COMPACT REFLECTORS WITH INTEGRATED GIMBALS

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TENDEG
INNOVATION DEPLOYED

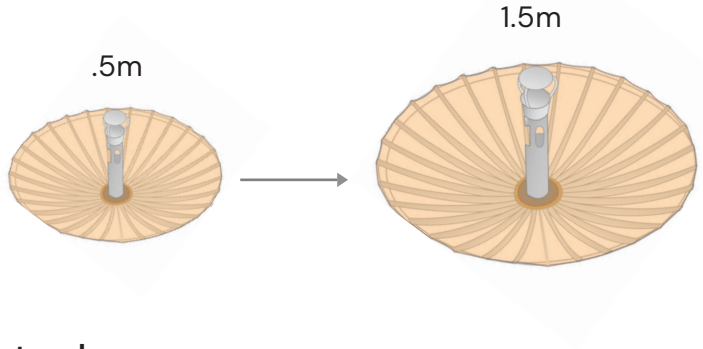
Patent: US11658385B2

DEPLOYABLE COMPACT REFLECTORS FOR PRECISION POINTING

Tendeg's family of compact reflectors are capable of supporting S through Q/V bands and have been demonstrated on orbit up to 52 GHz. Current flight missions support LEO, GEO and Lunar environments.

Size and frequency tunable to mission needs

- 0.5m to 1.5m diameter
- S-band through Q/V
- Hemispherical pointing coverage



ABOUT TENDEG

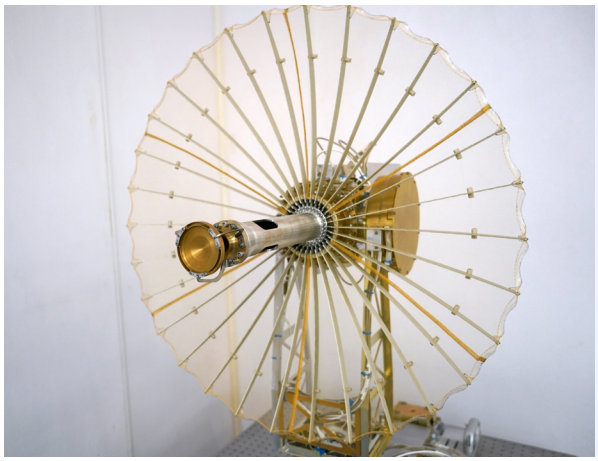
- **U.S. Domestic Non-Traditional Aerospace Supplier**
- 130+ Employees
- 160,000ft² of space
- AS9100 Certified
- Vertically integrated, focus on low-cost solutions
- **All assembly and functional testing done in-house**
- Scaling to deliver 100+ units / year

FLIGHT HERITAGE

- **More than 10 successful deployments on orbit**
- Demonstrated production rate of 2 reflector systems per month throughout 2024.

