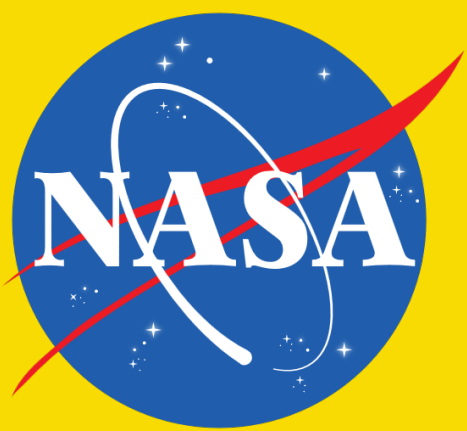


DANTi

DAA in the cockpit

<https://shemesh.larc.nasa.gov/fm/DANTi>



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Key Publications

Assistive Detect-and-Avoid for Pilots in the Cockpit, V Carreno, P Masci, M Consiglio, Proceedings of the 41st Digital Avionics Systems Conference (DASC), 2022

Evaluation, Analysis and Results of the DANTi Flight Test Data, the DAIDALUS Detect and Avoid Algorithm, and the DANTi Concept for Detect and Avoid in the Cockpit, V Carreño, Contractor Report, NASA/CR-20205004594, 2020

Sensor Uncertainty Mitigation and Dynamic Well Clear Volumes in DAIDALUS A Narkawicz, C Muñoz, and A Dutle, Proceedings of the 37th Digital Avionics Systems Conference (DASC), 2018

DANTi: Detect and Avoid in The Cockpit, J Chamberlain, M Consiglio, and C Muñoz, Proceedings of the 17th AIAA Aviation Technology, Integration, and Operations Conference (ATIO), AIAA-2017-4491, 2017

DAIDALUS: Detect and Avoid Alerting Logic for Unmanned Systems, C Muñoz, A Narkawicz, G Hagen, J Upchurch, A Dutle, M Consiglio, and J Chamberlain, Proceedings of the 34th Digital Avionics Systems Conference (DASC), 2015



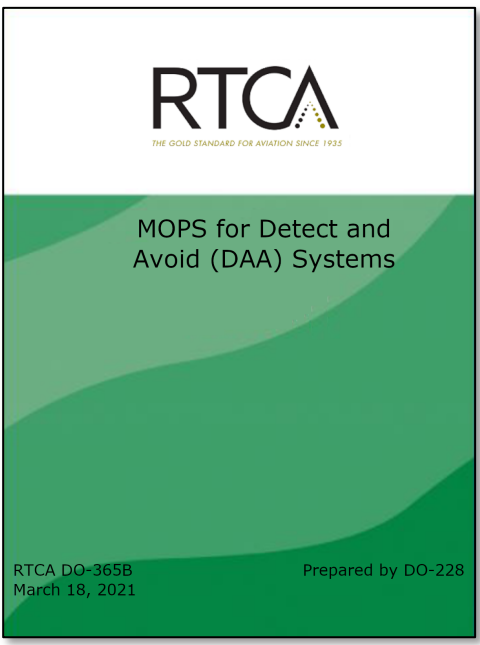
DANTi is a prototype Electronic Flight Bag which incorporates an assistive Detect and Avoid (DAA) capability developed by NASA.

The notion of **assistive DAA** for manned aviation proposes the use of DAA technology to provide pilots traffic awareness and maneuver guidance support when required to comply with see and avoid regulations.

Assistive DAA technologies can be integrated into today’s cockpit as “**Non-Required Safety Enhancing Equipment**” (NORSEE), as stated in the FAA Policy No: PS-AIR-21.8-1602, which describes a standardized approval process of NORSEE in general aviation (GA) and rotorcraft fleets.



To generate alerts and calculate resolution guidance, DANTi uses the **DAIDALUS** algorithm, which is the reference implementation for the DAA Minimum Operational Performance Standards (MOPS) document **DO-365**, DO365A, and DO365B developed by the RTCA Special Committee SC228.



Simulation studies were performed to assess the effectiveness of assistive DAA technologies when used to enhance pilots’ ability to see and avoid nearby traffic. Preliminary results strongly suggest that assistive DAA could greatly enhance the capabilities of flight crews to avoid traffic and remain well clear.

