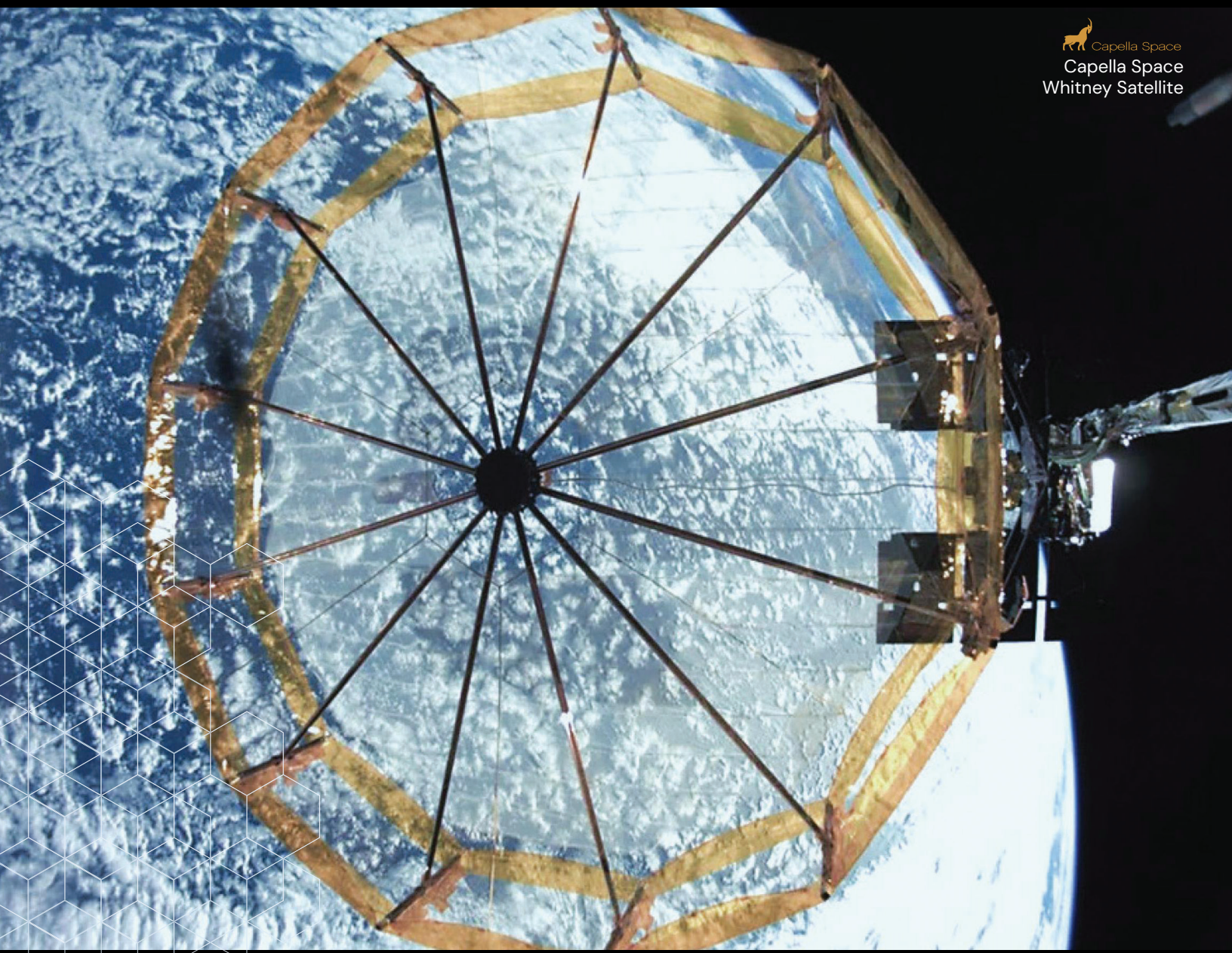
LARGE DEPLOYABLE MESH REFLECTORS

High-gain, precision RF capabilities for missions including Earth sensing, communications and advanced geospatial intelligence.



Capella Space
Whitney Satellite

TENDEG
INNOVATION DEPLOYED

PTR with boom mounted
offset fed configuration

DEPLOYABLE HIGH-PRECISION MESH ANTENNAS FOR CRITICAL APPLICATIONS

Tendeg's family of flight heritage proven large aperture mesh reflectors scale to 20+ meters. Configured with integrated RF feeds and booms, these antennas are capable of supporting applications up to Q/V band, including RF communications, active radar, radiometers and weather missions.

