innovator Last Import Date: 10/22/2012 Innovator Last Changed By: Jens Donig

Agile Planung

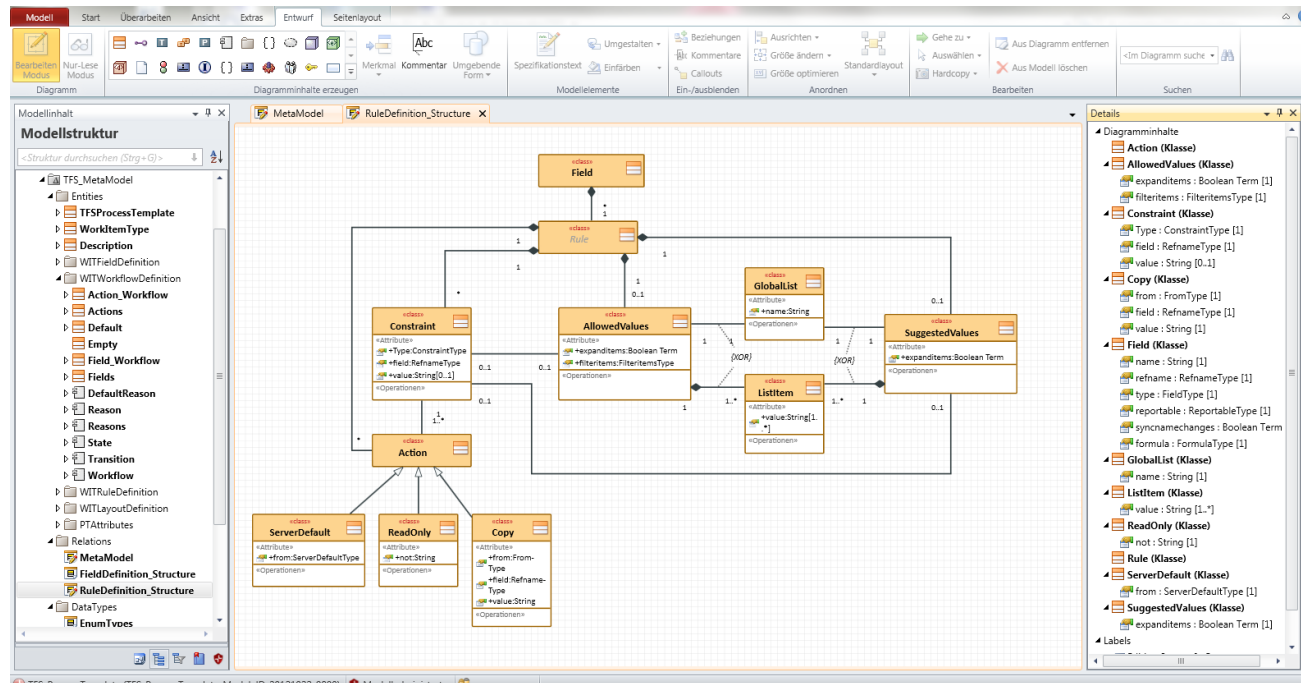
Sprint Backlog

Query Results: 5 results found (1 currently selected).							
	ID	▲ Stack R...	Story Poi...	Title	State	Assigned To	I
	2	10	3	SRS_MU_tomo_procedure(VERSION_W12-VB30)	Defined	Diekuh Liefumdenteich	S
	3	12	3	SRS_MU_M2_procedure(VERSION_W12-VB50)	Defined	Häbke Feng	S
	5	15	2	HM_MU_SRS2_F1G1U1M6(VERSION_W12-VB30 Z...	Defined	Oberta Sse	S
	4	25	5	SRS_MU_General_Stability(VERSION_W12-VB30...	Defined	Klär Grube	S
	6	30	8	HM_MU_SRS2_F14G2U5M1(VERSION_W12-VB30...	Defined	Router Boot	S

Integration modellbasierter Vorgehensweisen



Integration modellbasierter Vorgehensweisen



Fazit

- Fokussierung auf die Ergebnisse (Artefakte)
- Ergebnisse auf ihre Werte untersuchen (Maturity Levels)
- Stabile Artefakte für die Realisierung – anhand deren Qualität – definieren
- Spezifikation nach Ranking – das Dringende zu erst
- Dokumente als Sichten verstehen, die zu Meilensteinen eingefroren werden können

Agenda

Gegensätze?

