Integrating Building Information Modelling (BIM) into Project Management Systems for the Infrastructure and Construction Industries.

1 Background

This project explores how Building Information Modelling (BIM) could be integrated into C7 Projects to enhance calculation and execution. Integrating BIM with C7 Projects would allow users to link project data with BIM models, improving visibility, collaboration, and decision-making across different project roles. The project can take either a technical or a design-focused approach: a technical approach would focus on how BIM/IFC integration could be implemented effectively, connecting it with existing project data and developing a functional implementation. A design-focused approach would emphasize information processing, usability, and delivering value to users, focusing on developing a design concept for an intuitive and practical implementation. Both approaches aim to explore how BIM can support more efficient workflows within C7 Projects.

2 About Triona

Triona is a reliable product and consultancy company that improves our customers' daily operations through data-driven insights and efficient resource flows. Our products and expert services serve organizations within the forestry, infrastructure, and transport sectors in the Nordics.

For over 30 years, we have combined deep industry knowledge and expertise in software development to deliver digital solutions that make a real difference for our customers.

3 About C7 Projects

C7 Projects is a project management system that is used in the construction and infrastructure sectors. The system consolidates all project information into a single tool, reducing the need for multiple separate systems and making it easier for users to gain an overview and access relevant data. C7 can be adapted to an organization's processes and integrated with other systems to support information flows and avoid duplicate data entry. It is designed to support daily work by making essential project information easily accessible.

4 General

This thesis is aimed at one or two students. At least 50% of the work should be carried out on Triona's premises.

5 Objective

Suggested research questions:

Technical-focused:

- How can BIM and digital twin data be integrated with existing project or calculation information in C7 Projects?
- Which data structures and workflows are needed to enable seamless implementation of BIM in C7 Projects?

Design-focused:

- How can BIM and 3D model data be presented in a C7 Projects to support effective information processing?
- In what ways can digital twin representations improve decision-making and situational awareness in project management or calculation?

6 Scope of Work

The project explores integrating Building Information Modelling (BIM), digital twin, and 3D modelling into the project management system C7 Projects. Depending on the chosen focus, the work can take one of two directions:

Technical Focus:

The work will investigate how BIM and related 3D data can be connected and synchronized with existing project information in C7 Projects. This includes analysing data structures, developing workflows, and creating an implementation that demonstrates practical integration while maintaining data accuracy and consistency.

Design Focus:

The work will focus on how BIM and 3D data can be presented to users in a meaningful way. This includes exploring visualization techniques, information processing, and interaction design to develop a concept for an interface that delivers real user value and supports effective decision-making across different roles.

7 Expected Result

The project is expected to produce a clear understanding of how BIM, digital twin, and 3D modelling can be integrated into C7 Projects to enhance project management workflows.

For a **technical focus**, this includes a functional implementation demonstrating effective integration with existing project data.

For a **design focus**, the expected result is a user-cantered interface concept that presents complex project information clearly and supports timely, informed decision-making.

In both cases, the work will provide insights into best practices for combining technical feasibility with usability, highlighting how integrated 3D project data can add real value for different user roles.

8 Budget

Triona dedicates a supervisor for supervision/discussion regarding requirements and functionality, as well as ensures access to work tools (computer, etc.) and a workplace