Liebherr Electronics

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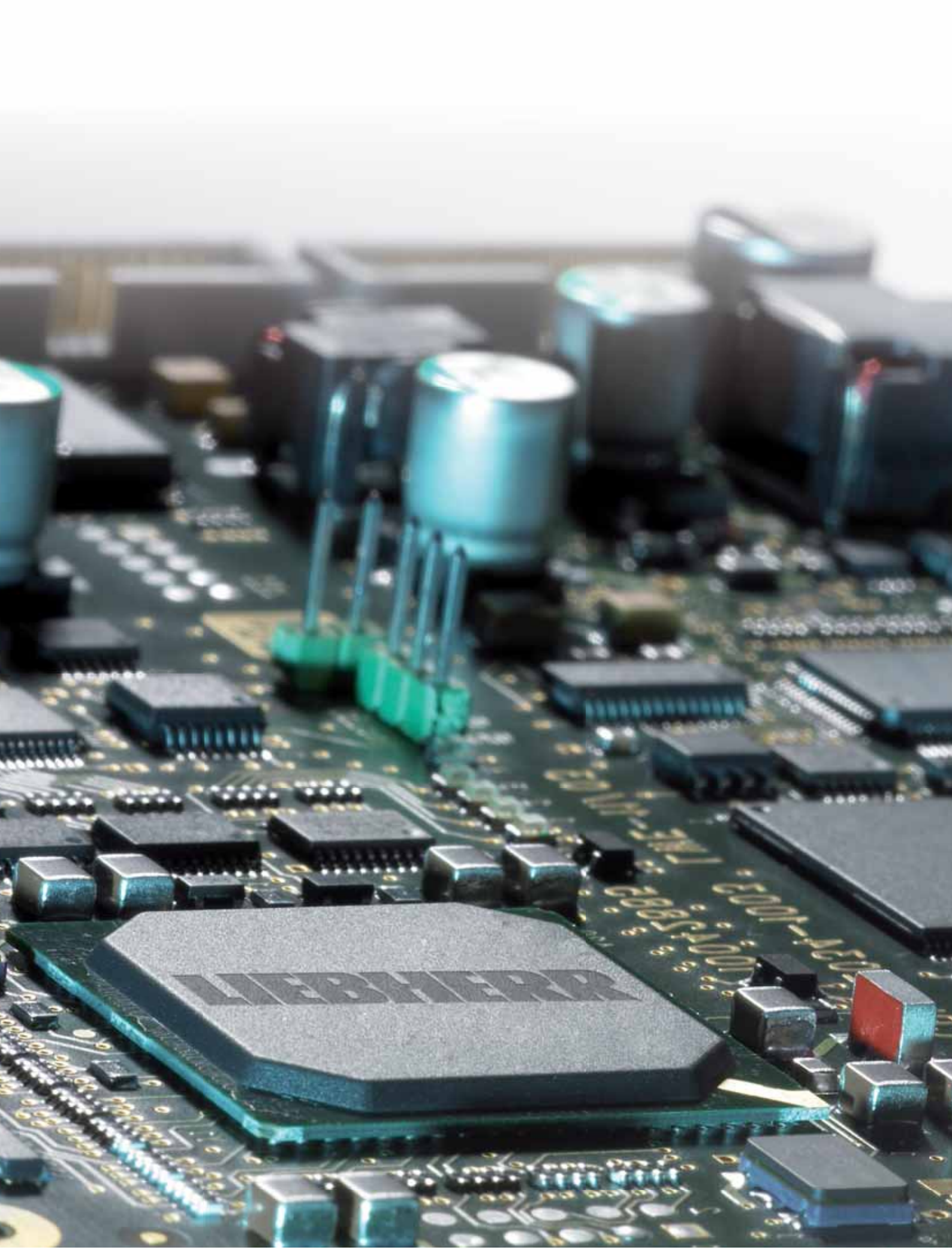
