

DREAM project by Parcevaux - Pouliquen



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Requirement Analysis and Specification Document

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1 Introduction

This document has been prepared to help you approaching Latex as a formatting tool for your Travlen-dar+ deliverables. This document suggests you a possible style and format for your deliverables and contains information about basic formatting commands in Latex. A good guide to Latex is available here <https://tobi.oetiker.ch/lshort/lshort.pdf>, but you can find many other good references on the web.

okk

Writing in Latex means writing textual files having a `.tex` extension and exploiting the Latex markup commands for formatting purposes. Your files then need to be compiled using the Latex compiler. Similarly to programming languages, you can find many editors that help you writing and compiling your latex code. Here <https://beebom.com/best-latex-editors/> you have a short overview of some of them. Feel free to choose the one you like.

Include a subsection for each of the following items¹:

- Purpose: here we include the goals of the project
- Scope: here we include an analysis of the world and of the shared phenomena
- Definitions, Acronyms, Abbreviations
- Revision history
- Reference Documents
- Document Structure

Below you see how to define the header for a subsection.

1.1 Scope

... Here you see a subsubsection

1.1.1 World Phenomena

¹By the way, what follows is the structure of an itemized list in Latex.

2 Overall Description

Here you can see how to include an image in your document.

Here is the command to refer to another element (section, figure, table, ...) in the document: *As discussed in Section 1.1.1 and as shown in Figure 1,* Here is how to introduce a bibliographic citation [1]. Bibliographic references should be included in a .bib file.

Table generation is a bit complicated in Latex. You will soon become proficient, but to start you can rely on tools or external services. See for instance this <https://www.tablesgenerator.com>.

2.0.1 use cases

Here is the diagram for farmers. We suppose they are logged in the application. In case they are not they can simply log in or create an account and then log in.

Name	<i>FarmerRegistration</i>
Actors	Farmers
Entry conditions	The farmer is on the DREAM registration form page
Event flow	<ol style="list-style-type: none"> 1. The system asks for farmer's data: name, surname, e-mail address, location. 2. The farmers fill out the form. The farmer can optionally enable geo-tracking to complete the location field. 3. The farmer confirms the responses. 4. The system sends an e-mail containing a validation link to the given e-mail address. 5. The system asks the farmer to check his/her e-mail box. 6. The farmer clicks on the validation link. 7. The system adds the data provided by the farmer to the database. 8. Based on the location given by the farmer, the system retrieves the e-mail address of the policy maker dedicated to the farmer newly registered. 9. The system sends an e-mail to the policy maker to acknowledge that a new farmer has registered.
Exit conditions	The data are correctly added to the database
Exceptions	<ul style="list-style-type: none"> - The given e-mail address is already in the database. The system displays a message prompting the farmer to modify the dedicated field of the form. - The data provided by the farmer have an invalid type or the e-mail address is incorrect. The system displays a message prompting the farmer to modify the dedicated field(s) of the form. - There is no registered policy maker dedicated to the area. In that case, no acknowledgement e-mail is sent, but instead a warning message is sent to the developer to urge him/her to contact the adequate policy maker.

