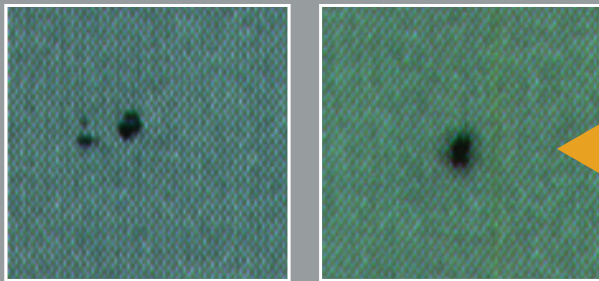


## Fewer defects. Faster lines. No rip and replace. Here's how.

Although Sage Automotive Interiors has had a machine vision system in place for years, they had a long-standing problem: The system consistently struggled to tell the difference between flock (lint) and stains on Sage's fabric rolls, and of all the defects that the system identified, more than a third were not actually defects at all.



*One of these images shows flock, and the other a stain. Can you tell them apart? Machine vision couldn't in any reliable way.*

Indeed, the problem was so consistent that multiple personnel were placed at the end of the line so that true defects could be marked by hand. In order to allow for this reinspection, however, the lines were being slowed down – in some cases to as slow as 50% of capacity. Because of slowed production and the multiple

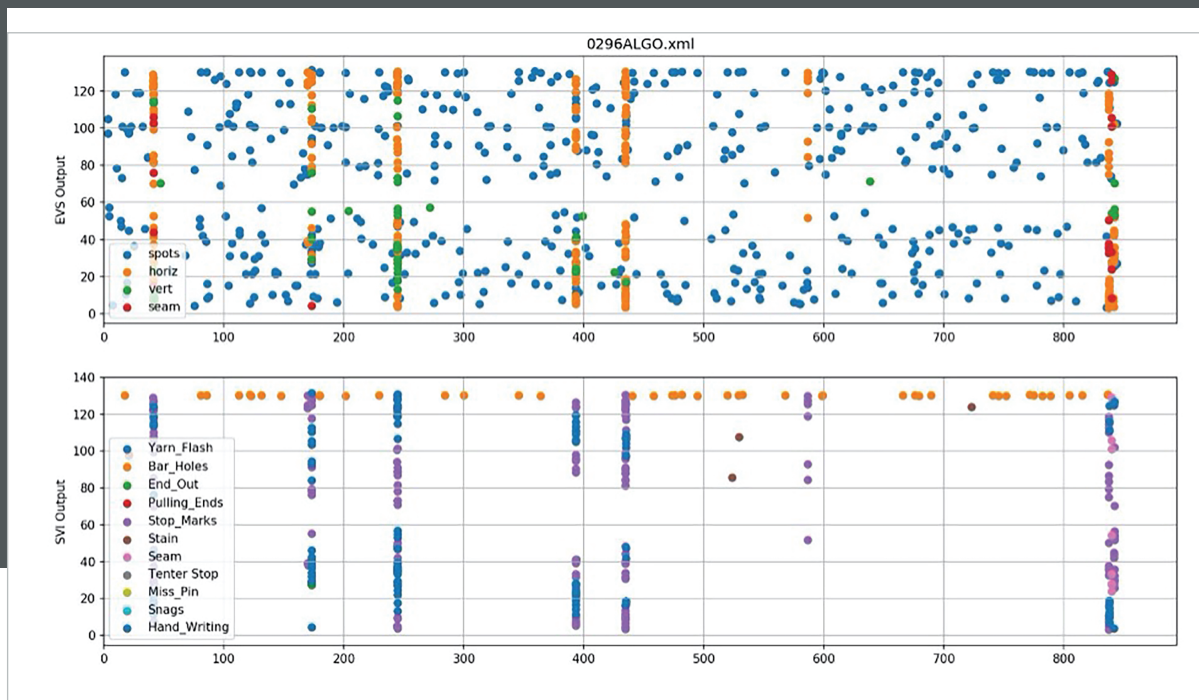
human inspectors required, the Total Cost of Quality was extraordinarily high.

That's how things stood when Mariner's Spyglass Visual Inspection (SVI) solution entered the picture (pun intended!) SVI was able to quickly and dramatically improve the defect detection – and here's how.

## Deep Learning for the Win

The Deep Learning AI that powers SVI isn't constrained by the programmatic, contrast-based defect detection methods used by traditional machine vision systems.

Instead, it's trained much like you'd train a human inspector. In the flock and stain images, notice how the edges of the stain are fuzzy and ultimately blend into the fabric, while the flock is hard-edged. And while training a human inspector would be a little more involved than that, that is essentially how Deep Learning models are trained, too: By showing it images of things that matter, and also images of things to ignore.



The top map plots all of the “defects” identified by the existing machine vision system on a half-mile-long fabric roll. The bottom map plots the actual defects as seen by SVI. Also note that SVI is aware of far more defect types than the machine vision system on its own.

It really is that simple. If your inspectors can differentiate defects from non-defects in images of your product, we can train a model to perform as accurately as your best inspector on their best day. And even better, the Deep Learning models in SVI are available 24x7 – and can work much faster than can humans.

## Results that Matter

Indeed, when we put Spyglass Visual Inspection behind their existing machine vision systems, Sage was able to redeploy four human inspectors per shift to higher-value activities AND double their line speeds. That's a 100% increase in production, achieved along with an

estimated savings of over \$200,000 in annual labor costs. And that maps to huge ROI no matter how you look at it.

Learn more. Email [sales@mariner-usa.com](mailto:sales@mariner-usa.com) or call (704) 540-9500.