Project Introduction

This proposal responds to the urgent need for improved pilot interfaces in the modern aircraft cockpit. Recent advances in aircraft equipment bring tremendous resources within the reach of the today's pilot. Unfortunately, these advancements are often accompanied by increases in system complexity and pilot workload. In many cases, the detailed interaction required by modern avionics significantly interferes with the pilot's need to scan instrument gauges, maintain visual separation from other aircraft, and attend to other critical tasks. To address these concerns, PragmaSoft's proposal combines innovations in robust speech recognition and interface design with powerful application language constraints to deliver highly effective voice interface solutions. Development efforts are carefully target at high workload pilot tasks to ensure substantial benefits and commercial acceptance. Initial product sales are leveraged to collect an extensive corpus of actual (in-flight) speech and operational data for subsequent research and development. PragmaSoft believes that the lengthy and focused attention required to operate some aircraft devices presents an unacceptable safety risk to flight operations. The proposed innovations deliver effective and commercially attractive voice interface solutions that allow pilots to interact with their cockpit environment in a safer and more efficient manner.

Anticipated Benefits

Potential NASA Commercial Applications: The proposed innovations deliver commercially attractive, speaker-independent, voice interface products that significantly enhance the safety and efficiency of advanced flight operations. Initial products are carefully targeted to specific applications to ensure substantial benefits and commercial acceptance. Non-certified versions of the product are configured for convenient use in a wide variety of aircraft, while certified versions are provided for permanent installation. The persuasive cost/benefit profile of these products ensures that a wide spectrum of aircraft owners and operators will finally enjoy the benefits of advanced speech recognition technology.

Practical Voice Recognition for the Aircraft Cockpit, Phase I

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Organizational Responsibility
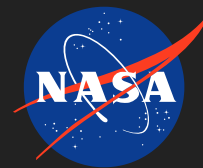
Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)
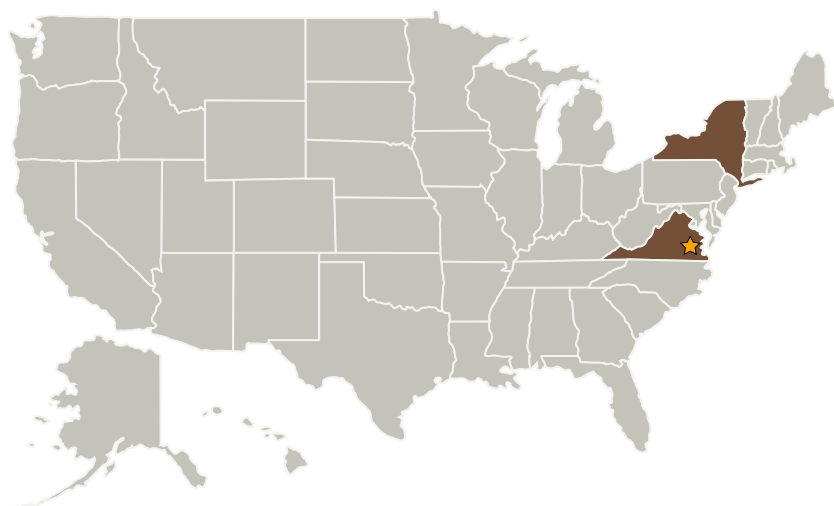
Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

SBIR/STTR

Primary U.S. Work Locations and Key Partners

Organizations Performing Work	Role	Type	Location
⭐Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
Pragmasoft, Inc.	Supporting Organization	Industry	Delmar, New York

Primary U.S. Work Locations	
New York	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

J. Scott Merritt

Technology Areas

Primary:

- TX15 Flight Vehicle Systems
  └ TX15.2 Flight Mechanics
    └ TX15.2.3 Flight Mechanics Testing and Flight Operations

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