Product Development Scoping Guide



Bringing clarity to early-stage engineering decisions, from concept to execution. We help clients define **what** needs to be built — and **how** to build it well.

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Introduction

Successful product development begins with clarity. Before engineering begins, Bluefin works with clients to carefully define what the product must do, what success looks like, and how mature the technology should be at the end of this phase.

This Scoping Guide ensures alignment across stakeholders, budgets, timelines, and technical requirements — so development proceeds with confidence and purpose.

1. Product Definition

A brief, high-level description of the product to be designed. Key questions include:

1) What is the product, and what is it called?
2) What is its intended purpose?
3) Who will use it, and in what environment?

2. Goals for Product Launch

Clarity on the end-state helps shape the engineering pathway.

1) What is the ***End State***?
2) What is the goal of this effort — a functional prototype?
3) Demo-ready unit?
4) Production ramp-up?

3. Schedule & Milestones

Are there key deadlines tied to:
- Trade shows?
- Fundraising rounds?
- Pilot deployments?
- Investor demos?

These events often define the pace, scope, and deliverables of the project.

4. Scope of This Project

How production-ready should the product be at the end of this phase?

The maturity of a product is driven by the **Technology Readiness Level (TRL) framework.**

For example, a typical scope may be “moving the product from TRL 4 to TRL 6.” Clearly defining TRL targets sets expectations for engineering deliverables, testing, and investment strategy.



Summary of TRL Levels:

⟷ **TRL 1–3** — Research, concept validation, proof of principle

⟷ **TRL 4–6** — Prototype and subsystem validation

⟷ **TRL 7–9** — System demonstration & operational readiness

Requirements:
Specifications appropriate for this phase should align with overall goals and investment levels.

Mechanical Requirements:

- Size, weight, mounting pattern, fasteners
- Appearance, form factor, industrial design
- Ruggedness: IP rating, temperature range, drop survivability
- Corrosion and chemical resistance

Electrical Requirements:

- Input/output specs: voltage, current, phase, timing
- Interfaces: AC/DC power, communication buses, protocols
- EMC, shock, and ESD susceptibility

Control & Embedded Functions:

- Firmware and processing requirements
- Data interfaces: serial, IP, industrial protocols
- Health indicators and diagnostics

Regulatory & Safety:

- UL, FCC, CE, MIL-STD, FDA (as applicable)
- Labeling, accessibility, consumer vs. technician interaction
- Export controls / offshore restrictions

Additional Requirements:

- Cost targets at multiple volumes
- Life cycle / obsolescence strategy
- Test plans — in-house and third-party

5. Deliverables

In general, you own the intellectual property and materials you pay for — free and clear.

Here are some of the deliverables that Bluefin Innovations supplies to support and document the work performed for your company:

1) Industrial & cosmetic design (renderings, material choices)
2) CAD models, schematics, PCB layouts, source code
3) Patent drawings and assignments
4) Prototypes — breadboard to packaged units
5) Test reports, plans, and laboratory results
6) Images and videos of testing
7) Manufacturing transition documentation (as applicable).

Ready to Define Your Scope?

Whether you're refining a prototype or preparing for production, Bluefin helps create a clear engineering roadmap that matches budget, schedule, and technical ambition.

Let’s scope your next phase with clarity and confidence.

Visit us at www.blfinn.com or contact us to start the conversation.

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