

Caregivers at St. Clair Hospital are using Socket Mobile's new SoMo 650 RFID-enabled handheld to ensure they administer the right medications to patients.

By Beth Bacheldor

July 10, 2007—Nurses and other caregivers at [St. Clair Hospital](#) are getting some help, via passive high-frequency RFID tags, in determining that the right patients are receiving the proper medicine at the exact dose and time—and in the correct manner.

The Pittsburgh hospital is implementing [Socket Mobile's](#) new SoMo 650 handheld mobile computer, which began shipping this week. The computer is fitted with a Socket Mobile CompactFlash RFID Reader Series 6, a dual-function device that can read and encode 13.56 MHz RFID tags (ISO 15693, ICode SLI/SL2, LRI512, my-d and Tag-It HF-I) and scan bar codes.

The SoMo 650, says Tom Ague, the hospital's COO and executive VP, is a Wi-Fi-enabled Pocket PC designed to let nurses verify a patient's identity, by reading an RFID tag embedded in that person's wristband before administering medicine. St. Clair Hospital has 329 acute care beds and admits about 16,000 patients annually. Running on the SoMo 650 is VeriScan software from [Sculptor Developmental Technologies](#), a subsidiary of the hospital. VeriScan is designed to run on personal digital assistants (PDAs) or mobile computers, helping nurses prevent medication errors by providing them with pharmaceutical orders in real time. It also enables them to update patients' charts right at the bedside.

St. Clair had been using VeriScan with bar-code scanners connected to laptop computers on carts, but the carts were difficult to maneuver in patient rooms. The hospital switched to PDAs, but had some problems early on with those as well. "The screens weren't bright enough," Ague recalls. "The initial versions of the PDAs weren't ruggedized, and the network kept dropping off whenever nurses traveled from one area to another."

Therefore, St. Clair Hospital began testing the SoMo 650 about four months ago. According to Peter Phillips, Socket Mobile's VP of marketing, the device was designed based on feedback from the hospital and other companies. St. Clair is also using [Precision Dynamics'](#) RFID-enabled patient wristbands and staff badges, as well as an RFID printer-encoder from [Zebra Technologies](#).

When the time comes to administer medication, a nurse logs in using the RFID-enabled SoMo 650 to read his or her badge's tag. The employee then scans the bar code on the medication package (St. Clair Hospital attaches bar-coded labels to all patient medications, which are placed into envelopes for administration). The package's bar-code number is then cross-checked with a back-end database to confirm the drug type, specific dose and means of administration.

The nurse reads the RFID tag in the patient's wristband, and the tag's unique ID number is cross-referenced with the patient information in a back-end database. Not only does patient information pop up on the SoMo 650's display screen, but also a picture of the patient, which was taken when the

patient was admitted.

The device records the date and time the tags and bar codes are read, then wirelessly sends all the data (bar codes, RFID tag numbers and timestamp) to the database, where it is compared with the doctor's latest orders. Voice commands on the SoMo 650 announce, "Patient identification confirmed," or, in the case of discrepancies, "Access denied." In addition, any new medication orders, order changes or cancellations are automatically downloaded so nurses can learn about them immediately.

"The SoMo 650 is ruggedized," Ague says, "so if a nurse drops the device, it isn't ruined. And so far in our tests of the initial version, the network has stayed up and nurses haven't been dropped." The new RFID capabilities are also proving useful, he adds. "With the bar code, you had to twist the wristband until [the] bar code was facing you, then you had to aim the scanner, and if the badge wasn't flat, maybe you wouldn't get a good scan."

In addition, the SoMo 650 features action buttons on either side, which Ague says makes the device easy to use for both left-handed and right-handed caregivers. At the request of St. Clair Hospital, which wanted a way to prevent handhelds from spreading bacterial infections from patient to patient, Socket Mobile is now developing a disposable, plastic sleeve that can fit over the SoMo 650.

St. Clair Hospital has ordered 120 of the RFID-enabled SoMo 650s, and is now rolling them out throughout its nursing staff. The number of RFID badges and wristbands the organization will ultimately use has not yet been determined, but Ague says that even if all 2,000 staff members and every patient had tags, the cost would "be negligible for a \$185 million-a-year business like ours." And, he says, the expected benefits are great. For now, the RFID tags provide positive patient identification, but they could also be used for other applications, including lab tests, X-rays and patient tracking.

The SoMo 650 weighs 6.3 oz. and runs the Windows Mobile 5.0 Professional operating system. It includes Wi-Fi and Bluetooth connectivity, an Intel 624 MHz processor, a display with 320-by-240-pixel resolution, and a stylus for input. Available now, the SoMo 650 starts at a price of \$695 per unit.