TENDEG

KaPDA



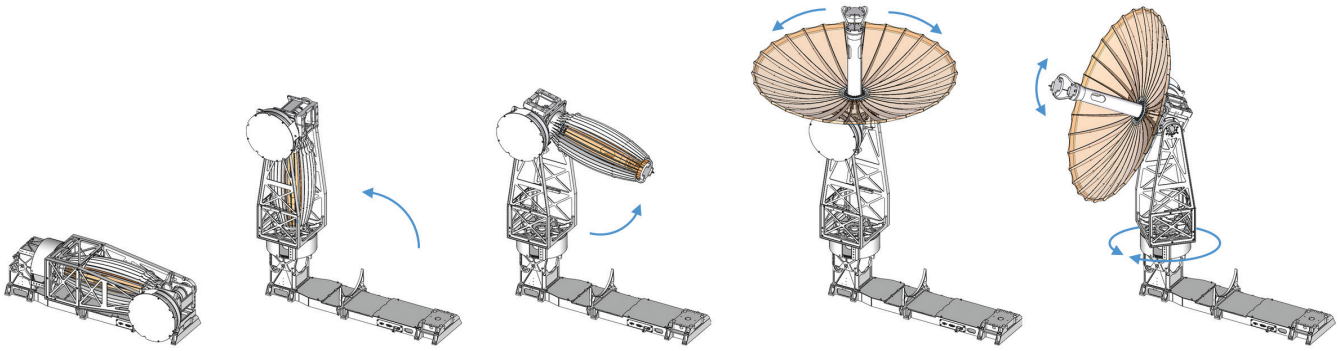
Key Features

- Scalable reflector from 0.5m to 1.5m diameter options
- Includes reflector, gimbal and control electronics, feed, waveguides, diplexer, filters and cabling, and other considerations depending on needs.
- RF characterized at X, K, Ka, Q/V
- Polarization capabilities: RHCP, LHCP, Vertical and Horizontal.
- Gimballed solution pointing < ±.08 deg (typical, 1-sigma), max rate of 10 deg/s

Offered in two configurations

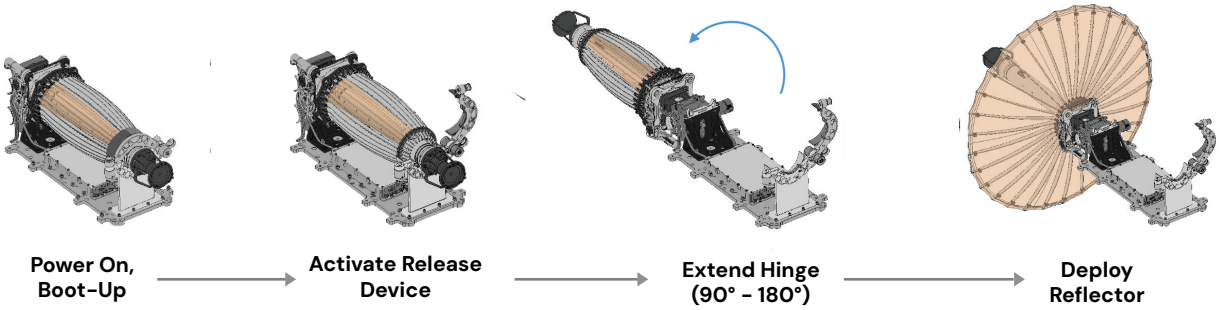
2-Axis Gimbal Platform

Integrated reflector with gimbal and control electronics, feed, waveguide, diplexer, filters and cabling, depending on customer needs. Volume available behind reflector for customer furnished LNAs, PAs, frequency converters, etc. LNAs and PAs can be sourced, integrated, and tested by Tendeg.



Flip Out Platform

Integrated reflector with control electronics, feed, waveguide, diplexer, filters and cabling, depending on customer needs. Optimized for smaller storage and compact footprint.

