

CONDITION MONITORING  
& DIAGNOSTICS OF ROTATING  
MACHINERY

[www.ec-systems.pl](http://www.ec-systems.pl)

# CONDITION MONITORING - AN INNOVATIVE APPROACH



**E**C Systems is a leading developer and supplier of vibration-based condition monitoring and diagnostic systems for rotating machinery. What makes us unique, is a very close cooperation with institutions of science from around the world, since the very beginning of our company's existence. This way we have access to the latest research developments, which we implement into our products. We can also work with the best engineers and conduct complex tests and simulations in the university labs.

Tomasz Barszcz Ph. D.  
President of the Board EC Systems



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# COMPANY PROFILE

EC Systems is an expert in design and implementation of industrial systems for monitoring, diagnostics, testing and control. For over 15 years our solutions have been used all over the world, in all the key sectors of industry. We have completed a range of various projects, starting from solutions like battery management system for electric vehicles or electronic grenade fuse, through systems for windshield wipers engines end-of-line testing, condition monitoring of wind turbines and reciprocating compressors, systems for remote monitoring of railroad crossings, bus diagnostics, up to systems designed to manage entire power plants. Based on our internal resources we prepare the project plan, design electronics and mechanics, develop low level and high level software, and perform final assembly and commissioning. Our portfolio includes ready-made products and specialized services, including constant remote condition monitoring of machines. We are unique due to our independence, references and experience in implementing special purpose solutions.

In the range of ready-made, standard products our main focus is condition monitoring and diagnostic systems for rotating machinery, which are used in various applications, from wind turbines and printing machines, through exhaust gas ventilators in power plants and dewatering pumps in mines, up to natural gas reciprocating compressors and synthesis gas compressors in chemical factories.

**We offer:**

- Online condition monitoring systems for rotating machinery, together with installation and commissioning,
- Data acquisition and signal conditioning modules for specialized measurements and off-line analysis,
- Specialized services: machine technical condition assessment and constant remote condition monitoring

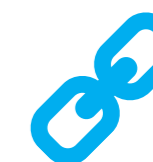
Over  
**15 years**  
on the market



**Specialized team of:**

- diagnostics engineers
- electronics designers
- software developers

Member of  
engineering  
holding of 500  
people  
– **EC Grupa**



Close cooperation  
with **technical universities** from all  
over the world



## Vibration-Based CONDITION MONITORING

# CONDITION MONITORING AND DIAGNOSTIC SYSTEMS FOR ROTATING MACHINERY

We have a broad experience in the area of vibration-based condition monitoring and diagnostic systems for rotating machinery. Our systems allow to continuously supervise the most critical machines, and to keep them in desired technical condition. They also give possibility to perform an emergency shutdown in case of a threat of a serious failure. This enables to plan maintenance in advance, and to minimize the planned downtime.

offer stationary and portable systems, working online, as well as these working offline, performing advanced signal analysis, and systems, which provide only the basic information.

Advanced vibration signal analysis implemented in our products allow to early detect damages, such as:

- **imbalance,**
- **misalignment,**
- **loose foundation,**
- **bearings and gears damage.**

Our offer includes a range of solutions with various complexity level, what gives us opportunity to present each client a dedicated offer fulfilling exactly the needs, and taking into account the specifics of the industrial facility. We

## HOW DO YOU BENEFIT?

### 01

Less planned and unplanned downtime

### 02

Optimized operational parameters

### 03

Greater durability

### 04

Reliability

### 05

Lower maintenance costs

### 06

Optimized overhaul plan

# REMOTE CONDITION MONITORING

Remote condition monitoring service is a unique proposal allowing to optimize machine operation without additional employment costs, proper personnel training and expenses on IT infrastructure needed to manage a diagnostic system. EC Systems remote condition monitoring system: **VIBcare** ensures, that customer's machines are supervised by experienced diagnosticians. The architecture of the system allows to manage hundreds of installations distributed on a large area, our specialists can remotely monitor machines located in any place in the world. The main purpose of the service is to early detect developing machine failures, which means improvement of security level, increased availability and lowered maintenance costs.

