Cartheur Research

Overcoming Adoption Barriers

Through an Application Discovery Process

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Executive Summary
Asynchronous compute and stack-oriented methods often look unfamiliar to teams steeped in clocked MCU, C/C++, and RTOS ecosystems. In real programs, the blocker is rarely feasibility. The blocker is translation from architectural novelty into business decisions with confidence. Cartheur's Application Discovery process removes that gap. We isolate one high-value subsystem, prove measurable advantage in context, and only then scale.

Where Adoption Friction Appears

- **Integration risk:** teams fear broad platform disruption.
- **Skill shift pressure:** delivery timelines leave little room for theory-first onboarding.
- **Validation load:** uncertainty around test, safety, and compliance effort.
- **ROI uncertainty:** no agreed KPI path from technical gain to business value.

Application Discovery Framework

Phase 1: Joint Technical Workshop
Identify timing bottlenecks, energy constraints, determinism gaps, EMI sensitivities, and lifecycle cost drivers.

Phase 2: Subsystem Isolation
Pick a narrow, high-leverage insertion point (for example PWM control, safety interlocks, signal conditioning, fast control loops, or edge preprocessing).

Phase 3: Paired Prototyping
Cartheur and customer engineers build a production-relevant subsystem jointly, so confidence is earned through outcomes rather than abstract education.

Phase 4: KPI Validation and Scale Decision
Measure deltas against agreed metrics, then decide whether and where to expand.

Illustrative Customer Examples

Industrial motion control (fast loop): reduced jitter, lower thermal spikes, cleaner verification envelope.

Edge sensor preprocessing: less upstream data burden, lower power draw, faster event response.

Safety interlock orchestration: stronger reliability margins and clearer fault-containment behavior.

Visual Storyboard Concepts

Illustration 1 — Barrier to Value Funnel
Visual concept: technical uncertainty, timeline risk, and integration fear entering the funnel; validated subsystem, KPI confidence, and rollout plan exiting.

Illustration 2 — Incremental Adoption Map
Visual concept: pilot deployment -> validated domain -> multi-domain deployment.

Illustration 3 — KPI Before/After Scorecard
Visual concept: phase delay, thermal load, validation effort, reliability margin, and energy per operation.

Compact Commercial Offer

Stage	Deliverable
Discovery Sprint	Problem framing, subsystem shortlist, KPI definition
Prototype Sprint	Production-relevant implementation in customer context
Validation Sprint	Measured outcome report and rollout recommendation
Scale Plan	Phased expansion model with technical ownership path

What This Means for Buyers

- Adoption becomes incremental, not disruptive.
- Technical evidence is created before major budget commitments.
- Internal champions emerge through paired delivery.
- Commercial decisions are made from measured outcomes, not assumptions.

Call to Action

Do not start with a full-platform migration decision.
Start with one high-value subsystem where the Isolated-Linear Processor can prove advantage in your environment.
Start your discovery engagement: `https://cartheur.com/pages/contact/#discovery`