

WHY AEROSPACE MANUFACTURERS NEED AUTOMATION MORE THAN EVER

Concept
systems

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LATEST INFORMATION FOR INDUSTRY MANUFACTURERS

The American Aerospace & Defense Summit is one of our favorite events of the year. More than a networking opportunity, the conference allows us to engage in thought-provoking conversations with industry leaders.

Experts are always discussing technological innovation, cost mitigation, and growth opportunities for the aerospace industry. In recent years, the modernization spotlight has been on robotic automation as a powerful tool for airline manufacturers.

Robots can fit into hard-to-reach places.

Robots can work around the clock with sustained accuracy.

Robots can endure hazardous situations.

Robots can master new skills with a push of a button.

Robots have helped businesses increase safety, eliminate waste, prevent equipment collisions, and bolster productivity.

All in all, automation solutions decrease overhead and increase profits. Plant modernization combines leading technology with strategic processes, so factories have the potential to have peak production output, repeatable every day of the week.

From fabrication to assembly and delivery, it is estimated that nearly two-thirds of manufacturing activities have the potential to be automated, opening up opportunities for skilled workers to tackle the real work of growing businesses from the inside out.

This digitization of manufacturing is pivotal: manufacturers are implementing plant modernization practices to keep up with what is being called Industry 4.0. Data and machine learning are the force behind the fourth industrial revolution.

Forbes says, “As Industry 4.0 unfolds, computers are connected and communicate with one another to ultimately make decisions without human involvement... As a result of the support of smart machines that keep getting smarter as they get access to more data, our factories will become more efficient and productive and less wasteful.”

For these reasons and more, Aerospace manufacturers especially are adopting cutting-edge automation technologies to improve efficiency. In 2012, a U.S. Congressional Research Service report found that over the last decade, aerospace manufacturing output increased by over 20% while other industries decreased overall.

With large, expensive parts and complex floor operations, it's no surprise the airline industry is leading the way for plant modernization.

The cost of damage and downtime is just too high for factories to absorb. When production standards are on the line, Concept understands the value of delicacy - even in a rough factory environment.

One of our clients, a commercial airline manufacturer, came to us needing an automation overhaul of their painting process.

Their day-to-day operation was directly slowing down output.

The airline factory's first pain point: the painting platforms were moved manually by operators each time. Additionally, their provincial visualization software wasn't performing as expected. It only sometimes prevented users from hitting planes with the painting platforms. Our client wanted a system that was 100 percent effective.

Concept fused together various existing technologies and created a custom collision avoidance solution. The smart software uses data to visualize the work cell and moving machines.

When businesses let robots make complex decisions, ineffective processes are transformed into reliably seamless systems.

Plant modernization allows companies to push the envelope without pushing the limits of business operations. Whether the obstacle is aging machinery, limited floor space, or finite man hours, automation solutions bring businesses into the future so they can exceed production benchmarks.

Modernization begins with a strategic automation roadmap.

To create an automation roadmap, it's important that decision-makers know their operation inside and out. With an understanding of business assets and threats, create a 3 - 5 year plan. This roadmap should consider the production holistically, so when each technology is integrated, the plant moves forward seamlessly.

Developing an automation roadmap will help factories:

- Prioritize upgrades in phases from immediate pain points to a plant-wide overhaul
- Gain process reliability and reduce unexpected downtime
- Know the current state of equipment and prepare for failure, replacement, or a retrofit

Plant modernization includes the entire gamut of emerging technologies being designed for manufacturers. Don't get left in the dust as more and more manufacturers phase into Industry 4.0. Here are some ways Concept helps manufacturers stay ahead of the curve:

What Is A MAC?

A Main Automation Contractor has extensive technical knowledge and takes the lead on complex automation projects.

