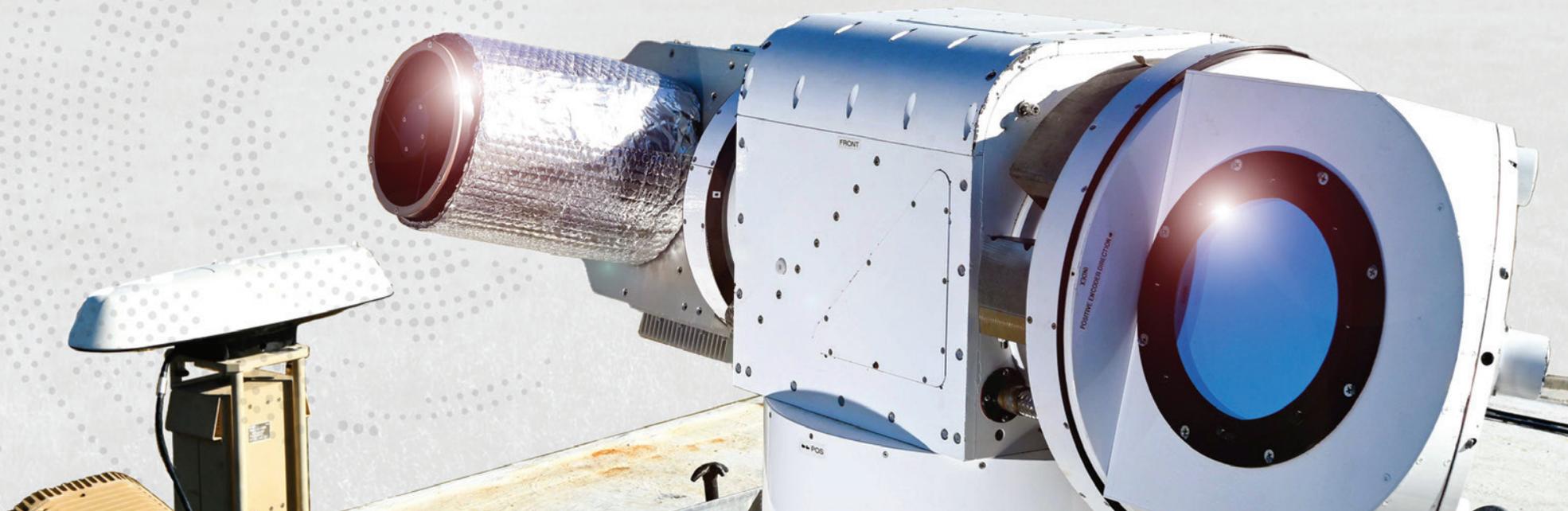


PROTECT



*“Accelerating space technology introduces seemingly unsolvable problems,
but finding solutions is what motivates us.”*

ADVANCE MISSION VALUE

We're investing (and reinvesting) in technologies that help us deliver affordable systems faster, so customers can better accomplish missions.

Deter

Lockheed Martin sustains sea-based strategic deterrence and creates new capability with hypersonic weapons.

Detect

We expose threats early and engage through agile remote sensing technology and resilient communication systems.

Defeat

Integrated joint all-domain operations bring down threats with dependable hit-to-kill technology and low-cost directed energy systems.



Over 60 years of strategic deterrence – We're your mission partner, for the long haul. The [Fleet Ballistic Missile Program](#) has achieved 175+ successful D5 test launches since 1989.

That's more than three decades of unmatched reliability and performance. Our performance over time shows we know our customers. We know the missions, and we're applying that knowledge every day to make our systems better.

Experience and progress show we're ready to be the mission partner of choice for next-gen missile defense.

[Directed energy](#) – Laser weapons provide speed, flexibility, precision, and an extremely low cost per shot with a nearly unlimited magazine.

That's only possible with lasers. Our weapon systems have tracked and defeated targets across all platforms, including small rockets, boats, UAVs and trucks.





[Never fail systems](#) – We are the world leader for missile defense and see the big picture in all phases of the ballistic missile defense system, from missile warning and C2BMC to sensors and interceptors.

Lockheed Martin pioneered [exo-atmospheric hit-to-kill technology](#), and our systems have delivered over 100 successful intercepts in combat and testing—more than any other company.

We bring decades of leadership designing, engineering and sustaining the technologies crucial for a robust Homeland Defense: space-hardened systems, hit-to-kill technology and strategic missile systems. As the threat matured, so have we: Lockheed Martin has invested in and developed the key technologies to enable multi-object defeat for more than two decades.



Protected communications – We are developing resilient and protected space-based capabilities to ensure the U.S. and its allies remain connected in a dynamic, data-hungry battlespace.

