Weather Information Communications (WINCOMM)

PROGRAM/PROJECT: Aviation Safety Program/Weather Accident Prevention Project [http://wxap.grc.nasa.gov/wincomm]
LEAD AGENCY/COLLABORATING AGENCIES: National Aeronautics and Space Administration (NASA)/ Federal Aviation Administration (FAA), National Oceanic and Atmospheric Administration (NOAA), Department of Defense (DoD)
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SERVICE AREA (S)/INITIATIVE (S)

- ***National Aviation Weather Initiatives:***
  1: 2 **2:** 2 **3:** 3 **5:** 2 **6:** 2 **7:** 3 **8:** 2

FUNDING

- ***Programmed/Planned ($'s/FY):*** $3.1M/FY 03 $3.1M/FY 04

TYPE OF PROGRAM/APPLICATION

R&D/Product Dissemination

SCOPE OF PROGRAM/PROJECT

- ***What's being developed, procured, etc.:*** *optimize air-to-air and air-to-ground data link technologies such as UAT, VDLM2/3, and Mode S to enable the transmission of weather information to the cockpit*. WINCOMM will define communication requirements, assess the current communications infrastructure, and apply/develop technologies to satisfy gaps.
- ***How will operations be changed/improved:*** *new communications technologies will provide a capability to up-link weather information to pilots in the cockpit, increase situational awareness, and assist in the reduction of aircraft accidents attributable to weather.*

PROGRAM/PROJECT MANAGEMENT

- ***Basic guidance document for this program:*** WINCOMM Level III Element Plan.
- ***Program/Project verification process:*** NASA sponsored annual Weather Accident Prevention reviews, Aviation Safety Program Executive Council reviews, and reviews/audits at the project/element level.
- ***Method used for end product validation:*** Combination of (a) system-level modeling and simulations, (b) laboratory-based experiments and (c) flight experiments via appropriate industry and/or NASA research aircraft. Many of these validation efforts are performed under cost-shared cooperative research agreements with industry partners.
- ***Operational training for the user:*** Not applicable since datalink technologies are generally not end-user devices requiring training.

SCHEDULE/IMPLEMENTATION

- ***Next major program milestone:*** 1QFYO4- develop preliminary configuration for integrated flight demos in FY05. 3QFY04- Develop final configuration.
- ***Program becomes operational:*** WINCOMM develops enabling technologies that need to be implemented by industry or other government agencies.
- ***Plans for further improvements:*** Development of air-air and air-ground datalink for low altitude automatic reporting capability; Satcom datalink for improved coverage and bandwidth; improved data compression schemes; open network standards.