Case Finland:
Introduction of Finnish Erex

Eress Forum

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Agenda

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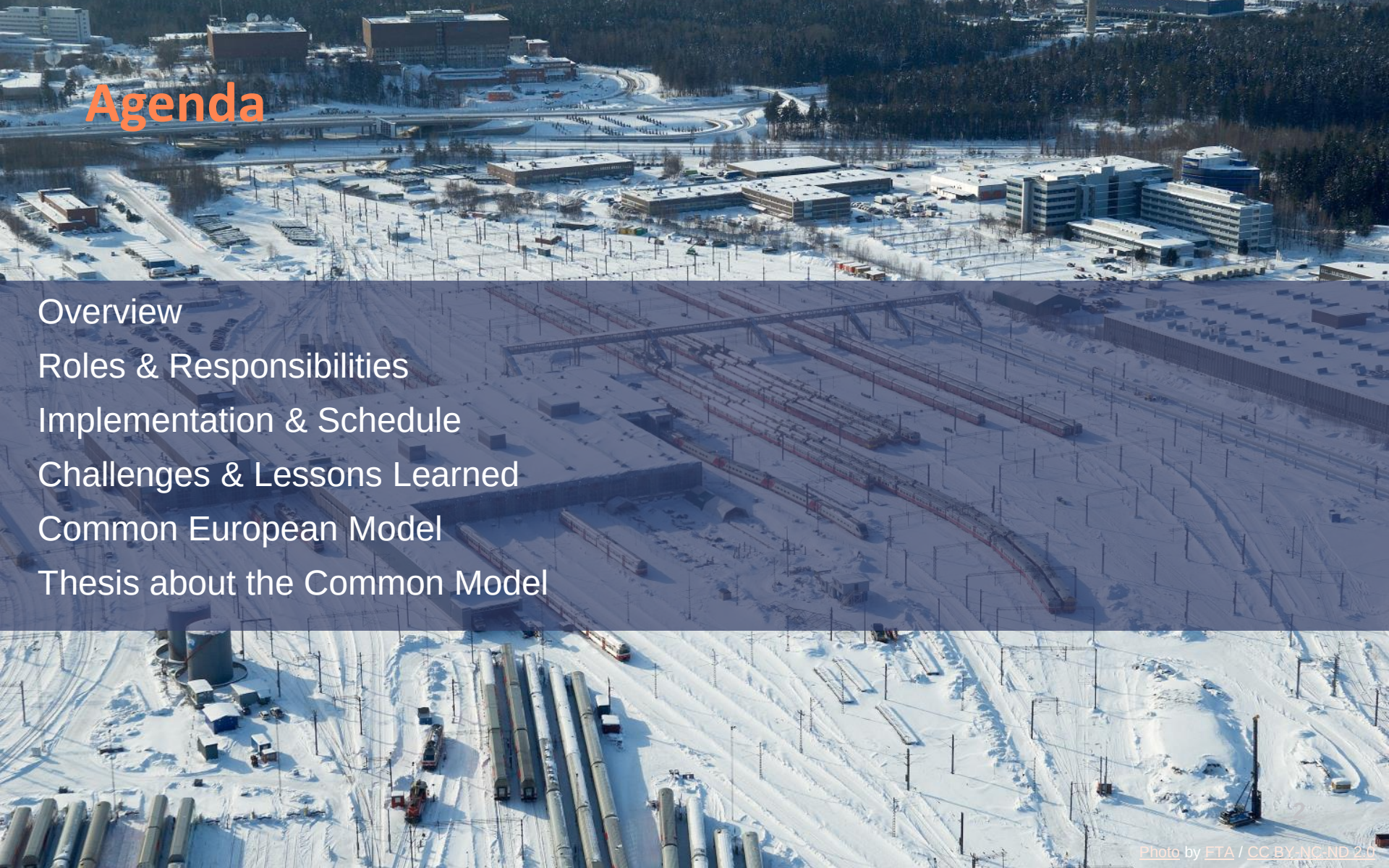
Thesis about the Common Model



Overview

Background:

