

A close-up photograph of a human hand, palm up, holding a glowing, translucent blue globe of the Earth. The globe is illuminated from within, creating a bright blue glow. The background is a solid blue gradient.

Local delivery of world-class solutions

OPEN TRACK for design support

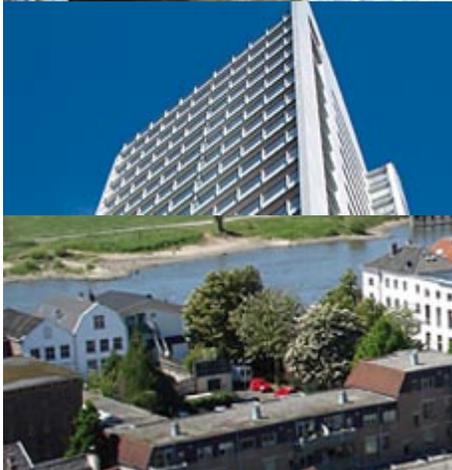
- Verification of feasible solutions -



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DHV Group



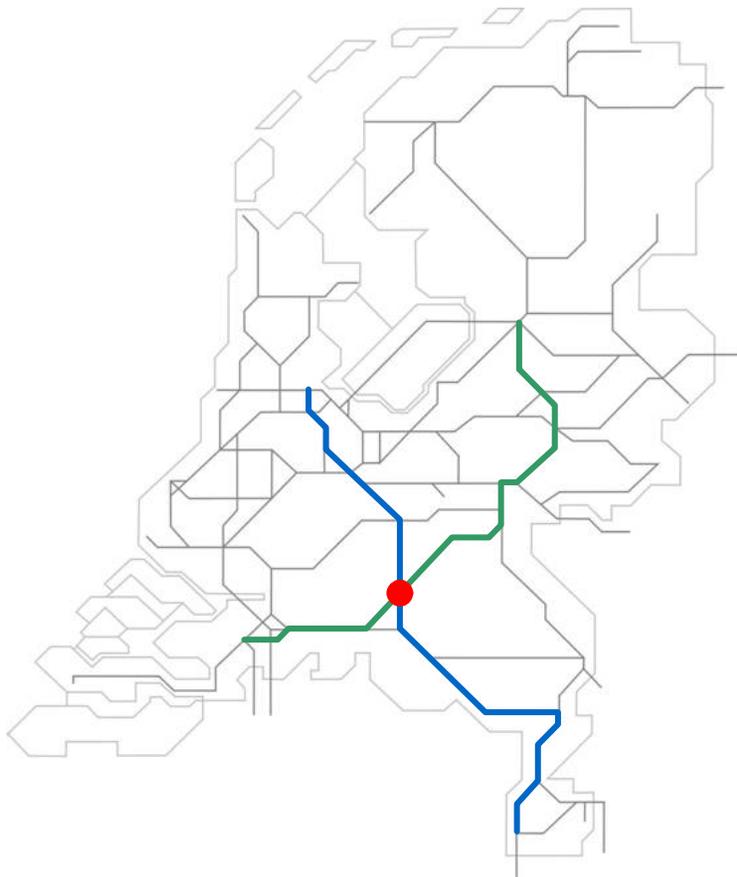
- Active worldwide
- 5,500 employees
- Connected through a shared mission, values, and projects
- Established in 1917

Expertise areas



- Airports
- Buildings
- Environmental Management
- Highways, Bridges, and Tunnels
- Intelligent Transport Systems
- **Mass Transit and Rail**
- Marine, Ports, and Waterways
- Urban and Regional Planning
- Water Management
- Water Treatment

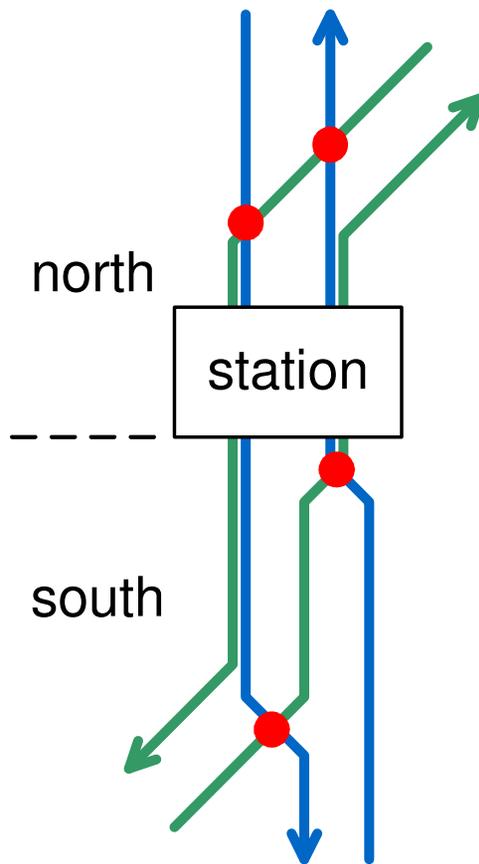
Project: Den Bosch station



- Junction of two major lines:
Amsterdam – Maastricht
Zwolle – Roosendaal
- Two customers:
Infrastructure manager (ProRail)
Train operating company (NS)
- Challenge:
A feasible infra solution for future train services and disturbances

