

Satellite Navigation and Air Traffic Control and Landing Systems

ARINC provides a complete range of services—from requirements development and modeling and simulation through test and demonstration—for ultra-sophisticated, sea- and land-based automated aircraft navigation and landing systems. Using satellite navigation and other technologies, we've helped define, develop, and implement sophisticated air traffic control and landing systems for both military and commercial clients. Currently, we provide critical support in the research, development, testing, and evaluation phases of satellite-based systems for major DoD programs, including the Navy Unmanned Combat Air System (N-UCAS) and the Joint Precision Approach and Landing System (JPALS).

Requirements Development

ARINC personnel use their operational and engineering experience to develop comprehensive, realistic, and testable navigation and landing system requirements, from definition and analysis/derivation through validation and traceability.

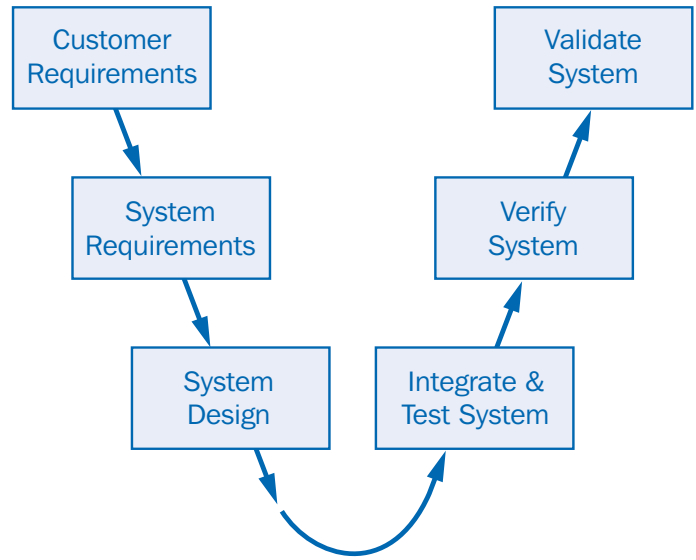
ARINC applies real-world operational expertise to develop Concepts of Operations (CONOPS) and “Day in the Life” (DITL) scenarios designed from the operator’s perspective. We also develop Use Cases to describe the detailed sequence of interactions between operators (and other actors) and the system to ensure that clear interface requirements are established.

Modeling & Simulation

ARINC models complex GPS systems, utilizes scenarios and field test data for accurate simulation, and provides proven expert analysis of the results to evaluate system performance. Our extensive modeling and simulation support includes major Naval Air Systems Command (NAVAIR) programs and currently plays a key role in performance and availability modeling and simulation for JPALS.

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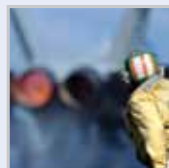
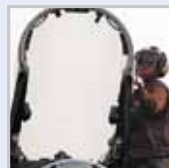
DEDICATION BEYOND EXPECTATION



Requirements Development, Verification, and Validation Process

Quick Facts

- ▶ Unmatched experience with civil and military GPS navigation technology
- ▶ Wide expertise in real-world aircraft and ship operations
- ▶ Dedicated systems engineering, modeling & simulation, and test & demonstration teams
- ▶ Proven program management capability
- ▶ Multiple contract vehicles



Test & Demonstration

ARINC personnel combine system expertise with comprehensive analysis tools to support all facets of test and demonstration, including definition and development of requirements and resources, planning, coordination, and execution of complex tests and demonstration events, data assessment, and documentation of findings and results.

We also conduct flight tests and static tests at-sea and on-land, in clear air and under jamming conditions, for the JPALS and N-UCAS programs.

Sea-Based JPALS

As a subject matter expert for the U.S. Navy, ARINC provides expertise and oversight assistance during the Engineering and Manufacturing Development (EMD) phase of the Sea-Based Joint Precision Approach and Landing System (JPALS).

ARINC served as the lead technical contractor to the Navy during technology development (TD)—ensuring a confident technical solution that enabled a successful Milestone B approval by OSD and the associated authorization to award the current EMD contract. We conducted test and demonstration events, developed end-to-end computer simulations and models to assess system performance, conducted performance analyses necessary to mature critical technology elements, and developed, documented and validated system-level performance requirements.

Currently, ARINC is working with the Navy to integrate Sea-Based JPALS in aircraft carriers, amphibious assault ships and the aircraft that operate off those ships.

Land-Based JPALS

ARINC is under contract to the U.S. Air Force to develop the functional and performance requirements for the Land-Based Joint Precision Approach and Landing System (JPALS). Our engineering team has developed prototype systems, conducted test and demonstration events, developed computer simulations and models to assess system performance, conducted performance analyses necessary to mature critical technology elements, and developed, documented, and validated system-level performance requirements.

Navy Unmanned Combat Air System

ARINC is working with the NAVAIR program office (PMA268) to develop N-UCAS air and ship system programs. These projects require demonstration of carrier-landing capability for an unmanned combat air vehicle, demonstration of suitability of critical carrier technologies in a relevant environment, and full integration of the existing N-UCAS Mission Control Element (MCE) with existing shipboard Air Traffic Controllers, Landing Signal Officers, and Primary Flight Control. ARINC's scope of work includes defining requirements and developing technology to enable unmanned aircraft to seamlessly operate with manned aircraft in the demanding shipboard environment. These technologies include relative and precision GPS navigation and two-way secure data link, which are essential to enable fully automated and positive-controlled shipboard monitoring, precision approach, landing, bolter, missed approach and situational awareness.

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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