

Portable Toilet Provider Cleans Up With RFID

A German company is deploying 60,000 low-frequency tags to ensure its Toi Toi and Dixi potties are well maintained and easily tracked.

By Rhea Wessel

March 12, 2007—Adco Dienste Holding owns and rents tens of thousands of portable toilets across Europe. Each toilet must be delivered, cleaned and maintained, then retrieved from a client's site on schedule. To better manage this process and provide customers up-to-date, detailed information about the condition and location of each portable toilet, the company has already RFID-tagged tens of thousands of plastic potty cabins.

By the end of this year, the firm expects to have tagged 60,000 of the toilets it rents throughout Europe. Operating under the Toi Toi and Dixi brand names, Adco is now expanding the RFID application to subsidiaries in Switzerland and Belgium. Adco owns 52 companies in 26 countries; in Germany, it employs 850 people at 12 subsidiaries.

The project began in 2000, when Adco's management in Germany opted to streamline its toilet record-keeping processes and ensure that its service employees actually cleaned and maintained each toilet as scheduled. Together with IT service provider Qits, the managers developed the RFID application, which they dubbed Toi-Track. The team considered bar codes, but ultimately decided bar-code labels wouldn't fare well in the dirty and dusty environments where portable toilets might be located, such as on construction sites.

Before the application was operational, drivers maintained service records by hand, noting if a particular toilet was cleaned, or if they couldn't gain access to the site where it was located.. After service personnel returned to the office, shift managers would review each service record and sign off by hand. The system was error-prone because of all the manual paperwork, and it took time to locate the necessary service records to respond to customer questions about bills or maintenance.

Qits and Adco worked with Hoef & Wessel to design custom interrogators and tags for the application. Screwed to the inside of each toilet cabin, the tags had to be readable from outside the cabin at a distance of about 30 centimeters, as well as watertight, readable at subzero temperatures and able to last as long as possible. Adco also wanted readers with a long battery life and easy for glove-wearing operators to use. Elements of the project were tested and developed from January to October 2000, with a test rollout in North Rhine Westphalia launched in October of that year. By the end of 2000, Adco had finished three months of field tests on the hardware.

Qits and Adco are now switching out the readers, changing to a different Hoef & Wessel model—the Skeye Allegro LS—with Windows CE 5 software. The partners chose these devices and software because they support more graphics than the current system; Adco plans to use the information collected via RFID for better planning and visualization of the routes followed by service personnel. These combination readers can also be used to scan the bar code printed on each driver's service assignment sheets.

The tags contain RI-TRP-R4FFan RFID transponder, made by Texas Instruments (TI), consisting of a plastic card containing a passive 134.2 kHz chip and conforming to the ISO 11785 RFID air-interface standard. Employees apply the tags to each toilet after it is manufactured. Two workers from Qits are in charge of helping each German subsidiary with tagging, as well as answering any questions about the 500 readers currently in use.

RELATED_ARTICLES Andreas Rankers, CEO of Qits, says Adco has invested €1.4 million (\$1.85 million) in the application at its 12 German subsidiaries. The project saw a return on investment within one year after going operational, he says, because so much time was saved by electronically tracking toilet maintenance. Adco is also able to offer its customers better service by answering questions more quickly, and with greater detail. In addition, the RFID data collected gives the company a complete overview of each toilet's location, allowing Adco to better manage its rental and maintenance processes.

"Customers want a service provider who does good work and can document the work," says Rankers. "With Toi-Track, we were able to reduce process costs by 70 percent, and we're getting far fewer complaints about services. Customers' questions are answered quickly online, and, in many cases, we no longer have to offer customers credits."

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