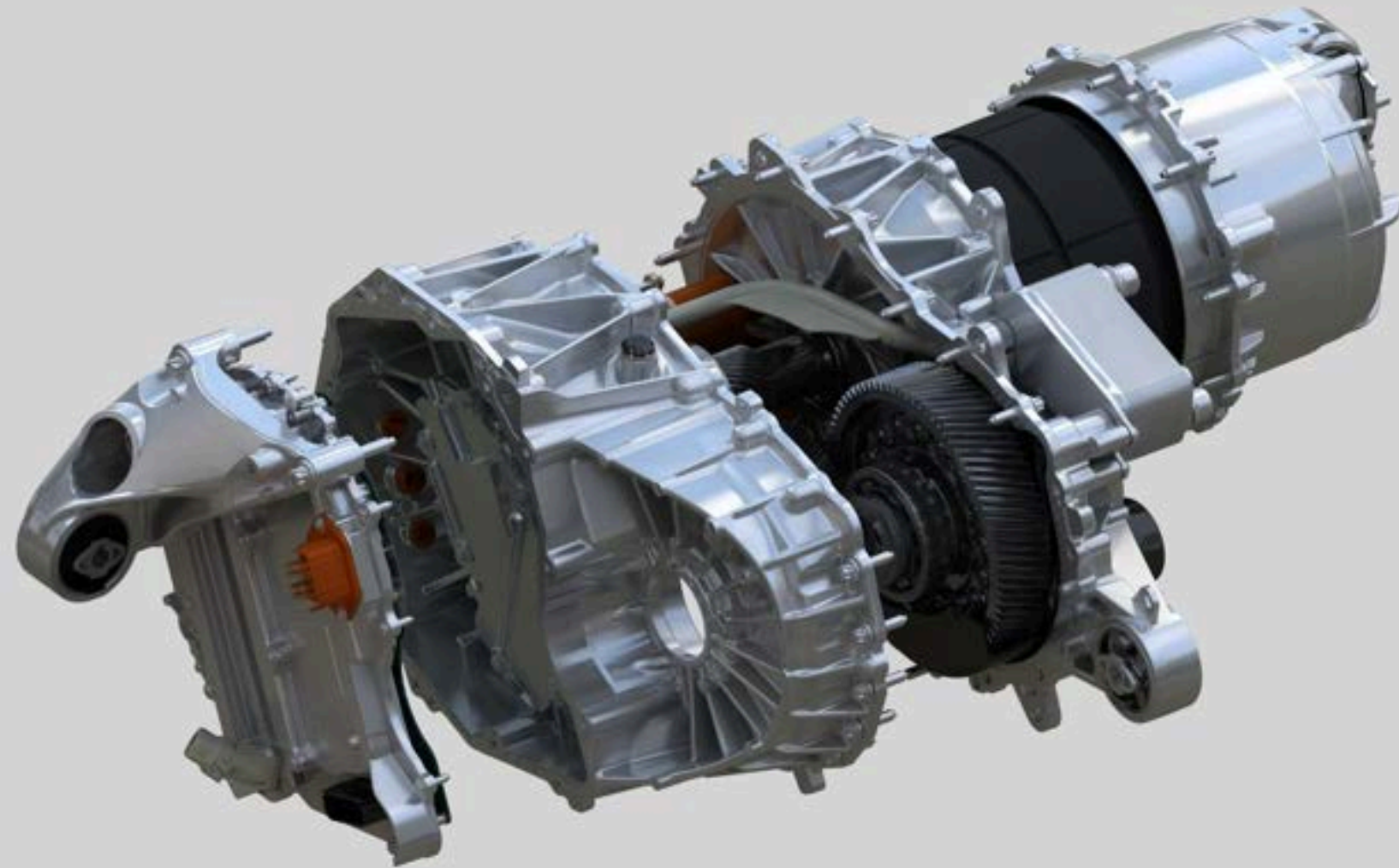


Ontario Dynamics

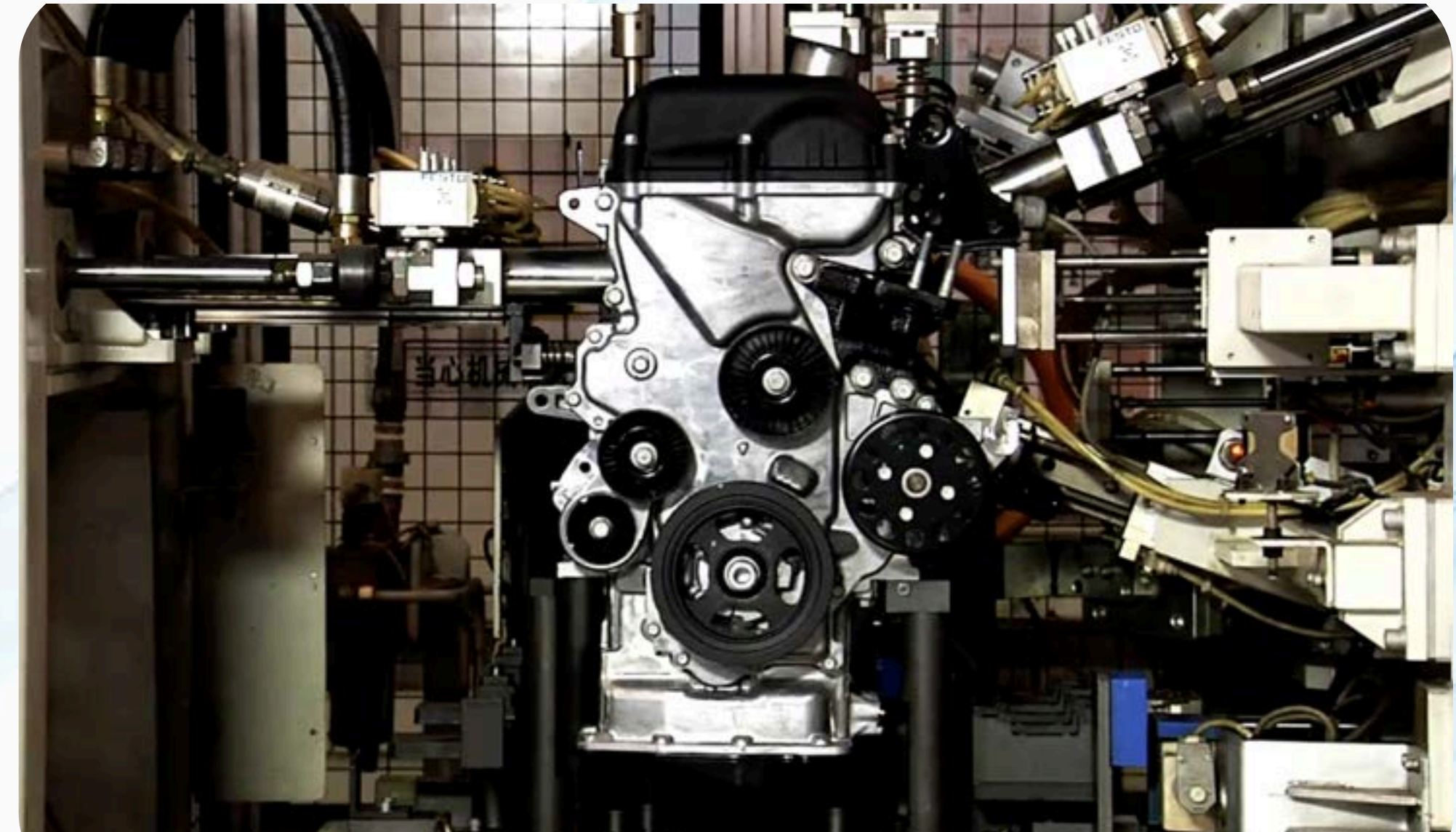
Ontario Dynamics

Your Partner in Product Development and Validation.



Engineering & Design

Product Development



Validation Testing

Real-World Performance Analysis



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Who we are?

We turn early-stage ideas into fully engineered, tested, and production-ready products.



Expertise: Multi-disciplinary team with 15+ years in mechanical design.



Proven Track Record: Delivered products like a 2-speed EV transmission and End-of-line inspection machines.



Testing and Validation: Custom test rigs, endurance benches, and inspection systems for automotive and industrial environments.

One-Stop Solution

From concept & CAD to custom test benches, we offer fully integrated support to reduce risk and accelerate your development cycle.

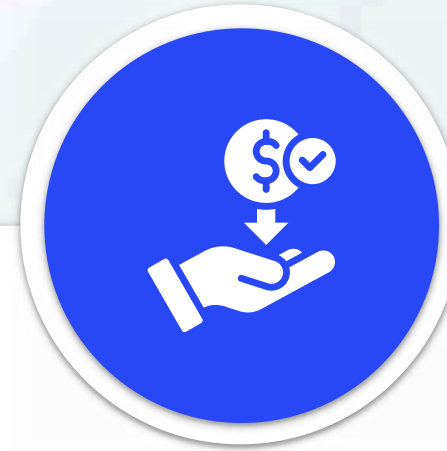


Industry Challenges



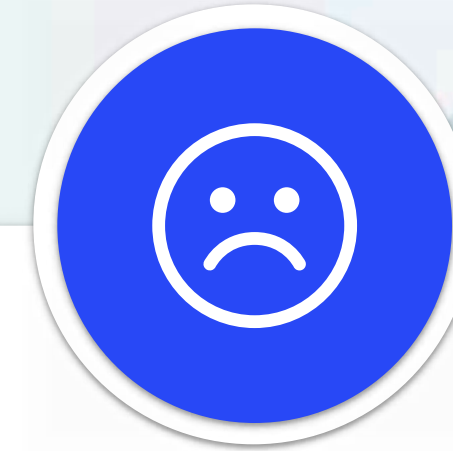
Resource Gap

- Testing infrastructure
- Engineering bandwidth
- Specialized expertise
- Validation budget



Budget vs. Needs

- High skill requirements
- Expensive prototyping cycles
- Tight funding constraints



Fragmented Outsourcing Challenges

- Multiple vendors
- Disconnected workflows
- No single ownership
- Communication gaps
- Poor documentation
- Rework and delays

The Solution Need