**VIBcare** is an extension of our VIBex condition monitoring system for rotating machinery. The center collects

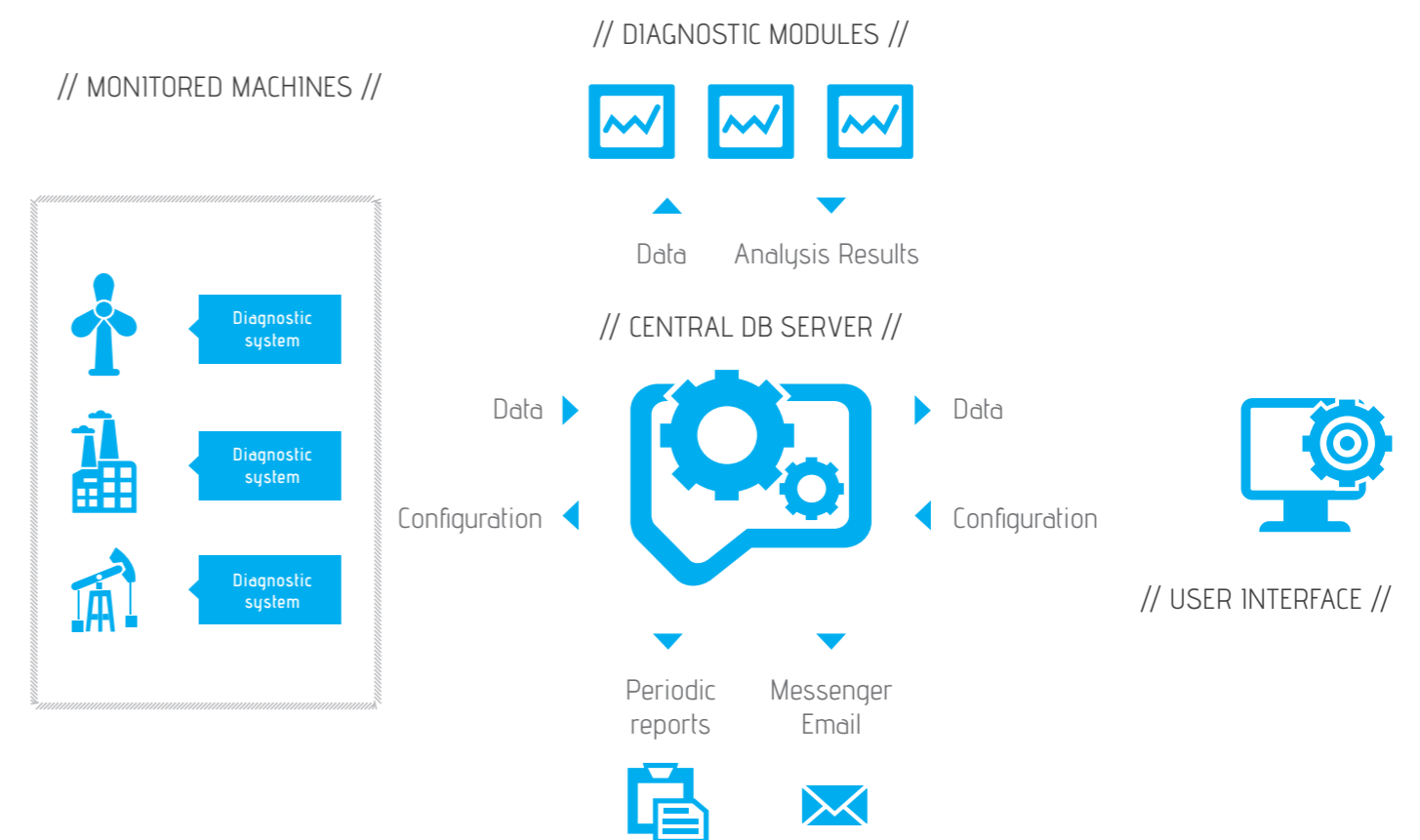
data from individual VIBex systems installed at the customer's facilities, which done through safe internet connection. The data is analyzed by advanced diagnostic modules, which detect non-standard or dangerous machine operational conditions.

When situation requires special attention, our specialists conduct detailed analysis of the machine. If they detect any relevant signs of a developing failure, the customer is informed immediately. In addition to that, we prepare periodic reports for each monitored machine which describe its current condition. The reports also include important suggestions regarding further operation of the machine and a list of machine's components which should be under special supervision in the forthcoming period. This helps to avoid failures or other operational problems.

### Key benefits of remote condition monitoring center:

- Lower personnel costs
- Lower expenses on IT infrastructure
- Monitoring of multiple machines in various locations
- Constant monitoring and current data analysis
- Periodical report on machines' condition
- Immediate reaction in situations needing attention
- Supervision over machines run by highly skilled specialists

# SYSTEM DIAGRAM



# WE WORK FOR CLIENTS LOCATED WORLDWIDE

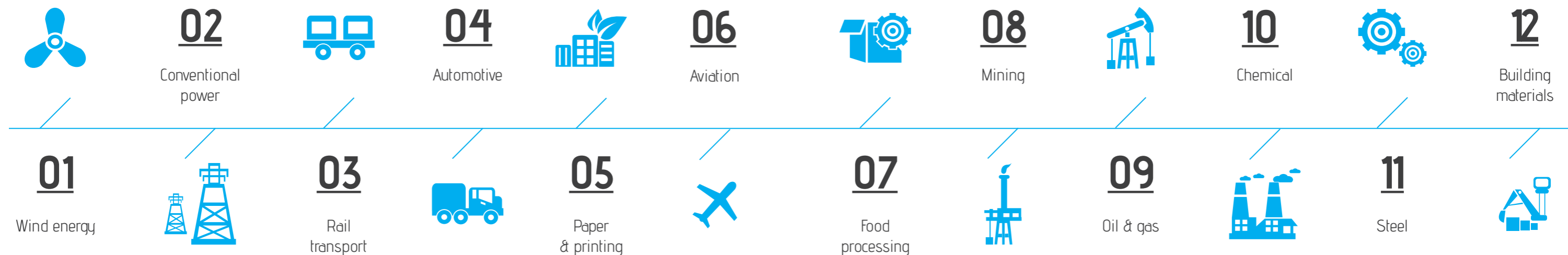
## Clients

- Alstom Power
- Bombardier
- Energobaltic
- Famur
- FEV
- Grupa Azoty
- LMS
- MTU Aero Engines
- RR Donelley
- Solaris Bus & Coach
- Thales
- Valeo

## University partners:

- University of Science and Technology
- Cetim
- Danmarks Tekniske Universitet
- Fraunhofer-Institut für Produktionstechnik und Automatisierung IPA
- Grenoble INP
- INP Toulouse
- INSA de Lyon
- Air Force Institute of Technology
- Warsaw University of Technology
- Wrocław University of Technology
- The University of Sheffield
- UTC - Université de Technologie de Compiègne

# WE OFFER SOLUTIONS FOR VARIOUS INDUSTRIES





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