RE in der
agilen
Entwicklung

RE in der
klassischen
Entwicklung

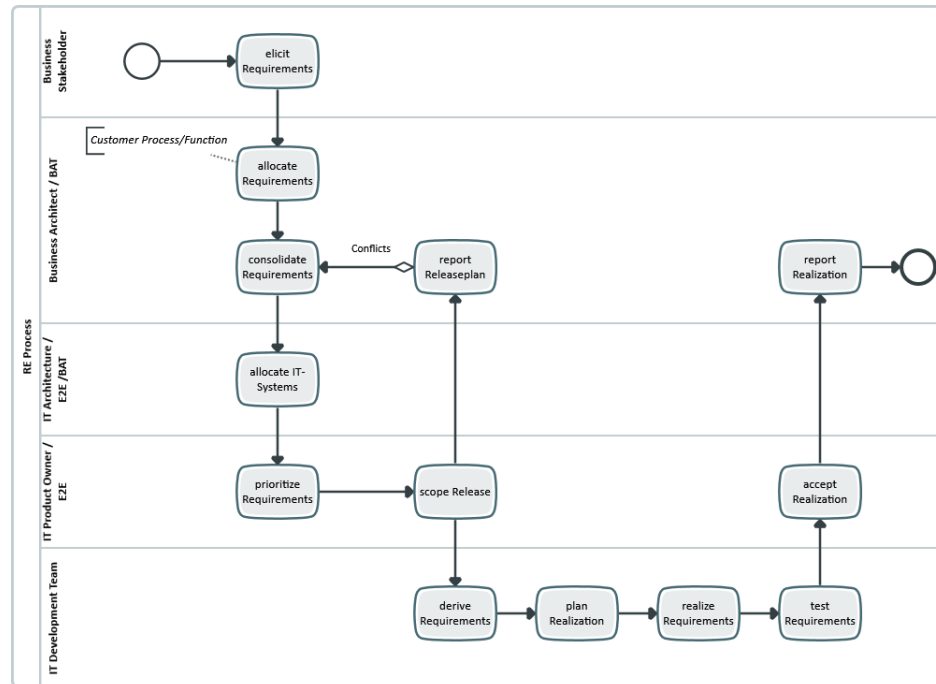
Unterschiede
und
Gemeinsamkeiten

Integration

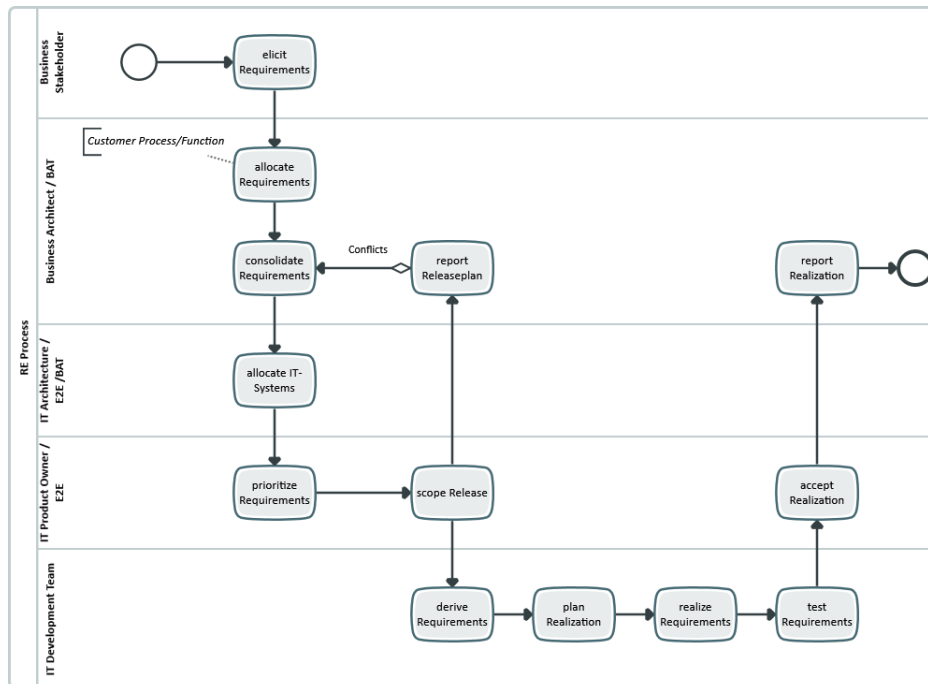
Value-oriented
Practices

Eigenschaften ablauforientierter Prozesse

- EVA Prinzip
- Aktivitätsreihenfolge wird festgelegt
- Ablauf steuert den Prozessfortschritt
- Ergebnisse sind über den Ablauf verteilt
- Übersicht kann schnell erreicht werden
- Gültigkeit auf hoher Abstraktion
- Verfeinerung schränkt immer mehr die Freiheitsgrade bei der Ablaufgestaltung ein



