GENERAL DYNAMICS
SATCOM Technologies

Radar Cross Section (RCS) Testing Facilities

Precision Aircraft Rotator Systems for Radar Cross Checking

Precision aircraft rotator systems used by Radar Cross Section (RCS) testing facilities worldwide

Raises and accurately positions the aircraft to perform RCS measurements

Motion purity allows real-time position feedback of the test article

Reduces environmental effects to enable longer testing windows

Upgradable for existing indoor and outdoor systems and customizable to fit any application

Overview

General Dynamics SATCOM Technologies provides the critical aircraft rotator systems used by aircraft Radar Cross Section (RCS) testing facilities worldwide. These state-of-the-art systems include a turntable, calibration pylon, multi-position radar room and a hoist and wing lift system that raise and accurately rotate and position the aircraft to measure radar and system performance in a variety of simulated, in-flight conditions. In addition the motion purity feature allows real-time, precise position location feedback of the test article.

Leveraging over 40 years of proven expertise designing very large, complex structures, our systems are designed to meet the most exacting specifications and highest precision assembly, in some cases up to sub-arc second accuracy. This technology enables us to customize systems and upgrade existing RCS facilities and to reduce environmental effects to enable longer testing windows, as well provide finer control of the test article. Our systems are currently in operation at RCS test facilities worldwide with additional facilities currently under development.

Radar Cross Section (RCS) Testing Facilities

Turntable Sub-System

Specifications based on the current system; tailorable to meet specific mission requirements.

- Accuracy: 5 arcsec
- Command Resolution: 0.001°
- Rotation Rate Variation: 0.5% (0.1% possible)
- Controlled Acceleration: S-curve (configurable)
- System Backlash: 0° (pre-loaded)
- Locked Rotator Resonance: 4hz
- Max Distribution Load: 90,000 lbs
- Diameter: 48 ft
- Perimeter Gap Width: 0.125" +/- 0.05"
- Max Step, Operational: 0.05"
- Test Article Resonance: >0.6 Hz
- Test Article Position Variation: <0.2 mDeg from 0.1Hz to 5Hz

Calibration Pylons

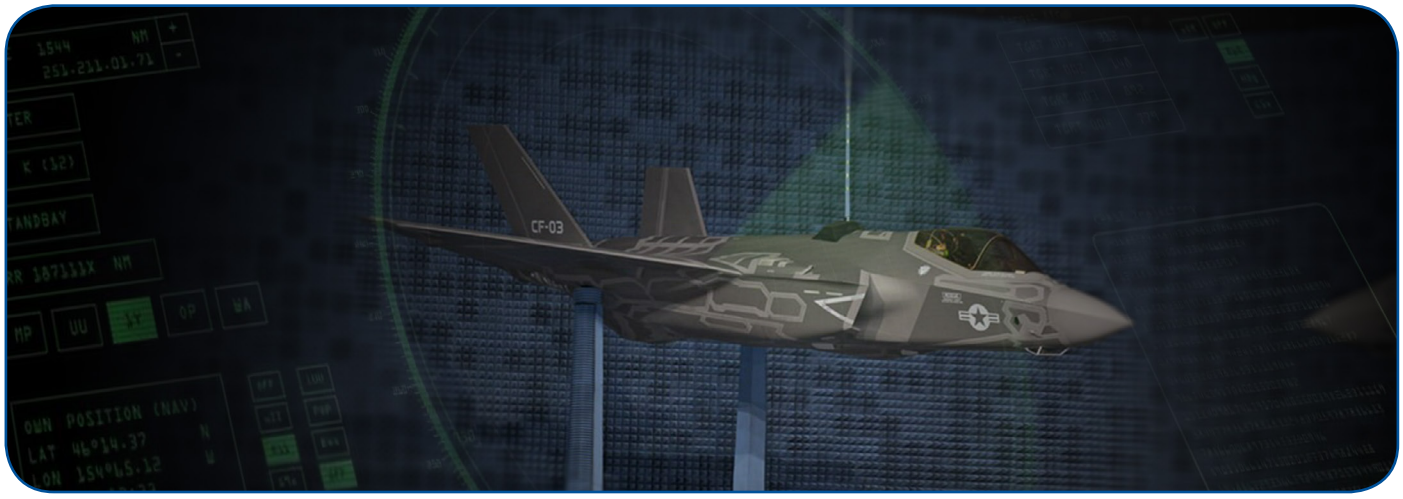
Specifications based on the current system; tailorable to meet specific mission requirements.

- Tapered Ogive
- Straightness: 0.2"
- Fully Deployable: Configurable Height
- Door Flush with Minimal Gaps
- Target Stability: <0.0009" rms after 150s
- Multi-Axis Target Actuator: 0.01° Repeatability
- Perimeter Gap Width, Door: 0.125" +/- 0.05"
- Max Step, Operational, Door: 0.05"

Mobile Radar Room

Specifications based on the current system; tailorable to meet specific mission requirements.

- Max Slew: 0.05 FPS
- Pitch Slew: 0.25 DPS
- Pitch (Operational Travel): +/- 15°
- Operational Travel Range: 64.5 ft
- Stability: <0.0009" rms after 150s



GENERAL DYNAMICS
SATCOM Technologies

Rob.Sullins@gd-ms.com • GDSatcom.com
972-852-5401