



# SUCCESS

COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENT

## CONTRACT NUMBER:

12-167-RH-01PLA  
12-167-RH-01CRD

## COMPANY NAME:

PS Engineering  
Lenoir City, TN

## TECHNICAL PROJECT OFFICE:

AFRL/711 HPW/RH,  
WPAFB, OH

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## AIR FORCE AGREEMENT Helps Small Business Compete in the General Aviation Industry

**WRIGHT-PATTERSON AIR FORCE BASE, Ohio** –A patent licensing agreement (PLA) and cooperative research and development agreement (CRADA) with the Air Force have been major factors in helping one small business directly compete with the largest aviation companies in the industry.

PS Engineering of Lenoir City, Tennessee, signed an exclusive PLA in 2012 with the Air Force Research Laboratory, 711th Human Performance Wing's Human Effectiveness Directorate (711HPW/RH), now known as the Airman Systems Directorate, for a patented speech technology that processes radio signals such



*An installed PS Engineering PMA450A audio panel is shown. (Photo courtesy of PS Engineering.)*

that each signal appears to come from a unique location in space when presented over a pilot's headset.

This 'multi-talker' separation greatly enhances communication effectiveness and serves to improve safety during flight operations, according to Dr. Brian Simpson, technical advisor for the 711 HPW/RH Battlespace Acoustics Branch, which developed the technology.

The CRADA allows experts from the Battlespace Acoustics Branch to carry out additional testing and answer questions about the technology while the PS Engineering develops and refines products based on technology in the patent.

A CRADA is one type of technology transfer agreement that provides quick access to extensive government-funded research and development resources that can be leveraged to create powerful results while also providing intellectual property protection. Both PLAs and CRADAs are facilitated by the Air Force Technology Transfer Program and its affiliated Office of Research and Technology Applications (ORTA). An ORTA is embedded at many AF research locations.

"On our own, we didn't have the expertise to develop multi-talker technology," said Mark Scheuer, founder and CEO of PS Engineering. "Being able to interact with Air Force scientists under this CRADA was crucial to our product development. Without these agreements, we would not be leaders in our field."

Since the agreements have been in place, the company has developed a line of products using the technology. As a result, they are able to compete against industry giants. The product line, the PMA450, received FAA certification in 2014. The PMA450A model is the first audio panel of its kind to have graphics displays that uses soft keys.

The multi-talker technology spatially separates overlapping radio transmissions received during flight. Instead of the messages coming out at the same time and playing over top of each other, the pilot and flight crew hear distinct messages that seem to come from different locations, making it easier to decipher messages and react.

PS Engineering competes in the commercial aviation aftermarket industry, serving companies like Honeywell and Avidyne Avionics. Many of its products are compatible with an aircraft's original equipment manufactured by Garmin Ltd.

"Using a PLA with a follow-on CRADA allows a company to leverage both Air Force resources and the inventor's knowledge. It helps to further develop the licensed technology for the company's specific commercial application. In return, the Air Force obtains additional data and a commercial product is more likely to result from the agreements," said Dr. James Kearns, 711HPW Technology Transfer and Domestic Alliances manager.

For more information about technology transfer opportunities with the Air Force, call the Air Force Technology Transfer Program Office at 937-904-9830.

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*Linking technology with the mission and marketplace.*

## **U.S. AIR FORCE TECHNOLOGY TRANSFER PROGRAM OFFICE**

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