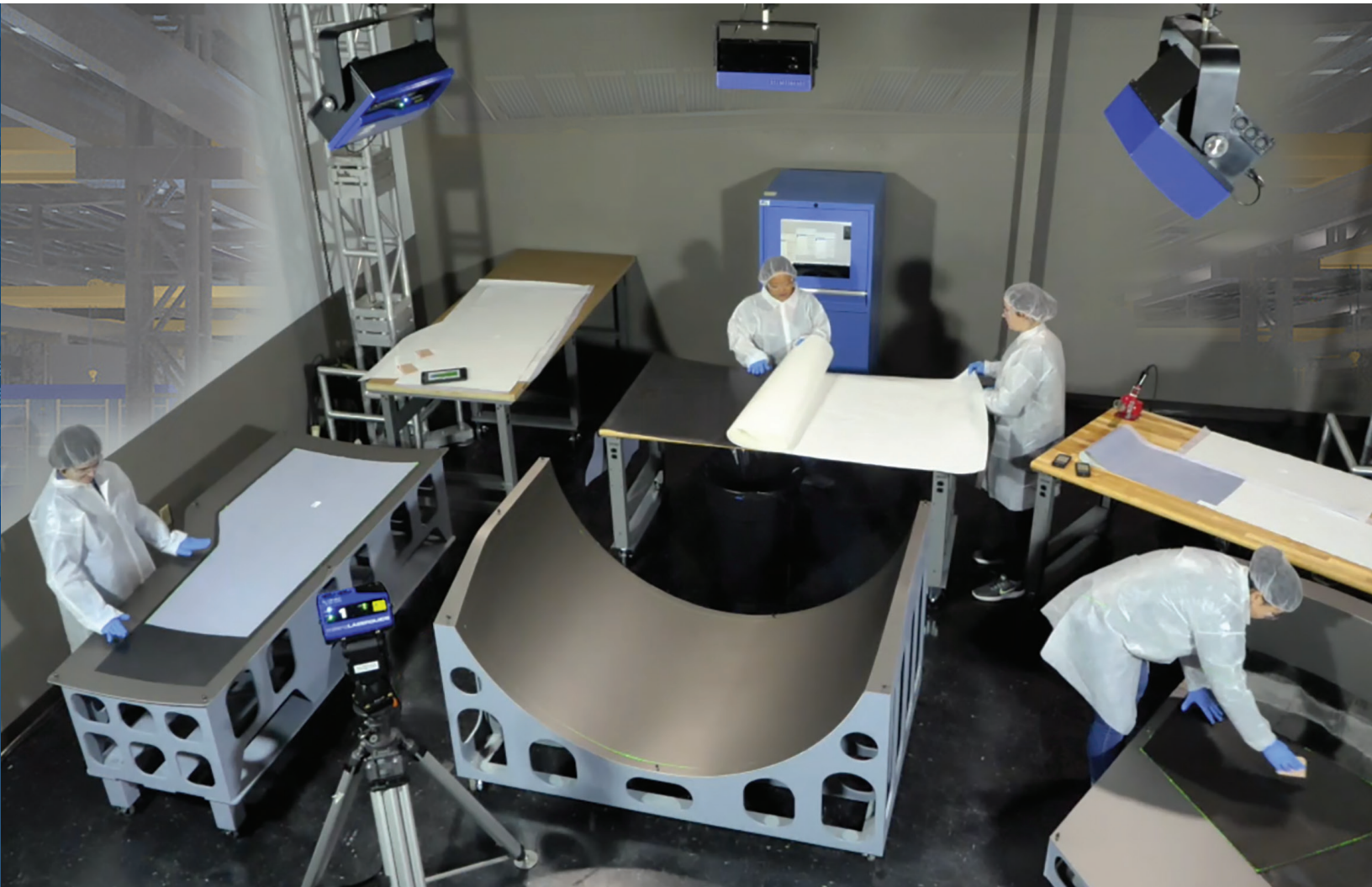




Accelerating Quality Manufacturing

Digital Quality Management Tools for the Shop Floor



Industrial Laser Projection

Mobile Process Control

3D Automatic Inspection

Digital Thread Population

aligned-vision.com



Unleashing the Power and Agility of the Digital Factory

Enabling Technologies and Expert Support

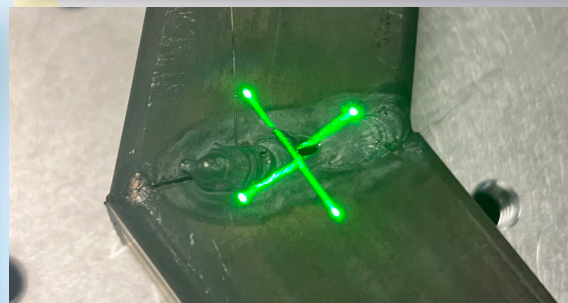
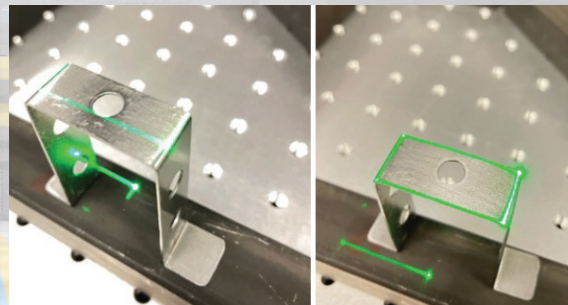
Reap immediate returns and future value from your digital investments

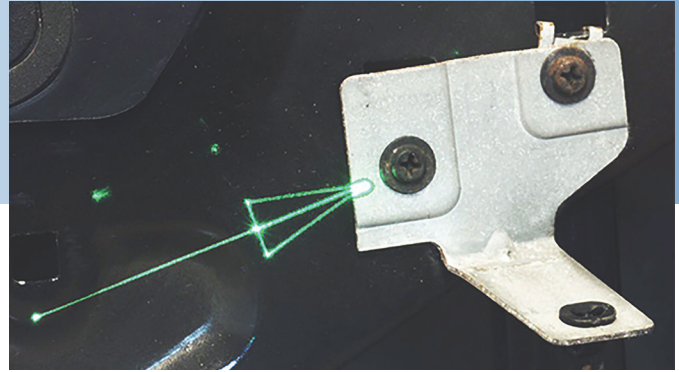
Digital quality management tools allow you to build what you design and verify what you build – automatically. Even better, they allow you to accelerate quality manufacturing operations without making huge capital investments for faraway payoffs. A stepwise path into the digital manufacturing future is already paying dividends for Aligned Vision customers.

Our customers enjoy

- Lowest cost, highest performance laser and vision systems
- Greatest savings in operating costs, including minimized scrap and rework
- Highest product quality to consistently meet customer requirements
- Full scalability and extensibility into today's manufacturing digitalization platforms

As you grow your digital manufacturing ecosystem, Aligned Vision technologies are integration-ready to grow with you. You reap immediate out-of-the-box standalone benefits by using our systems as digital point solutions, which import design and control data from and export as-built data to your enterprise systems. When you are ready, our systems support integration with your automated manufacturing technology controller. Or fully integrate our systems with your enterprise systems to perform critical data delivery, generation and collection within a holistic quality management solution.





