At a Kuwaiti Children's Store, Parents Drop and Shop

Thanks to an RFID-based tracking system, parents can drop off their kids at an indoor playground, then view them in real time at kiosks located throughout the store.

By Claire Swedberg

Feb. 11, 2008—Kuwait retailer MS Retail is offering an RFID-based tracking system at its new children's superstore, Baroue, to enable parents to monitor their kids as they play in the store's playground. The system is provided by Mideast systems integrator TagStone using Ubisense RFID readers, tags and cameras and Ubisense's Spatial Location Platform software.

Baroue is a 6,500-square-meter (70,000-square-foot) store selling 20,000 products for children, including toys, clothing and infant accessories. Dubbed as the store that offers "extravagance for kids," it is designed to encourage families to take their time when visiting. Baroue features a juice and coffee bar, a photo booth and workshops, as well as a playground featuring a giant sea serpent kids can climb on, straight and spiral slides, a "magical" harp that plays without strings, a sand pit and a jungle gym.

At the playground, parents can leave their children with staff members who provide childcare. Parents can then monitor their kids from one of five information terminals located around the store, says Hergen Meyer, TagStone's business development manager.

At the entrance to the Sea Serpent playground, each child is assigned a wristband in the form of a plush toy lion. Inside the wristband, according to Charles Sturman, Ubisense's marketing VP, is a Ubisense ultra-wideband (UWB) battery-powered RFID tag. The parents are given a ticket with a number corresponding to that child's unique ID number.

As a child plays, the wristband transmits a stream of extremely short 6-to-8 GHz signals encoded with that child's ID number. The signal is picked up by several of the 20 RFID readers deployed throughout the playground. The ID number and transmission strength are forwarded to the store's back-end system via an Ethernet connection. Ubisense software interprets the data as it is captured, then calculates the child's location within 5 centimeters (2 inches) by measuring the tag's elevation and angle of transmission, as well as the transmission's time distance of arrival (TDOA) at several readers.

The system also includes Ubisense digital cameras. When the software calculates the specific sector of the playground in which the child is playing, it instructs the appropriate camera view to be linked with that data.

As parents shop, they can stop at one of the store's information kiosks and input the ticket's ID number. A screen displays a map of the playground with a small dot indicating their child's exact playground location. The parents can then press another prompt to display digital images of the child at play.

Sturman says the use of ultra-wideband RFID is essential to pinpointing a child's location within a few centimeters. "Ultra wideband is used for sending a pulse with a very short signal," he says. "With that short pulse, you can measure how long it took to receive that signal," and determine the location with great accuracy.

RELATED_ARTICLES Previously, TagStone piloted a UWB system at an exhibit hall, locating employees as they moved around a large room. However, Meyer notes, this is the first use of a UWB RFID people-tracking system with cameras. Similar systems have been deployed for logistics tracking (see RFID Helps Cordes & Simon Document Shipments).

According to Sturman, Baroue's child-tracking system has not had any glitches since operation began. "The only problem has been availability," he says. The playground's capacity is limited because the store has a total of only 200 RFID wristbands (at a cost of about $80 apiece), which means that no more than 200 kids can use the playground at any given time. As a result, children and parents queue up for the playground in very large numbers, sometimes causing a delay.