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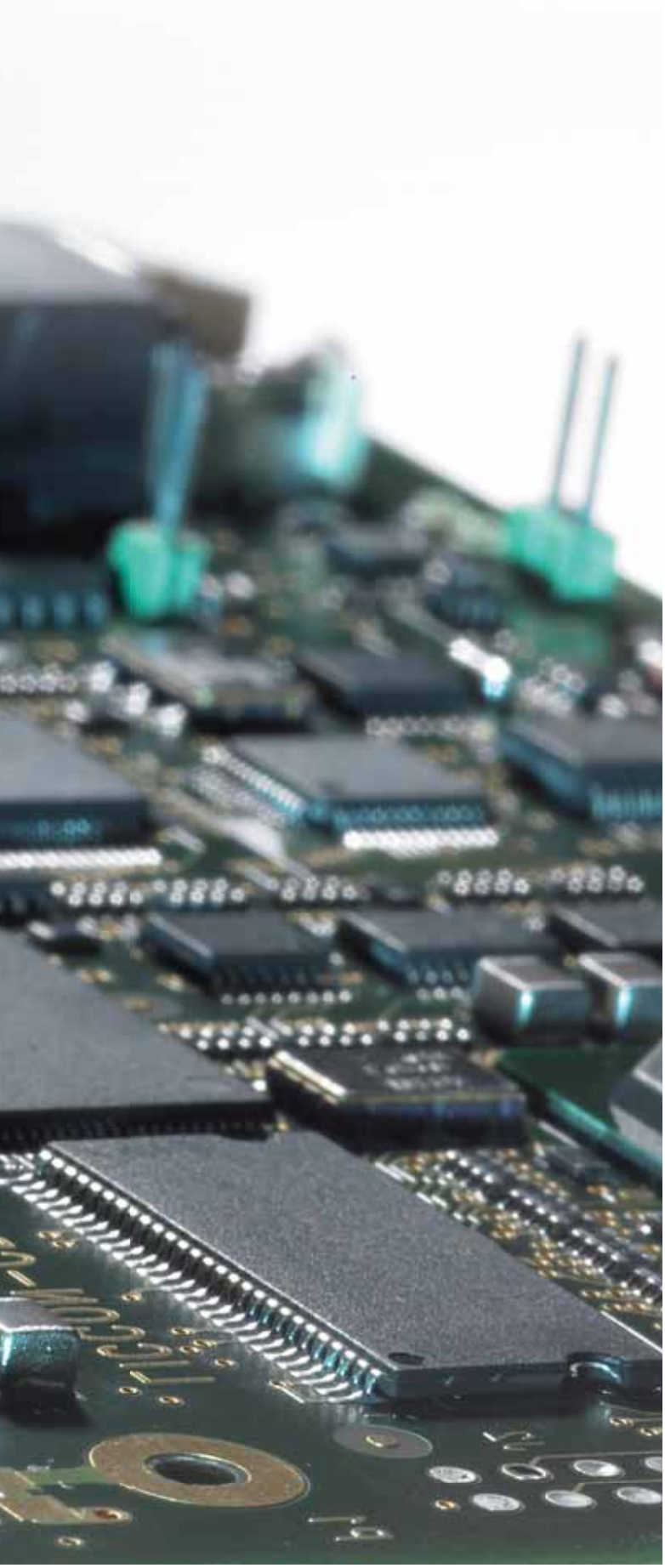

