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U.S. AIR FORCE TECHNOLOGY TRANSFER PROGRAM

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An RQ-4B Global Hawk in flight. Under a Cooperative Research and Development Agreement (CRADA) between the Air Force and Northrop Grumman, the aircraft recently completed successful test flights with a payload adaptor that would allow the aircraft to carry United Technologies Aerospace System's Optical Bar Camera (OBC) and the Senior Year Electro-optical Reconnaissance System (SYERS) and the MS-177. (photo courtesy of the U.S. Air Force.)

VIEWPOINT

Looking Towards the Future



Keith Quinn
Air Force Technology Transfer Program Manager

The Air Force Technology Transfer Program (T2) serves as a bridge that connects the inventive discoveries made by scientists in our labs to commercial partners that develop these technologies into products and services to benefit the public and the warfighter. These are exciting times as Air Force intellectual property continues to grow and we expand our collaborative projects with industry and academia. The hardworking T2 professionals are well positioned to support this growth and implement new initiatives.

One of these new initiatives revolves around marketing and branding Air Force T2. We are excited to bring you the first edition of the Air Force T2 quarterly newsletter. We welcome your thoughts, ideas and suggestions to make it useful, readable, and supportive of the entire Air Force T2 community.

FY16 was a challenging and exciting year for our T2 Program. We received congressional funding which allowed us to issue a BAA. We selected three organizations to help us modernize our program over the next two years: Techlink/Miltech, C-TRAC, and the University of Southern California. We look forward to the development of training, increased focus on intellectual property, and new tools to assist our T2 professionals.



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The Air Force Technology Transfer (AFT2) "Connect2" newsletter is published quarterly by the AFT2 Program Office, which is managed at the Air Force Research Laboratory, Wright-Patterson Air Force Base, OH. The goal of the AFT2 Program is to ensure Air Force science and engineering activities are transferred or intentionally shared with state and local governments, academia and industry.

This publication provides the Air Force, DoD and other government leadership insight into the valuable contributions that the Air Force Technology Transfer program makes to Air Force research and development activities. It can be found online at www.wpafb.af.mil/t2.

spotlight on INNOVATION

Air Force Non-DoD Military Aircraft Office Signs First CRADA

Under a new Cooperative Research and Development Agreement (CRADA) between the Non-DoD Military Aircraft (NDMA) Office and Textron Airland, LLC, the U.S. Air Force Airworthiness Office will provide an airworthiness assessment of Textron's M 530 Scorpion.

"This is the first of its kind; we have never had a partnership with industry to assess aircraft that are not under an Air Force acquisition contract," said Jorge F. Gonzalez, USAF Technical Airworthiness Authority.

The NDMA office opened in April 2016 and will execute CRADAs with any interested industry partner on a first-come, first-served basis. For these new agreements, the Air Force and industry partners will work together to define a set of evaluation criteria using MIL-HDBK-516.

When the assessment criteria has been established the Air Force will perform an independent compliance assessment using design, analysis and test data provided by the industry collaborator. At the end of the process, the Air Force will produce a comprehensive risk analysis document, called an Airworthiness Assessment Report.



The process will enable the Air Force to gain a much deeper understanding of the state of civil aviation, while providing industry with an expert, independent evaluation of the safety and reliability of their products. Over time, these collaborations will help the Air Force better understand commercial innovations and support its broader research and development goals.

"Allowing the Air Force to collaborate with non-defense aircraft partners for the first time is a big deal. This agreement and similar agreements benefit both government and industry partners," said Keith Quinn, Air Force Technology Transfer program manager.

Industry partners benefit by using the Air Force's valuable expertise to receive an assessment of the company's aircraft type design against applicable military airworthiness criteria. This helps to reduce design risk and also results in an official assessment that may be advantageous to future foreign customers. While the assessment procedure follows the Air Force airworthiness certification process to its fullest extent as outlined in Air Force policy and guidance, the aircraft will not receive an airworthiness certification.

The airworthiness process is fact-based and data-driven. The standard CRADA period of performance is two years, but can be completed early, terminated by either party at any time or extended as necessary upon agreement from both parties. Government costs for the assessments are fully reimbursed by industry for all expenses incurred under the agreement.

"This is a win-win for the Air Force, industry, and our national defense," said Camron Gorguinpour, the Air Force's Director of Transformational Innovation. "Not only are we gaining insight into technical innovation, we're also finding innovative ways to collaborate with industry to our mutual benefit."

WHERE ARE THEY NOW

Update on Attenuating Custom Communications Earpiece System (ACCES®)

The Attenuating Custom Communications Ear-piece System (ACCES®) was developed under a CRADA between the Air Force Research Laboratory, Human Effectiveness Directorate and Westone Laboratories Inc. The technology revolutionized hearing protection and communication in high noise environments for pilots. ACCES® integrates specialized electronics and cabling into a custom-molded earplug that provides 40dB of mean noise reduction while providing clearly intelligible voice communication.

Westone was granted an exclusive Patent Licensing Agreement (PLA) and a General Services Administration (GSA) contract to produce the state-of-the art device. ACCES® is a landmark example of technology development and transfer between the Air Force and industry: rapid technology development and delivery, technology transfer and transition, partnering with private industry, improving warfighter effectiveness, and acquisition reform. In 2006, ACCES® won the Federal Laboratory Consortium for Technology Transfer's Excellence in Technology Transfer Award.

Today, Westone is continuing to manufacture the device which is widely used across the Air Force and other services by pilots, ground crews, and Special Forces operations utilizing helmets, headsets and/or radios. It is also used by many city and state police, firefighters, medevac units, and special service helicopter pilots. When Colorado Springs had the Waldo Canyon and Black Forest fires, ACCES® was used by the U.S. Forest Service firefighter helicopter pilots.

