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Data Model Documentation

Data Model Detail

This document provides an overview of the data model.

SAFE Engineering Process V6.0

Type: **Package**
Detail: Created on 31.10.2013. Last modified on 31.10.2013.
Notes:

Top Level Process Model

Created By: Biendle on 25.09.2013
Last Modified: 14.10.2013, *Version:*1.0

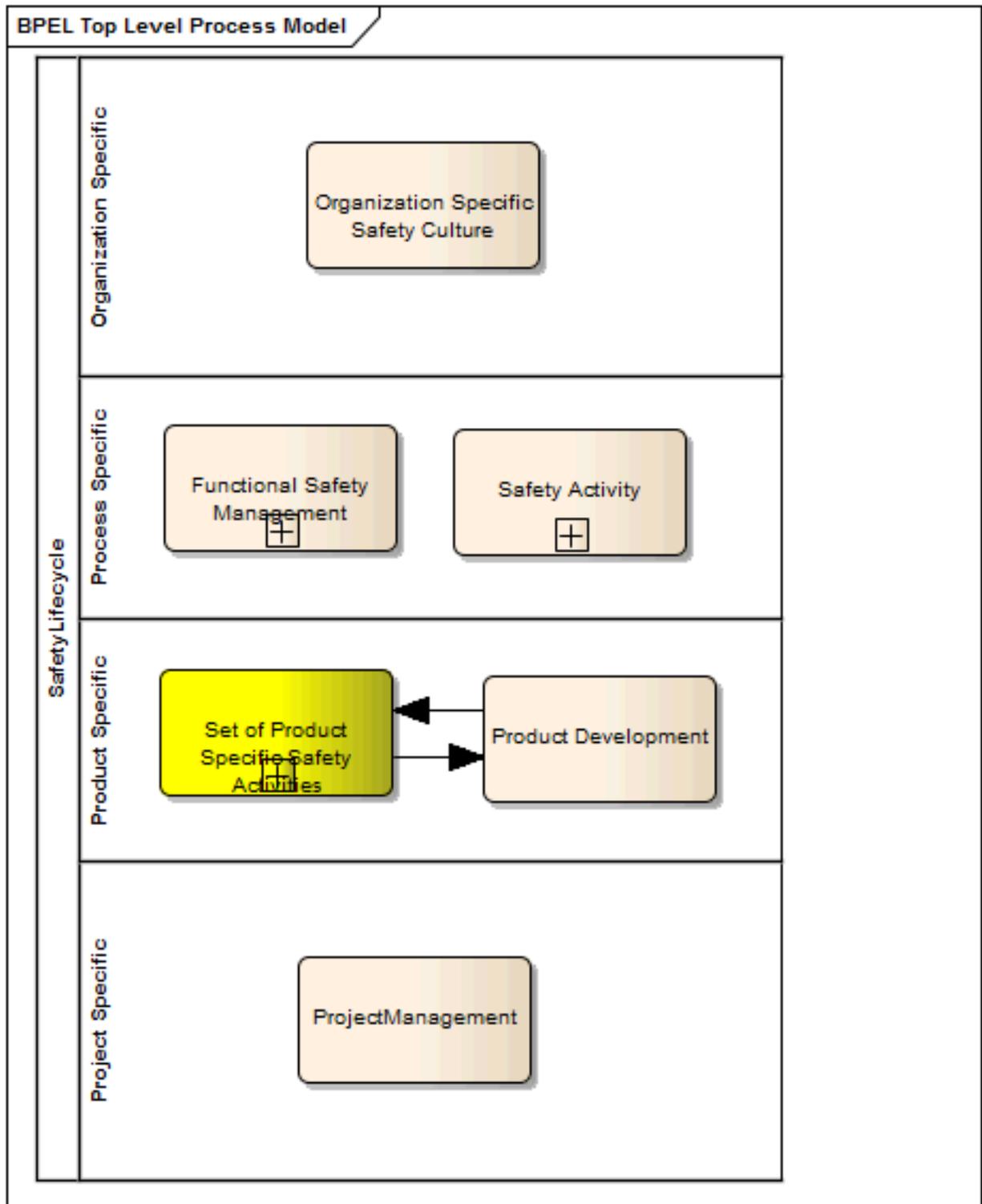


Figure: 1

SEP EAST-ADL Overview

Created By: F30956 on 28.10.2013

Last Modified: 31.10.2013, Version:1.0

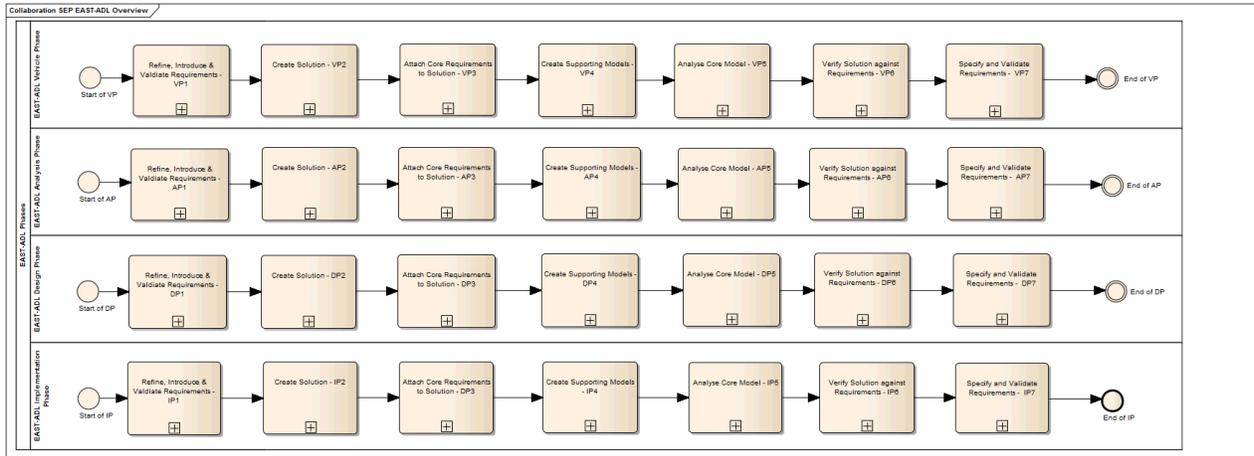


Figure: 2

BPMN 2.0 Collaboration View

Created By: F30956 on 24.03.2011
Last Modified: 19.11.2013, Version: 1.0

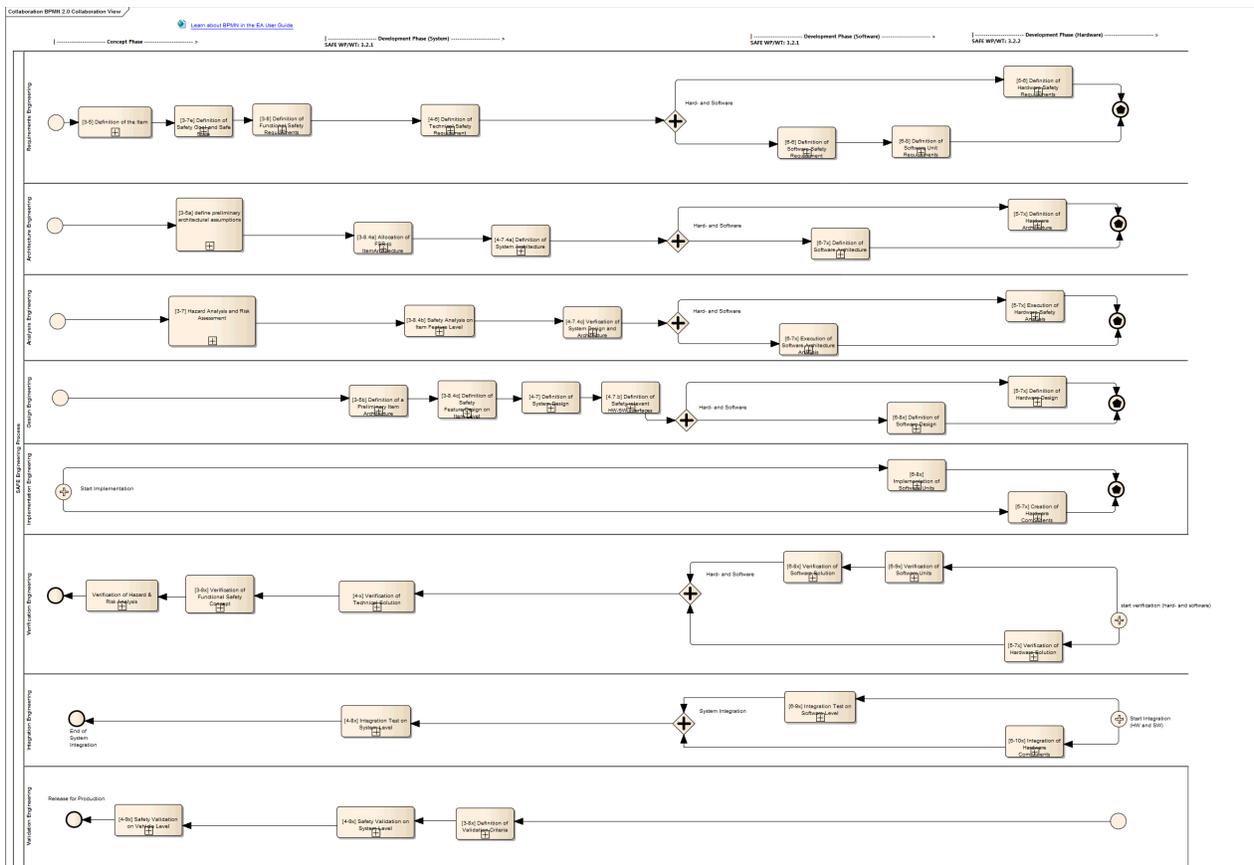


Figure: 3

Safety Activity

Created By: Biendle on 26.09.2013
 Last Modified: 07.11.2013, Version:1.0

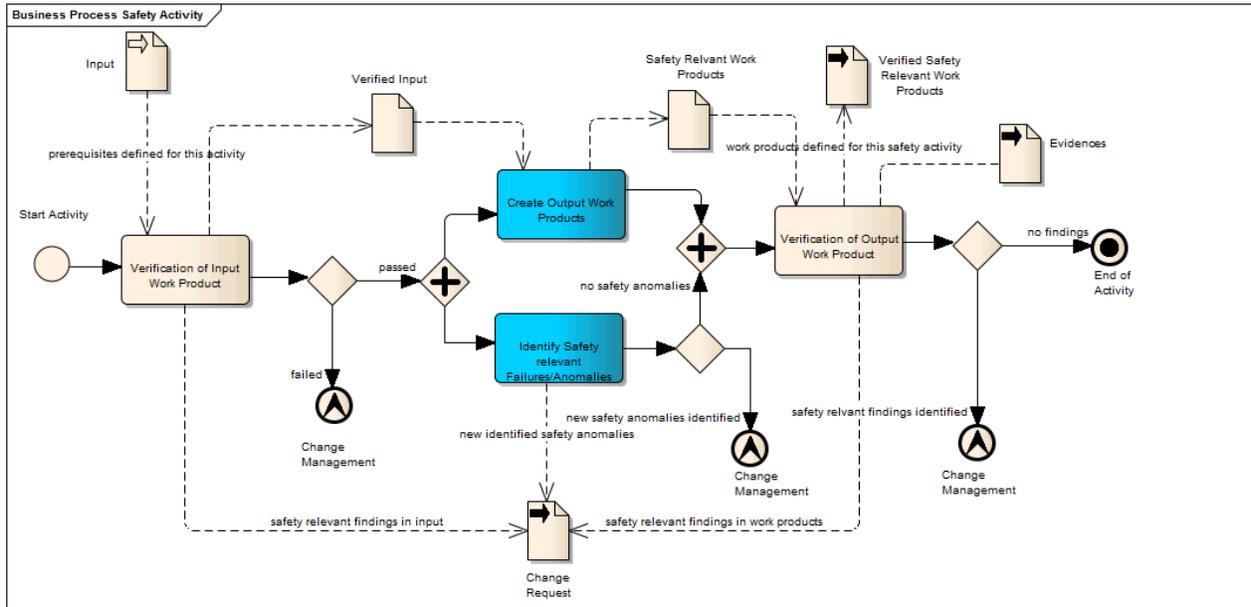


Figure: 4

Change Management

Created By: F30956 on 05.11.2013
 Last Modified: 07.11.2013, Version:1.0

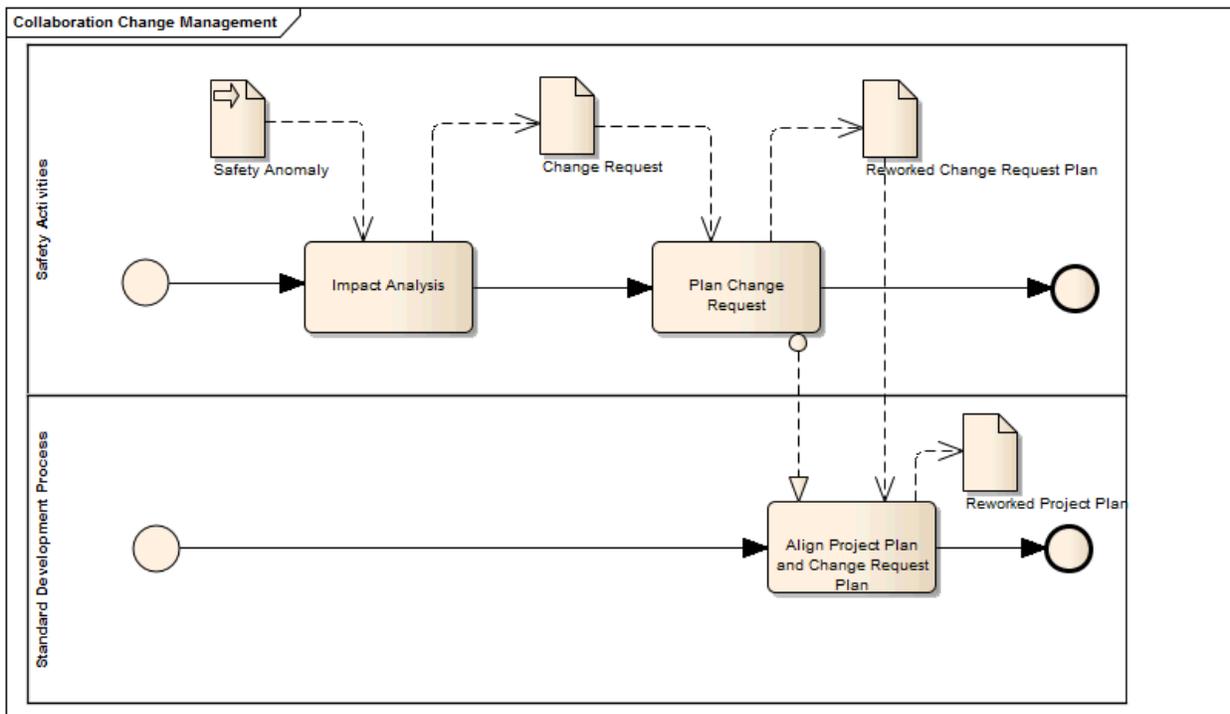


Figure: 5

EAST-ADL Phases

Detail: Created on 28.10.2013. Last modified on 28.10.2013.

Notes:

EAST-ADL Analysis Phase

Detail: Created on 28.10.2013. Last modified on 28.10.2013.

Notes:

Analyse Core Model - AP5

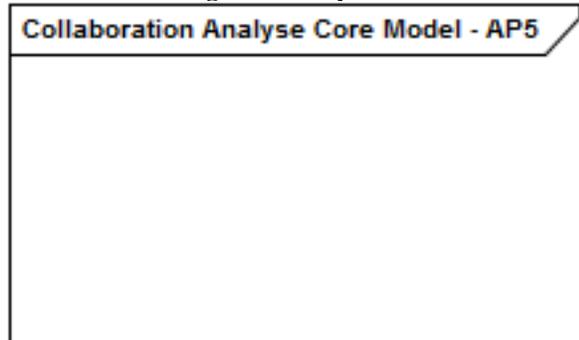
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Notes:

Relationships

Columns	Association	Notes
	Analyse Core Model - AP5. Verify Solution against Requirements - AP6.	
	Create Supporting Models - AP4. Analyse Core Model - AP5.	

Collaboration diagram: Analyse Core Model - AP5



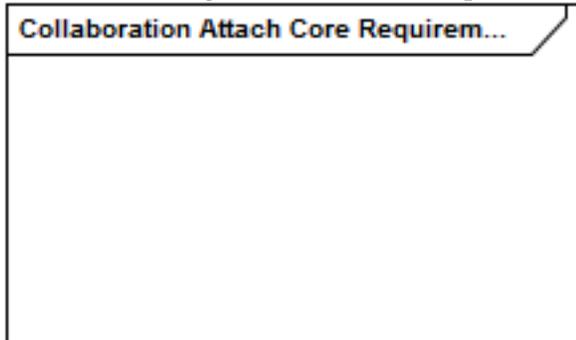
Attach Core Requirements to Solution - AP3

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
