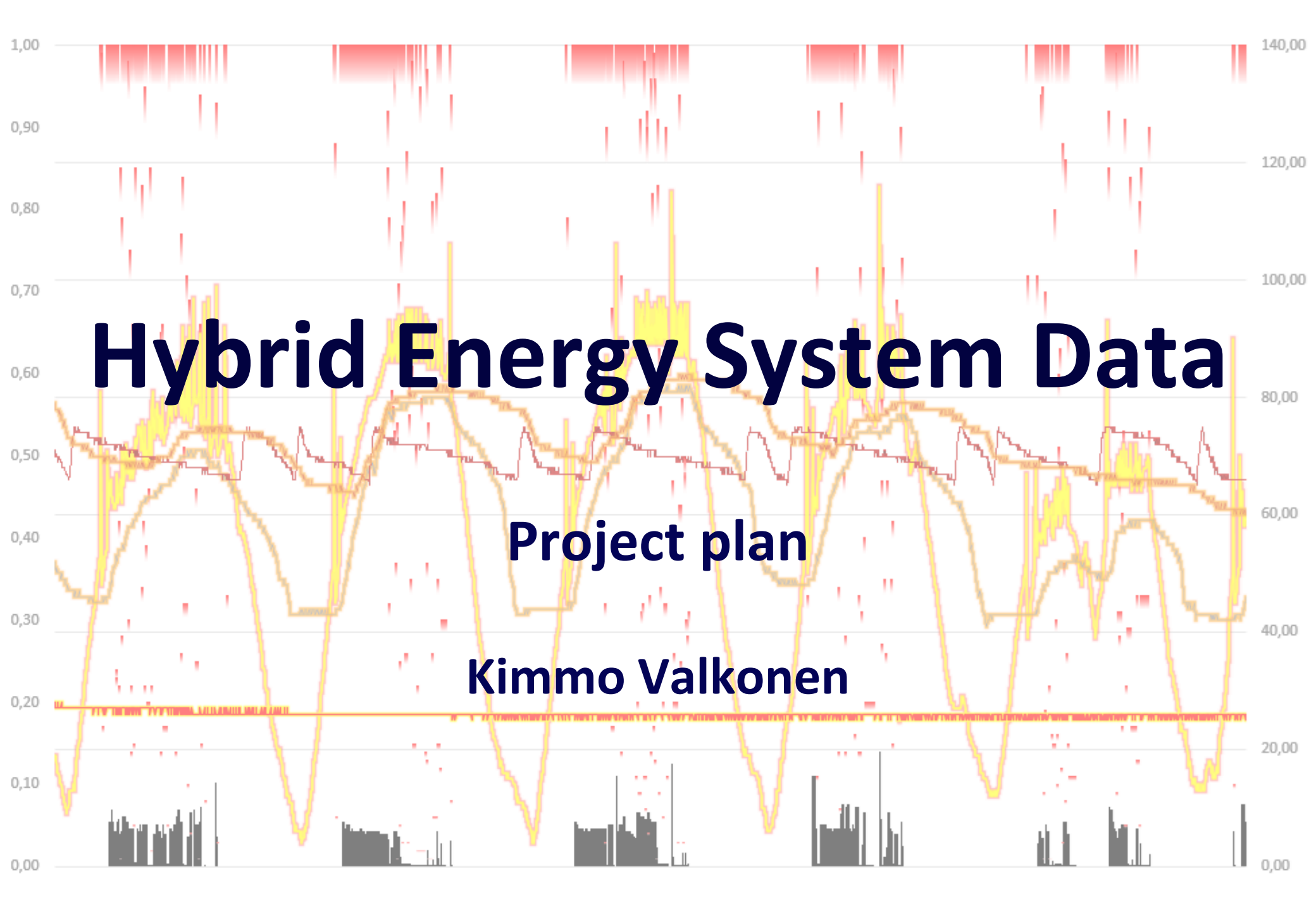


Hybrid Energy System Data

Project plan

Kimmo Valkonen

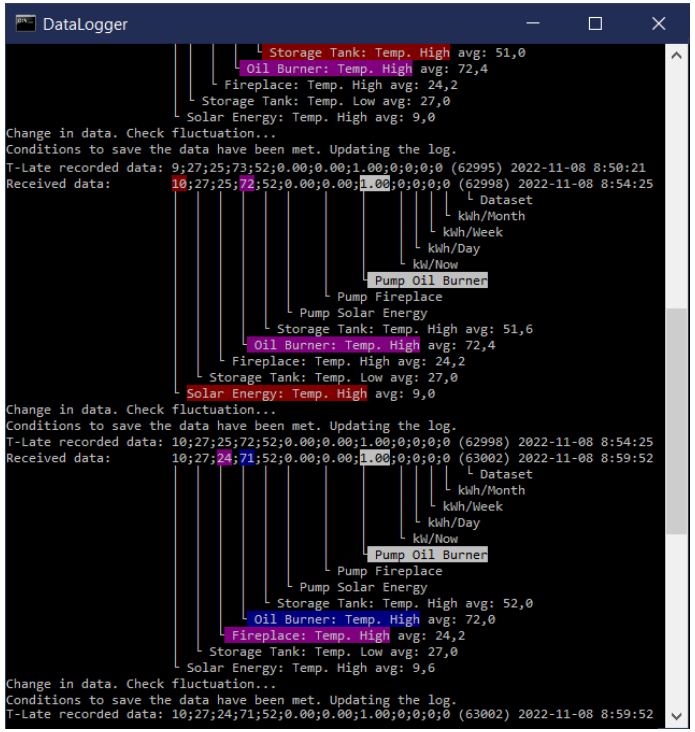
Content

- Purpose of the Project
- Current State Analysis
- Project Scope
- Mode Of Operation
- Risk Analysis
- Project Schedule
- More Information

Purpose of the Project

- Purpose of the project is to provide a Full Stack solution to collect, store and display hybrid energy system data.
- Solution will be alternative for current legacy system used for collecting, storing and displaying data.
- Solution will offer more flexibility for further application development.
- Project will deliver better application perfomance, better error handling and logging capabilities, secure data storing and a graphical user interface.

Current State Analysis



- Current solution is based on Windows script executed in **command shell** (cmd.exe).
- User can **press a key** to request immediate refresh the data and **scroll the screen** to previous records.
- Script writes network, login, session and device failures to log and is able to start corrective actions depending on the type of error is in question.
- Command line script has **low performance**.

Records are saved to .CSV file if the script can verify a real change in numbers:

```
2022-11-08 8:50:21;9;27;25;73;52;0.00;0.00;1.00;0;0;0;0
2022-11-08 8:54:25;10;27;25;72;52;0.00;0.00;1.00;0;0;0;0
2022-11-08 8:59:52;10;27;24;71;52;0.00;0.00;1.00;0;0;0;0
```

Project Scope

- The target is to use **Node.js** with **Express** at the back end.
- Back end will use **cURL libraries** to fetch the local Hybrid Energy System data via Internet using special Sorel connected 3rd party P2P **Nabto interface**.
- Back end will use a database (DB) that will be able to fulfill needs. DB strategy will need to be agreed before **Milestone M2**.
- Front end will have an interface for displaying records from the database using **React**.

Project Out of Scope

- Data **analysation views** that are still handled with legacy Microsoft Excel templates.
- **Live data visualisations** web page.
- Hybrid system devices **controlling**.
- **Other Operating Systems** than Microsoft’s currently supported Windows platforms.

Project Mode of Operation

- Agile approach and fast switch between technologies when needed.
- Prototyping Model concept used in application development adding functionalities incrementally one by one.
- Application development using bottom-up strategy.
- Focus on fast delivery of the 1st prototype for key user testing.
- Project will use Git in version control and a private GitHub repository to store application and project data.