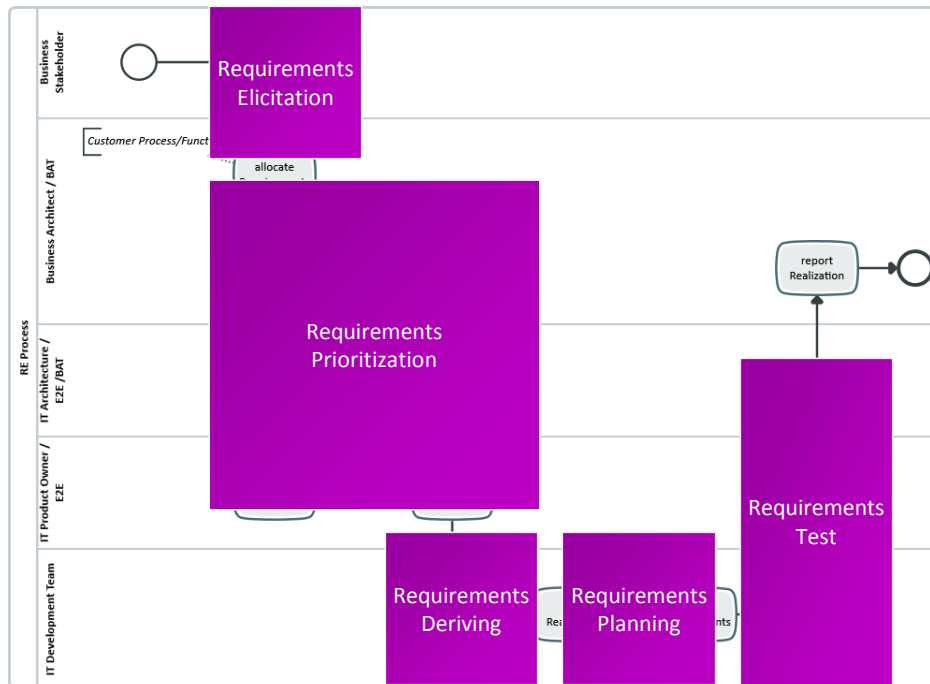
RE Geschäftsprozess



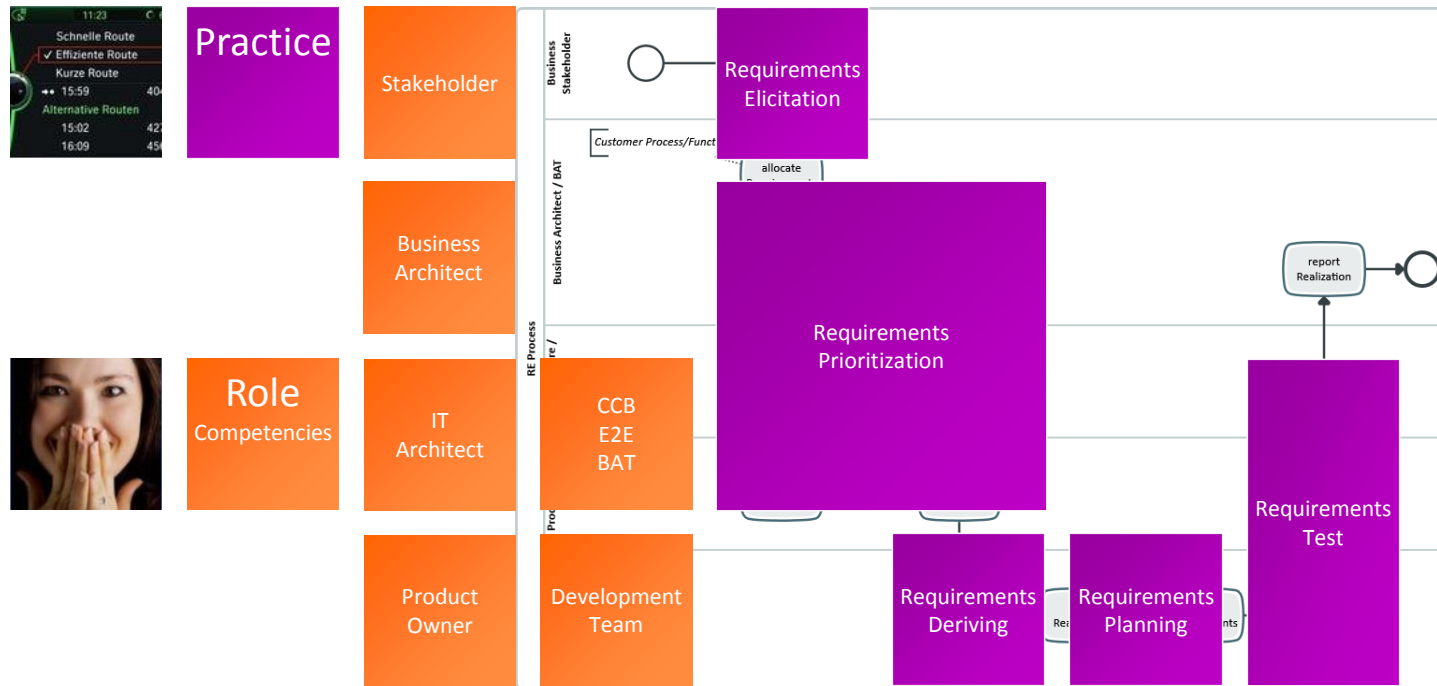
Modulare Practices



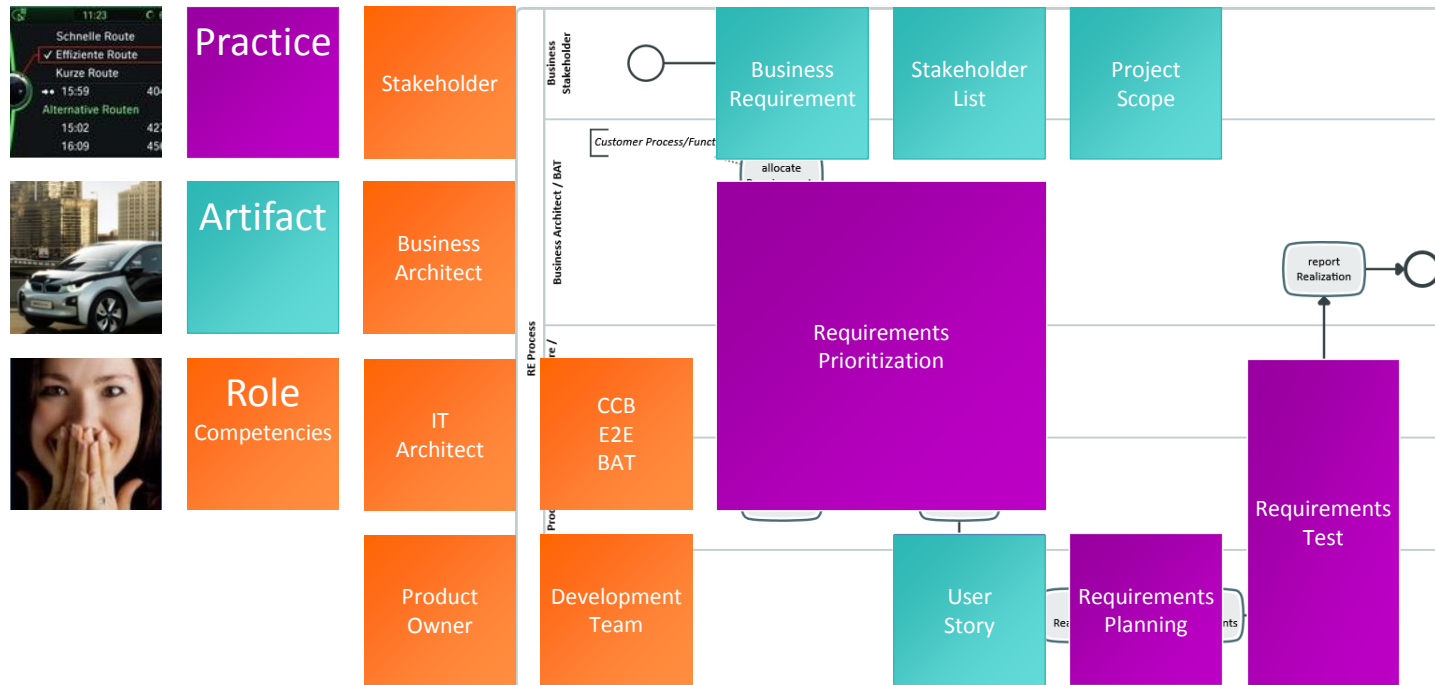
Practice



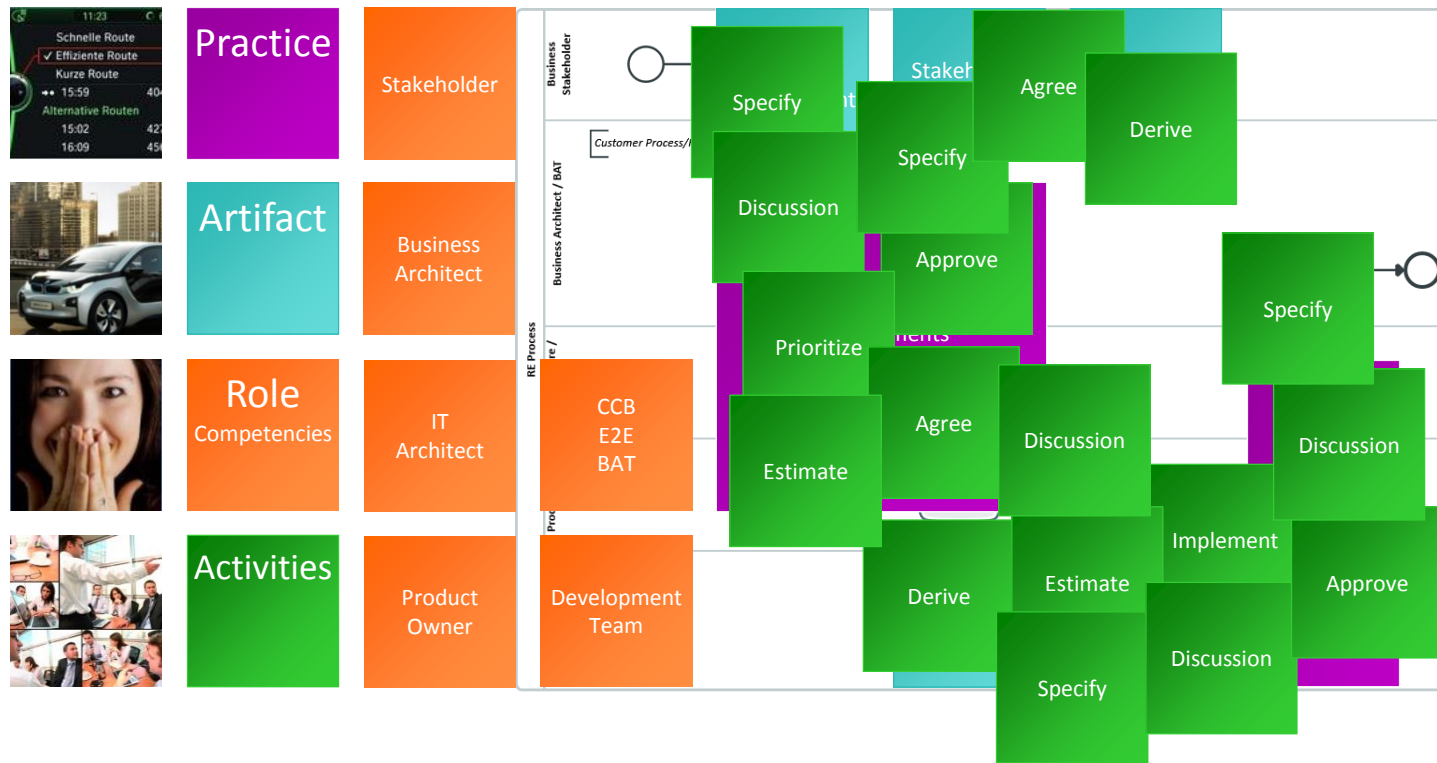
Rollen und Kompetenzen



Arbeitsergebnisse

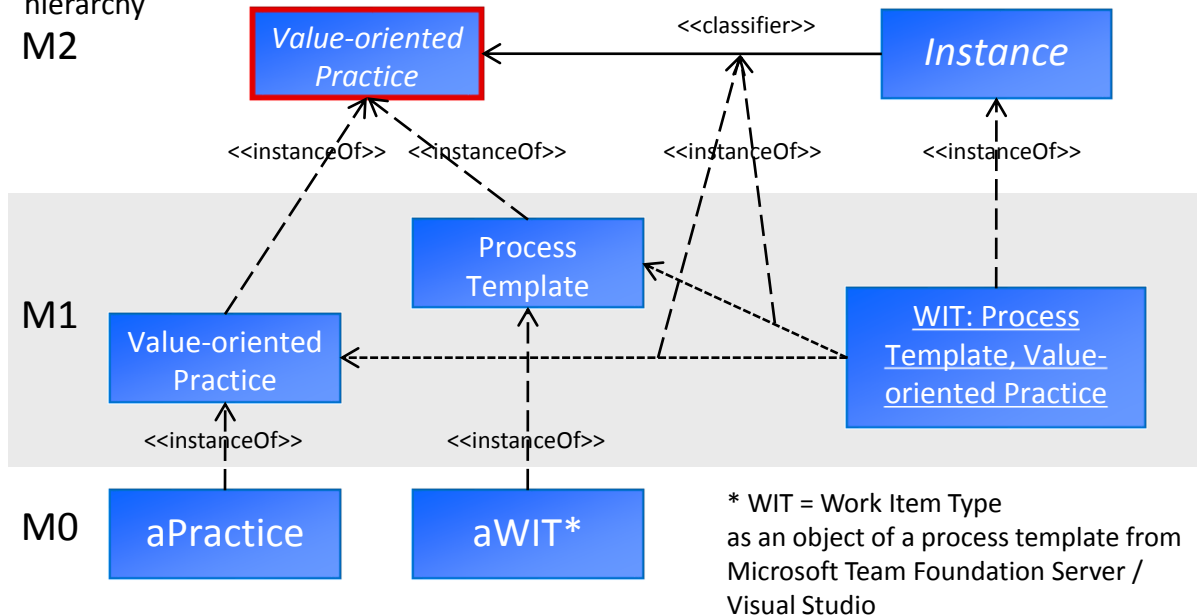


Vielfältige Aktivitäten



v-o-p MOF

