Modeling & Simulation

ARINC provides modeling and simulation support for ultra-sophisticated, sea- and land-based automated aircraft navigation and landing systems, including major Naval Air Systems Command (NAVAIR) programs. ARINC's engineering team is currently playing a key role in the modeling and simulation phase of the Sea-Based and Land-Based Joint Precision Approach and Landing Systems (JPALS) programs—and we were an integral part of the Technology Development phase of Sea-Based JPALS.

ARINC uses its tools and engineering knowledge to model complex GPS systems, stimulate these models through scenarios, analyze the results of field test data, and evaluate system performance.

JPALS Program

ARINC created the following JPALS program models, which enable in-depth analysis of system performance using candidate functional system architectures:

JPALS Performance Model: an offline, end-to-end simulation of GPS constellation, GPS antenna/receiver, and INS components. The model is used to thoroughly test navigation and integrity algorithms and allow ARINC engineers to assess performance capabilities of JPALS architecture candidates.

JPALS Availability Model: a series of detailed models of different error sources present in JPALS architecture candidates. The model allows ARINC engineers to verify the ability of candidate architectures to meet specified availability and guidance-quality requirements under clear air and jamming conditions.

ARINC has completed the development of both models, which have also been validated through field testing.

ARINC

DEDICATION BEYOND EXPECTATION

Quick Facts

- Unmatched experience with civil and military GPS navigation technology
- Wide range of experience in real-world aircraft and ship operations
- Dedicated systems engineering, software development, and field test teams
- Proven program management expertise
- Multiple contract vehicles
- CMMI level 2, ISO 9001:2008 and AS9100 certification
- Local offices throughout the United States and the world




Because of their modular architecture, these models can be readily modified to assess the functional performance of other GPS-based navigation systems.

ARINC has been supporting JPALS, N-UCAS, and other GPS-based navigation systems for the past 12 years. Whether your navigation system requirements involve air or sea transport, manned or unmanned systems, ARINC has the dedication and expertise needed to meet your most challenging specifications.

ARINC Incorporated, a portfolio company of The Carlyle Group, provides communications, engineering and integration solutions for commercial, defense and government customers worldwide. Headquartered in Annapolis, Maryland with regional offices in London and Singapore, ARINC is ISO 9001:2008 and AS9100 certified.

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