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Liebherr for Liebherr

Aviation, traffic engineering, mining, home appliances, the offshore industry or port equipment: Liebherr products stand for top quality and reliability all around the world. This is in part due to the performance of their electronics. For this core competence, Liebherr relies on state-of-the-art technology developed internally. Liebherr-Elektronik GmbH in Lindau, Germany, develops and manufactures high-grade electronic sub-assemblies and components.

Liebherr Electronics offer a broad basis combined with inter-sector know-how. Customers do not only benefit from innovations developed for companies belonging to the Liebherr Group, but also from synergy effects of lessons learned from other industries. For example, the extremely demanding safety concepts in the aviation sector lead to valuable impulses for other application fields.

Liebherr offers complete solutions which integrate all the required components, from the operating and display unit to input and output modules as well as high-performing software and hardware in a single system.

One partner, one stop.

© Eurocopter

© Hawker Beechcraft

© Bombardier

Litronic®

Litronic® is the central crane control and management system developed by Liebherr. It guarantees precision, safety and accurate crane operation using the most up to date software and hardware.

Modular and open system architecture allows quick implementation of new requirements or changes resulting from practical experience. Compatibility with other systems opens up unlimited application possibilities for diagnosis, operation and process data recording.


INFORMATION SYSTEM
ENGINE MANAGEMENT
SAFETY SYSTEM
MACHINE DATA RECORDING
550
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Pactronic®

As the cargo handling industry is evolving, so are the needs for efficient, cost-effective cargo handling equipment and increased handling performance. In addition, no manufacturer can reject the demand for sustainable, environmentally sensitive operation and the call for low-emission cargo handling equipment.

Liebherr Pactronic® stands for Power by Accumulator and Electronics. The system is characterized by an energy storage device, which is added to the drive system as a secondary energy source. The Liebherr Pactronic® hybrid drive is an integrated approach to meeting the needs of the industry. Charging of the accumulator is done by re-generating the reverse power while lowering the load and using the surplus power from the primary energy source. This results in substantially higher hoisting and lowering speeds. Not only is the crane's efficiency increased but also the turnover **(+30%)**. In addition, the crane's fuel consumption is significantly reduced **(-30%)**. This is achieved by fully utilizing the reverse energy and surplus power within the system.

Operational Advantages:

- 30 % more turnover
- Shorter vessel docking times
- Reduction of total cost of ownership

Environmental Advantages:

- 30 % less fuel consumption
- 30 % less CO_2
- 30 % less exhaust emissions

Structural Advantages:

- Designed service life is equal to that of the crane
- Just visible inspection every 10 years
- 100 % recyclable


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Cycoptronic®

Liebherr Cycoptronic® is a synonym for accurate and sway-free load motion. Cycoptronic® automatically initiates dynamic counterbalancing movements and equalizes transverse and longitudinal sway of the load while operating at maximum speed, thereby anticipating the effects of any possible load including wind.

The sensor system constantly sends information from gyroscopes attached to the ropes to the Litronic® system which in turn calculates possible sway. The angular measurement, from the gyroscopes, guarantees reliable operation during any weather conditions and operation without any interferences from environmental influences (e.g. dust, rain etc.).

Cycoptronic® is the perfect addition to the drive system especially in combination with Pactronic®. In terms of accuracy, safety and increased handling performance these two systems complement each other perfectly.

Key Advantages:

- Exact motion of load without sway
- Enhanced turnover
- Easy, stressless and safe crane operation


LIEBHERR
HAMBURG SÜD
CCNI
PUERTO LIRQUEN
SÜD

Teach-In

Teach-In is a point to point control for semi-automatic operation which pilots the crane to predetermined loading and unloading points. After the (un)loading points have been set, the crane moves between them with the highest possible speed. If one of the Teach-In points is reached, the crane automatically stops without any load swing, thus eliminating the time-consuming task of positioning the load at the (un)loading points.

Key Advantages:

- Easy definition of target positions
- Automatic steering to target points
- Crane motion can be stopped at any time
- Jib head and load are always within the permitted area
- No spillage of bulk material

Sycratronic®

Sycratronic® („Synchronizing Crane Control System“) allows two Liebherr Mobile Harbour Cranes to be operated simultaneously by one crane driver for improved speed, capacity and safety.

International safety standards require a down rating of crane capacity of 25% for manually operated, multiple crane lift operation if a synchronised movement of the cranes can’t be guaranteed. With Sycratronic® no down ratings are necessary, i.e. both cranes can be fully utilized at maximum lifting capacity.

In line with Sycratronic® Liebherr has developed another innovative add-on feature for heavy lifts. The Vertical Line Finder is a control assistance feature which assists the operator in avoiding side pull of the load caused from the long distance between operator and load or asymmetric centres of gravity.

