Taming the Graph
Profiles over Linked Data

Structured methods for developing profiles

Me4MAP: A method for the development of metadata application profiles

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Framework of development

PhD Thesis @ Universidade do Minho | uminho.pt (Portugal)

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What?

Method (de Almeida & Pinto, 1995):

- a selection of techniques
- the control of their usage
- the integration of the obtained partial results

Why?

- to give MAP developers a common ground on which to work
- structure
- development quality

Perspective and intentions

- a software engineer perspective;
- no universal solution;
- intention: to establish a starting point for the study and design of methods for the development of MAPs.

Me4MAP

Me4MAP defines the path to follow ...

- which activities to develop
- when these activities may take place
- how they are interconnected
- which artifacts they produce

... and the ideal work-team

- Project Manager
- System Analyst
- Semantic Developer
- Technical Editor
- Application Domain Expert
- Final User

On big MAP projects

- Core team: persons with technical skills, i.e. System Analyst and Semantic Developer
- Extended team: all

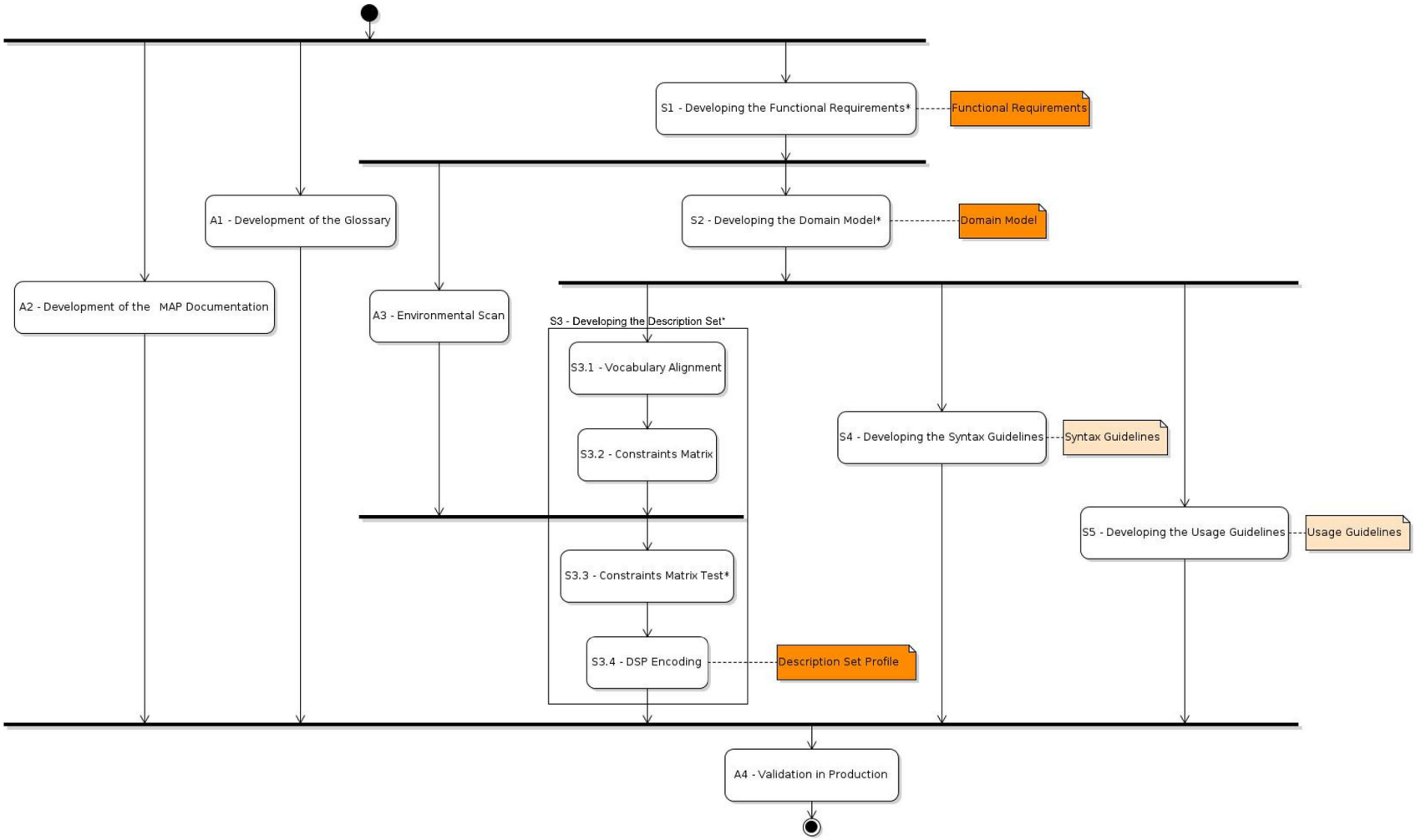
Singapore Framework

Me4MAP has the Singapore Framework as a starting point

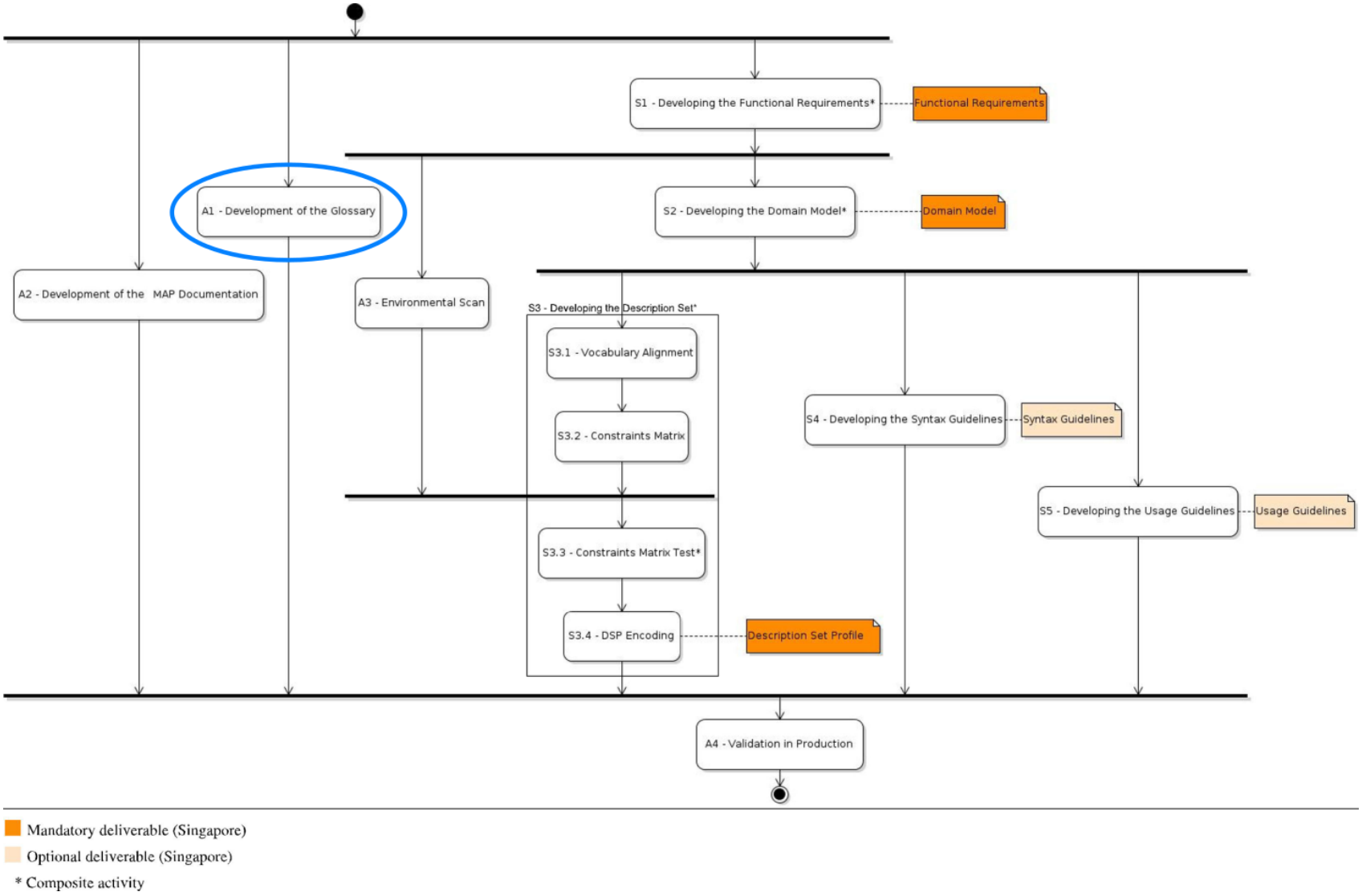
Singapore Framework

- Functional Requirements (S1)
- Domain Model (S2)
- Description Set Profile (S3)
- Syntax Guidelines (S4) *(optional)*
- Usage Guidelines (S5) *(optional)*