Current situation

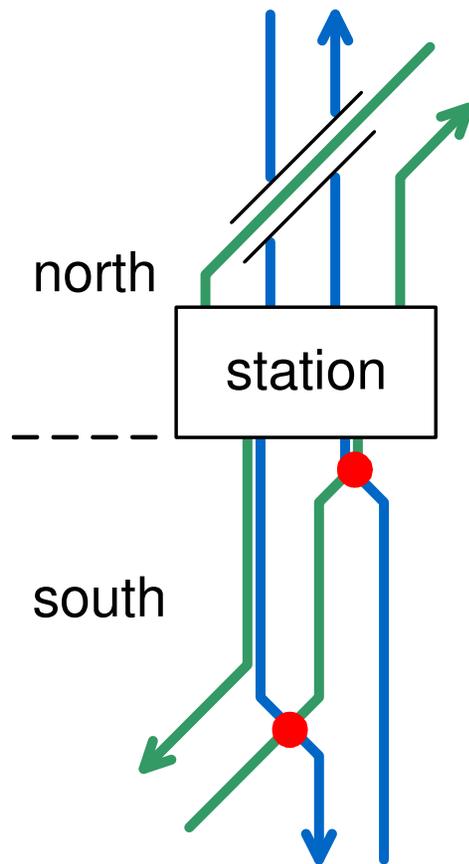
- North side: level crossing
current track lay-out
- South side: 3 tracks



- Amsterdam – Maastricht
- Zwolle – Roosendaal
- conflict point

Desired situation

- North side: flyover
new track lay-out
- South side: no change, in future
3 infra solutions



- Amsterdam – Maastricht
- Zwolle – Roosendaal
- conflict point

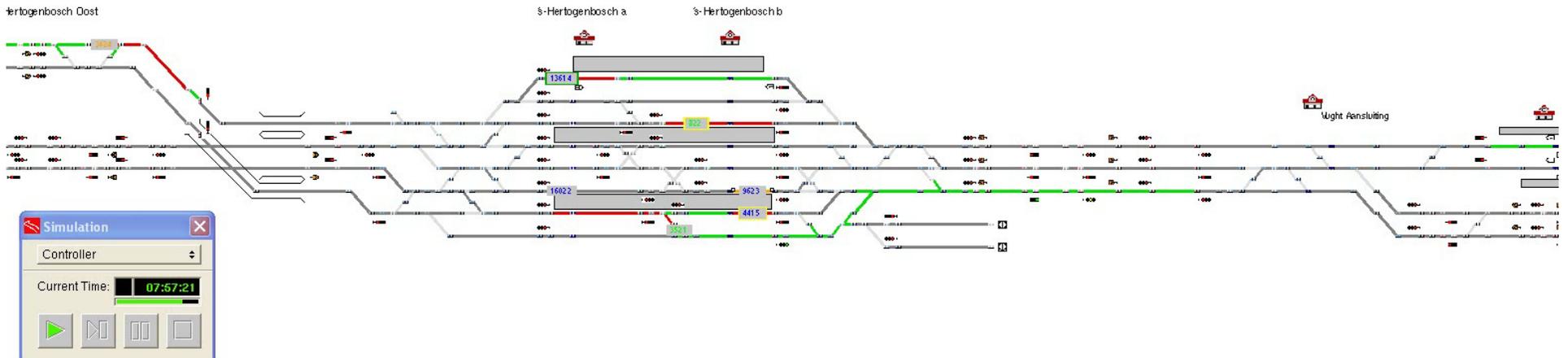
Challenge

The track lay-out has to facilitate:

- 3 alternatives for platform occupation * 2 line services + 6 re-routing scenario's = 12
- 2 timetables * 3 infra solutions (south) = 6
- $12 * 6 = 72$ scenario's in total
- Simulation of 12 selected scenario's (demo)

Demo

Consultancy and Engineering



Results

Added value of the simulation

- Visualisations (animation) of basic hourly pattern
 - To support the understanding of the solution
 - For technicians and non-technicians
- Mathematical analysis to support the advice

Results study

- Consensus about the track design
- Approval for further development

Added value OpenTrack

- **Confidence**

(in OpenTrack) that simulation represents the (future) reality correctly.

- **Understanding and confidence**

in the results by technicians and non-technicians. OpenTrack improved the discussion and the decision process.

Questions?

Consultancy and Engineering



Thank you for your attention!



Gateway to solutions