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	Create Solution - AP2. Attach Core Requirements to Solution - AP3.	

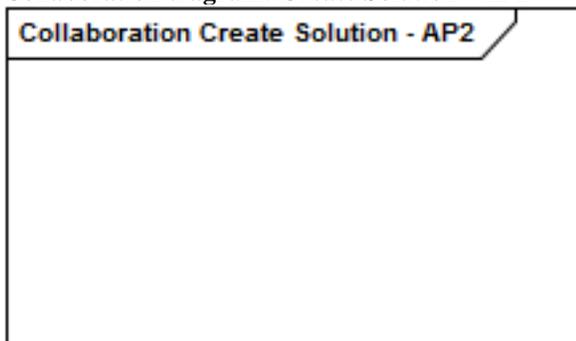
Collaboration diagram: Attach Core Requirements to Solution - AP3*Create Solution - AP2*

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Create Solution - AP2. Attach Core Requirements to Solution - AP3.	
	Refine, Introduce & Valdiate Requirements - AP1. Create Solution - AP2.	

Collaboration diagram: Create Solution - AP2*Create Supporting Models - AP4*

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

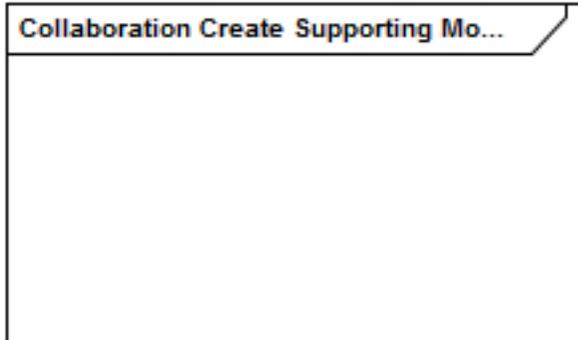
Notes:

Relationships

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	Create Supporting Models - AP4. Analyse Core Model - AP5.	

Columns	Association	Notes
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Collaboration diagram: Create Supporting Models - AP4



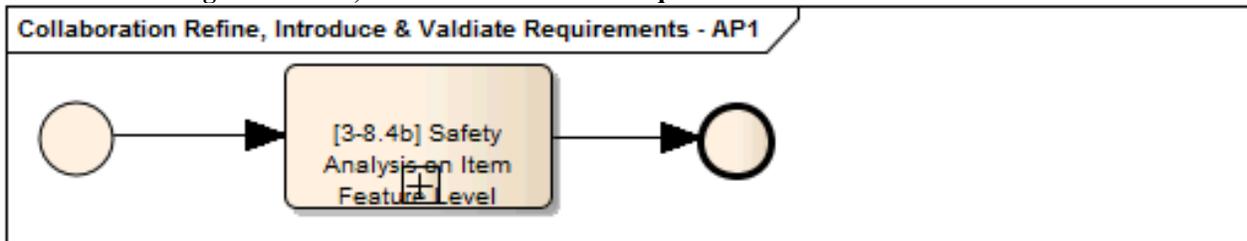
Refine, Introduce & Valdiate Requirements - AP1

Detail: Created on 28.10.2013. Last modified on 20.11.2013.
Notes:

Relationships

Columns	Association	Notes
	Start of AP. Refine, Introduce & Valdiate Requirements - AP1.	
	Refine, Introduce & Valdiate Requirements - AP1. Create Solution - AP2.	

Collaboration diagram: Refine, Introduce & Valdiate Requirements - AP1



Activity1

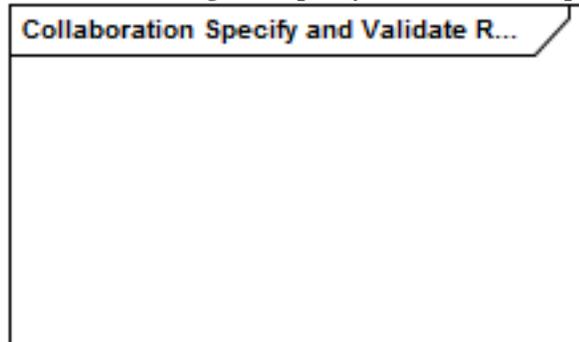
Detail: Created on 12.11.2014. Last modified on 12.11.2014.
Notes:

Specify and Validate Requirements - AP7

Detail: Created on 28.10.2013. Last modified on 20.11.2013.
Notes:

Relationships

Columns	Association	Notes
	Verify Solution against Requirements - AP6. Specify and Validate Requirements - AP7.	
	Specify and Validate Requirements - AP7. End of AP.	