ABOUT TENDEG

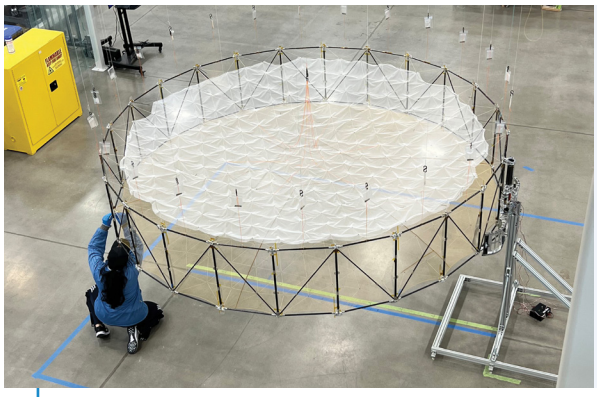
- **U.S. Domestic Non-Traditional Aerospace Supplier**
- 160,000ft² of space
- AS9100 Certified
- Vertically integrated, focus on low-cost solutions
- **All assembly and functional testing performed in-house**
- Scaling to deliver 100+ units / year

FLIGHT HERITAGE

- **More than a dozen large apertures deployed on-orbit.**
- Providing key SAR imagery to commercial and defense buyers.
- Providing large reflectors to the NASA INCUS mission, Astranis Omega Class Bus, and Lockheed Martin TacSat Mission, among others.

PTR

Perimeter Truss Reflector



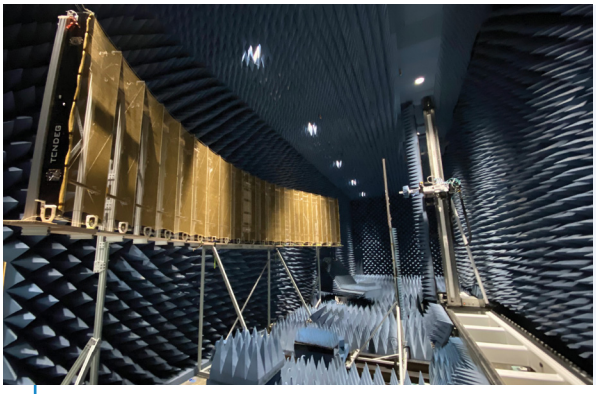
Key Features

- Highly scalable, parabolic perimeter truss reflectors
- Supports HF to Q/V-bands, reflector sizes of 2 to +20m in diameter
- System has reached TRL-8, is qualified to GEVS and ride-share environmental loads
- Can be paired with a Tendeg provided deployable offset boom, feed network and integrated payload adapter

Established, scalable architecture enabling the deployment of large, stiff reflectors. Tendeg has several flight contracts supporting GEO communications, LEO SAR, and other sensing applications.

TENSAR

Scalable Tensegrity Frame



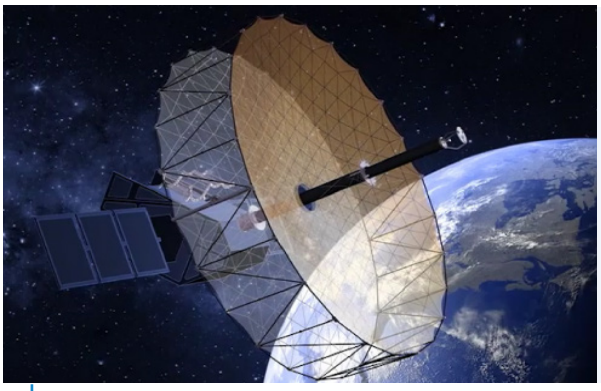
Key Features

- High aspect ratio, scalable deployable cylindric parabolic antenna
- Supports HF to Q/V-bands, reflector sizes of +20m along the long axis
- System has reached TRL-6
- Can be paired with a Tendeg provided deployable offset boom, feed network and integrated payload adapter
- US Patent US11,239,567 B2

Emerging, scalable architecture enabling the deployment of large parabolic reflective membranes, passive reflectarrays or folded rigid panels. Ideal for SAR and sensing missions.