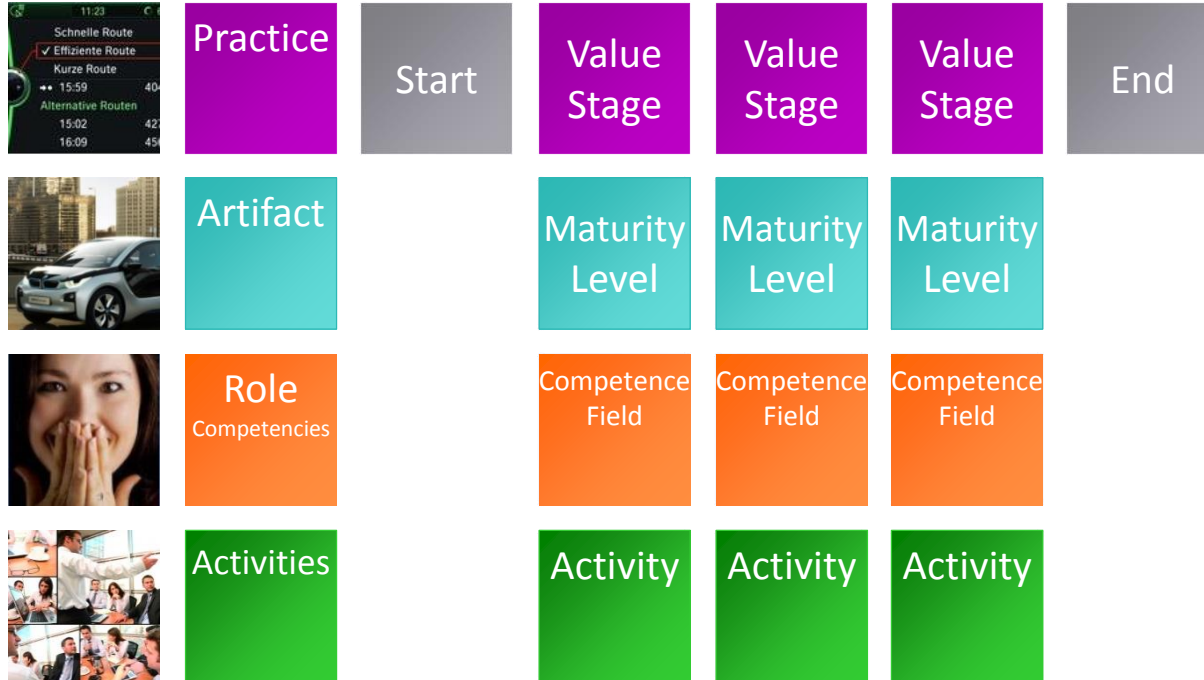
metamodeling
hierarchy
M2



Practice Elements

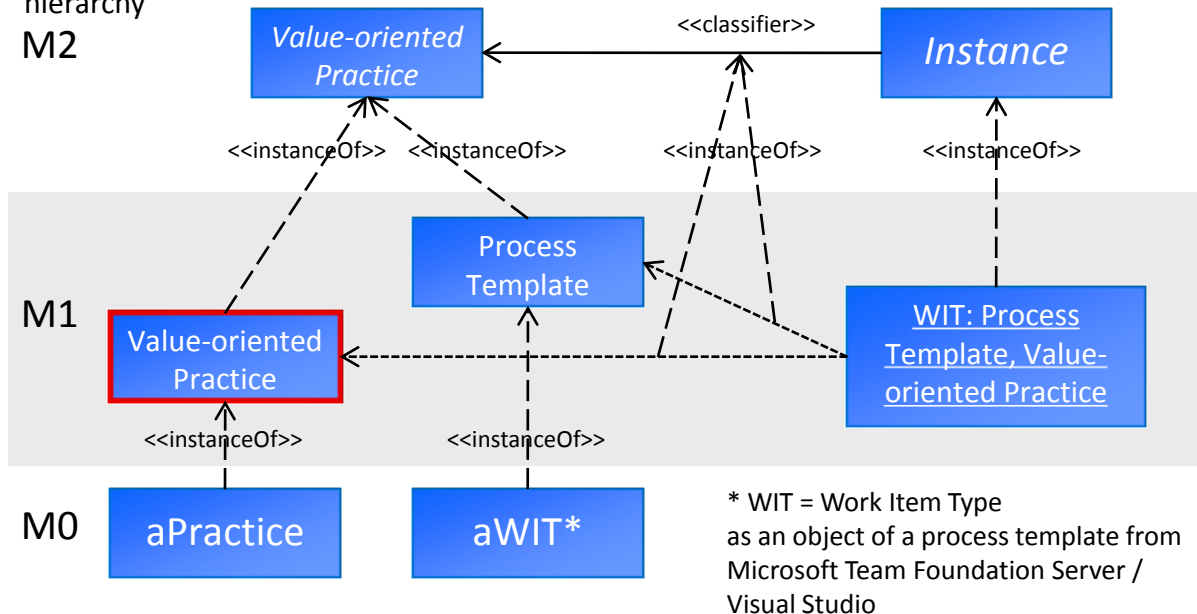


Practice Rules



v-o-p MOF

metamodeling
hierarchy
M2



Practice Requirement Elicitation



Practice
Requirement
Elicitation

Start

Scoped

Allocated

Completed

End



Artifact

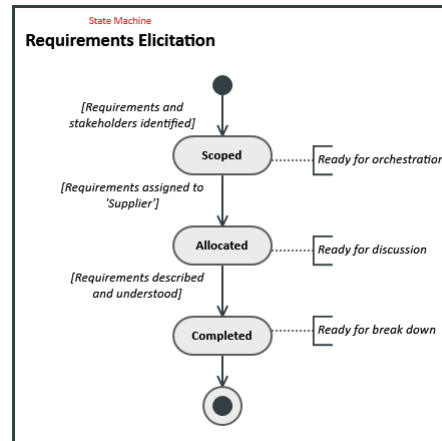
Business
Requirement