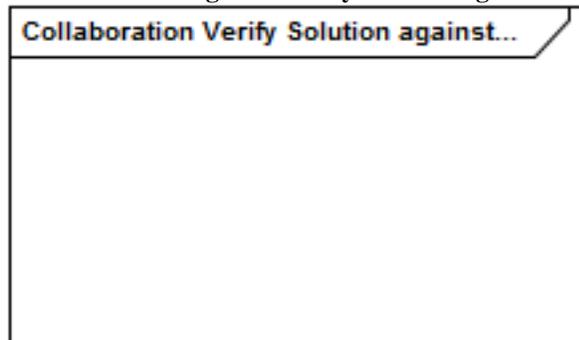
Collaboration diagram: Specify and Validate Requirements - AP7*Verify Solution against Requirements - AP6*

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Analyse Core Model - AP5. Verify Solution against Requirements - AP6.	
	Verify Solution against Requirements - AP6. Specify and Validate Requirements - AP7.	

Collaboration diagram: Verify Solution against Requirements - AP6*End of AP*

Detail: Created on 28.10.2013. Last modified on 28.10.2013.

Notes:

Relationships

Columns	Association	Notes
	Specify and Validate Requirements - AP7. End of AP.	

Start of AP

Detail: Created on 28.10.2013. Last modified on 12.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Start of AP. Refine, Introduce & Valdiate Requirements - AP1.	

EAST-ADL Design Phase

Detail: Created on 28.10.2013. Last modified on 28.10.2013.

Notes:

Analyse Core Model - DP5

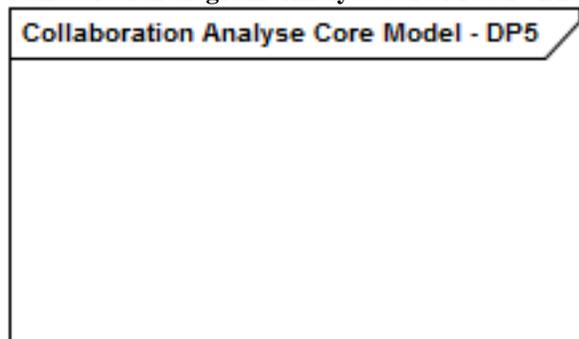
Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Create Supporting Models - DP4. Analyse Core Model - DP5.	
	Analyse Core Model - DP5. Verify Solution against Requirements - DP6.	

Collaboration diagram: Analyse Core Model - DP5



Attach Core Requirements to Solution - DP3

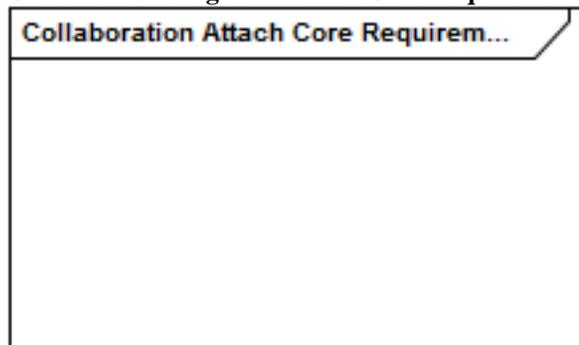
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Notes:

Relationships

Columns	Association	Notes
	Attach Core Requirements to Solution - DP3. Create Supporting Models - DP4.	
	Create Solution - DP2. Attach Core Requirements to Solution - DP3.	

Collaboration diagram: Attach Core Requirements to Solution - DP3



Create Solution - DP2

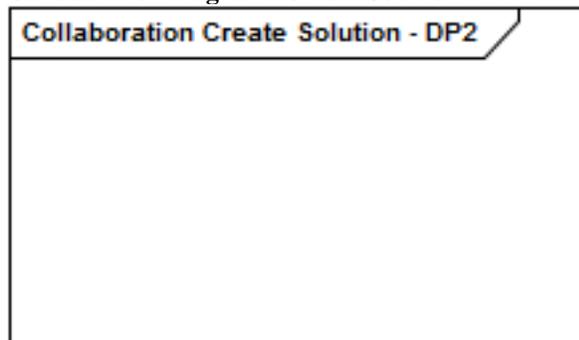
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Notes:

Relationships

Columns	Association	Notes
	Refine, Introduce & Valdiate Requirements - DP1. Create Solution - DP2.	
	Create Solution - DP2. Attach Core Requirements to Solution - DP3.	

Collaboration diagram: Create Solution - DP2



Create Supporting Models - DP4

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Attach Core Requirements to Solution - DP3. Create Supporting Models - DP4.	
	Create Supporting Models - DP4. Analyse Core Model - DP5.	

Collaboration diagram: Create Supporting Models - DP4



Refine, Introduce & Valdiate Requirements - DP1

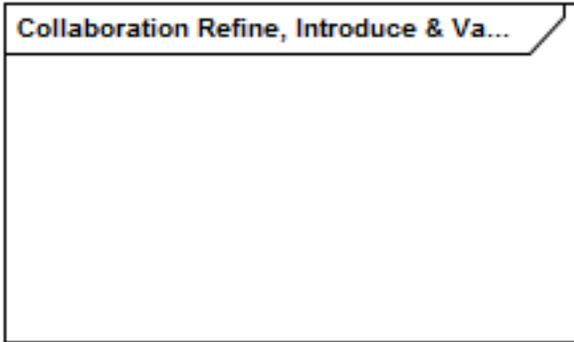
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Notes:

Relationships

Columns	Association	Notes
	Start of DP. Refine, Introduce & Valdiate Requirements - DP1.	
	Refine, Introduce & Valdiate Requirements - DP1. Create Solution - DP2.	

Collaboration diagram: Refine, Introduce & Valdiate Requirements - DP1



Specify and Validate Requirements - DP7

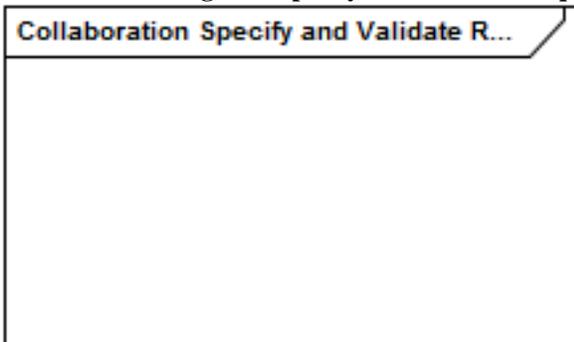
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Notes:

Relationships

Columns	Association	Notes
	Verify Solution against Requirements - DP6. Specify and Validate Requirements - DP7.	
	Specify and Validate Requirements - DP7. End of DP.	

Collaboration diagram: Specify and Validate Requirements - DP7



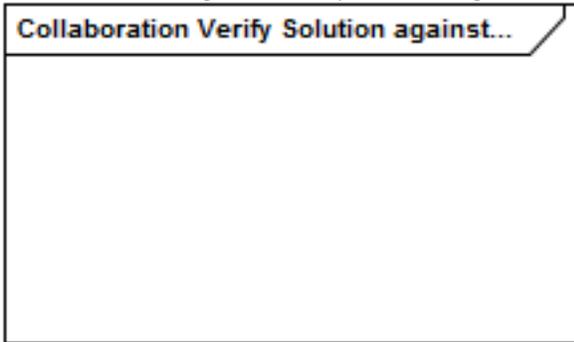
Verify Solution against Requirements - DP6

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Analyse Core Model - DP5. Verify Solution against Requirements - DP6.	
	Verify Solution against Requirements - DP6. Specify and Validate Requirements - DP7.	

Collaboration diagram: Verify Solution against Requirements - DP6*End of DP*

Detail: Created on 28.10.2013. Last modified on 28.10.2013.

Notes:

Relationships

Columns	Association	Notes
	Specify and Validate Requirements - DP7. End of DP.	

Start of DP

Detail: Created on 28.10.2013. Last modified on 12.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Start of DP. Refine, Introduce & Valdiate Requirements - DP1.	

EAST-ADL Implementation Phase

Detail: Created on 28.10.2013. Last modified on 28.10.2013.

Notes:

Analyse Core Model - IP5

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

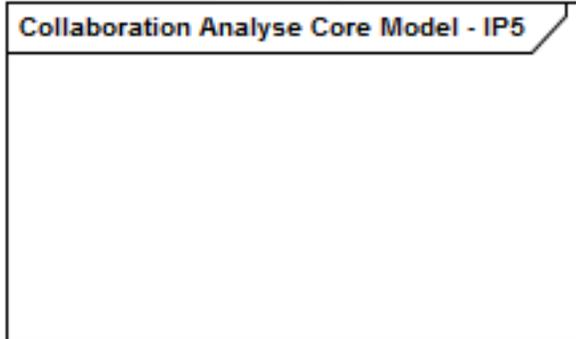
Notes:

Relationships

Columns	Association	Notes
	Analyse Core Model - IP5.	

Columns	Association	Notes
	Verify Solution against Requirements - IP6.	
	Create Supporting Models - IP4. Analyse Core Model - IP5.	

Collaboration diagram: Analyse Core Model - IP5



Attach Core Requirements to Solution - DP3

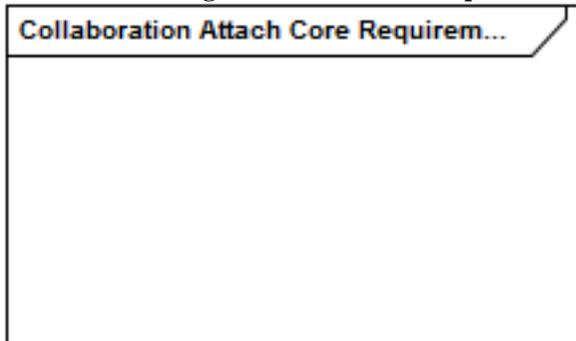
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Notes:

Relationships

Columns	Association	Notes
	Create Solution - IP2. Attach Core Requirements to Solution - DP3.	
	Attach Core Requirements to Solution - DP3. Create Supporting Models - IP4.	

Collaboration diagram: Attach Core Requirements to Solution - DP3



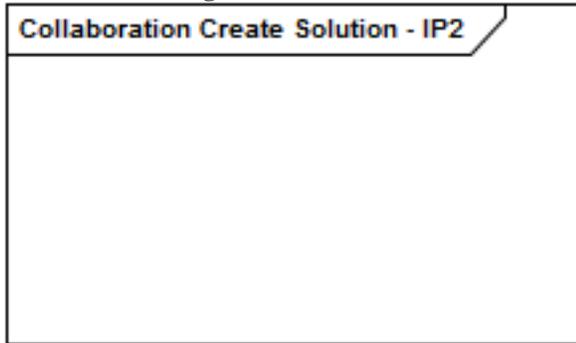
Create Solution - IP2

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Refine, Introduce & Valdiate Requirements - IP1. Create Solution - IP2.	
	Create Solution - IP2. Attach Core Requirements to Solution - DP3.	