Steering group

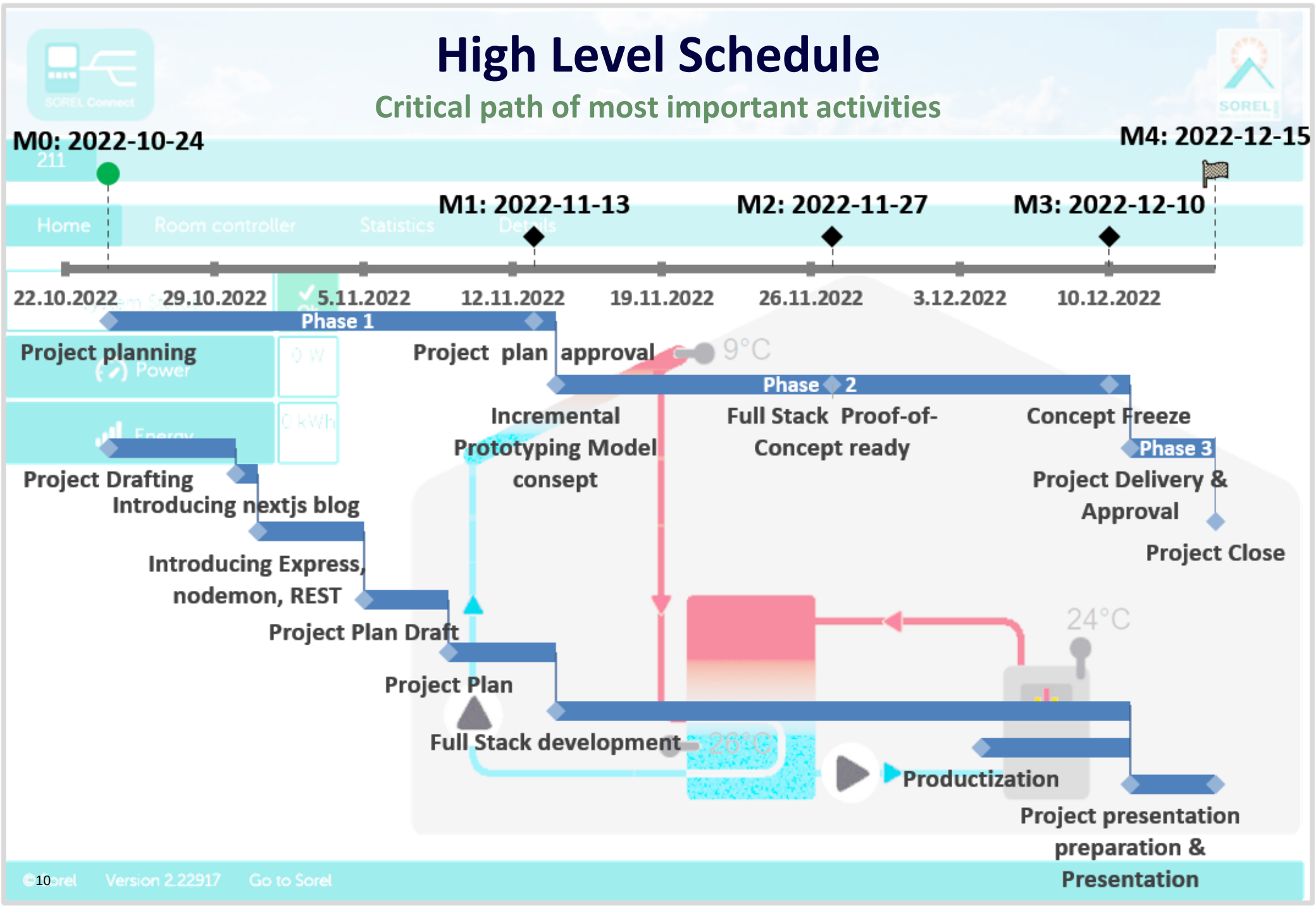
Name	Role
Sami Ben Cheick	Project Representative
Kimmo Valkonen	Concept Owner, Configuration Owner, Principal Specialist, Key User, Full Stack Developer, Key User Network Contact during the project

Risk Analysis

Risk	Probability	Impact	Risk mgmt/ mitigation action(s)
Project may face problems with cURL and Nabto interface	2	Low	Use legacy system collecting .CSV data and convert with middleware to the database in back-end and remove the monitoring display part to gain performance.
Nabto interface service is down	1	High	There is no immediate mitigation actions needed if downtime will be short. Building a custom interface could be one option if Nabto downtime will be longer. In practice this would mean that the project need to cancelled.
Project delivery schedule delays.	1	Low	Prioritize critical deliveries and focus to deliver minimum requirements.

High Level Schedule

Critical path of most important activities



More information

- Sorel and Nabto: https://www.nabto.com/cases/sorel/
- cURL: https://curl.se/, https://github.com/curl