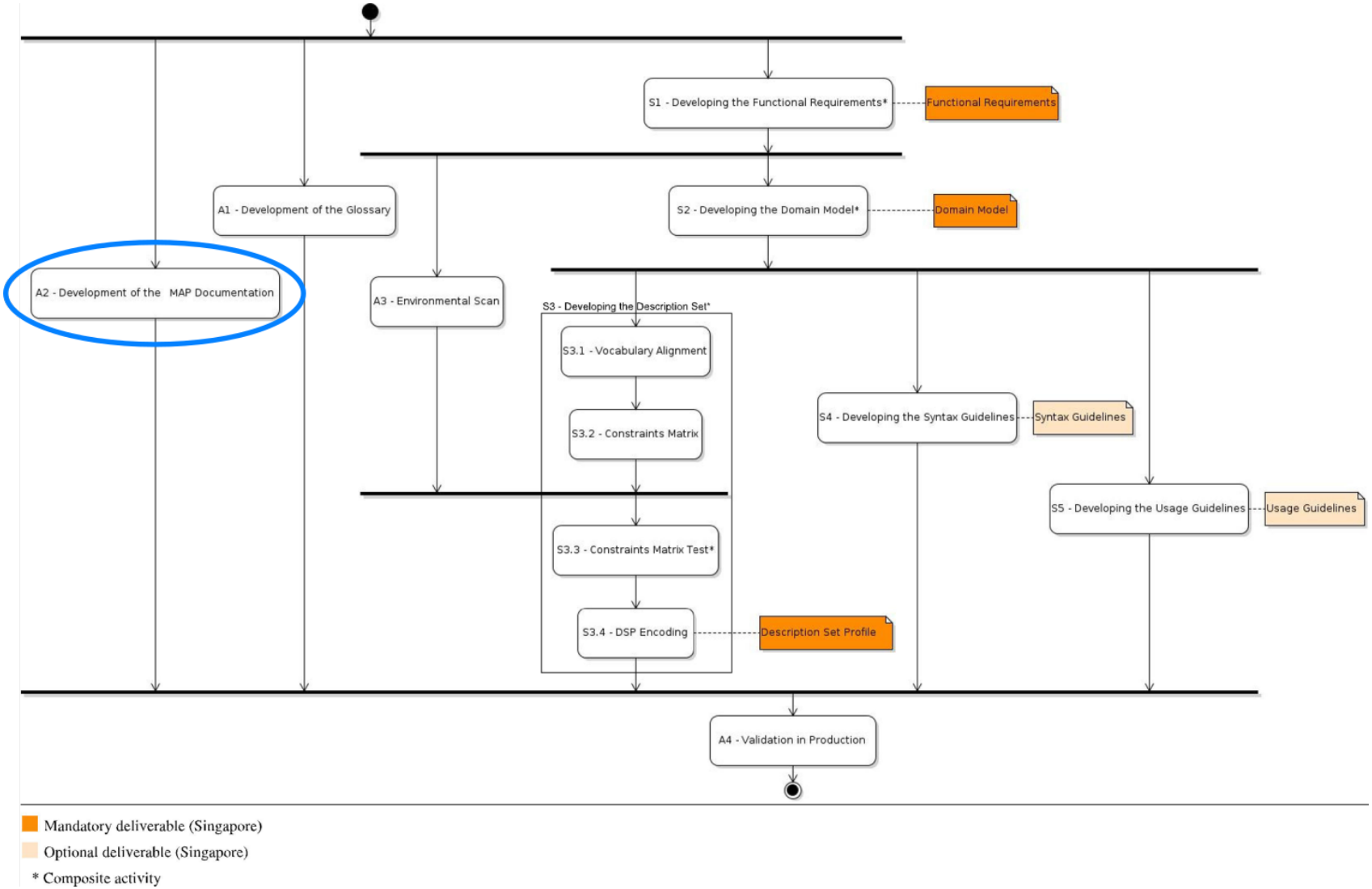
All activities



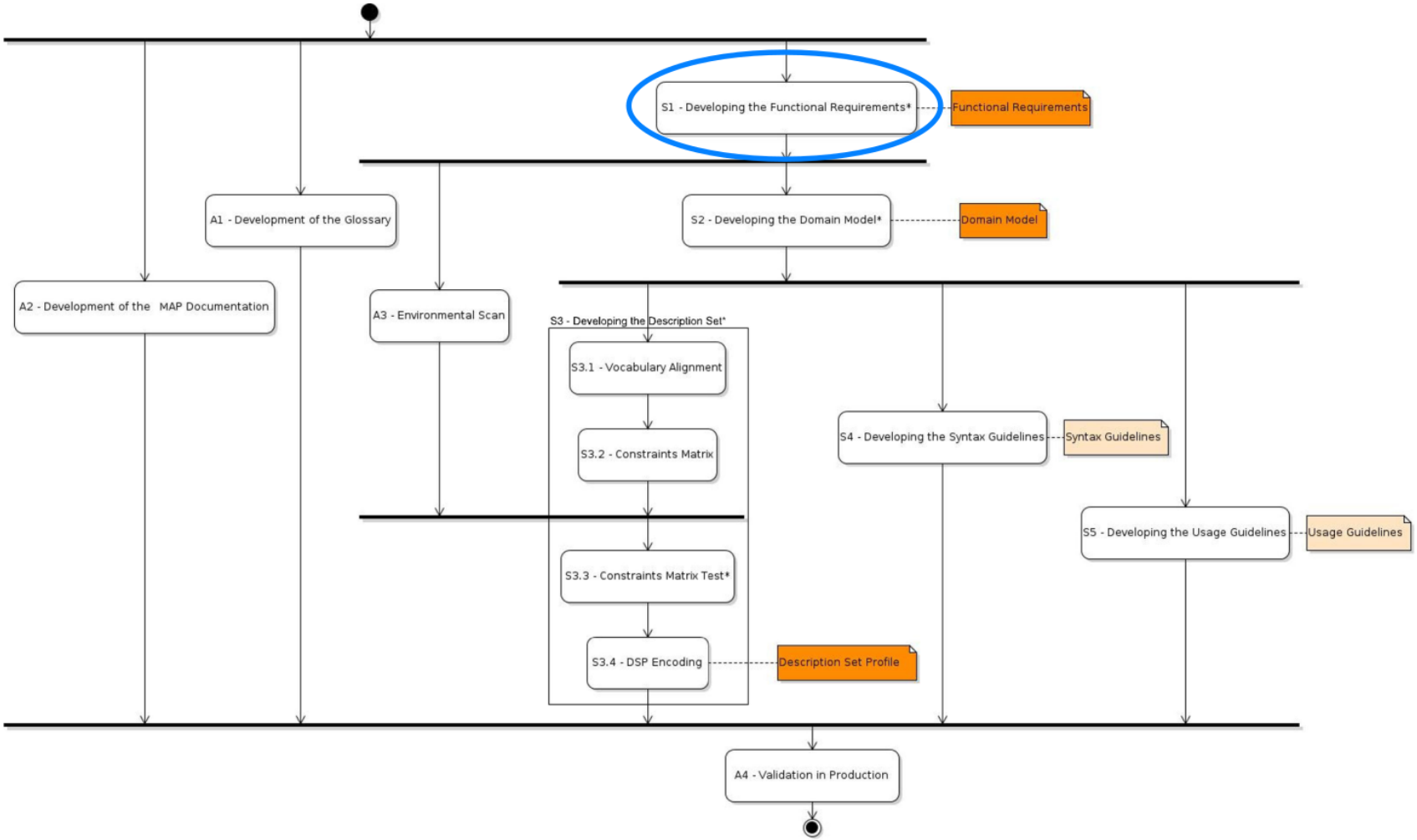
A1: Development of the Glossary



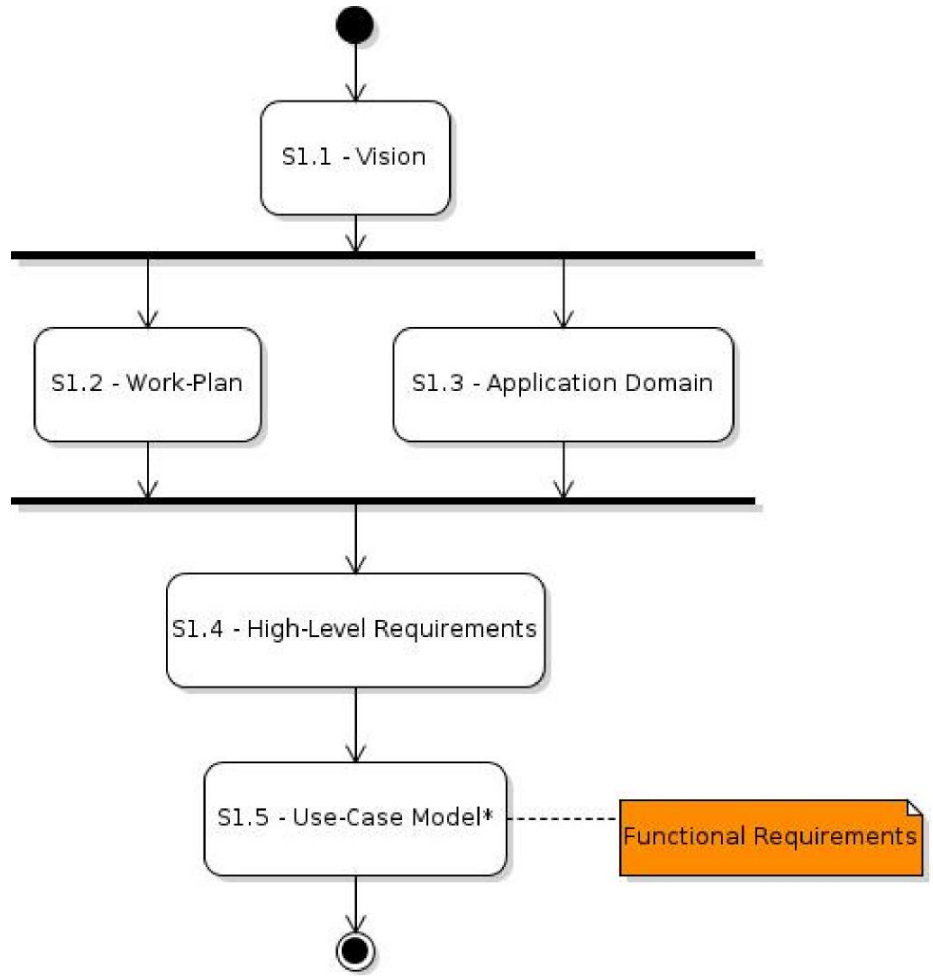
A2: Development of the MAP Documentation



Developing the Functional Requirements



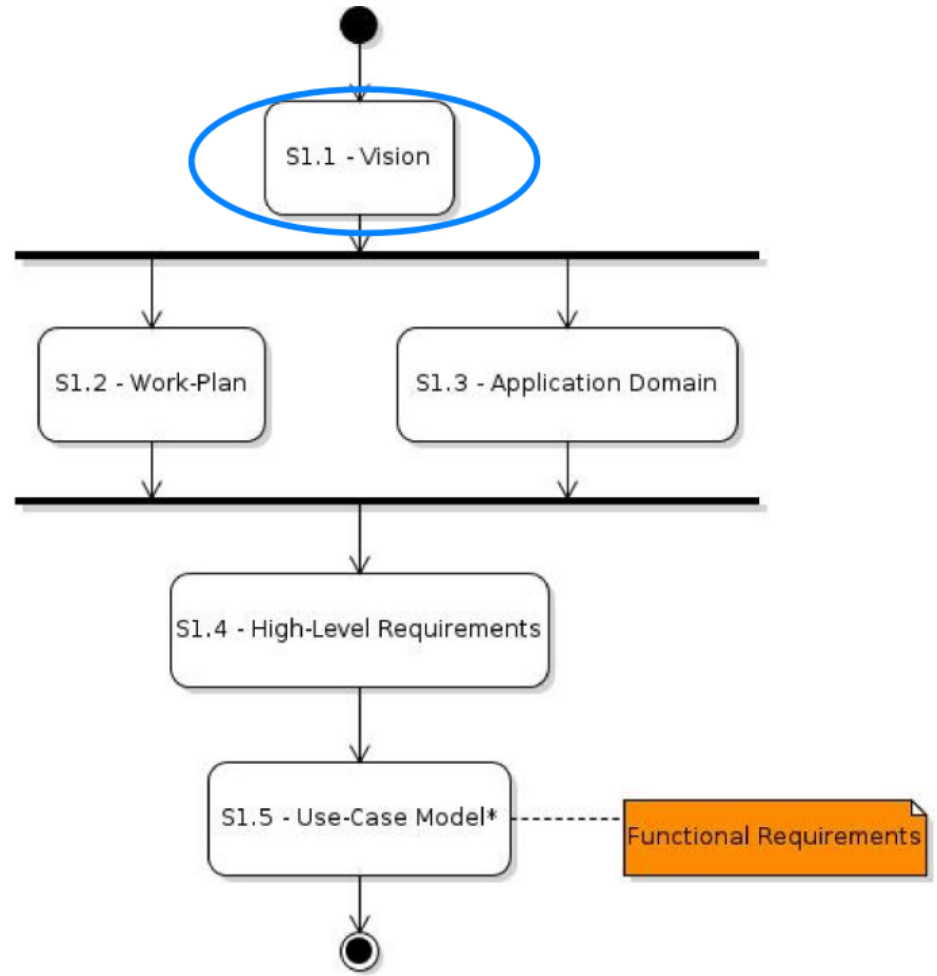
Developing the Functional Requirements



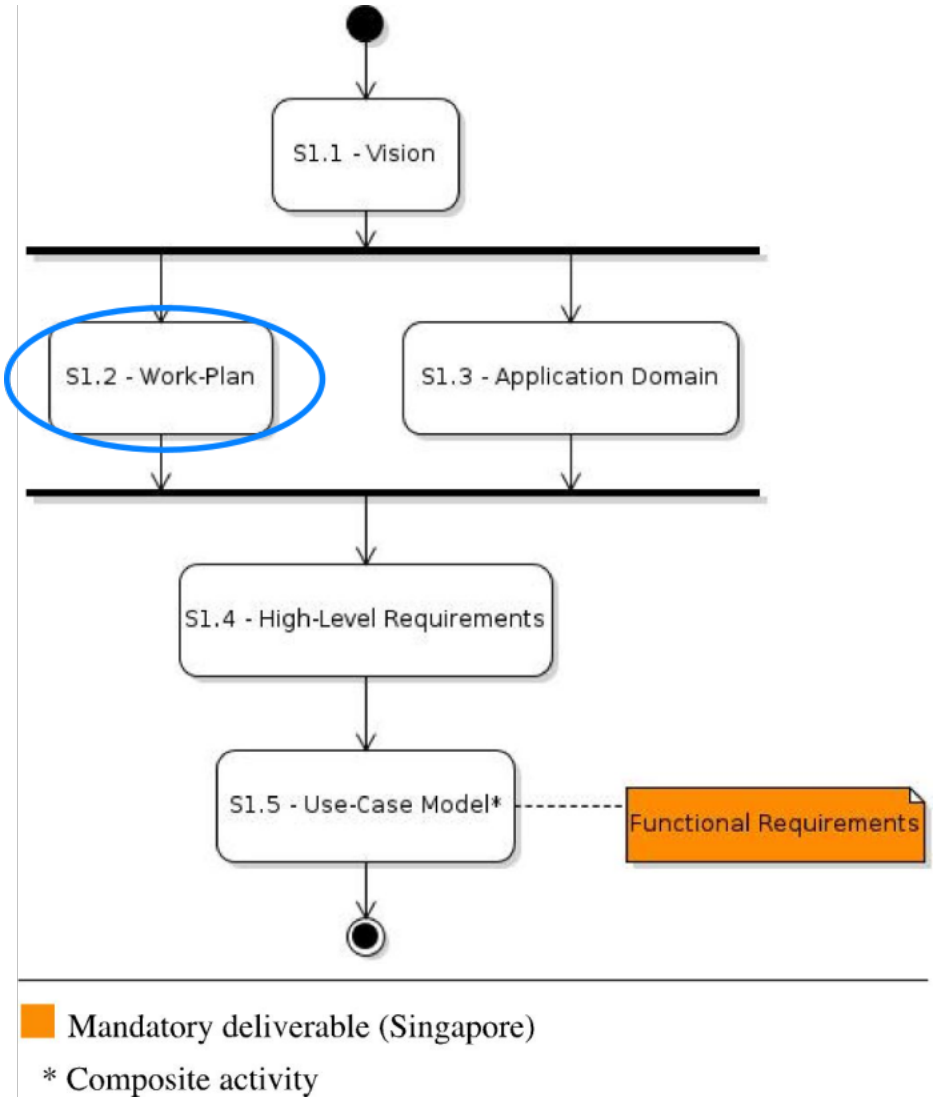
Mandatory deliverable (Singapore)