Ultra Stiff PTR

Center-Fed Perimeter Truss Relfector

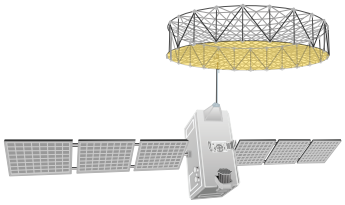


Key Features

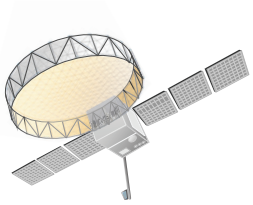
- Highly scalable, parabolic perimeter truss reflector with stiffening spokes.
- Supports HF to Q/V-bands, reflector sizes of 2 to +20m
- System has reached TRL-4, all critical components at TRL-8
- Center mast enables direct attachment of feed, single mounting point at the base which is ideal for gimballing
- US Patent US18/935,175

Emerging, scalable architecture enabling the deployment of large, ultra-stiff reflector systems. Ideal for missions that require rapid pointing maneuvers.

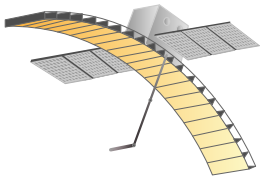
CONFIGURATIONS



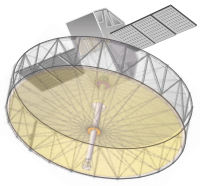
Boom Mounted
Offset Fed



Body Mounted
Offset Fed



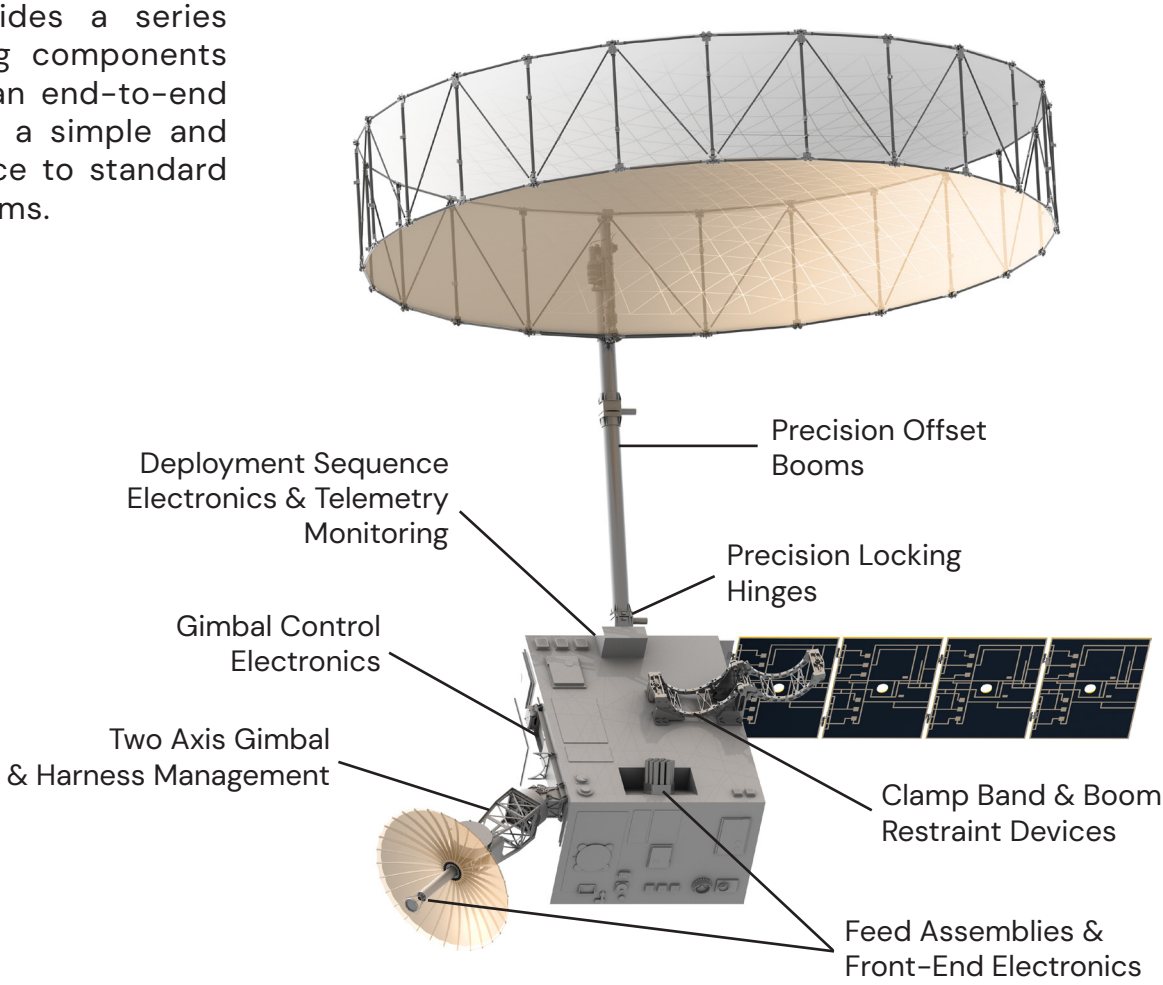
Body Mounted
Center Fed



Gimbal Mounted
Center Fed

END-TO-END SOLUTIONS

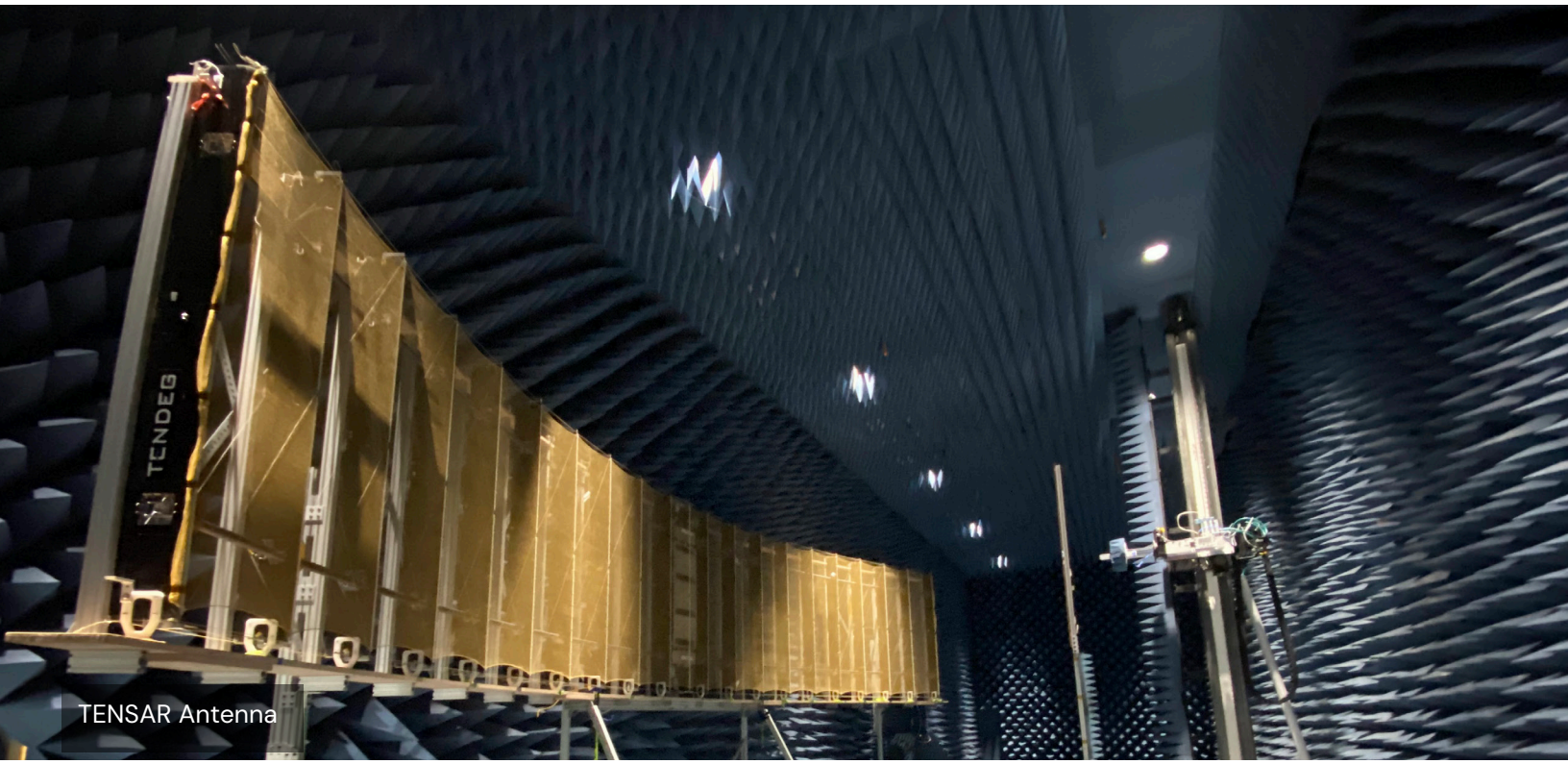
Tendeg provides a series of supporting components that enable an end-to-end solution with a simple and clean interface to standard space platforms.



