

**End users and academics have identified research projects across several industries that will require tens of millions of dollars in investments over the next five years.**

By Mark Roberti

Feb. 3, 2006—At last week's [RFID Academic Convocation](#), leading end users and representatives from academia identified a number of research projects across several industries that will need tens of millions of dollars in investments over the next five years. Among the areas requiring research funds are network protocol standards, specialized tags for airplane and auto parts, applications for micro- and nano-manufacturing technologies, and innovative bio and material sciences development in packaging.

"There is simply an enormous amount of applied research that needs to be done to move RFID forward and realize the dream of creating the 'Internet of Things,'" said John Williams, director of the [MIT Auto-ID Labs](#), which hosted the invitation-only event.



*John Williams, MIT  
Auto-ID Labs*

A hundred leaders in RFID attended the RFID Academic Convocation. The aim of the event was to identify opportunities for collaboration with RFID researchers from around the world, define core technology research areas needed to meet industry RFID requirements and begin to draw a road map for those market opportunities and technologies.

Williams presented details of an effort to develop an RFID global simulator (see [Lab to Build EPC Network Simulation](#)) chartered by the [EPCglobal Architecture Review Committee](#) under the auspices of the [Auto-ID Network Research Special Interest Group](#) (SIG). "The Internet of Things to make billions of physical objects visible over the Web," said Williams, "will require a secure and scaleable infrastructure that is more challenging to build than the original Internet."

Dick Cantwell, vice president of [Procter & Gamble/Gillette](#) and chairman of the [EPCglobal](#) board of governors, challenged attendees to move the EPC Network "from PowerPoint to reality."

Alan Thorne, associate director of the [Cambridge University Auto-ID Labs](#), and Ken Porad, program manager for automated identification programs at [Boeing](#), spoke about the Dreamliner specifications for RFID and the requirement to equip and test subassemblies with active RFID tags that record maintenance histories, as [Airbus](#) and Boeing look to optimize the management of maintenance of spare parts. Since airplane parts operate under harsh conditions and last for decades, new tags will have to be designed to meet the industry's needs—and methods and standards for synchronizing parts histories on tags and in databases must be developed.

Mike Rose, vice president of supply chain for [Johnson & Johnson](#)—together with Thomas Pizzutto,

[Wyeth Pharmaceuticals'](#) director for RFID technology and strategies; Ted Ng, [McKesson's](#) director of emerging technology; and Robert Celeste, director of the [EPCglobal Healthcare Life Science Business Action Group](#) (HLS BAG)—took part in a panel that identified additional RFID research areas requiring collaboration in the health and life sciences sector. These included data sharing, security, serialization, RF effects on chemical bonds and temperature, and RFID's integration with other authentication technologies.

"This was a critical event as industry and academia formed a partnership to take RFID forward," says Ng. "Those of us in the industry came away with a better understanding of the research being done around the world, and I think the researchers came away with a better understanding of the needs of the various industries represented at the event."

Stephen Miles, a researcher at the MIT Auto-ID Labs and chair of the RFID Academic Convocation conference committee, estimated the total cost of the required research could be more than \$100 million over the next five years. End users expressed an interest in working with researchers to help fund some of the required research, but more work needs to be done to map out what those research needs are.

The conference committee has nominated both Miles and Bill Hardgrave, executive director of the [University of Arkansas' Information Technology Research Institute](#) (ITRI), to cochair the next RFID Academic Convocation, to be held May 1 in Las Vegas in conjunction with [RFID Journal LIVE!](#), a leading RFID industry conference and exhibition. RFID researchers interested in participating are invited to join one of the research areas identified at the January convocation, or to initiate a new sponsored research area by going to the RFID Academic Convocation Online Community Site, hosted by [MIT Auto-ID Labs](#).