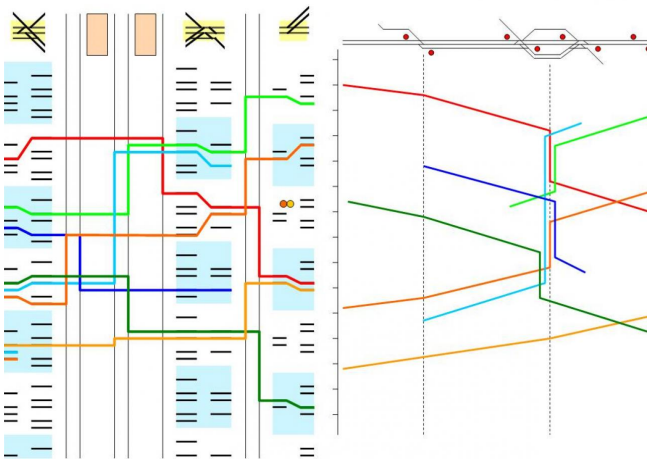
PULS 90 Network Planning: Alternative to Additional Tracks and Flyovers

For the Berne area a substantial enhancement of traffic is planned for the next decade. Numerous expensive infrastructure measures are stipulated to enable this. In the same period, the replacement of the main interlocking is due. The project identifies possibilities to improve capacity with signalling and process based measures and compares the costs to conventional capacity enhancement.

A detailed timetable scenario is set up for a conceivable service offer for the node of Berne and the adjacent network parts. Optimised conventional signalling and ETCS level 2 are introduced in different scenarios. The operational process of PULS 90 is applied. The conflict-free timetables are proven by simulation. The requirement for additional infrastructure is reduced to one core flyover.



Client
SBB I-XP (Switzerland)

Period: 2001 - 2002

Delivered services
- Conceivable service offer train quantities
- Define connectivity concept
- Calculate minimal headways
- Conflict-free timetable on lines
- Track occupation in node
- Simulation of operational behavior
- Comparison of costs

Specifications
- Corridor Basel–Thun: approx. 150 km
- Planning horizon: 2020
- Minimal headway: 90 s
- Platform tracks in Berne: 14
- Approching lines: 9
- Trains trough node of Berne: 106 / h
- Costs conventional: 2.5 Billion CHF
- Costs with PULS 90: 0.4 Bilions CHF

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