* Composite activity

S1 - Developing the Functional Requirements

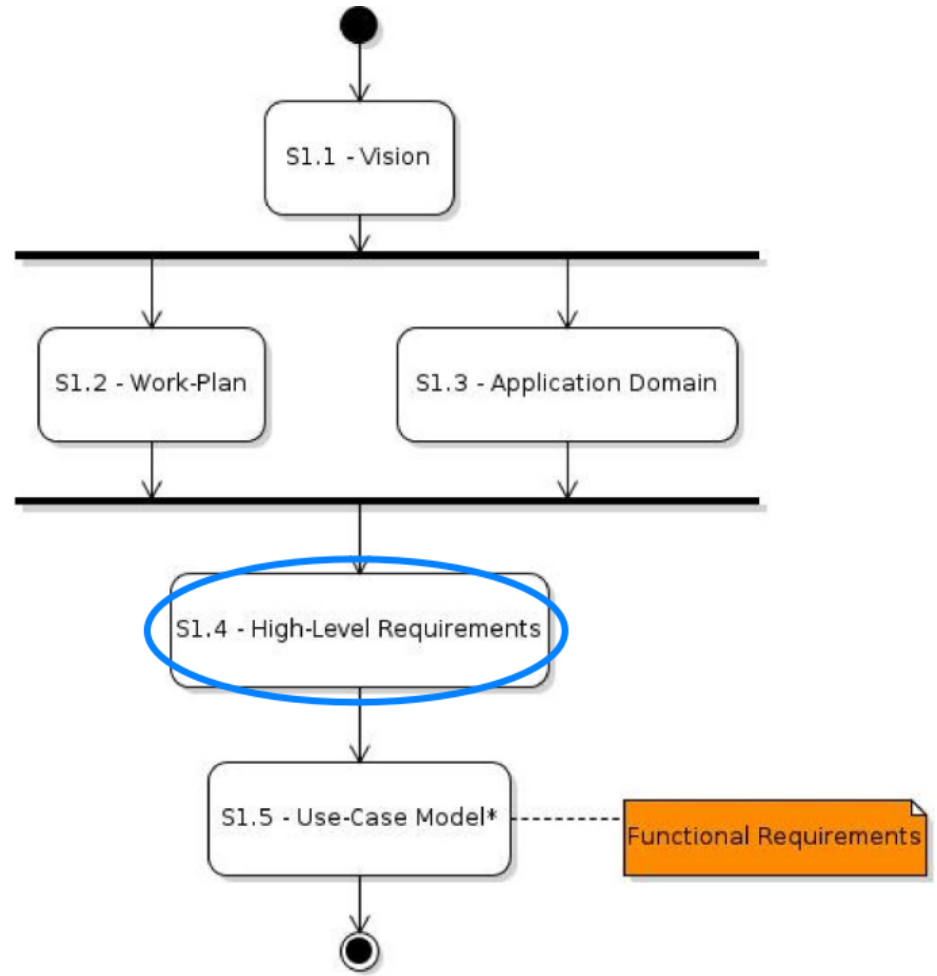


Developing the Functional Requirements



Developing the Functional Requirements

Developing the Functional Requirements



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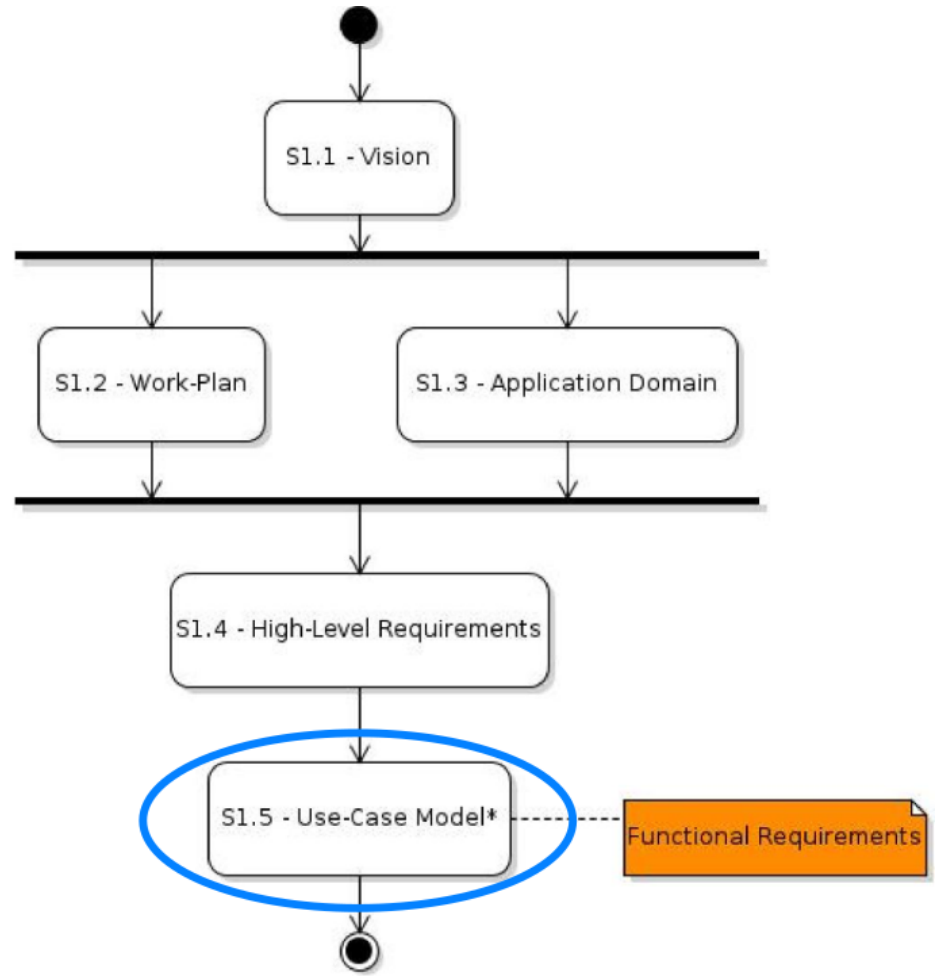
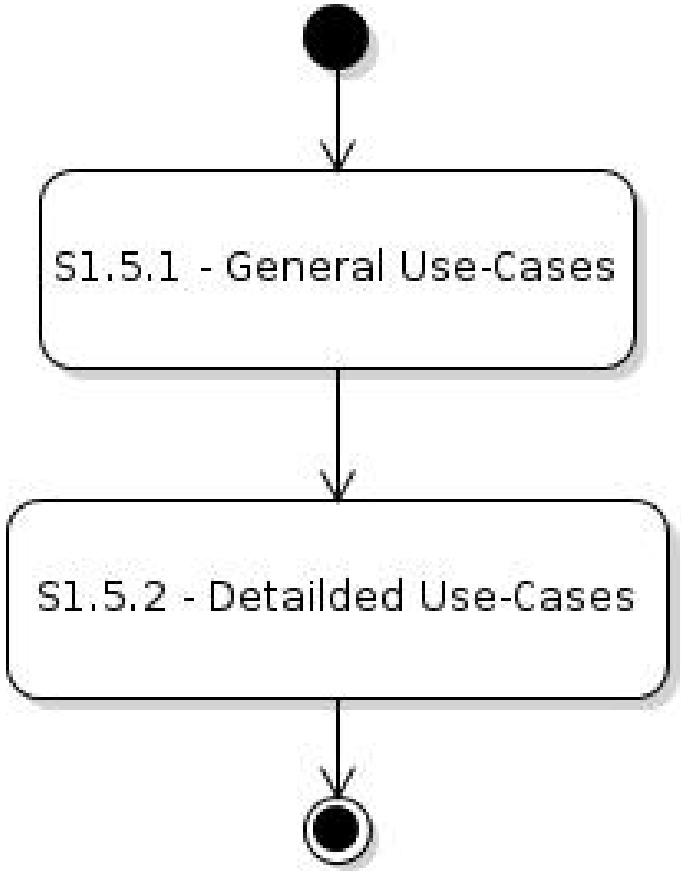


Mandatory deliverable (Singapore)

* Composite activity

S1.5: Use Case Model



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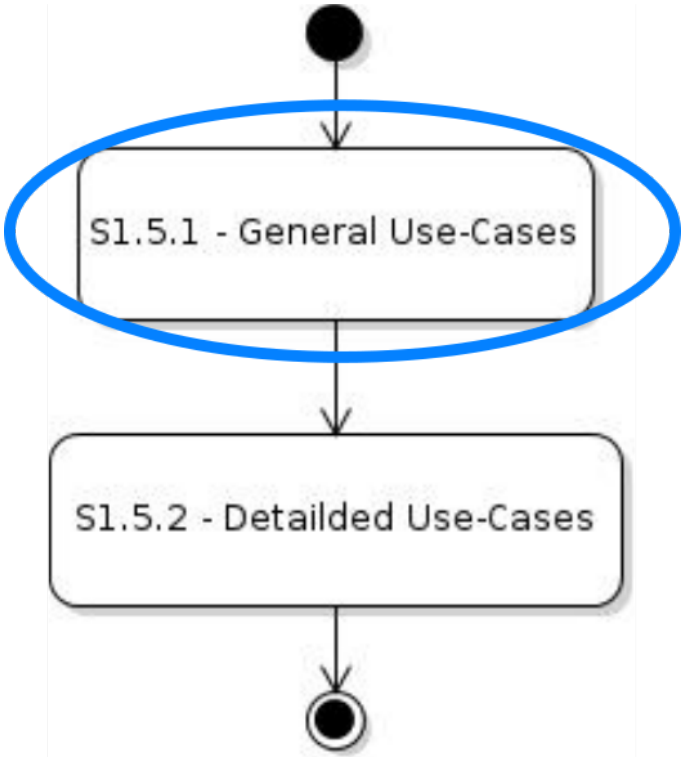

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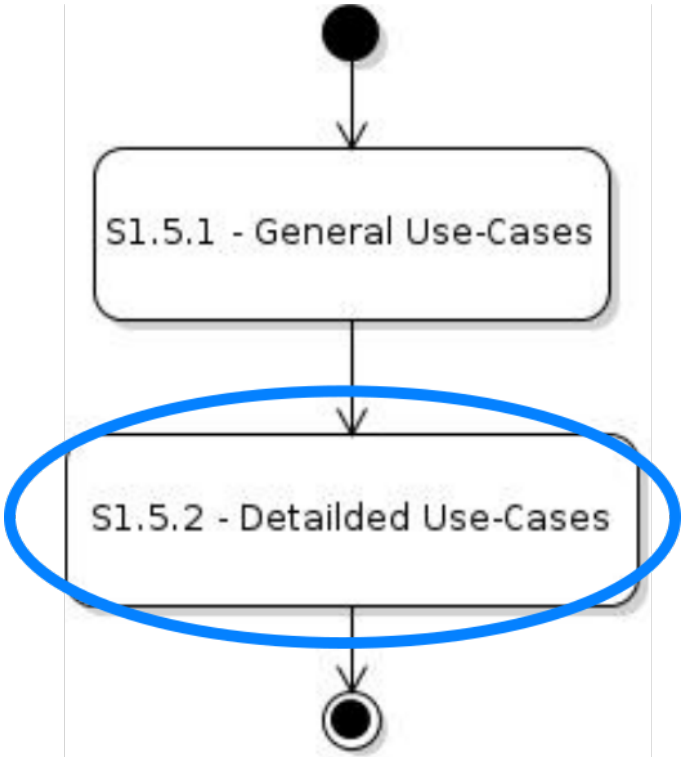
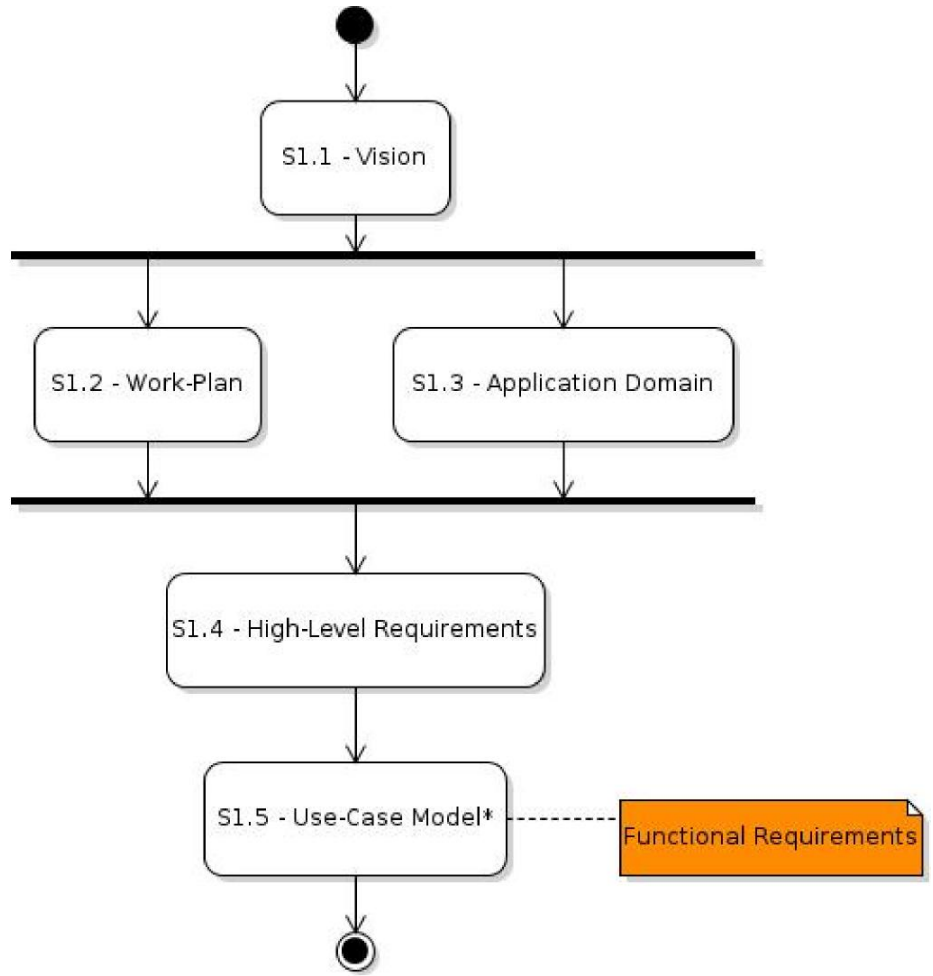


