

ITS - Industrial Turbine Services

International Group





A Continuous Story of Success

Next to you all over the World

ITS - Industrial Turbine Services GmbH is an international provider of new systems and solutions for the automation and visualization of operators in industrial gas turbines.

Innovative products and customer satisfaction have turned ITS into a thriving company that ensures its international success through flexibility, creative thinking and high-end quality.

We are proud of our control systems and solutions which are primarily engineered and developed for power plants. Additionally we provide a wide range of spare and accessory parts for gas turbines.

At ITS we strive to provide all our customers with affordable products that are of the quality and efficiency of an OEM product. We have an impeccable record of delivering the best services in the most desirable time frames to our customers.





ITS Services

Flexible and Reliable

- Developing and manufacturing of replacement parts
- Trading with spare and replacement parts
- Service and technical support for power plants
- OEM of Human-Machine-Interface TMOS SCADA (Turbine Monitoring System)
- OEM of Turbine PLC MACH7 Turbine Control System
- OEM of Dynamic Pressure Analysing OCM (Online Combustion Monitoring)
- Technical due diligence
- Technical assistance on site
- Borescope inspections
- Training for operators and maintenance engineers



Turbine Monitoring System

TMOS SCADA by ITS



Flexible, Powerful, Expandable and Future Oriented

TMOS SCADA is an exceedingly reliable process control system. The original operator and monitoring system for the gas turbine is in the meantime an exceptional and outstanding member of the operational process control family.

One of the prominent characteristics of TMOS SCADA is the ability to communicate with the common PLCs from General Electric and Siemens.

Without modifications and with little effort, TMOS SCADA can be integrated into the existing control system as well as take over their functions completely and independently.

Learn more about TMOS SCADA from ITS:

www.tmosscada.com





TMOS SCADA

Designed to Keep the Overview

- Ability to communicate with the common PLCs from General Electric and Siemens
- No modifications on the existing control system
- Takes over all functions completely and independently
- Modern diagnostics, operation, and monitoring functions, without expensive changes in the controls
- Offers one standard interface for the controls even though they are from different vendors and generations
- Cost savings from personnel training and software maintenance
- Deviation from monopolistic control vendors

Learn more about TMOS SCADA from ITS:

www.tmosscada.com



Turbine Control System

MACH7 by ITS



Based on Siemens Standard Industrial Automation Technology

The MACH7 gas turbine control system developed by ITS is the result of many years of development. It's the only available and infinitely tested alternative to the original gas turbine control system manufacturer.

Today, the MACH7 with its modular construction is not only the best alternative for General Electric gas turbines but also for other brands of gas turbines.

It can be used for part, base- and peak load, minute reserve (fast start), black start and net reconstruction.

Learn more about MACH7 from ITS:

www.turbineservices.at





MACH7

Advantages

Standards

- Conforms to German industry standards
- Uses standard industrial components
- Coextensive conversion OEM control sequence

Hardware and Parameters

- Short delivery time
- Under constant development by Siemens
- Fair prices for spare parts
- Replacement parts are not supplier dependent
- Redundant implementation of all important modules recommended
- Extremely high availability of the control system
- Modular construction of the hardware possible
- Replacement of modules during operation possible
- Extensive diagnosis possibilities
- Operation with many types of fuel possible
- Replacement of field devices not absolutely necessary

Software and Logic

- Easily understood parameters
- Modular design of control logic and regulation
- Visualization with TMOS and other brands like WinCC
- Integration into a higher level DCS possible
- Standard Siemens training and a short orientation for your maintenance personnel to service the Mach7
- Transferring fuels in both directions even without synchronization to grid
- Operational modes for both load and isochronous control
- Integration to synchronizer, voltage regulator and generator protection