On the commercial side, the device is sold to cropdusters and stunt teams Geico Skytypers, Gauntlet Warbirds, Team Oracle as well as pilots from Boeing, Lockheed Martin, and Virgin Galactic.



NEW AGREEMENTS

PURDUE
RESEARCH FOUNDATION

AFRL Establishes New Partnership Intermediary Agreement with Purdue University

By Mindy Cooper, Air Force Technology Transfer Program

WRIGHT-PATTERSON AIR FORCE BASE, Ohio – The Air Force Research Laboratory (AFRL) and Purdue Research Foundation signed a new Partnership Intermediary Agreement (PIA) in order to expedite the technology transfer process of AFRL technology into the commercial market. The foundation will work with AFRL, the Air Force Technology Transfer Program Office, Wright Brothers Institute, The Entrepreneur Center, student teams and companies to identify technologies that are available for licensing and commercialization. This type of agreement allows the Purdue Research Foundation to facilitate joint projects and technology transfer between the Air Force and private companies.

Working with their partners, Purdue Research Foundation will help teams establish sound business plans and market their products – thus opening new commercial outlets for AFRL technology. In addition, Purdue Research Foundation will share best practices in commercialization training, outreach and marketing.

“The goals of this agreement include implementing our established technology translation processes and to expand the commercialization channels for Purdue and AFRL,” said Chad Pittman, vice president of the Purdue Office of Technology Commercialization. “Because we share so many similar disciplines and industries, the successful marketing and commercialization methods we utilize will fit well with the innovations and technologies that AFRL has developed and patented. We are excited to begin this endeavor with the Air Force.”

According to the Purdue Research Foundation, Purdue uses various marketing tools that have proven immensely successful, including a monthly e-newsletter with 100,000 subscribers and Flintbox, an online tool that promotes innovations. With this agreement, AFRL technology is going to benefit from the foundation's successful marketing practices to increase transfer to the commercial market.

“Agreements like this are one of the cornerstones of a successful technology transfer program,” said Keith Quinn, Air Force T2 Program Manager, “Purdue has many successful methods for quickly commercializing products. We are eager to see what they can do with AFRL technology.”

meet the INVENTOR

Dr. Jonathan Spowart

Senior Materials Research Engineer

Air Force Research Laboratory, Materials and Manufacturing Directorate, AFRL/RXCCM

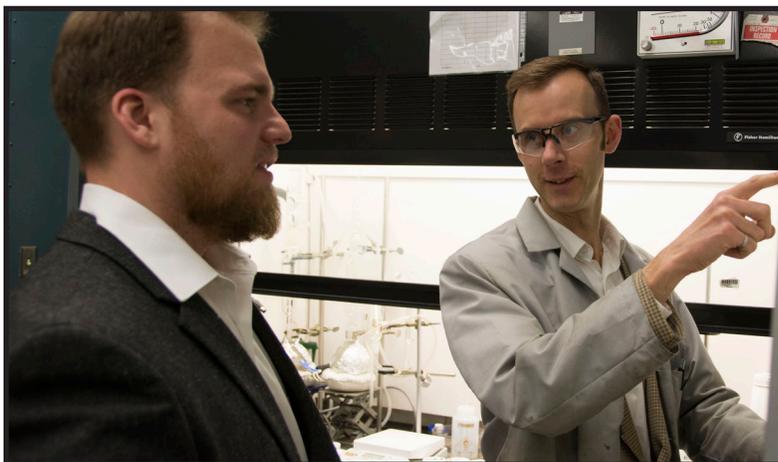
What was your invention?

The concept behind RoboMet.3D, as we originally envisioned it, was to create a system that can generate two-dimensional material microstructure data for three-dimensional reconstruction.

This data can be used to identify internal defects, assess the quality of a selected material, and validate integrated computational materials engineering models, along with several other applications.

What was your development process?

We came up with a concept at the exact time that some funding from the Air Force Office of Scientific Research (AFOSR) was made available. This was basic research (6.1) funding that allowed us to do a proof of concept in the lab in a prototype system. While we were developing the prototype, we were simultaneously writing up the Air Force invention disclosure. The patent process took approximately five years to complete.



Dr. Spowart and Dr. Garth Wilks in the Materials and Manufacturing Directorate laboratory. (photo courtesy of AFRL)

my fellow scientists and engineers to at least spend some of their time thinking about this process and if you have a good idea just write it down and put in an invention disclosure, you really haven't lost anything, and the potential benefit to the government and private industry could be significant.

What benefits do you see with technology transfer?

I do believe that the tax payer is getting a good deal for tech transfer and tech transition. Because if you look at the initial basic research funding investment that was made by the Air Force, it was a fraction of the total sales of the Robo-Met.3D system to date, with 20+ systems deployed worldwide, including several national laboratories. In addition, the basic system has been upgraded and modified over the years, and one variant will be delivered this year for automated inspection purposes at an Air Force Air Logistics Center. The early tech transfer certainly enabled this key tech transition.

Why did you pursue a technology transfer agreement?

We pursued the T2 agreement because we quickly realized that the lab did not have the capability to mature the technology to the level at which it could be commercially viable, but that it still owned the intellectual property. This led to the IP license agreement with UES, Inc., which has benefitted both organizations in very complementary ways.

What were your impressions of the technology transfer process?

It's not that onerous a task to go through a tech transfer or a tech transition. I would encourage



RoboMet.3D (photo courtesy of UES)