SOUTHWEST RESEARCH INSTITUTE

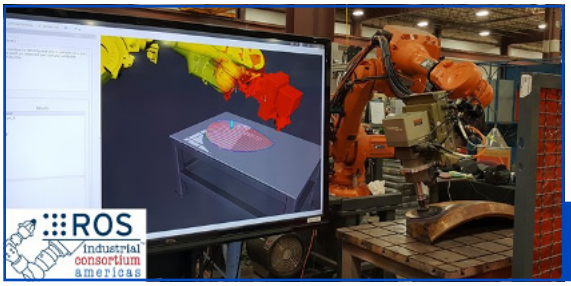
Advanced Robotics Solutions
for Industrial Applications

Southwest Research Institute® (SwRI®), a world leader in the field of robotics, has been developing and providing advanced manufacturing and robotic technologies for more than 35 years. SwRI's custom advanced integration solutions bridge the gap between technology readiness levels (TRLs) 3 and 7.

Capabilities

SwRI offers a wide range of capabilities for industrial robots, including:

- **Custom mobility solutions**
  - Confined space navigation and access to traditionally inaccessible locations due to:
    - Height
    - Lack of ground access
    - Harsh environmental conditions
  - Custom robotic design for varying scales:
    - Confined space
    - Large workspace
  - Real-time path planning
  - Autonomous mobile robots (AMRs)
- **Application-specific robotics and automation**
  - Perception for process feature detection
  - Precision metrology for large, open workspaces
  - Advanced sensing and instrumentation onboard autonomous platforms
  - Process development and intelligent manipulation
  - Class 1 Division 1 robots and equipment
- **Advanced integration services**
  - Delivery of turnkey systems
  - Maintenance contracts and on-site training
  - PLC (programmable logic controller) development
  - Integration of all common commercial automation products
- **Large-area integration and testing facilities**



Process path generation

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D024588

Mobile robotic coating removal system, which won an R&D100 award in 2020

Applications

Some applications of SwRI's robotic solutions include:

- Painting/coating/depainting for numerous applications:
  - Gantry-based or mobile
  - Known or unknown geometries
  - Laser technology for selective stripping
- Inspection/machining/material-handling robots with mobile bases
- Path planning for blending and machining

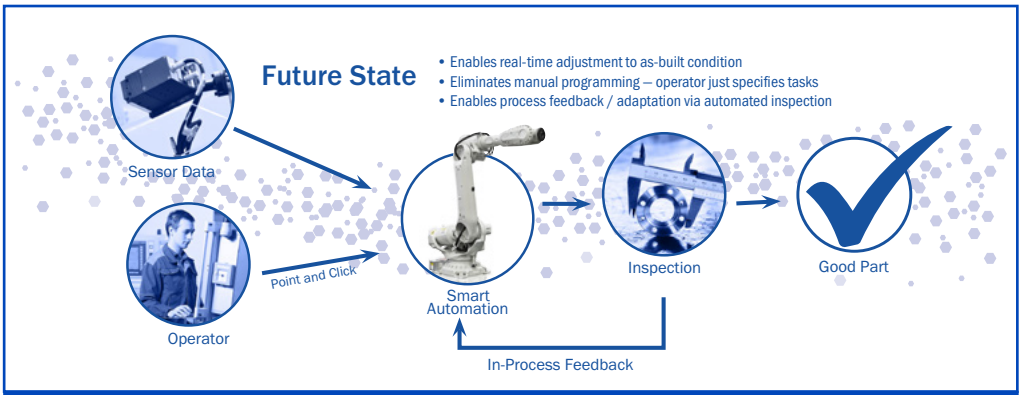
Additional Services

As an independent, nonprofit institution, SwRI also provides unbiased, third-party input on:

- Opportunities for process enhancement through automation
- Return on investment investigations and calculations for process automation
- Services not restricted to a specific commercial equipment brand

SwRI-developed gantry robots for depaint

Paint booth installation at Red River Army Depot



Scan-N-Plan approach for intelligent sanding process

21,000 ft² open workspace with 100-ton crane

We welcome your inquiries.

For more information, please contact:

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Southwest Research Institute

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