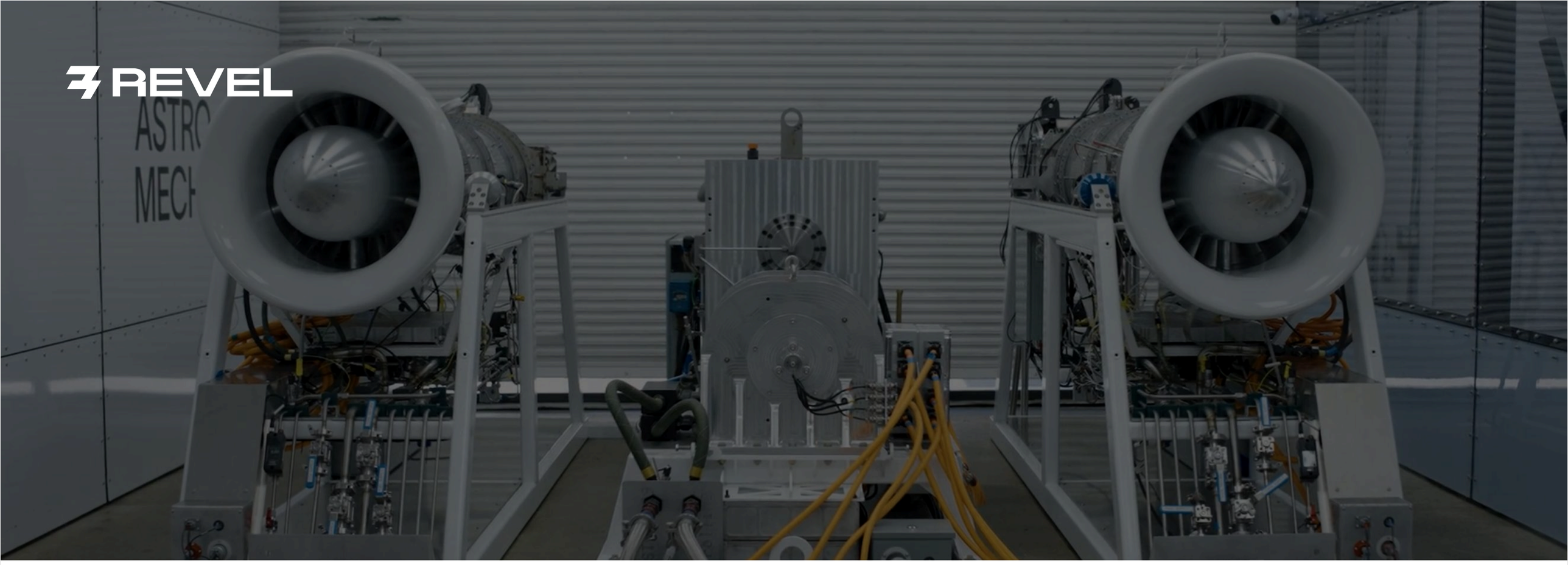


CASE STUDY

How Astro Mechanica accelerated engine testing with Revel

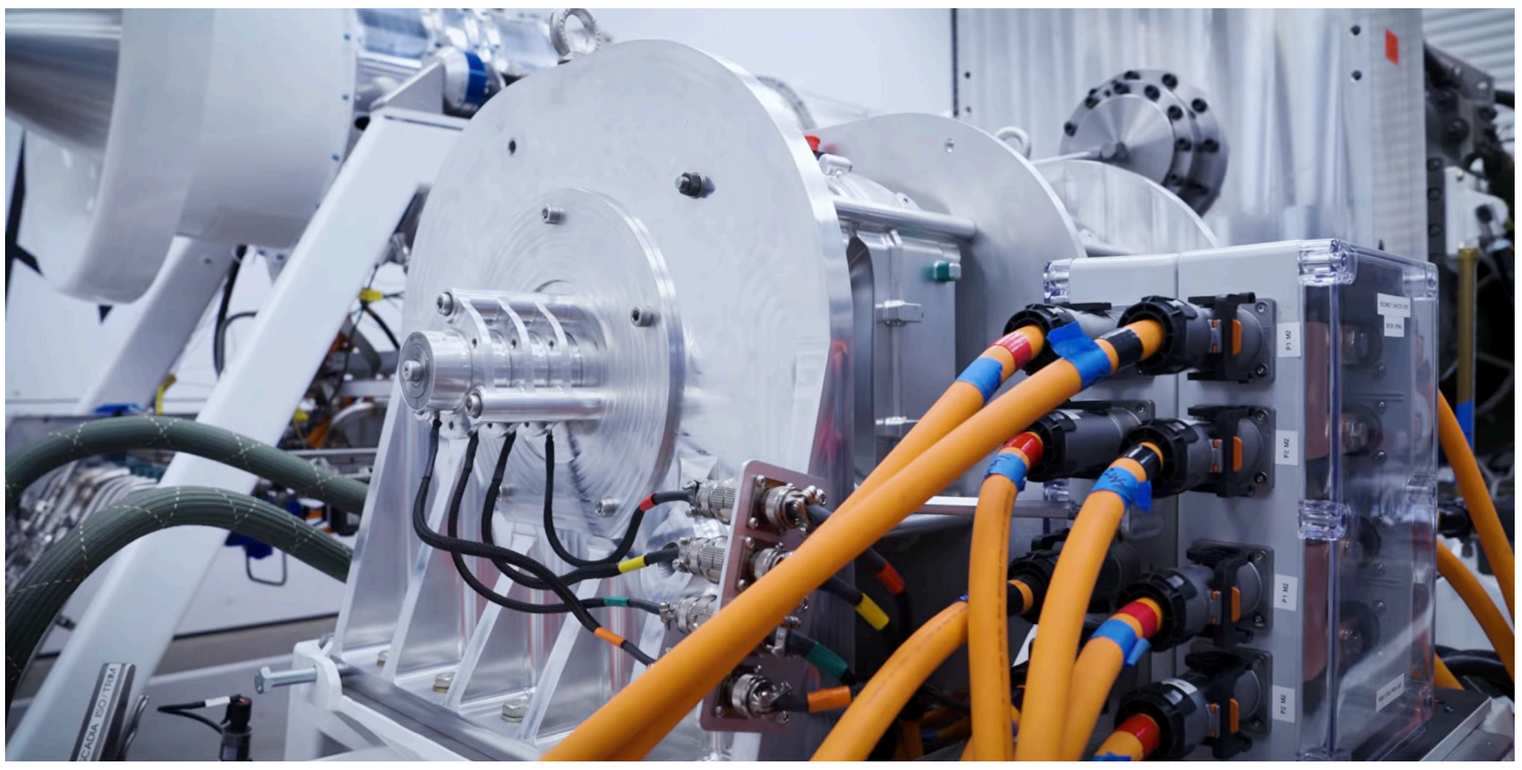
Overview

Astro Mechanica is a vertically integrated aerospace company building engines, airframes, and systems for the next generation of flight.

The challenge

As Astro Mechanica developed and tested their next-generation engine systems, their team had been relying on a homegrown control platform. Like many internal systems, it required specialized knowledge to maintain and evolve, creating a dependency on the small number of people closest to the tooling. For a lean team moving quickly, that solution created friction.

Astro Mechanica needed a more intuitive platform that operators could use directly, while still supporting the pace and complexity of engine testing. They also needed a solution that could be deployed quickly onto their existing test stand without slowing ongoing development.



How Revel delivered

After replacing Astro Mechanica's homegrown control platform, Revel had the engine test stand set up and running within a day. The Revel team integrated with Astro Mechanica's existing environment, integrating with their in-house driver protocol to connect custom devices, and got the stand operational quickly.

Once deployed, Revel gave the Astro Mechanica team an easier way to operate, adapt, and iterate on test procedures. Rather than relying on one internal technical team member to build and manage the tooling, operators were able to work more directly with the system themselves: writing RevelCode, building dashboards, and automating processes that had previously been more manual.

Revel also introduced new capabilities that had not existed in their prior system, including rapidly editable dashboards and real-time telemetry monitoring with alerting and abort logic, giving the team more control and visibility during live testing.

