Company Overview

Founded in 1944, Parsons is an engineering, construction, technical, and professional services firm with revenues of $3 billion in 2012.

Parsons is a leader in many diversified markets with a focus on defense/security, environmental/infrastructure, transportation, and resources. Parsons delivers design/design-build, program/construction management, and other professional services packaged in innovative alternative delivery methods to federal, regional, and local government agencies, as well as to private industrial customers worldwide.

We conquer the toughest logistical and technical challenges and deliver landmark projects across the globe. Today, more than 11,500 employees are engaged in executing more than 2,000 projects in 25 countries around the world. For more about Parsons, please visit www.parsons.com.

Introduction

Parsons’ Defense & Security Sector has built a reputation for systems engineering excellence, technological innovation, and responsiveness to customers’ requirements. As systems engineering and advanced technology experts, Parsons is dedicated to serving the nation’s needs in the areas of advanced aerospace systems, tactical and strategic weapons systems, space systems, and information systems. Our principal business in these areas consists of systems engineering, analysis, simulation, and design of advanced systems using state-of-the-art tools and advanced value-engineering techniques. We are recognized experts in architecture and systems engineering and in the definition, analysis, and ranking of integrated architecture alternatives according to cost, testability, and bottom-line-effectiveness metrics.

The Parsons Solution

Parsons has provided high-end program management and engineering support to the federal government for more than 60 years and has a demonstrated record of success. The company has award-winning experience in integrating and leading distributed teams who have provided critical decision support, processes, and plans to senior Department of Defense leadership. We support customer engineering processes from concept development through design, test and verification, assessment, and fielding (see the systems engineering “V” below). As a systems engineering prime contractor for advisory and assistance services, we are proud of our ability to provide the best staff for the job in a timely and cost-efficient manner.

Concept Development

Parsons excels at working the front end of the systems engineering and integration process, which identifies and integrates concepts, quantifies their contributions to a program, determines the risks, and suggests paths for their resolution. The size of these efforts ranges from preliminary assessments of concepts to informal and formal analyses of alternatives and top-level requirements on the interfaces between battle managers and the elements they control. Services provided include the translation of a system (or subsystem, program, project, or activity) concept into a preliminary and detailed design (engineering plans and specifications), performing risk identification/analysis/mitigation, and then integrating the various components to produce a working prototype or model of the system.
Systems Design and Requirements

Parsons has extensive experience in the design of architectures and programs. Integral to our approach is the concept of an architecture strategy that takes into account fundamental uncertainties in the nature of the threat, data-driven decision points, and external constraints such as budget limitations that define what is possible in any given time frame. Architectures must adapt to future mission changes, respond to threats as they unfold, and recognize cost as an architectural measure of merit. Parsons has repeatedly applied its analysis processes to help programs develop the technical requirements for integrated systems concepts, leading to formation of performance requirements.

Integration and Verification

As a whole, programs are continuously developing and evolving complex hardware and software that must operate in a consistent, synchronized, and synergistic fashion in order to achieve performance goals. Systems engineering efforts must ensure that evolving implementations of capability contribute to overarching system-level performance by tracking development progress, measuring system-level performance, identifying functional seams and gaps, and rebalancing systems margin and development priorities. Parsons has a record of success in implementing these imperatives and leads the way in ensuring that proper integration and verification efforts are performed.

Modeling and Simulation

Parsons has a long and successful history of modeling and simulation development to support architecture and engineering analyses for its customers. We employ a hierarchy of modeling and simulation tools, many developed in house, that span the spectrum from high-fidelity engineering models to campaign models. Each successive layer of the hierarchy is underpinned by and anchored to results at the higher-fidelity, foundational levels.

Understanding program performance and limitations in any given time frame—then deciding where to go next—is the realm of modeling and simulation. Our goal is to find the right mix of capabilities to predict the performance of a system for a range of threat characteristics, attack scenarios, operational constructs, environmental conditions, and engagement parameters that is far broader than what could be field tested or hardware-in-the-loop tested.

Summary

During its 68-year legacy, Parsons has experienced tremendous success while working on a wide array of systems-engineering efforts that have required the integration of incremental technology upgrades, operational innovations, and new systems concepts into evolving space and defense architectures. Our unmatched record of success makes Parsons the right solution for any government or commercial organization seeking the expertise and record of success required to meet tough systems-engineering challenges.