Verify your in-process product quality in real time

Automatic inspection generates actionable as-built data

Major digital systems providers are creating the paths for closed-loop manufacturing that offer a common platform for as-designed, as-planned and as-built data. LASERVISION generates vital as-built data that is fed back to design and engineering.

LASERVISION

Minimizes idle time and raises inspection quality

- Each inspection starts automatically when electronic work instructions reach an inspection step
- No wait-time for inspector: inspection is conducted in seconds with no operator intervention

Corrects errors when rework costs the least

- Inspection verifies attributes in real time, and flags FOD, misaligned materials or other flaws for immediate correction
- Rework and scrapping of costly components is markedly reduced

Automatically populates electronic documentation and generates the as-built digital twin

- Calibrated images of every surface are captured and saved as part of each component's as-built digital twin
- Documentation includes any nonconformances and corrective actions, and enables direct comparisons between as-designed and as-built attributes

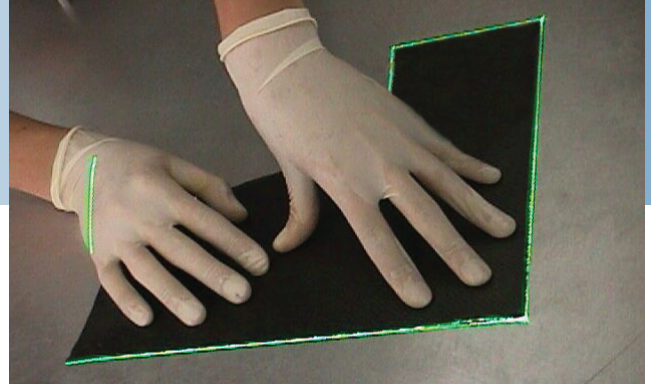
Enables continuous process and product improvement

- As-built digital twin comprises manufacturing intelligence that feeds deep learning and closed-loop manufacturing improvements
- Uncertainty is quantified, enabling tighter allowables and less overdesign



"Our automated inspection system was really an enabling technology for this next-generation wing."