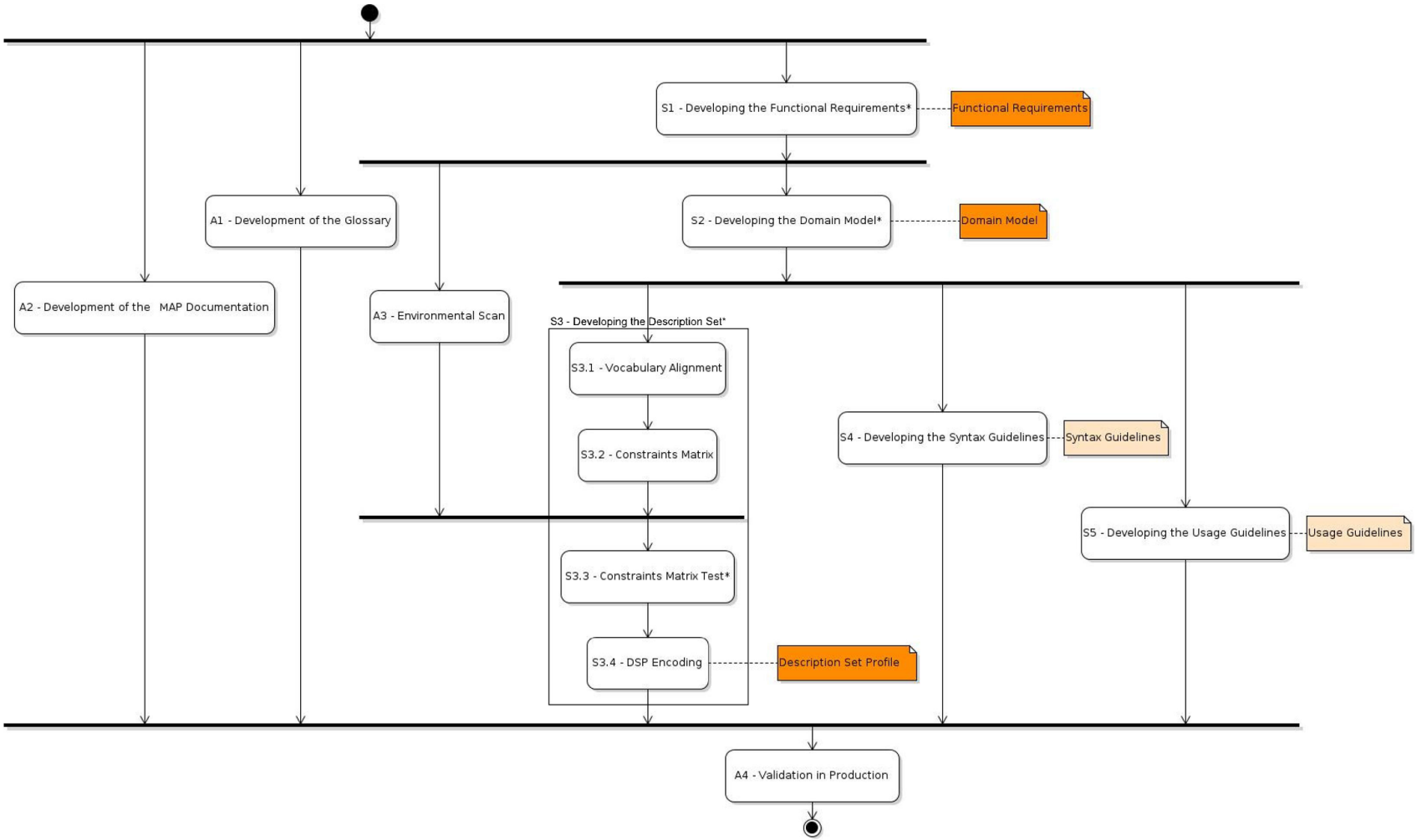
Developing the Functional Requirements



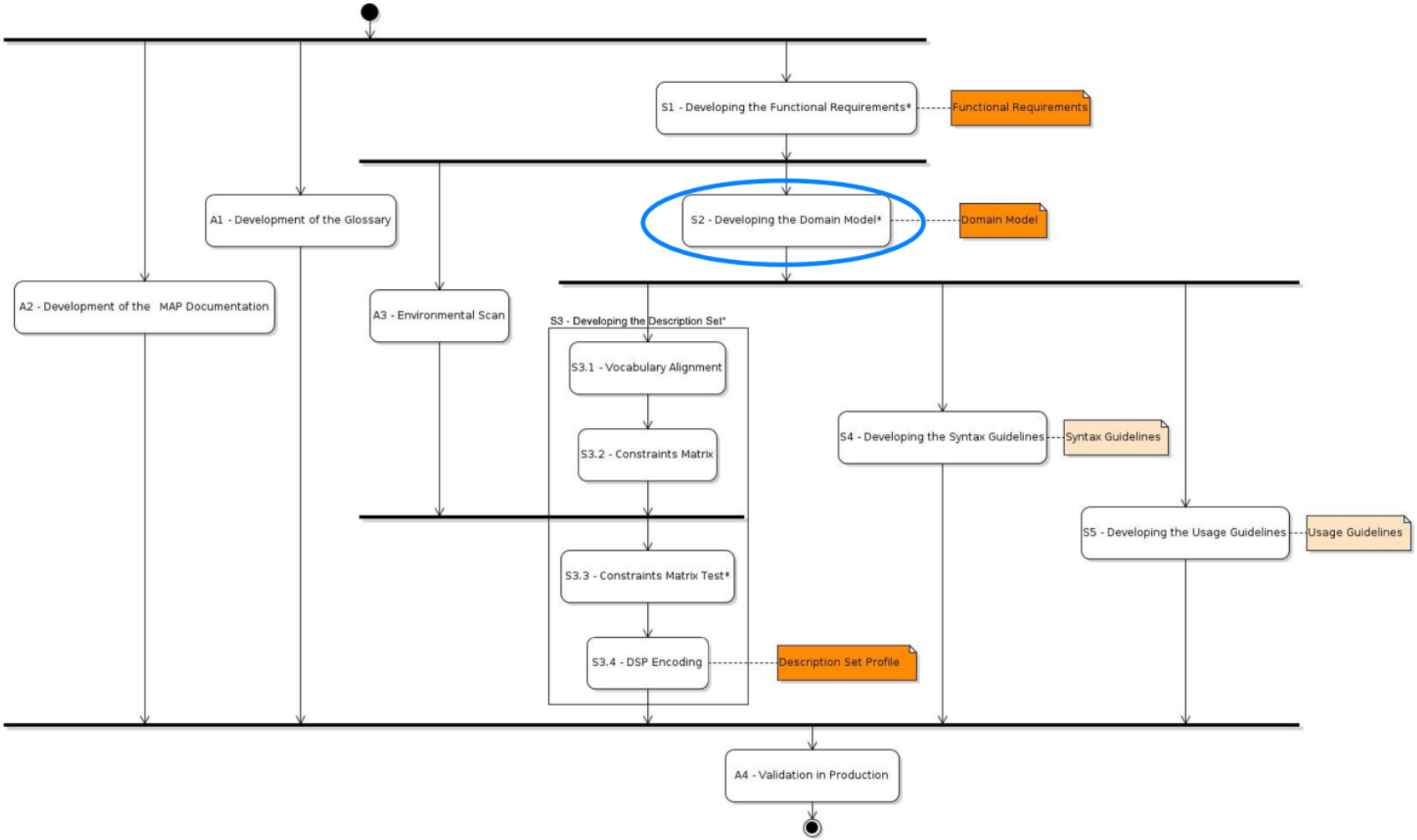
Mandatory deliverable (Singapore)

* Composite activity

All activities



Developing the Domain Model



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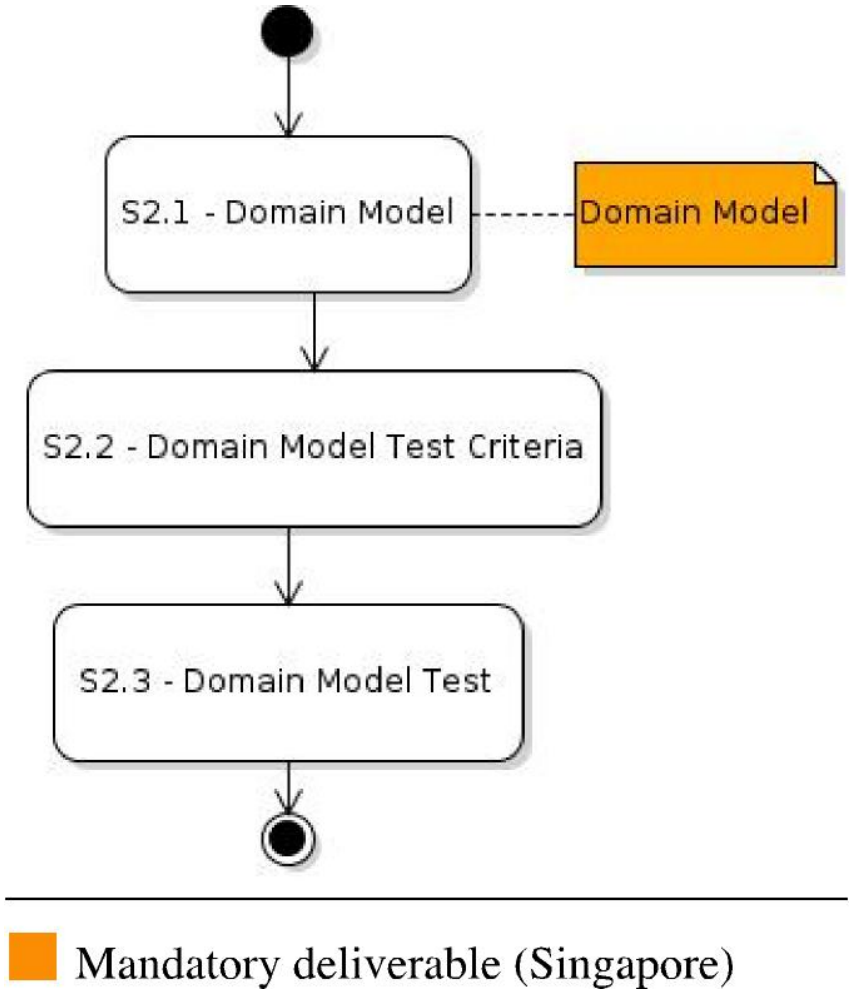

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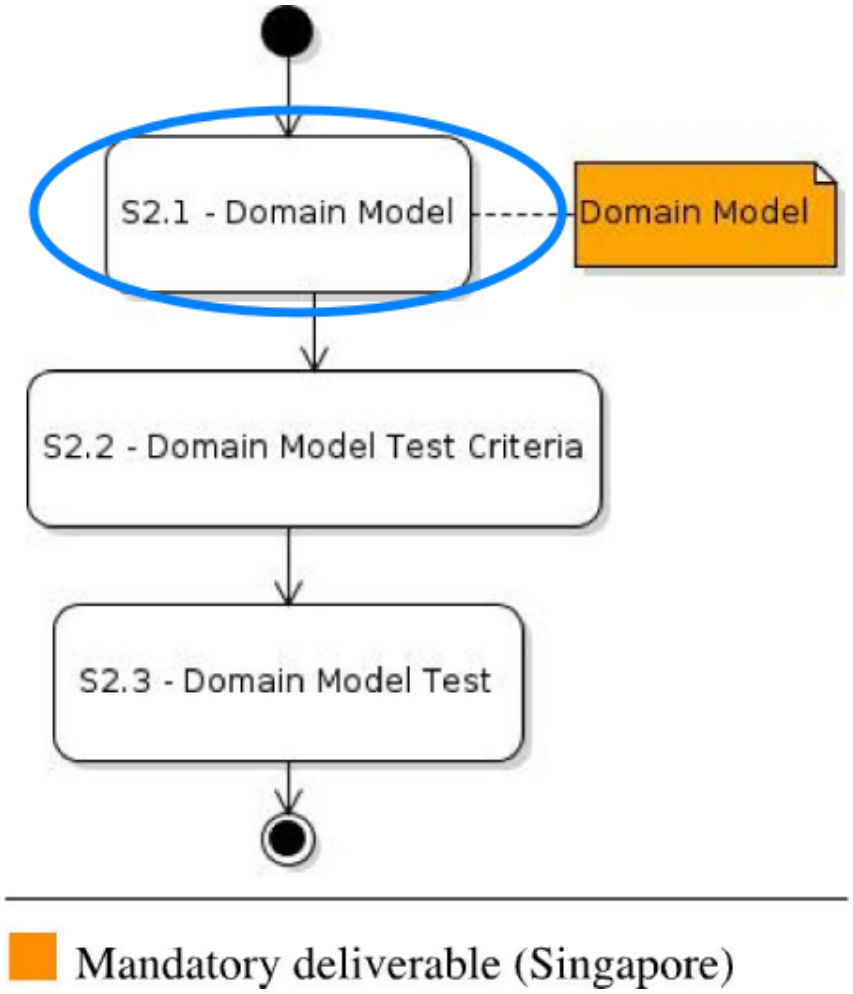