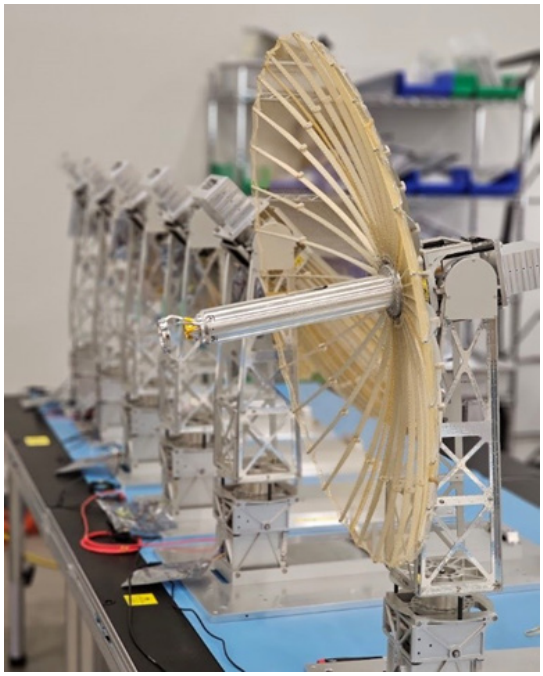


COMMON APPLICATIONS

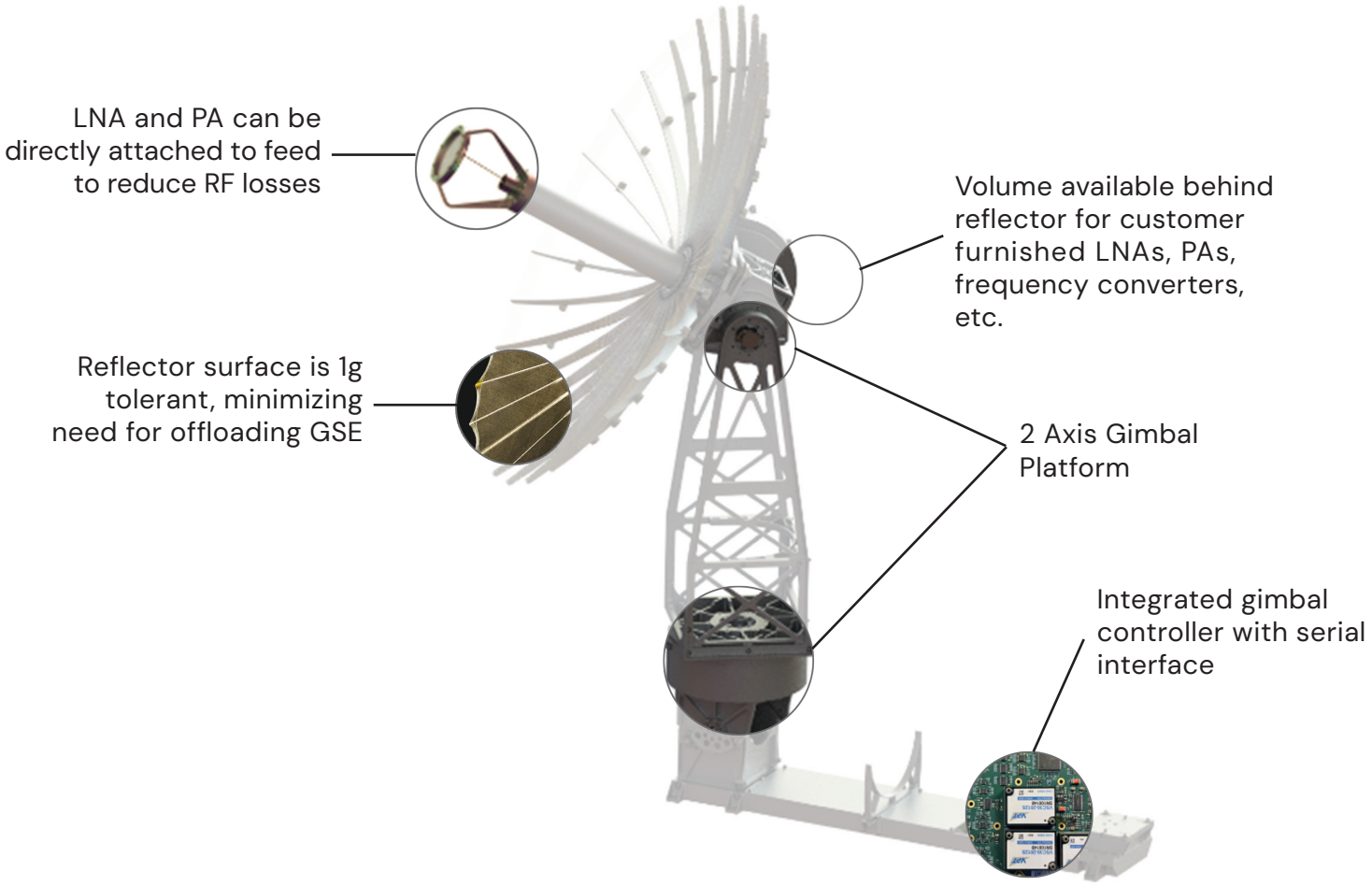
KAPDA- LEO Q/V
Q/V Band Backhaul Communications Application
40 - 52 GHz

KAPDA-GEO K/KA
GEO Ka Band Communications Application
17.7 -20.2 GHz
27.5 - 31.0 GHz

