



Gadda Automation: Building the Digital Foundation for Smarter Crane Operations

Connecting crane manufacturers, service partners and customers through ADM4.0

Gadda Automation develops automation and control solutions for lifting equipment and works with crane manufacturers to integrate advanced control technology into their machines.

Modern cranes already generate large amounts of operational information. Control systems continuously process signals relating to movements, loads, operating hours, wind conditions, alarms and machine configuration. Traditionally, however, much of this information has remained inside the individual crane and has only been available locally.

To make this data accessible beyond the machine, Gadda incorporated **ADM4.0** - Direl's branded version of Inuatek's **Data Collection Cloud (DCC)** - into its connected-crane solution.

Today, **approximately 280 licensed devices** are managed in Gadda's ADM4.0 environment, demonstrating that the solution has moved from a pilot project to fleet scale.

The challenge: taking crane data beyond the operator cabin

Cranes are often installed at construction sites for extended periods and may be located far from the company that designed the control system or manufactured the equipment.

When a question or technical issue arises, service organisations need more than a local view of the machine. They need to understand how the crane is configured, how it is operating and what happened before an alarm or event occurred.

Gadda needed a scalable way to:

- Collect data from the crane control system
- Present technical information in a clear and useful form
- Separate access between manufacturers, service partners and end customers
- Support different crane models and dashboard requirements
- Preserve historical operating information
- Provide a foundation for future services based on actual machine usage

Building a connected-crane service with ADM4.0

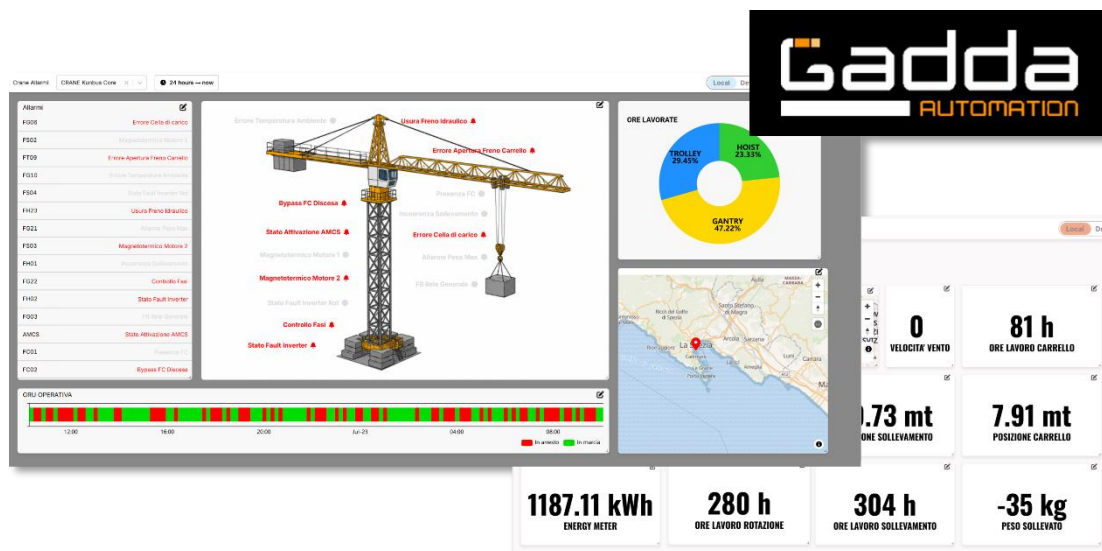
Gadda's connected solution combines the crane's PLC and touch-panel environment with secure remote access and ADM4.0 cloud data collection.

Remote access can provide authorised access to the crane's HMI and selected machine parameters. ADM4.0 complements this by collecting operating data continuously and presenting it through dashboards, fleet views, reports and historical analysis.

This means that the cloud solution is not tied to a single crane brand. Gadda can apply the same underlying architecture while adapting the collected values and dashboards to the machine and manufacturer.

Turning control signals into operational insight

The detailed crane dashboard can present both the current operating state and the technical context around it. Depending on the crane configuration, this may include rotation angle, trolley position, hook position, wind speed, active alarms, inverter status, current and maximum permitted load, energy consumption and crane location.



“A crane already contains a great deal of valuable operating data. With ADM4.0, we can make that data available to manufacturers, service partners and customers in a structured and controlled way.”

Gadda Automation Specialist

Supporting faster and better-informed service

Access to operating data creates a shared technical picture for Gadda, the crane manufacturer and the service organisation. Before travelling to a site, a technician can review machine status, recent alarms and relevant operating values.

Historical data can help establish whether an issue was an isolated event or part of a recurring pattern. This can support faster initial fault assessment, more qualified communication with the operator and better preparation before an on-site service visit.



The objective is not to replace the technician's expertise. It is to give the technician better information before a decision is made.

“Remote access helps us see the machine; collected data helps us understand what happened before. Together, they give us a much better starting point when we need to support a customer.”

Gadda Automation Specialist

Scaling a digital offering across crane manufacturers

Gadda's ADM4.0 environment is structured to support different manufacturers, service companies and end customers within the same underlying platform. Among the crane manufacturers using Gadda's connected technology is Raimondi, whose ADM dashboards combine crane status, operating conditions, movement data, alarms and location in one technical view.

At fleet scale, the important challenge is not connecting a single demonstration crane. The challenge is managing many machines with different owners, dashboards, access rights and configurations without creating an administrative burden for every installation.

A reusable foundation for fleet management

By using a common cloud foundation, Gadda can reuse data-collection configurations, dashboard structures, fleet organisation, user access models, reporting templates and alarm definitions. The platform can then be adapted where a specific crane manufacturer or machine series requires additional signals, calculations or visualisation.

This allows Gadda to concentrate on crane automation and machine knowledge while Direl and Inuatek provide the supporting cloud technology and platform development.

For manufacturers, it creates a practical path to offer connected-crane services under their own customer relationship without developing an entire IoT platform from scratch.



Looking ahead: from visibility to new service models

The first value of connected crane data is visibility: being able to see machine status, operating values and historical activity. The same data foundation can also support more advanced services over time.

- Usage-based leasing, where operating hours and movement types help document actual utilisation
- Load-based service models, where certified load information helps distinguish light use from repeated high-load operation
- Safety and operating-condition alerts, for example when load, wind or inverter conditions require attention
- Maintenance based on actual duty, combining operating hours, movement counts and load ranges
- Project reporting and documentation for handover, service planning and customer dialogue

These are not all services that Gadda offers commercially today. They illustrate what becomes possible once reliable machine data is collected in a structured and scalable way.

A partnership combining crane and cloud expertise

The solution brings together complementary competencies. Gadda contributes its knowledge of crane automation, PLC programming, machine signals and operating requirements. Direl provides ADM4.0 as the customer-facing Italian solution and supports its implementation in the local market. Inuatek develops and operates the underlying DCC platform.

This division of responsibility means that Gadda does not need to develop and maintain an entire IoT platform internally. Instead, the company can focus on selecting the right crane data, creating useful dashboards and turning machine insight into services for manufacturers and their customers.

“The important part for us is that the platform can develop with the applications. We can begin with monitoring and documentation and then add new services as manufacturers and customers identify additional value in the data.”

Gadda Automation Specialist

Looking ahead

Connected equipment is increasingly becoming an expected part of modern crane technology. For Gadda, ADM4.0 provides a foundation on which crane manufacturers can gradually expand their digital offering - from fleet visibility and technical support to reporting, condition-based service and new usage-based commercial models.