OCM

Online Combustion Monitoring System

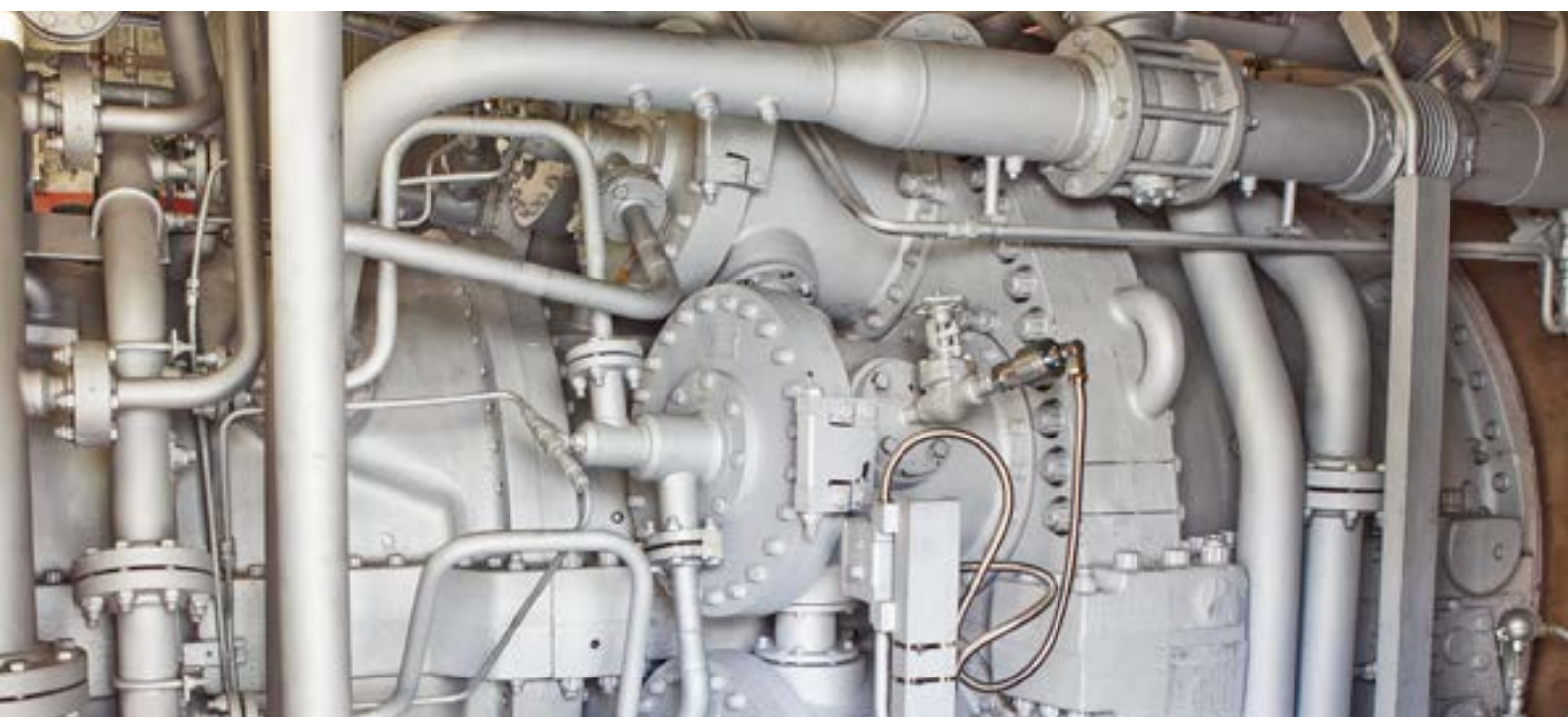


There are highly sensitive piezo pressure transducers continuously monitor the combustion chamber dynamics during commercial operations, evaluating the technical condition of your turbine.

Data acquisition rates of 8KHz per channel ensure high quality results. After a FFT analysis the signals are processed by TMOS SCADA for monitoring. Additionally, we also offer long term data logging.

Based on this mathematical analysis we evaluate the current fingerprint. The collected data is then continuously compared with the preset-fingerprints of our costumers' turbine (considering the workload).

If deviations are detected the operator is informed by messages and alerts about changes in the combustion behaviour. This enables our customers to forward-looking and predictive operations and maintenance.



Flame Scanner for Gas Turbines

Precision Combined with Long-Term Stability



Years of dedicated research and development from our experienced field service personnel, control and technical advisors have culminated in the Flame Scanners of ITS.

Designed for the safe operation of General Electric Frame 1, 3, 5, 6, 7 and 9 industrial gas turbines, the Flame Scanners rely on proven technologies to provide an accurate flame analysis.

The Flame Scanner is reputable for its maximum flexibility, user friendliness and well proven reliability, thereby maximizing the cost effectiveness for the customer by increasing the longevity of the gas turbine.

Learn more about the Flame Scanners from ITS:

www.flamescanner.net



Gas Turbine Spare Parts

Exceptionally fast and reliable



We distribute our products mainly in cooperation with our standing local partners and resellers which offer a large variety of gas turbine spare parts.

Nevertheless we are especially committed to final customers. Our service engineers together with our customers, evaluate any issues that may occur on site and offer them customised solutions for optimising gas turbines.

We always consider operating efficiency and plant availability as high priority tasks. To ensure our customers the best service available we implemented a lean management supported by our internal quality and risk management.

Check for the available spare parts at:

www.turbineservices.at



Turbine Consulting

Due Diligence from our Experts



Project developers, financial institutions, investors in or purchasers of a gas turbine technology company and even turbine manufacturers – all have a vested interest in a technical due diligence review of a specific gas turbine system.

ITS brings extensive expertise and experience to bear in providing a wide variety of turbine consulting services, the nature of which is customised to a specific client's needs.

