

Hardware & Software Prototyping

MVP engineering and proof-of-concept builds across hardware and software.

hardware-software-prototyping · Revision A (draft) · 2026-07-07 · Status: **Draft**

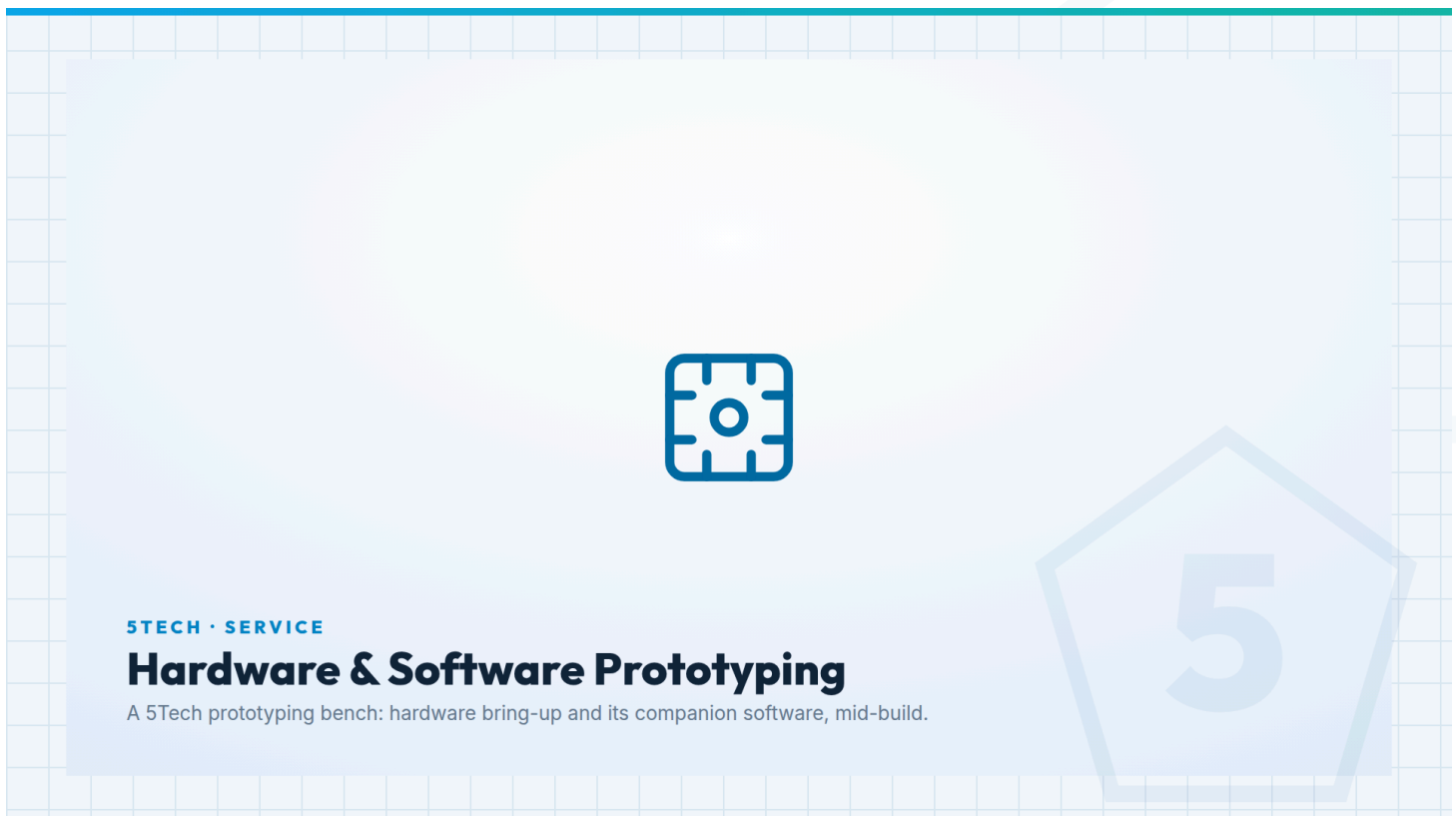


Figure FIG-001 — A 5Tech prototyping bench: hardware bring-up and its companion software, mid-build.

We turn ideas into working prototypes — hardware, software, or both — fast enough to test, demo, and de-risk before you commit to a full build. A prototype exists to answer a question, usually *"will this actually work, and what will it take?"*, as fast and as cheaply as the risk allows. We scope every build around the single most important thing to prove first, then engineer the narrowest version that proves it. That discipline is what separates a prototype that informs a decision from a demo that just looks good.

We build across hardware and software: sensor and device bring-up, firmware, mechanical fit, and the application or dashboard that goes with it. You get a working proof of concept, an honest readout of what works and what production would require, and the design files, source code, and documentation — all owned by you. If the honest answer is *"not yet"* or *"not this way"*,

you get that too, before you spend more. Because the same team can carry an idea from concept through to a production-ready system, a successful prototype does not mean starting over with a new vendor or throwing away work.

Who this is for

- Founders and product teams validating a technical concept.
- R&D groups that need a working rig to test an idea.
- Businesses de-risking a build before larger investment.

Problems we solve

- An idea that needs proof before it can attract budget or buy-in.
- No in-house capacity to build across hardware and software.
- Uncertainty about technical feasibility, cost, or timeline.
- Previous prototypes that were demos, not a path to production.

What you get (deliverables)

- A working proof-of-concept or MVP targeting your key risk.
- Hardware bring-up and/or software application as required.
- A clear readout: what works, what does not, and what production needs.
- Design files, code, and documentation you own.
- A recommended path — and a rough budget — to the next stage.

