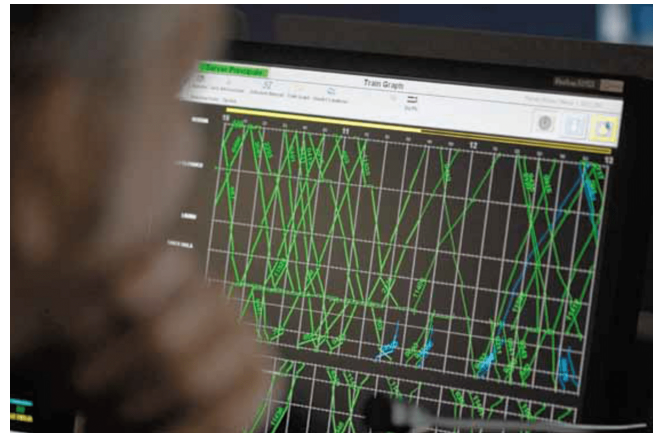


# Preliminary Design of Centralised Traffic Control System and operational rules

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 let, one to Thales for Centralised Traffic Control (CTC) West and Passenger Information and one to Alstom for CTC East, Advanced Dispatching and Planning functions. Emch+Berger played the leading role in the RAEP consortium supporting BDK in ensuring this portion of both contracts satisfies the expectations of BDK.

The specific challenges include:

- The convergence of both systems with an entirely new set of Operational Rules
- The introduction of additional levels of automation including shunting and possessions management using a Hand Held Terminal and automated management of restrictions (e.g. dangerous cargo).
- The design of hardware for each control room which allows to access all applications required for Traffic Control.
- The support of the Customer in preparing the business changes to make best use of the emerging Technology.



## Client

Banedanmark (DK, Copenhagen)

**Period:** 2012 - 2013

## Delivered services

- Tender Specification
- Tender Evaluation
- Lead in Requirements Clarification
- Lead in Joint Design (to converge and interface the two products)
- Review of System and Subsystem Requirements (requirement specifications were delivered by the suppliers covering approx. 2000 requirements each)
- Support of the Customer in Cases of Differences with the Suppliers
- Elaboration of Business Change Documentation for the Customer

## Specifications

- Network length: 2500 km
- Number of 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 Desks: approx. 75 (including Disaster Recovery Rooms)
- Number of Hand Held Terminals: approx. 200
- Number of external Interfaces: approx. 50