We designed our systems to provide reliable service in a hostile environment with rapidly evolving threats. And, those systems will get to space sooner and more affordably thanks to customers' new rapid acquisition procedures and our modern development techniques. We've delivered over 300 payloads supporting critical national missions. Combining our expertise with the best industry partners and technologists, we ensure our customers have the most effective secure global networks.



Joint All-Domain Operations – We build resilient networks that quickly connect critical data across multiple domains to predict and disrupt adversaries.

Today's air, space, sea, land and cyber missions collect an abundance of information. Processing and analyzing that amount of data is a challenge, especially when factoring in multiple levels of security at which those systems operate. We can synchronize major systems and crucial data sources with revolutionary simplicity to empower warfighters to quickly make decisions. Because of that expertise, we are part of a team that will help develop ideas for the Air Force's future command and control system, JADC2.

LM 2100™ IMPROVEMENTS

and commonality help us “Go Fast” on Next-Gen OPIR. The [modernized LM 2100 bus](#) speeds our ability to deliver while also modernizing mission capability. Its open architecture enables us to work with many different payloads, including high-power, reprogrammable systems.



Processor

A fully reprogrammable onboard mission processor allows you to modify satellite configuration on orbit in response to changing business requirements.



Power

Compact, flexible solar arrays can be adapted to mission needs — including high-power missions to 20 kW and beyond — with reduced cost and mass.



Propulsion

Choose between all-electric, all-liquid or hybrid propulsion. For electric propulsion, flight-proven Hall Current Thrusters reduce orbit-raising time by 50% compared to other electric systems.

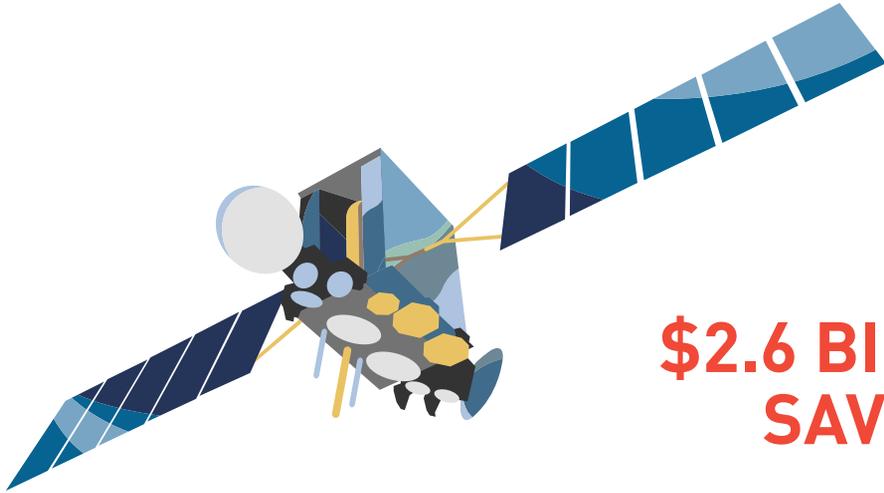
Weight: ~5,070 lbs / ~2,300 kg

Power: 20 kW

Size: ~12x6 ft / ~3.7x1.8 m

COST REDUCTION

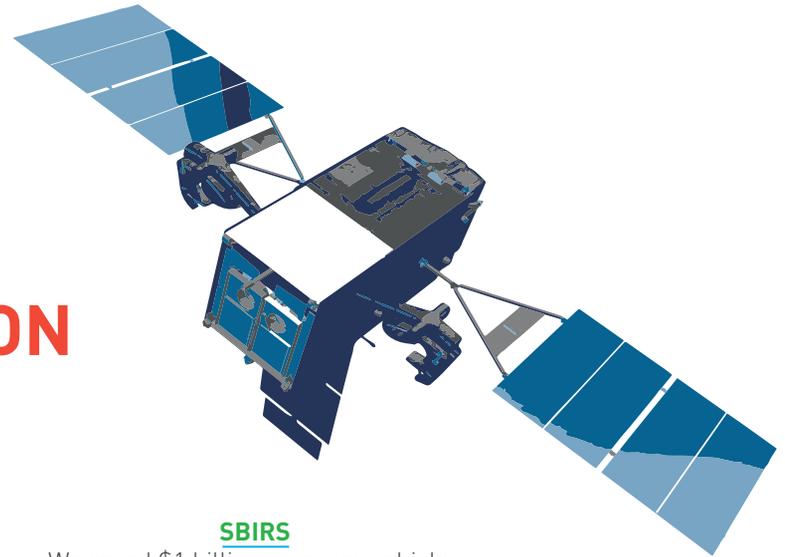
We're tackling affordability by adopting fixed-price contracting, streamlining engineering teams and slashing schedules through advanced manufacturing and common products.