MISSION READY

Tendeg delivers cutting-edge solutions that enhance mission resilience and enable advanced capabilities in secure communications, intelligence gathering, and precision sensing. We support government and defense customers with high-performance systems designed for rapid deployment and operational flexibility in dynamic environments. By driving innovation in space-based technologies, Tendeg empowers critical missions across a wide variety of applications.

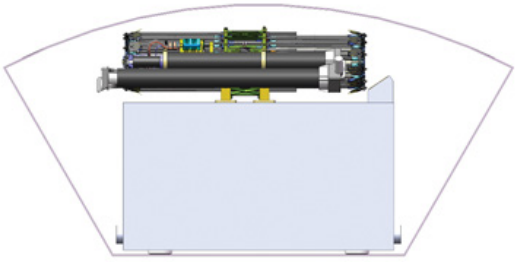
- GEO, MEO, and LEO Backhaul Comms
- Earth Sensing
- Proliferation and Resiliency
- SIGINT Detection
- GEOINT Assessment
- CIS Lunar Comms
- Domain Awareness & Combat Power



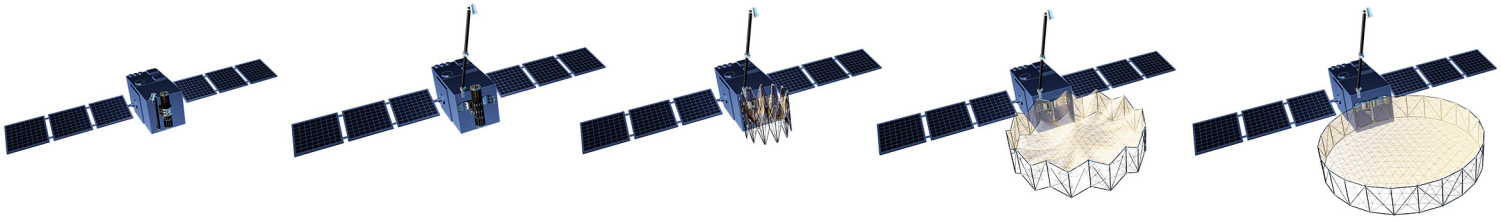
TENSAR Antenna

RIDE SHARE

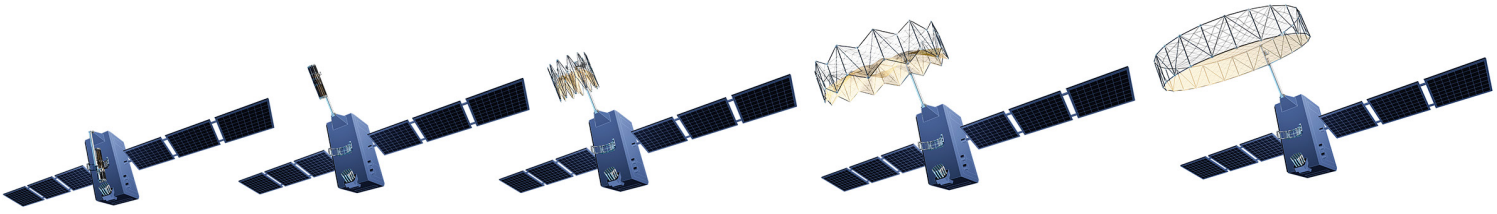
When adapting to the constraints of shared launch environments, our designs prioritize compact stowage, precise deployment, and reliable performance in space. We work directly with designers to define spacecraft architectures to maximize mission success while navigating the unique challenges of rideshare launches.



