Kesslr Labs

Arcturus

The Problem

Certification is slow, manual, and fragmented.

Programs rebuild certification from scratch, duplicating hardware, software, and verification work while stitching traceability and documentation across disconnected tools, leading to overruns, failures, and constant re-qualification.

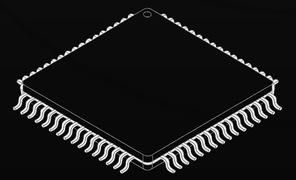
Certification and Validation:

Leads to **25-40%+** increase in dev cost

USD 50–200 per line of high-criticality code

Consumes **50–70%** of development effort

1.3×–1.5× overruns typical for software



Hardware certification can **double** dev times

80% of avionics projects experience significant delays

$511B global space economy by 2029, **$1.8T** by 2035, but safety-critical certification is a key bottleneck slowing time-to-market.

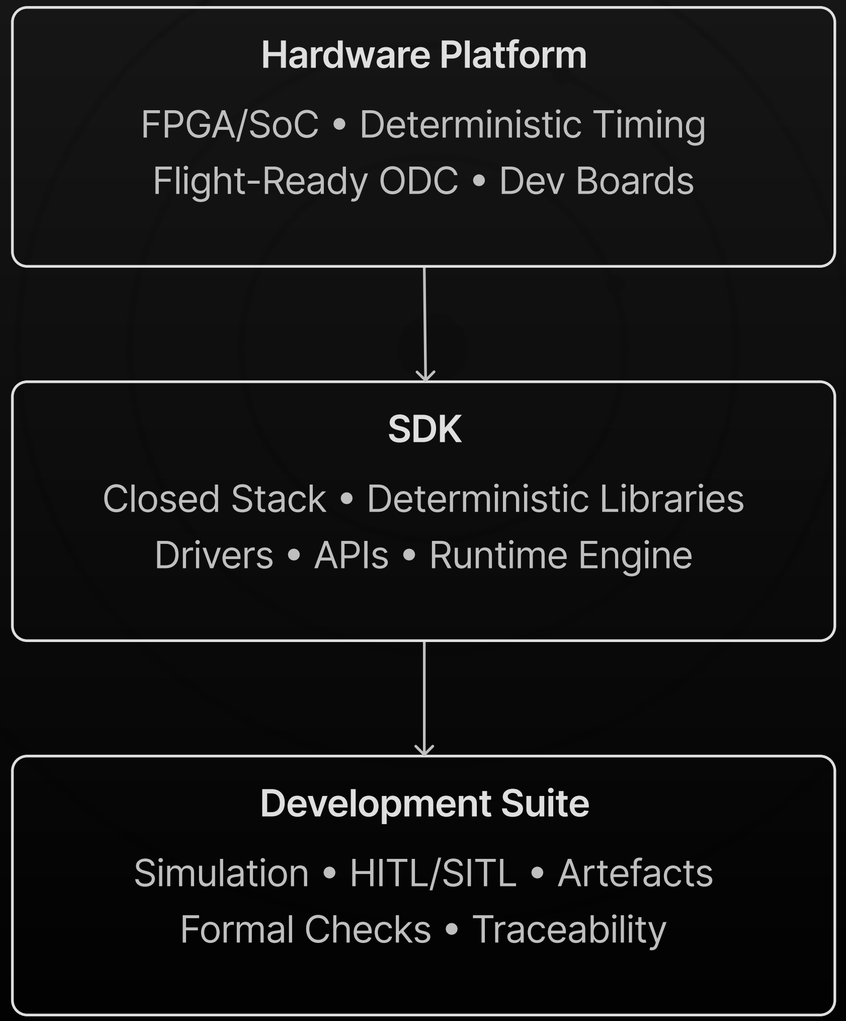
The Solution

Acturus - *the* Platform for Certifiable Compute

Arcturus is the brightest star in the northern sky. Once a beacon used in WWII to guide the allied effort, now the architecture guiding a new era of certifiable compute.

Arcturus is *the* unified platform for rapid, certifiable compute. Deterministic hardware, a closed SDK, and automated verification pipeline combine into one workflow that seamlessly produces certification-ready artefacts.

Built alongside the engineers and certifiers who will be using it, Arcturus directly addresses their real pains, enabling certification at the speed of development.



Our Moat

Closed SDK System	Deterministic Compute	Certification Reuse	Hardware/Software Codesign	Regulatory & Domain Focus
CUDA-style lock-in. Switching means rewriting everything.	Predictable outputs → certifiable. GPUs can’t do this without killing performance.	Artefacts + test harness reused across programs. Legacy means starting from scratch every time.	Integrated board + SDK + harness → vertical stack. Bolt-ons can’t match.	Pre-aligned with DO-178C/DO-254/etc. Big chipmakers avoid niche cert burden.

