PlantTalk:MES

AUTOMATION SOFTWARE FOR YOUR SHOP FLOOR

PlantTalk:MES

for the CNG ASSEMBLY PROCESS

Datanational Corporation's PlantTalk:MES is a fully integrated Manufacturing Execution System (MES) with current implementations in multiple environments dedicated to the assembly and installation of CNG (compressed natural gas) and LNG (liquefied natural gas) systems. This automated system provides for a controlled, validated and fully traceable installation and assembly process, including:

- The delivery of electronic process sheets with operator instructions on touchscreen monitors
- Barcoding and scanning validation for all assembly components and finished products
- Complete tool integration and validation of torques and rundowns
- PLC integration with fixtures and testers to ensure completion of cycles
- Operator login capture and validation to ensure their authorization to work at specific stations
- Traceability data storage of all key processes and results during the assembly process
- ERP integration for production reporting, scheduling, part information
- 24/7 technical support

The PlantTalk Advantage

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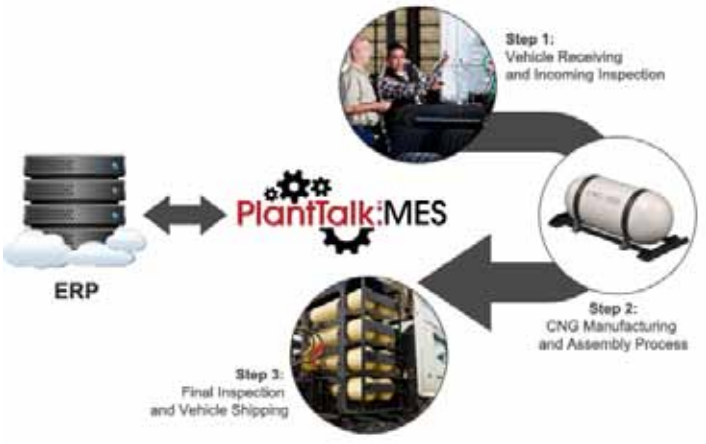

This automated system provides for a controlled, validated and fully traceable installation and assembly process, including:

- On line process sheets and images to provide dynamic visual aids to the operator
- On line training and operator validation through deployment of training videos
- System interfaces with testers and machines to ensure the integrity of the installation process
- CNG tank purge process integration
- System interfaces with your ERP/EDI and Accounting Systems to eliminate duplicate data entry and to provide streamlined updates for receiving, production reporting and shipping
- Full traceability of all designated assembly and data collection points.

We specialize in the design, development, implementation and support of complete Manufacturing Execution Systems for shop floors. Solutions of this type typically require the skills to integrate the machines, tools, production report and alert systems with communications equipment and ERP/MRP systems to inform and guide your employees. We possess the required knowledge and expertise to enhance your existing systems or implement new systems to your specific project requirements.

Software Built Around You

Datanational specializes in design, development, implementation and support of complete solutions for your automotive shop floor. Solutions of this type require the skills to integrate the machines, tools and production report and alert systems with the communications equipment and ERP/MRP systems to inform and guide your shop floor staff. We have many years of experience and the know-how to successfully complete these projects on time and budget.

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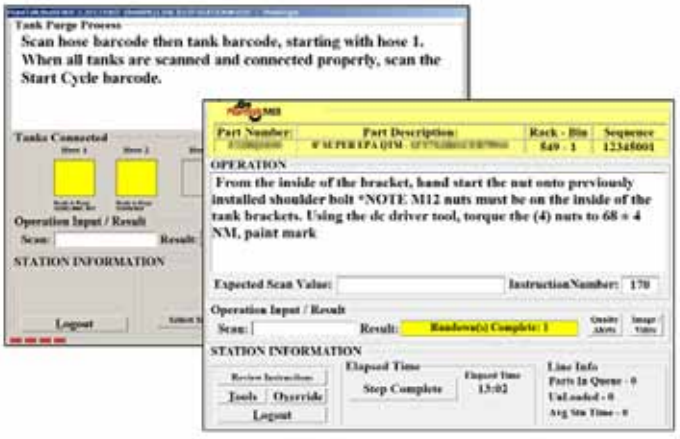
Step 1: Receiving Process and Incoming Inspection

Upon delivery of the vehicle to the CNG modification facility, the operator uses a portable hand held scanning terminal to scans either the VIN on the barcoded window Monroney or the VIN from inside the door. The system validates that the VIN scanned is valid (meaning that it has previously been downloaded from the ERP system as a scheduled receipt) and whether or not we have the CNG build data from ERP about the VIN. The original source of the expected receipts is typically a web-based OMS system from the OEM (Ford, GM, etc.). Once the association takes place between the VIN, dealer code and the CNG part number, this data is then included in the download data to PlantTalk.

The next process is a list of questions about the contents and appearance of the vehicles. This is done on the hand held scanner to catalog and save the answers as a part of receiving inspection. The questions prompted are all user defined in the system. Questions normally include damage review on hood, passenger side, rear, driver side, roof, glass breakage, and any add on's like floor mats and flag antenna.

After all questions have been answered, the data is stored on the server. The program returns to the VIN scan screen and the process repeats until completed (all vehicles have been received and inspected). When the vehicle is received, the VIN is marked to be sent to ERP as "Received" in the ERP upload file. The vehicle is then moved to the assembly staging area and is ready for the build process.



Step 2: Build Process

For the vehicle CNG integration line, when a vehicle is completed in the receiving and inspection process, the application looks up the VIN in the data received in the build schedule from the ERP system. If needed data is found, the process pulls key pieces of information from the ERP data stream and creates the "Ready to be worked on" record for the PlantTalk:Build system. The system also retrieves the part number and country code, if applicable, to determine what extra parts may need to be added. If no ERP build data file is available, a build schedule can be created in PlantTalk.

To begin the instructions for the vehicle, the operator scans the VIN of the vehicle, either from the window sticker or from the door. The required instructions for the build station will be loaded and the first one in order is displayed. When the first station is completed, the VIN/Part is marked to be sent to the ERP System as "Started" in the ERP file upload.

PlantTalk:Build controls the entire installation process through the use of intuitive operator instructions on touch screen monitors and tool interfaces for data collection and validation. The system ensures that the work instructions at each station are completed in order and that the stations are also done in order. All scans and torques are saved to the database to provide full traceability of the instructions processed. Some stations will require interfaces and data collection with DC torque tools. Our system also supports leak test interfaces and the tracking of serialized components requiring traceability data storage.

When the vehicle is complete on the assembly line, the VIN is marked to be sent to the ERP System as "Completed" in the ERP file upload.

Step 3: Final Inspection and Shipping

The final process is to ship the vehicle. Shipping inspection is the same process as receiving and when the final question is replied to, the record of the VIN is moved to a history table in the database. When the shipment is complete, a shipping document is printed for all VINs scanned for the shipment. At this time, the VIN is marked to be sent to the ERP System as "Shipped" in the ERP file upload. The vehicles then are ready to be delivered back to the OEM plant using their transportation system, Key-Ready to be shipped to the dealerships for delivery to the customer.