

October 24, 2007

## **The National Institute of Standards and Technology (NIST) Wins the FLC Mid-Atlantic Region Technology Transfer Award for Innovative Robotic Crane Improves Large Aircraft Maintenance Operations**

The Mid-Atlantic Region of the Federal Laboratory Consortium this year presented the Regional Excellence in Technology Transfer Honorable Mention Award to Mr. Adam S. Jacoff, Mr. W. Robert Bunch, Mr. James S. Albus, Mr. David W. See, Mr. Forrest Kelman, and Mr. Mark E. Cundiff of the National Institute of Standards and Technology (NIST) for work on “Innovative Robotic Crane Improves Large Aircraft Maintenance Operations.”

One of the harshest jobs in the Air Force’s maintenance depots has been dramatically ameliorated by a revolutionary new robotic crane called RoboCrane which allows paint stripping (“de-paint”) personnel to work around large aircraft from the relative safety and comfort of an enclosed cab suspended from the hangar ceiling. This technology transfer effort leveraged years of engineering research into robotic cranes performed by the National Institute of Standards and Technology (NIST), part of the U.S. Department of Commerce. The project was sponsored by the Air Force Research Laboratory (AFRL) and used cooperative research and development agreements with U.S. Technology Corporation to build and demonstrate an operational prototype — renamed the Aerial Multi-Axis Platform (AMP) — within a maintenance hangar at the Warner Robins Air Logistics Center (ALC).

Working closely with depot personnel, the project team identified requirements, tested critical components within hazardous dust-filled environments, and generated creative design solutions to apply research results. The RoboCrane/AMP prototype demonstrated dramatic process improvements which could transform the de-paint process around large aircraft. Since then, U.S. Technology Corporation has licensed the applicable patents from NIST and installed two production systems to support aircraft coating removal at Warner Robins. They are working on two more RoboCrane/AMP installations at Tinker ALC as well.

The RoboCrane/AMP is expected to significantly improve the working environment for maintenance personnel, and support additional tasks such as aircraft preparation, inspection, touch-up, and final cleaning. It creates a 40-50 percent reduction in the de-paint flow time of the aircraft, and over 70 percent reduction in operator stress/injury. When applied to the current Air Force workload of more than 200 aircraft per year, with an average cost for de-painting of \$200,000 per aircraft, the RoboCrane/AMP has the potential to save the Air Force \$8 million annually.

One of the most coveted awards in the field of technology transfer, FLC awards for Excellence in Technology Transfer recognize laboratory employees who have accomplished outstanding work in the process of transferring Federally-developed technology to the marketplace. The award was made on September 21 at the region’s annual meeting.

The Federal Laboratory Consortium is comprised of the technology transfer offices of all of the Federal laboratories throughout the country while its Mid-Atlantic Region focuses on the 70 Federal laboratories in DC, DE, MD, PA, VA and WV.

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