In order to retrofit obsolete steam turbine control systems MAN PrimeServ provides comprehensive modernization concepts including a contemporary PLC based digital speed controller.

Challenge
Steam turbines are operated in different applications as mechanical drives for compressor trains or as generator drives for power generation. Furthermore, steam turbines are used for the supply of constant pressure process steam using the surplus energy to drive generators or compressors. As the operating mode strongly depends on the application, the steam turbine speed control has to fulfill multiple requirements as power control, frequency control or extraction pressure control. Since control systems have gone through a fast technical development, the functionality and the control concept of older control systems may often not meet current standards any more. Furthermore, years of operation may have increased the risk of malfunctions and component failures whilst spare parts supply and technical support are often not immediately available any more.

Modernization Solution
In order to retrofit obsolete steam turbine control systems, and therefore to meet current standards and requirements, MAN PrimeServ provides comprehensive modernization concepts including a contemporary PLC based digital speed control. As standard the speed control is realized on the SIMATIC PCS7 series or the newly designed Turbolog platform. In addition, also other platforms as Woodward applications can be provided on request. The consistent use of industrial standard components as well for the programmable logic controller as for the independent monitoring systems supports the long-term availability of spare parts and technical support.
Modernization of Speed Control
Steam turbines DG/DK

The central module consists of a highly available programmable logic controller as standard, with the open-loop and closed-loop control functions of the steam turbine train grouped together in a common system. The I/O modules are either realized as standard, highly available or fail-safe modules according to their intended use and can be further extended to include additional functions. By updating the control parameters and algorithms as well as modernizing also the related systems, e.g., the overspeed detection system, MAN PrimeServ provides for the entire unit being in accordance with current technical standards and meeting requirements up to IEC 61508 SIL 3 and API 670.

Advantages
Being the OEM of your steam turbine MAN PrimeServ provides you a comprehensive modernization solution - including the complete loop as well as the necessary mechanical modifications - for a successful and sustainable upgrade:

- Advanced retrofit solution with modern control and safety concept
- Comprehensive modernization concept tailored to specific train and application
- Industrial standard components for long-term spare parts supply and technical support
- Process control system with clear and intuitive visualization of machine parameters for user-friendly operation
- Analysis and recording functions for all information as measured values or alarm messages
- Connection to MAN PrimeServ irds® system for provision of remote service support

Comprehensive Modernization
MAN PrimeServ provides comprehensive modernization concepts to modernize your equipment – no matter if you want to optimize reliability, operating costs, environmental sustainability or any other characteristic. Please contact us for further information.