

In addition to the disruptive technologies in demand, the BIND 4.0 Corporate Clients have prioritized 12 Use Cases that address current Industry 4.0 Challenges. Apply if you have any of the technologies we seek, or solutions that address these Use Case challenges.

1 Traceability & Monitoring of product Life Cycle and Value Chain

Technical application of solutions for business monitoring and traceability:

- Physical traceability and manufacturing route, out-of-standard routes, linked with MES and ERP data, in order to optimize the implementation of new products/processes
- E2E product life cycle (Conception, design, production process, Packaging and distribution)
- Development of platforms for traceability and waste management with certification based on Mass Balance methodology.
- Workflows of services provided / Processes: Guarantee traceability of special processes that require personnel or machinery approvals
- Connectivity and integration of productive or business processes
- Process sensing for data collection for additional uses

2 Improving Environmental Impact, Energy Efficiency and Sustainability

Solutions to improve environmental impact, energy efficiency and sustainability (both of processes and business or final product) in various ways, including:

- Net emission reduction (decarbonization solutions, CO2 capture and storage, other emission compensation methodologies...)
- Review of production processes to increase its energy efficiency, including segmentation of consumption of different facilities to manage the global efficiency of industrial plants
- Solutions for energy accumulation and reuse
- Energy monitoring and traceability, including storage and reuse
- Emission measurement and reporting

3 Digitalization and Optimization of Internal Processes

Digitization and optimization of internal business processes:

- Digital systems for management, planning and decision support (demand forecasting, stock management, inventories, shifts, personnel, follow-ups...)
- Automate the supply matrix: Achieve agile and logical access to the information of material delivery from suppliers
- Automation of internal (business) processes through process robotics (Automation of purchasing, sales, invoicing, quality, reporting processes...)
- Review and improvement of the model of relations with the final customer (Segmentation, relation with products, etc.)

4 Mobility Solutions

Innovation in mobility, with solutions such as:

- Autonomous mobility
- Industrial electric mobility / Electrification of industrial fleets
- Automation and robotization in warehouse and logistics (EGV)
- Methodological and operational innovation for fleet management or automation.
- Energy storage / components, modules and systems for electric mobility

5 Maintenance of Production Means

Solutions to extend the useful life of productive means, with special emphasis on their monitoring for the application of passive, preventive, predictive, adaptive or evolutionary maintenance methodologies for both productive means and infrastructure.

Within these solutions, prioritize those for the detection of anomalies and the calculation of the RUL (Remaining Useful Life) for power electronics components or industrial machinery and equipment

6 Innovation in Industrial Processes, for the worker or end-user experience

Innovation in productive or business processes, affecting:

- Industrial processes (new materials, methodologies) and business processes (CRM)
- Additive manufacturing, including finishing/polishing technologies for metal components of 3D printing of complex morphology and very difficult access to interiors, unconventional or novel technologies.
- Digital innovation applied to the worker (PRL solutions, immersive technologies, HMI interfaces)
- Cable projection, routing: Projection on table or on vehicle of cable harnesses for assembly on bench or routing
- Assembly projection: Projection on vehicle of assemblies.
- In Mold Electronics (IME)

7 Advanced / Collaborative Robotics

Solutions related to robotics:

- Robotic innovation (advanced robotics)
- Collaborative robotics applications
- Specialized sensors for monitoring key instructions/characteristics in automated processes
- Sensors for tracking characteristics of metal parts
- Monitoring of elements of the robot itself

8 Customer lifecycle and funneling; improving user/ customer experience

Solutions to improve user experience, such as:

- Improvements in customer lifecycle tracking and modeling (innovation in funneling, marketing, positioning, conversion...)
- Business processes automation (BPA) related to customer service.

9 Hydrogen-based Solutions/ Electrolysis

New proposals based on Hydrogen (application of H₂ to productive processes) or its generation (Electrolysis)

10 Quality Control

Proposals for digitization, innovation or optimization of quality processes, including:

- Methodological review of resources or means used for the control of quality and related reporting.
- Monitoring of industrial processes for quality control and generation of recommendations.
- Control systems for machining tools (milling e.g.) of metal parts for machines (vision control systems among others)
- Automatic systems focused on defect detection in metal parts of complex geometry (very bright parts, small and non-repetitive defects)
- Surface quality control of sheet metal.
- Quality control of assembly.

11 Recycling & Circular Economy; Re-use of process residues and re-integration into the value chain

Review of the value chain to identify the waste generated and reuse it (recovery in previous stages), optimization of its recycling or valorization (reduction of costs and environmental impact).

Ex: Sensorization of buckets for oil status measurement and recovery of this from the production process for recycling and recovery.

12 Capturing, Analyzing and Valorising Biomarkers

Solutions and innovation in the business (processes, products and services) based on the capture, monitoring, analysis and valorisation of biomarkers.