

Renewables Management System (RMS)

Bringing renewable energy production to the cloud

CGI's Renewables Management System (RMS) is a solution for the operation of wind, solar PV, hydroelectric, and other renewable energy power plants. One of CGI's mission-critical IP solutions for the utilities industry, RMS is an

operational platform to help you efficiently manage and control your complete renewables portfolio, while at the same time support your business objectives.

RMS is used to monitor and control 15GW of renewable energy production in 11 countries across 3 continents.



15GW

energy production



380

wind farms



14

solar parks



39

hydro plants

Microsoft partnership

CGI enjoys a longstanding partnership with Microsoft that spans over 15 years. The first step in transitioning RMS to the cloud was to rebuild our solution around the Azure infrastructure, building RMS on top of a mixed IaaS and Azure services offering. We are now extending RMS into Microsoft's Internet of Things (IoT) Suite, which is scheduled to be launched in early 2018.

By offering RMS as a SaaS (Software-as-a-Service) solution, our clients have the opportunity to:

- Transform business processes
- Efficiently scale RMS to meet current and future business needs
- Integrate with new worldwide data sources to develop rich insights into renewables data
- Use data centers that comply with stringent country-specific regulations
- Benefit from the RMS platform, while making lower financial investments compared to an on-site solution
- Leverage CGI's extensive experience and know-how in renewables management

RMS 4.0

- Built using state-of-the-art technologies
- Leverages Microsoft IoT Suite as an alternative to traditional data collection architectures
- Includes enhanced performance and scalability features
- Agile deployment through micro services, without impacting operations
- Improved user interface
- Reduced new development costs
- Enables third-party development, easier integration and user configuration with a powerful API



An IoT solution

RMS requires two-way communication with renewable power plants. There is a need to retrieve real-time information on renewable assets for monitoring and real-time alarm management, as well as to send commands to those assets. Since most of the renewable energy industry is not yet IoT-ready, CGI has developed the RMS IoT gateway, whose main function is to provide:

- A connection to the IoT hub in Azure
- An interface using industry protocols available at the power plant level (such as OPC DA, OPC XML, IEC 104 and OPC UA)

The RMS IoT gateway also allows for self-update, configuration of acquisition rates, local calculations for enhanced analysis, local buffering, and an API for local integrations such as SMS.



IoT Hub **Microsoft Azure**

Deployable on large installation with more than 500 million events per day



Service Fabric

Provides scale and resilience to critical operations



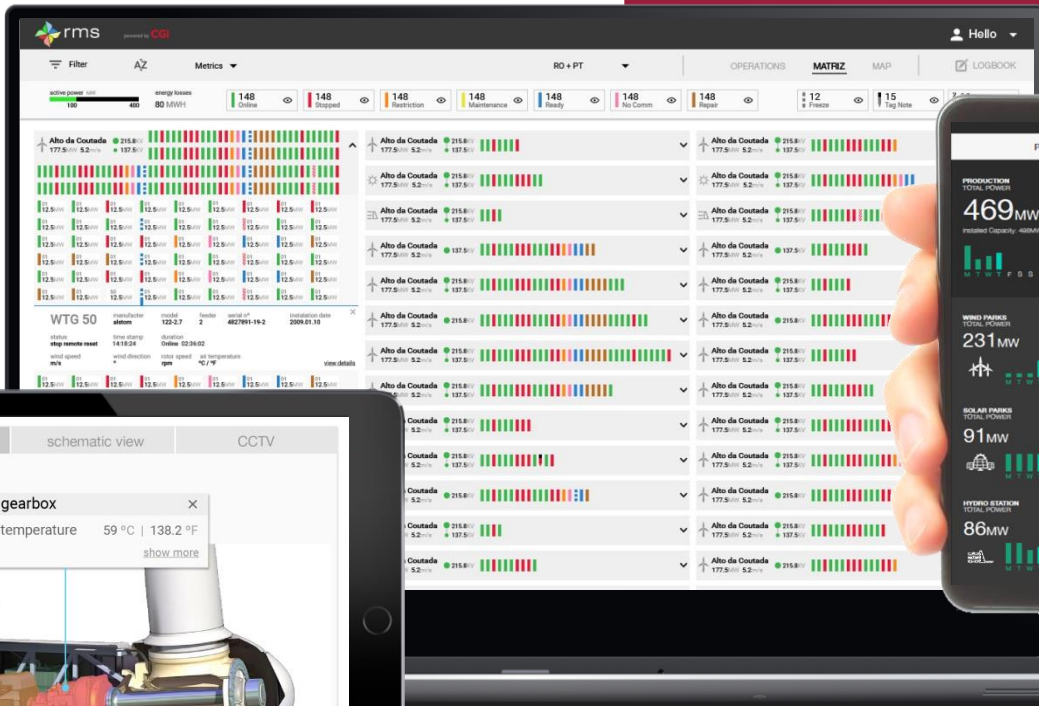
Raw Data

Long term raw data storage for predictive analysis



Machine Learning

Enables predictive maintenance of assets



ABOUT CGI

Founded in 1976, CGI is one of the world's largest IT and business consulting services providers, helping clients transform into digital enterprises end to end.

For more information about CGI, visit www.cgi.com or email us at rmsinfo.pt@cgi.com