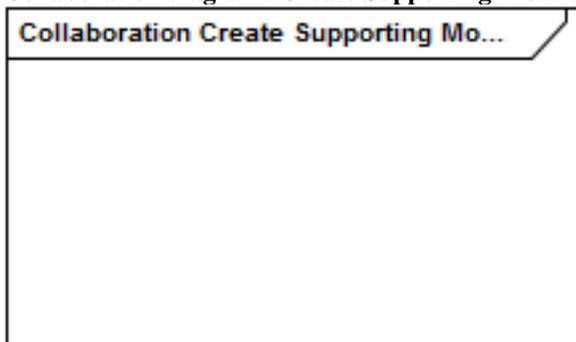
Collaboration diagram: Create Solution - IP2*Create Supporting Models - IP4*

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Attach Core Requirements to Solution - DP3. Create Supporting Models - IP4.	
	Create Supporting Models - IP4. Analyse Core Model - IP5.	

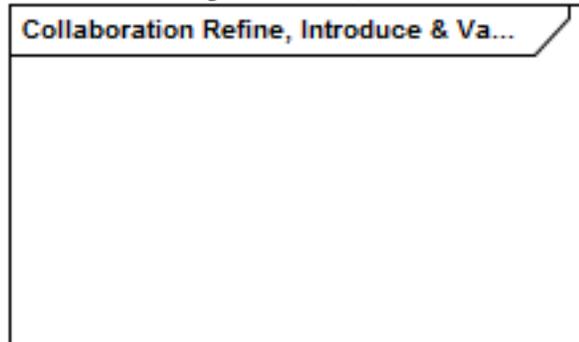
Collaboration diagram: Create Supporting Models - IP4*Refine, Introduce & Valdiate Requirements - IP1*

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Start of IP. Refine, Introduce & Valdiate Requirements - IP1.	
	Refine, Introduce & Valdiate Requirements - IP1. Create Solution - IP2.	

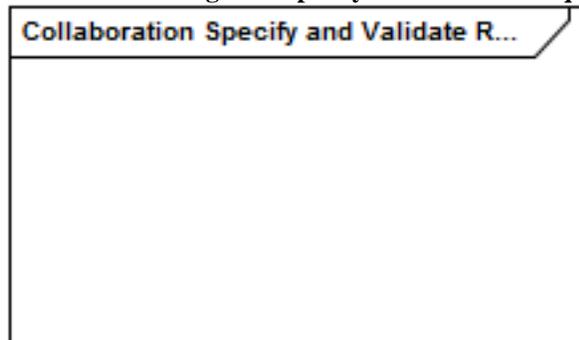
Collaboration diagram: Refine, Introduce & Valdiate Requirements - IP1*Specify and Validate Requirements - IP7*

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Specify and Validate Requirements - IP7. End of IP.	
	Verify Solution against Requirements - IP6. Specify and Validate Requirements - IP7.	

Collaboration diagram: Specify and Validate Requirements - IP7*Verify Solution against Requirements - IP6*

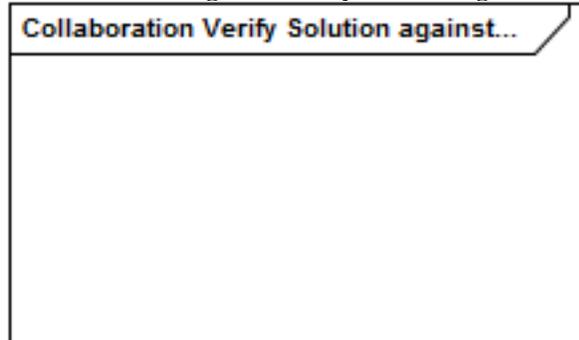
Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Analyse Core Model - IP5. Verify Solution against Requirements - IP6.	
	Verify Solution against Requirements - IP6. Specify and Validate Requirements - IP7.	

Collaboration diagram: Verify Solution against Requirements - IP6



End of IP

Detail: Created on 28.10.2013. Last modified on 12.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Specify and Validate Requirements - IP7. End of IP.	

Start of IP

Detail: Created on 28.10.2013. Last modified on 12.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Start of IP. Refine, Introduce & Valdiate Requirements - IP1.	

EAST-ADL Vehicle Phase

Detail: Created on 28.10.2013. Last modified on 28.10.2013.

Notes:

Analyse Core Model - VP5

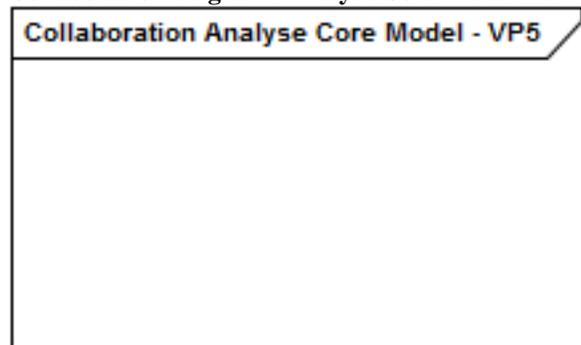
Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Analyse Core Model - VP5. Verify Solution against Requirements - VP6.	
	Create Supporting Models - VP4. Analyse Core Model - VP5.	

Collaboration diagram: Analyse Core Model - VP5



Attach Core Requirements to Solution - VP3

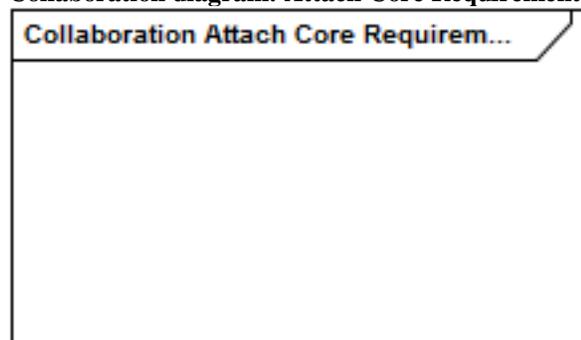
Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Attach Core Requirements to Solution - VP3. Create Supporting Models - VP4.	
	Create Solution - VP2. Attach Core Requirements to Solution - VP3.	

Collaboration diagram: Attach Core Requirements to Solution - VP3



Create Solution - VP2

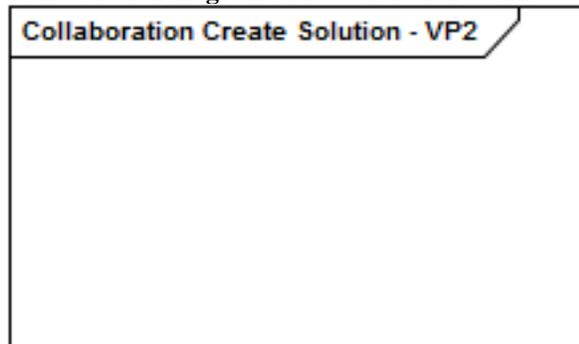
Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Create Solution - VP2. Attach Core Requirements to Solution - VP3.	
	Refine, Introduce & Valdiate Requirements - VP1. Create Solution - VP2.	

Collaboration diagram: Create Solution - VP2



Create Supporting Models - VP4

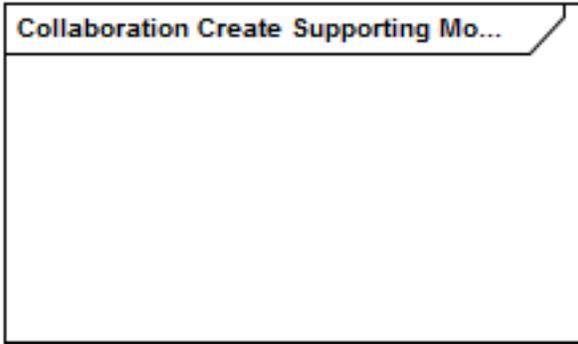
Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Attach Core Requirements to Solution - VP3. Create Supporting Models - VP4.	
	Create Supporting Models - VP4. Analyse Core Model - VP5.	

Collaboration diagram: Create Supporting Models - VP4



Refine, Introduce & Valdiate Requirements - VP1

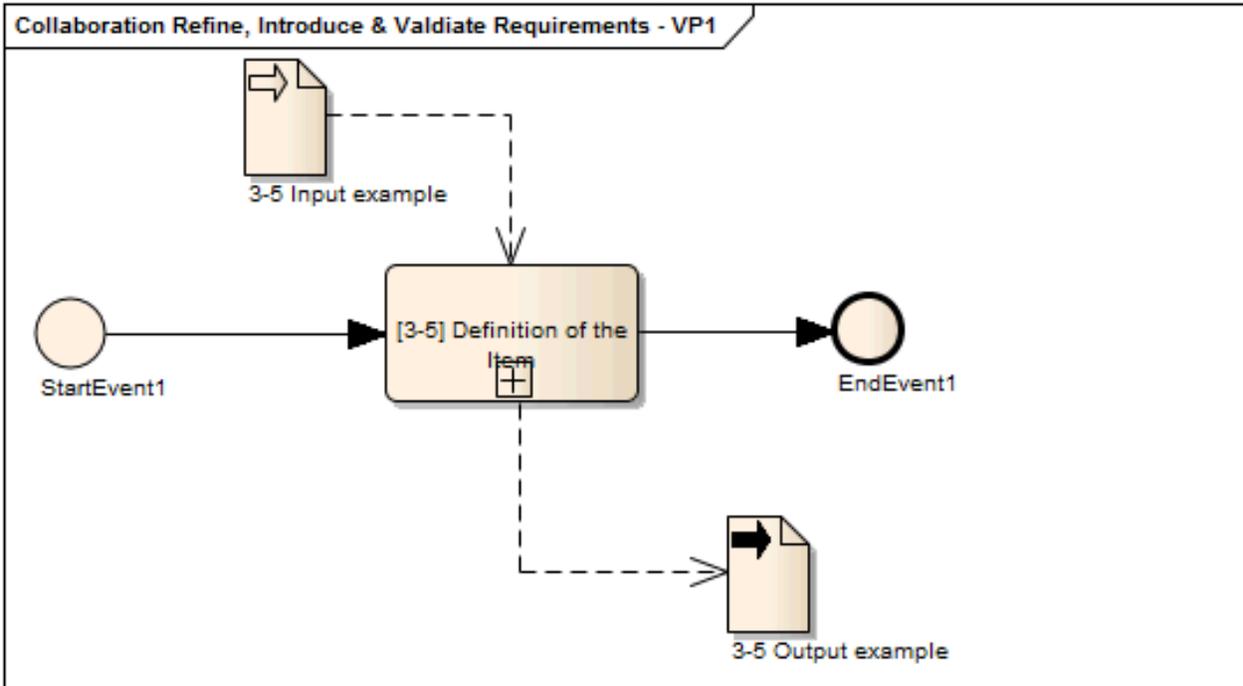
Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Start of VP. Refine, Introduce & Valdiate Requirements - VP1.	
	Refine, Introduce & Valdiate Requirements - VP1. Create Solution - VP2.	

