

Hardware-Software Synergy

AUTOMATES POWER PLANT DATA COLLECTION

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Robotics and other advanced automation technology systems are viewed as a looming threat to some in the plant maintenance field. Although there is a constant battle for some workers to remain useful while machines are continuously fulfilling more roles on the

plant floor, there are those who in turn have found a better use of their newly freed time.

One such scenario is exemplified by the service technicians at the Agua Mansa Power Plant in Colton, CA, where a recent software-computer hardware partnership has eliminated

the manual recording of equipment performance. The new technology, consisting of the CipherLab 9400 handheld computer bundled with Instamation Systems' *Roundskeeper* software and provided by global distributor BlueStar, has not served to make any traditional jobs obsolete, though. The automated

The screenshot shows the 'Rounds Keeper' software window. The title bar reads 'Rounds Keeper'. The menu bar includes 'File', 'View', 'Reporting', 'Database', 'Help', and 'Exit'. Below the menu bar are three buttons: 'Show Data', 'Graph Data', and 'Upload Data'. A digital clock in the top right corner displays '10:42:25'. The main window is titled 'GT#2 Log'. On the left side, there is a tree view under 'Routes' containing 'GT#2 Log', 'GT#2 Log-A', 'Test Two', and 'Outside Log', with a 'Show All Points' button at the bottom. The main area is a table with two columns: 'Display' and 'Pointname'. The table lists 20 data points, with the first three highlighted in yellow. The status bar at the bottom indicates 'No security defined' and 'Local Data: Datapath = C:\projects\Roundskeeper 5.0\data'.

| Display | Pointname |
|---------|--|
| 1 | Over Current 46 Unit # 2 ON? |
| 2 | Over Frequency 810 Unit # 2 ON? |
| 3 | Under Frequency 81U Unit # 2 ON? |
| 4 | Fuel Gas Supply Pressure |
| 5 | Fuel Gas Manifold Pressure #2 |
| 6 | Turbine Lube Oil Supply Pressure #2 |
| 7 | Turbine Lube Oil Scavenge Pressure |
| 8 | Generator Lube Oil Supply Pressure |
| 9 | Compressor Discharge Pressure-P3 #2 |
| 10 | Turbine Lube Oil Supply Temperature #2 |
| 11 | Accessory Gearbox Temperature #2 |
| 12 | Sump "A" Temperature #2 |
| 13 | Sump "B" Temperature #2 |
| 14 | Sump "C" Temperature #2 |
| 15 | Sump "D" Temperature #2 |
| 16 | Fuel Gas Supply Temperature |
| 17 | Turbine Enclosure Temperature |
| 18 | Compressor Inlet Temperature-T2 |
| 19 | Generator Lube Oil Supply Temperature #2 |
| 20 | Drive Bearing Temperature #2 |

Roundskeeper software automatically processes data collection, which effectively renders manual data collection obsolete. Information is incorporated straight into a database for trending, archiving and other reporting.

data collection of the power plant's equipment has enabled the plant to save much sought after downtime and money, which allows workers to concentrate their energy predicting maintenance rather than solving problems as they occur.

"Because we are required to regularly record many visual readings and observations of power plant equipment, finding a mobile solution to automate this process and communicate it back to our database was essential," says Mike Kokebeck, lead service technician at Agua Mansa. "By automating data capture with BlueStar's bundled Instamation-CipherLab solution, we are able to gain enhanced insight into the performance of the power plant equipment. This saves us time and money because we are able to use all of the collected data to quickly and efficiently predict maintenance needs. Before we adopted this data collection system, we attempted to do this manually, which proved to be extremely inefficient and sometimes inaccurate."

The CipherLab 9400 is a handheld mobile computer that integrates barcode scanning and data capture features that include high-resolution touch-screen VGA display, a two-megapixels camera and a full or shared alphanumeric keypad for data input. Users can scan, RFID tag, batch upload and print wirelessly from any field location. It supports *Microsoft Windows CE 5.0* and is compliant with other popular wireless communications platforms.

Instamation Systems *Roundskeeper* is a software system to automatically process data collection. It was designed to do away with manually collecting data, so the information is directly incorporated into a database for trending, archiving and other reporting on. "*Roundskeeper* requires a portable data collection unit to provide it with the data that it saves," explains Steve Wagner, president, Automation Systems. "The device should be well made, resilient to the environment, easy to use and cutting edge technology. The CipherLab 9400 met these requirements."

The product collaboration was put together by BlueStar, a distributor of RFID, Auto ID, POS and other mobility products. "BlueStar introduced me to the product after I solicited their



The CipherLab 9400 handheld mobile computer was an attractive product to Instamation Systems for pairing with the *Roundskeeper* software due to its ease of use, compactness, embedded *Microsoft Windows CE 5.0* operating system, large bright screen, good construction and low cost of ownership.

help in finding a suitable data collection device," Wagner says. "I then talked to CipherLab and visited them at their facility in Texas where I was convinced to try the 9400. Pairing of the *Roundskeeper* was easily accomplished in a short period of time."

The Agua Mansa Power Plant powers the Southern Californian city of Colton and also contributes to the California Independent System Operator Corporation (ISO) grid. The California ISO is a nonprofit corporation that operates most of the state's high-voltage wholesale power grid, linking power plants and utilities. Through this grid, Agua Mansa provides power to other cities in emergencies.

Energy is a precious commodity, especially in California, where the state grid has to juggle energy for millions of people," says Al Crawford, CipherLab's vice president of technology. "By streamlining the daily maintenance of the Agua Mansa equipment, we're able

to minimize the plant's downtime, thus reducing the stress on the California power grid." 

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