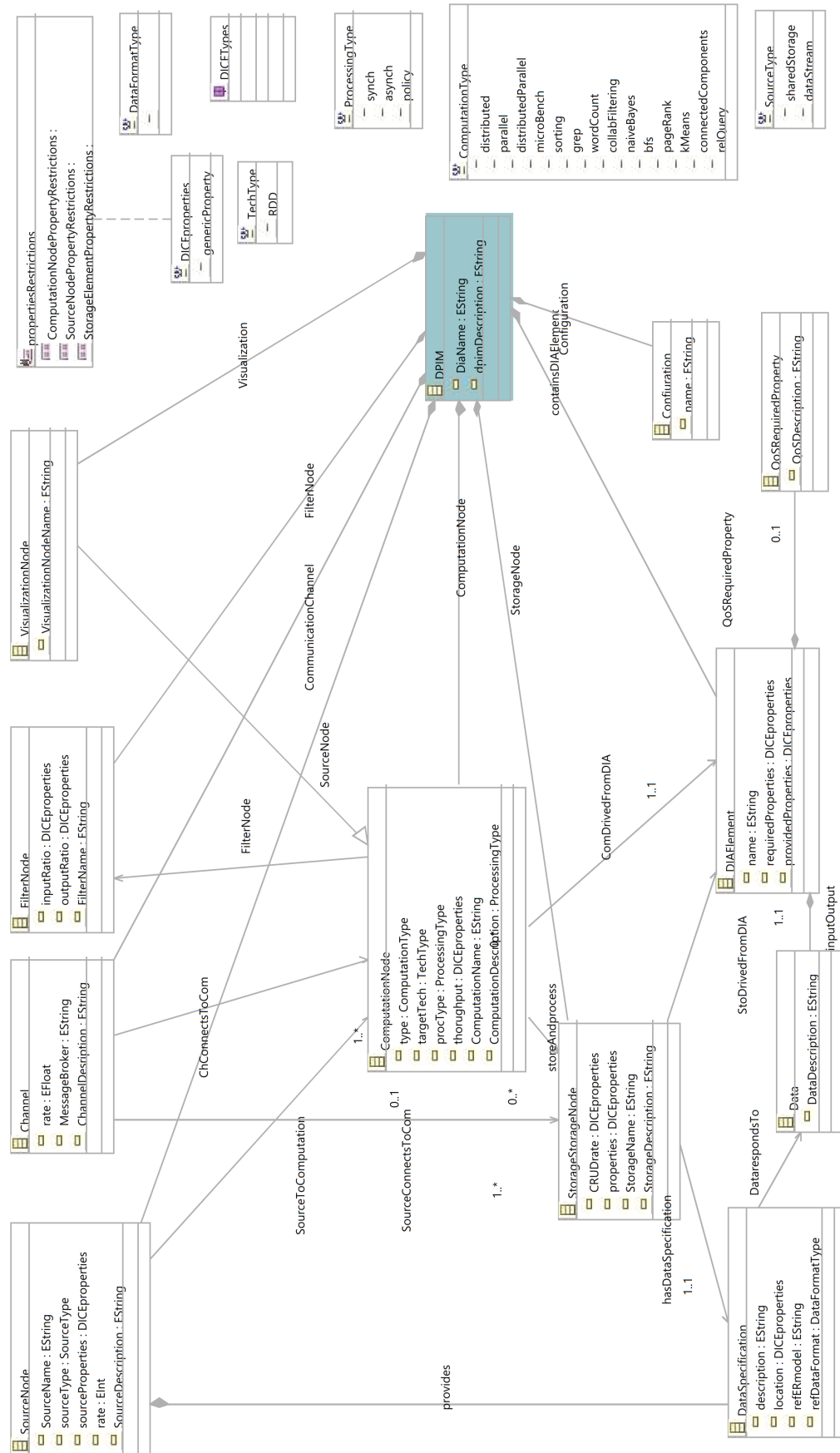


Figure 1: DICE DPIM metamodel.

