

The Challenge

Banverket (the Swedish National Rail Administration) is making big investments in the network during 2004-2015. The long-term nature of these investments makes it important to anticipate what types of trains and vehicles will be operated on the network in the future.

Transrail was contracted to make this analysis of future rolling stock and impacts on the infrastructure.

In Transrail's opinion, the previous Swedish high-speed studies had taken too narrow and specific approaches. A holistic view would be needed to determine what kind of high-speed rail would be best for Sweden. It was time for a broad high-speed investigation, taking all aspects into consideration at the same time.

Our Solution

Transrail's knowledge of the rail market was tapped by Banverket to make a more detailed study on high speed trains, i.e. of trains running at speeds ≥ 200 km/h.

- Existing high-speed trains (tilting or conventional designs) in Europe and around the world were analysed as well as new projects.
- Both European manufacturers and customer railways were asked for their opinions on future technological trends.
- The high-speed TSI (Technical Standards for Interoperability) and other relevant European standards were studied.
- Previous Swedish high-speed feasibility studies were examined.

One result of the study was the identification of a need to reconsider the current strategy for high speed services. Although today no trains in Sweden exceed 200 km/h, several Swedish rail infrastructure projects have been geared to carry tilting trains at up to 250 km/h on existing tracks. Also new lines have been designed to such standards. New investments were planned.

The survey showed that there are few examples of trains running at over 220 km/h with the tilting mechanism active. As a matter of fact, there is a change of preferred technology at approximately this speed. Conventional suspension designs are preferred above this speed.

Infrastructure constructions in line with the TSI would allow train operators to purchase mainstream products "off-the-shelf", which would reduce cost while increasing reliability.

A number of further technical, operational and commercial aspects were raised.



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