For aerospace and defense primes, building in-house is prohibitively costly and outside their core focus; for chipmakers, the regulatory burden is too niche to justify. Arcturus sits in the gap, creating an entirely new category that competitors can’t justify replicating.

Why Now?

- Evidence requirements rising
- Development accelerating
- Hardware cheaper than ever
- Legacy certification workflows breaking

Industry **needs** a unified path

$1.8T

Space Economy by 2035

>70,000

Satellites Launching This Decade Alone

>10x

Cheaper Prototyping in the Last Decade

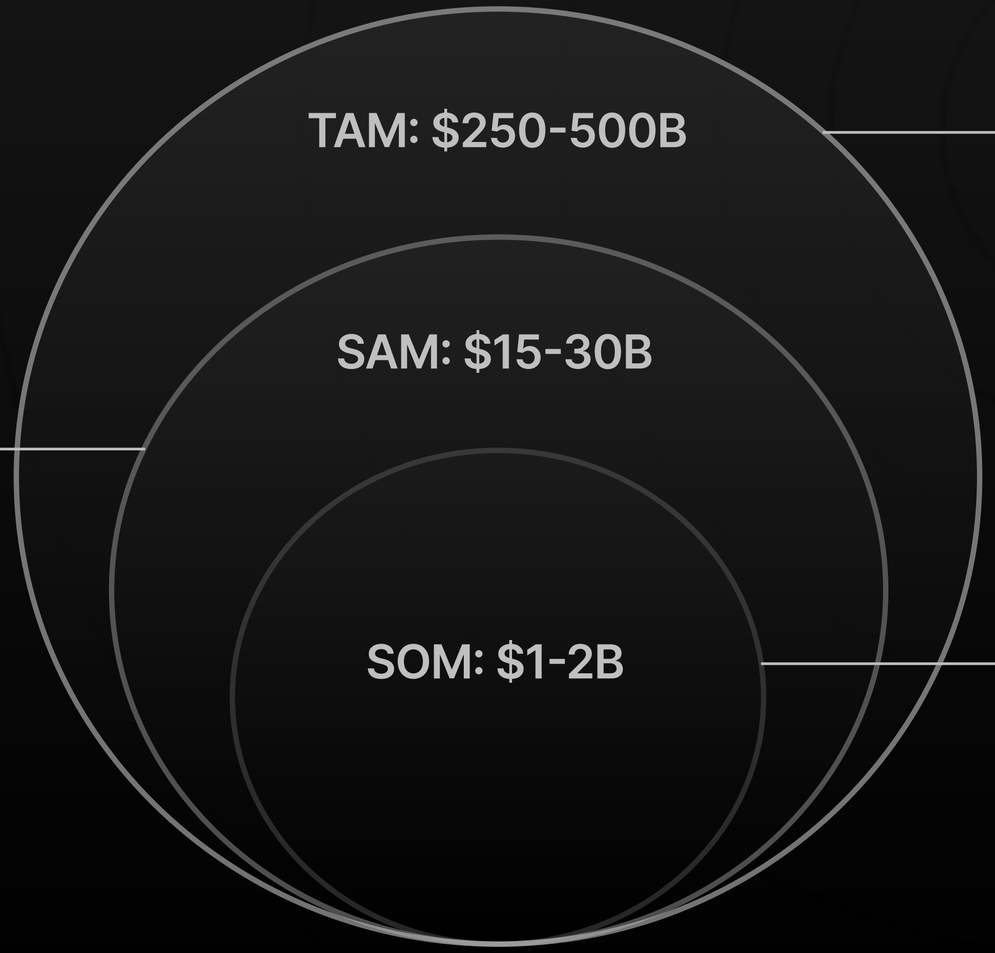
13%

CAGR
(Defense Autonomy & AI)

50-70%

Effort Wasted on Certification

Market Opportunity



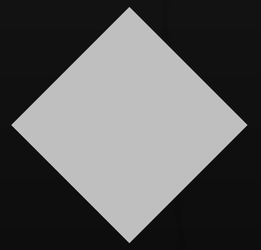
Global certifiable compute across regulated industries: space, defense, automotive, medical, industrial, etc.

Aerospace & defense certifiable compute: avionics, satellites, drones, military autonomy.

Initial adopters: CubeSat teams, defense and aerospace startups, early pilots.

