TOOWiLD Airborne Precision Spacing Simulation Tests

This slide shows the results of simulations using Automatic Dependent Broadcast-Surveillance (ADS-B) techniques such as Airborne Precision Spacing. The simulations, using controllers and commercial pilots, were conducted at the Airspace Operations Lab at NASA's Ames Research Center.

The slide illustrates that having self-spacing aircraft provides tighter control and more precise control over the spacing interval between a lead aircraft and the aircraft spacing off of it.

The plot shows the error between the target interval and the actual interval observed for each aircraft in simulation at the runway threshold. The red line represents self-spacing aircraft and shows that the target interval was achieved with a high degree of accuracy—within 1.5 seconds plus or minus 5 seconds. The blue line represents aircraft in the alternative non-spacing condition where controllers issued speed instructions, again using tools as part of advanced operations, and were responsible for maintaining the spacing. The non-self-spacing aircraft had less precise control over the interval.

TOOWiLD Inter-Arrival Runway Spacing

variance from target spacing interval, in seconds