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# LiMain – Intelligent Maintenance

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Beat your challenges with smartness

[www.liebherr.com](http://www.liebherr.com)

## LIEBHERR

Maritime cranes



# Become independent of time, place and resources

Liebherr Intelligent Maintenance (LiMain) is a new level of independence for manned and unmanned platforms, that offers increased crane availability at lower costs. LiMain is a fully digital, remote and semi-automatic maintenance system, which saves investments and resources for the platform operator.

## The LiMain Modules

The key element of LiMain is the modular system architecture. Platform operators can choose from various modules and so determine the degree of autonomy and scope of intelligent maintenance for the crane.



### Module 1: Automatic Greasing

Functionally critical components are continuously checked and automatically lubricated. The aim is to ensure automatic, need-based lubrication at all relevant lubrication points. The prerequisite is that the bearing points must be in motion during lubrication.



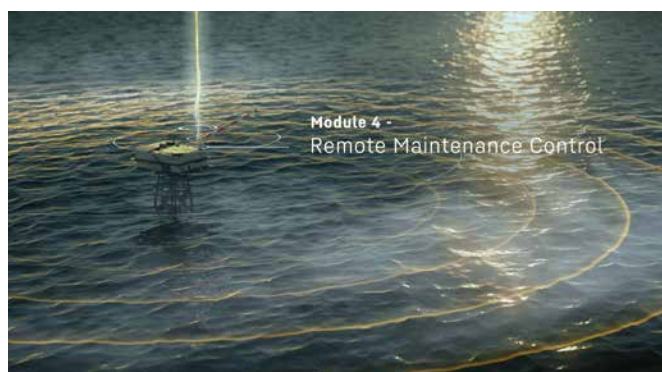
### Module 2: Condition Monitoring

State-of-the-art sensor technology provides detailed data on relevant components and systems of the crane. All of the following conditions can be recorded electronically and accessed remotely using data cable connection, gsm or satellite. These are available in the control system and can be queried via a user interface. Transmission of the data to a web portal is done cyclically.



### Module 3: Predictive Maintenance

Detailed data based on decades of experience and know-how of more than 1,000 offshore cranes can be used to forecast the remaining lifetime of selected components. Based on a comprehensive condition evaluation in module 2, Condition Monitoring, a remaining life-time or probability of failure can be determined through comprehensive analyses and calculations. The results are visualised in a web portal in numerical or graphical form.



### Module 4: Remote Maintenance Cycle

This module allows semi-automatic maintenance of the crane and at the same time connects all the modules in order to achieve the best possible maintenance: protected, completely remote, based on digital data.

With LiMain module 4, maintenance can be carried out remotely, from land. Manned service visits on site at the crane can thus be reduced to a minimum. This way of performing service with LiMain is contemporary because it reduces costs, protects the environment by significantly reducing travel expenses and at the same time ensures a long and sustainable use of the unit.