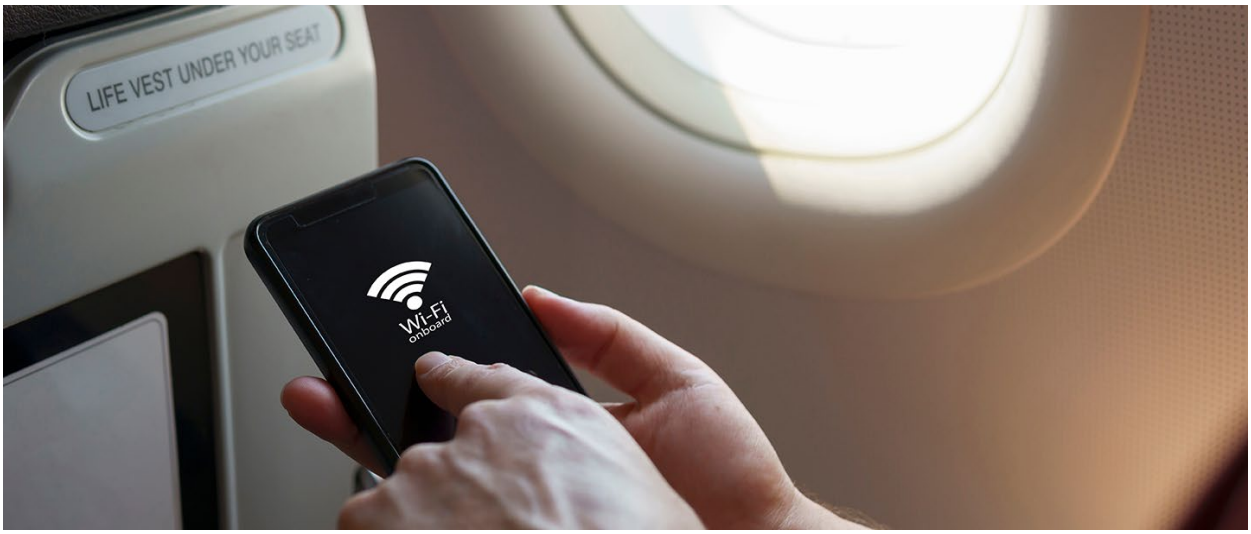
PRECISION GEARS FOR IN-FLIGHT WI-FI: ENABLING RELIABLE AEROSPACE CONNECTIVITY



Discover how Precipart engineered precision gears for in-flight Wi-Fi systems, enabling reliable satellite connectivity and enhanced passenger experience in aerospace applications.

Overview

A leading aerospace technology provider sought to enhance in-flight Wi-Fi connectivity by developing a high-speed satellite communications system capable of delivering reliable global internet access. Achieving this required high-precision motion-control components to maintain continuous alignment with orbiting satellites during flight—an advanced engineering challenge demanding extreme accuracy, durability, and performance under dynamic conditions.

The Challenge

To ensure uninterrupted connectivity, the system required components that could:

- Maintain precise satellite tracking during flight movement
- Perform reliably under harsh aerospace conditions
- Deliver continuous rotation and elevation control
- Meet strict aerospace quality and compliance standards

The Solution

Precipart partnered closely with the customer to design and manufacture custom precision gears critical to the antenna system's function. These gears enable smooth and accurate movement, ensuring the antenna remains aligned with satellites at all times.

By leveraging expertise in:

- Precision motion control engineering
- Advanced gear manufacturing
- Cross-functional collaboration (engineering, manufacturing, inspection, and supply chain)

Precipart delivered high-performance, aerospace-grade gear components tailored to the application's exact requirements.

The Results

The solution enabled:

- Consistent, high-speed in-flight internet connectivity
- Improved passenger experience and onboard productivity
- Reliable performance in mission-critical aerospace environments

This project demonstrates Precipart's ability to deliver precision-engineered components for aerospace applications, supporting technologies that transform global communication and connectivity.