Companies need a single, trusted partner to handle design, prototyping, and validation under one roof.



Product Development Services

We transform ideas into engineered, validated, and production-ready mechanical products.

Full-Cycle Development

- From concept to prototype & production

DFM & Cost Optimization

- Supplier-ready design documentation
- Minimum part count

CAD & Simulation

- SolidWorks, Onshape, Inventor (GD&T ANSI Y14.5)
- FEA, tolerance analysis, & stress validation
- PLM-ready documentation & BOMs

Prototyping & Iteration

- In-house & partner builds (Form-Fit-Function)
- Purpose build validation infrastructure

Risk & Quality Assurance

- DFMEA
- DVP&R
- 8D Root Cause Analysis & Phase Gates

Communication & Control

- Single point of contact & weekly updates



Testing and Validation Services

We engineer test systems that replicate real-world conditions and generate the data needed to validate performance.

Custom Test Benches

- ▶ Full-cycle validation rigs: tailored to your specific application.
- ▶ Durability, fatigue, and performance test benches.

Endurance, fatigue, and lifecycle test benches.

- ▶ Full sensor integration: Force, torque, pressure, displacement, vibration.
- ▶ Custom DAQ systems (NI, embedded Linux, microcontrollers).

Environmental Simulation

- ▶ Replicate field loads, temperatures, vibration, and dynamic motion profiles.
- ▶ Validate durability through realistic duty cycles and extreme-condition stress testing.