KAPDA-Lunar X/KA
Lunar Communications Application
7.1 - 8.4 GHz
22.5 - 32.3 GHz



END-TO-END SOLUTIONS



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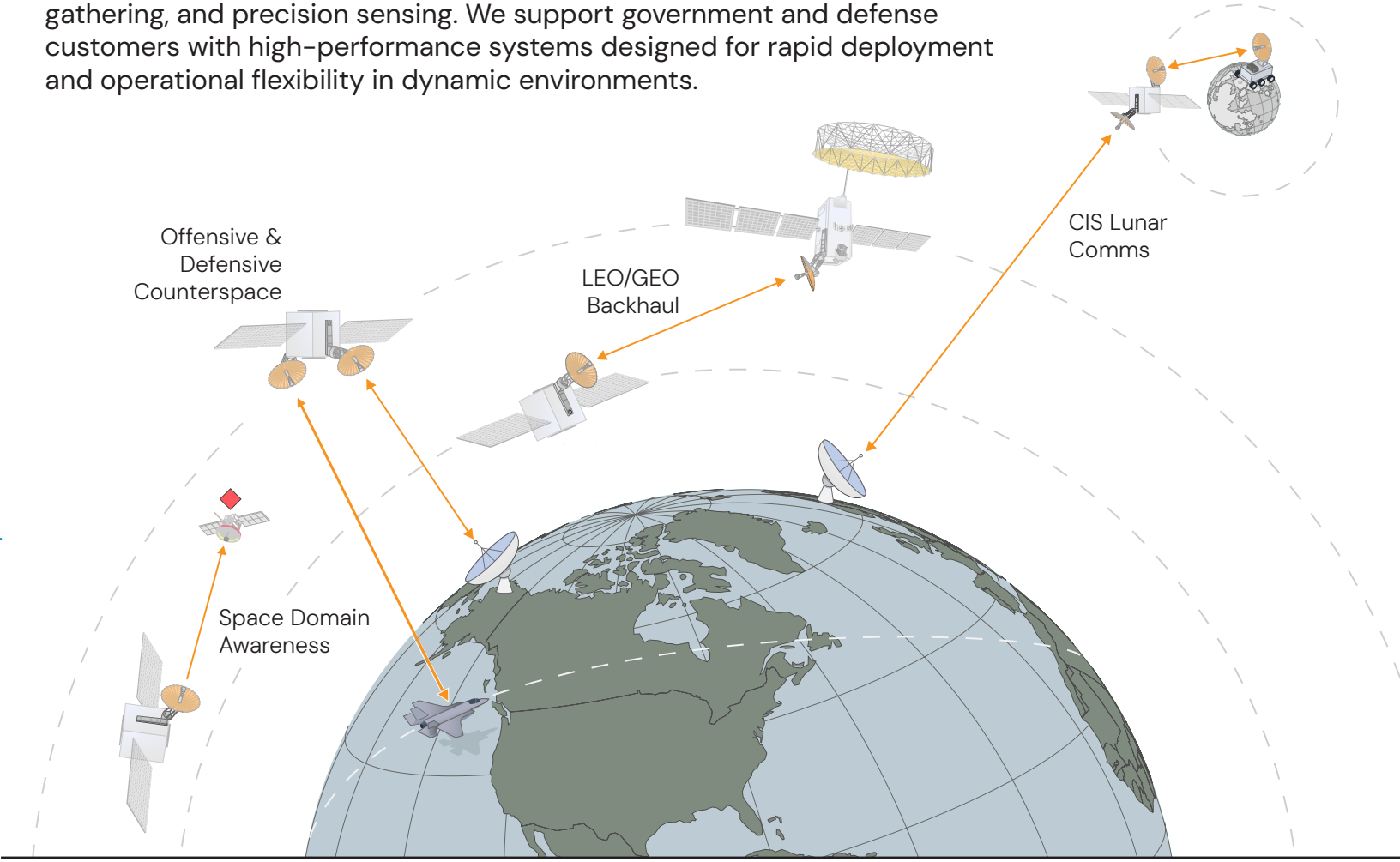
MISSION READY

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.