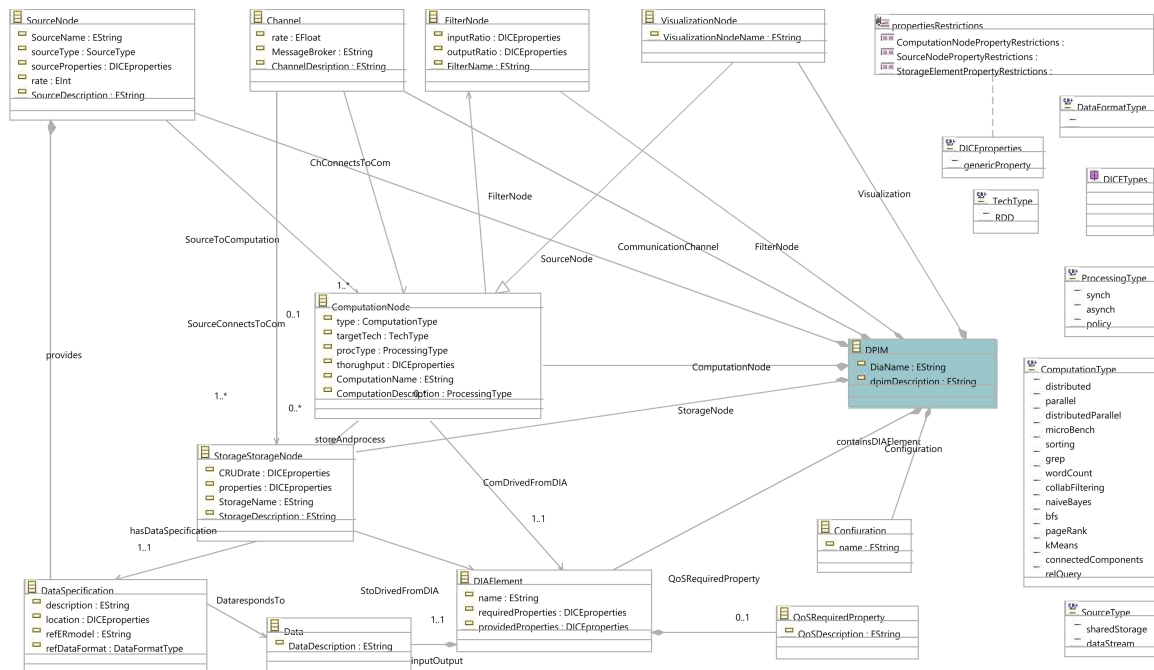


Figure 2: DICE DPIM metamodel in portrait form.

Name	<i>ProductionRelease</i>
Actors	Farmers
Entry conditions	The farmer has begun the cropping season (and eventually finished). The farmer is already registered on the DREAM platform
Event flow	<ol style="list-style-type: none"> 1. The farmer logs in on the platform and clicks on the “Release production data” tab. 2. The farmer clicks on the “New release” button 3. The system displays a form with the following fields: seed variety (to be chosen among a certain list), seed rate, production amount, surface area of the cultivated fields, fertilizer (can be several, to be chosen among a certain list), amount of fertilizer used (one field per fertilizer used), start and end date. 4. The farmer completes the fields, with respect to the measure units given by the system. 5. The farmer confirms. 6. The system adds the data to the database.
Exit conditions	The data are correctly added to the database
Exceptions	- The data provided by the farmer have an invalid type. The system displays a message prompting the farmer to modify the dedicated field(s) of the form

Name	<i>ForumCreation</i>
Actors	Farmers
Entry conditions	The farmer is already registered on the DREAM platform
Event flow	<ol style="list-style-type: none"> 1. The farmer logs in on the platform and clicks on the “Forum” tab. 2. The farmer clicks on the “New topic” button. 3. The farmer completes the title and message fields 4. The farmer can optionally add some tags to characterize the topic 5. The system adds the topic to the database
Exit conditions	The data are correctly added to the database
Exceptions	<ul style="list-style-type: none"> - The data provided by the farmer have an invalid type. The system displays a message prompting the farmer to modify the dedicated field(s) of the form. - The title or the message is empty. The system displays a message prompting the farmer to fill them both

