Replacing the “see and avoid” capability of a pilot onboard an aircraft with a Detect and Avoid (DAA) capability remains the biggest technical challenge to the safe and efficient integration of Remotely Piloted Aircraft Systems (RPAS) into non-segregated airspace. Over the past five years, General Atomics Aeronautical Systems, Inc. (GA-ASI) has been working on DAA technology for the Predator B aircraft and other large RPAS.

In collaboration with the FAA, NASA, and several industry partners, GA-ASI has developed and flight tested a prototype DAA system which has matured into a capability representative of the Minimum Operational Performance Standards (MOPS) being developed by RTCA Special Committee 228. Several key technological advances include the development and flight testing of an air-air radar called the Due Regard Radar, the development and integration of an automatic collision avoidance capability, and the use of a display to enable Self-Separation.

Most recently, NASA completed a comprehensive performance test of the prototype DAA capability onboard the NASA Ikhana (Predator B variant) RPAS. This talk will focus on the key technical challenges associated with integrating DAA technology onto a large RPAS and share results from recent flight testing. This talk also will provide an update on the progress being made in the U.S. towards the development of a technical standard for an airborne DAA system.

Brandon Suarez leads GA-ASI’s Sense and Avoid (SAA) efforts, including system development, aircraft integration, and flight testing. Mr. Suarez is part of a team of experts from the FAA, NASA, and several industry partners to bring together the technology needed for a proof-of-concept SAA system on a Predator B. He is involved in the development of national and international SAA standards through the RTCA Special Committee (SC-228) and other community forums. The goal of these efforts is to write the standards that will be used to certify the unique features of UAS for flight in the U.S. National Airspace System (NAS). He holds both Bachelor’s and Master’s degrees in Aerospace Engineering from the Massachusetts Institute of Technology (MIT).