ebook

ANDREWS COOPER | MANUFACTURING AUTOMATION

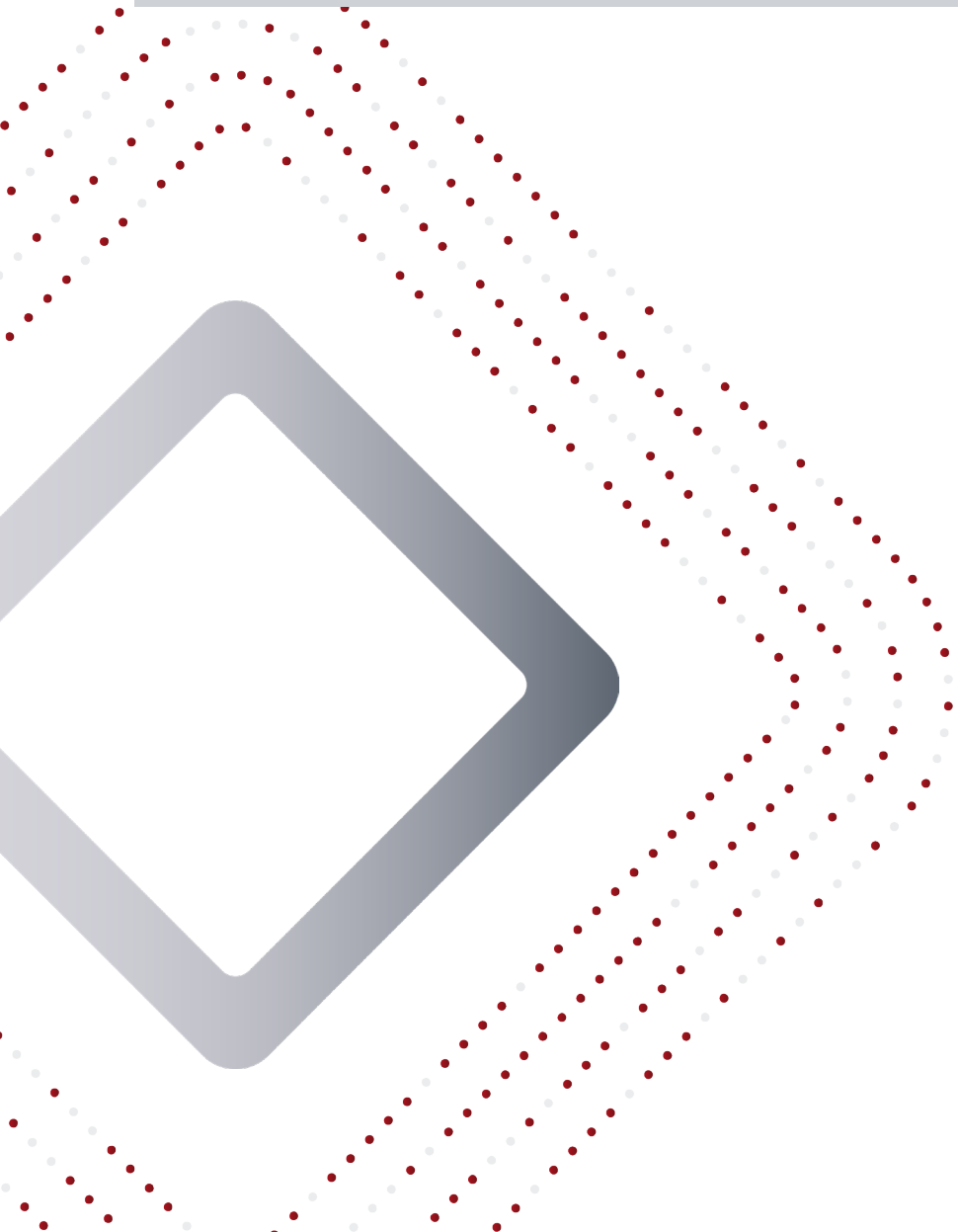
ANDREWS COOPER

Roadmapping for Strategic Automation Development

BOOK 5 OF 5

PERFECTING MATERIAL HANDLING & MOTION CONTROL

TECH TALKS™ EBOOK SERIES



www.Andrews-Cooper.com

ABOUT ANDREWS COOPER

Andrews Cooper (AC) excels at advanced engineering for emerging technologies, specializing in Research & Development, Product Development, Hardware Testing, and Manufacturing Automation. We cater to ambitious, tech-focused companies seeking to innovate and lead their industries. With expertise in multiple engineering disciplines, our engineers function as force multipliers, propelling the development of HardTech solutions. With a focus on rapid development using proven methodologies, we de-risk the development process and integrate validation and testing to ensure high-quality, manufacturable products.