CREATED

Business
Requirement
Assigned To

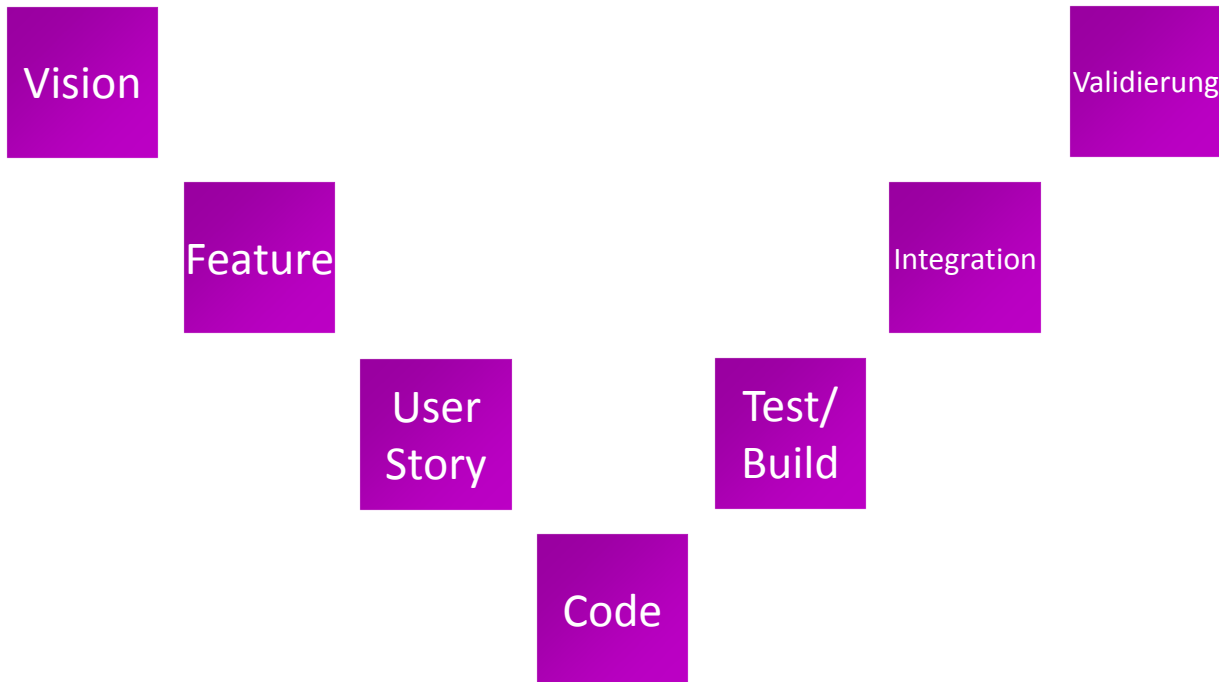
Business
Requirement
DEFINED

Project
Scope

Stakeholder
List



RE in der agilen Entwicklung



Artefakt User Story



Practice

Requirements
Elicitation

Requirements
Elicitation

Requirements
Test



Artifact

Created

Defined

Verified



Role
Competencies

Development
