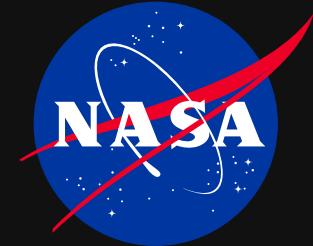


National Aeronautics and Space Administration



DANTI



The notion of assistive Detect and Avoid (DAA) for manned aviation proposes the use of DAA technology to provide pilots with traffic awareness and maneuver guidance support when required to comply with see-and-avoid regulations. The NASA developed Detect and Avoid iN the Cockpit (DANTi) is a prototype electronic flight bag which incorporates an assistive DAA capability.

Assistive DAA technologies can be integrated into today's cockpit as Non-Required Safety Enhancing Equipment (NORSEE), as stated in FAA Policy, 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 Detect and Avoid Alerting Logic for Unmanned Systems (DAIDALUS) algorithm.

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.



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

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DANTi DAA in the Cockpit

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

