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SYNTHETIC VISION COULD HELP PILOTS STEER CLEAR OF FATALITIES

    NASA and industry are developing revolutionary cockpit
displays to give airplane crews clear views of their surroundings
in bad weather and darkness, which could help prevent deadly
aviation accidents.

    Limited visibility is the greatest factor in most fatal
aircraft accidents, said Michael Lewis, director of the Aviation
Safety Program at NASA's Langley Research Center in Hampton, VA.
NASA has selected six industry teams to create Synthetic Vision,
a virtual-reality display system for cockpits, offering pilots an
electronic picture of what's outside their windows, no matter the
weather or time of day.

    "With Global Positioning Satellite signals, pilots now can
know exactly where they are," said Lewis. "Add super-accurate
terrain databases and graphical displays and we can draw three-
dimensional moving scenes that will show pilots exactly what's
outside. The type of accidents that happen in poor visibility
just don't happen when pilots can see the terrain hazards ahead."

    The NASA Aviation Safety Program envisions a system that
would use new and existing technologies to incorporate data into
displays in aircraft cockpits. The displays would show hazardous
terrain, air traffic, landing and approach patterns, runway
surfaces and other obstacles that could affect an aircraft's
flight.

    Industry teams submitted 27 proposals in four categories:
commercial transports and business jets, general aviation
aircraft, database development and enabling technologies. NASA
and researchers from the Federal Aviation Administration and
Department of Defense evaluated the proposals' technical merit,
cost and feasibility.

     NASA has committed $5.2 million that will be matched by $5.5
million in industry funds to advance Synthetic Vision projects
over the next 18 months. More money is expected to be designated
later to accelerate commercialization and make some systems
available within four to six years.

    Among the team leaders selected for the first phase of the
program are: Rockwell Collins, Inc., Cedar Rapids, IA; AvroTec,
Inc., Portland, OR; Research Triangle Institute, Research Triangle
Park, NC; Jeppesen-Sanderson, Inc., Englewood, CO; the Avionics
Engineering Center of Ohio University, Athens, OH; and Rannoch
Corporation, Alexandria, VA.

    Rockwell Collins, Inc. will receive funds to develop
synthetic vision for airliners and business jets. The AvroTec,
Inc. and Research Triangle Institute groups will use their awards
to create technologies for a general-aviation synthetic vision

system. A team led by Jeppesen-Sanderson, Inc. will receive funds to develop terrain database requirements and system approaches. The Avionics Engineering Center of Ohio University and Rannoch Corporation will use their awards to design specific component technologies for Synthetic Vision.

The Aviation Safety Program is a partnership with the FAA, aircraft manufacturers, airlines and the Department of Defense. This partnership supports the national goal announced by President Clinton to reduce the fatal aircraft accident rate by 80 percent in 10 years and by 90 percent over 25 years.

Because of advances in the last 40 years, commercial airliners are already the safest of all major forms of transportation. But with an accident rate that has remained relatively constant in the last decade and air traffic expected to triple over the next 20 years, the U.S. government wants to prevent a projected rise in the number of aircraft accidents.

For a complete list of industry teams please check the Internet at:

http://oea.larc.nasa.gov/news_rels/1999/May99/99-025.html

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