CASE STUDY

CUSTOMER IMPACT

Ancra Aircraft + Dirac

A Heico company and Tier 1 aerospace supplier equipping over 60% of the world's aircraft freighter fleet, Ancra partnered with Dirac to close the gap between engineering intent and shop floor execution.

> "[A transition to Dirac can reduce the time spent developing work instructions by 95%!]"

95%	50%	20%	6 Weeks
FASTER DOCS	LESS ENG TIME	THROUGHPUT GAIN	IMPLEMENTATION

01

Challenge

Ancra operates in a **high-mix aerospace environment with more than 500 unique assemblies** across multiple systems. While engineering was fully digital, production remained document-driven.

Days
DOCUMENTATION LEAD TIME
Long lead times to generate shop floor documentation from engineering models slowed production readiness.

50%+
ENG TIME ON FLOOR
Heavy engineering time spent supporting builds on the floor rather than higher-value optimization work.

High
TRIBAL KNOWLEDGE RISK
Build knowledge lived in screenshots, PDFs, and technician experience — never formally captured.

Work instructions were manually authored. This created risk at the exact point aerospace demands certainty: variability during NPI and production ramp.

For a company scaling complex aerospace programs, the discontinuity between design and execution became the primary operational constraint.

02

Solution

Ancra deployed **Dirac's AI-driven, model-based production planning platform** to transform the product model into the operational source of truth on the factory floor.

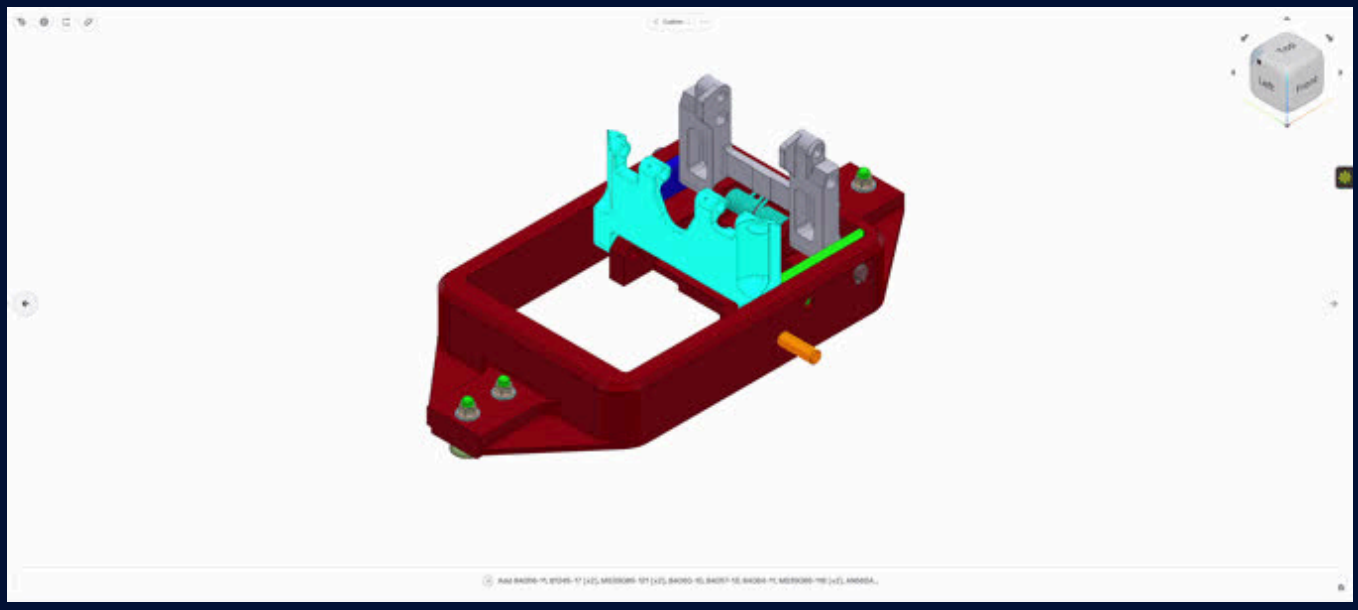
WITHIN SIX WEEKS, PRODUCTION WAS LIVE

Dirac enabled Ancra to:

- Generate shop floor-ready workflows directly from the 3D product model
- Standardize tools, sequencing, and assembly methods across stations
- Capture experienced operator knowledge within production workflows
- Replace static drawings with model-based execution
- Establish a continuous engineering-to-production feedback loop

Engineering intent now flows directly into execution.

Production no longer depends on manual translation.



03

Impact

95%

FASTER DOCUMENTATION

Work instructions that previously required several days now take hours to generate.

50%

LESS ENGINEERING TIME

Engineering effort shifts away from manual observation and troubleshooting toward higher-value optimization

20%

THROUGHPUT IMPROVEMENT

Early prototype build throughput improved through reduced downtime and fewer disruptions.

01

Documentation Speed

Engineers translate design intent into executable workflows with speed and clarity. What once took days of manual authoring — screenshots, markups, and tribal handoffs — now flows directly from the 3D model to the floor.

02

Engineering Time Shift

Engineers now spend their time on process optimization, tooling strategy, and NPI planning rather than walking technicians through builds. Capacity previously lost to reactive reoubleshooting is redirected toward scaling production.

03

Prototype Throughput

By creating and validating work instructions directly from the CAD model before assemblies reached the floor, typical downtimes from tool shortages and unclear instructions were minimized. In several cases, assemblies were effectively ready for build before physical components arrived, with long-lead tooling ordered ahead of time.

Ancra shifted from document-driven assembly to model-driven production. Engineering intent now governs execution, tribal knowledge is institutionalized, and teams can execute complex assemblies with a shared understanding of how each unit should be built. From initial engagement to live production use in just six weeks.

DIRAC

Interested in learning more?

contact@diracinc.com