

The publisher's printers have tagged a half million textbooks shipped to colleges and universities worldwide.

By Mary Catherine O'Connor

Jan. 14, 2010—[Wiley Higher Education](#), the educational textbook arm of book publishing house [John Wiley & Sons](#), is currently testing radio frequency identification in an international pilot program. The division, which publishes approximately 150 titles each year, is conducting the test to determine whether the technology can help it gain better insight into three activities: managing returned (unsold) books, rooting out book piracy and improving the traceability of complimentary evaluation copies of textbooks (to ensure it does not pay out a refund if booksellers attempt to return them to Wiley).

The division has already tagged a half million textbooks and shipped them to retailers, according to Jeff Kurschner, CEO of RFID systems integrator [MobileXe](#), which worked with Wiley to launch the RFID program.



*Steven Simons, Wiley
Higher Education's VP of
financial operations*

"Although this is a pilot, we're anticipating a quick confirmation of the [expected] cost/benefit ratio, immediately followed by a full rollout [of the program] to all Wiley textbooks—and, eventually, beyond textbooks," says Steven Simons, Wiley Higher Education's VP of financial operations.

The books, which were shipped to college and university bookstores in the United States and abroad in order to supply material for the fall and winter 2009-10 semesters, were tagged during the printing process. For softcovers, an [Avery Dennison](#) AD824 ultrahigh-frequency (UHF) passive tag (compliant with the ISO 18000-6C and EPC Gen 2 standards) was embedded in an adhesive label bearing a bar code and the title's international standard book number (ISBN), and was then placed on a page near the back of each book. For hardcovers, an Avery Dennison AD224 RFID tag was embedded into the endpaper pasted to the inside of each book's cover (and is, therefore, not visible). Wiley worked with [MobileXe](#) and a number of printing firms in order to install the required RFID interrogators, tag applicators and software required to make tagging a part of the inline printing process. The printing companies pass the costs they've invested in RFID onto Wiley, since they do not directly benefit from the technology, according to Lou Peragallo, Wiley's VP of operations.

The RFID hardware—including interrogators from [Alien Technology](#) and RFID printer-encoders provided by [Zebra Technologies](#)—has been rolled out at four sites at which Wiley textbooks are printed, along with [MobileXe's](#) Print, Apply, Verify & Exchange (PAVE) software, which links the RFID tag data with Wiley's warehouse-management software. ([MobileXe](#) developed the PAVE software specifically for the Wiley application.) Two of these sites are located in the United States, one is in the United Kingdom and the other is in Singapore.

The tags are made with RFID chips supplied by [NXP Semiconductors](#). Before being added to a book, each RFID tag was encoded with a unique ID number—a serialized global trade identification number (SGTIN). As the books were being shipped to their destination, Alien RFID readers mounted at the loading dock collected two numbers from each tag: its SGTIN and the transponder ID (TID)—a unique identifier that NXP encoded to each chip at the point of manufacture. A TID can not be altered and is, therefore, a useful tool for ensuring that counterfeiters are unable to introduce fake RFID tags into a supply chain.

For every tagged volume, its tag's SGTIN and TID are associated with that book's title and the invoice for the corresponding order. This information is then stored in a warehouse-management software module that is part of Wiley's enterprise resource planning (ERP) application.

In spring 2010, college bookstores will begin to return textbooks that did not sell during the fall semester, in order to receive credit for those copies (this is a customary practice for textbook orders). Upon receiving each tagged volume, workers at Wiley's return centers will employ Alien RFID readers to read that book's tag. The PAVE software will call up the records in Wiley's ERP application, ensuring that the SGTIN and TID match for each book.

This will provide Wiley with significantly more visibility into its supply chain than it had in the past, the company indicates, and should ensure that only authentic and authorized returned books are issued credits. Previously, a bookseller in, say, Singapore might purchase 100 copies of a book directly from Wiley as soon as that title was released. Later, the same bookstore might purchase additional copies from a Wiley dealer in Singapore at a lower price. If that bookseller were to attempt to return copies to Wiley that it had purchased for a discount, the company would know this, based on the sales history linked to the book's tag, and could consequently issue a refund reflecting the discounted price. In instances in which contracts prohibit books sold in overseas markets from being returned Stateside, no refund would be given at all.

The tagging system will also offer Wiley improved visibility into the evaluation copies of books that it issues to professors at no cost. The company provides these copies so that a teacher can evaluate a title and determine whether to use it to teach a class. In the event that the book is not used for a class, the professor might try to return it to Wiley, through the university bookstore, seeking a full refund. But because the book's RFID tag would inform Wiley that it is an evaluation copy, this refund would be denied.

Should booksellers attempt to return pirated copies of Wiley titles, the publisher would be able to determine this, since even if a counterfeiter were savvy enough to attach an RFID tag with a cloned SGTIN to a pirated volume, the chip's TID would not match the one in Wiley's records, thus proving that the tag was a clone and the book a knockoff.

Wiley believes that utilizing RFID to authenticate books will lead to significant reductions in fraudulent

returns, and provide a return on its RFID investment through cost savings on returns. The proof, the company indicates, will come this spring, when booksellers start returning unsold copies of textbooks, and Wiley begins to use the RFID tag data to authenticate them.