compacer
>eurodata-Group

SMART SERVICES SOLUTIONS

The smart services solutions from **compacer** bring together top-class technology to create complete digital special concepts for various different business segments and sectors. All the solutions are united by the concepts of ideal process automation and target-oriented data processing.

PREDICTIVE MAINTENANCE – DATA-DRIVEN PRODUCTION SAFETY

Every year, significant financial losses accrue due to the failure of technology. Small causes often have huge effects in this context because production environments optimised for efficiency and productivity are largely composed of closely intertwined production steps.

Unexpected machine or component failures can bring an entire production line to a grinding halt. The essential lesson here is that the costs of production downtimes are generally far greater than the costs of the actual troubleshooting. Monitoring your Service Level Agreements and guaranteeing an effective preventive maintenance of industrial machines are both key to limiting machine downtimes to a minimum – and thus essential for your competitiveness! By monitoring and analysing real-time and historical data, irregularities can be noticed well before they become real problems. This knowledge enables predictive maintenance and thus avoids unplanned shutdowns.

Enable carefully **planned maintenance cycles** based on precise analyses. Service machines when they actually need it – and only then!

React immediately to specified events thanks to sophisticated alerting functions. Prevent unplanned production downtimes.

Gain **transparency on process and data flows** thanks to the **compacer** monitoring tool **edpem**.

Save costs by avoiding loss of production and limit storage costs for spare parts.

Increase your production safety through continuous evaluation of real-time data.

Just rely on our vast experience: for over 20 years, customers have been partnering with **compacer** to protect their highly sensitive data.

THE RIGHT KIND OF ANALYTICS

Predictive maintenance is a method to use data-driven procedures to prevent downtimes. However, the data needed to gain insights and **predict maintenance** works will depend on each individual use case. Our **compacer** solution can be used in a broad range of settings, but in principle, it can be applied wherever machines are operated. Whether your data will be analysed by our own **compacer** solution **edbic**, the well-known IBM analytics system Cognos, or by your proprietary system, we will support you in all three variants.

DEVICE MONITORING

Real-time analytics with edbic
Our dashboard displays relevant sensor data in real time, such as temperature or pressure. These can first be aggregated, linked or derived to concentrate large amounts of data into actionable information or to provide an enhanced quality of information.

Analyse historical data with analytics systems
Our device monitoring dashboard displays up-to-date and highly aggregated indicators and historical statistics based on collected machine data to monitor and assess the current state of all production facilities.

Our monitoring tool edpem can do even more
Events along the production chain are made visible so you can monitor the entire production process. This allows you to not only integrate machine data, but also to include logistics data or data on individual work pieces, for example via RFID recognition. This is especially important where complex production chains need to operate in fine-tuned, interwoven steps and you need to recognise both malfunctions within individual machines and failures affecting the entire process chain.

ANOMALY DETECTION

Real-time analytics with edbic
Predefined rulesets allow you to define thresholds that will be compared against the actual sensor data in real time. This allows you to detect a gradual increase in temperature or other anomalies early on.

Analyse historical data with analytics systems
An uninterrupted production provides typical data that the analytics system will learn to recognise as such. But machine learning technologies can identify patterns that remain invisible to the naked eye. If any anomalies crop up within in the data, the system will detect and assess them.

Our monitoring tool edpem can do even more
Note that data anomalies do not necessarily need to trigger an immediate response, but can be used in further analysis and for predicting future failures instead.

FAILURE PREDICTION

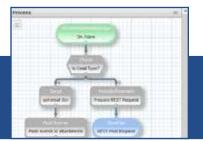### Real-time analytics with edbic
Depending on the use case, it might be sufficient to predict failures based on threshold values and prior experience. For example, it is possible to detect cracks in components through a change in the frequency spectrum of structure-borne sound.

Analyse historical data with analytics systems
Gathered data and recognised patterns can be assessed by statistical methods and used to calculate the probability of faults and failures and when they will occur. This is usually achieved using prediction models – artificial intelligence, that is – that have been specifically trained for a particular use case.

Our monitoring tool edpem can do even more
Planned maintenance windows can then be used to replace parts that are not yet broken but that have been assessed as "critical" by the system, i.e. when they have a high probability of failing within the next maintenance interval. This prevents unnecessary costs due to unplanned plant-wide downtimes.

ACTION CONTROL

Real-time analytics with edbic
When a threshold is exceeded, our integration platform edbic can immediately launch appropriate actions, such as sending alarms via e-mail/text messages or initiating non-time-critical feedback controls.

Analyse historical data with analytics systems
The analysis of historical data lets you optimise production processes to prevent future failures and keep downtimes to a minimum. For example, it can be used in conjunction with indicators to modify the operation of a machine in such a way that it produces less waste.

Our monitoring tool edpem can do even more
If an Asset Management System is connected to **compacer edbic**, it can also automatically launch maintenance tasks.

SUPPORT FOR YOUR SUCCESSFUL IMPLEMENTATION!

- Equipping machines with sensors.
- Connecting machines to the existing IT infrastructure.
- Integration data streams from sensors and machines.
- Monitor process and data streams with immediate detection of and automatic response to predefined events.
- Migrating your data to Big Data processing environments based on SQL or NoSQL databases or even to server clusters like Hadoop.
- Benefit from business intelligence and data mining technologies made by global market leaders.
- Leverage machine learning techniques.

APPLICATION MODELS FOR COMPACER'S INTEGRATION PLATFORM:

MANAGED SERVICES:

services provided through our e-business platform. As we belong to the eurodata group, we are benefiting from eurodata's own ISO/IEC 27001-certified, high-performance data centre at Saarbrücken (Germany).

SOFTWARE-AS-A-SERVICE (SAAS):

Secure cloud services at eurodata's own ISO/IEC 27001-certified, high-performance data centre at Saarbrücken (Germany). As part of the eurodata group, we fully trust in our sister company's data security.

ON-PREMISE:

Implementation based on the technical infrastructures of our customers or of their hosting providers.

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Are you familiar with **compacer edbic**? **edbic** is a modern data integration system which connects all those involved along the value added chain (digitalisation). All the business data with their various diff erent formats and origins come together in **edbic** and the business processes are improved in the long term by automation of the kind that makes sense. **edbic** supports the visualisation of those business processes (e.g. with **edpem**, **arcplan**, **cognos**) and ensures clarity (technical monitoring and process overview) and stability (active cluster architecture), for example in internal sequences (A2A) or data interchange with business partners (B2B). Info at **compacer.com/en/edbic**

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i   For more information go to: **www.compacer.com/en**