

# RFID Takes Attendance—and Heat

A California startup developed an RFID system to help teachers take roll call, but called off an in-school pilot after it incited protests from parents and advocacy groups.

By Mary Catherine O'Connor

Feb. 16, 2005—A small California startup called InCom has developed a radio frequency identification (RFID) system called InClass to automate attendance-taking in elementary and secondary schools. The system uses ultra-high frequency (UHF) readers mounted in classroom doorways and passive RFID tags attached to student ID card holders. InClass was being tested at Brittan Elementary School in Sutter, the small town northeast of Sacramento where InCom is based. After a number of parents of Brittan students protested the use of RFID in the school, InCom announced on Feb. 15 at a school board meeting that it had ended the pilot test.

"We'd accomplished everything we needed to accomplish in terms of testing the RFID readers and tags," says InCom vice president of operations Doug Alhers, "and the protests were negatively affecting the education process at the school, so we pulled the program."

InCom's cofounders include Alhers and Michael Dobson, its VP in charge of software development. Both also work for the school district in Sutter. Alhers is a teacher at Union High School, and Dobson is a network administrator at Union, as well as at Brittan Elementary, which had invited InCom to run a pilot project to test its InClass product. Brittan school administrators were interested in the product in part because California bases school aid upon attendance numbers.

Here's how the InClass system works: A unique 15-digit ID number is written to each tag and associated with the name of the student to whom it is issued. As the students pass through the reader-generated interrogation field under a doorway, the reader sends the tags' unique ID numbers to a central server. InCom has developed a software program, installed on the server, that collects the tag data and uploads a list of present, absent and tardy (based on when they enter the classroom) students to a PDA that is issued to the teacher. The upload is done wirelessly over an 802.11b Wi-Fi protocol. The teacher can then perform a visual check on the InClass-generated attendance list by scanning the room to reconcile what the list says with what she sees in the classroom. Once confirmed, the list is submitted wirelessly via the same PDA to school administrators, who are required to file attendance records to a state board of education.

The pilot began Jan. 18. The school was testing the InClass product to see if it could decrease the amount of time teachers spend taking attendance manually at the beginning of each class. It was also considering using the InClass product to help locate students on campus, though the pilot was testing the use of InClass only for taking attendance. Concurrent with the InClass deployment, Brittan school administrators had issued photo ID cards to all its students as a means to increase school security by ensuring that all students can be easily visually identified. The RFID attendance-taking pilot was a separate but interrelated project launched at the same time.

Brittan Elementary received a flood of media attention because an unspecified number of parents of Brittan students raised concerns over the use of RFID technology in the school and the issuance of picture ID cards to all Brittan students. The ID cards show the student's picture and full name but do not contain an embedded RFID chip. Each student wears his or her card inside a clear plastic-and-nylon holder that contains an RFID tag and is attached to a neck lanyard. Though only the seventh- and eighth-graders were involved in the InCom pilot, all Brittan students had been told to wear their picture ID cards at all times while in school. The tag's unique ID number was associated only with a student's first and last names in the InClass database, and not with any other personal information, according to Alhers.

Despite calls to the school officials for comment, *RFID Journal* could not determine whether Brittan students are still being asked to wear the picture IDs despite the fact that the readers are no longer functioning and the RFID pilot has ended. According to a news report in the *Appeal-Democrat*, a local newspaper, students not wearing their badges have not been disciplined.

Also according to the *Appeal-Democrat*, a number of parents have been supportive of the InClass trial and the decision of Brittan School principal and district superintendent Earnest Graham to test the technology at their children's school.

Alhers said last week that there had been six official complaints made to the school since the IDs cards were distributed, but that not all of the complaints revolve around the use of RFID. "Some parents don't like the fact that students are wearing picture IDs with their names on them," he said. These parents fret that children wearing IDs outside of school could be targeted by predators who call out their names, although some also object to the use of RFID. Parents point to a number of different concerns over the issuance of RFID tags to the students. Some say that assigning ID numbers to students and using that number to identify them could have negative physiological effects on the students. Parents also fear that students could be tracked outside of school or outside of the range of the RFID readers, even though school officials have explained that such a thing is not possible. On Jan. 30, two parents filed a complaint with the American Civil Liberties Union over the matter.

The InClass pilot at Brittan Elementary was tested solely in seventh and eighth grade classrooms, with readers installed in the doorways of those rooms. The only information the InClass pilot test could have provided to school administrators was whether a seventh- or eighth-grade student had entered or left one of those classrooms, according to Alhers. In each of these seventh- and eighth-grade classrooms, the reader's range was from the top of the doorway to the threshold directly below the reader. That meant only the tags of the students passing through the doorway were recognized. Tags worn by students walking through the hallway outside the classroom were not read.

Alhers says the InClass product let Brittan's teachers format the InClass-generated attendance data by class, period, day, or week. And the school's administrators could use the InClass system to send messages or announcements to teachers via the PDAs.

Before being cancelled, the InClass pilot was scheduled to last until the end of the school year. InCom also ran a brief trial, identical to the current trial, with students attending a summer program at Brittan last year. According to Alhers, the school did not send any notices to the parents of the students involved, and if any parents knew of the use of RFID at that time, none of them complained.

Alhers says that InCom is being flooded with e-mail messages and calls from schools administrators across the country that are interested in testing the product, but InCom has no new trials scheduled at this time.

"Most of the schools that are contacting us with requests for pilots have already issued picture IDs to students, so that part of the program won't be a problem," says Alhers, who adds that InCom will recommend to any

school it works with in the future that parents be made aware of the use of RFID before the pilot begins.

InCom will demonstrate the InClass product at the American Association of School Administrators' National Conference on Education being held in San Antonio, Texas, Feb. 17 to 20.

Copyright ©2005 RFID Journal, Inc. All Rights Reserved