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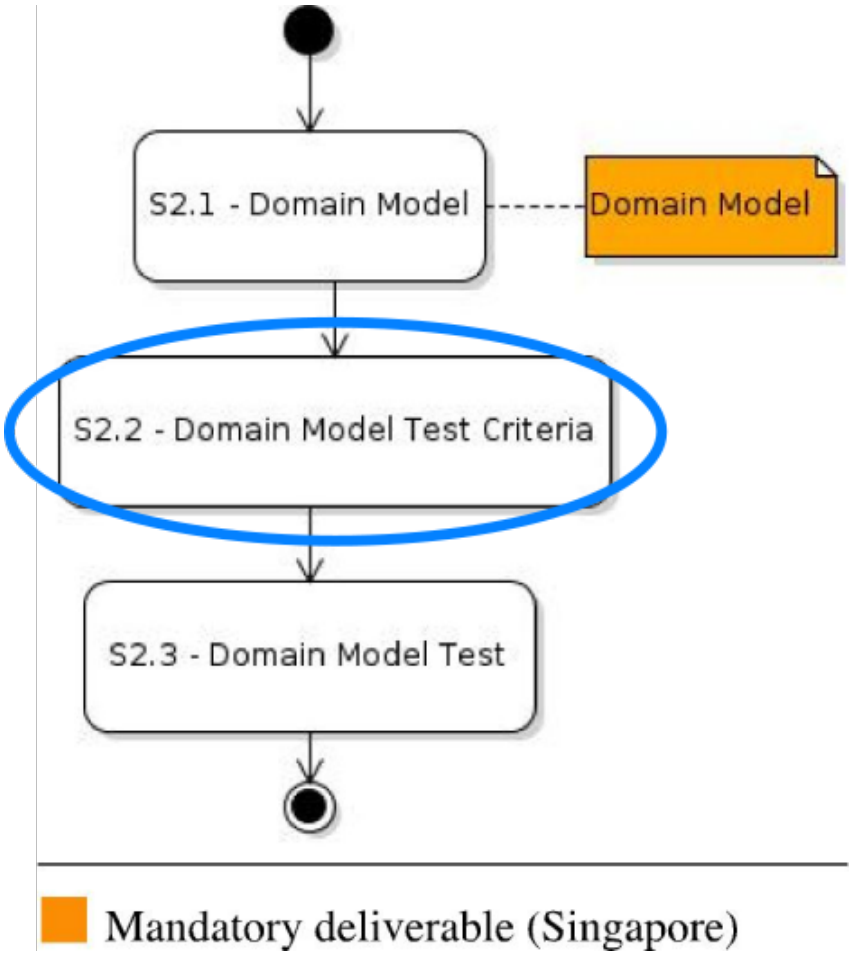

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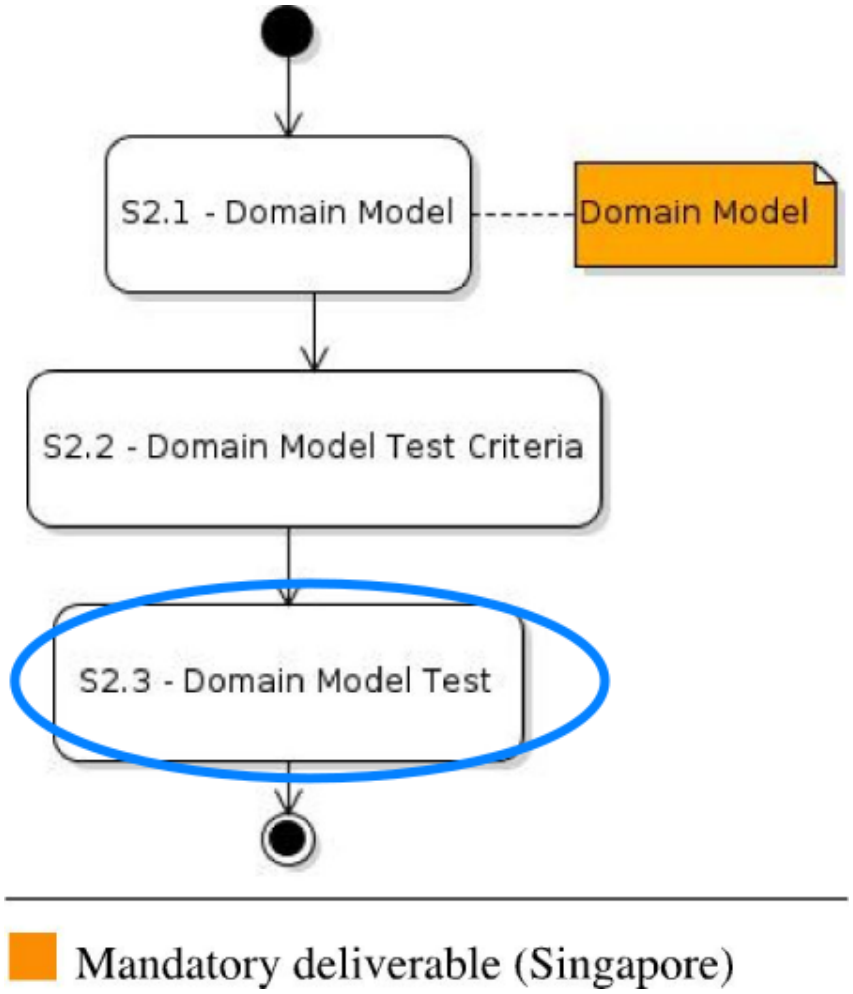
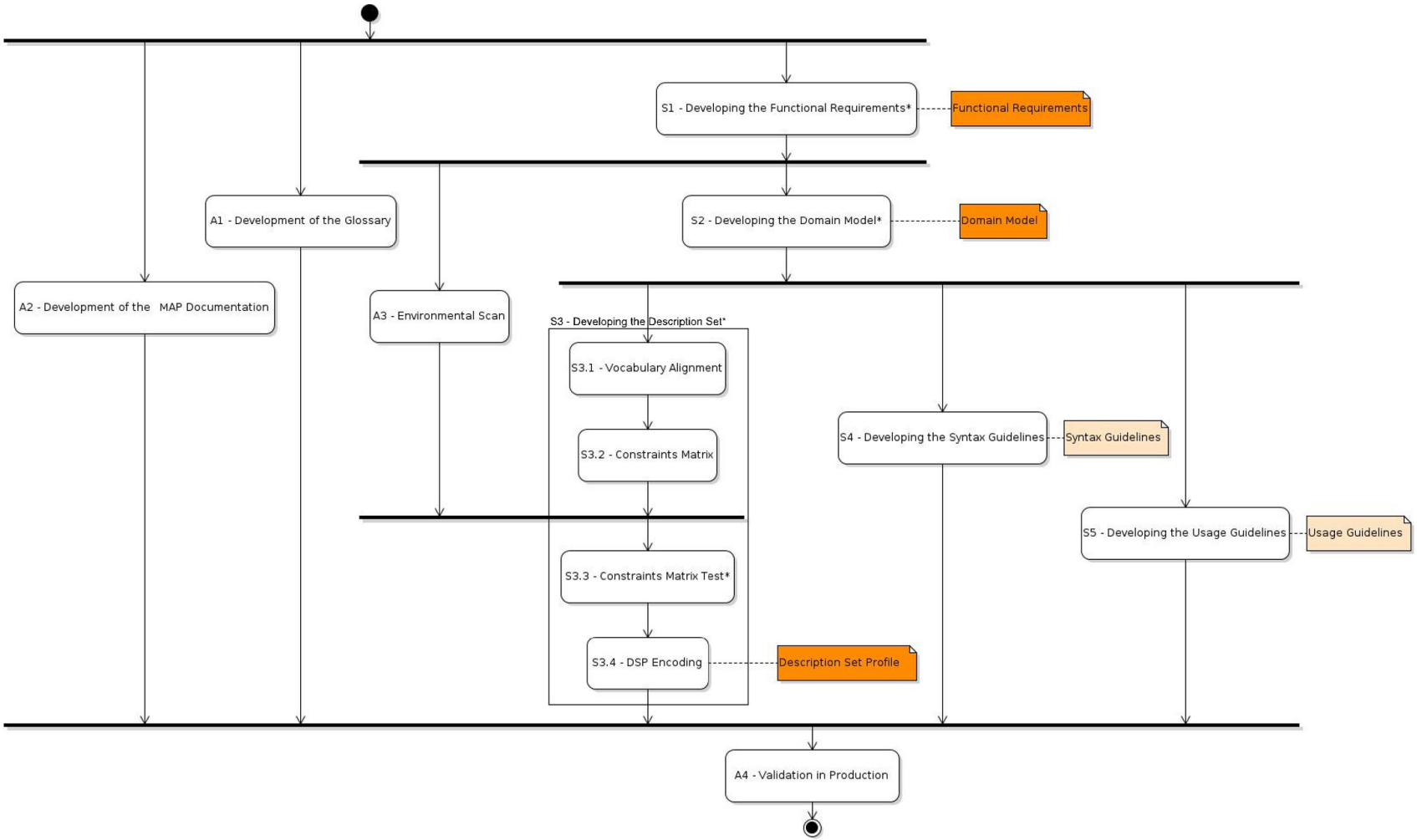
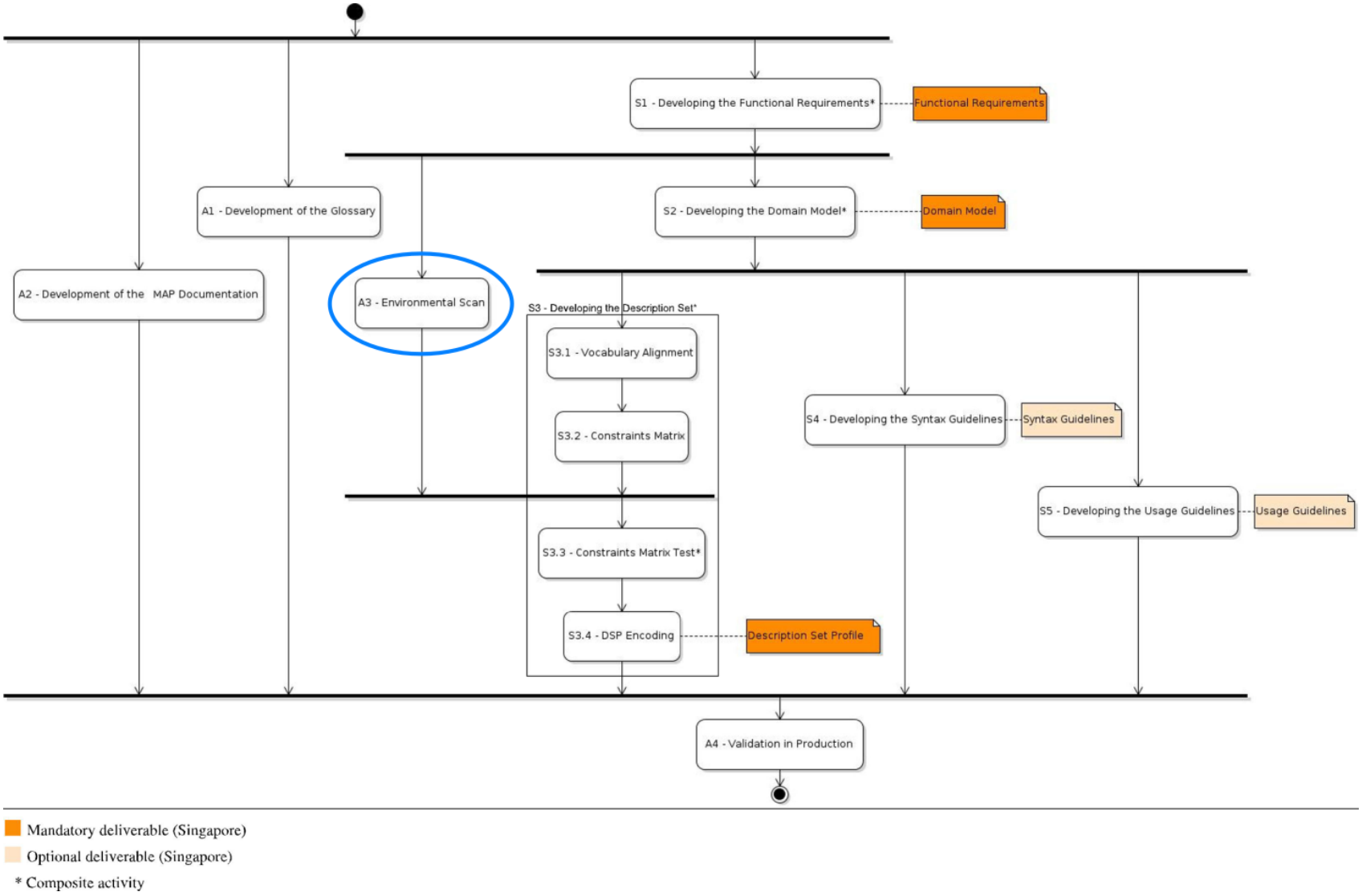