Contact us at:

www.turbineservices.at





Our History

Moving to a Promise for the Future

2001 - The Foundation of Industrial Turbine Services GmbH Austria

Since the foundation of our company, ITS has upheld the highest level of efficiency. We excel in all matters regarding industrial gas turbines as well as process control, monitoring and visualization.

We have been continuously changing with the growth of technology and therefore managed to stay ahead of our competitors. ITS is the center of excellence for all matters concerning industrial gas turbines.

TMOS - Start of development. TMOS was introduced initially as an operator interface, engineering workstation and data logging for the Power Generation Industry to interface with the turbine control systems. It also provides diagnostic and analytical tools for the power generation processes. With its unmatched performance, high reliability and ease of functionality, TMOS has proved to be more popular than the original operator interface supplied by the OEM of the turbine.

2003 - The Start of Development of UV Flame Scanning Devices

ITS responded to the increasing need of high quality, reliable and rapidly available equivalent for the OEM Parts.

MACH7 - Start of development. The original design of the MACH7 control panel was meant as a direct replacement for a General Electric gas turbine control type. This system is not limited only to General Electric gas turbines, but can also be applied to other manufactures or as a compact unit for the balance of plant equipment.

2004 - Foundation of Industrial Turbine Services GmbH Germany

In 2004, after 3 years of building and establishing our business in Austria we took the decision to open a satellite office in Germany. We service many power plants in that area, and with being located in close proximity to them it enables us to provide quality service and ongoing support.

2005 - Certification in Compliance with ISO 9001:2000

In 2005 we sought to certify our products and systems in accordance with the ISO standards. This afforded us even more credibility with our already established customers.



Our History

Moving to a Promise for the Future

2007 - Foundation of Industrial Turbine Services GmbH Malaysia

With expanding our reach to Malaysia we opened up a platform to respond to the specifications of the Asian markets. There are many dated power plants still present in this region, we found that to deal with the special requirements that they pose it would be best practice to create a direct line by opening a local point of contact.

With our office in Kuala Lumpur we work in direct accordance with our Malaysian counterparts to tend to our customers needs.

2009 - The Start of Development of Online Combustion Monitoring

Online Combustion Monitoring is the high resolution and fast measurement of pressure variations in the combustion chamber. After the online FFT analyses of collected data, the frequency curves allow detailed diagnostics of the combustion process.

This information can be used for early detection of damage to the combustion chamber or on the tuning processes on the exhaust gas and its emissions.

2010 - The Expansion of the Product Range

Development and successful market introduction of the new ITS Flame Scanner with SiC technology. A silicon carbide (SiC) photo diode is very sensitive to the longer wavelength components of the UV light generated through a flame. This longer wavelength light penetrates the fog of oil quite well and therefore the SiC based sensor is more sensitive to the presence of flames. This flame sensor utilizing the SiC photo diode is being produced by ITS Industrial Turbine Services and has been successfully operated on a wide number of gas turbine installations.

2011 - Start of development of TMOS SCADA

Ever since TMOS has been on the market, the design team never stops developing and adding improvements, new interfacing possibilities and new advanced features. Today, TMOS is a feature-packed, user friendly, robust and multi-connective system. Thanks to its flexibility and scalability, TMOS has been renamed as TMOS SCADA to better reflect its true capability.



Our History

Moving to a Promise for the Future

2013 - TMOS SCADA V6

The TMOS system was divided from single executables to an independent server and client structure. The result: the transmission is now realized in a low level TCP/IP communication, without usage of operating system protocols.

Direct communication between different/multiple operating systems and embedded systems are now realized. There are redundant connections between more than 2 Servers. This provides an optimized and independent communication structure for a large remote environment and better scalability to fulfill the customer's individual needs.

2015 - Certification in Compliance with EN ISO 9001:2008, OHSAS 18001:2007, SCC*:2011

In 2015 we decided to further verify our standards by obtaining a more advanced level of the ISO certification. We also received two other reputable certifications checking and certifying our management and production quality as well as ensuring that the company is in line with international occupational health and safety regulations.



Reliability Builds Confidence

A Look into Our List of Customers



ITS - Industrial Turbine Services GmbH Worldwide Success

Our customers have been placing their trust in the experience and know-how of ITS for over a decade. This is credible evidence of our company's commitment to quality and is working proof of the reliability of our product.

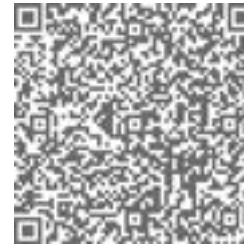
Every customer we've had the pleasure to work with receives an unparalleled level of care and enthusiasm - guaranteeing you long reliable relationships.





Know-How and Experience

Contacting Us Gives You the Advantage



Scan to import our contact information into your mobile device.

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www.turbineservices.at

www.tmosscada.com

www.flamescanner.net

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