- A need to charge individual Railway Undertakings based on their energy consumption
- This is based on EU regulation, and enables multi-operator functionality
- A special need in Finland: railway companies can buy electricity from any supplier in the energy market
- Two alternatives: develop a custom Finnish system, or introduce the already existing Erex system to Finland

Project goal:

- Introduction of Finnish Erex (including development and testing) before the go-live date of January 1st 2017

Roles & Responsibilities

Project Owner	**Juha-Matti Vilppo, Finnish Transport Agency**
Project Manager, TMS Integration	Rami Huovinen, Gofore Oy
TMS Development	Solita Oy
Testing	Iiris Saarenpää, Gofore Oy
Fixed installation & Substation input	Lasse Martikainen, Rejlers Oy
Metering data	Directly from the Railway Undertakings
Erex system	Eress & Bouvet

Implementation & Schedule

No major development required in Finland except for sending train run data to Erex

- Source: LIIKE (Traffic Management System in Finland)
- Data is based on actual train runs, not timetables
- Straightforward implementation: nightly batch run collecting, combining and sending new data

Challenges & Lessons learned

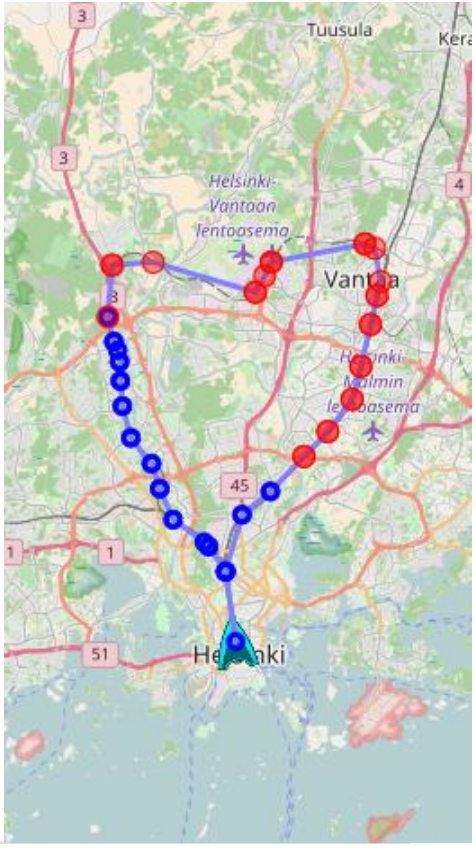
No problems during the entire development and testing

- Development was easy using the TrainRunInput interface in Erex
- Cooperation between all stakeholders was fluent

Data quality issues become visible only when the data is used

Key success factors:

- Face-to-face workshops ensured that everyone had a similar understanding of the LIIKE-Erex interface
- Hands-on training and direct access to Erex system made the integration development faster
- Ability to copy production data to test environments made testing a lot easier



Common European Model

Finland became an example for other Eress and non-Eress countries

- Both Eress and FTA paid attention to using a common European model from the beginning
- Finnish Erex fulfills all EU requirements
- It’s also the newest and most mature Erex solution

Reporting to the energy market: Finland will be the first to introduce this functionality

Thesis about Common Model: Background

Iiris Saarenpää's Master of Science thesis

- Research on standardization issues in general but focusing on Erex
- Eress has a goal to have a complete standardized system

There are differences in the railway market across different countries

- This impacts Erex system
- How to solve these differences in one system?
- Thesis goal: Find out the relevant differences that need to be solved in order to have a unified solution

Research method: Interviewing Eress administration, Erex developers and IM Erex responsibles in different countries

Thesis about Common Model: Conclusions

Energy market meets railway market: both have existed for a long time, and can't be directly adjusted to fit each other

- Contradicting requirements: which one to follow?

Railway market: nationally focused

- National environments and requirements don't enable common plug-and-play system yet
- Erex system is dependent on international standards and laws

Common model enables cost-efficient development, maintenance and operations

- Common framework fits the legislation and other needs of different countries
- Most practical domain challenges can be solved by configurations

Thank you!

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