

Asset management for hydropower plants OnCare.Asset





Increased maintenance efficiency

Identify today the maintenance needs of tomorrow. Implementing tools for maintenance management increases the efficiency of maintenance activities, while at the same time reducing costs and saving resources. Voith supports you in ensuring the highest level of system availability.

Unexpected machine downtimes and high costs for maintenance and repairs impact the bottom line. Professional asset management is important in achieving a high level of system availability along with low maintenance costs. Computerized maintenance management system (CMMS) is recommended to manage and monitor these factors. These systems facilitate reliable planning and monitoring of key parameters, transparent budget management and timely initiation of measures. But the important integration of asset and component data is very time consuming with most systems.

However, CMMS systems are not new and have been in use for several years. Many hydropower plants already use these systems to effectively manage the maintenance activities for their machinery. That said there is a problem with conventional CMMS systems: Although some of them have been running for many years, they still do not have all of the integrated, maintenance-relevant data. Due to this missing information, effective maintenance can be difficult.

Quick realization of your goals with OnCare.Asset

OnCare.Asset is the optimal solution for efficient asset management, from planning and documentation to cost control and replacement parts management. Unlike standard software solutions, Voith offers you a maintenance concept that facilitates efficient asset management with low administrative work during the implementation phase and ongoing operation.

Hardware and software licenses are supplied with conventional systems. The customer is responsible for the integration of the maintenance data and empirical values for execution, implementation and process sequences in the integration phase.

With OnCare.Asset, all important data is already stored in the software system. In order to allow you the quickest approach in managing all relevant data, OnCare.Asset uses the OnCumulus platform or local on-site server.



- 1 Voith perfectly coordinates maintenance management with your requirements
- 2 An employee starts with carrying out preventive maintenance measures
- 3 Clear and friendly user interface enable easy access to all maintenance relevant data and documentation

The OnCare product family

Other products in the OnCare product family can be used for improved machine availability. OnCare.Health provides an efficient condition monitoring system. In addition, with OnCare.Asset there are interfaces to Process Control Systems (PCSs).

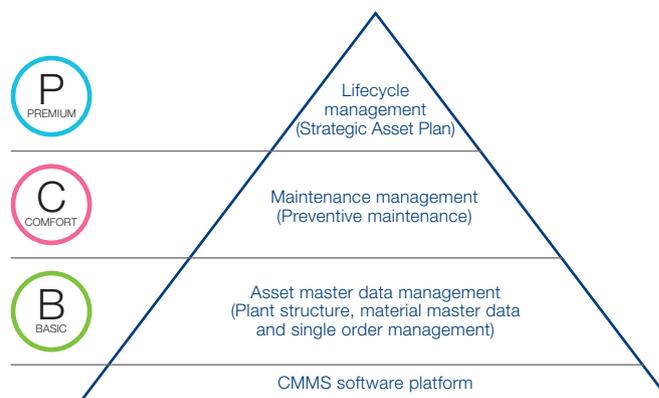
The ideal solution in three packages

Voith offers OnCare.Asset in three different plans – BASIC, COMFORT and PREMIUM. All three service packages are based on the CMMS platform. With the BASIC package, the database for the assets, parts lists, documentation and also instructions for maintenance activities are stored. The COMFORT package includes support in implementing preventive maintenance processes. With the PREMIUM package, you can ensure efficient asset management over the entire life cycle of your components.

The modular structure of the packages allows you to first familiarize of the functionalities in the BASIC package and at a later point to expand your asset management system.

Your contact in Sales can explain the benefits of OnCare.Asset for your hydropower plant, using a demo version.

OnCare.Asset: Three packages at a glance



You can find details on the scope of the individual service packages in the table on page 7.



Quick availability of your asset management systems and substantial cost savings

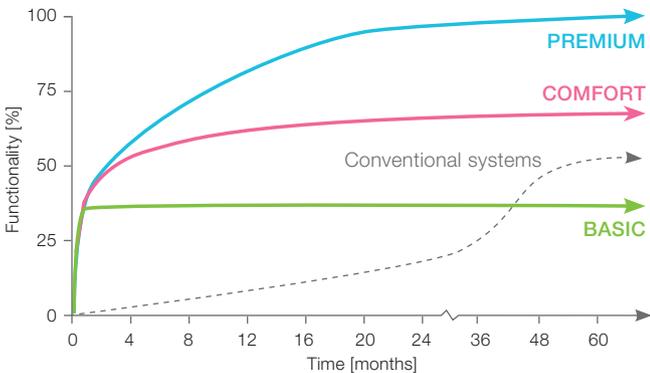
Depending on the requirement, you can achieve quick availability of the needed functions with the suitable package. OnCare.Asset helps you to ensure trouble-free operation, cost savings and good profitability of your hydropower plant.

Lower maintenance for your team

The BASIC package offers the asset structure, the material/component master data and notification and reporting functions after implementation. The secret to this success is that with OnCare.Asset, much of the maintenance-related data has already been stored in the system before first use. Extensions such as customer data can be transferred after a few business days using OnCare.Asset without exhausting your resources.

While integration of preventive maintenance measures in conventional systems takes several years due to missing resources such as specific system knowledge, the COMFORT package can be reliably used after a few months. For this, you receive a package of key parameters which will allow you to improve the planning and scheduling of preventive maintenance measures and a quick analysis of weak spots and costs. As a result, with the asset management system, your maintenance needs are substantially reduced. If you prefer of the PREMIUM package, you can achieve considerable savings due to optimized processes between operation, maintenance and service partners. With OnCare.Asset, you can implement efficient asset management more quickly versus conventional CMMSs and you can invest in the future of your system.

