



# Team Raytheon

## Next Generation GPS Operational Ground Control Segment (OCX)



**Raytheon**

*Customer Success Is Our Mission*

## Team Raytheon: Experienced. Proven. Ready.

When American citizens and warfighters depend on strong, accurate, reliable GPS data, how do you ensure the nation's GPS system will perform without fail, without compromise — both today and tomorrow? The answer is with Raytheon Intelligence. As the need for GPS capabilities has become ever-so-vital to various military and civilian operations, Raytheon has stepped up to the challenge to ensure our GPS systems work 24/7. We have engaged a world-class industry team with the right skills and experience to deliver the Global Positioning System (GPS) Next Generation Ground Control Segment (OCX), which will enhance net-centric and navigation warfare capabilities, and control over GPS II and GPS III satellites.

Team Raytheon has developed a low-risk, affordable and flexible solution to meet and exceed the U.S. Air Force's specific program needs. In addition, Team Raytheon's offering provides the superior accuracy, timing and navigation functionality across the entire GPS network. With more than 40 years of experience in integrated ground control systems, Raytheon is well positioned to deliver a valuable, low-risk solution that's on time and on budget.

Team Raytheon has the proven record of time-certain delivery, and a deep bench in place to successfully deliver the program's technical requirements, with superior Mission Assurance.

Raytheon's previous, proven program experience shows that Raytheon has the knowledge and expertise to build and deliver "best-in-class" satellite ground control systems that have consistently been delivered on time and under budget. This record of strong performance defines Raytheon as a world class integrated ground control leader on a myriad of large space satellite programs, including National Polar-orbiting Operational Environmental Satellite System where we have successfully demonstrated our ability to manage large-scale program space satellite programs.

To meet the need for a highly secure, extensible and maintainable system, Raytheon's back-to-basics engineering approach will allow for better oversight and rapid integration of enhanced capabilities for theater operations. With Net-centric navigation, anti-jamming technology, enhanced automation, and information assurance, Raytheon leads as the prime contractor and right choice for deploying GPS OCX.

### **Key Team Benefits and Features:**

- Raytheon brings more than 40 years of space satellite ground command and control system experience to the team.
- Team Raytheon is developing GPS OCX with new anti-jamming technologies, more advanced predictive algorithms, and more frequent clock and ephemeris updates.
- Our GPS OCX solution will be based on a modern service-oriented architecture that will integrate government and industry open system standards.
- Raytheon's Team of space and navigation industry leaders combine the right partners with the right skills and experience to provide the right solution today.
- We have successfully deployed over 110 unique satellite ground segment systems for large space programs, with a solid history of successful, time-certain delivery.
- The new control system will fully support GPS III and legacy satellites and focus on military transformational and civil needs across the globe, including advanced anti-jam capabilities, and improved system security, accuracy and reliability.
- Raytheon is known as the world leader in designing and building satellite navigation augmentation and service monitoring systems for civil and military aviation applications.

## OCX: Smart Thinking From the Ground Up

After the U.S. Air Force Space and Missile Systems Center awarded Raytheon the contract to develop the new system design for the next-generation global positioning system operational ground control segment (GPS OCX), Raytheon immediately stepped up to the challenge of delivering a low-risk, time-certain solution by focusing on our integrated ground control expertise and assembling an industry team best suited to meet and exceed the U.S. Air Force's needs.

Raytheon's long-term strategy, which has been adapted by industry experts, is to pursue the control and space segments separately, which allows us to compete as a prime in one of our key capability areas. Our space-based navigation and integrated ground control knowledge uniquely positions our team to deliver the best OCX solution. Our solution provides the flexibility, extensibility and maintainability to ensure GPS mission success for the next several decades. Raytheon is the best choice because the team combines our expertise in GPS satellite development with a design approach that leverages successful, recent software development from multi-satellite programs using globally distributed command and control centers. Our service-oriented architecture and flexible design will meet today's challenges and will accommodate both planned and unforeseen future needs.

Raytheon's next generation GPS OCX includes new anti-jamming technologies, more advanced predictive algorithms, and more frequent clock and ephemeris updates to give America's soldiers, sailors, airmen, and Marines secure, accurate, and precise information they can depend on – even in the face of enemy countermeasures – around the clock anywhere on or over the planet.

## Raytheon GPS OCX: Meeting the evolving challenges of the future

GPS is integral to the full spectrum of military operations and has become a national strategic asset, providing the American warfighter with game-changing capabilities and operational advantages on the battlefield. The Raytheon Team will deliver a "system of systems" that will serve as a vital tool for our warfighter, ensuring mission success in the field for years and decades to come.

In a world where our adversaries strive to counter America's strategic security advantages, Raytheon's experience on integrate ground control segments, our partner's domain knowledge and our fully integrated GPS and DCGS networks provide global awareness and total information dominance to keep America's soldiers, sailors, Airmen, and Marines a step ahead and positioned for victory.

Team Raytheon – experienced, focused and ready to deliver the low-risk, time-certain solution to protect our warfighters today and tomorrow.

*Strong, accurate, guaranteed GPS data provide warfighters with the battlefield advantages needed to ensure mission success.*



## Team Raytheon: Bringing GPS Heritage, Mature Technology, and Domain Expertise to OCX

### Raytheon

#### Raytheon

- Delivered over 110 ground stations in the last 40 years
- Large-scale ground system development
- Developed FAA-Certified GPS Wide Area Augmentation System (WAAS)
- GPS III Control Segment Development



#### ITT Technologies

- GPS navigation payload development and maintenance for more than 33 years
- M-Code space-based receiver and M-Code monitor station development
- Key Management



#### The Boeing Company

- Lead GPS O&S contractor
- Architecture Evolution Plan Transition Expertise
- Architecture Evolution Plan and Launch Anomaly and Disposal Operations Development
- M-Code Expertise



#### Braxton Technologies

- GPS constellation models
- GPS Block II Launch Anomaly and Disposal Operations Developer



#### Infinity Systems Engineering

- Vast experience in all generations of GPS space and control segments
- Extensive experience in GPS operations, training, documentation, development, test, and maintenance

JPL

#### Jet Propulsion Laboratory

- Development team for global differential GPS
- Continuous improvements of navigation models and algorithms



#### SRI International

- Three decades of GPS spectrum and analysis and signal processing.

[www.raytheon.com/capabilities/products/gps\\_ocx](http://www.raytheon.com/capabilities/products/gps_ocx)

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