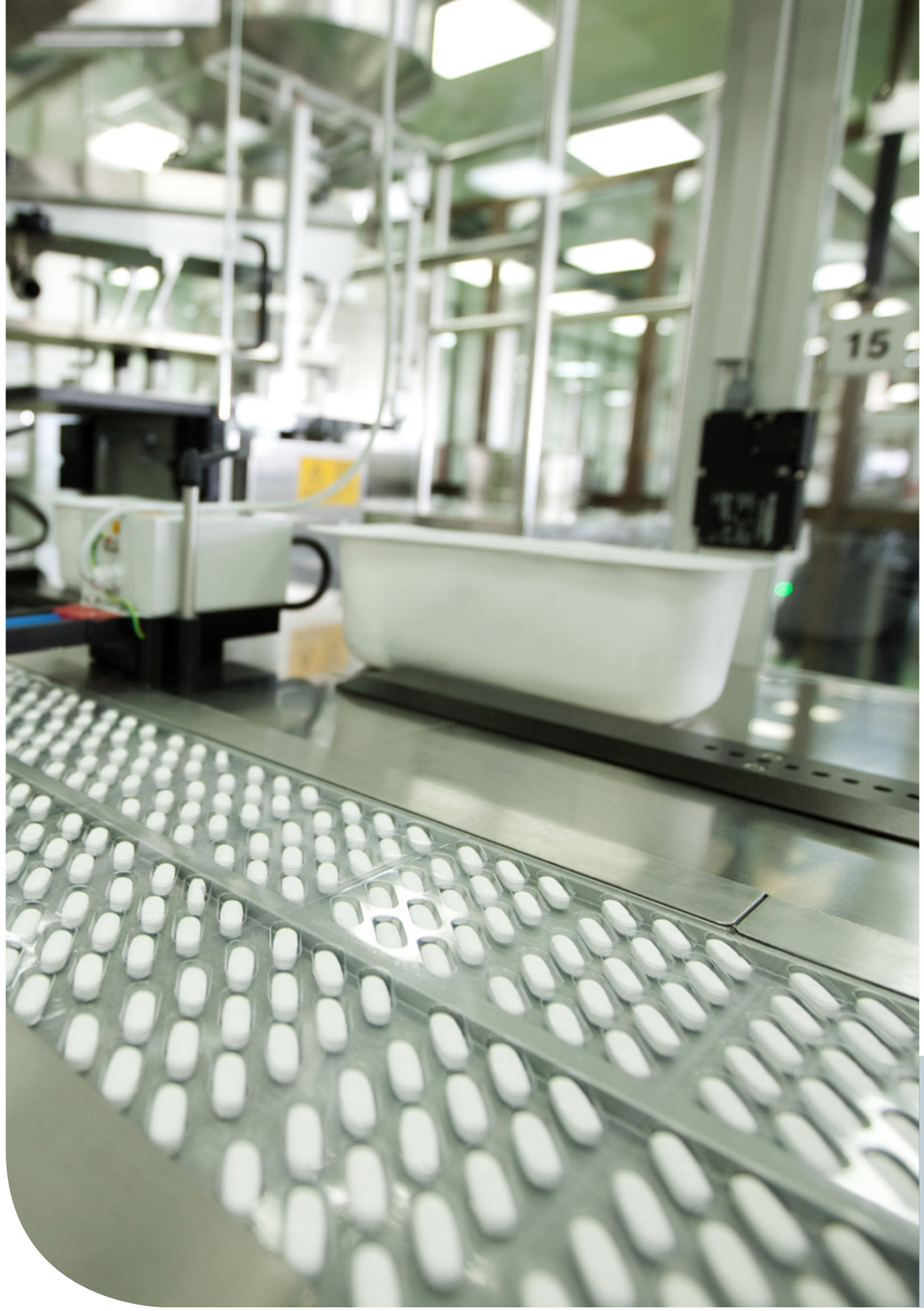
MANAGED SERVICES FOR THE ENVIRONMENTAL CONTROLS SECTOR

Maintaining a clean and comfortable environment is important in all buildings. It becomes critically important and high standards must be seen to be met in buildings such as:

- Healthcare facilities, especially operating theatres
- Semiconductor clean rooms
- Pharmaceutical facilities.