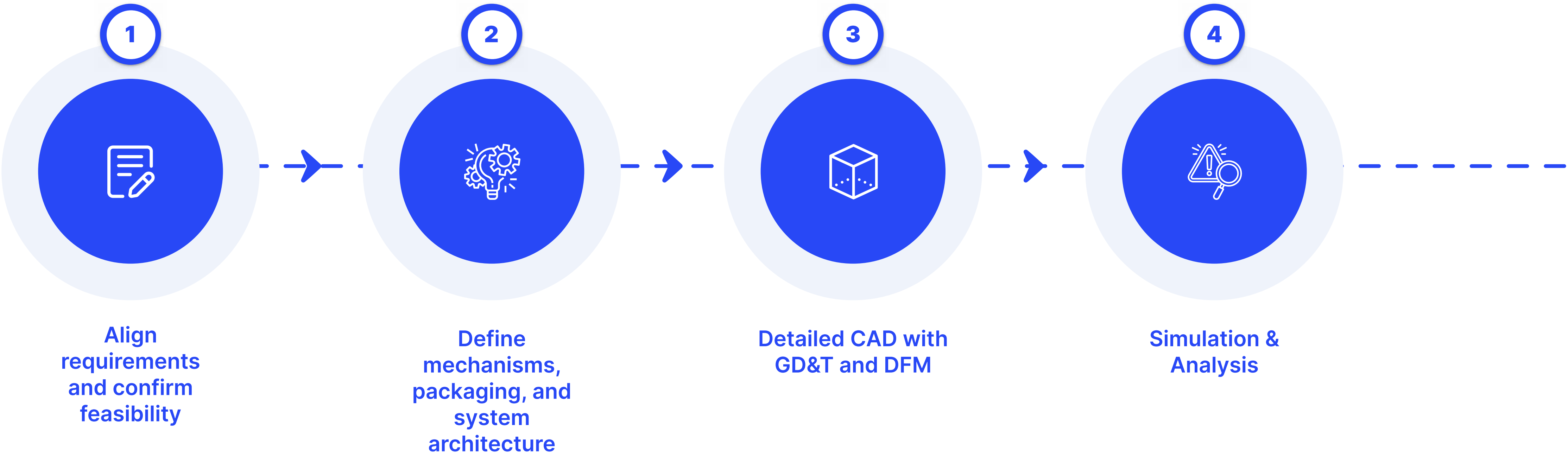
Data Analysis & Reporting

- ▶ High-resolution data logging with automated signal processing, failure detection, and limit monitoring.
- ▶ Custom reports for DVP&R, compliance, and root-cause analysis (8D, FMEA).



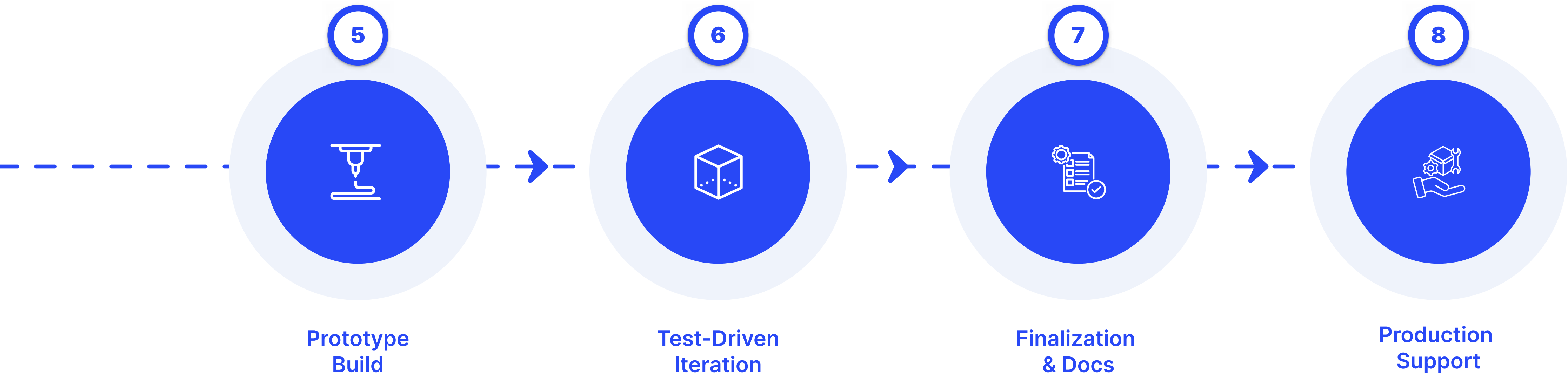
Our Process – Product Development

End-to-end engineering excellence from concept to production support.