ABOUT THIS EBOOK SERIES

Through this eBook series on Roadmapping for Strategic Automation Development, we describe how to create a successful automation plan by creating a well-defined blueprint at each stage of development and integration. Whether you're at the start of your automation journey or need help defining ROI to replace your current manual processes, AC builds a custom manufacturing automation roadmap tailored to your specific needs. If you don't have a complete specification, we work with your manufacturing and process engineers to understand and recommend the most beneficial processes for your custom automation.

Manufacturing Automation

Looking for a snapshot of our Manufacturing Automation services? Watch our 1-Minute Video.

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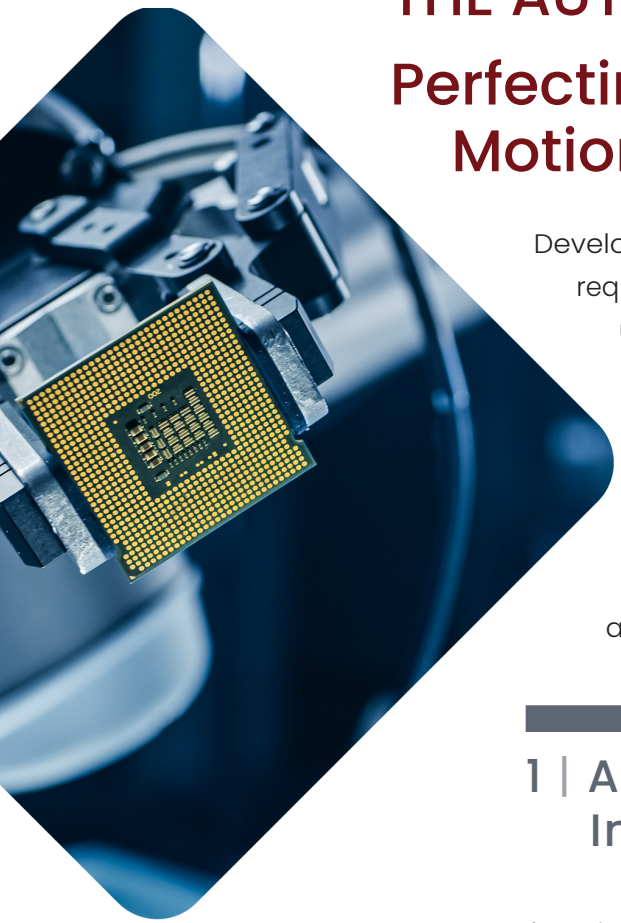


THE AUTOMATION ROADMAP:

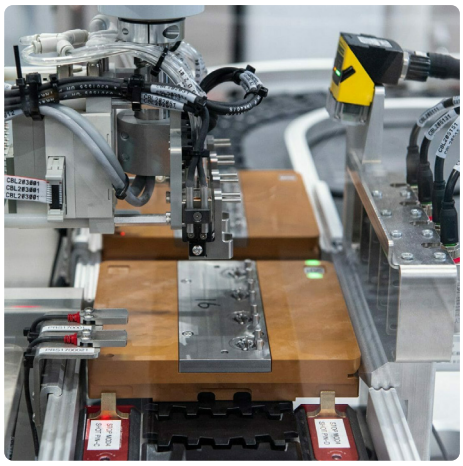
Perfecting Material Handling & Motion Control

Developers faced with complex manufacturing tasks require high-precision automation solutions. Achieving ultra-precise parts placement at varying scales and geometries necessitates integrating sophisticated technologies and advanced programming to handle complex materials accurately. An automation roadmap facilitates the development of custom material handling and motion control systems, ensuring the highest manufacturing accuracy, speed, and quality for complex parts and assemblies.

1 | Assess Needs & Identify Improvements

An automation roadmap includes an analysis of current material handling and motion control processes to identify areas for improvement, such as these considerations:

- **Assess Current Performance**: Thoroughly analyze current processes to identify inefficiencies and define specifications to improve precision handling and complex movement through new technologies and solutions.
- **Evaluate Technology Compatibility**: Assess the compatibility of potential systems with existing machinery and processes, ensuring the selected solutions can integrate seamlessly and offer flexibility to adapt to future technological advancements.