Name	
Actors	Farmers
Entry conditions	
Event flow	
Exit conditions	
Exceptions	

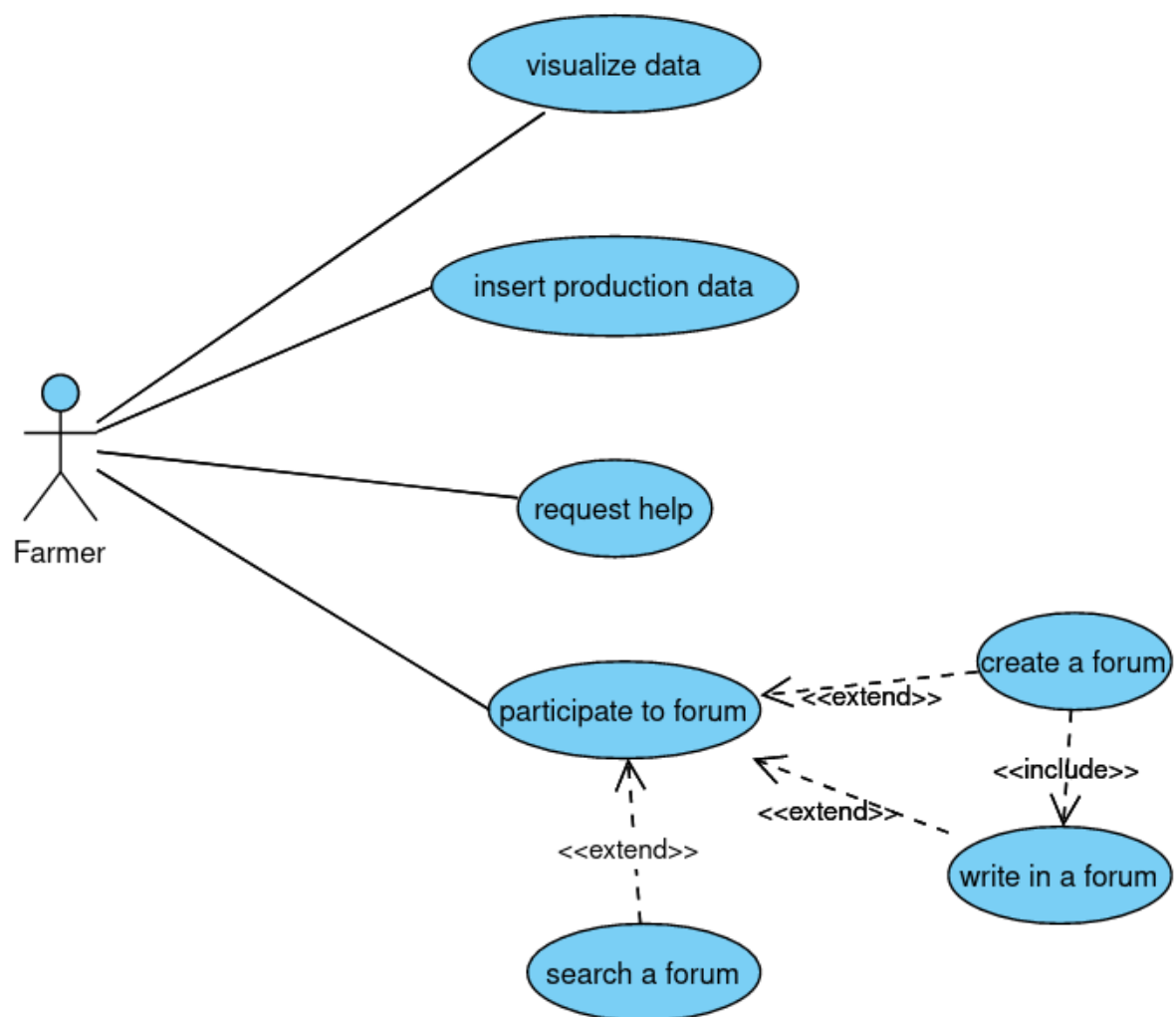


Figure 3: Use case diagram for logged in farmer



Figure 4: Use case diagram for logged in policy makers

3 Specific Requirements

Organize this section according to the rules defined in the project description.

4 Formal Analysis Using Alloy

Organize this section according to the rules defined in the project description.

5 Effort Spent

Provide here information about how much effort each group member spent in working at this document.
We would appreciate details here.

References

- [1] S. Bernardi, J. Merseguer, and D. C. Petriu. A dependability profile within MARTE. *Software and Systems Modeling*, 10(3):313–336, 2011.