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3 IT projects among NIST grants

By [WILLIAM JACKSON](#)

Computer security, intelligent data searching and a personal wireless service were among 16 projects that received funding recently from the National Institute of Standards and Technology's Advanced Technology Program .

The program funds commercial development of products with potentially significant technical or economic impact that are too risky to attract private investment .

The latest round of funding would provide \$22.3 million if all projects carry through to completion . Those approved range from blade technology for efficient energy generation to virus-resistant tissue for skin grafts. Three focus on pushing the limits of IT.

The Automated Knowledge Discovery System, being developed by InRAD LLC of Knoxville, Tenn., would automate searching and organizing Internet content. Also participating in the project are Knowledge Based Systems Inc. of College Station, Texas, and Sarnoff Corp. of Princeton, N.J.

"Intelligent search is a stretch," InRAD chairman Richard Neal said, because identifying and labeling data is notoriously difficult at detailed levels .

The knowledge discovery system would require users to have ontology, or deep semantic understanding , of the research subjects , as well as a technology road map breaking down their organizations ' goals and requirements .

Intelligent agents would search using the ontology, and a kernel containing the technology road map would organize the returned data based on labels attached by the agents . The result should be a complete set of information about selected subjects .

This research aid won't be cheap, however. "Every application will probably require a \$200,000 to \$300,000 investment" from customers , Neal said .

InRAD wants to systematize development of intelligent agents so that customers can create their own ontologies and road maps .

The Wireless Intelligent Personal Server, being developed by Rosetta-Wireless Corp. of West Chicago, Ill., would give mobile workers access to large files and complex data.

The user would carry the wallet-sized server to connect automatically , at 1.5 Mbps, to an office network for e-mail and other files . Personal digital assistants , notebook computers or other devices could then access the data on the server.

"You don't have to wait for the file to download , because it is already positioned ," Rosetta-Wireless Vice President Keith Campbell said .

The server would have a range of 30 to 50 feet, and it would encrypt and password -protect data during transmission and storage .

Maintaining the correct file version when several people are simultaneously using it is difficult, and wireless transfer needs improvement by an order of magnitude to make this server a reality, according to NIST.

"We've got the system pretty well-defined, and we've got a working demo," Campbell said . Automatic fault recovery and encryption must be added, but "at the end of two years, we expect to have a fully functioning device."

Bit 9 Inc. of Somerville, Mass., is developing a Computer Immune System to protect computers and networks from previously unknown attacks.

It's easier to describe what the immune system is not than what it is, Bit 9 President Todd Brennan said . For example, the system does not recognize patterns as anti-virus programs do with known threats . Nor does it monitor code behavior heuristically .

The system "does not look for what's wrong, but instead focuses on a new definition of what's right," NIST said .

As for exactly how it does that, "We have to wait until we get the patents to go into it," Brennan said .

He noted that enterprisewide policy enforcement is involved. Technical barriers include ensuring the program is stable, does not overburden its host, scales up to thousands of systems and its software can be upgraded .

Each program has been approved for about \$2 million in funding for two years. Continuation in the second year is in doubt, however, because the administration 's fiscal 2004 budget request did not fund the Advanced Technology Program .

William Jackson is a staff writer with Government Computer News . He can be reached at wjackson@postnewsweektech.com.

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Companies and projects selected for funding

AdvanTek International LLC to lengthen rotors for wind turbines .

Bit 9 Inc. for a system to proactively protect computers and networks from attack.

Chromatin Inc. develop mini-chromosome technology for introducing multiple genes into plants .

HandyLab Inc. for a highly sensitive , low-cost and portable DNA analysis device.

Imaging Systems Technology for a novel plasma display panel structure .

InRAD LLC for an automated software system to search for and organize content from Internet sites and databases .

PowerSicel Inc. for high-performance power transistors .

Revivacor Inc. for safer xenograft tissues from pigs .

Rosetta-Wireless Corp. for a wallet-sized, wireless server.

Stratatech Corp. for methods to enable ice-free freezing and drying processes .

Supertron Technologies Inc., Newark, N.J., for development of arrays of superconducting coils .

Tiax LLC for low-cost solid oxide fuel cells .

Virent Energy Systems LLC for catalyst and reactor technologies to produce hydrogen for fuel cells .

The three joint venture partnerships and projects are:

Ford Motor Co., American Technology Inc., Edison Welding Institute, and Sonobond Ultrasonics Inc., West Chester, Pa., to develop ultrasonic metal welding technology .

Motorola Inc. and Englehard Corp. to develop a miniature catalyst fuel processor .

Robert Bosch Corp., SRI International, Stanford University and Volkswagen of America Inc. to develop an interactive natural-language dialogue system .

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