All activities

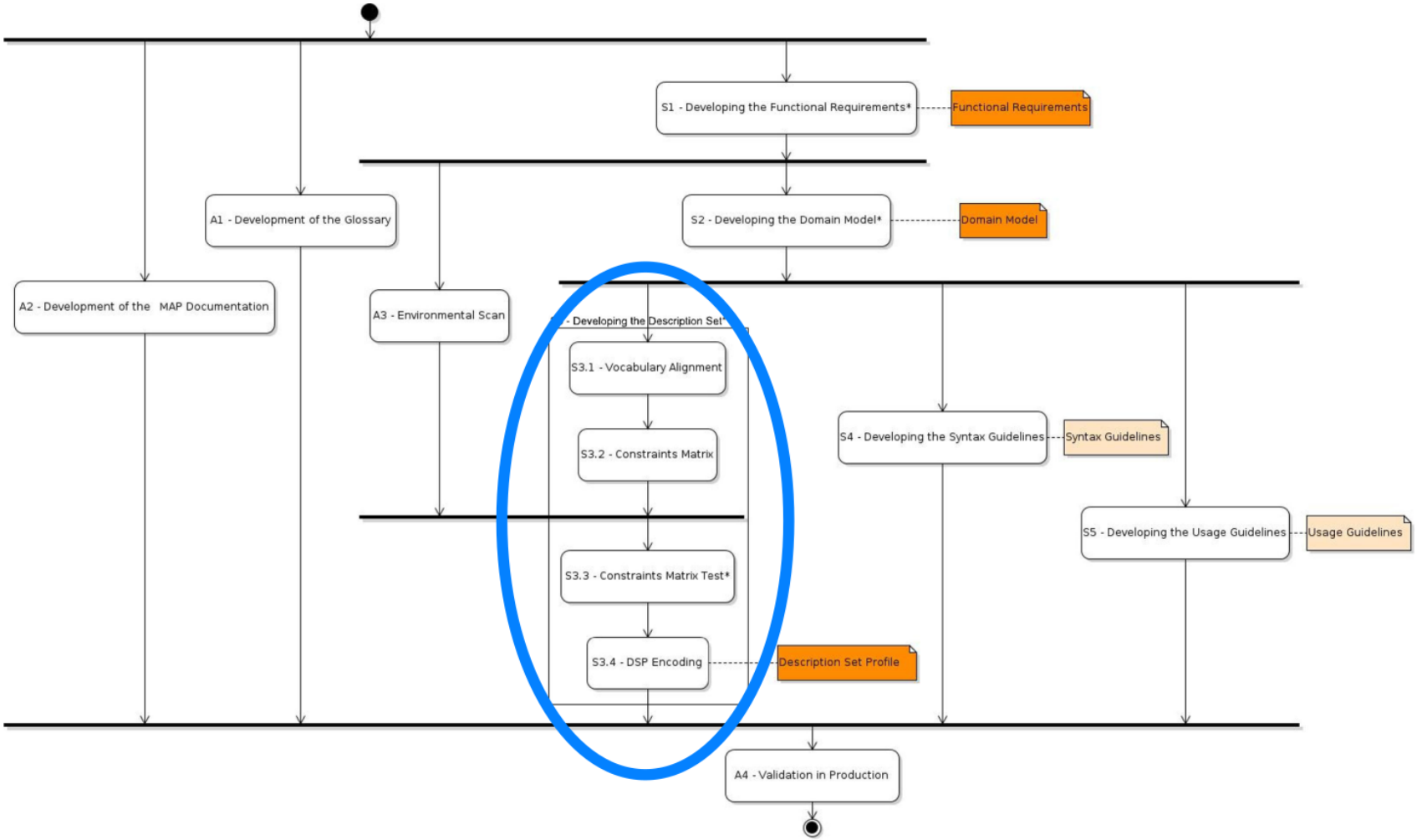


Environmental Scan



All activities

Developing the Description Set



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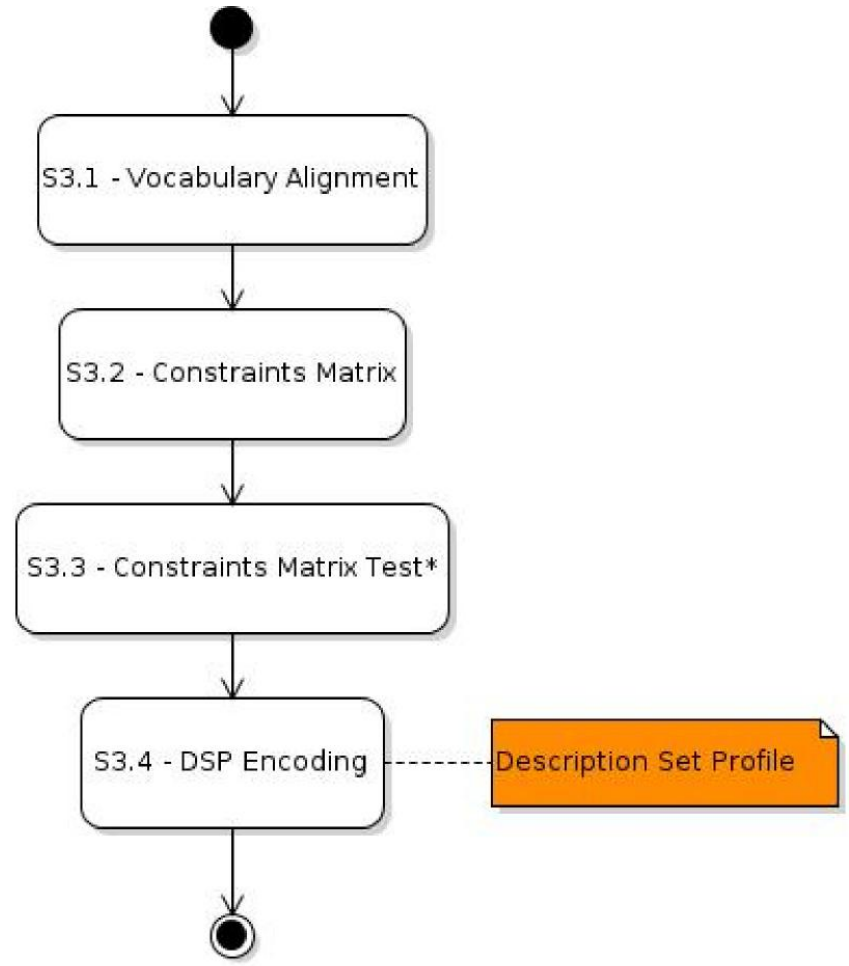

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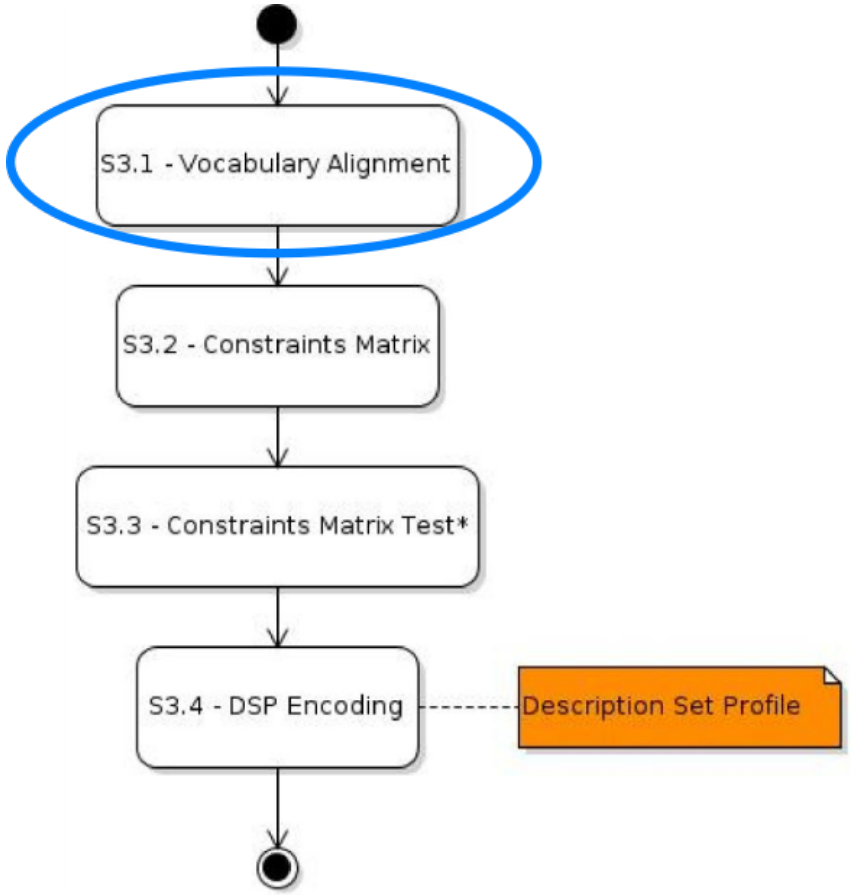
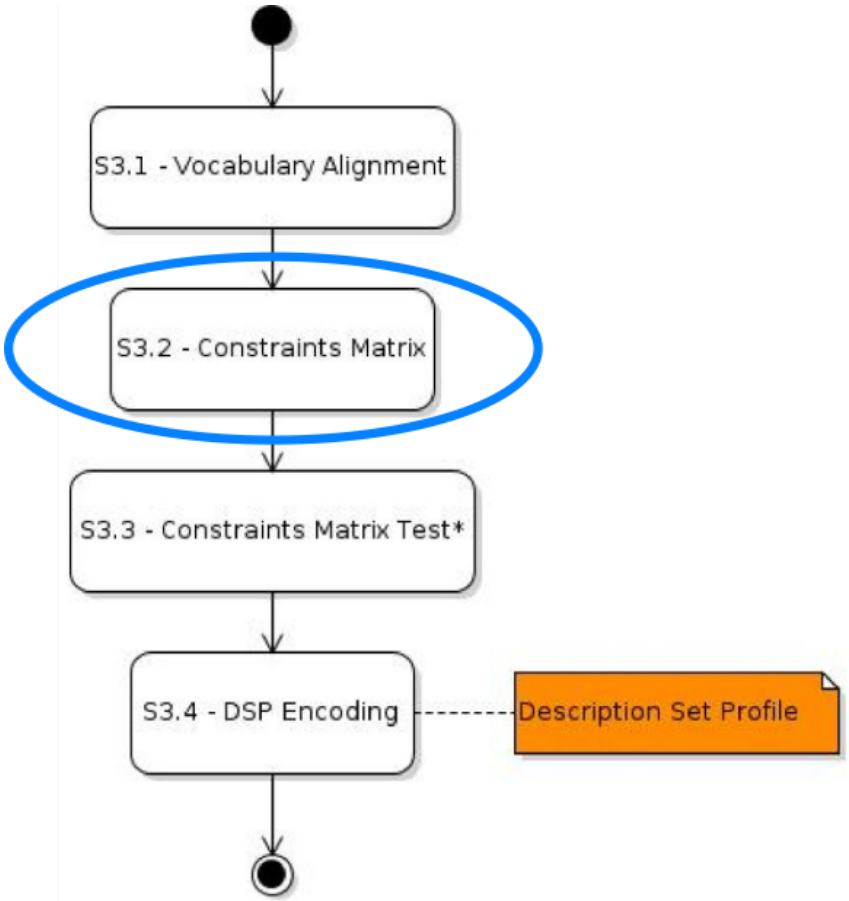


Excerpt of a Vocabulary Alignment

Entity	DM Attribute	Metadata Schema	Metadata Schema Property Name
Initiative	Name	dcterms	title
		Good relations	name
	Description	dcterms	description
		Good Relations	description
	Email address	Vcard	hasEmail
		Foaf	mbox
	URL	Foaf	Homepage
		Vcard	hasURL
Network	Name	dcterms	title
		Good relations	name
	isPartOf	dcterms	isPartOf
Product-or-service	Category	Good relations	category
		VCard	category
	Unit	Good relations	hasUnitOfMeasurement

Developing the Description Set



Constraints Matrix Template

Constraints Matrix: *name of the Application Profile*

Identification of Namespaces used

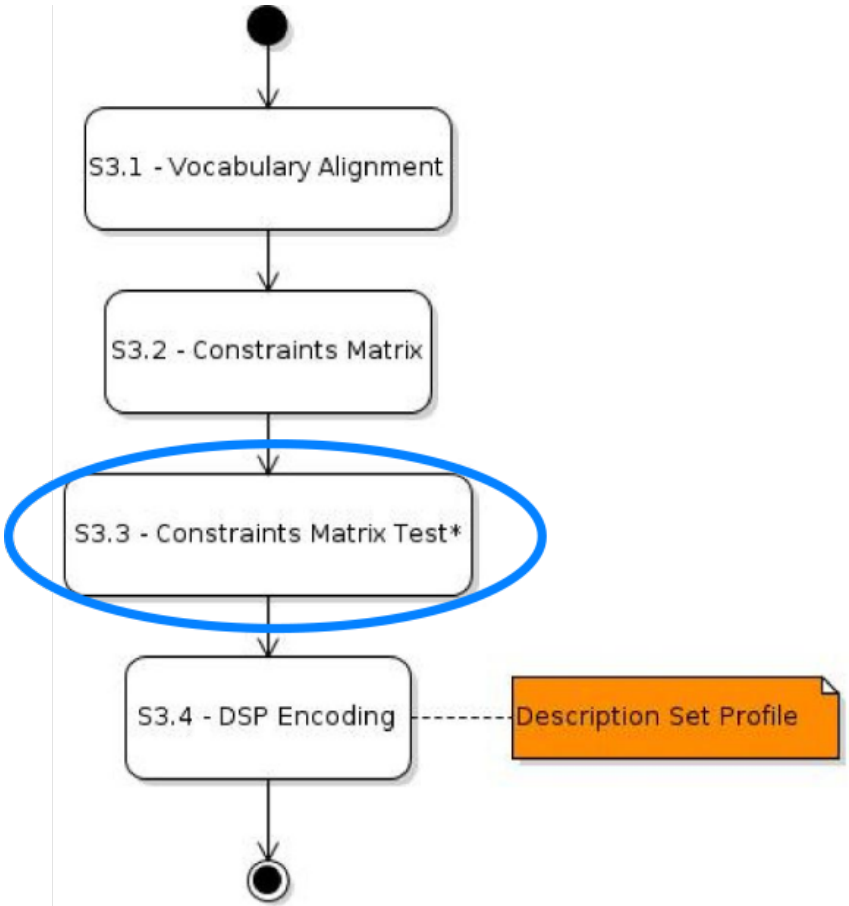
Title	Full Namespace IRI	Prefix
as many rows as needed....		