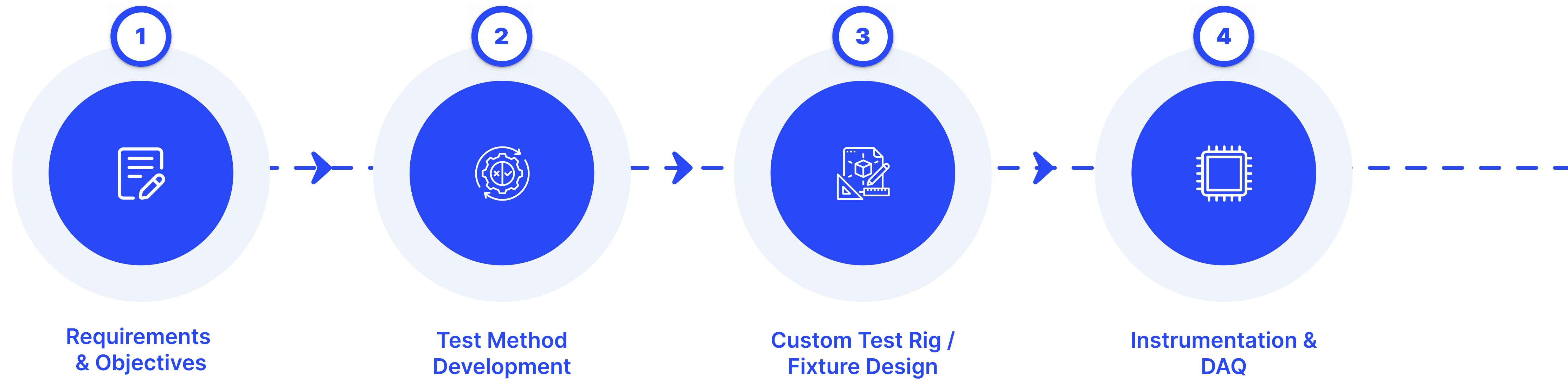


Our Process – Product Development

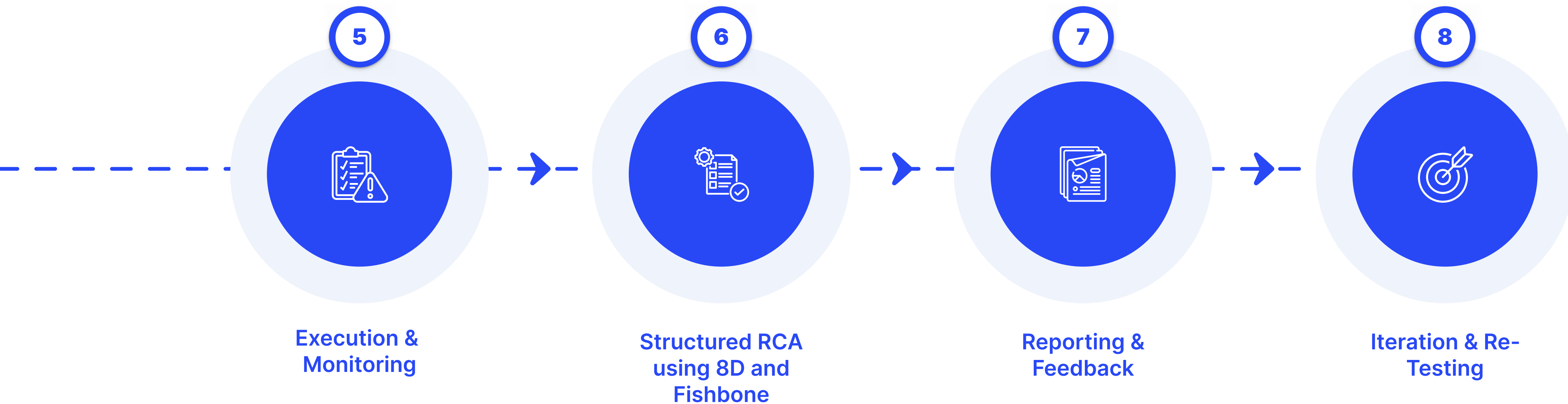
End-to-end engineering excellence from concept to production support.



Our Process – Testing and Validation



Our Process – Testing and Validation



Past Projects and Success Stories

Confidential

Novel electric vehicle transmission development and validation

- Complete transmission design, simulation, prototyping, and vehicle integration.
- Custom test rig development and full validation.
- Successfully tested by client in Japan



Challenge:

- Transmission development completed in 15 months
- Parallel vehicle integration in 10 months



Client: Canadian Startup

Image has been blurred to protect confidentiality.



Past Projects and Success Stories

Confidential

Bearing noise and vibration detection machine – Mass production line

Design and development, Data Disquisition System ingratiation, manufacturing and supply.

- Noise and vibration checking.
- Axial Loading
- High speed rotation - 6000rpm
- Data Recording & Report generation

⚙️ **Challenge:** Isolate motor noise from test specimen noise.

👤 **Client:** Automotive Tier 1




Past Projects and Success Stories

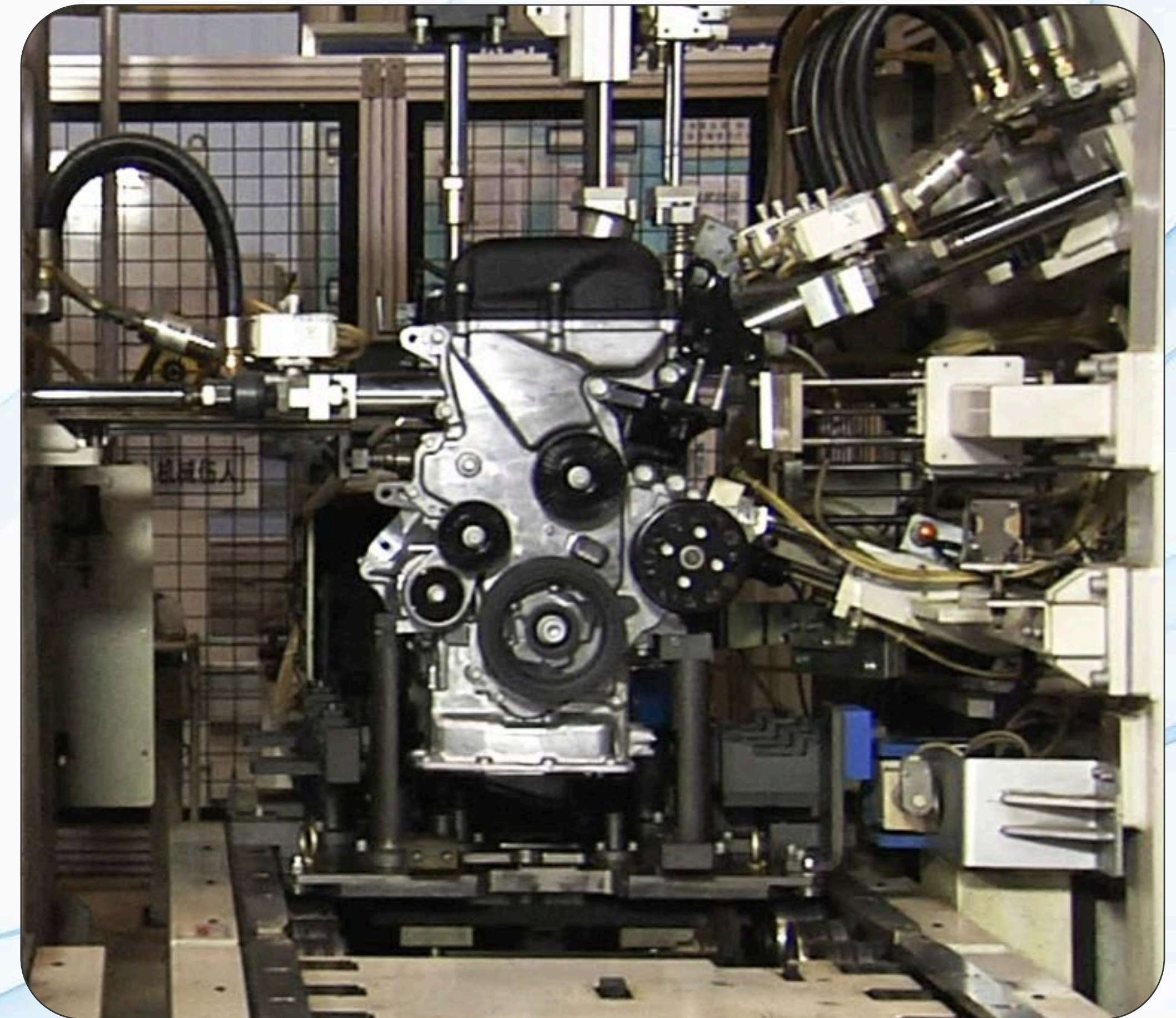
Confidential

End-of-line cold engine test bench for performance evaluation.

