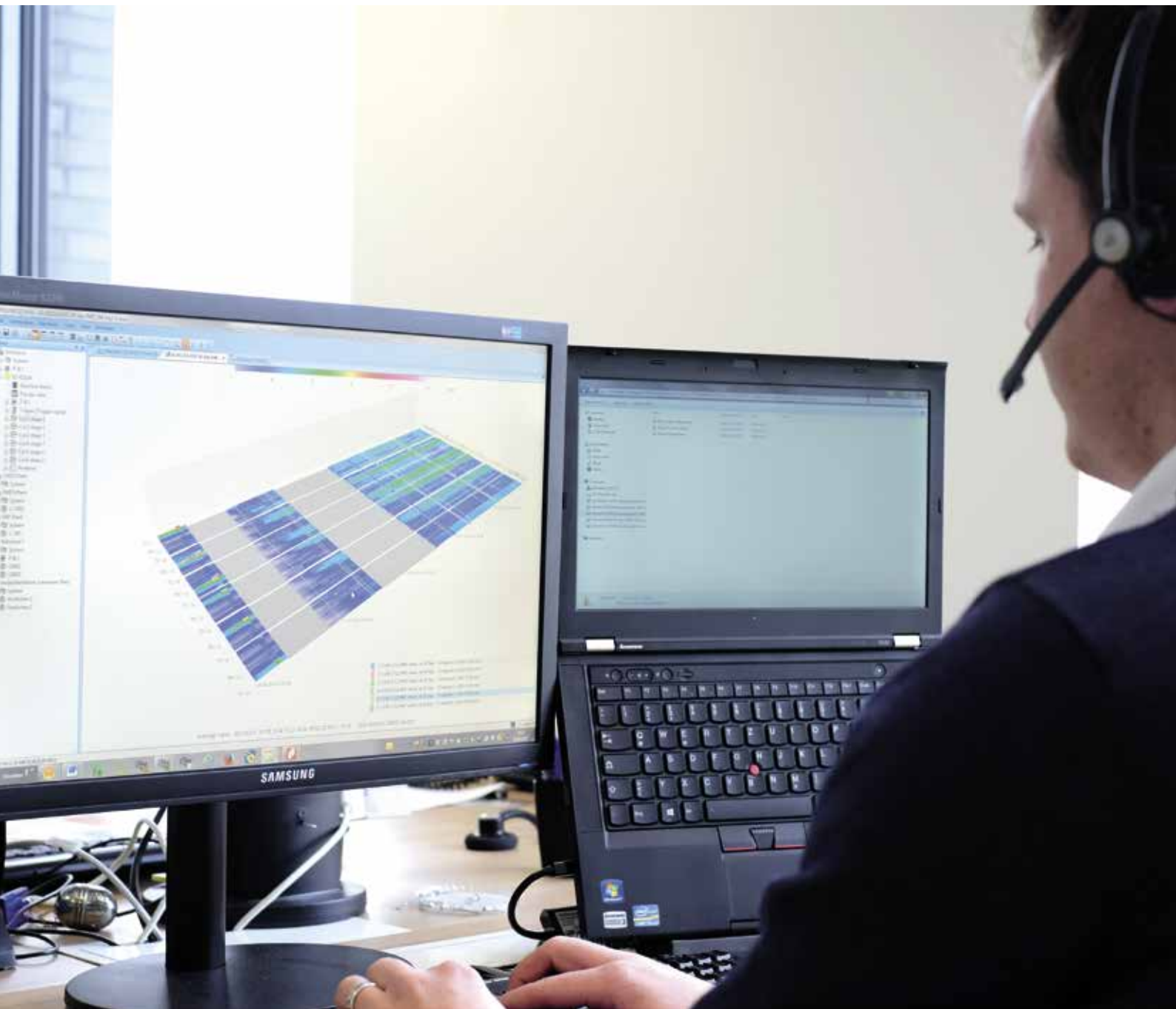


Customer Support

PROGNOST Systems Lifecycle Support





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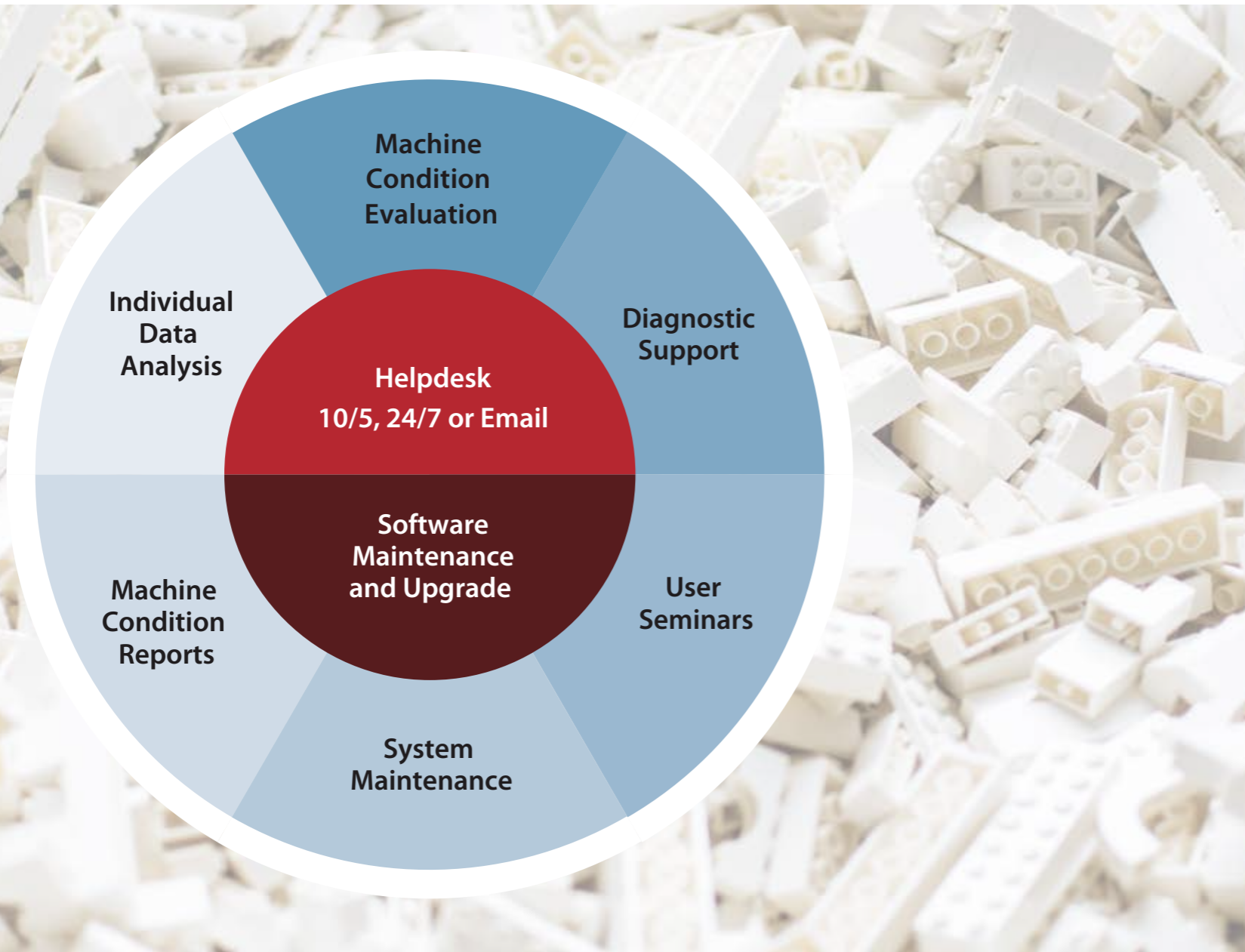
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We personally support all PROGNOST® users

for reaching their ultimate goal:

Reliable protection and monitoring of Rotating Equipment

Modular Service Offering



Safe and reliable operation of complex production units requires early and precise information on the machines' status and operating conditions. This information forms the basis for maintenance planning and supports decisions to increase uptime.

PROGNOST® supplies this information for reciprocating and centrifugal machinery with high precision and reliability. Our specialists can support you with interpretation of collected data as well as with handling the hardware and software itself. Our specialists have extensive knowledge of machine technology, data analyses and system operation.

