



Use of **Capella** in **Bid Phase** of railway signalling projects, experiences and challenges

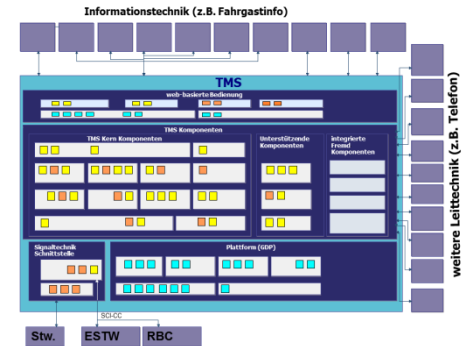
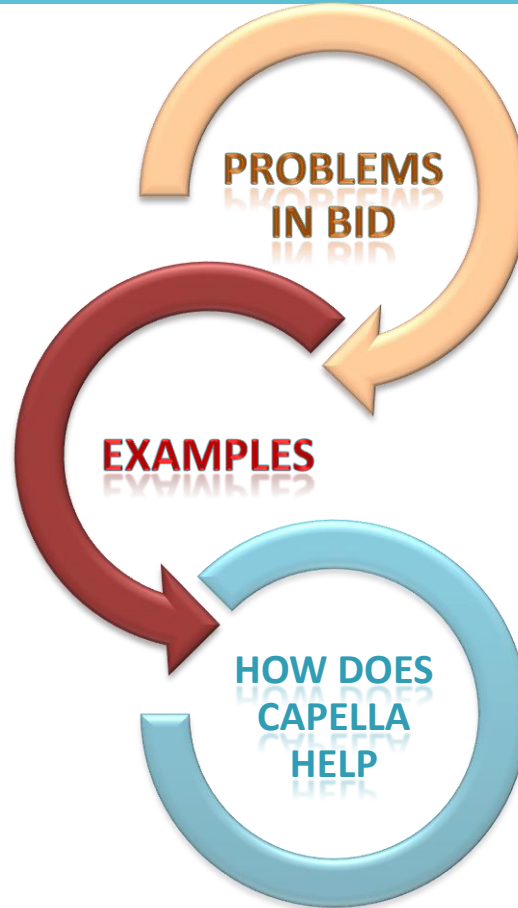
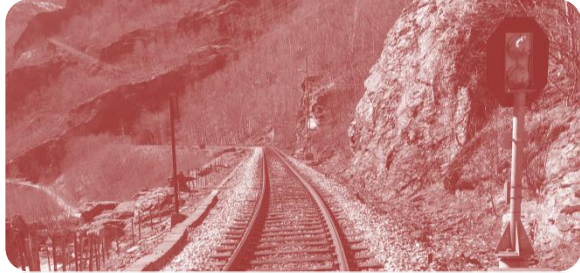
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- » MainLine Signaling

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Railway Traffic Management Systems