AEHF

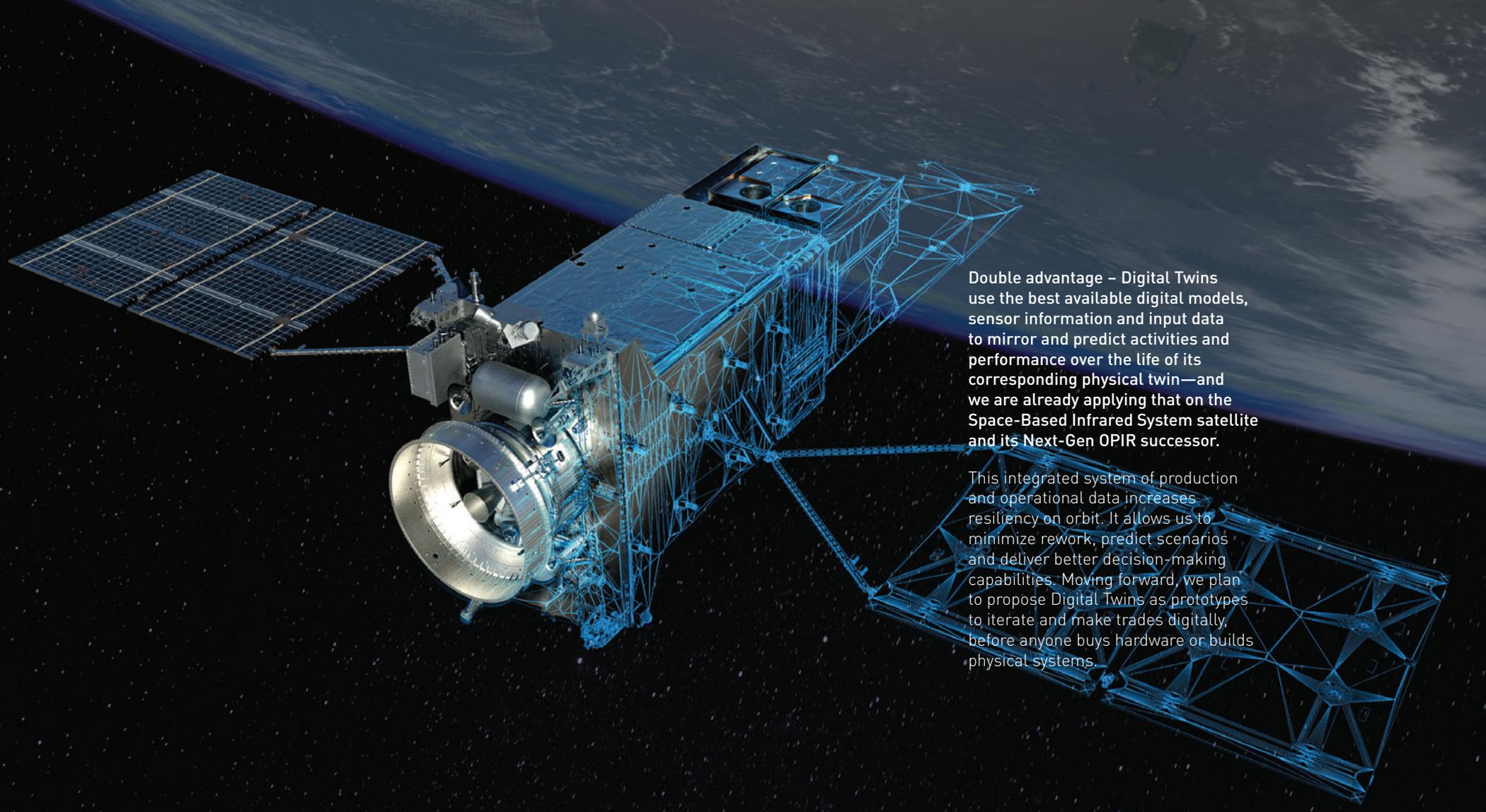
We lowered satellite costs by \$1.6 billion in AEHF's final block buy

**\$2.6 BILLION
SAVED**



SBIRS

We saved \$1 billion on space vehicles 5 and 6 and upgraded the bus to the LM 2100 at no additional cost



Double advantage – Digital Twins use the best available digital models, sensor information and input data to mirror and predict activities and performance over the life of its corresponding physical twin—and we are already applying that on the Space-Based Infrared System satellite and its Next-Gen OPIR successor.

This integrated system of production and operational data increases resiliency on orbit. It allows us to minimize rework, predict scenarios and deliver better decision-making capabilities. Moving forward, we plan to propose Digital Twins as prototypes to iterate and make trades digitally, before anyone buys hardware or builds physical systems.

