

# TDA/DIT 594 - Assignment 1 - Case Study on a Reuse-Driven System

**Due Date:** Sunday, November 15, 23:59

**Submission:** Via Canvas (one PDF document per team)

## Overview

In this assignment, you will create a case study examining the development of a Software Product Line (or another complex system that makes extensive use of reusable assets or external libraries).

Many examples of SPL development are included in the following book: Van der Linden, F. J., Schmid, K., & Rommes, E. (2007). Software product lines in action: the best industrial practice in product line engineering. Springer Science & Business Media. This book is freely available in digital form from the Chalmers library.

However, you are not restricted to this book (which is somewhat old). You may also feel free to find other SPLs or complex systems that make extensive use of reusable assets and external libraries, and create a case study on the development of those systems. For example, many companies blog extensively about their products (i.e., Netflix - <https://netflixtechblog.com/> - Facebook - <https://engineering.fb.com/> - or Spotify - <https://engineering.atspotify.com/>).

## Approval

You must ensure that sufficient information is available on the chosen system to write this report before you begin the project.

Before beginning your case study, you **must** obtain approval from your supervisor on your choice of system to study. A supervisor will be assigned following completion of Assignment 0 (Team Formation), so it is in your interest to form a team as quickly as possible.

When requesting approval, include your primary sources of information on the chosen system. If you are unsure whether enough information is publicly available on a system you are interested in, discuss this with your supervisor.

## Deliverable

You will create a case study on the system of your choice. It must document the following aspects regarding the system:

- **Context:** What kind of organization adopted/applied SPL or reuse-driven engineering?
- **Motivation:** What motivated the transition to or adoption of a product line or reuse-driven approach?
- **System Type:** For what kind of system did they apply SPL or reuse-driven engineering?

- **Approach:** How did they adopt SPL or reuse-driven engineering? What practices were employed? What processes were affected, and how?
- **Challenges:** What were the key technical or process challenges encountered when implementing SPL or reuse-driven engineering?
- **Results:** What are the important results with regard to business, architecture, process, and organization?
- **Conclusions:** What did they learn from implementing SPL or reuse-driven engineering?

You may also write about other aspects of the system that you feel are relevant.

In addition to documenting information found about these systems, you should reflect on the choices made by the engineers building these systems and provide your own commentary and opinions on those choices. Do you feel these were reasonable decisions? Do you see potential weaknesses in the decisions made? Are there alternatives you feel should have been considered? We do not expect you to design a perfect system, but you should discuss the work performed by these companies in the context of your own experiences or in the context of other systems that you have read about.

There is not a minimum page length for this document. Quality is more important than quantity. It is important that you cover the criteria in detail, and provide your own reflections on the development of the chosen system.

Submit your case study in **PDF form** via the submission link on Canvas. You will submit one document per team.

### Grading Guidelines

Note, these guidelines are intended to give some guidance, but are not exhaustive. Each supervisor will assign a grade based on the correctness and quality of your work.

Grade (Chalmers)	Grade (GU)	Guidelines
5	VG	<ul style="list-style-type: none"> <li>● Covers the full set of stated aspects above, as well as additional aspects regarding the development of the system that you have found interesting.</li> <li>● Each aspect is covered in detail, and includes your original commentary and creative reflection (i.e., not just a summary of public information on the system).</li> <li>● All team members have had a role in writing <b>and editing</b> the document (it is not obvious that different sections were written by different authors).</li> <li>● Document is written in clear English, without</li> </ul>

		major spelling or grammar errors.
4	G	<ul style="list-style-type: none"> <li>• All aspects covered.</li> <li>• Most aspects are covered in detail, and include your original commentary and creative reflection.</li> <li>• Document is written in clear English, with few spelling or grammar errors.</li> </ul>
3		<ul style="list-style-type: none"> <li>• All aspects covered.</li> <li>• Some aspects covered in detail, with original commentary and creative reflection.</li> <li>• Document has some spelling or grammar errors, but is still understandable.</li> </ul>
U	U	<ul style="list-style-type: none"> <li>• Aspects missing from the above list.</li> <li>• Included aspects not covered in sufficient detail.</li> <li>• No original commentary or reflection.</li> <li>• Document has major spelling or grammar errors.</li> </ul>