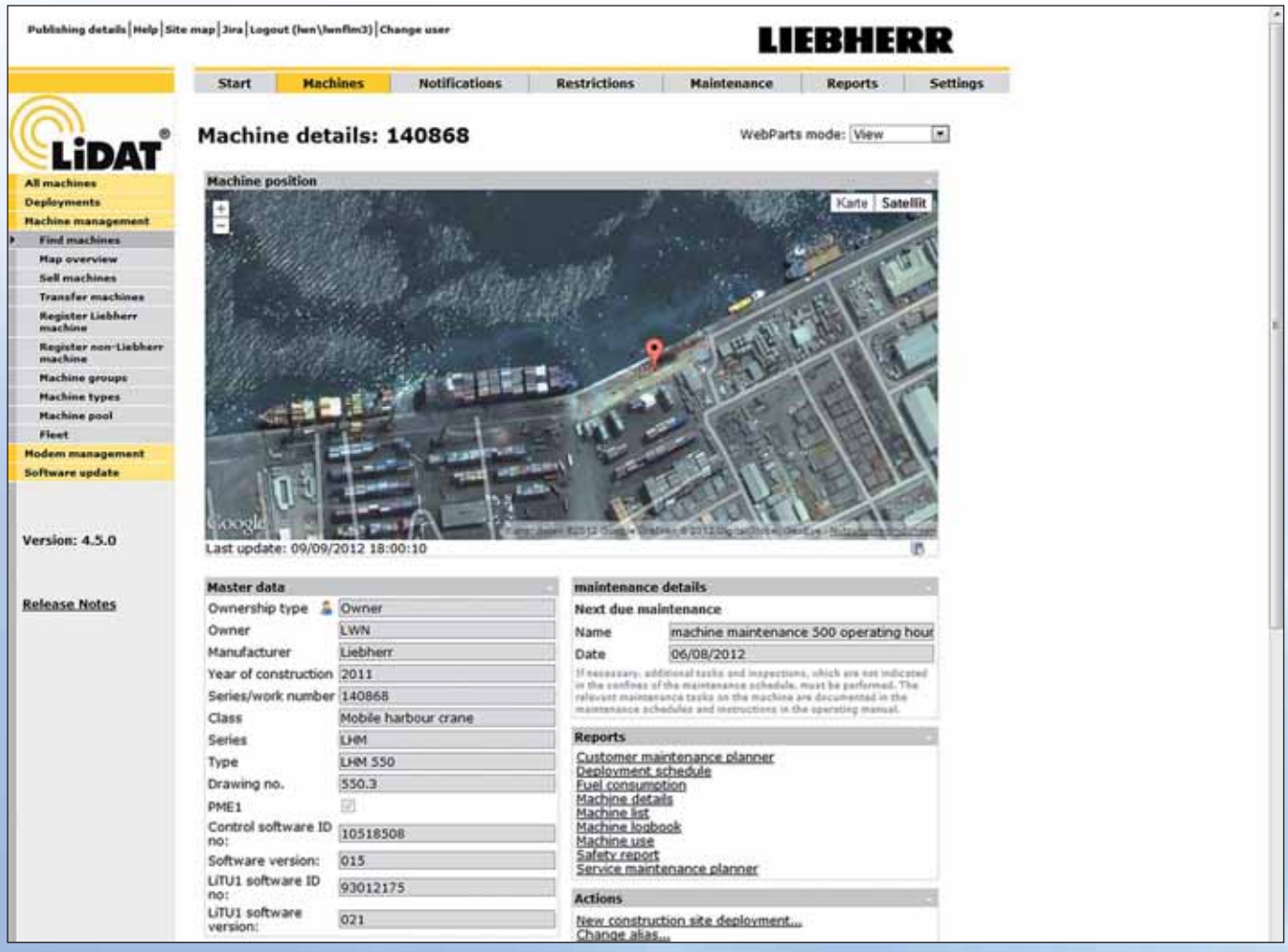

WILSON CORK
WILSON

LiDAT®

LiDAT® is a data transmission and crane locating system especially developed by Liebherr. Based on state-of-the-art data transmission technology, LiDAT® provides information on the operation of equipment enabling efficient management, optimal operation scheduling and remote supervision.

LiDAT® Basic Package

The web portal provides direct access to all relevant data, e.g. position of the crane (google maps), operation hours, level of fuel, error messages, maintenance interval etc. With the integrated notification system, all the most important machine data can be viewed at any time from any internet-able device. Data are updated several times a day and can be accessed at any time.