Definition of Description Template ***(as many Description Sets as needed)***

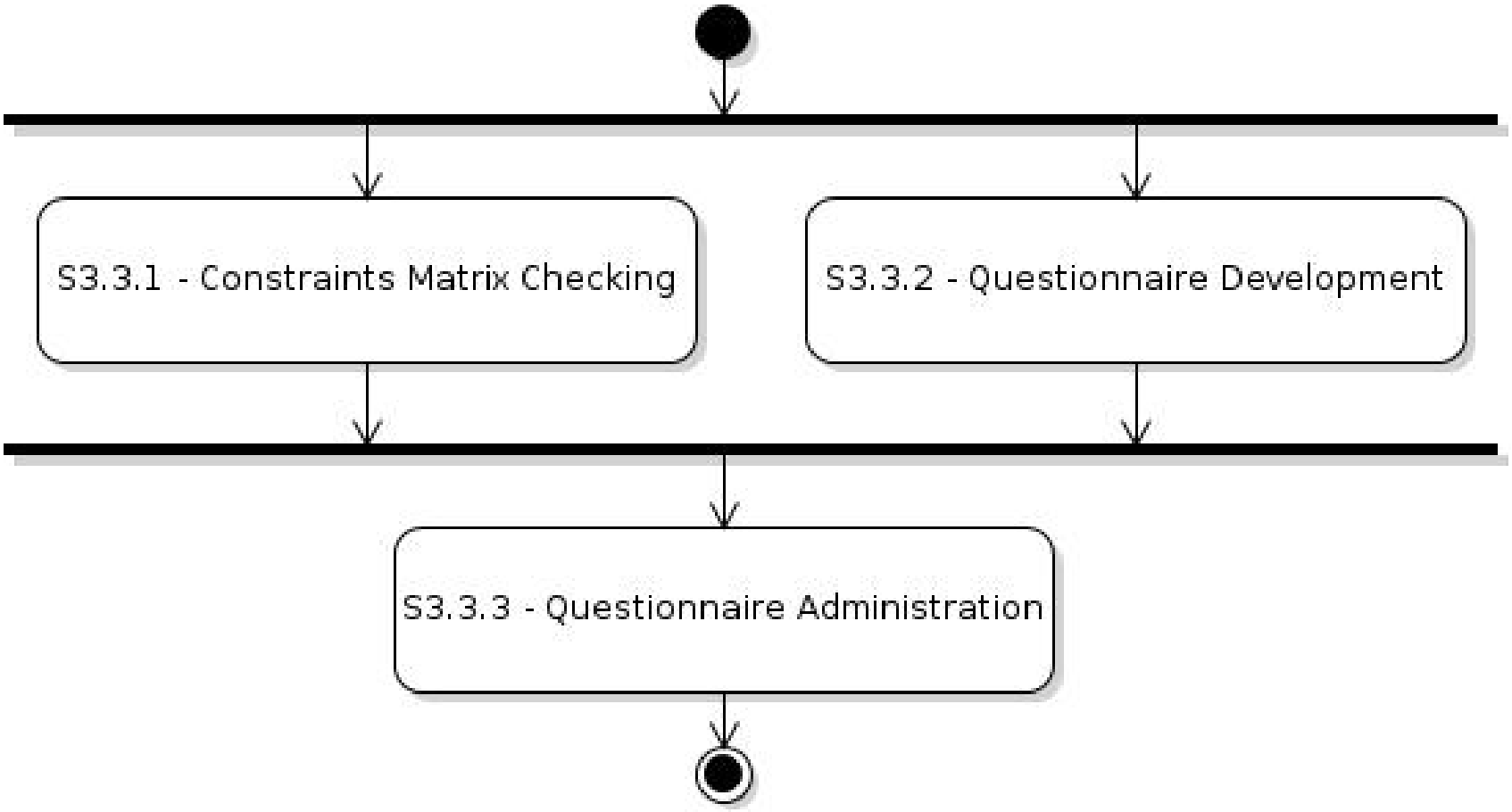
Description Template:	*name of the class*	**Term:**	*name of term*		**Usage:**	*description of the class*					
Label	**Property**	**Range**	**Value String**	**SES IRI**	**Value IRI**	**VES IRI**	**Related description**	**Min**	**Max**	**Type**	**Usage**
as many rows as needed....											

Description Template:	*name of the class*	**Term:**	*name of term*		**Usage:**	*description of the class*					
Label	**Property**	**Range**	**Value String**	**SES IRI**	**Value IRI**	**VES IRI**	**Related description**	**Min**	**Max**	**Type**	**Usage**
as many rows as needed....											

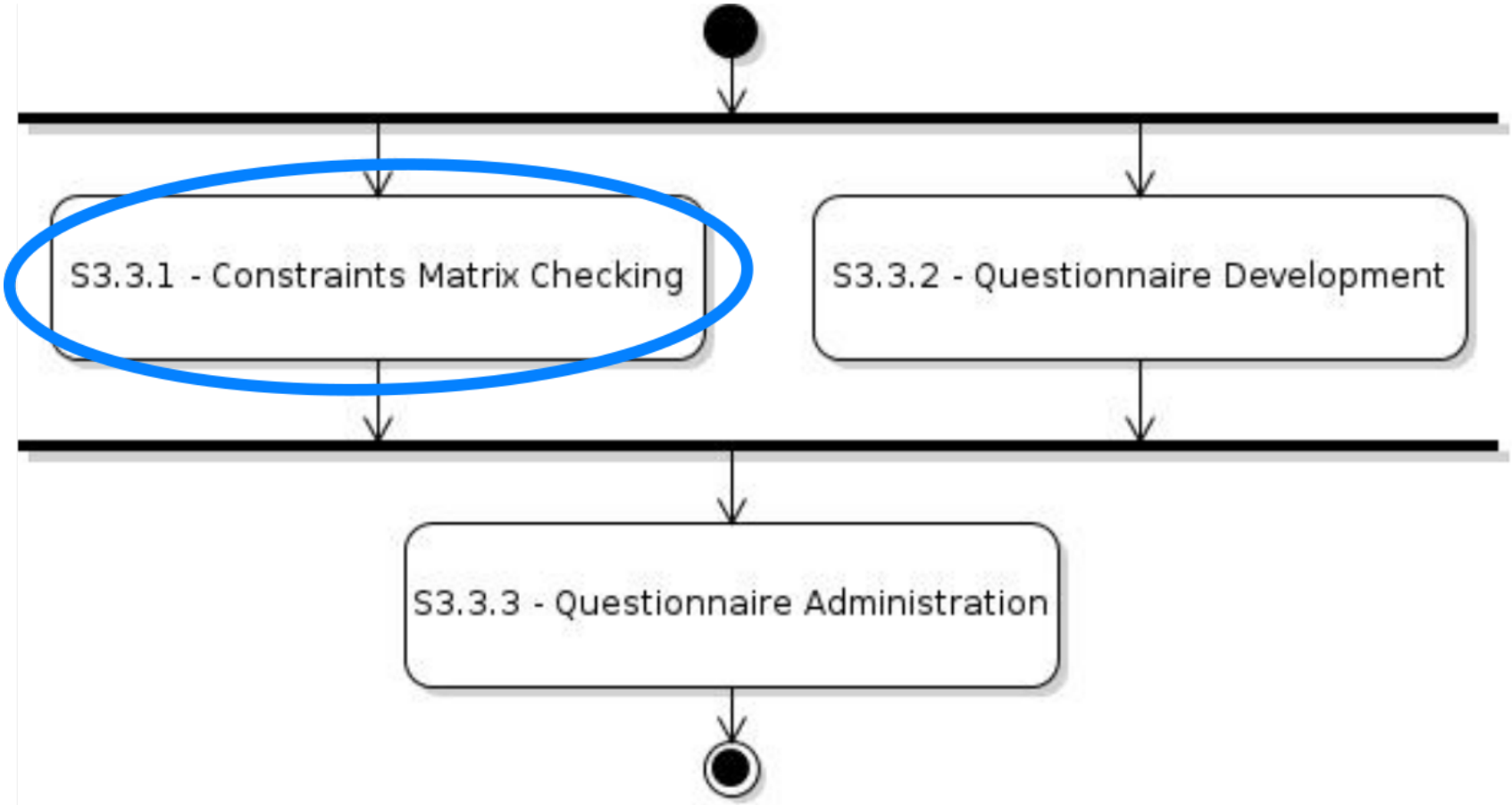
Developing the Description Set



S3.3: Constraints Matrix Test



S3.3: Constraints Matrix Test



Constraints Matrix Checking Template

Resource A

Label	Value
Instance of Class	*Class X*
Property A1	
Property A2	
as many rows as needed	

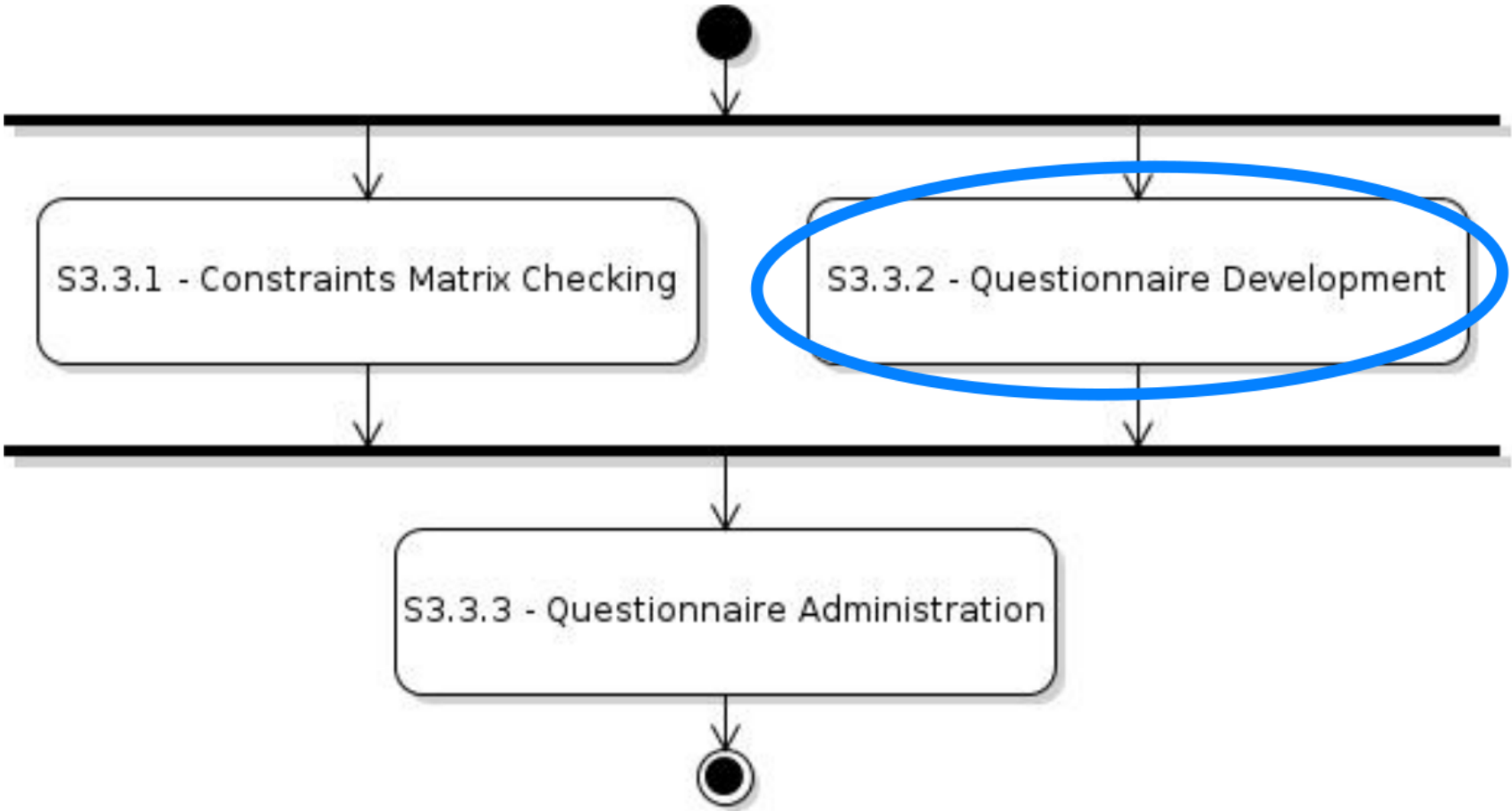
Resource B

Label	Value
Instance of Class	*Class Y*
Property B1	
Property B2	
as many rows as needed	