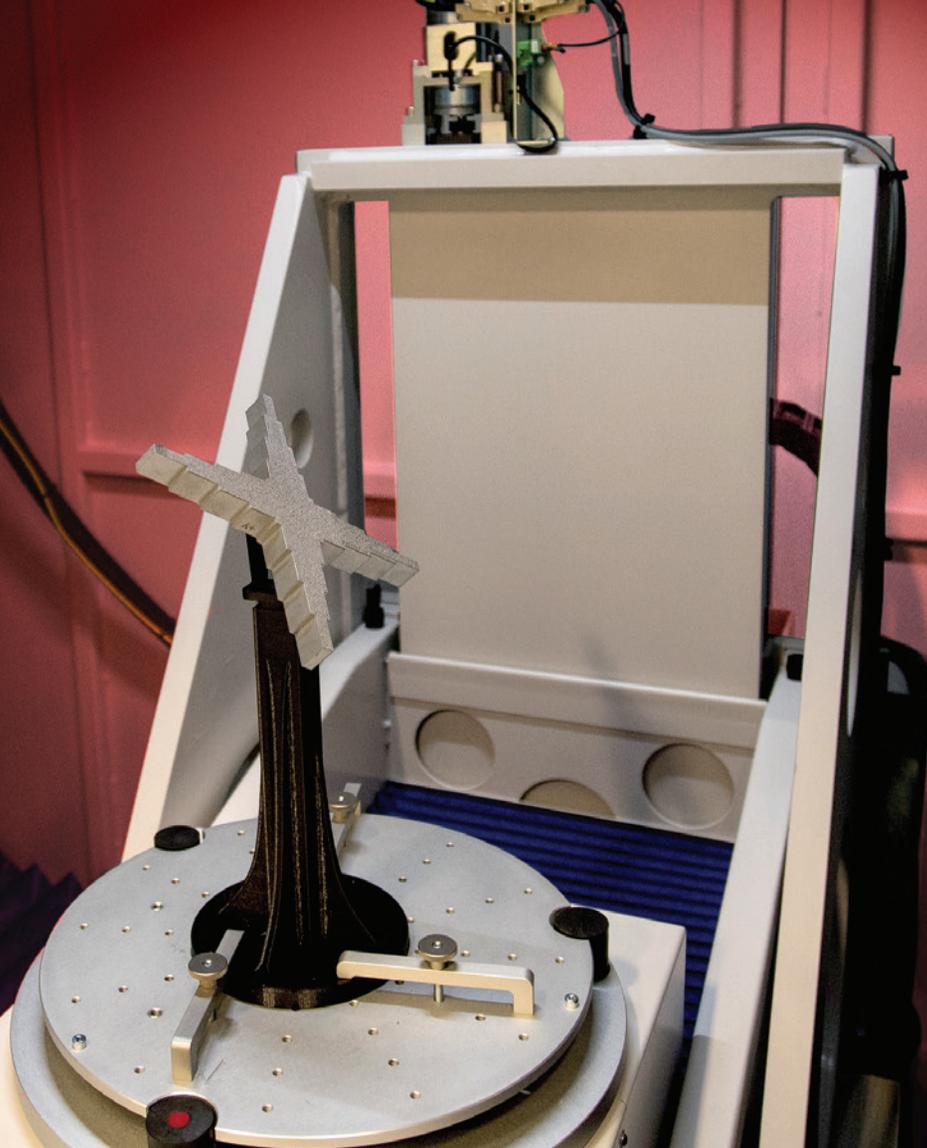
Commercial mindset – We're rethinking how complex satellite missions are done and delivering more value.