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Different „Languages“

misunderstandings



Inhomogeneous
technical figures

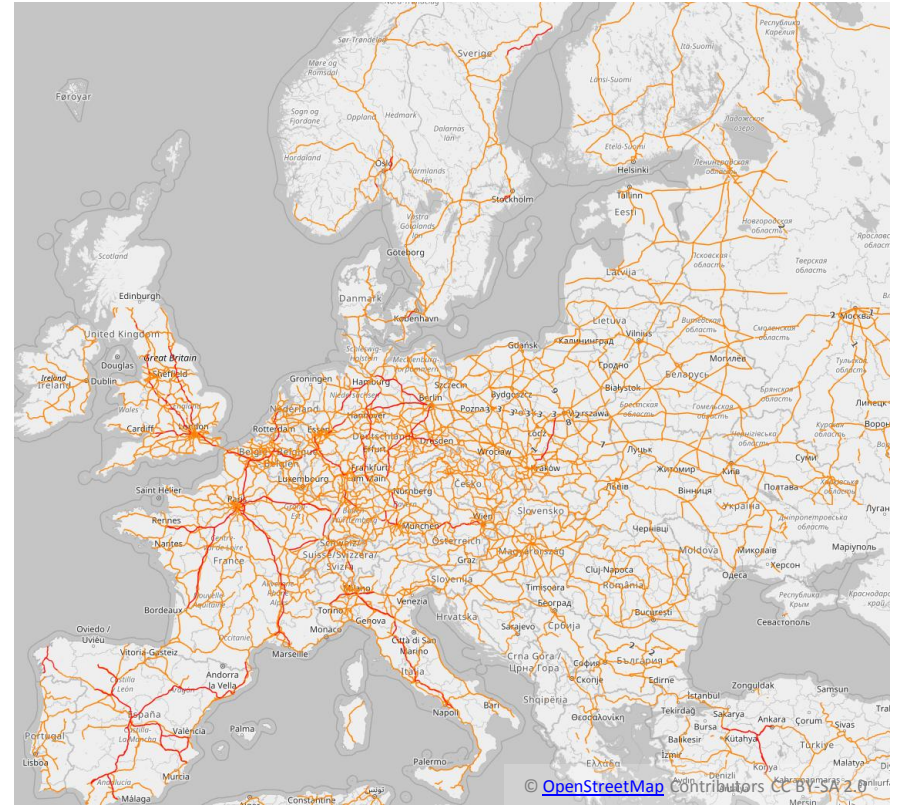
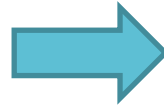


Poor presentation
in documents

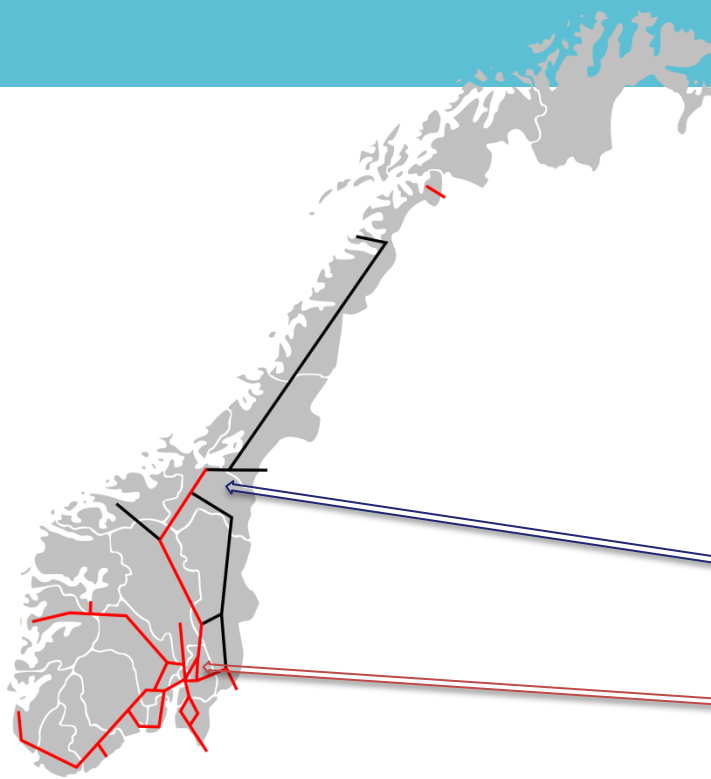
Problems in Bids



Example Traffic Management System (TMS)



TMS: Local and global management of railway traffic



Project

- » Management of 4000km railways
- » 3 Control centres
- » Heterogenous Traffic:
 - Trondheim 60 trains/day
 - 1000 trains/day in Oslo
- » Adaptation to legacy Signalling