Resource n ***(as many resources as needed)***

Label	Value
Instance of Class	*Class Z*
Property n1	
Property n2	
as many rows as needed	

S3.3: Constraints Matrix Test



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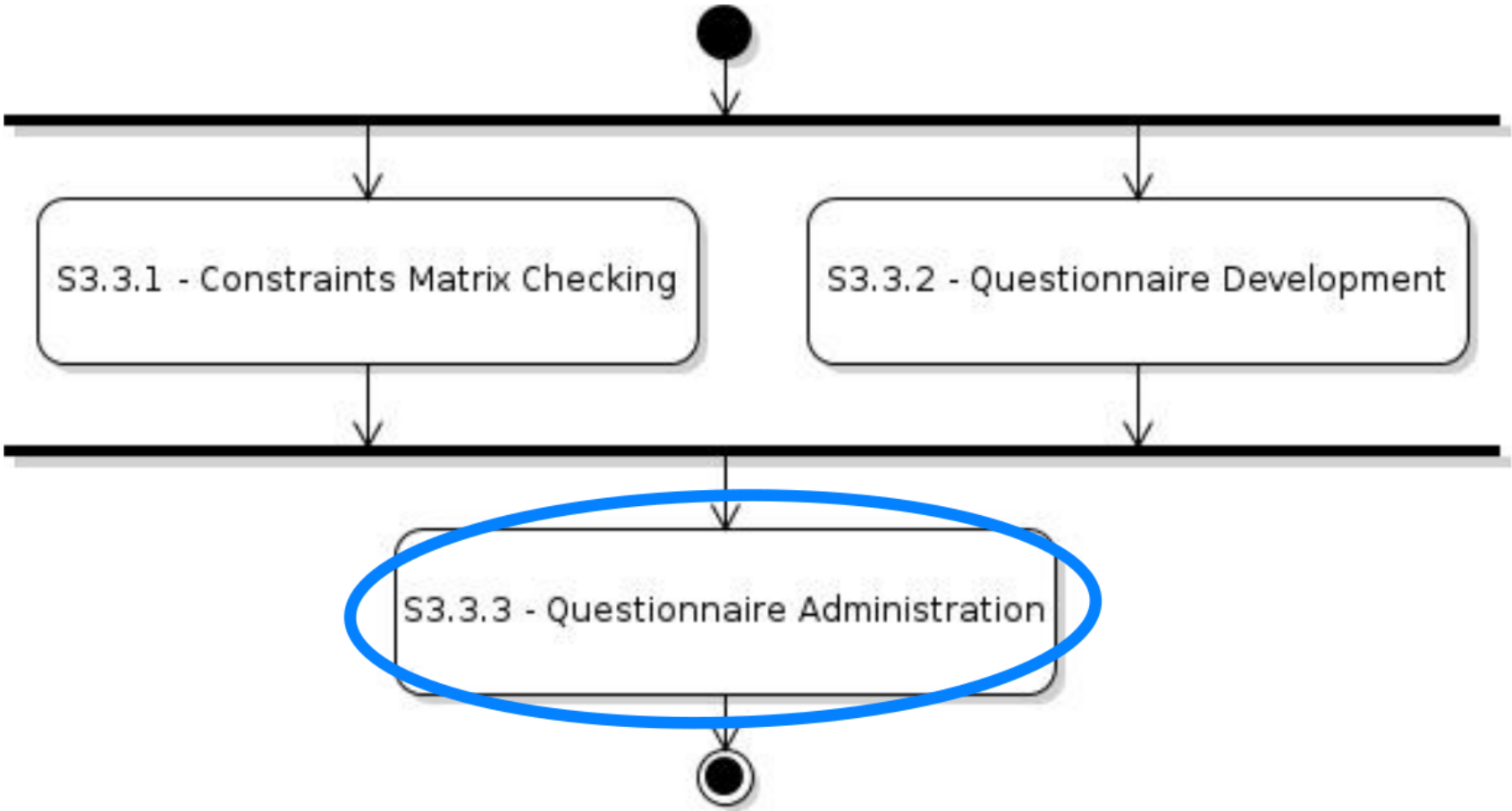
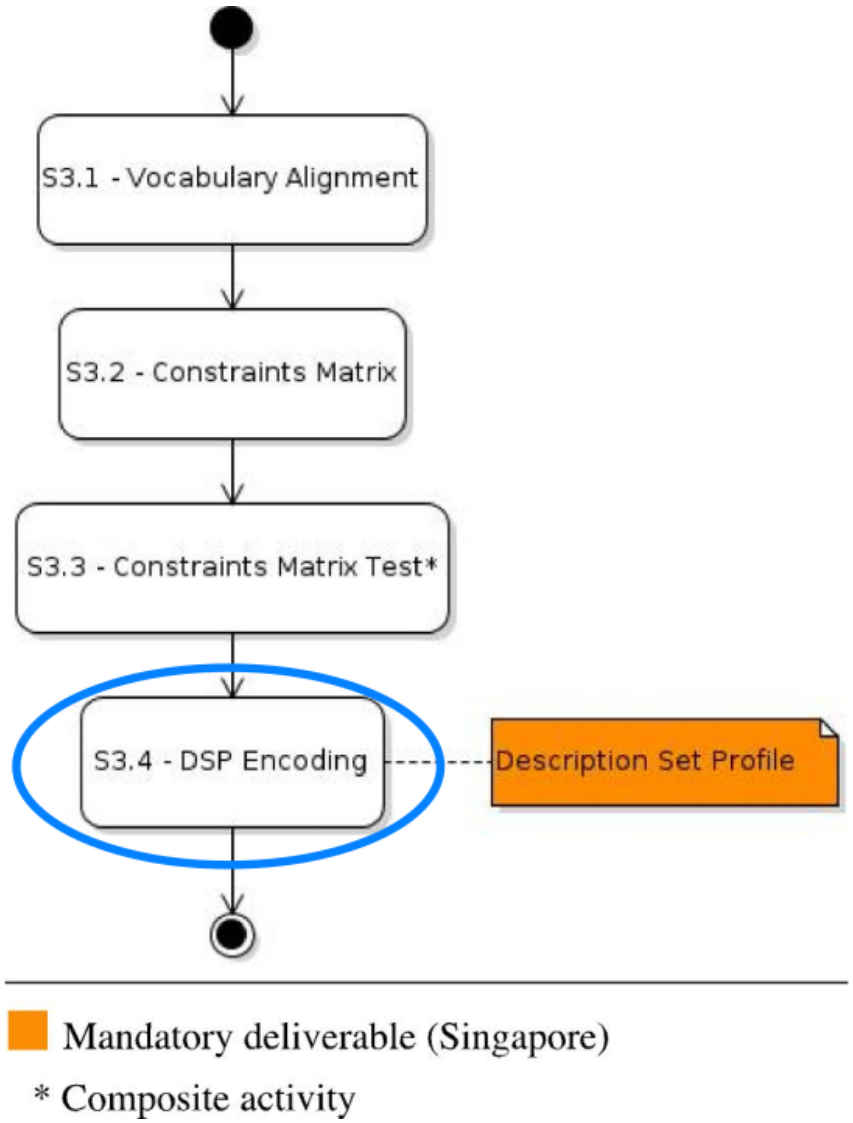


S3: Developing the Description Set

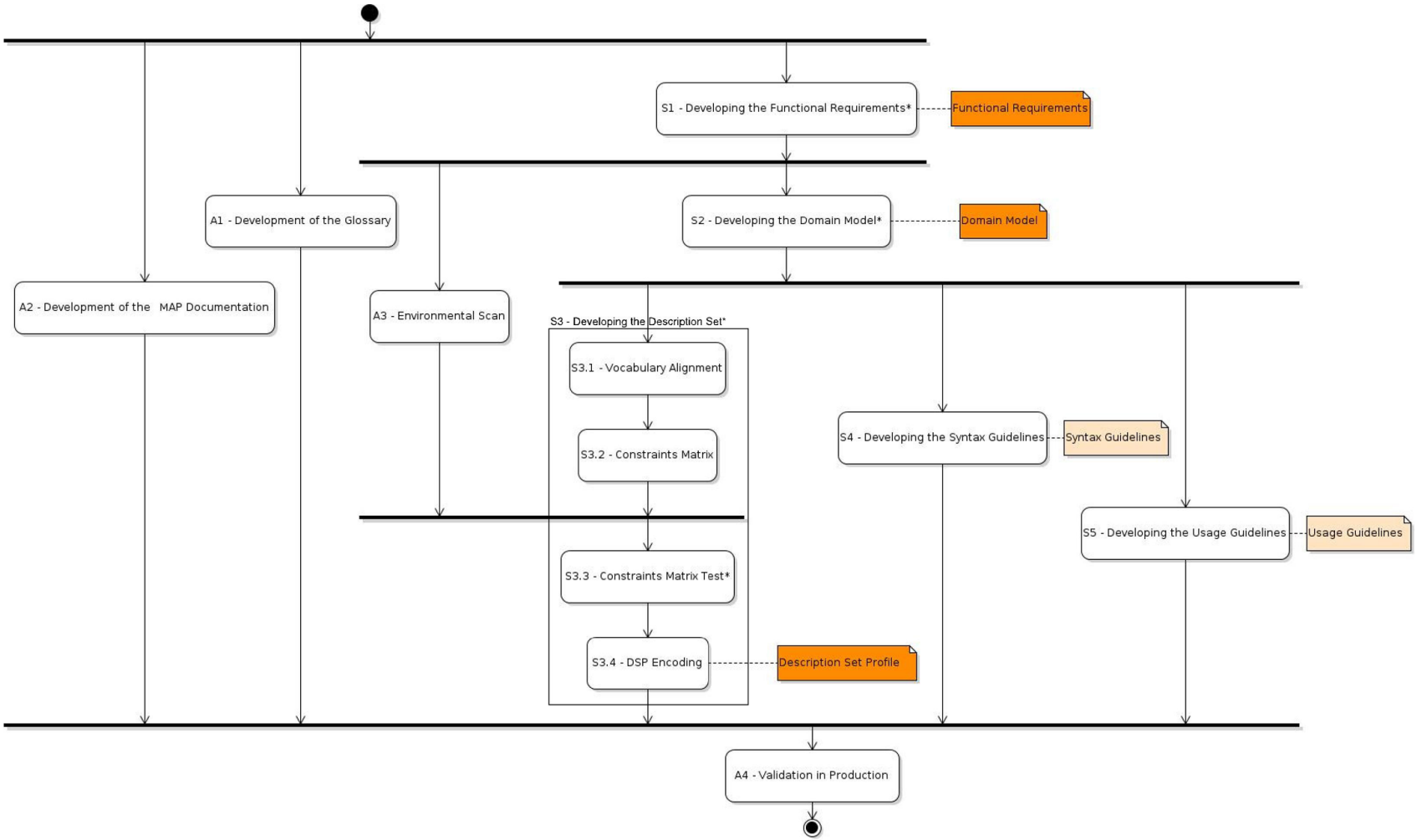


S4: Developing the Syntax Guideline

S5: Developing the Usage Guidelines

Validation in Production

All activities



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Earlier Versions published

Curado Malta, M. and Baptista, A.A. (2013).
A method for the development of Dublin Core Application Profiles (Me4DCAP V0.2): detailed description.
In International Conference on Dublin Core and Metadata Applications. Retrieved from http://dcevents.dublincore.org/IntConf/dc-2013/paper/view/178/81

Curado Malta, M. and Baptista, A.A. (2013a).
Me4DCAP V0.1: A method for the development of Dublin Core Application Profiles.
In N. Lavesson, P. Linde, P. P., editor, Proceedings of the 17th International Conference on Electronic Publishing - Mining the Digital Information Networks, pages 33 – 44. IOS Press.

Version presented here - to be pusblished

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DCMI Webinar: May 2017
Recording: `https://www.youtube.com/watch?v=Ff73npqlx7A`

Taming the Graph
Profiles over Linked Data

Thank you

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http://maltas.org