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Francois Louw, Lead Business Analyst, Halliburton's SAP Center of Expertise

## AT A GLANCE

### Summary

To streamline its work order process on land and optimize data transmission at sea, Houston, Texas-based Halliburton, one of the world's largest service providers to the energy industry, chose SAP® solutions for mobile business. With total integration from handhelds to back-end systems, the solutions save repair and administrative time and increase employee productivity.

### Web Site

[www.halliburton.com](http://www.halliburton.com)

### Key Challenge

Manual, paper-based, time-consuming work order process leading to inaccurate data

### Project Objectives

- Reduce time and effort needed to process work orders
- Speed up transfer and synchronization of data

### Solutions and Services

- SAP NetWeaver® Mobile component
- SAP xApp™ Mobile Asset Management composite application

### Why SAP Solution

- Seamless integration of mobile solutions with the company's existing SAP landscape
- Reduced training time and increased user acceptance due to end-user familiarity with SAP interfaces

### Implementation Highlights

- Completed implementation at 1 site in 3 months (plans to add 5 more sites – all in the United States)
- System expansion to maintenance vessels for offshore oil platforms began in Q4 2004

### Key Benefits

- Substantial savings in repair and administrative time, leading to increased productivity
- Rapid transfer of synchronized, accurate data
- Support for entire work order cycle
- Estimated eventual cost savings of \$500,000 per year upon successful rollout to all U.S. sites

### Implementation Partners

- SAP Consulting
- Accenture

### Existing Environment

- SAP R/3® software (functionality now found in the mySAP™ ERP solution)
- SAP NetWeaver components: SAP NetWeaver Business Intelligence and SAP NetWeaver Portal

### Hardware

- Dell servers with Intel processors
- Mixed-vendor PDAs, laptops, and desktops with Intel processors

### Operating System

- Microsoft Windows 2000 and XP
- Microsoft Windows Mobile 2003

## HALLIBURTON

### SAP® xApps™ Composite Applications for Mobile Business Help Streamline Maintenance Processes for Real Estate Services Group at Halliburton

If you think that keeping the operational gears turning in Halliburton is a major undertaking, you're correct.

One of the world's largest providers of products and services to the petroleum and energy industries, Halliburton manages six major corporate campuses in the United States. The people in these buildings do much of the company's work in overseeing and supplying Halliburton's worldwide operations.

Halliburton's Real Estate Services group, based in Houston, Texas, is charged with maintaining the company's six U.S. campuses. Until this year, when Halliburton implemented SAP® xApps™ composite applications for mobile business, the group relied on conventional, paper-based work order processing for its 60 maintenance technicians.

### Taking Time

“Our campuses are quite large,” says Michael Young, project coordinator in the Real Estate Services group at Halliburton. “And our maintenance technicians were spending time walking extra miles – and filling out reports – in order to complete their daily work orders.

“For instance, a technician might go out on a project and then, after completing the job, he or she would have to walk back to the office and file a report,” explains Young. “Then the phone would ring and the technician would have to go back out to the next location – which might turn out to be next door to the first job.”

In addition, the work assignment and reporting process was taking too much administrative time – and in some cases was producing inaccurate data. “Our technicians would fill out paper reports then give them to our administrative staff, who would reenter the information into our systems,” says Young.

In 2003 Halliburton’s Real Estate Services group decided to upgrade to a mobile asset-management solution. The company evaluated several different vendors and began by installing SAP xApps composite applications at its Houston Oak Park campus as a pilot site with an estimate of 30 days to implement this solution. Along with Accenture, the SAP Consulting organization came on board to help with the development process. Halliburton chose to work with Accenture because of its mobile technology and industry expertise as well as its skilled SAP practitioners and three-decade-long history of partnering with SAP.

**“With the new system, we expect to reduce the transmission time from 30 minutes down to about 2 minutes.”**

Francois Louw, Lead Business Analyst, Halliburton’s SAP Center of Expertise

### **Mobile Features**

Halliburton has been a user of SAP R/3® software (functionality now found in the mySAP™ ERP solution) since 1998, so the prospect of implementing the SAP xApps composite applications was particularly appealing because the solutions tied easily into the company’s back-office software system. For example, the mobile asset management application is 100% integrated with the SAP plant maintenance solution and automatically updates mySAP ERP. Additionally, the application’s user interface mirrors the mySAP ERP user interface, so employees become comfortable immediately with the new solution, reducing training time.

“But most important, the solution is completely integrated, all the way from the SAP R/3 software to the technicians’ handhelds,” says Francois Louw, lead business analyst at Halliburton’s SAP Center of Expertise. “And it is extremely powerful, right out of the box.”

### **Synchronizing Work Orders**

Now, the company’s Houston maintenance technicians synchronize their handhelds when they start work each morning on their assigned projects. As each project is completed, the technician enters the relevant information into the handheld – materials used, time spent, and so on – and then goes directly to the next assignment.

Whenever it is convenient, the technician can synchronize the handheld with the central database. When working in buildings that have wireless local area networks (WLANs) installed, the synchronization takes place via the WLAN. In a building without a wireless LAN, the technician inserts the handheld into a wired LAN cradle, and the application automatically refreshes the central server.

“With the wireless capabilities, we can immediately send a technician a job to perform, anywhere and anytime, enabling us to respond much more quickly to our customers’ requests,” says Young.

The solution also supports the entire work order cycle, according to Louw. “It automates notification, work order processing, and time confirmation and delivers regular updates to our back-office systems.”

### **Saving Time**

The SAP solutions for mobile business are producing valuable benefits for Halliburton. They save each technician an estimated one hour per workday and each administrative assistant an average of four hours a day – the time it used to take to reenter the technicians’ reports into the back-office system.

“We’re making the entire process for maintenance work requests more productive, answering customer calls faster, and bringing more accurate data to our back-office system, which means our maintenance users can perform more effective trend analyses or use the data for other applications,” says Young.

### **Next: Going Shipboard**

Thanks to these benefits, Halliburton is beginning a major expansion of its SAP mobile system to cover the company's 19 vessels involved in the construction and maintenance of off-shore facilities, such as oil platforms, around the world.

"We use low-bandwidth satellite links for data and phone communications with these ships," says Louw.

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Michael Young, Project Coordinator,  
Real Estate Services Group at Halliburton

"Voice takes precedence over data traffic, and, because of the effort to key data into a laptop and send it over these links, it can take 25 or 30 minutes just to write up one work order."

A ship's typical workload might mean generating 20 or more work orders each week, in addition to updating preventive maintenance orders and failure codes on the notifications. This places a significant burden on the people, on the ship, as well as on employees back at headquarters. Maintenance technicians would take notes manually during the day and then sit down at their laptops late at night, in order to update the SAP R/3 software.

### **As Fast As They Can Type**

"With the new system, we expect to reduce the transmission time from 30 minutes down to about 2 minutes," says Louw. Part of the reason for this speedup is that the SAP xApp Mobile Asset Management composite application operates as a complete offline system and then uses intelligent synchronization algorithms to send only the data that is being changed (delta data). As a result, the actual transmission involves minimal data transfer.

The people on board the ships will be able to synchronize their laptops whenever they want. They'll have more time to focus on maintenance, which is critically important on these vessels.

### **A Giant Challenge**

Whether on land or sea, performing operational maintenance for Halliburton presents a giant challenge – to maintenance technicians as well as to the company's managers. That challenge is now being well taken care of by Halliburton's various divisions – and SAP solutions for mobile business.

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