Collaboration diagram: Refine, Introduce & Valdiate Requirements - VP1



3-5 Input example

Detail: Created on 20.11.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	3-5 Input example. [3-5] Definition of the Item.	

3-5 Output example

Detail: Created on 20.11.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	[3-5] Definition of the Item. 3-5 Output example.	

EndEvent1

Detail: Created on 31.10.2013. Last modified on 31.10.2013.

Notes:

Relationships

Columns	Association	Notes
	[3-5] Definition of the Item. EndEvent1.	

StartEvent1

Detail: Created on 31.10.2013. Last modified on 31.10.2013.

Notes:

Relationships

Columns	Association	Notes
	StartEvent1. [3-5] Definition of the Item.	

Specify and Validate Requirements - VP7

Detail: Created on 28.10.2013. Last modified on 20.11.2013.

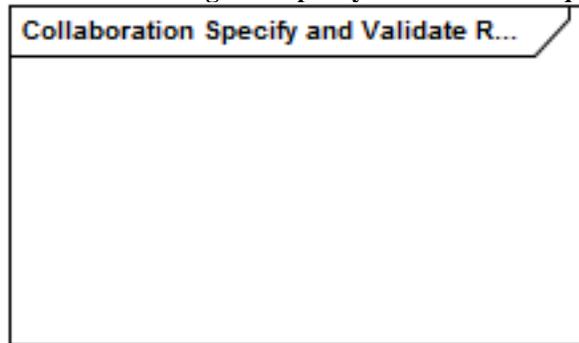
Notes:

Relationships

Columns	Association	Notes
	Verify Solution against Requirements - VP6. Specify and Validate Requirements - VP7.	
	Specify and Validate Requirements - VP7.	

Columns	Association	Notes
	End of VP.	

Collaboration diagram: Specify and Validate Requirements - VP7



Verify Solution against Requirements - VP6

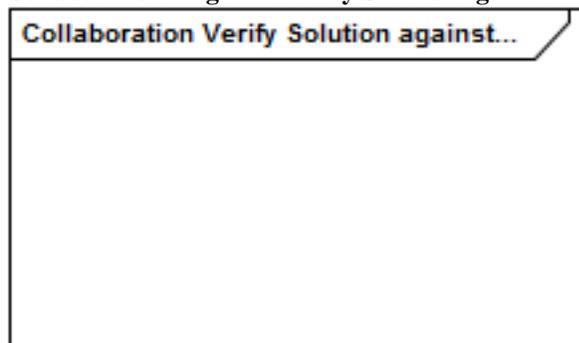
Detail: Created on 28.10.2013. Last modified on 20.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Verify Solution against Requirements - VP6. Specify and Validate Requirements - VP7.	
	Analyse Core Model - VP5. Verify Solution against Requirements - VP6.	

Collaboration diagram: Verify Solution against Requirements - VP6



End of VP

Detail: Created on 28.10.2013. Last modified on 28.10.2013.

Notes:

Relationships

Columns	Association	Notes
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Columns	Association	Notes
	Specify and Validate Requirements - VP7. End of VP.	

Start of VP

Detail: Created on 28.10.2013. Last modified on 12.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Start of VP. Refine, Introduce & Valdiate Requirements - VP1.	

SAFE Engineering Process

Detail: Created on 29.04.2013. Last modified on 29.04.2013.

Notes:

Analysis Engineering

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

[3-7] Hazard Analysis and Risk Assessment

Detail: Created on 09.04.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: D3.2.1, D3.1.1

part/chapter of ISO26262: 2-5

EAST-ADL phase: analysis

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Hazard & Risk Analysis (HARA)

MAENAD: [3-7] Hazard Analysis and Risk Assessment

Relationships

Columns	Association	Notes
	[3-7] Hazard Analysis and Risk Assessment.	
	[3-7] Hazard Analysis and Risk Assessment. [3-8.4b] Safety Analysis on Item Feature Level.	

[3-8.4b] Safety Analysis on Item Feature Level

Detail: Created on 09.04.2013. Last modified on 12.11.2014.

Notes:

reference to SAFE WP/WT: 3.3.1

part/chapter of ISO26262: 3-8.4.2.3, 3-8.4.2.6, 3-8.4.3.1

EAST-ADL phase: analysis

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Hazard & Risk Analysis (HARA)

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[3-7] Hazard Analysis and Risk Assessment. [3-8.4b] Safety Analysis on Item Feature Level.	
	[3-8.4b] Safety Analysis on Item Feature Level. [4-7.4c] Verification of System Design and Architecture.	
	[3-8.4b] Safety Analysis on Item Feature Level.	
	[3-8.4b] Safety Analysis on Item Feature Level.	

[4-7.4c] Verification of System Design and Architecture

Detail: Created on 09.04.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: 4-7.4.3.1, 4-7.4.3.5

EAST-ADL phase: analysis

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Hazard & Risk Analysis (HARA)

MAENAD: t.b.d.

old label of activity: [12] perform system safety analysis (4-7.3/4)

hint: FTA, FMEA

Relationships

Columns	Association	Notes
	[4-7.4c] Verification of System Design and	

Columns	Association	Notes
	Architecture. Hard- and Software.	
	[3-8.4b] Safety Analysis on Item Feature Level. [4-7.4c] Verification of System Design and Architecture.	

[6-7x] Execution of Software Architecture Analysis

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: 6-7

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Hazard & Risk Analysis (HARA)

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[6-7x] Execution of Software Architecture Analysis.	
	Hard- and Software. [6-7x] Execution of Software Architecture Analysis.	

[5-7x] Execution of Hardware Safety Analysis

Detail: Created on 10.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.3.1

part/chapter of ISO26262: 5-7.4.3

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Hazard & Risk Analysis (HARA)

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[5-7x] Execution of Hardware Safety Analysis .	
	Hard- and Software.	

Columns	Association	Notes
	[5-7x] Execution of Hardware Safety Analysis .	

Hard- and Software

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	[4-7.4c] Verification of System Design and Architecture. Hard- and Software.	
	Hard- and Software. [5-7x] Execution of Hardware Safety Analysis .	
	Hard- and Software. [6-7x] Execution of Software Architecture Analysis.	

Architecture Engineering

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

[3-5a] define preliminary architectural assumptions

Detail: Created on 09.04.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: D3.2.1b (also environment conditions)

part/chapter of ISO26262: 3-5.4.1, 3-5.4.1

EAST-ADL phase: vehicle

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Item Definition

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[3-5a] define preliminary architectural assumptions . [3-8.4a] Allocation of FSR to ItemArchitecture.	
	[3-5a] define preliminary architectural assumptions .	

[3-8.4a] Allocation of FSR to ItemArchitecture

Detail: Created on 09.04.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: 3-8.4.3

EAST-ADL phase: vehicle

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Technical Safety Concept

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[3-8.4a] Allocation of FSR to ItemArchitecture. [4-7.4a] Definition of System Architecture.	
	[3-5a] define preliminary architectural assumptions . [3-8.4a] Allocation of FSR to ItemArchitecture.	

[4-7.4a] Definition of System Architecture

Detail: Created on 08.07.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: 4-6, 5-6 oder 4.7.1/2

EAST-ADL phase: vehicle

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Technical Safety Concept

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[4-7.4a] Definition of System Architecture. Hard- and Software.	
	[3-8.4a] Allocation of FSR to ItemArchitecture. [4-7.4a] Definition of System Architecture.	

[6-7x] Definition of Software Architecture

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: 6-7.4.9(?)

EAST-ADL phase: implentation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Software Realization

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[6-7x] Definition of Software Architecture.	
	Hard- and Software. [6-7x] Definition of Software Architecture.	

[5-7x] Definition of Hardware Architecture

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: t.b.d.

part/chapter of ISO26262: 5-7.4.1.5(?) oder 5-8

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[5-7x] Definition of Hardware Architecture.	
	Hard- and Software. [5-7x] Definition of Hardware Architecture.	

Hard- and Software

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	[4-7.4a] Definition of System Architecture. Hard- and Software.	
	Hard- and Software. [5-7x] Definition of Hardware Architecture.	
	Hard- and Software.	

Columns	Association	Notes
	[6-7x] Definition of Software Architecture.	

Design Engineering

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

[4.7.b] Definition of Safety-relevant HW-SW Interfaces

Detail: Created on 23.09.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: 4-7.6/7

EAST-ADL phase: design

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Technical Safety Concept

MAENAD: 4.7_System design

Relationships

Columns	Association	Notes
	[4-7] Definition of System Design. [4.7.b] Definition of Safety-relevant HW-SW Interfaces.	
	[4.7.b] Definition of Safety-relevant HW-SW Interfaces. Hard- and Software.	

[3-5b] Definition of a Preliminary Item Architecture

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.1.3

part/chapter of ISO26262: 3-5

EAST-ADL phase: design

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Technical Safety Concept

MAENAD: t.b.d.

old label of activity: [4] define design suppositions, limits

Relationships

Columns	Association	Notes
	[3-5b] Definition of a Preliminary Item Architecture. [3-8.4c] Definition of Safety Feature-Design on Item Level.	[4] define design suppositions, limits
	[3-5b] Definition of a Preliminary Item Architecture.	

[4-7] Definition of System Design

Detail: Created on 09.04.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: 4-7.4.1.2(?) oder 4-7.6/7

EAST-ADL phase: design

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Technical Safety Concept

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[3-8.4c] Definition of Safety Feature-Design on Item Level. [4-7] Definition of System Design.	
	[4-7] Definition of System Design. [4.7.b] Definition of Safety-relevant HW-SW Interfaces.	

[6-8x] Definition of Software Design

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: 6-8

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Software Realization

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[6-8x] Definition of Software Design.	
	Hard- and Software. [6-8x] Definition of Software Design.	

[5-7x] Definition of Hardware Design

Detail: Created on 10.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.2.2

part/chapter of ISO26262: 5-7.4.1.5(?) oder 5-7.4.1/2

EAST-ADL phase: implentation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	Hard- and Software. [5-7x] Definition of Hardware Design.	
	[5-7x] Definition of Hardware Design.	

[3-8.4c] Definition of Safety Feature-Design on Item Level

Detail: Created on 16.04.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: 3.3.1 and 3.2.1

part/chapter of ISO26262: 3-8.4.2.3, 3-8.4.2.6, 3-8.4.3.1(?)