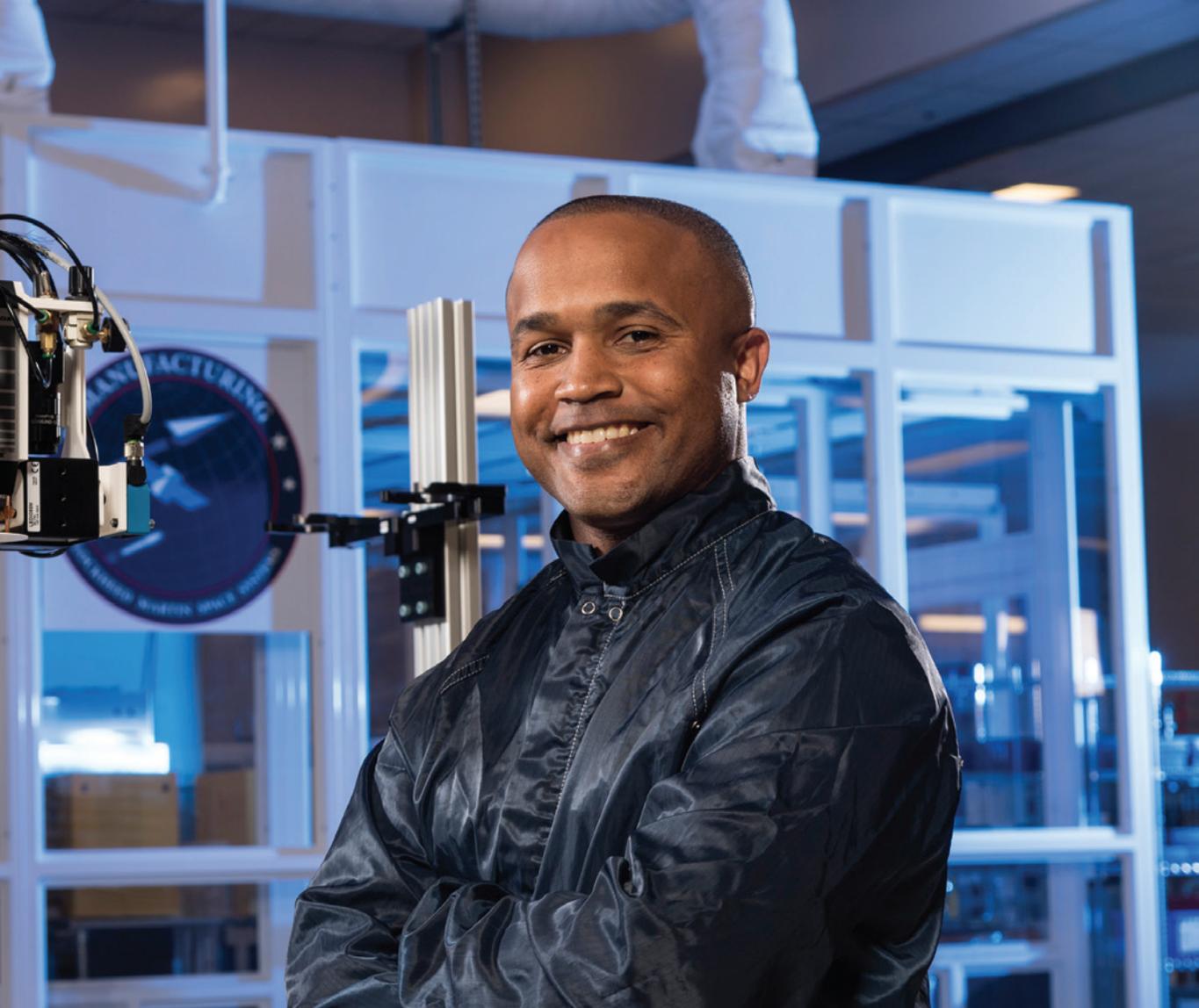
More and more, we're inserting and innovating commercial practices into our DNA, with high-volume production, tech insertion and commonality. No better example than GPS III. As new technology emerges, or as the Space Force's mission requirements change, Lockheed Martin's unique [GPS III satellite](#) was designed with a flexible, modular architecture to allow for the straight-forward, low-risk insertion of new capabilities.



3D printing – [Additive manufacturing](#) speeds production and reduces costs, which is why we've printed thousands of components across our programs.

That includes common omni antennas on GPS satellites, giant fuel tank domes for Next-Gen OPIR and backshells on Fleet Ballistic Missiles.





Investing in the workforce of the future – As systems change, so do the ways we make them.

We are constantly shaping the workforce of the future by hiring and retraining veterans and other workers across the nation. For example, the [Advanced Manufacturing Technician Apprenticeship Program](#) is a registered United States Department of Labor apprenticeship that develops electronics manufacturing technicians. Through training programs like these, we are growing expertise at Lockheed Martin to deliver better products faster.



Stepping up on the ground – We modernized the GPS Operational Control Segment and provided upgrades that allowed the Air Force to field its next-generation GPS III satellites and take advantage of secure M-code signals earlier.

By speeding development, we unlocked a band of capability much more quickly for GPS users than was scheduled.

TRANSFORM FOR SPEED

Threats redefine themselves faster than ever. New technologies arrive quickly. We're staying ahead of the curve to deliver capability faster than ever before. Our advanced future state of engineering seamlessly connects conceptualization, design, verification, manufacturing and sustainment to better understand and improve the ideas we bring to life.

Adopt and create new tech

We're inserting new technology and doing it fast. Engineers reshaped our programs to field capability in less than half the prior cycle time. And we're pushing new boundaries on cloud technology in space and continually exploring business Innovations to meet the needs of our customers.

Whole systems thinking

Upgrading capability isn't about one game-changer. It's a system of innovation working together, from ground to orbit, making a difference for the Warfighter.