- Achieved 100% inline inspection for torque, NVH, leak, and rotation quality.
- Reduced manual inspection time by >70% through automated cold-run testing.
- Delivered measurement repeatability within $\pm 1-2\%$ across high-volume production.
- Enabled OEM to catch defects before shipment, cutting rework/warranty issues by up to 40%.
- 30% reduction in cost compared to Japanese manufacturer.

 **Challenge:** Isolate motor noise from test specimen noise.

 **Client:** OEM, India



Past Projects and Success Stories

Confidential

Engine assembly washing machine – mass production

- 95–99% contaminant removal (ISO 16232 / VDA 19 levels).
- <200–500 µm residual particle size.
- 30–50% higher throughput vs manual/semi-auto washing.
- 35–50% fewer cleanliness-related defects.
- 25–40% lower maintenance intervention with auto-filtration.



Challenge: Noise level less than 65 dB, accommodate different engine variants.



Client: OEM



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Past Projects and Success Stories

Confidential

Automotive parts – Case design for powertrain

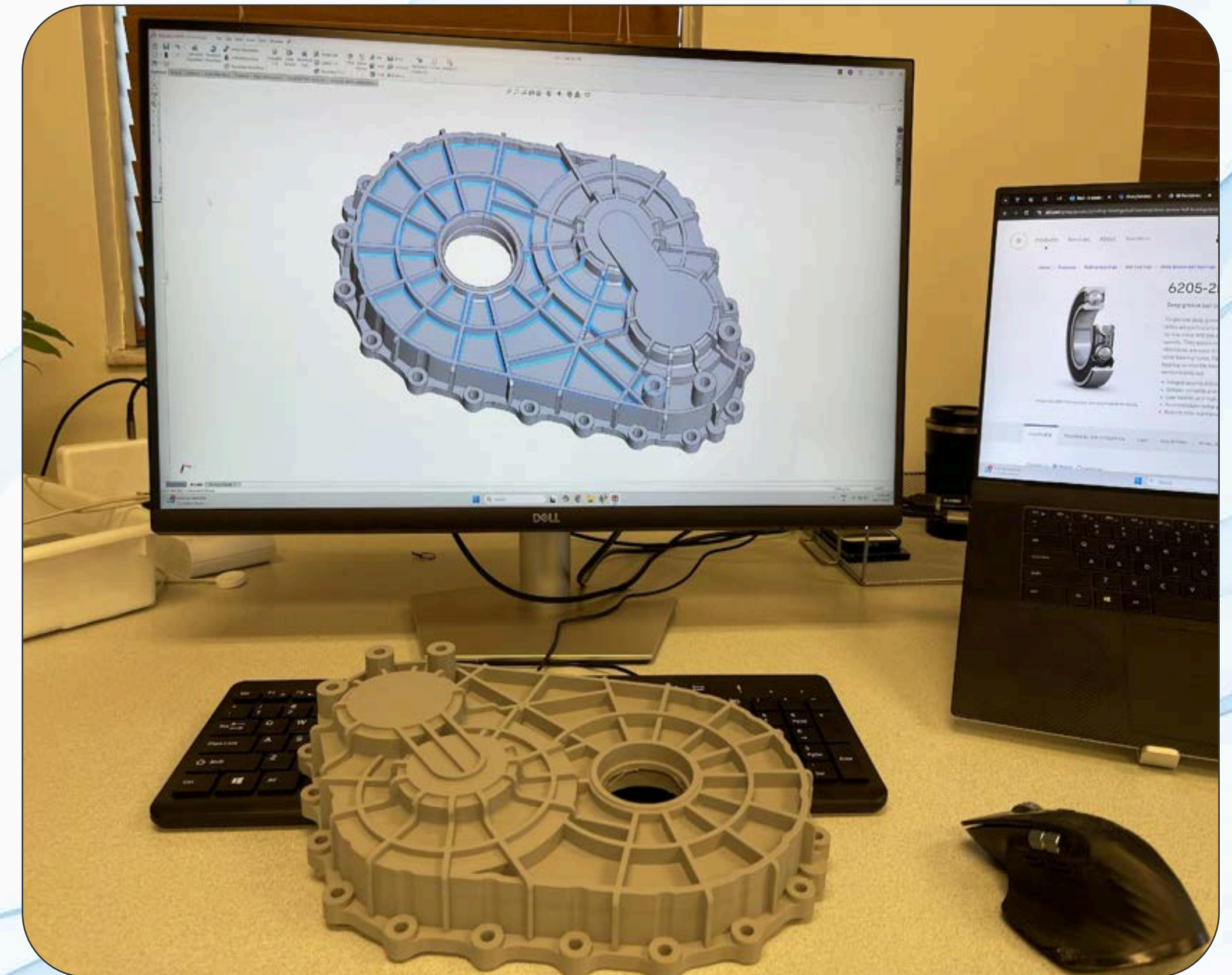
- CAD + engineering development of a prototype powertrain housing.
- Structural analysis, packaging refinement, and manufacturability checks.
- Prototype-ready documentation for machining and testing.



Challenge: Ensuring manufacturability of a complex geometry with prototype machining limits.



Client: Automotive, Canada




Past Projects and Success Stories

Confidential

Engine performance evaluation test bench

- High-resolution measurement of torque, airflow, pressure, temperature & NVH.
- Enables calibration, performance mapping & thermal/performance analysis.
- Provides repeatable, lab-grade conditions for prototype engine refinement.

 **Challenge:** High resolution data capturing and visualization


 **Client:** Automotive, OEM



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Past Projects and Success Stories

Confidential

Drive train component detection machine.

- Inline inspection system ensuring 100% verification of drivetrain assemblies.
- High-speed detection with precise sensor fusion (vision, proximity, torque/position feedback).
- Delivers consistent zero-defect quality without slowing the production line.



