

High-frequency timetable makes demands on the tracks, the stations and the train operators

The Netherlands is one of Europe's front runners, but does not have a national rail industry and has therefore always been open to developments and innovations. The Netherlands has one of the most efficiently utilised rail networks in Europe.

We are one of the pioneers in restructuring the rail networks and we value technical and process-related innovation, optimisation, service, safety and lifecycle cost reductions. Examples are the construction of the High-Speed Line South, the introduction of ERTMS and the new metro line in Amsterdam. DHV Rail is involved in all these projects as a consultant for the public parties.

The regional networks in the Netherlands have experienced substantial growth, resulting in higher demand on main rail network capacity from passenger and freight carriers.

The pilot in week 36 (see the ProRail article starting on page 16 of this issue) investigates the intensified use of the tracks: a high-frequency service will encourage train travel 'without a timetable' – an Intercity and a Sprinter (slow train) will run on the key routes every 10 minutes.

A different frequency will change the demands on stations

A high-frequency service places greater demands on the transfer function of the station: determining the arrival platform just before the train comes in and moving large numbers of passengers between waiting areas and departure areas. This requires

space as well as stair and escalator capacity – not to mention clear and dynamic journey information. The peak load will be better distributed as a result of high-frequency services. This eases the burden on the station's transfer function capacity.

If the number of passengers grows, demand for retail and service facilities will also increase – thus creating higher demand on commercial facilities.

When the train capacity of centrally located stations has increased by not letting them be the end station of a line for slow trains but instead a through station, new bottlenecks may arise. Passengers will also have to get used to the fact that at larger stations the train will halt only shortly. Trains will turn and wait at smaller stations halfway between two larger nodes of the network. This affects not only the rolling stock, but also means that at smaller stations without personnel, the train operating company will have to create facilities for the drivers and conductors.

The balancing act between a robust high-frequency service and optimisation of the transfer function at stations needs further study. Analysis of transfer functions and passenger flows are key topics that NPC and Netherlands Airport Consultants (DHV NACO) specialise in.

Both NPC and DHV have extensive experience in the railway field. DHV Rail is in ProRails' top three of best performing engineering firms. NPC was formerly part of NS (Dutch Railways) and is now part of the DHV Group.

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