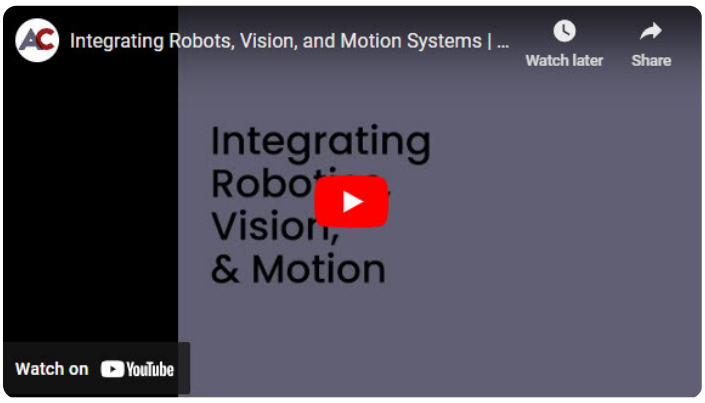


> Custom material handling and motion control systems ensure the highest manufacturing accuracy, speed, and quality for complex parts and assemblies.

2 | Improve Precision Performance & Mitigate Risks

Using defined specifications in the roadmap, select advanced material handling and motion control technologies that advanced and more precise performance, through the following improvements:

- **Improve Material Handling**: Select material handling solutions that deliver greater precision, speed, and accuracy for the desired manufacturing performance.
- **Improve Motion Control**: Determine motion control improvements for finer movement, greater accuracy, and higher repeatability systems to achieve ultra-precise coordinate performance with material handling systems.



Learn more precision material handling from AC Senior Applications Engineer, Jerry Entrikin. in our 1-Minute Video.

- **Include Vision-Guided Precision**: Enhance precision and efficiency by including vision-guided technologies to drive even greater system performance.
- **Integrate Technologies**: Integrate selected material handling and motion control systems, from hardware setup to software configuration, and system testing. Ensure they meet the required roadmap specifications.Plan for Integration: Ensure a detailed deployment plan to integrate seamlessly with existing systems and processes.

3 | Validate & Monitor Performance

The roadmap also includes a step-by-step plan for validating performance, ensuring optimal operation with minimal disruption, including steps to::

- **Validate Performance**: Complete a comprehensive validation of the integrated system, including stress testing and analysis, to ensure performance improvements.
- **Monitor Performance**: Evaluate system performance through real-time data analysis and regular maintenance, addressing issues promptly to maintain high performance.

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Custom Manufacturing Automation: CHARTING A COURSE FOR SUCCESS

To summarize, at AC, we prioritize early engagement to understand your automation needs, operational goals, and manufacturing processes. Working closely with you early and throughout the development process enables us to develop a comprehensive and well-planned roadmap, leading to rapid and successful automation implementation.

From a comprehensive analysis of existing machine control systems, we identify inefficiencies and areas for enhancement. By focusing on flexible sourcing of control hardware, we derisk the supply chain to minimize delays and stay on track. We leverage our expertise with diverse control systems to select technologies that meet the right performance and scalability requirements. By carefully planning and executing your automation roadmap, we ensure seamless integration of your machine controls system and provide access to support for future scaling.

Regardless of where you are in your product lifecycle, improve your speed to market with AC's engineering teams in Research & Development, Product Development, Hardware Testing, and Manufacturing Automation. Let us know how can we support your current needs and solve your ambitious challenges.

"Once the specification is established, it's time to work on selecting components and techniques that can meet or exceed the requirements. How will the system's requirements be met to introduce, move, and remove components? What motion techniques are required? What sensing techniques and control system best fits the requirements?"

-Jerry Entrikin
Senior Applications Engineer

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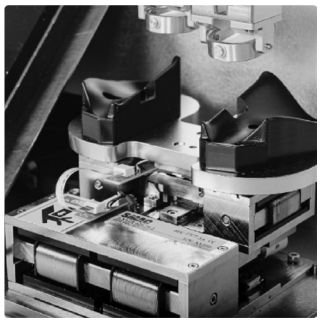
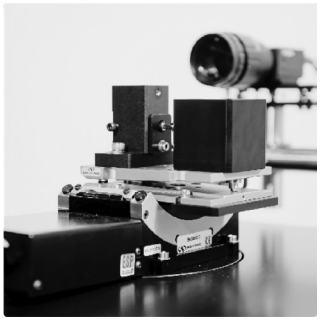
R&D Accelerator



Product Development

Hardware Testing



Manufacturing Automation

Integrated Engineering Teams

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