Hypersonic advantage – When you're going five times faster than the speed of sound, experience matters.

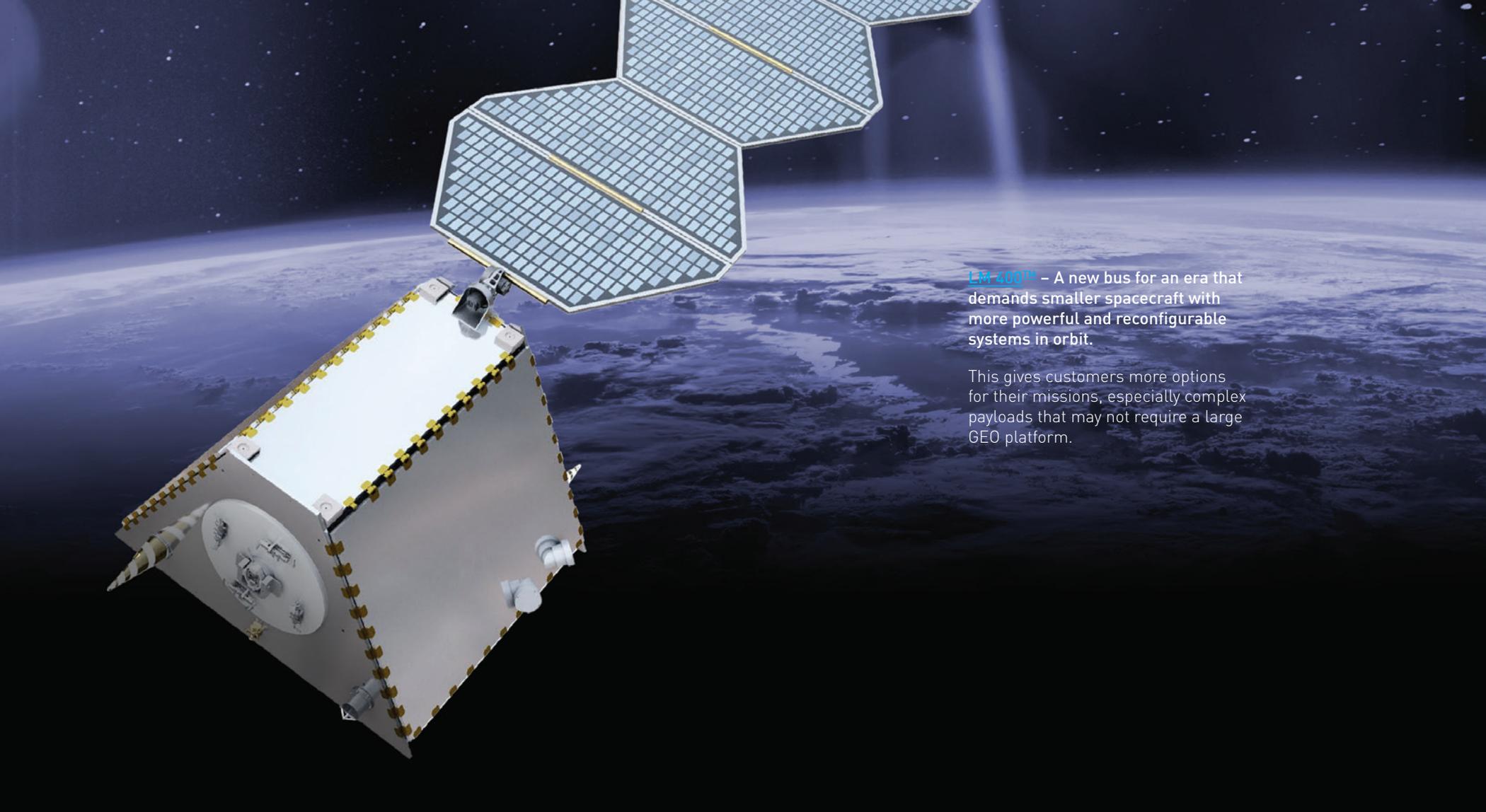
Lockheed Martin has invested in developing and demonstrating hypersonic technology for more than 30 years. The physics of fast uses our leadership in missile defense, space and advanced materials, which is a combination no other company possesses. We bring the best of industry together to collaborate and team, because when we take on the world's toughest engineering challenges, we always put the mission first.

HYPERSONIC SPEED

Surging capability for hypersonic strike and detection is a national priority. We're speeding development of the fastest missiles in the U.S. arsenal and taking America beyond Mach 5.