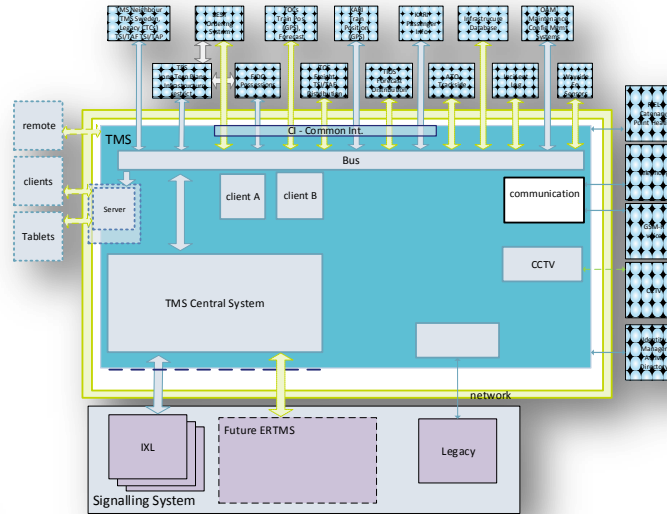
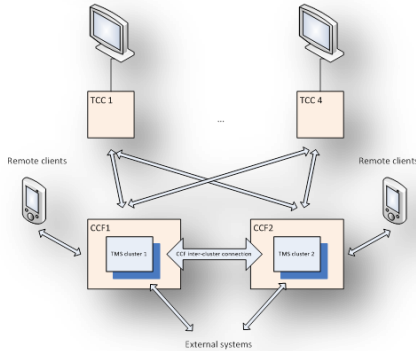
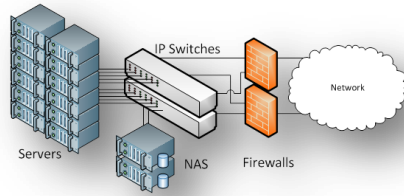
By Norway_counties_blank.svg: Marmeladderivative work: Arsenikk (talk) - Norway_counties_blank.svg, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=10158596>

TMS Norway

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TMS Control Centre (TCC)



Different

- » Colours
- » Names
- » Representations
- » ...

