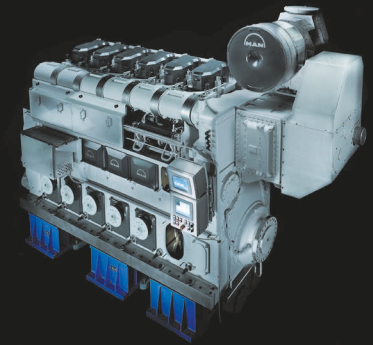


# PREEvision – Universal Management of Requirements in Functional Development

## Case Study MAN Diesel & Turbo SE



### The Customer

MAN Diesel & Turbo SE is one of the world's leading manufacturers in its strategic business units of Engines, Marine Systems, Turbomachinery, Power Plants and After Sales. MAN Diesel & Turbo offers the right product solution for every application in the Power Engineering field with products ranging from small four-cycle auxiliary engines to two-cycle engines for gigantic container ships.

### The Challenge

**To organize and manage complex sets of data in the functional development of electronic controllers for four-cycle engines.**

MAN Diesel & Turbo SE has a growing and complex data structure due to the large number of engine functions, signals and variants. Added to this are increasingly stringent legal requirements (e.g. emission standards) and new customer requirements. A configuration management and change management tool is used to manage the data. Requirements management and architecture design were not integrated previously, so this gap in the existing tool-chain needed to be filled.

### The Solution

**Functional development with universal requirements management using PREEvision.**

MAN Diesel & Turbo SE uses PREEvision as its requirements management tool in the functional development of four-cycle engines. Around 50 engineers work in parallel on current and future generations of controllers. They define the interfaces between functions and establish parameters for later engine calibration.

PREEvision currently manages around 1500 individual requirements for approx. 20 primary engine functions (I/O, parameters, test specifications).

In productive application cases, requirements management, the test specification and the software architecture are currently generated by toolkit elements that are later reused.

PREEvision manages all requirements related to engine functions. The implementation status of requirements is universally traceable.

MAN Diesel & Turbo SE also integrates functional tests in PREEvision. Test specifications are defined for engine functions and are linked to requirements.

After PREEvision had been evaluated and incorporated into the existing tool environment, it took around 6 months until the customer was able to utilize requirements management and specifications for engine functions. The data was not imported here, rather it was all created. Just three months later, MAN Diesel & Turbo SE added test specifications to PREEvision, and after just six months the architecture.

### The Advantages

**Universal support over all phases of the development approach per the V-model.**

PREEvision supports functional development from requirements management to the architecture and finally the testing phase.

At MAN Diesel & Turbo SE, the focus is on specifying functional requirements, monitoring their implementations and associated tests. All key employees involved in the development have access to requirements specifications, automatically generated reports and test reports.

Engineers in different roles work together efficiently in different project phases using the same system and a single database. Large quantities of data are managed, tracked and reused in a clearly organized way.

The use of PREEvision is making functional development in four-cycle engine area at MAN Diesel & Turbo SE more efficient.