Modern Observability in the Aviation Ecosystem

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Who We Are

Shift5 provides real-time observability of operational technologies (OT)

We apply state of the art dual-use technology to collect serial data, enrich it and alert on anomalies in real-time across all onboard systems.

Defense

Transport & Special Mission

Combat

Unmanned

Heavy Vehicles

Commercial

Aviation

Rail

2019

Founded in 2019, and headquartered in D.C.

100 full-time employees and hiring more.

Military Partners

- SOCOM
- Army
- Airforce
- Navy

Commercial Partners

- Major US-based airlines and OEM
- US passenger and freight railway operators
Reducing security risk and gaining operational insights starts with a foundational element: **data**.

But why do we know more about the IT data on laptops than we do about the OT data on modern aircraft?
The Challenge: Gaining Observability Into Onboard Systems

Commercial aircraft are flying data centers.

- Serial systems were not designed with visibility in mind
- Traffic traveling across onboard OT networks is ephemeral
- Data is obscured by the complexity of systems
- Retrofitting is complicated and impractical
- Disparate component vendors and architectures limit data observability
- Offloading vast data has been impractical and costly
Reveal Critical Insights Into Modern Aircraft

Modern observability starts here.

Cybersecurity & Threat Hunting
Protect the growing cyber attack surface and respond quickly to threats.

Maintenance & Operations
Gain critical insights that improve operational efficiency.

Regulatory Compliance
Automate and ease the burden of regulatory requirements.
Modern Observability: What is it and why does it matter?

- **Data-Driven Insights**: Determine intent, type, origin, and mitigation strategy
- **Analysis**: Detect anomalous behavior or readings
- **Context**: Add speed, location, temperature altitude, thresholds, etc.
- **Raw OT Data**: Capture MIL-STD-1553, ARINC 429, Ethernet, and more
Observability relies on OT data

Enabling predictive maintenance, compliance, and platform security

**Capture**
Retain all of the data crossing the serial bus. Every bus, every protocol, all the time.

**Collect**
Gather raw serial data captured from every asset across your entire fleet.

**Translate**
Transform data from raw to human-readable volumes in real-time.

**Compress**
Enable up to 100:1 data compression designed around your mission type, not our platform.

**Analyze**
Detect patterns and anomalies in data and in the behavior of onboard components.

**Alert**
Receive real-time alerts for events both onboard and at remote locations.

**Democratize**
Maximize onboard data by integrating it seamlessly into your systems of authority.

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THANK YOU
Each platform is a data center, which requires data security
Collecting & Transmitting Onboard Data

**Ground Systems and Backoffice:** Maintenance, Operations, Suppliers, etc.