– Todd Rudberg, Electroimpact



Perform the Fastest, Most Accurate Builds

Laser projection directly communicates design intent to the manufacturing floor

Or as we like to say, *our light brings your CAD into the real world*. LASERGUIDE automatically delivers your design data to the manufacturing floor. The system imports information from the bill of materials (BOM) and bill of process (BOP). Then it creates highly accurate, clear 3D projections onto tools and works-in-progress (WIPs) to guide manual operations.

LASERGUIDE²

Boosts productivity and enhances operator efficiency

- Easy-to-use multitasking system projects up to 4 jobs, keeping 4 teams adding value
- Automatic alignment and continuous checks eliminate operator setup tasks
- Highly reliable projectors keep operators adding value instead of maintaining the system

Achieves the lowest total cost of ownership

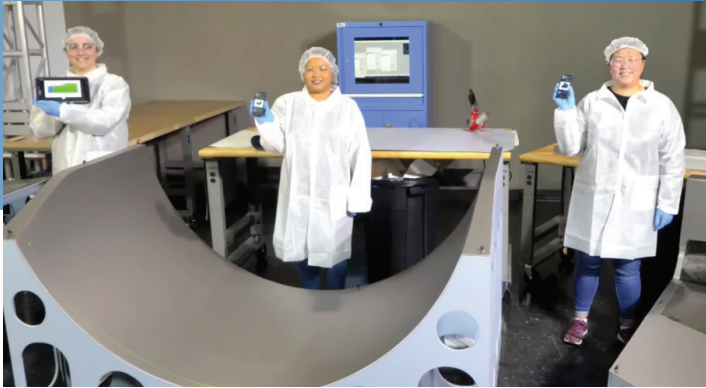
- Fewer projectors, controllers, seats of software than with any other laser system
- No annual fees, free lifetime email/phone support and superior customer service

Select laser projectors tailored to your specific needs

- The only complete portfolio of projectors in the industry, from extended long throw (up to 50 ft) to confined spaces (MicroLASERGUIDE)
- Best-in-class laser projection accuracy and performance with any LASERGUIDE model



“When integrating a new technology into a process, it’s sometimes hard to justify the startup cost...but with the outstanding customer support and responsiveness of the [Aligned Vision] team, we were able to be up and confidently running within a day.” — Russell Rowles, NASA Goddard



Equip Your Production Team for Greater Speed and Accuracy

Mobile process control literally in the palm of your operator's hand

To maximize time for value-added tasks, BUILDGUIDE digital process control suite streamlines or eliminates nonvalue-adding activities. Tapping CAD/CAM data, BUILDGUIDE makes it easy for your engineers to generate BOPs and electronic work instructions. Your operators directly access this guidance from familiar smart mobile devices. They stay at the tool, adding value to your works-in-progress.

BUILDGUIDE

Eliminates paper from the shop floor

- Electronic work instructions, including both projection and non-projection steps, replace paper work instructions
- Electronic sign-in and buyoff track team members working on each piece
- Automatic data collection and digital archiving eliminates paper traveler recording time and inaccuracies

Eliminates costly interaction with the control computer

- Operators advance to the next fabrication step without stepping away from the tool
- Eliminated step-away time accumulates quickly into real cycle time reductions

Makes work instructions and graphics fully accessible where they are needed

- Tablets and/or smartphones provide full operator control of the fabrication steps
- Projection system tracks production sequence so operators don't have to
- Mobile device guides operator through full step completion (e.g. full vacuum and time for debulks)

"The laser ply projection system reduced the lay-up production time by 80% over conventional methods." — *Steve Sucic, United Technologies*

"85% savings with LASERGUIDE." — *Danielle Fernholz, General Dynamics*





Enabling Faster, Smarter, More Accurate Manufacturing



Technological collaboration with our customers has always characterized the Aligned Vision business model, and it characterizes every Aligned Vision product, feature and advancement.

We partner with our customers to:

INVESTIGATE

problems-turned-opportunities to reduce operating costs while raising product quality

INNOVATE

to maximize the manufacturing benefits and payoffs of our solutions

EMPOWER

our customers to make extraordinary leaps forward, often yielding improvements of 80% or more in manufacturing productivity and performance

Aligned Vision continues to innovate and extend the reach of our technologies through the entire manufacturing process.

We back our products and solutions with superior customer service:

- Immediate technical support
- Unlimited free phone/email support
- Rapid application development enabled by artificial intelligence
- No annual fees

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2020 Excellence in Composites Manufacturing Award Winner