

## **New Dimension of Operations and Interlocking Simulation for Practice-oriented Training**

Simulation systems should represent reality and are designed for user preparation for the daily practice. An upgrade of the BEST system (BEST = Betriebs- und Stellwerkssimulation, Operations and Interlocking Simulation) to simulate future technologies was initiated at DB AG (German Railways). The BEST PRESIM (BEST Redesign and Extension) project focusses on:

- Implementation of modern train protection system ECTS (European Train Control System)
- new user interfaces and functionality of manufacturers of traffic control systems and electronic interlocking (Bombardier, Scheidt&Bachmann, Siemens, Thales)
- simulation of interlocking (remote control and local control)
- implementation of data exchange with other IT-systems like timetable or interlocking planning data
- internet connectivity to enable e-learning and self-directed learning.

The aim of the project is to upgrade the technical platform and components to a high level of modern software architecture and to a modular and easily expandable IT-structure. Standardization and multifunctional usage will cut maintenance and development costs, both for qualification programs and for interlocking planning processes.

High level traffic controller's qualification is assured by simulation of current and future technology. BEST will be professionally adapted to implement current and future traffic control systems. Therefore, the actual specification documents defining new or to-be-extended traffic control systems are analyzed and the described functionality will be implemented. This allows training new systems on the simulator before commissioning in reality. The project BEST PRESIM is an important cornerstone for the relaunch of the traffic controller qualification at both DB Netz and DB Training and the new simulator will improve qualification and handling confidence of train controllers.

BEST PRESIM project is run by an interdisciplinary team formed by members of DB Netz (infrastructure manager), DB Training (training provider), Scheidt&Bachmann (manufacturer of the simulation system) and the Technical University of Dresden. The functionality and processes are specified in detail, will be implemented and tested. The new simulation facilities will be the most modern of their type in Europe.

All in all, staff qualification at DB will be significantly improved by the new simulation system.