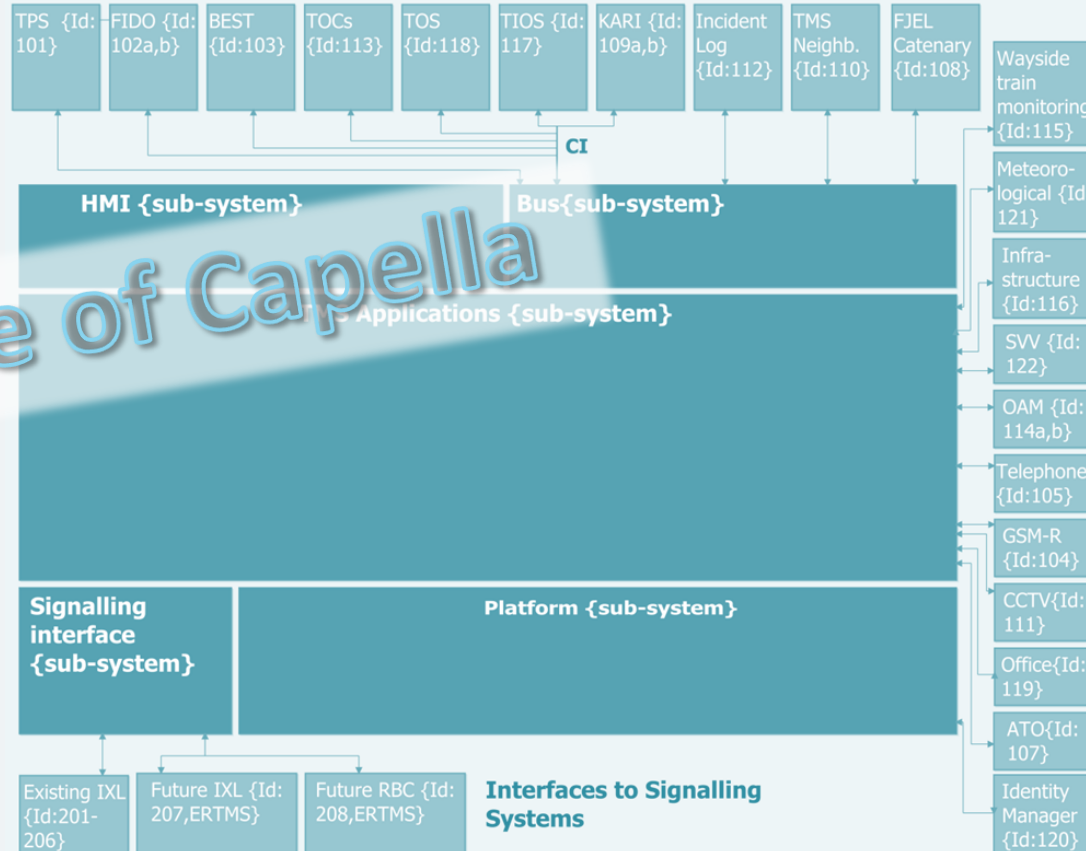
Mixed

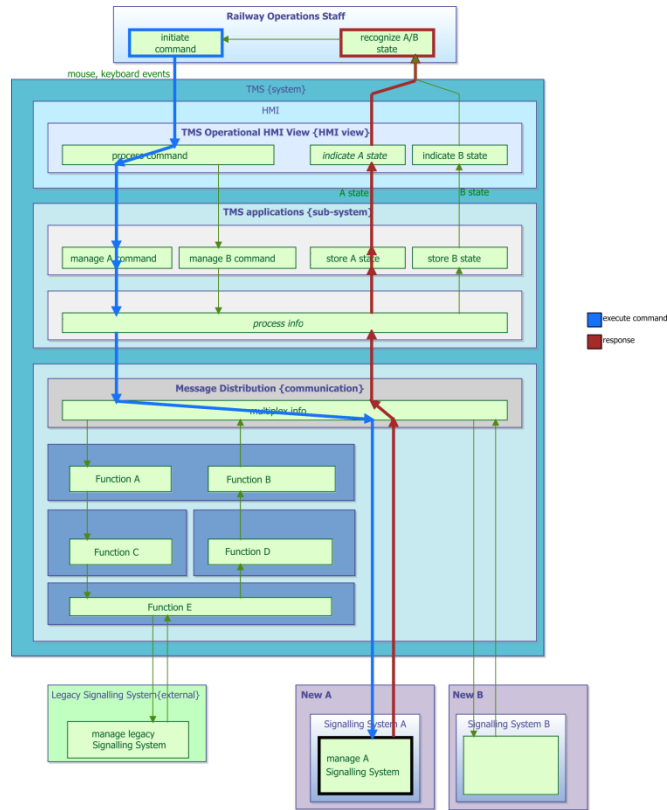
- » logical and physical views
- » Technical and sales views

Example TMS Norway Bid

Interfaces to adjacent System

Usage of Capella





Function allocation

- » Done partially
- » for critical scenarios
- » Helps also in discussion with customer

Advantages for Bid

- » Common view on Architecture
 - Co-engineering enabler
 - Same figures/same look-and-feel in multiple documents
 - Unique naming in figures

- » Separation of logical vs physical View → identify missing topics
- » Automatic colorization by specific viewpoint

Experiences (1)

Challenges

- » Time for introducing method is necessary
- » Not enough time for complete explicit functional breakdown
 - Was done in visio... 😞, but better than nothing
 - Allocation to components is missing
- » Not everybody in bid team likes “another tool”
 - Where is my Powerpoint...

Experiences (2)

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We have won the Bid!

**We have a basis for
Development!**

**Acceptance of
Capella grows!**

Result, Questions?