

Intelligent Shelf Compliance Solution Minimizes Inventory Distortion

The solution enables retailers to ensure their shelves are stocked properly with less effort.

How do you make sure all your packaged goods are available on shelves, are in the right locations, and have the correct product orientation and number of facings? Planogram and promotional display models show where products should be placed for maximum sales, but verifying that products on shelves match planograms is a very laborious, time consuming and expensive process, and consequently, is not performed frequently. Automating this task, researchers at Carnegie Mellon (CMU) developed a shelf compliance solution, called AndyVision*, that harnesses the latest digital image recognition technology to ensure product placement on store shelves fits planogram models. With the solution, retailers can minimize inventory distortion, defined as the absolute value of the sum of out-of-stocks and overstocks, which can lead to lost sales (out-of-stock) and discounting (overstocks).



AndyVision* Robot (left)

According to Professor Narasimhan at CMU, AndyVision demonstrates how a computer-vision system could be an alternative to using wireless RFID tags to track inventory. The robot uses a combination of image processing algorithms running on a low power Intel® processor that is easier to implement than RFID tagging. This research project funded by Intel illustrates how cutting-edge technology can be applied in the future to the retail environment.

At this early stage, it's unclear how the problem of image collection will be solved in a typical retail setting. Although a mobile robot is highly effective at capturing images, it could be too invasive for shoppers, especially for stores open 24 hours a day. Another option is to attach cameras to a small number of shopping carts and collect images while customers push them through the store. It may also be possible to use existing surveillance cameras, or sensors mounted in ceilings, product shelves, or on cleaning equipment.

Automate planogram and promotional display monitoring

Cameras and image recognition technology, powered by an Intel® architecture processor, can be used to continuously perform shelf compliance without human intervention.

Provide timely compliance reports

Digital imaging-based compliance solutions (i.e., cloud-based) can deliver compliance updates to CPG brands on a daily basis, enabling them to verify they are getting the product placement they are paying for.

Learn more

To get more details about this solution, download a full length Solution Blueprint at <http://www.intel.com/content/www/us/en/retail/intelligent-shelf-compliance-solution-blueprint.html>.

For more information on intelligent retail solutions, visit Intel's Intelligent Retail Web site: intel.com/retailsolutions. Follow us on Twitter at @RetailerInsight.

Create and monitor store-specific planograms

Digital imaging solutions can process images from cameras to create a planogram that the solution can also continually monitor for compliance.

Identify new products or shelf configuration changes

Camera-based systems can alert retailers and CPG brands when a new product has been added to the shelf, prompting planogram changes. Likewise, the solution can inform retailers when a product has been allocated too much or too little shelf space.