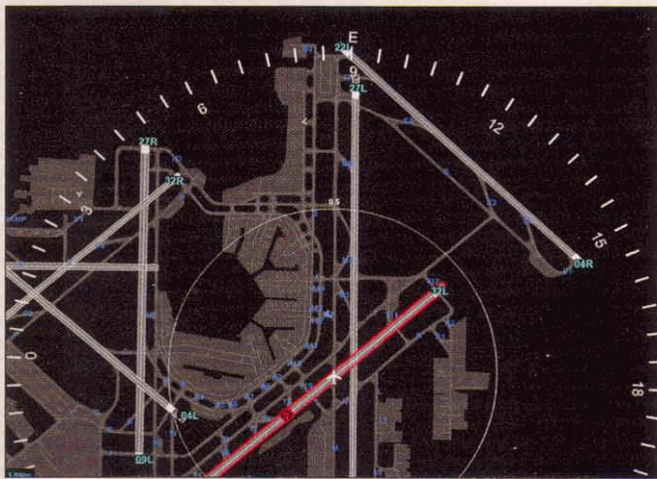


ACSS, an L-3 Communications and Thales company, and UPS Aviation have partnered to develop an automatic dependent surveillance system-broadcast (ADS-B) package designed to assure the safe separation of aircraft on the ground and while lining up for an approach. Announced at the 2005 Paris Airshow, SafeRoute will first be installed on UPS aircraft, along with Class 3 electronic flight bags (EFBs). ACSS currently is developing the software for the system's two capabilities: surface area movement management (SAMM) and merging and spacing. Operators will be able to procure the capabilities separately. UPS plans to install both capabilities in its fleet. ACSS expects to have SafeRoute certified in 2007.

The ADS-B capability can be installed in ACSS' surveillance processor or hosted in another supplier's product. SafeRoute software is being written to the ARINC 653 standard, so its installation will not require complete regression testing.

UPS plans to save fuel and reduce noise and emissions using the merging and spacing capability at its base in Louisville, Ky. A ground unit with special spacing software—to be installed at the Indianapolis, Ind., air route traffic control center serving the Ohio Valley—will sequence the aircraft to waypoints in preparation for approach. The unit then calculates spacing instruction—in terms of time, not distance—which is transmitted to the aircraft lining up for an approach. Pilots receive the spacing instruction via data link; UPS plans to use the airborne communications addressing and reporting system (ACARS). With instruction data entered into the surveillance processor, the SafeRoute software determines the best control settings for a continuous descent arrival (CDA). Trial CDAs flown in late 2004 showed “the potential to achieve a 30 percent reduction in noise and



3 percent reduction in emissions,” says Karen Lee, UPS' director of flight operations.

On the ground, traffic information can be overlaid on airport maps, which UPS plans to have installed in its new EFBs. In this case, the SAMM system “listens” passively to transponder transmissions from other aircraft and, potentially, ground vehicles. More than having the system show own-ship position and the positions of other aircraft on the ground, ACSS plans to have it also give the pilot a visual and aural alert in case of a possible incursion. In such an instance, the map image of the runway or taxiway on which a conflict could occur would turn yellow first, then red (as shown above).

UPS hopes to save fuel burn from the SAMM capability, as well as from CDAs. For example, with the enhanced situational awareness on the ground, pilots can better time their decision to switch from auxiliary power unit (APU) power to engine start.

FAA is enthusiastic about ADS-B, as is evident from its decision last year to select the technology as the preferred option for the future surveillance system in U.S. airspace. However, the technology is new, and ACSS and UPS are working closely with the agency to assist in writing the technical standard order (TSO) requirements for ADS-B. Visit www.l-3com.com/acss.