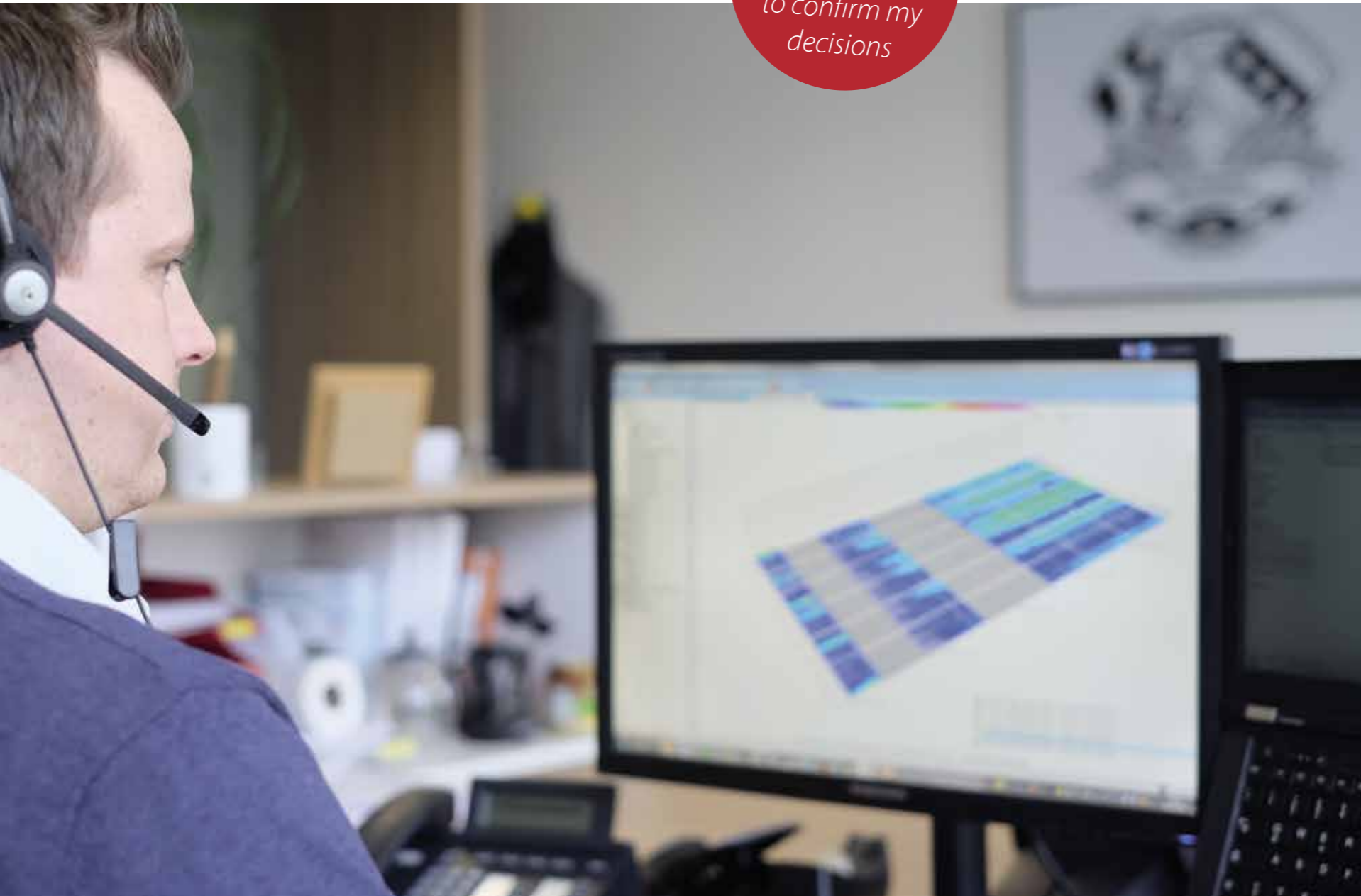
The PROGNOST Customer Support team has experience supporting a large number of critical machines worldwide, which are installed in a wide range of processes and applications. Over the past 30 years we built up an extensive knowledge database which you can directly benefit from to ensure high protection and availability standards for your machines.

Advantages

Our goal is to provide a package of services tailored to your team's needs. We offer a modular service level agreement allowing you to choose the service you need.

Helpdesk

I want a responsive Customer Support to confirm my decisions



Our Helpdesk service is an integral part of the Service Level Agreement and offers direct personal contact to the PROGNOST Customer Support team. Our Customer Support team provides interpretation of the recorded data as well as system operation consultation. Helpdesk enables customers to verify their own diagnoses in a personal discussion and with our expertise available through our certified machinery analysts.

Online access to all data allows our analysis experts to view the same data as you and discuss the findings by phone or email.

Phone Helpdesk "10/5"

Upon phone inquiry our customers receive support from customer support team within one hour of receipt of the phone inquiry during normal business hours, Monday through Friday.

Phone Helpdesk "24/7"

Upon phone inquiry our customers receive support from customer support team within one hour of receipt of the phone inquiry, includes nights, weekends and holidays.

Email Helpdesk

Upon email inquiry sent to our dedicated mail address the customer receives written support by email from customer support team the following day from Monday to Friday between 8:00 a.m. to 6:00 p.m. CET.

Advantages

In-depth knowledge supports your decision-making process and helps you achieve your maintenance and operational goals.