LiDAT surface

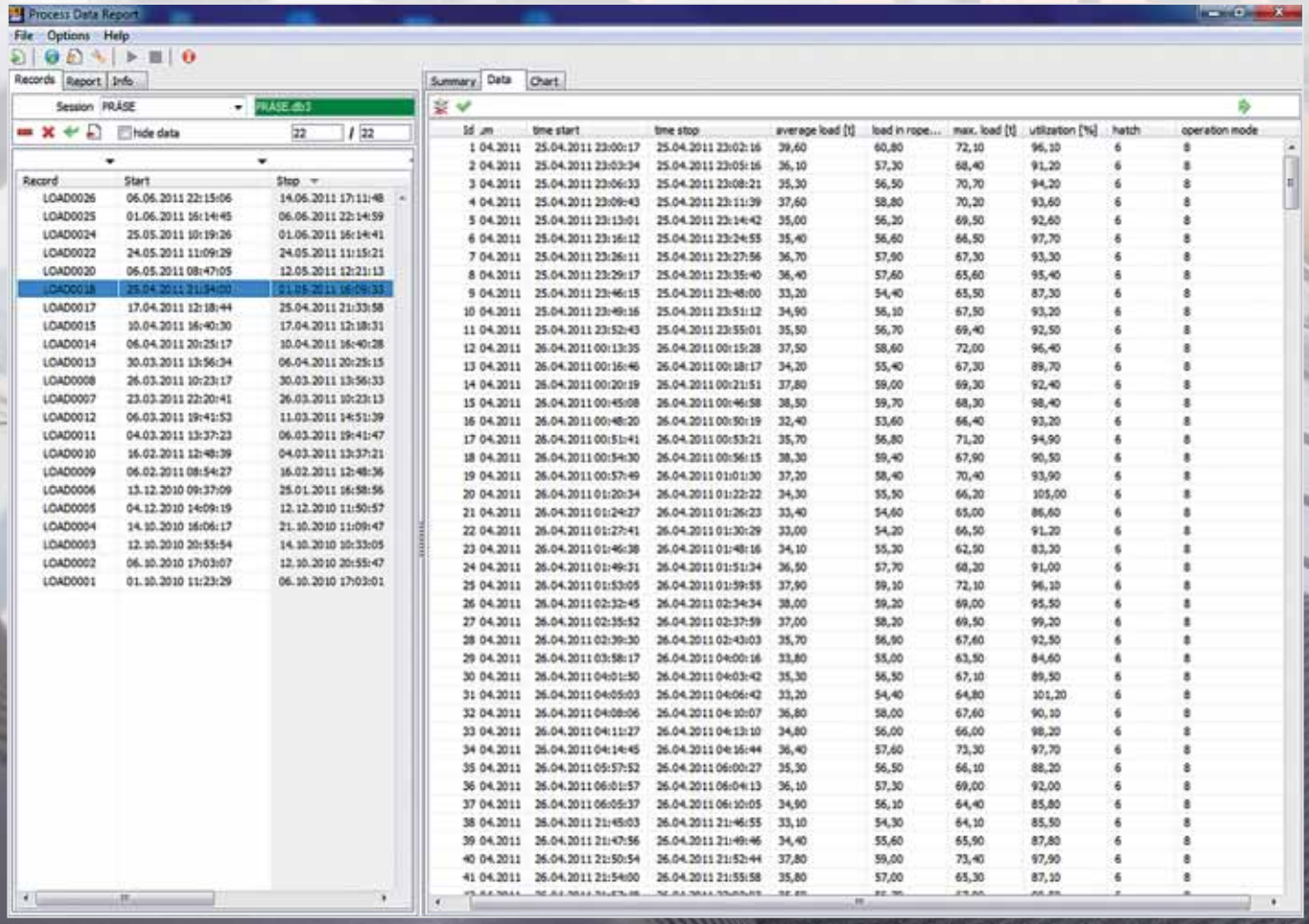
LiDAT® Teleservice

The permanent availability of Liebherr cranes is an important prerequisite for smooth and efficient operations. Using the teleservice a Liebherr service engineer can log directly on the crane for instant support in order to analyse data and carry out online troubleshooting.