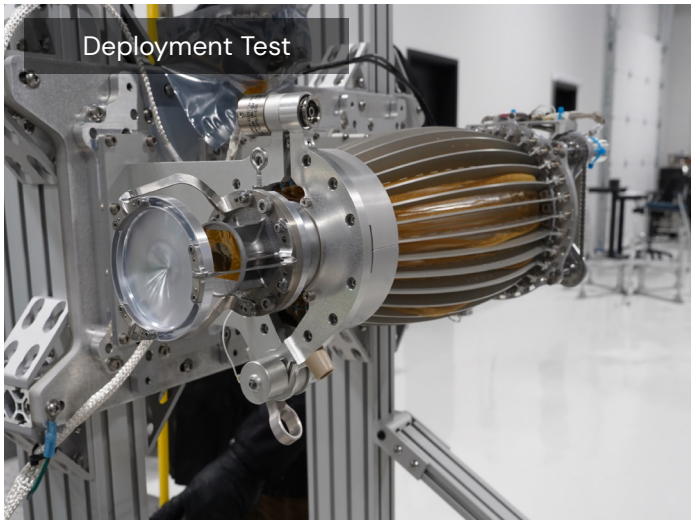


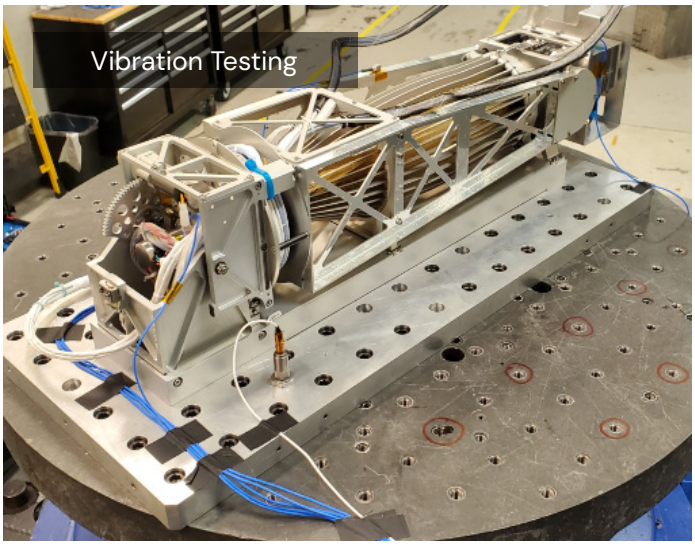
Enabling:

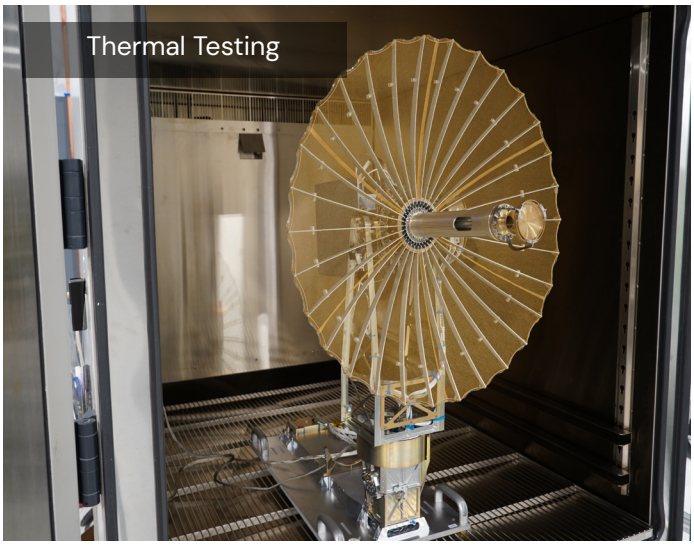
- SIGINT Detection
- Proliferation and Resiliency
- Earth Sensing
- GEO, MEO, and LEO Backhaul Comms
- GEOINT Assessment
- CIS Lunar Comms
- Domain Awareness & Combat Power

