

Design & Analysis Tools (DAT)

PROGRAM/PROJECT: Aircraft Icing Project [<http://icebox-esn.grc.nasa.gov>]

LEAD AGENCY/COLLABORATING AGENCIES: National Aeronautics and Space Administration (NASA), Federal Aviation Administration (FAA)

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SERVICE AREA(S)/INITIATIVE(S)

- ***National Aviation Weather Initiatives:***
5: 13

FUNDING

- ***Programmed/Planned (\$'s/FY):*** \$2.55M /FY 03 \$2.55M /FY 04

TYPE OF PROGRAM/APPLICATION

R&D/Prototype Demonstration

SCOPE OF PROGRAM/PROJECT

- ***What's being developed, procured, etc.:*** advanced icing simulation software, new experimental methods, and new experimental databases that will enable accurate evaluation of the performance of aircraft and aircraft sub-systems under icing conditions.
- ***How will operations be changed/improved:*** the tools developed from this element will improve the design, testing, construction, and certification and qualification of aircraft and aircraft sub-systems.

PROGRAM/PROJECT MANAGEMENT

- ***Basic guidance document for this program:*** Aircraft Icing Project Plan.
- ***Program/Project verification process:*** Aerospace Technical Advisory Committee (ASTAC) and Subcommittee reviews, peer reviews, and NASA Aircraft Icing Forums.
- ***Method used for end product validation:*** Technical peer reviews and experimental testing.
- ***Operational training for the user:*** Specific workshops when new tools are released and help from the Icing Research Branch as needed.

SCHEDULE/IMPLEMENTATION

- ***Next major program milestone:***
- ***Program becomes operational:*** The Design & Analysis Tools Element will develop enabling technologies to be implemented by industry, government agencies and academia.
- ***Plans for further improvements:*** Release of LEWICE version 3.0; complete Tailplane Icing Program II; complete scaling effects study of ice accretion on aircraft aerodynamics; complete automated grid generation capability integrated with LEWICE; develop experimental methods and databases for super cooled large droplets; understand the effect of ice on aircraft control surfaces and the resulting effect on aircraft dynamics.