

Sea-Based Joint Precision Approach and Landing System (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.

JPALS Program

The JPALS Program is intended to provide all U.S. military aircraft a safe, all-weather, common precision approach and landing system that supports all DoD air fields. JPALS will be installed on nearly all aircraft in the U.S. military inventory, all air-capable ships operated by the U.S. Navy and Coast Guard, and air fields operated by all services.

The initial program increment—Sea-Based JPALS—will use advanced anti-jam GPS receiver systems, inertial navigation systems, and a digital data link to provide precision approach guidance to 200 ft, 1/2 nm for equipped aircraft and ships. Future increments will include Land-based JPALS variants, as well as guidance

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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



for Autoland operations. When fully-fielded, JPALS will provide precision instrument approach capability in all weather conditions.

Ship Integration

ARINC provides engineering and air traffic control technical expertise to NAVAIR PMA213 in the installation of the JPALS ship System and the integration of existing Navy shipboard In-Service systems. JPALS will integrate with the AN/TPX-42 Air Traffic Control Console, AN/SPN-46 Automatic Carrier Landing System, AN/SPN-41 Instrument Landing System, Landing Signal Officer Display System (LSODS), Improved Fresnel Lens Optical Landing System (IFLOLS), Aviation Data Management and Control System (ADMACS), and the MORIAH Wind System.

ARINC's scope of work includes defining fleet requirements, Use Cases, Risk Management, Configuration Management, GPS development, development of System Engineering and Management Plan, and documentation required to support each level of the DoD System Engineering Technical Reviews of an ACAT 1D program. Additionally, we are working with a subcontractor to develop a stable JPALS Carrier Air Traffic Control Center (CATCC) simulation system that will stimulate fleet "NetCentric" ATC display equipment.

Aircraft Integration

ARINC has been a trusted provider of aircraft integration and modification services for over 50 years. Our engineers are experienced subject matter experts familiar with a wide spectrum of avionics systems and types of aircraft, including commercial, corporate, regional, general aviation, and military aircraft, both fixed and rotary wing.

Currently supporting the Sea-Based JPALS effort, ARINC provides avionics requirements and assessments for Navy aircraft—the first to receive full JPALS air system (AS) integration. These include the primary Carrier Air Wing aircraft: F/A-18E/F, EA-18G, E-2D, C-2A, and MH-60R/S. We have also developed an aircraft platform integration database that is a compilation of key avionics by aircraft type/model/series (T/M/S) and facilitates requirements analysis in the development of JPALS integration approaches.

ARINC, 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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