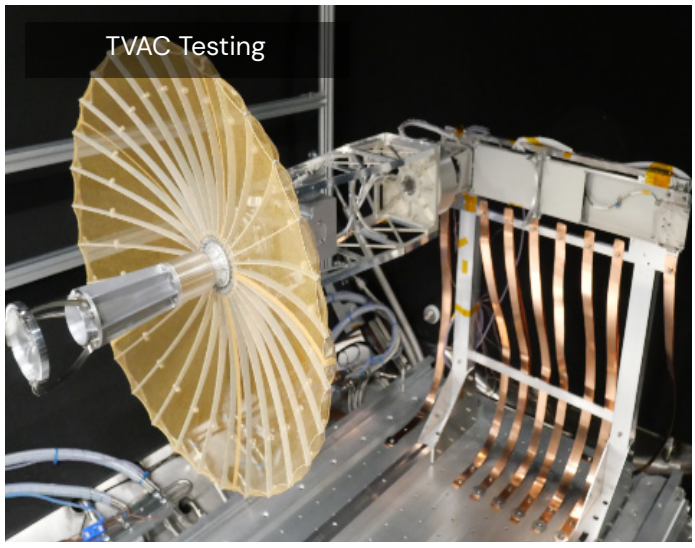
And more...

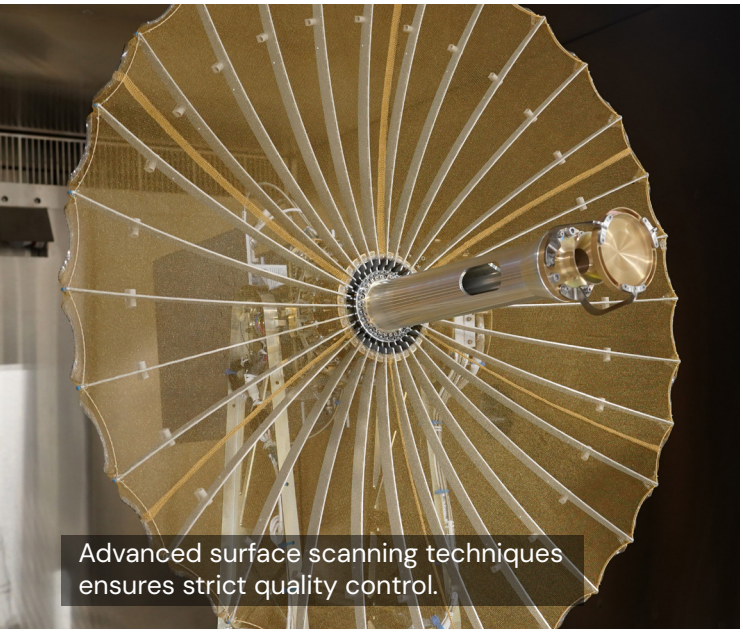
CAPABILITIES



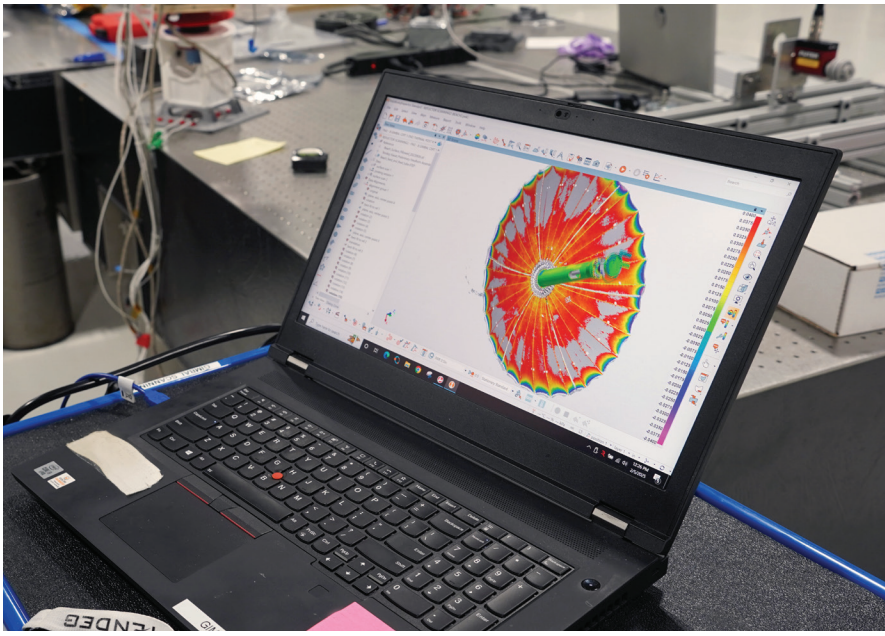








Advanced surface scanning techniques ensures strict quality control.



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.

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