EAST-ADL phase: design

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Technical Safety Concept

MAENAD: t.b.d.

old label of activity: [31] design the system including SAFETY measures

Relationships

Columns	Association	Notes
	[3-8.4c] Definition of Safety Feature-Design on Item Level. [4-7] Definition of System Design.	
	[3-5b] Definition of a Preliminary Item Architecture. [3-8.4c] Definition of Safety Feature-Design on Item Level.	[4] define design suppositions, limits

Hard- and Software

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Hard- and Software. [5-7x] Definition of Hardware Design.	
	Hard- and Software. [6-8x] Definition of Software Design.	
	[4.7.b] Definition of Safety-relevant HW-SW Interfaces. Hard- and Software.	

Implementation Engineering

Detail: Created on 23.09.2013. Last modified on 13.11.2014.

Notes:

[5-7x] Creation of Hardware Components

Detail: Created on 23.09.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: t.b.d.

part/chapter of ISO26262: t.b.d.

EAST-ADL phase: t.b.d.

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	Start Implementation. [5-7x] Creation of Hardware Components.	
	[5-7x] Creation of Hardware Components.	

[6-8x] Implementation of Software Units

Detail: Created on 23.09.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: t.b.d.

part/chapter of ISO26262: t.b.d.

EAST-ADL phase: t.b.d.

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	Start Implementation. [6-8x] Implementation of Software Units.	
	[6-8x] Implementation of Software Units.	

Start Implementation

Detail: Created on 23.09.2013. Last modified on 24.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Start Implementation. [5-7x] Creation of Hardware Components.	
	Start Implementation. [6-8x] Implementation of Software Units.	

Integration Engineering

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

End of System Integration

Detail: Created on 23.09.2013. Last modified on 23.09.2013.

Notes:

Relationships

Columns	Association	Notes
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Columns	Association	Notes
	[4-8x] Integration Test on System Level . End of System Integration.	

Start Integration (HW and SW)

Detail: Created on 23.09.2013. Last modified on 24.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Start Integration (HW and SW). [6-9x] Integration Test on Software Level.	
	Start Integration (HW and SW). [5-10x] Integration of Hardware Components.	

[6-9x] Integration Test on Software Level

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: out of focus

part/chapter of ISO26262: 6-9/10

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[6-9x] Integration Test on Software Level. System Integration.	
	Start Integration (HW and SW). [6-9x] Integration Test on Software Level.	

[4-8x] Integration Test on System Level

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: out of focus

part/chapter of ISO26262: 4-8

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	System Integration. [4-8x] Integration Test on System Level .	
	[4-8x] Integration Test on System Level . End of System Integration.	

[5-10x] Integration of Hardware Components

Detail: Created on 10.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: out of focus

part/chapter of ISO26262: 5-10

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[5-10x] Integration of Hardware Components. System Integration.	
	Start Integration (HW and SW). [5-10x] Integration of Hardware Components.	

System Integration

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	System Integration. [4-8x] Integration Test on System Level .	
	[6-9x] Integration Test on Software Level. System Integration.	
	[5-10x] Integration of Hardware Components. System Integration.	

Requirements Engineering

Detail: Created on 09.04.2013. Last modified on 13.11.2014.
Notes:

[3-5] Definition of the Item

Detail: Created on 09.04.2013. Last modified on 19.11.2013.
Notes:

reference to SAFE WP/WT: 3.2.1

part/chapter of ISO26262: part 3 Chapter 5

EAST-ADL phase: vehicle

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Item Definition

MAENAD: 3-5_Item Definition_AL 1.0

Relationships

Columns	Association	Notes
	[3-5] Definition of the Item. [3-7e] Definition of Safety Goal and Safe State .	
	[3-5] Definition of the Item.	
	StartEvent1. [3-5] Definition of the Item.	
	[3-5] Definition of the Item. EndEvent1.	
	3-5 Input example. [3-5] Definition of the Item.	
	[3-5] Definition of the Item. 3-5 Output example.	

[3-7e] Definition of Safety Goal and Safe State

Detail: Created on 09.04.2013. Last modified on 13.11.2014.
Notes:

reference to SAFE WP/WT: 3.1.1

part/chapter of ISO26262: 3.7

EAST-ADL phase: vehicle, element "xy"

EASIS (sub)process: t.b.d., element "xy"

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Functional Safety Concept

MAENAD: 3-7e Safety goal and Safe state definition

hint: the scenario (rules->scenarios->...) is based on the example chapter of the document
"SAFE_D311a_V02.doc"

Relationships

Columns	Association	Notes
	[3-5] Definition of the Item. [3-7e] Definition of Safety Goal and Safe State .	
	[3-7e] Definition of Safety Goal and Safe State . [3-8] Definition of Functional Safety Requirements.	

[3-8] Definition of Functional Safety Requirements

Detail: Created on 09.04.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: 3.1.2

part/chapter of ISO26262: 3-8.4.2.3, 3-8.4.2.6

EAST-ADL phase: vehicle

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Concept Phase\Functional Safety Concept

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[3-8] Definition of Functional Safety Requirements. [4-6] Definition of Technical Safety Requirement .	
	[3-7e] Definition of Safety Goal and Safe State . [3-8] Definition of Functional Safety Requirements.	

[4-6] Definition of Technical Safety Requirement

Detail: Created on 08.07.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: 3.1.2

part/chapter of ISO26262: 4-6

EAST-ADL phase: vehicle

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Technical Safety Concept

MAENAD: 4.6a_Technical Safety Specs Definition

Relationships

Columns	Association	Notes
	[4-6] Definition of Technical Safety Requirement . Hard- and Software.	
	[3-8] Definition of Functional Safety Requirements. [4-6] Definition of Technical Safety Requirement .	

[6-6] Definition of Software Safety Requirement

Detail: Created on 08.07.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: 3.1.2

part/chapter of ISO26262: 6.6

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Software Safety Concept

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	Hard- and Software. [6-6] Definition of Software Safety Requirement.	
	[6-6] Definition of Software Safety Requirement. [6-8] Definition of Software Unit Requirements.	

[6-8] Definition of Software Unit Requirements

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.1.2

part/chapter of ISO26262: 6.8.4.2/3/4

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Software Safety Concept

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[6-8] Definition of Software Unit Requirements.	
	[6-6] Definition of Software Safety Requirement.	

Columns	Association	Notes
	[6-8] Definition of Software Unit Requirements.	

[5-6] Definition of Hardware Safety Requirements

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.1.2

part/chapter of ISO26262: 5-6

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\EE Hardware Safety Concept

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	Hard- and Software. [5-6] Definition of Hardware Safety Requirements.	
	[5-6] Definition of Hardware Safety Requirements.	

Hard- and Software

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	[4-6] Definition of Technical Safety Requirement . Hard- and Software.	
	Hard- and Software. [5-6] Definition of Hardware Safety Requirements.	
	Hard- and Software. [6-6] Definition of Software Safety Requirement.	

Validation Engineering

Detail: Created on 23.09.2013. Last modified on 13.11.2014.

Notes:

[4-9x] Safety Validation on Vehicle Level

Detail: Created on 23.09.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: t.b.d.

part/chapter of ISO26262: t.b.d.

EAST-ADL phase: t.b.d.

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[4-9x] Safety Validation on System Level. [4-9x] Safety Validation on Vehicle Level.	
	[4-9x] Safety Validation on Vehicle Level. Release for Production.	

[3-8x] Definition of Validation Criteria

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: 3.1.3

part/chapter of ISO26262: 3-8.4.4

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Qualification of Components

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[3-8x] Definition of Validation Criteria.	
	[3-8x] Definition of Validation Criteria. [4-9x] Safety Validation on System Level.	

[4-9x] Safety Validation on System Level

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: out of focus or 3.2.4

part/chapter of ISO26262: 4-9

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Qualification of Components

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[4-9x] Safety Validation on System Level. [4-9x] Safety Validation on Vehicle Level.	
	[3-8x] Definition of Validation Criteria. [4-9x] Safety Validation on System Level.	

Release for Production

Detail: Created on 24.03.2011. Last modified on 23.09.2013.

Notes:

Relationships

Columns	Association	Notes
	[4-9x] Safety Validation on Vehicle Level. Release for Production.	

Verification Engineering

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

Connection between the activities have to be updated (TBD)

Verification of Hazard & Risk Analysis

Detail: Created on 25.09.2013. Last modified on 12.11.2014.

Notes:

reference to SAFE WP/WT: t.b.d.

part/chapter of ISO26262: 3-7

EAST-ADL phase: t.b.d.

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
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Columns	Association	Notes
	[3-8x] Verification of Functional Safety Concept. Verification of Hazard & Risk Analysis.	
	Verification of Hazard & Risk Analysis.	

start verification (hard- and software)

Detail: Created on 09.07.2013. Last modified on 23.09.2013.

Notes:

Relationships

Columns	Association	Notes
	start verification (hard- and software). [5-7x] Verification of Hardware Solution.	
	start verification (hard- and software). [6-9x] Verification of Software Units.	

[6-9x] Verification of Software Units

Detail: Created on 09.04.2013. Last modified on 19.11.2013.

Notes:

reference to SAFE WP/WT: out of focus

part/chapter of ISO26262: 6-9

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: t.b.d.

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	start verification (hard- and software). [6-9x] Verification of Software Units.	
	[6-9x] Verification of Software Units. [6-8x] Verification of Software Solution.	

[3-8x] Verification of Functional Safety Concept

Detail: Created on 09.04.2013. Last modified on 12.11.2014.

Notes:

reference to SAFE WP/WT: out of focus or 3.2.4

part/chapter of ISO26262: 3-8.4.5

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Qualification of Components

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[3-8x] Verification of Functional Safety Concept. Verification of Hazard & Risk Analysis.	
	[4-x] Verification of Technical Solution. [3-8x] Verification of Functional Safety Concept.	

[4-x] Verification of Technical Solution

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: out of focus or 3.2.4

part/chapter of ISO26262: 4-6.4.6, 4-7.4.8

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Qualification of Components

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[4-x] Verification of Technical Solution. [3-8x] Verification of Functional Safety Concept.	
	Hard- and Software. [4-x] Verification of Technical Solution.	

[6-8x] Verification of Software Solution

Detail: Created on 09.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: out of focus or 3.2.4

part/chapter of ISO26262: 6-8

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Qualification of Components

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[6-8x] Verification of Software Solution. Hard- and Software.	
	[6-9x] Verification of Software Units. [6-8x] Verification of Software Solution.	

[5-7x] Verification of Hardware Solution

Detail: Created on 10.04.2013. Last modified on 13.11.2014.

Notes:

reference to SAFE WP/WT: out of focus or 3.2.4

part/chapter of ISO26262: 5-7.4.4, 5-6.4.9, 5.8.4.9 + 5.9.4.4

EAST-ADL phase: implementation

EASIS (sub)process: t.b.d.

