**Emch+ Berger**

Development of Advanced Traffic Management and Decision Support Functionality for Rail Networks

The Danish rail infrastructure manager BDK is carrying out a full replacement of all signalling equipment, control and Business IT systems. Two contracts involving control systems have been awarded, one to Thales for Centralised Traffic Control (CTC) West and Passenger Information and one to Alstom for CTC East, Advanced Traffic Management and Decision Support and Planning functions. Emch+Berger AG Bern played the leading role in the RAEP consortium supporting BDK in ensuring this portion of the East (Alstom) contract satisfies the expectations of BDK. The specific challenges included:

- Visioning, Blueprinting and Specifying a completely new approach to Traffic Management and Decision Support for a large Network with mixed traffic
- Aligning the existing Product Base of the Supplier and Instructing the Processes
- Developing Real Time Database Systems that cover Rolling Stock, State of the Railway, Topology
- Integration of Disruption Management including Maintenance Contract Requirements into the Design
- The support of the Customer in preparing the business changes to make best use of the emerging Technology
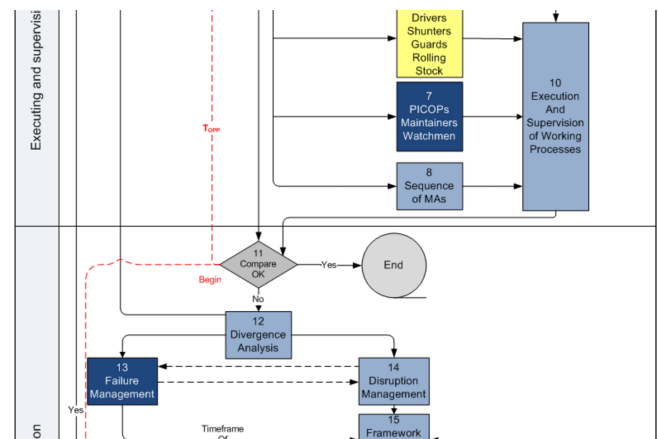
Client

Banedanmark (DK, Copenhagen)

Period: 2012 - 2021

Delivered services

- Tender Specification
- Tender Evaluation
- Lead in Requirements Clarification
- Lead in Process Design by means of a Process Lab
- Review of System and Subsystem Requirements (approx. 3000 requirements)
- Support of the Customer in Cases of Differences with the Suppliers
- Elaboration of Business Change Documentation for the Customer
- Alignment between Research and Supplier
- Alignment between Banedanmark and DSB, the principal Operator of danish long distance passenger services
- Elaboration of Detailed Use Cases

Specifications

- Network length: 2500 km
- Marker boards: 9000
- Maximum speed: Up to 300 km/h (current practice is 200 km/h)
- Introduction of ETCS level 2: 2016 - 2021
- Number of Control Rooms: 2
- Number of Trains: approx. 2000 per day
- Number of Train Operating Companies: 30
- Number of external Interfaces: approx. 50
- Interfacing Networks: 7