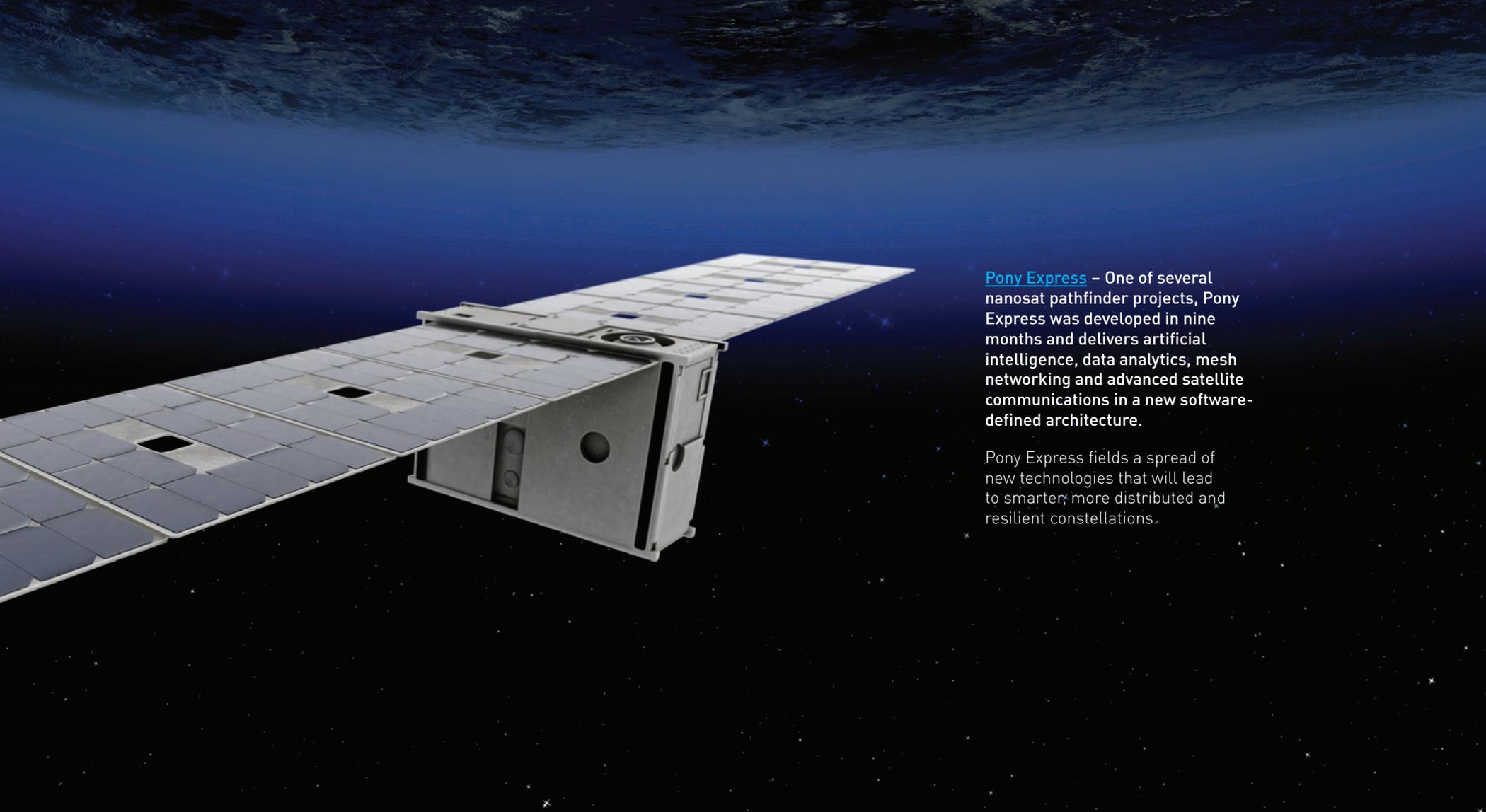
HOW **FAR** DOES
30 MINUTES
GET YOU?





LM 400™ – A new bus for an era that demands smaller spacecraft with more powerful and reconfigurable systems in orbit.

This gives customers more options for their missions, especially complex payloads that may not require a large GEO platform.



[Pony Express](#) – One of several nanosat pathfinder projects, Pony Express was developed in nine months and delivers artificial intelligence, data analytics, mesh networking and advanced satellite communications in a new software-defined architecture.

Pony Express fields a spread of new technologies that will lead to smarter, more distributed and resilient constellations.



Using mixed reality including, [virtual and augmented reality](#), saves at least \$10 million a year in identifying efficiencies and issues before production.

We are also applying this to advanced manufacturing, streamlining production using visual work instructions and laying out our Intelligent Factory designs. We pass those savings onto our customers by reducing cost and speeding development.