Team

Development Team
&
Product Owner

Product
Owner

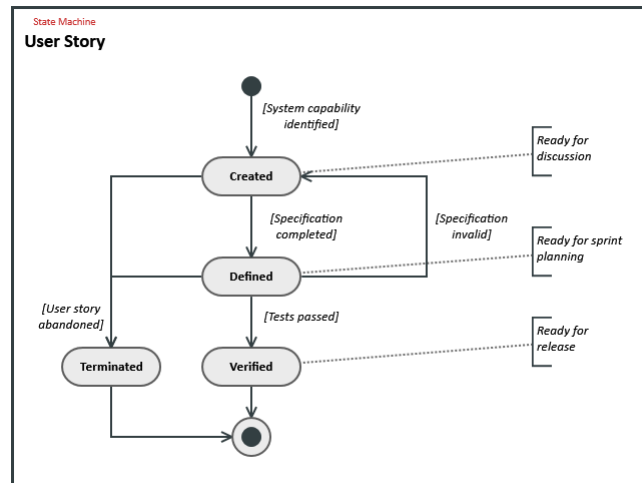


Activities

Specify

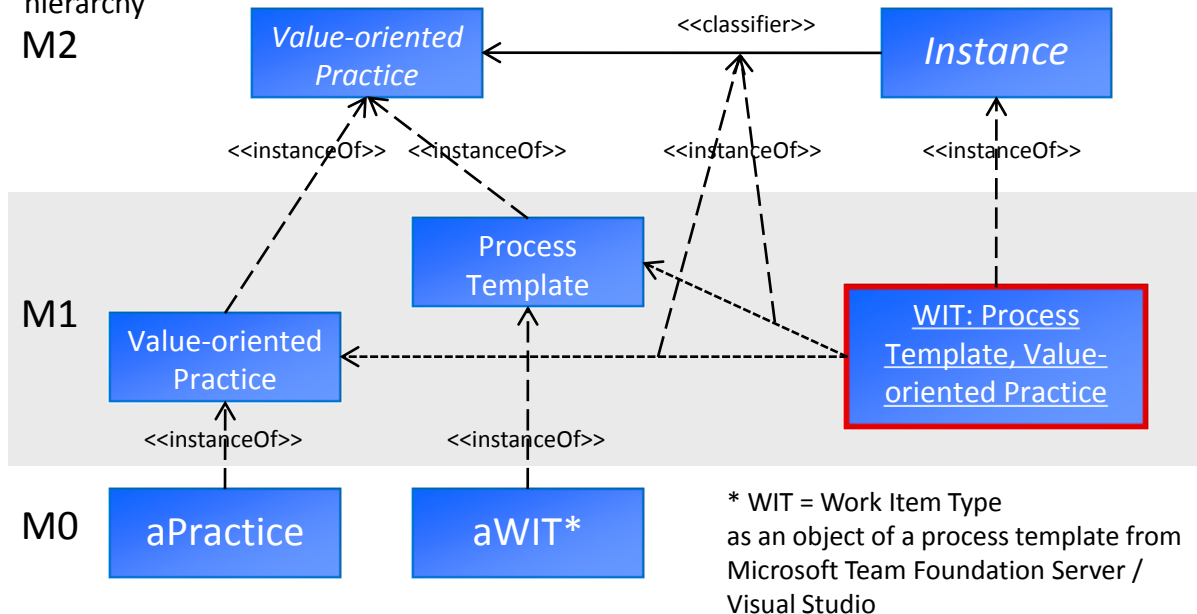
Discussion & Estimate

Approve

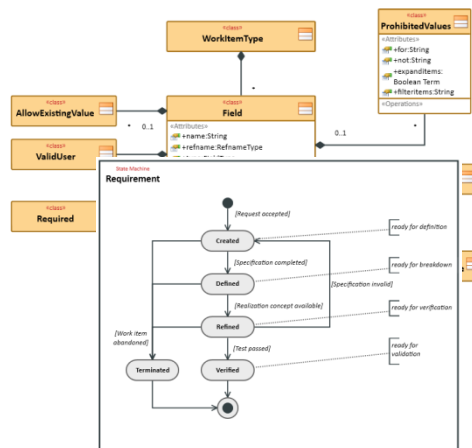


v-o-p MOF

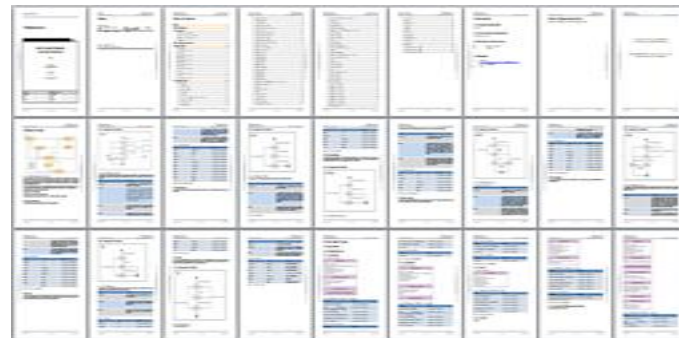
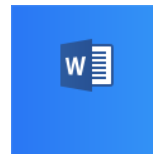
metamodeling
hierarchy
M2