AUTOSAR: t.b.d.

SAFE D6.x: Development Phase\Qualification of Components

MAENAD: t.b.d.

Relationships

Columns	Association	Notes
	[5-7x] Verification of Hardware Solution. Hard- and Software.	
	start verification (hard- and software). [5-7x] Verification of Hardware Solution.	

Hard- and Software

Detail: Created on 08.07.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	[5-7x] Verification of Hardware Solution. Hard- and Software.	
	[6-8x] Verification of Software Solution. Hard- and Software.	
	Hard- and Software. [4-x] Verification of Technical Solution.	

SafetyLifecycle

Detail: Created on 25.09.2013. Last modified on 25.09.2013.

Notes:

Organization Specific

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

Organization Specific Safety Culture

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

Organization specific tailoring of development process prepared for development of safety relevant features in the scope of ISO 26262.

Process Specific

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

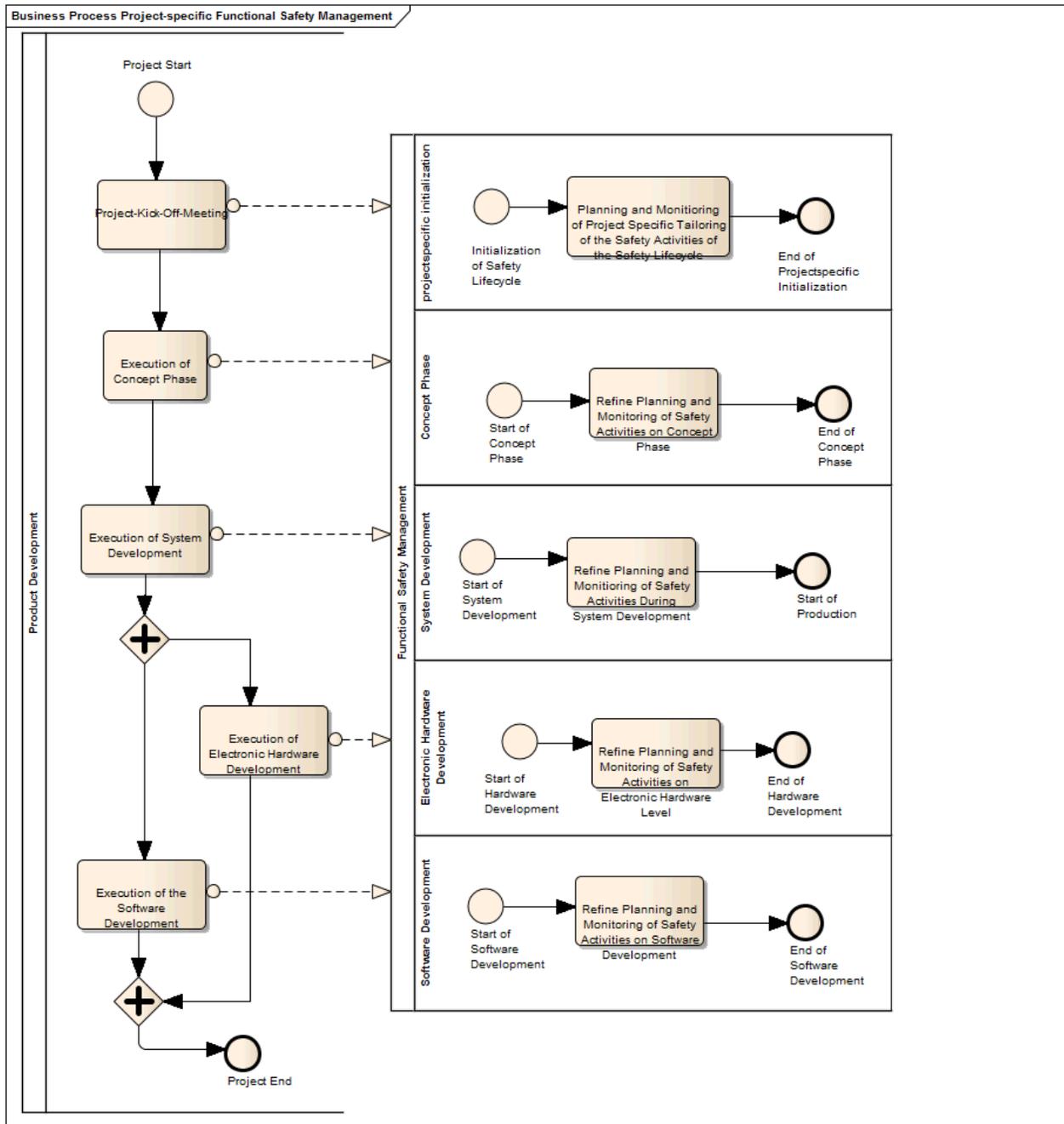
Functional Safety Management

Detail: Created on 25.09.2013. Last modified on 26.09.2013.

Notes:

Planning and monitoring of safety relevant activities based on organization specific constraints

Business Process diagram: Project-specific Functional Safety Management



Functional Safety Management

Detail: Created on 26.09.2013. Last modified on 30.10.2013.
Notes:

Relationships

Columns	Association	Notes
	Execution of Concept Phase.	

Columns	Association	Notes
	Functional Safety Management.	
	Execution of Electronic Hardware Development. Functional Safety Management.	
	Execution of System Development. Functional Safety Management.	
	Execution of the Software Development. Functional Safety Management.	
	Project-Kick-Off-Meeting. Functional Safety Management.	

Concept Phase

Detail: Created on 26.09.2013. Last modified on 28.10.2013.

Notes:

Refine Planning and Monitoring of Safety Activities on Concept Phase

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Functional Safety Management Activity done by the Functional Safety Manager triggered by the milestone start of concept phase.

Relationships

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities on Concept Phase. End of Concept Phase.	
	Start of Concept Phase. Refine Planning and Monitoring of Safety Activities on Concept Phase.	

End of Concept Phase

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities on Concept Phase. End of Concept Phase.	

Start of Concept Phase

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Start of Concept Phase.	

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities on Concept Phase.	

Electronic Hardware Development

Detail: Created on 26.09.2013. Last modified on 28.10.2013.

Notes:

Refine Planning and Monitoring of Safety Activities on Electronic Hardware Level

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Functional Safety Management Activity done by the Functional Safety Manager triggered by the milestone start of hardware development phase.

Relationships

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities on Electronic Hardware Level. End of Hardware Development.	
	Start of Hardware Development. Refine Planning and Monitoring of Safety Activities on Electronic Hardware Level.	

End of Hardware Development

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities on Electronic Hardware Level. End of Hardware Development.	

Start of Hardware Development

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Start of Hardware Development. Refine Planning and Monitoring of Safety Activities on Electronic Hardware Level.	

projectspecific initialization

Detail: Created on 26.09.2013. Last modified on 28.10.2013.

Notes:

Planning and Monitoring of Project Specific Tailoring of the Safety Activities of the Safety Lifecycle

Detail: Created on 26.09.2013. Last modified on 13.11.2014.

Notes:

Functional Safety Management Activity done by the Functional Safety Manager triggered by the milestone project start.

Project start is defined as RFQ from customer is received.

Relationships

Columns	Association	Notes
	Planning and Monitoring of Project Specific Tailoring of the Safety Activities of the Safety Lifecycle. End of Projectspecific Initialization.	
	Initialization of Safety Lifecycle. Planning and Monitoring of Project Specific Tailoring of the Safety Activities of the Safety Lifecycle.	

End of Projectspecific Initialization

Detail: Created on 26.09.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Planning and Monitoring of Project Specific Tailoring of the Safety Activities of the Safety Lifecycle. End of Projectspecific Initialization.	

Initialization of Safety Lifecycle

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Initialization of Safety Lifecycle. Planning and Monitoring of Project Specific Tailoring of the Safety Activities of the Safety Lifecycle.	

Software Development

Detail: Created on 26.09.2013. Last modified on 28.10.2013.

Notes:

Refine Planning and Monitoring of Safety Activities on Software Development

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Functional Safety Management Activity done by the Functional Safety Manager triggered by the milestone start of software development.

Relationships

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities on Software Development. End of Software Development.	
	Start of Software Development. Refine Planning and Monitoring of Safety Activities on Software Development.	

End of Software Development

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

*Notes:**Relationships*

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities on Software Development. End of Software Development.	

Start of Software Development

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

*Notes:**Relationships*

Columns	Association	Notes
	Start of Software Development. Refine Planning and Monitoring of Safety Activities on Software Development.	

System Development

Detail: Created on 26.09.2013. Last modified on 28.10.2013.

*Notes:***Refine Planning and Monitoring of Safety Activities During System Development**

Detail: Created on 26.09.2013. Last modified on 13.11.2014.

Notes:

Functional Safety Management Activity done by the Functional Safety Manager triggered by the milestone start of system development.

Relationships

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities	

Columns	Association	Notes
	During System Development. Start of Production.	
	Start of System Development. Refine Planning and Monitoring of Safety Activities During System Development.	

Start of Production

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Refine Planning and Monitoring of Safety Activities During System Development. Start of Production.	

Start of System Development

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Start of System Development. Refine Planning and Monitoring of Safety Activities During System Development.	

Product Development

Detail: Created on 26.09.2013. Last modified on 30.10.2013.

Notes:

Execution of Concept Phase

Detail: Created on 26.09.2013. Last modified on 30.10.2013.

Notes:

Relationships

Columns	Association	Notes
	Execution of Concept Phase. Functional Safety Management.	
	Execution of Concept Phase. Execution of System Development.	
	Project-Kick-Off-Meeting. Execution of Concept Phase.	

Execution of Electronic Hardware Development

Detail: Created on 26.09.2013. Last modified on 12.11.2014.

Notes:

Development of hardware components realized by other technologies (mechanical components, hydraulic components,...) are not in scope of this model.

Relationships

Columns	Association	Notes
	Execution of Electronic Hardware Development. Functional Safety Management.	
	Execution of Electronic Hardware Development.	
	Execution of Electronic Hardware Development.	

Execution of System Development

Detail: Created on 26.09.2013. Last modified on 30.10.2013.

Notes:

Relationships

Columns	Association	Notes
	Execution of System Development. Functional Safety Management.	
	Execution of Concept Phase. Execution of System Development.	
	Execution of System Development.	

Execution of the Software Development

Detail: Created on 26.09.2013. Last modified on 30.10.2013.

Notes:

Relationships

Columns	Association	Notes
	Execution of the Software Development. Functional Safety Management.	
	Execution of the Software Development.	
	Execution of the Software Development.	

Project-Kick-Off-Meeting

Detail: Created on 26.09.2013. Last modified on 30.10.2013.

Notes:

Relationships

Columns	Association	Notes
	Project-Kick-Off-Meeting.	