Impact and results

`+ FAST DEPLOYMENT`

Revel replaced the previous in-house platform and was installed and operational on Astro Mechanica's test stand in just one day.

`+ IMMEDIATE TEST READINESS`

The team was able to begin testing their engine as soon as hardware was ready, with no additional software bring-up required.

`+ OPERATOR OWNERSHIP`

Test operators were able to write and manage their own automation, reducing reliance on a single internal expert.

+ NEW CAPABILITIES

Real-time telemetry dashboards, alerting, and abort logic gave the team greater control and safety during live test operations.

+ OPERATIONAL LEVERAGE

Revel made it easier for a lean team to automate test operations without needing to maintain custom software infrastructure.

+ LOWER TOOLING BURDEN

Astro Mechanica was able to move off a homegrown platform and onto a more fully deloped product purpose-built for test and control.

> Revel came in, got us up and running quickly, and made it much easier for our operators to own the test stand directly. It gave us a faster, more intuitive way to iterate without relying on homegrown tooling. As we scale, we're excited to expand our use of Revel to accelerate our testing and development.
>
> Matt Perkins
> VP of Engineering — Astro Mechanica

The challenge

Revel helped Astro Mechanica modernize their engine test stand without adding operational complexity. By replacing their homegrown system with Revel, Astro Mechanica was able to empower their team to drive faster iteration and development.

With Revel, Astro Mechanica can move at the pace of their hardware program. When the engine was ready, the team was able to test on Revel immediately, without a long ramp-up period or extended software bring-up.