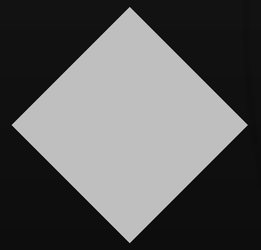
Roadmap

Angel Round (Q4 2025)



- FPGA dev board
- SDK v1
- Demos + automated artefact pipeline
- Beta deployments
- Early certification alignment
- Industry LOIs

Pre-Seed (Q2 2026)

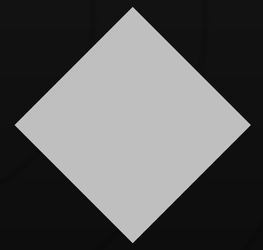


- Productize SDK (v2)
- US presence + first FTEs
- IP filings: architecture + certification framework
- First startup customers + expanded pilot network

Seed (Q3 2027)

- 8–12 industry pilots
- Published modular certification framework
- 10+ FTE team
- RTL design + fabrication partners locked

Series A (2029)

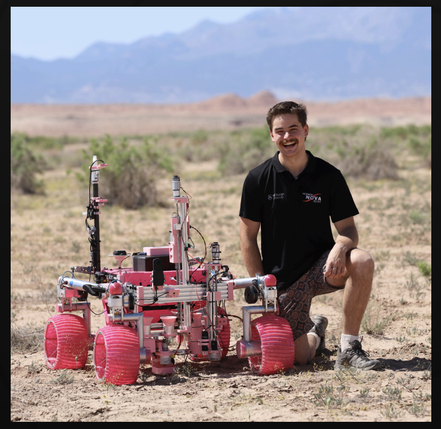


- First silicon tape-out
- Space & defence flight heritage
- SDK ecosystem: 100+ developers, 20+ partner libraries
- Strategic partnerships; path to certification across industries

The Team

Patrick Bellamy

Ex-Flight Software @ Rocket Lab; led University of Melbourne Rocketry to international success; IAC-published. Expertise in flight-critical software + leadership of teams of 100+ engineers.

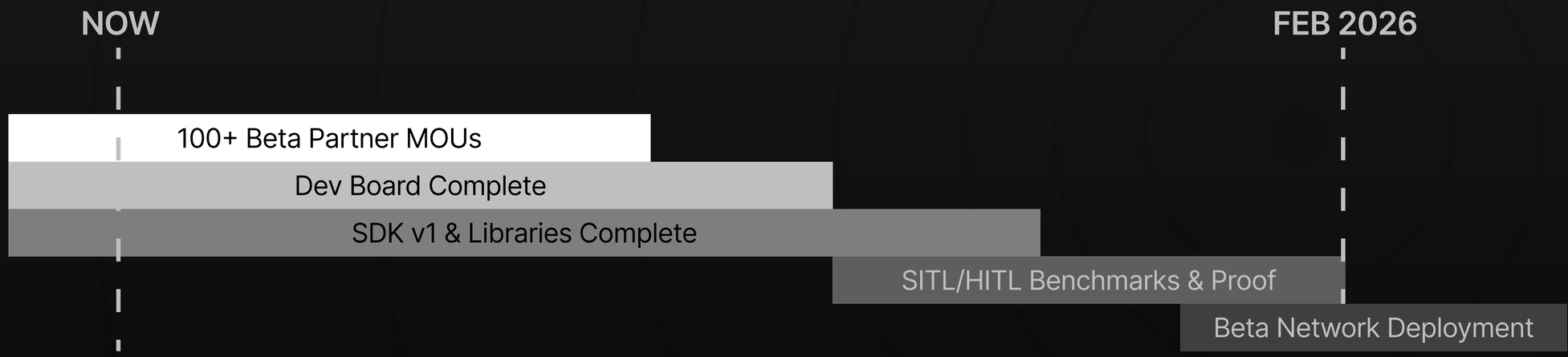


Jack Ulbrich-Baker

Ex-GNC @ Rocket Lab; led Monash Rover Team to international success; IEEE-published. Deep control systems, hardware, and leadership experience of teams of 100+ engineers.

Jack and Patrick met at Rocket Lab, where fragmented certification and testing pipelines slowed every project. Back in Australia, they teamed up to fix the bottleneck, leveraging deep technical insight, strong industry networks, and experience leading 100+ person engineering teams to deliver and deploy Arcturus at scale.

The Ask



AUD 300k

(Angel Round)

This Buys us:

- 6-8 months of runway
- FPGA dev board + SDK V1 released
- SITL/HITL demos + 5 testers live
- Industry and certifier LOIs

Sets up Pre-Seed (Q2 2026)

Conclusion

Kesslr Labs is making certification easy.

By building *the* platform for high-performance certifiable compute, we lower the barrier to entry and turn certification, once a project-killer, into an afterthought.

Arcturus serves as the guiding architecture for the next era of *all* certifiable compute, and we hope you'll join us on this journey.

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