Challenge: Detect component visually hidden. Multi model compatibility



Client: Automotive, OEM

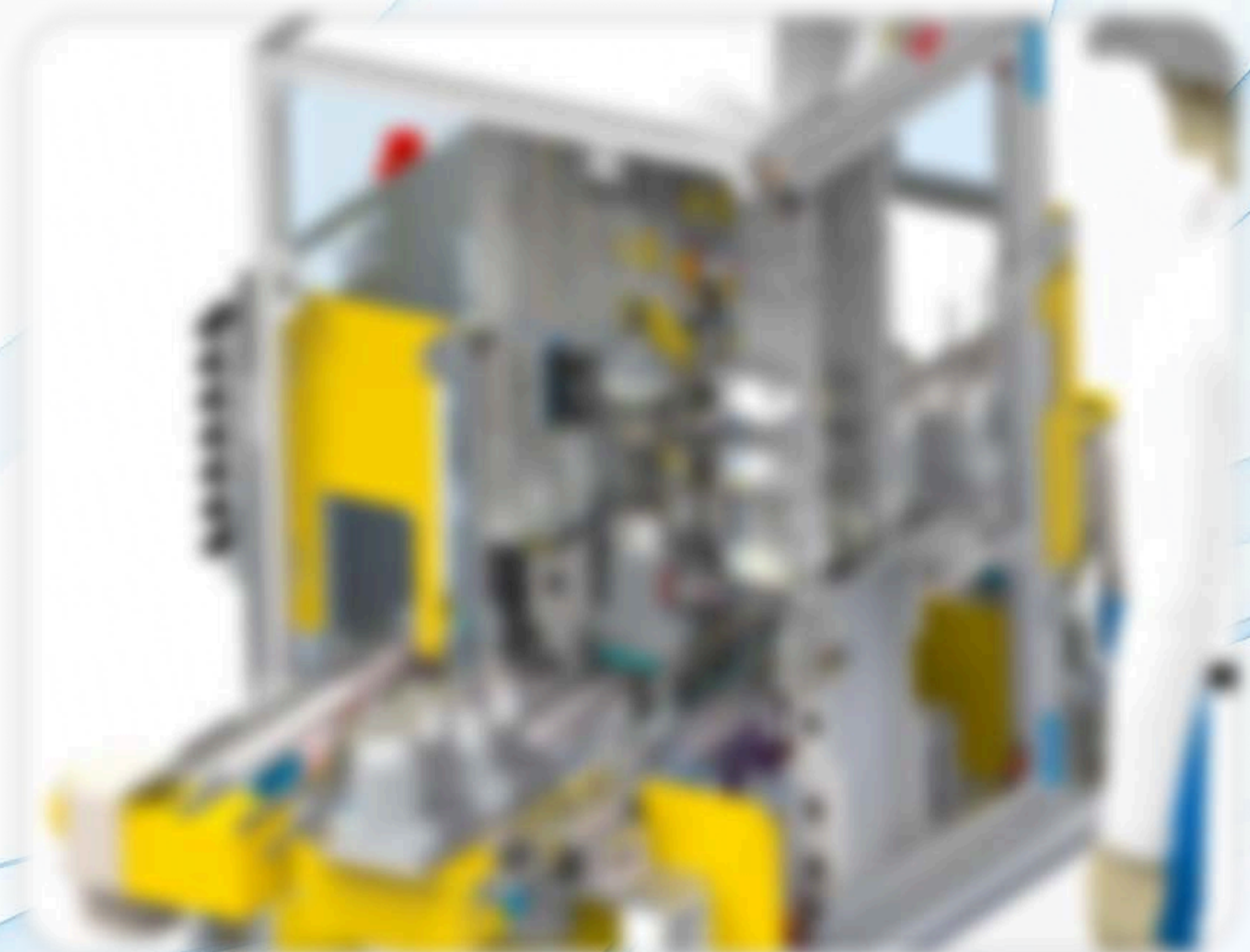


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Past Projects and Success Stories

Confidential

Weldment fixtures for automotive door panels.

- Precision fixtures to accurately locate and clamp door panels for welding.
- Ensures repeatable geometry, tight tolerances, and high welding quality.
- Designed for durability and consistent operation in high-volume production.



