SOUTHWEST RESEARCH INSTITUTE

Naval Robotics & Automation

PROBLEM STATEMENT

Lack of adaptable automation solutions

The shipbuilding industry lacks versatile robotics and automation solutions that enhance workforce capabilities and meet growing operational demands. Challenges:

Intensive Work: Complex tasks in hazardous spaces

Workforce: Declining numbers/skill, higher expectations

Variability: Changing ship conditions/environments

Integration: New/evolving systems must interoperate

BENEFITS

Right-fit: Solutions that fit specific, yet flexible needs

Better Decisions: Made by actionable data

Scalable Transition: Effectiveness from concept to deployment

More Flexibility: Fail fast, pivot as needed, address high-mix environments

Greater Readiness: Improve workforce productivity and asset availability

Safer Work: Reduce dangerous/repetitive human tasks.

TECHNOLOGY SOLUTION

Intelligent, focused, vendor agnostic applied robotics R&D tailored to a problem set – not forcing a solution to a problem.

Co-design: Solutions designed & evolved with end users.

Modern Techniques: AI, autonomy, planning, adaptive process control, etc.

Integration: With human counterparts and workflows.

Risk Mitigation: Through prototyping, testing and evaluation in representative environments.

Application: Focus on macro-level application, e.g. grinding