Automatic alarm forwarding to PROGNOST Systems provides expert advice and reports when failures arise.

Machine operators receive information regarding machine issues without an active request, sometimes even before anyone knows of any machine issue on site.

Helpdesk with personal support is a valuable resource and provides expert know-how around the clock. Supplemented with remote access to your system it allows fast and efficient advice.

Software Maintenance and Upgrade

We set strict requirements for IT security and system performance



To ensure that your PROGNOST® system always works securely and reliably, regular Software Maintenance is essential. **Software Maintenance** is an integral part of the system health to protect your investment against obsolescence and ensures system stability. PROGNOST continuously develops enhancements to improve the system efficiency, operational and IT security and to optimize monitoring reliability. Service packs optimize technical software characteristics and design while keeping the interface consistent. This will prevent the system from any upcoming vulnerability due to cyber-crime or incompatibility. A **Service Pack** can include new failure patterns, new hardware driver or updates to address new issues such as security. Software Maintenance excludes new features and functionalities like new analyses, which are considered as **Software Upgrades or System Extensions**.

Software Maintenance optimizes the system performance by eliminating issues and applying advanced development.

The fundamental best practice for maintaining monitoring systems: Be proactive, not reactive, about performing updates and patching. If you are not patching on a regular basis, the system becomes obsolete over time.

We recommend all our customers to keep their systems up-to-date by contracting Software Maintenance.

Advantages

With Software Maintenance, your system is kept up-to-date with latest technologies to run with high-end efficiency. Service packs can be obtained easily via the Auto Updater directly from the user client software or by contacting your PROGNOST customer support team.

PROGNOST gathers annual experience of +11million machine operating hours including all new failures happened within. The essence of this data collection is available as new and refined Failure Patterns added to your diagnostic database so your system receives the key learnings from +1,400 machines.

To adapt more quickly to customer and IT security requirements, PROGNOST is transitioning from annual software releases to software maintenance.

**Software Maintenance is defined by the IEEE: "Modification of a software product after delivery to correct issues, to improve performance or other attributes, or to adapt the product to a modified environment."*

Analyses and Reports

I want to outsource regular machine assessments



Analyses and reports are compiled by the diagnostic experts of PROGNOST Systems. The conclusions and recommendations are based on the monitoring data, trend analyses and customer feedback to provide assessments which operators can rely on.

Machine Condition Evaluation

On a regular basis (annually, semiannually, quarterly, monthly or weekly) PROGNOST Customer Support specialists review all machine data and trends. In addition, alarms from the PROGNOST® system are directly passed on to PROGNOST Customer Support. The alarm parameters will be analyzed and the results returned to you. Furthermore, your threshold settings will be reviewed and maintained for improved system efficiency. This shifts your resources while providing regular adjustments allowing for more accurate data with ever-changing operating conditions.

Machine Condition Reports

Similar to the Machine Condition Evaluation, the adjustments and findings can be documented in a report which serves as the basis for your preventive maintenance planning. Our analysis specialists evaluate trends, events and changes and provide comments and recommendations on any abnormal or significant findings. These recommendations support you in planning the right measures for a machine overhaul and in assessing the effectiveness of these measures afterwards.

Individual Data Analysis

For detailed evaluation of recorded system messages and measured data we offer comprehensive data analysis describing possible failure scenarios. Furthermore, you receive recommendations for further planning of maintenance activities based on our experience.

System Configuration

Manual adjustment of operating conditions, warning thresholds and machine protection limits is an important part to achieve the best possible analysis result. Each system is delivered with default values and thus offers protection from the first revolution to avoid major consequential damage in the event of an failure. However, each machine behaves differently during operation, so based on the trend and in consultation with the operator, it is recommended to adjust the existing values after approx. 3 months of operation. It is also recommended to check the values again after major overhaul or after several years of operation.

Advantages

External machine condition evaluation transfers the regular analysis workload from your desk to the PROGNOST Customer Support team.

On-demand reports including RCA (root cause analyses) identify the most efficient maintenance measures.

Only a manually adjusted system provides optimal machine protection and indicates emerging damage at an early stage. A recommendation of this setting can be made remotely or on site.

User Seminars

I am new in the field of monitoring and I need training



Software Modules

- Communication Dashboard displays main information of the communication module in a browser.
- Monitoring Dashboard displays main information of the monitoring module in a browser.