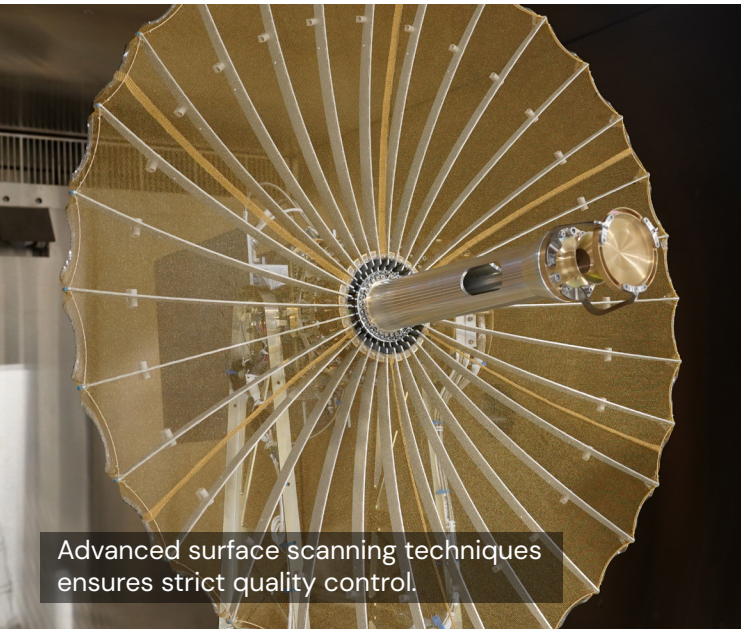
3m Reflector stowed on the top deck of a small satellite within a SpaceX full rideshare volume.



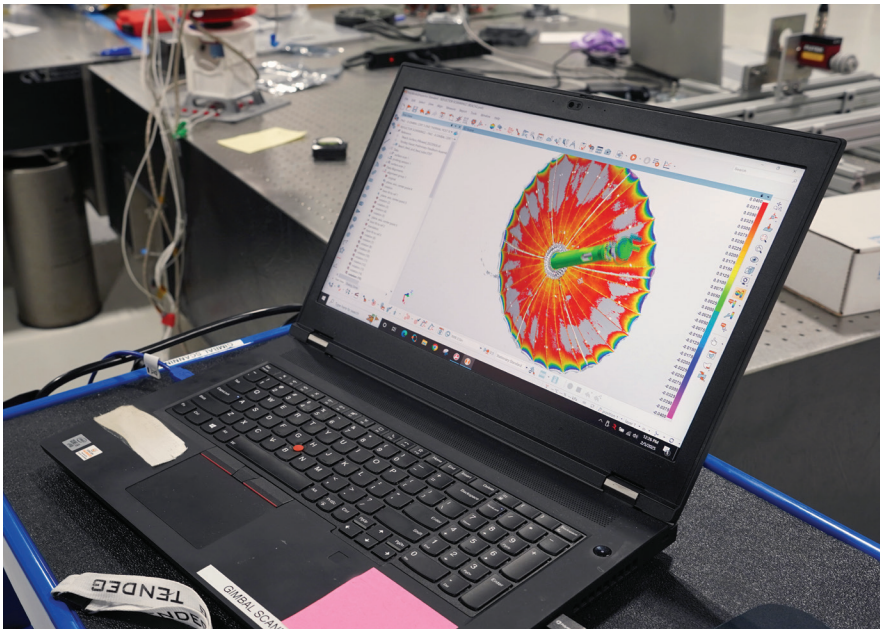
Body mounted offset fed deployment sequence



Boom mounted offset fed deployment sequence



Advanced surface scanning techniques ensures strict quality control.



ENGINEERING LED

Our team is driven to incorporate high-throughput manufacturing early in the development process to enable rapid deliveries at small business prices.

LARGE SCALE PRODUCTION

Tendeg's cutting edge production facilities span 160,000 square feet, supporting dozens of simultaneous flight build cells and reflectors up to 20m in diameter. We are actively integrating automation to scale capabilities.

SUPPLY CHAIN MASTERY

Tendeg has rigorously invested in its supply chain to command schedule and cost consistency, this includes in-house manufacturing of soft goods, among others.

ADVANCED TESTING AND VALIDATION

Tendeg characterizes reflector performance with state-of-the-art metrology tools, including state of the art surface scanners with turnkey software, enabling real-time tuning and full surface performance assessment. This enables a rapid production build cadence.

Hardware is assembled in controlled environments. Our in-house testing facilities include vibration tables, thermal vacuum (TVAC) chambers, thermal chambers and offloaders, allowing the team to test early and often with schedule assurance.

TENDEG

INNOVATION DEPLOYED

www.tendeg.com