Technical Design

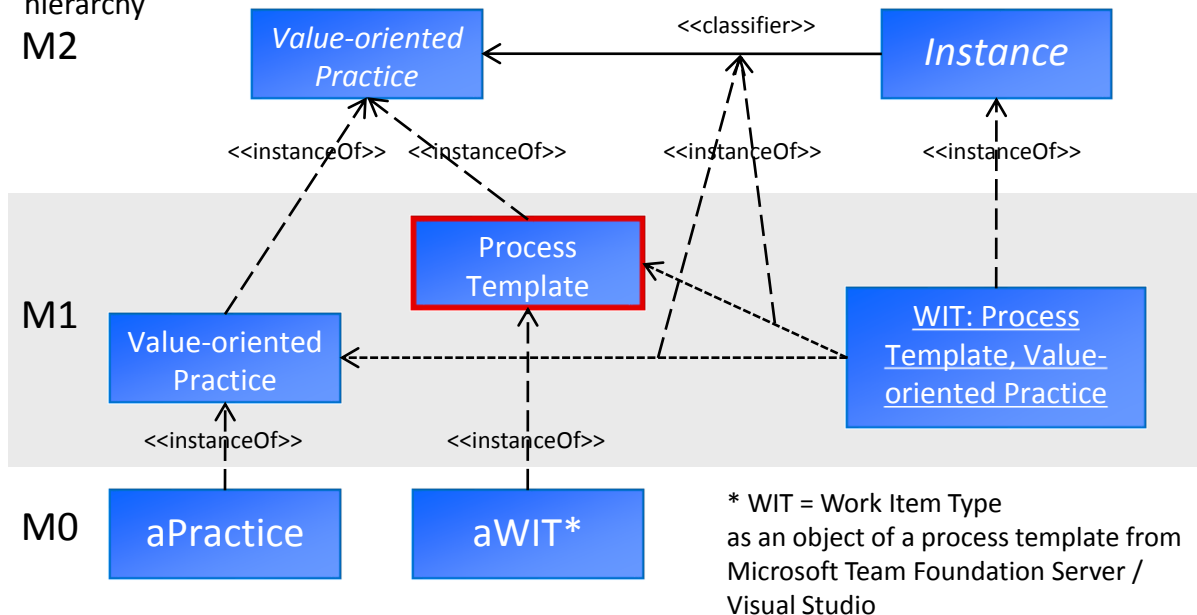


Meta-Model Schema-Model Instance-Specification



v-o-p MOF

metamodeling
hierarchy
M2



Code

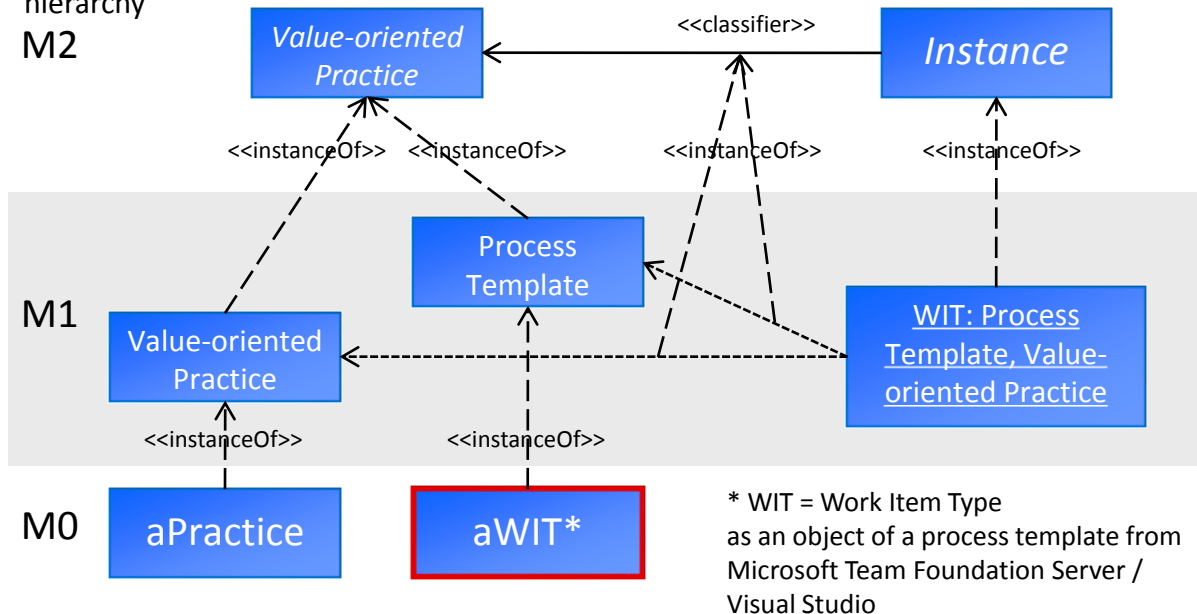
```

Requirement.xml
1  <?xml version="1.0" encoding="utf-8"?>
2  <xsd:import application="Work item type editor" version="1.0" xmlns:witd="http://schemas.microsoft.com/VisualStudio/2008/workitemtracking/typesed">
3  <xsd:element base="Requirement" type="Requirement"/>
4  <DESCRIPTION>Tracks a stakeholder need.</DESCRIPTION>
5  <FIELDS>
6  <!-- *** Global *** -->
7  <FIELD name="ID" refname="System.ID" type="Integer" reportable="dimension">
8  <HELPTXT>The internal TFS ID of this work item; automatically assigned by TFS.</HELPTXT>
9  </FIELD>
10 <FIELD name="Title" refname="System.Title" type="String" reportable="dimension">
11 <HELPTXT>Short title or name of this work item.</HELPTXT>
12 <REQUIRED />
13 <WHEN field="System.State" value="Terminated" >
14 <READONLY />
15 </WHEN>
16 </FIELD>
17 <FIELD name="Subtype_" refname="Siemens.SSF.Common.Subtype" type="String" reportable="dimension">
18 <HELPTXT>Additional classification of the work item type.</HELPTXT>
19 <ALLOWEDVALUES expanditems="true">
20 <LISTITEM value="(1) Market" />
21 <LISTITEM value="(2) System" />
22 <LISTITEM value="(3) Software" />
23 <LISTITEM value="(4) Hardware" />
24 </ALLOWEDVALUES>
25 <WHEN field="System.State" value="Terminated" >
26 <READONLY />
27 </WHEN>
28 </FIELD>
29 <!--
30 <FIELD name="External ID" refname="Siemens.SSF.Common.ExternalID" type="String">
31 <HELPTXT>External identifier of this work item; not the internal TFS ID.</HELPTXT>
32 <REQUIRED />
33 </FIELD>
34 <!--
35 <!-- *** Status *** -->
36 <FIELD name="Owner" refname="Siemens.SSF.Common.Owner" type="String" syncnamechanges="true" reportable="dimension">
37 <HELPTXT>The stakeholder of this work item.</HELPTXT>
38 <SUGGESTEDVALUES>
39 <SUGGESTION name="MyStakeholder::H-IT_PM_TFSatXP" />
40 </SUGGESTEDVALUES>
41 <WHEN field="System.State" value="Terminated" >
42 <READONLY />
43 </WHEN>
44 <!--
45 <ALLOWEDVALUES>
46 <LISTITEM value="(1) Market" />
  
