

EG4K BLACKBOX CASE STUDY



Don't be left in the dark

Donghee Auto Plant South-Korea Plans Assembly Line Extension With The Help Of EG4K



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Mr. Sung-Ryun Im, Assistant Manager, Maintenance Dep't. Donghee Auto had this to add: *"To date we have 33 EG4K units installed at each of our production lines (the motor, compressor, welding, lights, and heaters etc). The EG4K provides us with power consumption data, which is broken down periodically daily, weekly, monthly, yearly and per load. We can directly compare consumption data with the car output, and accurately estimate the power usage per number of cars produced. At Donghee Auto we expand our assembly lines every year in order to increase our production. With the EG4K we are able to estimate the facility's electrical capacity."*

DONGHEE UPGRADES TO ADAPTABLE SOFTWARE

The largest automobile plant in South-Korea, Donghee Auto, has recently commissioned their software subcontractor to integrate EG4K and its' software into their existing CIMON SCADA software. Following the success of the project, 33 EG4K units were installed at the plant.

Donghee Auto founded in 2001, is one of Hyundai's largest subsidiaries and has an annual production of 2.3 million cars ("Morning" local market & "Picanto" export market). The plant expanse reaches over 244,727 m², and is situated in Sursan, Chung-Nam, South-Korea.

DONGHEE FORCED TO LOOK FOR ALTERNATIVES

The Power Quality Monitoring system that was in use prior the integration, displayed real-time RMS voltage and current measurements. The main drawback of the system is its inability to analyze power consumption and power quality parameters comprehensively. Due to a non-repairable hard-disc failure in one of their main Servers, Donghee was prompted to look for an alternative power quality analysis system. Increase in annual automobile sales meant that Donghee needed to plan the building's extension in one of their assembly lines with great urgency. The existing power quality analysis system failed to provide them with vital information regarding the trend loads, making the planning of the extension nearly impossible.

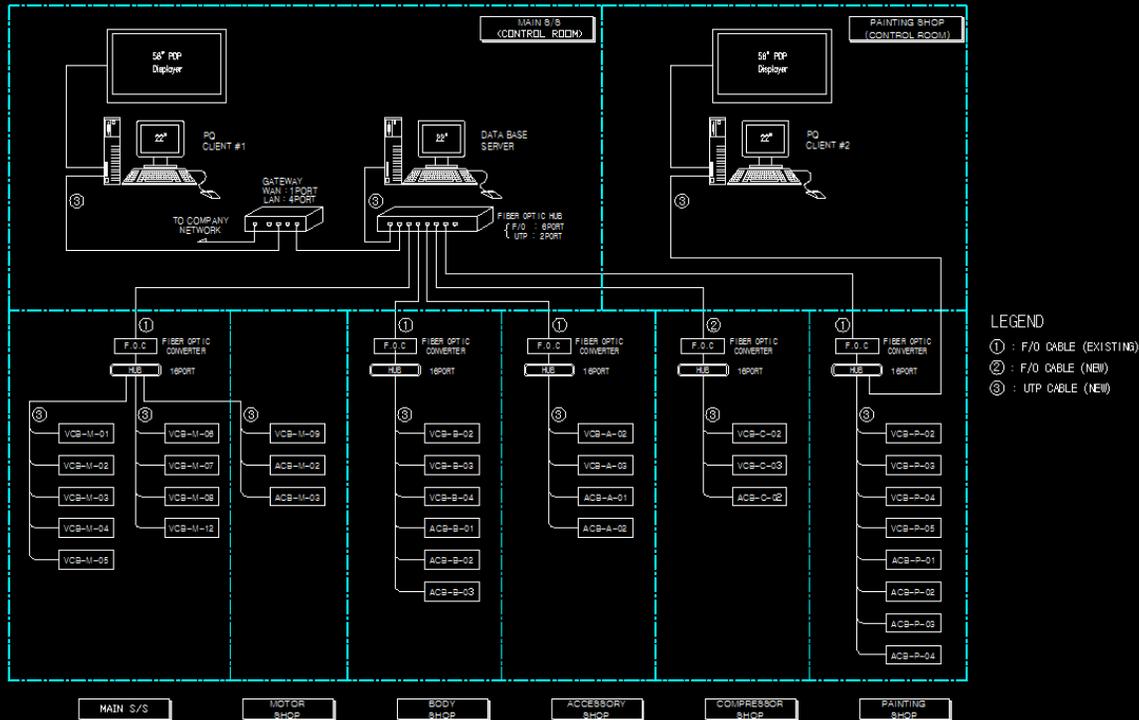
TAKING SOFTWARE INTEGRATION TO THE NEXT LEVEL

As all the installed EG4K devices could be configured and integrated into their CIMON SCADA system the process was much more simplified. Situated on the Donghee's OPC Server this integration allowed the CIMON SCADA to display comprehensive data measured in real-time on a 52 inch plasma display panel, providing full control over all the analyzers.

This upgrade also meant that engineers could now in addition access the EG4K's PQSCADA Server via the Elspec's Investigator Software providing:

- **In-Depth Analysis:** Powerful analysis software, that allows you to zoom in and out of time. With simple click of your mouse, you can zoom in on data from a year pinpointing it down to a millisecond in order to identify, the finest Power Quality parameter details and differences.
- **Waveform Continuous Recording:** Unique raw data (waveform) continuous recording at an extremely high sampling rate, therefore there is no need to worry about missed events due to incorrect setup. Furthermore, abnormalities propagate through the network as it is recorded on various devices that are all synchronized in time; thereby providing you with a clear and comprehensive picture on the condition that lead to the failure.

SYSTEM CONFIGURATION



CIMON System Configuration – Post EG4K PQSCADA Software Integration & Upgrade

ENGINEERS EFFECTIVELY PLAN EXTENSIONS

The successful integration of the EG4K and its' propriety software into Donghee's existing CIMON SCADA system, meant that the company's electrical engineers were now able to utilize the comprehensive data measured by the EG4K for their building plans. The EG4K suits the plants needs by providing them with:

- **Detailed and Comprehensive Data:** The system's unique capability is its data-storage capacity, allowing it to effectively record and measure the facility's power consumption and load trends. Information is relayed periodically according to the plant's report requirements.

- **Lucrative:** An adaptable Power Quality solution that is integrable into any existing SCADA system. The EG4K's comprehensive data ensures effective planning and cost, operation, and maintenance of equipment.
- **Automated Reports:** Generated by Elspec's Investigator Software, this reporting system is not only based on EN50160 standards, but also on a wide range of standards from other major countries. The templates may also be uniquely adapted to suit the needs of individual user-standards and requirements.
- **Remote Monitoring Capabilities:** The EG4K is specifically designed to connect either via TCP/IP/RTU/GPRS Wireless for ease of use. This enabled the data to be analyzed over the company's network, at any remote location on a PC.

ELSPEC TECHNOLOGY ENHANCING THE PLANT'S SPOT-WELDING AND ELECTRICAL POWER QUALITY

As Power Quality is of the utmost importance for the facility, especially during Spot-Welding, Donghee installed Unbalanced Equalizers. With a culmination of 6 large Equalizer and Activar systems, the facility optimized their Power Quality, with savings in energy, and a vast improvement in the quality of their production, especially in their Spot-Welding.

Conclusion: The adaptability of the EG4K exceeds individual client needs and expectations as it can easily be integrated into any existing system, cost effectively and with ease.