OnCare.Asset packages in comparison to conventional systems



Easy operation

Planning, documentation and monitoring of the entire asset management system in one platform ensures all required maintenance-related data can be reviewed at any time and by any user. Quick and intuitive navigation is facilitated by graphic illustrations in the applications and a intuitive user interface. Mobile devices can be used via the cloud-based application OnCare.Asset function.

Low costs

With OnCare.Asset, weak spots in your hydropower plant can be detected at an early stage and necessary measures initiated. Thus unplanned shutdowns and associated production stop-pages can be prevented. Furthermore, OnCare.Asset allows you an overview of all maintenance processes. Thus your outlays for analyzing key parameters of different systems can be substantially reduced. Integrated replacement parts management ensures that only often-needed replacement parts are stocked and thus reduces your storage costs.

High level of system availability

Due to continuous monitoring of the entire power plant, potentials for optimization can be identified and preventive measures can be planned and initiated. Due to efficient replacement parts management and interfaces with materials management systems such as SAP MM, OnCare supports smooth execution of preventive measures. In turn, unplanned shutdowns can be substantially reduced and the availability of your power plant can be increased.

Integration of other tools

OnCare.Asset can be perfectly combined with OnCare.Health, which registers the condition of the bearings and alerts OnCare.Asset in case of damage. In addition, the products, control systems such as PCS and ERP systems, can be integrated via optimized interfaces in OnCare.Asset. OnCare.Asset can also be used as front-end for most ERP-systems (SAP, Infor, IBM, JDE e.g.) to reduce administration effort and increase user-friendliness.



Customer: Water and Power Development Authority (WAPDA), Pakistan
Hydropower plant: Tarbela IV

Successful installation in Tarbela (Pakistan)

Learn more about the rapid implementation of OnCare.Asset at the hydropower plant in Tarbela (Pakistan):

The OnCare.Asset system is used for planning all maintenance processes in the power plant. The system compares the key output figures, reads the stored data and reacts to any discrepancies. Through this approach, the customer is able to identify potential optimizations and plan preventive maintenance measures, thereby allowing the operator to greatly reduce unplanned downtimes and increase the availability of the plant. Tarbela is regarded as an example of an intelligent hydropower plant and a pioneer for other plants around the world.

When implementing OnCare.Asset, the contents of the BASIC and COMFORT package were integrated in sections. The preventive maintenance concept was initially realized for the hydraulic machine, high pressure unit and cooling water system and then extended to the entire hydropower plant. OnCare.Asset could also be used to service portable multifunctional devices. Thanks to the structured database from Voith, only minimal administrative input by the customer was required and the concept could be realized in a very short time.

The technical objects of the BASIC and COMFORT package could be prepared by Voith in such a way that the data could be populated into the OnCare.Asset application within three months.

Keyword: Efficient maintenance

With the OnCare.Asset maintenance management system, you can ensure efficient asset management for the complete hydropower plant.

Degree of detailing

Package scope

Your coverage
(service agreement)

Your benefit



- 1 Preventive maintenance concepts ensure a high level of machine availability
- 2 Comprehensive modular packages can cover all customer specific requirements

2



Maintenance management for corrective and plant activities

- Up to 500 objects*
- System structure, functional groups
- Material master data (MMD), material and warehouse numbering
- Malfunction messages including P1 - P4 reporting processes
- Reporting and work order processes for corrective maintenance measures
- Key parameters/reports on costs, hours and number of work orders carried out
- Up to 10 licenses
- Software update service for two years

- No additional costs for:
 - Hardware and licenses
 - Engineering and implementation
 - Training
 - Online support

- Support for standard products and processes with a short implementation time



Support for implementation of best practice maintenance processes

- Up to 1,500 objects*
- Including BASIC service package
- Planning and scheduling of activated work order processes for corrective and preventive maintenance measures
- Automatic creation of repetitive activities
- Preventive maintenance measures for the most important equipment
- Key figures on planning, scheduling and shutdown times
- Graphical navigation guidance
- Mobile maintenance module
- One interface to other business systems
- Software update service for four years

- Including BASIC service package:
 - No further costs for expanded training measures

- Substantial savings in the case of development and implementation costs for maintenance



Excellent maintenance processes with a focus on risk based performance maintenance

- Up to 5,000 objects*
- Including COMFORT service package
- Standard plans and descriptions for work orders, maintenance guidelines
- Integrated interface with OnCare.Health
- Maintenance measures for the entire hydropower plant
- Risk assessment / stoppage frequency assessment (RCM / FMEA)
- Key figures for analysis of weak spots, continuous improvement, system stability issues
- Electronic documentation system with ordering function
- Warehousing and material management module
- Basket / material ordering module
- Shutdown planning module
- Three interfaces to other business systems
- Software update service for six years

- Including COMFORT service package:
 - No further costs for training measures in the RCM / FMEA area

- Considerable savings on routine process costs due to an optimized interface between operation, maintenance and service partners

OnCare.Asset is a system in the OnCare line. Other service products in this line are OnCare.Health.

* The following maintenance-related data is designated in OnCare.Asset as sections: products, replacement parts, functional groups and parts lists.

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