```

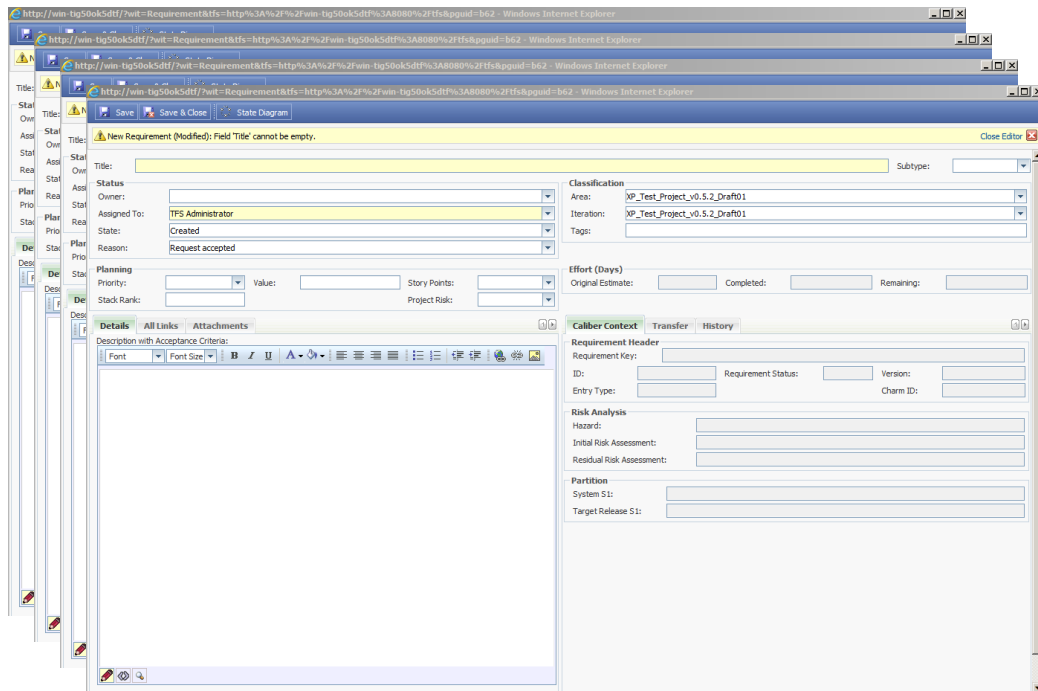
length: 54476 lines: 1116

v-o-p MOF

metamodeling
hierarchy
M2



Arbeitsumfeld

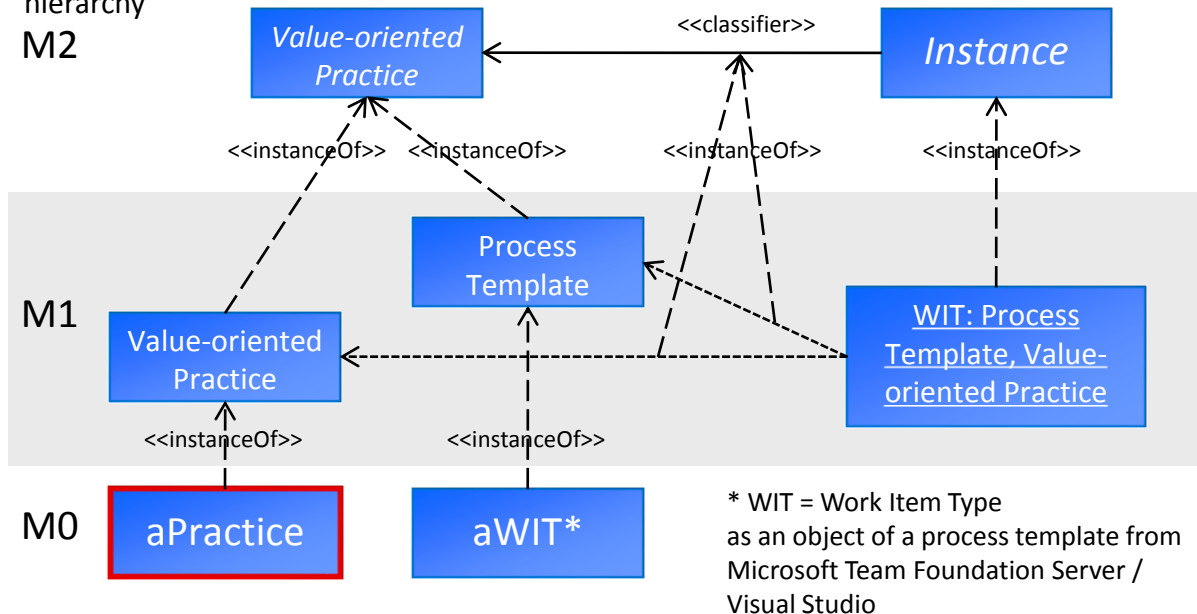


The screenshot displays the HOOD web application interface, specifically the 'New Requirement' form. The interface is viewed through multiple overlapping Internet Explorer windows. The form is titled 'New Requirement (Modified): Field Title cannot be empty.' and includes a 'Close Editor' button. The form is organized into several sections:

- Title:** A text field for the requirement title.
- Classification:** Includes dropdowns for 'Area' (XP_Test_Project_v0.5.2_Draft01) and 'Iteration' (XP_Test_Project_v0.5.2_Draft01), and a 'Tags' field.
- Owner:** A dropdown menu set to 'TFS Administrator'.
- State:** A dropdown menu set to 'Created'.
- Reason:** A dropdown menu set to 'Request accepted'.
- Planning:** Includes fields for 'Priority', 'Value', 'Story Points', and 'Project Risk'.
- Effort (Days):** Includes fields for 'Original Estimate', 'Completed', and 'Remaining'.
- Details:** A section with tabs for 'Details', 'All Links', and 'Attachments'. It contains a 'Description with Acceptance Criteria' text area and a 'Caliber Context' section with tabs for 'Transfer' and 'History'.
- Requirement Header:** Includes fields for 'Requirement Key', 'ID', 'Requirement Status', 'Version', 'Entry Type', and 'Charm ID'.
- Risk Analysis:** Includes fields for 'Hazard', 'Initial Risk Assessment', and 'Residual Risk Assessment'.
- Partition:** Includes fields for 'System S I' and 'Target Release S I'.

v-o-p MOF

metamodeling
hierarchy
M2



v-o-p für RE



Practice

Requirements
Elicitation

Requirements
Prioritization

Requirements
Deriving

Requirements
Planning

Requirements
Test

Requirements
Change



Artifact

Business
Requirement

Project
Scope

Stakeholder
List

System
Requirement

User
Story

Change
Requests



Role Competencies

Stakeholder

Requirements
Manager

Business
Architect

IT
Architect

CCB
E2E
BAT

Product
Owner

Development
Team



Activities

Specify

Discussion

Approve

Prioritize

Agree

Derive

Estimate

Implement

Zusammenfassung

- Freiheitsgrade für selbstorganisierte Teams
- Practices können modular und nach Teambedarf im Arbeitsumfeld eingesetzt werden
- Der Arbeitsfortschritt und die Arbeitsqualität ist durch die Maturity Levels der Artefakte transparent und eindeutig messbar
- Die Synchronisation der Projekte kann über die Value Stages und auf Basis erreichter Artefakt-Qualität erfolgen
- Verschiedene Vorgehensmodelle (Agil, Iterativ, Inkrementell, Wasserfall) können in einem gewissen Maße synchronisiert werden

Gegensätze ziehen sich an!



Vielen
Dank!

Diskussion
und Fragen

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