AEROSPACE

TECHNOLOGY STRATEGY

Aerospace is shaping the future of the nation's space programs. Our technology strategy reflects our commitment to learn from our past, assure the present, and shape the future. We accomplish this with a unified methodology that addresses our customers' current and future needs, advancing the space architecture through prototyping for rapid technology development and insertion. This eliminates barriers to deeper, interdependent partnerships with allies and commercial providers.

Aligned to Customer Needs, Now and in the Future

Not only do we develop strategies to solve our customers' current challenges, we have aligned our resources to address future needs. Our engineering, science and technology hubs are broad and inclusive organizations designed to encompass changes in technology or priorities, provide data-driven recommendations, and serve as a knowledge management repository.

Our strategic leaders engage internally with both customer-facing staff and subject matter experts to balance our customers' issues against current Aerospace and commercial capabilities, breaking down any perceived silos and ensuring our goals are in step with the customer. We find this method streamlines our efforts to generate insights, and it maximizes the benefit of our technical investments.

A Focus on Innovation

The space enterprise is in a period of rapid innovation and growth driven partly by commercial entities and newly-democratized access to powerful tools and expertise. When our adversaries attempt to use new technologies to develop a strategic advantage, our customers and the nation look to Aerospace to provide guidance to tackle these challenges.

Recognizing that an ecosystem that fosters innovative thinking is key to bringing transformational, game-changing concepts to fruition, Aerospace created the Innovation Lab Initiative, or iLab. This focused team provides the underpinnings for our innovative corporate culture, and it works to accelerate the transfer of new technologies to government, civil and commercial space, tackling complex problems in service of the public interest.

The foundation of our technology strategy is based on listening to our customers to address both current and future needs. Our methodology includes:

- A cross-discipline focus, spanning both locational and organizational boundaries;
- An innovation ecosystem to encourage new thinking on complex problems at the cultural level;
- Rapid prototyping capabilities instantiated into our processes, to develop, build, and test new technologies at speed; and
- A deep understanding of both the past and future of the space enterprise

The engineering, science and technology Hubs are broad, discipline-spanning organizations aligned with customer needs.

Developing, Delivering and Transitioning Prototypes to the Space Operator

New constellation models of smaller, distributed satellites provide opportunities for frequent development and testing of technology, creating an enterprise-wide need for prototyping capabilities. These capabilities are essential to providing innovative space solutions in a timely manner. Prototyping and rapid technology development are not ends in themselves; however, the ultimate goal is to create a benefit to the entire space enterprise.

By inserting technology into future shorter-lifecycle constellations, prototypes can serve the need for continuous on-orbit upgrades. Aerospace has coalesced our vast space and ground prototyping capabilities into the Experiments Lab, or xLab, which is responsible for architecting, developing, and disseminating new capabilities at the speed of need.

As missions get more complex, there's a need to advance the state of the art in simulating on-orbit maneuvers.

Aerospace is testing a variety of materials for additive manufacturing of space parts both on the ground and on orbit.

Our Enterprise-wide Purview

An understanding of the entirety of the space enterprise is crucial for success. The requirements for national security space create distinct challenges necessitating well-defined, innovative solutions. Applying systems engineering principles across the space enterprise, Aerospace uses new approaches, innovative technologies, and novel strategies to achieve broader mission effectiveness and efficiency.

The Aerospace Corporation

The Aerospace Corporation is a national non-profit corporation that operates a federally funded research and development center (FFRDC) and has approximately 4,000 employees. The Aerospace FFRDC is aligned to support the most critical programs of the Department of Defense and the nation, and to serve as its customers' innovation partner across the space enterprise. Consistent with the competencies outlined in our sponsoring agreement, Aerospace provides strategic value through independent, intellectually rigorous, relevant, and timely products and services. With three major locations in El Segundo, Calif.; Colorado Springs, Colo.; and Washington, D.C., Aerospace addresses complex problems across the space enterprise and other areas of national significance.

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