Training
Seminars for Starters, Advanced Users and Specialists

On-site PROGNOST Training Center Web Training

Getting started	Initial User	Operator
Instrumentation	Advanced	Customized

PROGNOST seminars teach the basics of reciprocating compressor technology as well as frequency analysis on centrifugal equipment. Furthermore, system operation and optimization will be trained. Our analysis specialists explain technology, procedures and functions allowing you to better interpret monitoring data and failure patterns and carry out the analytical steps required. User questions are encouraged by the instructor who demonstrates useful analysis and diagnostic methods.

Different seminars are available not only for your machinery and monitoring specialists, but also for your control room and instrumentation personnel.

The **Initial User Seminar** is the start-up training. Expert instructions enable you to use the visualization software, to evaluate the condition of machines and perform accurate failure analyses.

The **Advanced User Seminar** covers advanced diagnostic methods and root cause analyses.

The seminar for **Control Room Personnel** covers the basics for using condensed machine condition information.

Participants of the **Instrumentation Specialists Seminar** will become skilled in the fundamentals of PROGNOST® hard- and software. Component replacement and general troubleshooting procedures are included.

Annual system and analysis training
A annual three day training with individual elements especially for you. This training includes system handling as well as data analysis techniques for system users.

All seminars are available on-site , at PROGNOST Systems facilities or as Web-Training from our training platform PROGNOST Campus.

Advantages
Well trained users are able to make more effective use of a modern monitoring system and achieve an optimized machine operation by taking advantage of the imparted knowledge about data analysis.

System Maintenance

We need assistance when maintaining the monitoring system



Regular inspection and maintenance of a PROGNOST® system hardware is the basis for reliable operation. An system check is a valuable service offer on the service agreement which can be set to annual or every other year.

PROGNOST Customer Support checks the functionality of the PROGNOST® system and performs maintenance tasks within the cabinet including the hardware installed (e.g. control of the fans, cleaning/replacement of filters, optical inspections).

After the system and measuring loop inspection is concluded, a report on the system condition as found and corresponding adjustments or further work necessary is produced and transmitted via email.

On-site Application Service Visit

PROGNOST customer support offers on-site visits by a PROGNOST machine and system analysis experts who travels to your facility to perform on-site maintenance, system monitoring, advanced technical diagnostics, preventive and

predictive service planning, performance tuning and/or training of personnel. Regular review of system health prevents potential system problems and provides suggestions to improve performance as necessary.

Remote Application Service Support

PROGNOST customer support offers on demand remote support by system analysis expert who supports a on-site maintenance personnel, to perform system monitoring or advanced technical diagnostics. Providing preventive and predictive service planning, performance tuning and reviewing system functionalities, verifying potential system problems and suggesting system improvements as necessary are elements of this service offering.

Advantages

System checks on-site or remotely guided are recommended or prescribed as a Proof Test Interval according to IEC 61511. You may also occasionally need defective components replaced.

Diagnostic support based on temporarily acquired PROGNOST® data

Can you monitor our problem machine temporarily



Initial start-ups of new compressors, machines with a failure history or production assets going back online after overhauls – these are the critical moments in which online monitoring and diagnostic expertise is required.

After analyses of the data by our Customer Support experts, machine operators receive a Machinery Health Report that is based on gapless and simultaneously analyzed signals of the entire machine. Equipped with this report, operators have good information to make firm decisions for maintenance campaigns, performance optimization and reliable uptime predictions.

The PROGNOST Customer Support offers several options to monitor your rotating equipment. From short term temporary monitoring to repetitive periodical monitoring and finally long term monitoring. All three models are based on the machine data acquired and recorded with the powerful and mobile PROGNOST®-NT Swift system.

Status quo

Temporary Monitoring

Status quo Status quo Status quo

Periodical Monitoring

Long-Term Monitoring



Development and production of the worlds' best Online Monitoring Systems for Predictive Maintenance

PROGNOST Systems offers intelligent monitoring systems for Rotating Equipment, especially for reciprocating compressors and gearboxes, of extruder trains. Our solutions include automated machinery diagnostics, SIL-certified machine protection and performance monitoring. Especially developed solutions for Predictive Maintenance of reciprocating and centrifugal machinery detect impending failures very early and assign the affected components. Operation-critical damages are avoided and maintenance measures can be performed efficiently.

Our customers are excited about the possibilities to diagnose failures at their machinery and to get a user-friendly tool at the same time which enables them to move from preventive to Predictive Maintenance procedures. The PROGNOST Customer Support is sharing its 30 years experience as a email or phone 10/5 to 24/7 service. Our global Sales and Services network in 40 countries provides timely responses to any question and requirement – in your timezone and your local language.

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Reliable protection and monitoring of Rotating Equipment



Your PROGNOST Systems Team

Imprint

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