Pacific Controls is a world leader in monitoring environmental control systems and already has thousands of buildings connected to its Galaxy platform to optimise their operation and reduce greenhouse gas (GHG) emissions. A wide range of devices related to building management can generate valuable real-time information when connected to the Galaxy platform. By managing environment monitoring and temperature control systems, waste management, recycling, ventilation and air filtration systems in real time, and by ensuring regular inspections, suppliers of environmental control systems and home automation systems can offer their customers not just equipment but guaranteed compliance with regulations about the environment in the buildings.

Data Logs Demonstrate Compliance

Using Pacific Controls Managed Services for Critical Assets Monitoring provides equipment users with the facts and figures needed to demonstrate compliance with regulations such as good manufacturing practice (GMP), indoor air quality (IAQ) and ISO 14001. The service will help with compliance in the following areas:

- Health standards compliance requires pharmaceutical companies and other industries in the medical domain to demonstrate compliance with GMP, or similar standards, which the Pacific Controls managed services enable them to do. They can also provide evidence that temperature and humidity and levels of pollutants have been kept within defined limits.
- Cleanliness compliance is another important area for the pharmaceutical industry and for manufacturing, particularly semi-conductor clean rooms. Suppliers of particle detectors and microbial monitors can make use of Pacific Controls managed services to offer their customers tracking services and data to demonstrate compliance with relevant regulations. In these situations, sensors will be deployed to monitor airborne and surface molecular contamination (AMC and SMC) allowing the facility manager to quantify contaminants, identify sources and trends and troubleshoot problems. Specialist services may be deployed to allow:
- Analysis of acids in air
- Analysis of ammonia and amines in air
- Analysis of organic compounds in air (hydrocarbons, siloxanes, NMP, etc.)
- Analysis of surface condensables and trace metals.

All the data from these sensors will be transferred to the Galaxy platform for monitoring and analysis and alarms will be triggered if defined safety levels are breached.

- Temperature and humidity compliance within the food storage and processing industries as well as for manufacturing plants and healthcare facilities. Manufacturers of temperature and humidity control systems and environmental control equipment, such as chillers, can offer their clients additional services by connecting it to Pacific Controls managed services. They ensure that the data history is available for the regulatory authorities. Temperature and humidity can be controlled remotely from the GCCC to ensure that it stays within the defined limits and Gbots can be deployed to rectify any problems identified.
- Compliance with regulations on fans and filters – manufacturers can use the Managed Services for Critical Assets Monitoring to demonstrate that air quality meets environmental standards, in offices or other buildings. It provides the data to show that levels of atmospheric dust have not exceeded specified limits for airborne particulates that can include pollen, mould (fungal) spores, animal dander, insect proteins, pesticides, lead, and infectious bacteria and viruses. Designers can identify improvements to the ventilation system that will benefit the occupants as well as improve the efficiency and longevity of the HVAC system.
- Waste management - effluent gases and the composition of liquids in the drainage systems for chemical and similar plants can be monitored in real time to ensure that they comply with regulations limiting discharge of damaging liquids or gases to the environment and that full documentation is available for the regulatory authorities.
- Pollution level compliance - suppliers of ventilation systems and drains in any type of plant can use Pacific Controls managed services to raise alarms in real time if pollution levels rise. The centrally stored data logs are available to demonstrate environmental compliance to the authorities and reports can be created automatically in the required format.

- Lighting Level Compliance - suppliers of lighting systems and light monitors can make use of Pacific Controls managed services to assure customers that lighting is adequate for tasks to be carried out safely, that public spaces are well enough lit to prevent accidents, and provide the records needed for regulators. They can also offer environmental benefits to their customers by reducing artificial lighting when there is sufficient daylight.
- Pacific Controls Managed Services for Critical Assets Monitoring can be used to demonstrate compliance with ISO 14001. This requires the organisation to have a management system that ensures the entire organisation is involved in continual improvement. Using Pacific Controls' service, performance measures can be set in the system and supporting plans, instructions and guidance documents can be stored alongside the historical logs to make improvements transparent. Reports can be generated automatically in the right format.

Safety of occupants and users is always a major concern for companies and all workspaces and public places need to be able to demonstrate that they can ensure the safety of people using them. Equipment used to achieve this ranges from the fire and elevator alarms installed in most buildings, to detectors for hazardous substances such as lead and asbestos and harmful moulds that may be present in certain workplaces. Suppliers of detection equipment can use Pacific Controls Managed Services for Critical Assets Monitoring to link the alarms to the emergency services and to first response units.