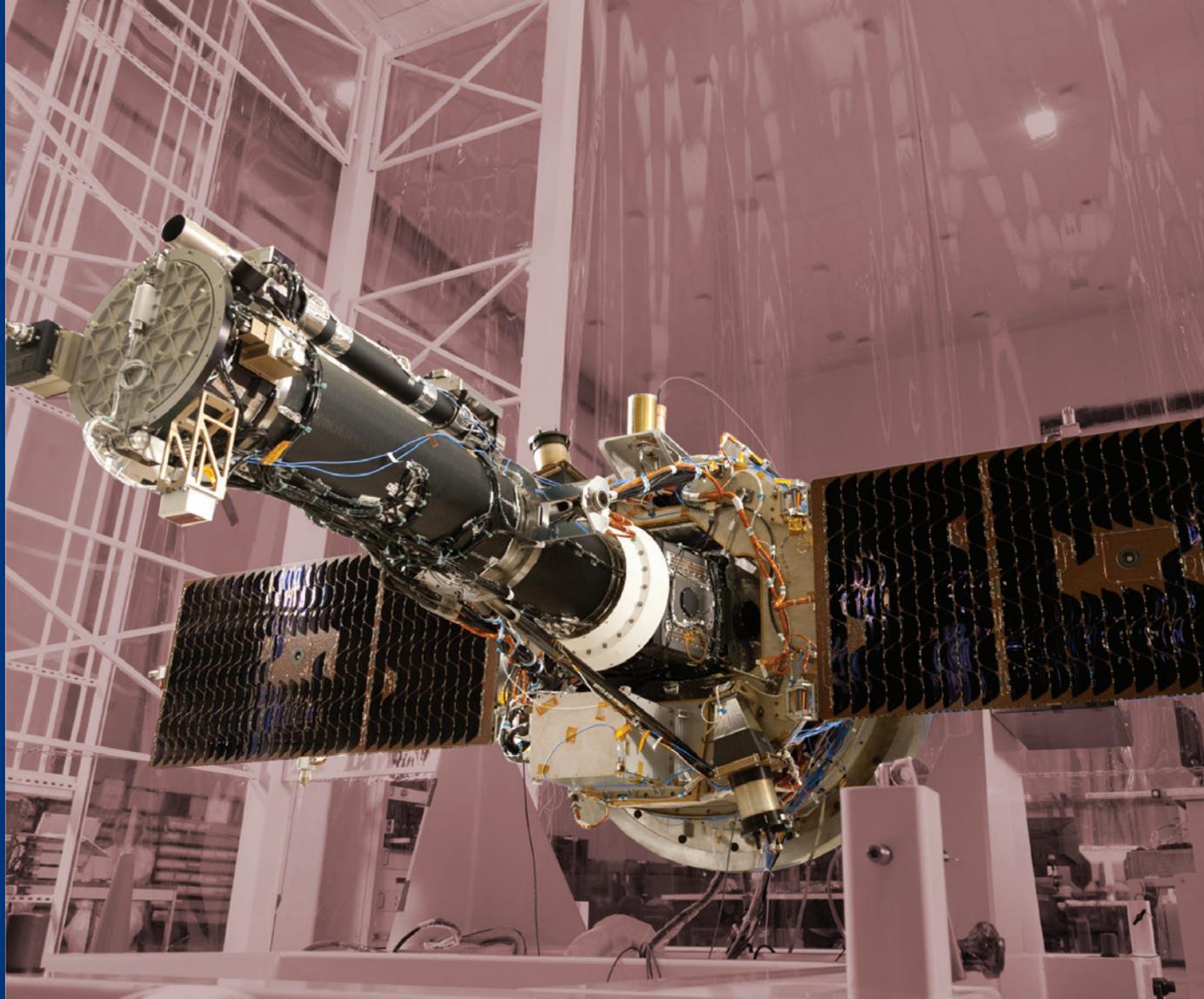
A woman with dark curly hair, wearing a white lab coat and clear safety goggles, is focused on her work in a laboratory. She is holding a small component in her hands, examining it closely. The background is filled with various pieces of scientific equipment, including what appears to be a microscope or a similar instrument. The lighting is bright and focused on her work area.

Funding innovation – [We're investing](#) in nontraditional companies to boost agility and bring emerging technology to the front lines faster, like in quick, responsive launch.

Relationships with companies like ABL Space Systems bring our—and their—products to orbit faster.

Payload expertise – Lockheed Martin has a trustworthy legacy: We've built more than 300 payloads for a variety of missions.

Lockheed Martin has more than 50 years of experience as a payload integrator, developing cutting-edge technologies supporting our nation's critical missions. Whatever the task, we have the right set of skills to bring missions to life.



Lockheed Martin. Your Mission is Ours.®



www.lockheedmartin.com/space

