Closely-Spaced Parallel Operations Roadmap Summary

The Federal Aviation Administration (FAA) is analyzing a number of Closely-Spaced Parallel Operations (CSPO) enabling activities to permit revised runway spacing and airport design standards. These revisions are based on new research and analysis and are possible through the application of advanced technology and performance based procedures.

Today, both capacity and efficiency are significantly impacted when operating to Closely-Spaced Parallel Runways (CSPR) during low visibility conditions. Figure 1 depicts a high level overview of independent and dependent CSPR operations.

As traffic levels continue to increase, the effect on operations will become even more significant. In these conditions, the distance between parallel runways, airport’s surveillance capabilities, and supported procedures will determine whether independent (higher throughput) and/or dependent (lower throughput) operations are permitted.

Initially, CSPO activities will focus on the development of new runway (airport) separation standards in order to introduce immediate benefits without requiring additional airport infrastructure. New separation and airport design standards may also permit airports to build runways closer together in the future, increasing capacity within the airport’s existing boundaries. The mid and far-term CSPO activities will rely on advanced technology and performance-based procedures permitting minimal spacing and maximizing throughput to CSPR. A notional implementation strategy for CSPO activities is shown in Figure 2.

Figure 1. Closely-Spaced Parallel Operations Today (Approaches)
The FAA's CSPO initiative is focused on increasing arrival and departure service to airports in low visibility conditions that already have CSPRs or may build parallel runways in the future. The CSPO enabling activities provide the FAA with another incremental step towards modernizing the National Airspace System (NAS) and accommodating the forecasted growth in demand. Enabling activities include wake analysis, deviations during simultaneous independent approaches, data collection and analysis ("blunder analysis"), Performance-Based Navigation (PBN), enhanced surveillance (ground and airborne), advanced avionics and new procedures (based on PBN, surveillance, and avionics enablers). Each activity will contribute unique capacity benefits while maintaining an acceptable level of safety in reduced visibility conditions. The local effect of increasing capacity will ripple through the NAS as reduced delay.