MEGACITY MUMBAI

Software development for the Indian market: Handle complex challenges with RailSys®

Client: Mumbai Railway Vikas Corporation Ltd. (MRVC)
Project period: 2013

Initial situation

7.4 million passengers. 2,900 train runs per day. The rail-bound suburban traffic in Mumbai is very complex and operates at its capacity limit with one of the highest passenger densities in the world: Instead of the intended 1,800 passengers per train, up to 5,000 passengers use each train during the peak hours.

To reduce the number of passengers per train, a higher amount of train runs is required. Due to the increased demand the overcrowding of the trains can barely be counteracted. To reduce the amount of passengers to a maximum of 3,500, MRVC develops various projects, which include investments in the railways infrastructure and rolling stock, in cooperation with the Government of Maharashtra and the International Bank for Reconstruction and Development.

Challenge

The timetable construction and simulation system RailSys® should be integrated for the elaboration and evaluation of these projects. The entire Mumbai suburban railway system should be investigated. Long distance passenger trains and freight trains operate in some sections and are integrated into the model as well. By schedule, the trains run every three minutes on the main lines of the Western and Central line and every five minutes on the Harbour line. They operate seven days a week for 21 hours per day.

Strategy

To work efficiently, MRVC decides to use RailSys® Enterprise, which enables several persons to work on the project simultaneously.

The initial data input is integrated in a RailSys® training, increasing the MRVC experts' knowledge with regards to the handling of the software.

It is important to everyone that the application suits the client. Therefore, adjustments are made to be able to e.g. model the signalling system of Mumbai. In the course of a factory acceptance test the model is tested and approved for the projected assignments.

In an extensive training phase the MRVC personnel becomes acquainted with RailSys® and its application for an operational investigation. In a subsequent on-the-job training phase the utilisation of RailSys® is integrated into the processes at MRVC.

An excursion to Europe concludes the training, informing the MRVC employees about signalling systems and operational processes of other suburban railway systems.

Result

The timetable construction and simulation system RailSys® has been successfully integrated into the working processes of the planning department for the Mumbai suburban railways. MRVC now owns an up-to-date, redundancy free model of their infrastructure and timetable data. Various outdated data sources, often only available on paper, have been replaced.

MRVC uses RailSys® to investigate the impacts of planned infrastructural modifications and to develop and test suitable timetables for the optimal utilisation of existing line and track capacities. RailSys® supports the efficient production of timetable publications, platform workings and occupation charts as well as management information reports. MRVC personnel have also started to use RailSys® for countrywide investigations regarding the optimisation of the infrastructure and operation

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