LiDAT®

LiDAT® Turnover Package

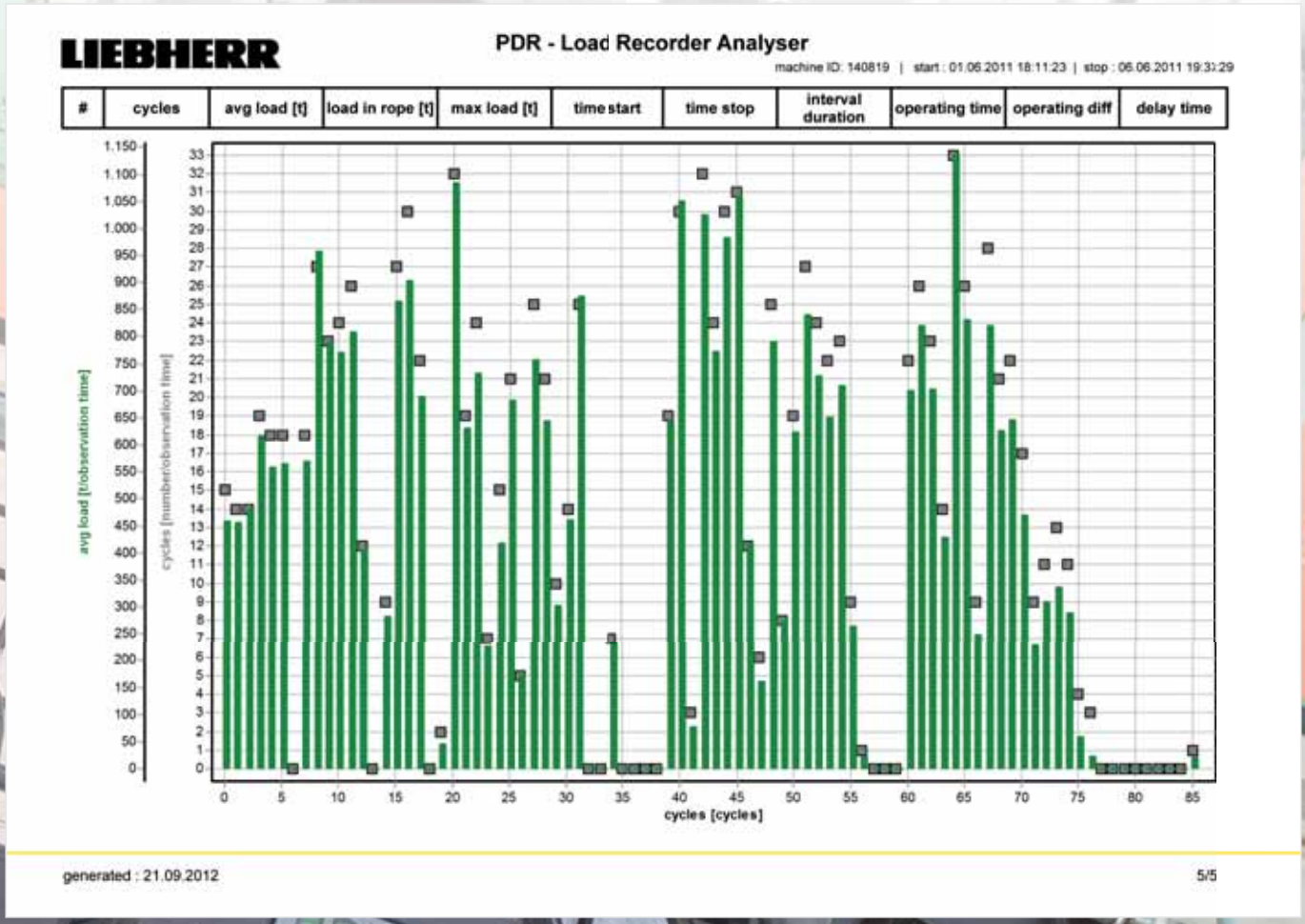
The turnover package allows for a comprehensive analysis of the complete turnover process, e.g. load cycles, turnover/hour, turnover/crane etc. With the help of the load recorder load cycle data are transmitted during the working process by means of LiDAT®. The analysis and graphic display of these data is carried out using process data reporting software (PDR), which is adapted to the method of application.



Process data report

Key Advantages:

- Overview of safety-relevant information at a glance
- Optimised spare parts management
- Reduction of service costs
- Efficient machine usage for longer service life



Load cycles analysis

Liebherr-Werk Nenzing GmbH

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