

Safety software cocktail hosts a menu of features

by Harry Weisberger

Aviation Communication & Surveillance Systems (ACSS), a joint venture company of L-3 Communications and Thales, is at NBAA 2005 featuring SafeRoute, the company's proprietary operating software that is designed to host a variety of safety-of-flight functions. The platform resides in the TCAS 3000, the third generation of ACSS traffic and collision avoidance systems. TCAS 3000 system certification is expected in next year's first quarter and will replace TCAS 2000 as the basic L-3 TCAS product. The first TCAS 3000 application is aboard the Dassault Falcon 7X and is flying on all three 7X test aircraft.

SafeRoute was unveiled at the Paris Air Show in June and is currently being marketed with two distinct functions, both being demonstrated at the L-3 Communications booth, No. 1153. One is called SAMM, for surface area movement management

Kris Ganase, ACSS president, told NBAA Convention News, "UPS, our Safe-Route launch customer, is putting TCAS 3000 and SafeRoute on all 350 of their airplanes. They are incorporating both SAMM, which will help to avert runway incursions, and merging and spacing (M&S), a function that UPS predicts will save 880,000 gallons of fuel a year for their fleet."

SAMM will display ground traffic information, including own aircraft and other aircraft positions on the airport surface, and will generate visual and aural advisories similar in function to those of TCAS. Being demonstrated at the L-3 booth is a reenactment of a surface near-miss between Boeing 747s at Chicago O'Hare. SAMM uses a GPS interface for position data and will communicate through ADS-B. "We are already talking to major OEMs about including this feature on their airplanes," Ganase said.

M&S will use essentially the same ADS-B communications protocol. It is a technology designed to sequence and separate aircraft on final approach at high-volume airports like Louisville, Ky., where many UPS aircraft arrive nearly simultaneously each evening. Ganase said the M&S function will "make Tracon's job easier" by displaying in the cockpit on TCAS—a multifunction display or an electronic flight bag the position of other aircraft along with speed cues to accelerate or decelerate for sequencing. He added, "If there is an FAA mandate one day for this kind of sequencing system, it will be very easy to implement."

Ganase said he expects the FAA to embrace the autonomous airborne separation functions of M&S for their ability to increase capacity and efficiency within terminal airspace. ACSS plans to announce today the addition of a continuous descent arrivals (CDA) module to the M&S software. Ganase quoted Capt. Karen Lee, UPS director of flight operations, as saying successful trials with CDAs flown last year show the potential to achieve a 30-percent

reduction in noise and 3-percent reduction in emissions. UPS also expects significant fuel savings from keeping airplanes at higher altitudes longer and being able to get its airplanes on the ground faster, he said.

Ganase said that SafeRoute will eventually encompass a whole series of functions. "When we designed TCAS 3000," he continued, "we came up with basically a generic surveillance processor platform to which we could add functionality per customer requirements. That functionality will be contained in the software program we call SafeRoute. Its first application is to add software functions to TCAS 3000 on the Falcon 7X." He said SafeRoute has the capability to host "a family of ADS-B-based solutions." Ganase added that SafeRoute programs can be overlaid onto existing ACSS products such as TCAS

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2000, and the T2CAS traffic and terrain avoidance system introduced in 2003. About 500 of the latter are in service to date. "We've sold about 2,000 in all markets, to meet the Class-A TAWS mandate," he noted, adding that SafeRoute software is designed not only for current ACSS systems but is a "portable software that can operate with Arinc 653 systems from other makers."

Of the SafeRoute architecture, Ganase offered an analogy to a personal computer. "The PC is the basic platform, like our common processor. TCAS 3000 is the application analogous to Word, and SafeRoute is like Excel. This is a platform with a whole lot of future growth potential," he stated.

Ganase was previously ACSS chief operating officer and, before that, COO for the Thales regional and business aircraft division in Montreal. Located at the Phoenix Deer Valley Airport in Arizona, ACSS was formed to market and continue development of the TCAS 2000 system following Honeywell's merger with AlliedSignal. □