 **Challenge:** 3 months lead time

 **Client:** Automotive, Tier 1 supplier, India

Past Projects and Success Stories

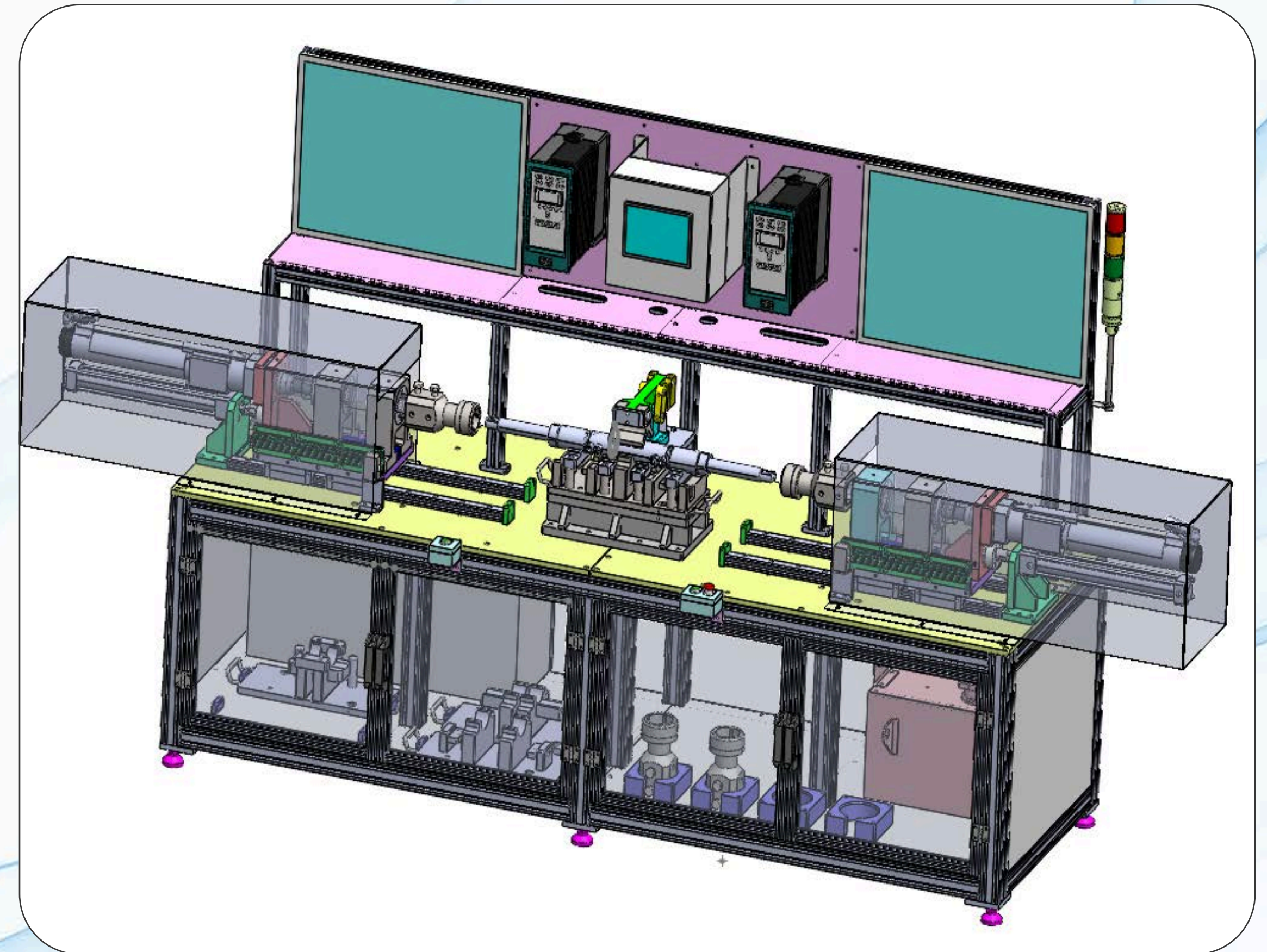
Confidential

Both side Gland tightening with 2 horizontal head with DC nut runner

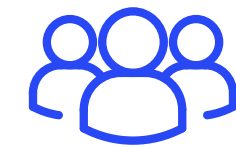
- Simultaneous, torque-/angle-controlled tightening on both glands, removing operator variability.
- Traceable tightening data at line speed for consistent sealing quality and fewer reworks.

 **Challenge:** Operator safety and line speed.

 **Client:** Automotive, Tier 1 supplier, India

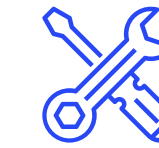


Core Design Capabilities



Design Engineering Team onshore and offshore team.

10 Engineers



Core CAD/CAE Software

SolidWorks

Unigraphics (NX)

AutoCAD



Canada Office

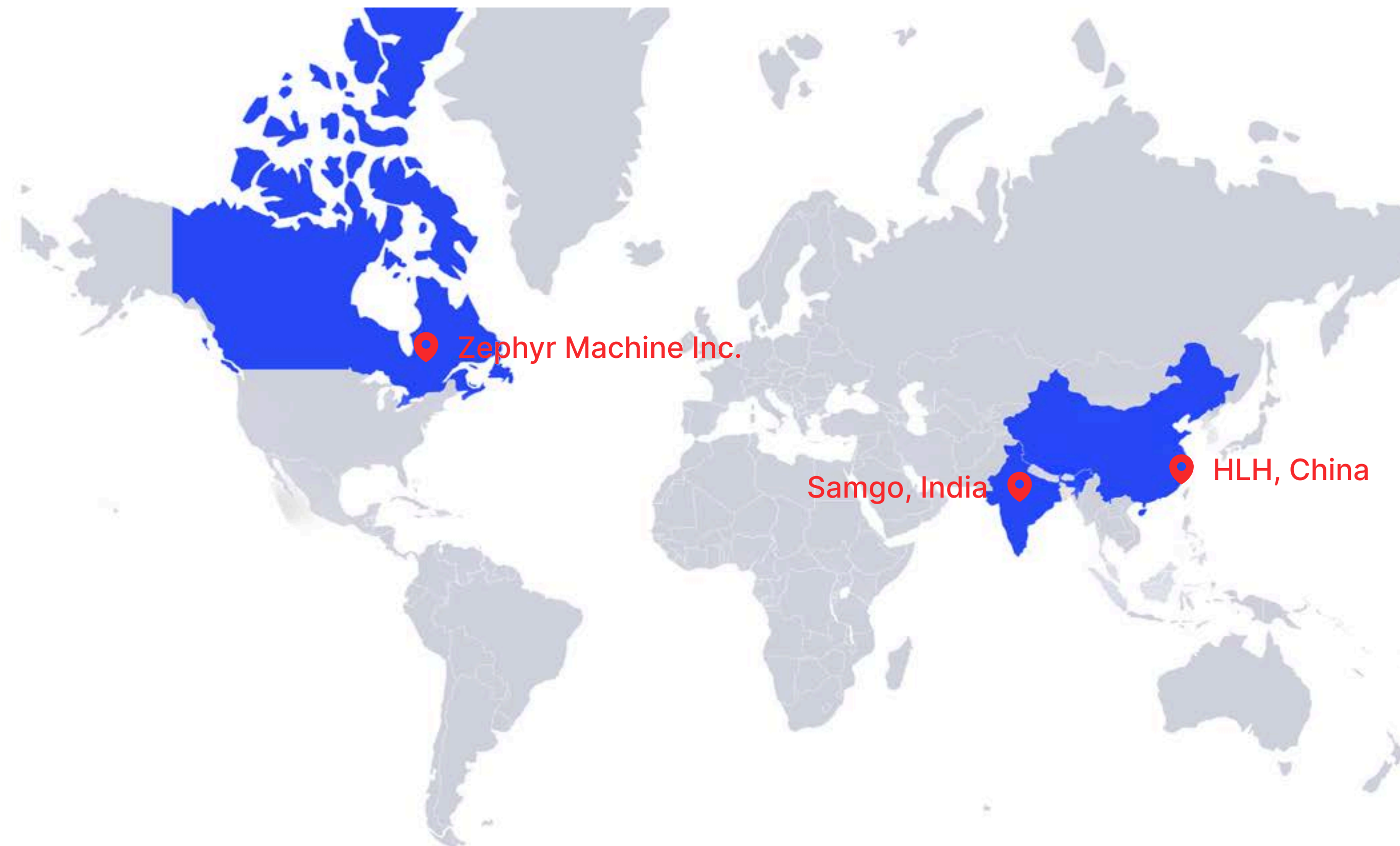


Offshore Design Team (India)



Manufacturing partners

Over 15 manufacturing partners across the globe.