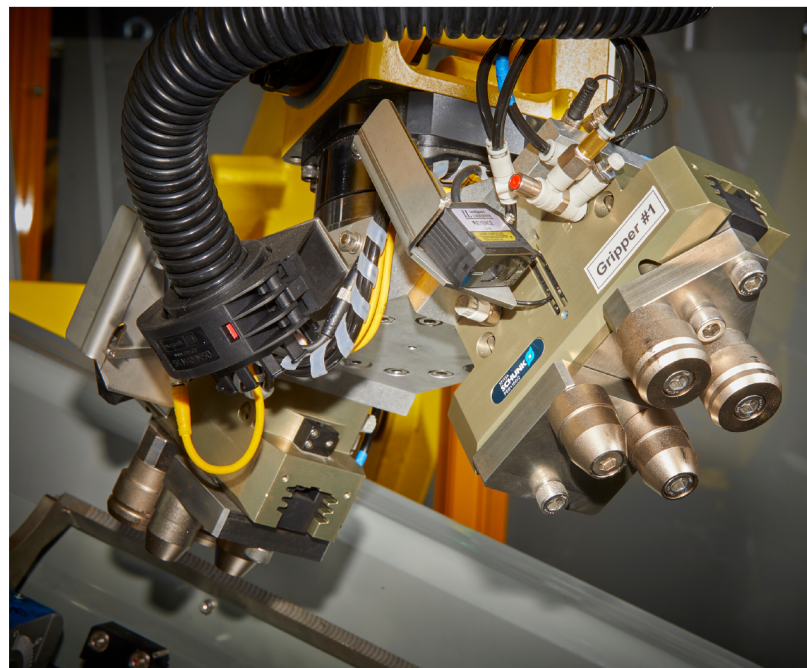
Working side-by-side with business owners and in-house engineers, the MAC asks critical "what if" questions to create optimal custom control systems. They are also responsible for keeping projects on track, overseeing everything from design, OEM specs, supervision, implementation, acceptance testing, and training.

Using the MAC partnership model, one of our clients launched a new facility with a custom PlantPax controls platform. Because training was completed in advance of acceptance testing and Concept's expert engineers had a thorough understanding of the PlantPax simulation tools, the startup and commissioning time was cut in half.

With a roadmap from the Main Automation Contractor, our client is on track to standardize controls across all their facilities.

Why Get A Controls Upgrade?

Stand-alone solutions aren't common place anymore, because when legacy systems become obsolete, manufacturers are forced to upgrade the entire system all at once.

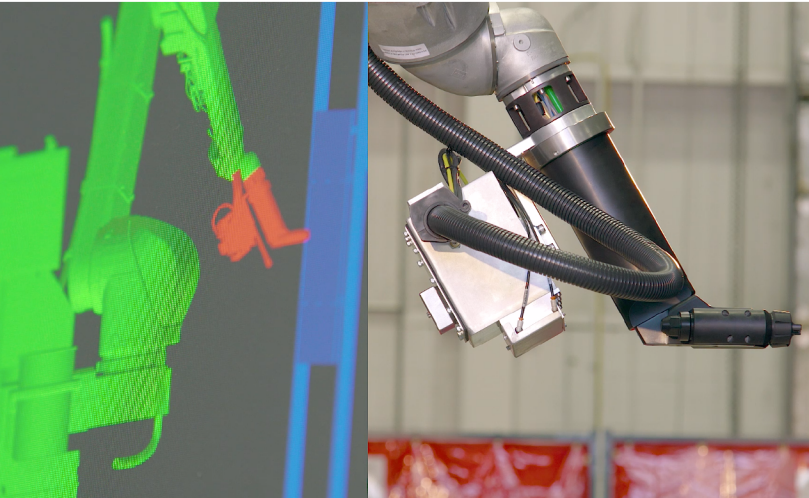


However, the benefits of a full upgrade are second to none.

A controls upgrade gives equipment the capability of talking to each other, transforming a disparate system into one where all machines work together as a single unit.

With a new PLC, manufacturers can tap into improved functionality. New processes can help conserve energy and simplify sequencing. And replacing an HMI can revolutionize communication, giving operators central access to data on temperature, materials, equipment status, and more.

Today, a controls upgrade means desktop and mobile capabilities. Time and distance won't stop plant leaders from achieving production goals.



Who Needs A Retrofit?

When outdated machines are causing unexpected downtime and hurting production goals, it's time to get serious about a fix.

Auction sites like eBay offer manufacturers a way to order replacement parts that may not be available otherwise. But for machines older than a college graduate, these parts may be triple their original cost or no longer exist. Business owners who've completed an automation roadmap, can retrofit trusted equipment before it's too late.

There are so many software solutions available to retrofit older systems. Machine monitoring comes with an array of process benefits:

- Real-time reporting eliminates stresses of reacting to problems
 - Universal dashboard ensures all team members have access to key information A
 - Automated alerts facilitate immediate responses from supervisory personnel
- Intelligent machines change the game for business owners serious about competing in the global market.

At Concept Systems, we're committed to making investment dollars go the extra mile. Our expert engineers design custom automation solutions to address specific operation needs. Using the foundation of our proven project methodology, Concept upgrades are finished on time, in budget, and with as little downtime as possible.

From kick-off to testing and integration, we work with our clients each step of the way.

It's time to modernize your enterprise. Start here.

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