Case Study

Automated SAP® PM Order Collection and Distribution

Mercedes Benz U.S. International Inc. utilizes SEAL Systems to enhance Plant Maintenance accuracy and efficiency.

In this white paper we introduce some facts, information and methods for efficient handling of maintenance orders. This solution avoids the manually research, print and compilation works for maintenance order processes and provides an automatic workflow.

In 1996, Mercedes-Benz U.S. International Inc. unveiled a state-of-the-art, fully equipped manufacturing plant in Tuscaloosa, Alabama in the United States. This plant would serve as the new hub of all North American production; it would also come to generate 13% of the company's worldwide sales.

Originally designed to produce Mercedes' new M-Class model, the Tuscaloosa plant quickly exceeded the company's expectations, and the facility was expanded to accommodate the increasing demand. Today, MBUSI – Mercedes-Benz U.S. International – boasts over 4 million square meters of production space, including two full assembly lines, two paint shops and a body shop. A team of nearly 4,000 employees carries out the production of every vehicle from start to finish. In addition to producing the next generation M-Class and R-Class vehicles, the factory is also the only site in the world which produces the Mercedes GL-Class SUV – the 2007 Sport Utility of the Year.

Mercedes-Benz vehicles are renowned for their use of innovative technology; it comes as no surprise that the plant which produces these cutting-edge vehicles embraces the same spirit of innovation. Despite a staggering production volume, MBUSI prides itself on its "just in time" manufacturing, under which only 2-3 hours' worth of inventory is stocked at any given time. To keep pace with the needs of the plant, a sophisticated automated system monitors and requisitions the needed inventory creating a steady stream of incoming goods. This system prevents the wasteful process of stockpiling mass quantities of inventory until needed.

With a world-class operation dedicated to innovation, and an ambitious manufacturing plan with no margin for error, there was one major omission from MBUSI's model for efficiency: the printing and dissemination of the plant's maintenance orders. While other aspects of MBUSI's operation thrived on automation and efficiency,

the department responsible for actually keeping the plant functioning was bogged down with an inefficient, inadequate printing process.

World class equipment needs high accuracy maintenance

Members of the plant's maintenance team were forced to manually research, print and compile each maintenance order and its subsequent attachments. This tedious process had to be performed 200 times every month, and dealt with a wide range of documents, including ACAD, GIF, JPEG, TIF, Micro Station DGN, PDF, PowerPoint, Excel, and Microsoft Word.

"Many of our maintenance orders require that detailed information, ranging from pictures and drawings to specifications and lockout standards, print in conjunction with the orders," reports Brenda Smith, Maintenance System Specialist for Mercedes-Benz U.S. International. "The Maintenance Supervisor and other members of the Maintenance team were required to research and print any additional documents needed with the orders." These "additional documents" could range anywhere from a handful of attachments to hundreds per month.

This manual printing and assembly process required hundreds of man hours. The ultimate price of this practice, however, was even more costly. The precise nature of the team's maintenance orders requires absolute accuracy.

"We needed an accurate and efficient way to have critical documents print automatically," says Brenda Smith, Maintenance System Specialist for MBUSI.

It fell to Smith to find a way to overcome this challenge. After an exhaustive search – including phone calls to current customers – Smith found SEAL Systems. "SEAL presented a good product and showed an interest in developing their system to [suit] our needs and specifications," Smith recalls.

Distribution control with stamps and watermarks

Smith and her colleagues at MBUSI worked closely with SEAL Systems to make certain that the new SAP solution would address all of the maintenance team's issues. The result was striking. With the newly-implemented SEAL Systems process in place, the printing of maintenance orders, including their attachments, became a single step procedure, instead of an hours-long chore. Different documents types, from ACAD to PDF, print in the correct order at the push of a button. If necessary, specialized documents can be automatically directed to an alternate printer, such as a plotter, as part of the regular print job. This holds true even when documents are stored on different servers.

SEAL Systems also implemented a number of fail-safe measures to ensure that the correct version of each attachment is produced for each respective job. The built-in identification system tracks any and all changes made to a particular document. Every time a change is made, the document receives an identifying water stamp to indicate the date and status of the revision. This feature is particularly useful when a maintenance order is divided among members of the maintenance team; the employee can immediately see that the document is the correct version. This excludes outdated information from a plant maintenance order.

"My favorite feature is that all the setup for Auto printing can be done within the task list and shop papers of the planned maintenance orders," Smith says, "With this feature we can attach any document needed for any scheduled time within the task list and it will print as needed, along with the maintenance order shop papers. We have the ability to select many options on how the print packages are created within SEAL's configuration."
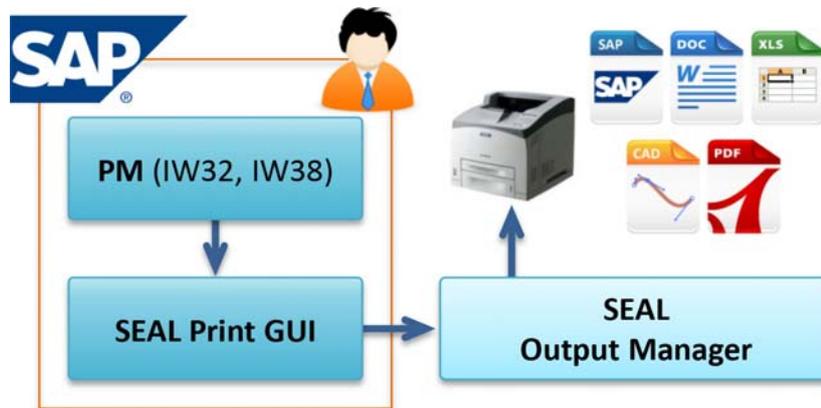
Major savings, more accuracy and user-friendliness

Ms. Smith also reports a "major savings in man-hours" as a result of the SEAL Systems solution, as well as "better efficiency in the accuracy of documents needed to perform tasks."

Just as important as the increased efficiency and accuracy was the solution's user-friendly interface. Employees adapted to the new system after only minimal training. Even so, "The support from the SEAL design and implementation teams [is] very professional and helpful," says Smith. "I am very happy with our final results."

Attach document to standard SAP work orders

The solution delivered to MBUSI was a standard out of the box package for PM printing with attachments. The solution executes a print through the standard SAP PM printing functions in IW32, IW38, or IW3D. The print output is routed to SEAL Systems' SAP certified and integrated transaction. There the shop papers and documents are identified, indexed and the job is finally submitted to the SEAL Output Manager, PLOSSYS netdome residing on a Windows or Unix platform external to SAP. From there PLOSSYS Netdome retrieves the necessary documents from the various available archives, converts from their native formats into an interim format, then produces the output collated properly, with stamps and watermarks on any digital or logical device on the enterprise network.

Small and wide format printing

Additionally the use of print pooling allowed for the planner to submit the output via a central device which intelligently distributes the plot output to a specific device or devices that is able to print the layout required. For example, ANSI-D size drawings on a small ANSI-A size printer would result in an image effect of a thumbnail. The pool device would automatically send the ANSI-D image to a full size plotter device, while any ANSI-A pages would end up on the smaller faster printer.

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