Why Choose Us



Enterprise Validation, Low Cost

We provide validation expertise and custom test equipment without the overhead of a big OEM lab.



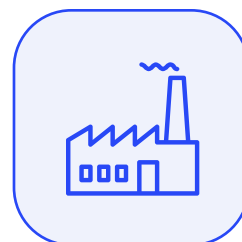
Senior Engineering, Fraction of Cost

Get high-skill CAD, FEA, DFM, GD&T, and documentation without hiring a full internal team.



Partnership & Ownership

We think with you, challenge assumptions, solve problems, and take responsibility for outcomes.



Designed for Scale & Reliability

Every design meets manufacturing constraints, tolerances, and costs from day one (DFM, DFA, GD&T).



Integrated Design + Testing

We close the loop between CAD → prototype → test → improvement, cutting down rework and delays.



Clear Communication & Delivery

One point of contact. Weekly updates. Transparent timelines. PLM-ready documentation.



Faster Time-to-Market

Agile iteration, rapid prototyping, and test-driven refinement help you ship faster reliably.



Strong IP Protection

Strict NDAs, secure data handling, controlled access. Your product and IP are always fully protected.



Let's Build Your Next Product With Confidence

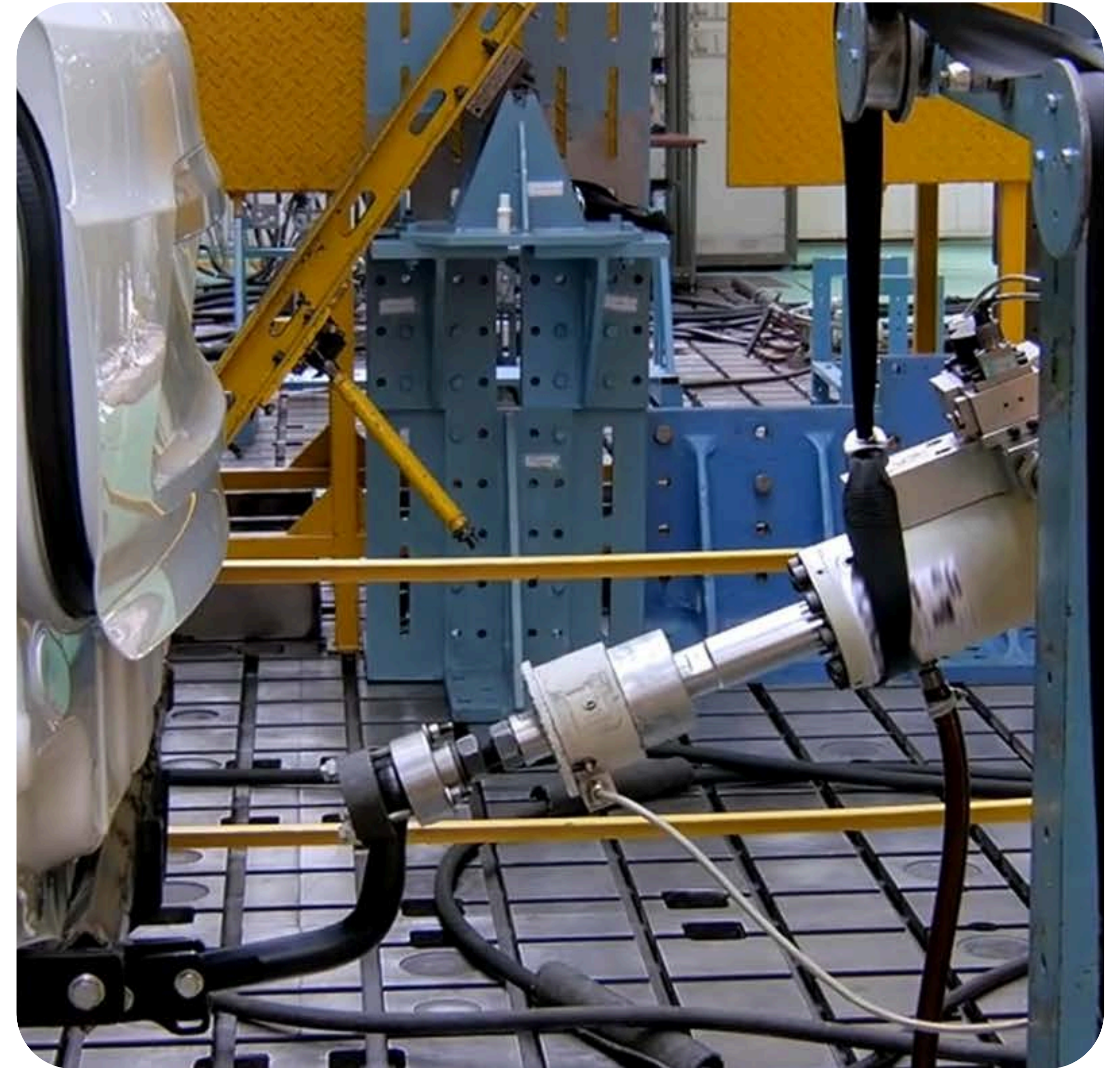
If you're developing a new mechanical product or need world-class validation support, we're ready to partner with you.

- ✔ Bring us your concept, prototype, or testing challenge
- ✔ We'll map a clear path from idea → design → prototype → validation
- ✔ Deliverables you can trust. Data you can rely on. Engineering you can scale with.

Let's discuss your project.

✉ contact@ontariodynamics.com

🌐 ontariodynamics.com



 Ontario Dynamics

Let's Engineer Your Next
Competitive Advantage

Thank You