Environmental Systems Suppliers Can Offer New Services

Suppliers of home automation systems, building management systems (BMS) and environmental control systems can use Pacific Controls ICT Enabled Managed Services For Business Process Integration to add depth to their service offering. The accessibility of facts and figures from real-time monitoring is extremely valuable in analysing performance, planning developments and designing future systems. By storing information from a diverse range of equipment on a single platform, analysis across interdependent parameters becomes possible at a press of button. Pacific Controls managed services can capture people's expertise in a knowledge management system and this can be used to verify that the processes being followed have been tested properly and to replicate methodologies which have proven successful. The Galaxy platform is capable of managing huge volumes of data and can be used for modelling alternative scenarios to test for, select and execute the proper solution.

From the real-time monitoring interface, users can access current trends and identify important operating parameters such as water and steam pressures, percentages of oxygen and carbon dioxide in flue gases, and the flow of fuel, steam and water. These trends in critical parameters allow users to track the performance of their equipment. Users can select any number of single and multiple points to be combined on one graph to examine trends. Users can access these real time trend reports, identify important data profiles and view performance issues.

Pacific Controls Managed Services for Critical Assets Monitoring are designed for optimising energy use. Vendors of HVAC and lighting equipment can offer their customers the additional service of reducing their carbon footprint by:

- Keeping the temperature and humidity close to target and not over-heating or over-cooling buildings
- Continuously commissioning the HVAC equipment so that it is operating at peak performance
- Turning off lights when there is enough daylight and by not heating rooms that are empty.

Optimising the system in these ways alone can save between 10–30% of the energy bill. Using the Pacific Controls managed services to achieve this means that the improvement can be verified to demonstrate environmental benefits and meet corporate social responsibility targets.

Companies that provide environmental inspection services can use Pacific Controls managed services to collect, collate and analyse all the data needed to provide their clients with an overall view of the environmental and energy conditions in their premises. This allows them to identify where opportunities lie for improvements such as energy savings or the reduction of contaminated emissions.

Water damage control services can also be offered. Real time monitoring can limit water damage by raising the alarm and shutting off the water supply the instant a leak is detected.

Transfer Environmental Data From Any Source to the IP Network

Pacific Controls Managed Services for Critical Assets Monitoring can collect data from any device, regardless of protocol, and transfer it to the IP network using their M2M data panels. Data from large numbers of sensors can be transferred to asset management, enterprise resource planning (ERP) and customer relationship management (CRM) systems to provide data and insight that takes management information to a new level. M2M technology allows the data to be collected from almost anywhere. The key parameters needed to demonstrate environmental compliance are identified by the manufacturer and the necessary sensors installed by Pacific Controls. The field devices communicate with Pacific Controls Galaxy platform in real time to enable continuous data streaming and analytics.

Pacific Controls GCCC provides remote monitoring and control of all electro-mechanical and security services at the customers' facilities, thus ensuring that data is available to demonstrate compliance with regulations. It provides real-time management of the entire energy ecosystem.

Pacific controls managed services support professional services that deliver the whole environmental compliance assurance cycle from assessment to policy management, device monitoring, change management, incident response and auditing. The integrated operational platform is an invaluable tool for facility managers who are working toward the optimisation of infrastructure operations.

Benefits for Environmental System Suppliers

Using Pacific Controls Managed Services for Critical Assets Monitoring, environmental equipment manufacturers can offer their customers monitoring and management services through a single interface that connects all the equipment they have deployed. This allows them to have an on-going relationship with equipment users and provides a central data depository for analysis that will enhance R&D.

They can offer predictive maintenance services to ensure that environmental control systems are operating reliably, with little or no downtime. They can also offer services to reduce GHG emissions and improve energy efficiency.

Benefits for Building Owners

Information gathered using Pacific Controls Managed Services for Critical Assets Monitoring provides support for integrated design strategies that allow tradeoffs that can reduce initial installation costs. For example, strategies such as passive solar allow heating equipment to be downsized. Chiller size can be reduced with the use of high efficiency lighting, which generates a smaller heat load in the building.

In addition, information gathered from remote, real-time monitoring allows building owners to reduce operations and maintenance costs through remote troubleshooting and increased reliability. Historical data logs allow them to increase energy efficiency and demonstrate that they are meeting corporate sustainability targets. The services automatically track key data that can be made accessible to any authorised users and compiled into reports that demonstrate compliance and can be sent automatically to the appropriate regulator. Automating data gathering has an immediate 'green' side effect, because reducing the number of field visits for data collection and trouble-shooting contributes directly to a reduction in pollution.

This platform enables the tracking of key performance metrics against strategic goals and allows managers to identify ways to increase productivity while improving the facility's flexibility and reliability.