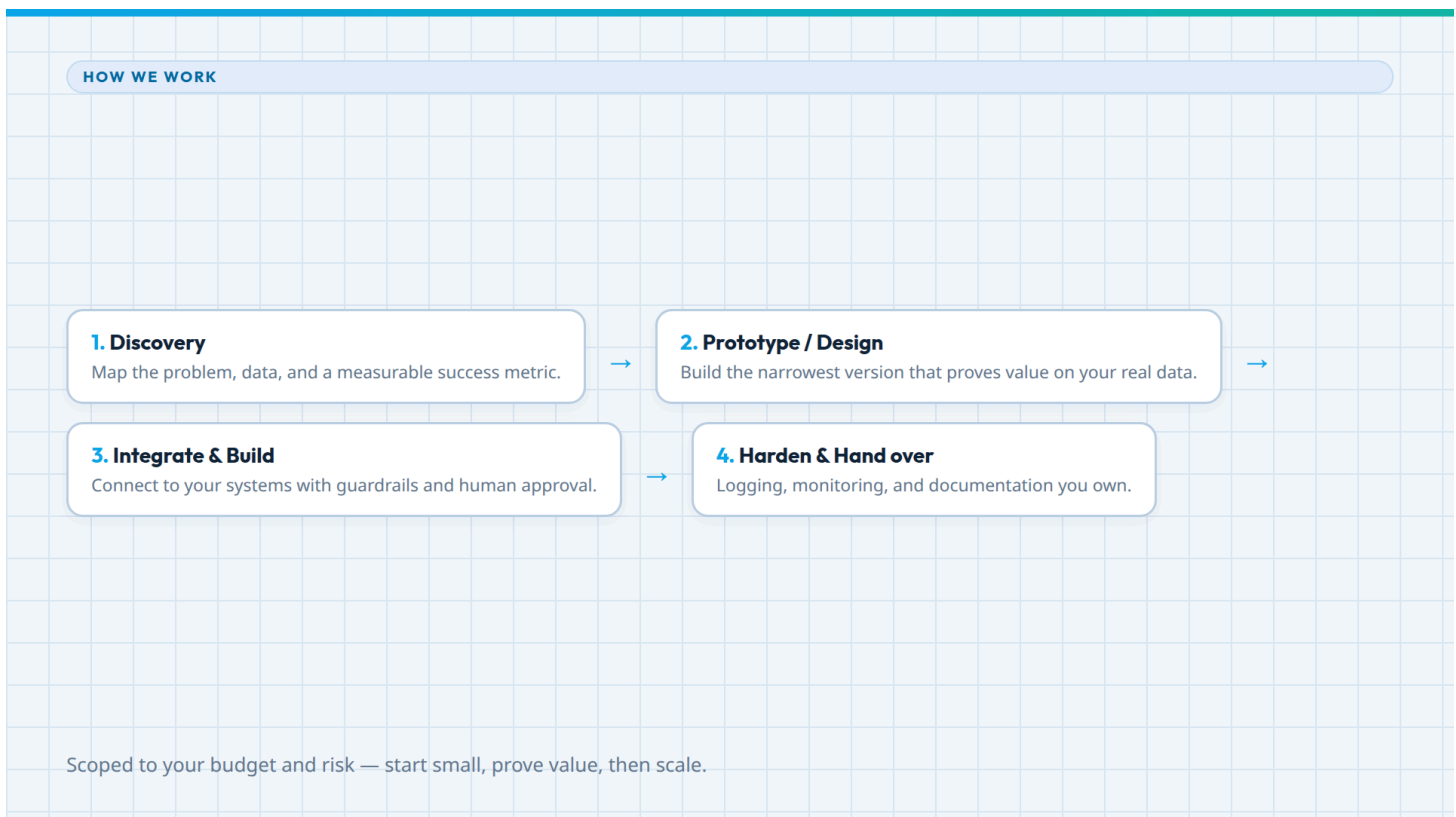


Figure FIG-002 — How a prototyping engagement runs: frame the risk, build the smallest thing, test, and recommend.

We scope prototypes around the fastest path to a decision, so timelines are usually weeks rather than months — gated mainly by hardware lead times and the risk being proven. We are equally comfortable proving a hardware concept, a software concept, or the integration between the two, which is often where the real risk sits.

STEP	WHAT HAPPENS
1 • Frame the risk	Identify the single most important thing to prove first.
2 • Build the smallest thing	Engineer the narrowest prototype that answers it.
3 • Test & learn	Put it in front of reality and capture what it tells us.
4 • Recommend	Advise on production readiness, cost, and next steps — honestly.

If the prototype shows the idea is not viable, that is a valuable and inexpensive result compared with discovering it after a full build. When it succeeds, the same team can continue into a production program or hand everything to your team cleanly — there is no rebuild from scratch.

Example use cases

- MVP engineering for a hardware or software product.
- Hardware/software prototype for a new device concept.
- Proof-of-concept development to secure funding or buy-in.
- Rapid rigs to test a research or automation idea.
- Feasibility builds before a full production program.

Related services & industries

- **Related services:** Embedded Systems & IoT ([embedded-sensors-iot](#)), Robotics & Automation ([robotics-automation](#)), Custom Engineering & Consulting ([custom-engineering-consulting](#)).
- **Related industries:** Research & prototyping, small-business automation, manufacturing automation.

Voice: capability-based and honest — no invented metrics or client names (see the live [services.ts](#) for the established tone).

Figures

ID	TITLE	STATUS	FUTURE FILENAME	PURPOSE
FIG-001	Prototyping Bench — Hero	Missing	images/hero_service.png	Service cover / hero
FIG-002	Engagement Process	Missing	diagrams/process.png	The service engagement process