Columns	Association	Notes
	Execution of Concept Phase.	
	Project-Kick-Off-Meeting. Functional Safety Management.	
	Project Start. Project-Kick-Off-Meeting.	

Project End

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Project End.	

Project Start

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
	Project Start. Project-Kick-Off-Meeting.	

Safety Activity

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Impact Analysis

Detail: Created on 05.11.2013. Last modified on 05.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Impact Analysis.	
	Safety Anomaly. Impact Analysis.	
	Impact Analysis. Plan Change Request.	
	Impact Analysis. Change Request.	

Safety Activities

Detail: Created on 05.11.2013. Last modified on 05.11.2013.
Notes:

Plan Change Request

Detail: Created on 05.11.2013. Last modified on 05.11.2013.
Notes:

Relationships

Columns	Association	Notes
	Impact Analysis. Plan Change Request.	
	Change Request. Plan Change Request.	
	Plan Change Request. Reworked Change Request Plan.	
	Plan Change Request.	
	Plan Change Request. Align Project Plan and Change Request Plan.	

Change Request

Detail: Created on 05.11.2013. Last modified on 05.11.2013.
Notes:

Relationships

Columns	Association	Notes
	Impact Analysis. Change Request.	
	Change Request. Plan Change Request.	

Reworked Change Request Plan

Detail: Created on 05.11.2013. Last modified on 13.11.2014.
Notes:

Relationships

Columns	Association	Notes
	Plan Change Request. Reworked Change Request Plan.	
	Reworked Change Request Plan. Align Project Plan and Change Request Plan.	

Safety Anomaly

Detail: Created on 05.11.2013. Last modified on 05.11.2013.
Notes:

Relationships

Columns	Association	Notes
	Safety Anomaly. Impact Analysis.	

Standard Development Process

Detail: Created on 05.11.2013. Last modified on 05.11.2013.

Notes:

Align Project Plan and Change Request Plan

Detail: Created on 05.11.2013. Last modified on 05.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Align Project Plan and Change Request Plan.	
	Align Project Plan and Change Request Plan.	
	Plan Change Request. Align Project Plan and Change Request Plan.	
	Align Project Plan and Change Request Plan. Reworked Project Plan.	
	Reworked Change Request Plan. Align Project Plan and Change Request Plan.	

Reworked Project Plan

Detail: Created on 05.11.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Align Project Plan and Change Request Plan. Reworked Project Plan.	

Evidences

Detail: Created on 04.11.2013. Last modified on 04.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Verification of Output Work Product. Evidences.	verification reports,...

Create Output Work Products

Detail: Created on 25.09.2013. Last modified on 30.10.2013.

Notes:

Verified Input provided after successful execution of the Verification of input work products is finished. In the case that the input work products do not have the required maturity a change request for the work products shall be created.

The change request shall be used as input work product for the safety activity impact analysis.

This activity is different for each safety activity and is described in the detailed description of each safety activity

Relationships

Columns	Association	Notes
	Create Output Work Products.	
	Create Output Work Products.	
	Create Output Work Products. Safety Relevant Work Products.	
	Verified Input. Create Output Work Products.	

Identify Safety relevant Failures/Anomalies

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

Identify safety relevant errors, failures, faults of the available product specification, documentation, realization. (depends on the progress of development)

This activity shall be done during entire product development. Each development team member shall communicate safety relevant failures if they are identified during any development activity (e.g. reviews, project meeting, execution of test cases, integration of product elements,...).

Relationships

Columns	Association	Notes
	Identify Safety relevant Failures/Anomalies.	
	Identify Safety relevant Failures/Anomalies.	
new identified safety anomalies	Identify Safety relevant Failures/Anomalies. Change Request.	

Verification of Input Work Product

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

This verification shall check the maturity of the input documents required by ISO 26262.

In the case that there are any findings that identify that a change within the input work products is needed a change request shall be created and communicated to the functional safety manager.

Relationships

Columns	Association	Notes
	Start Activity. Verification of Input Work Product.	

Columns	Association	Notes
	Verification of Input Work Product.	
	Verification of Input Work Product. Verified Input.	
prerequisites defined for this activity	Input. Verification of Input Work Product.	
safety relevant findings in input	Verification of Input Work Product. Change Request.	

Verification of Output Work Product

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

Quality gate:

The next activity shall only be started if the gate is passed.

In the other case a change request shall be addressed.

Relationships

Columns	Association	Notes
	Verification of Output Work Product.	
	Verification of Output Work Product.	
	Safety Relevant Work Products. Verification of Output Work Product.	
	Verification of Output Work Product. Evidences.	verification reports,...
safety relevant findings in work products	Verification of Output Work Product. Change Request.	
work products defined for this safety activity	Verification of Output Work Product. Verified Safety Relevant Work Products.	

Change Request

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

Change requests shall be used as input for the safety activity Impact Analysis.

Relationships

Columns	Association	Notes
new identified safety anomalies	Identify Safety relevant Failures/Anomalies. Change Request.	
safety relevant findings in input	Verification of Input Work Product. Change Request.	
safety relevant findings in work products	Verification of Output Work Product. Change Request.	

Input

Detail: Created on 25.09.2013. Last modified on 12.11.2014.

Notes:

The input documents are different for each safety activity.

They are described in the detailed description of each safety activity.

Relationships

Columns	Association	Notes
prerequisites defined for this activity	Input. Verification of Input Work Product.	

Safety Relvant Work Products

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

Work product which is required in the ISO 26262 for this safety activity without any verification.

This work products are used as input for the verification of output work product.

Relationships

Columns	Association	Notes
	Create Output Work Products. Safety Relvant Work Products.	
	Safety Relvant Work Products. Verification of Output Work Product.	

Verified Input

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

Verified work products defined for this safety activity.

Relationships

Columns	Association	Notes
	Verified Input. Create Output Work Products.	
	Verification of Input Work Product. Verified Input.	

Verified Safety Relevant Work Products

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

The safety relevant work products are different for each safety activity.

Relationships

Columns	Association	Notes
work products defined for this safety activity	Verification of Output Work Product. Verified Safety Relevant Work Products.	

Change Management

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
safety relvant findings identified	Change Management.	

Change Management

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
failed	Change Management.	

Change Management

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Relationships

Columns	Association	Notes
new safety anomalies identified	Change Management.	

End of Activity

Detail: Created on 26.09.2013. Last modified on 04.11.2013.

Notes:

Relationships

Columns	Association	Notes
no findings	End of Activity.	

Start Activity

Detail: Created on 25.09.2013. Last modified on 04.11.2013.

Notes:

Relationships

Columns	Association	Notes
	Start Activity. Verification of Input Work Product.	

Product Specific

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

Product Development

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes:

Product Development according to reference process model (e.g. SPICE, CMMI,...)

Relationships

Columns	Association	Notes
	Set of Product Specific Safety Activities. Product Development.	
	Product Development. Set of Product Specific Safety Activities.	

Set of Product Specific Safety Activities

Detail:

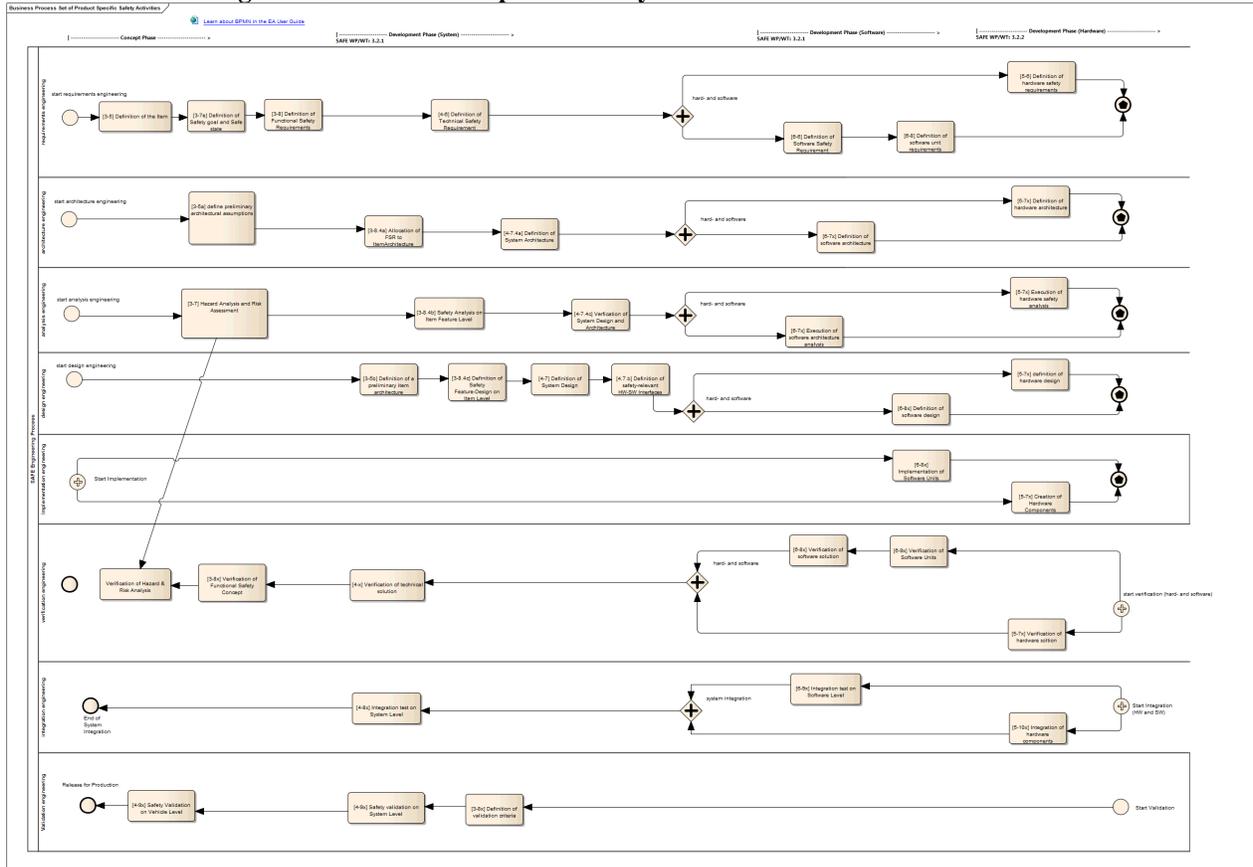
Created on 26.09.2013. Last modified on 13.11.2014.

Notes:

Relationships

Columns	Association	Notes
	Set of Product Specific Safety Activities. Product Development.	
	Product Development. Set of Product Specific Safety Activities.	

Business Process diagram: Set of Product Specific Safety Activities



Project Specific

Detail: Created on 25.09.2013. Last modified on 13.11.2014.

Notes:

ProjectManagement

Detail: Created on 26.09.2013. Last modified on 26.09.2013.

Notes: