**CHALLENGE:**

**Vision-system Bottleneck**

Pentamaster’s GURU (Glove Unique Reprocessing Unit) employs compute-intensive real-time vision processing to make safe reuse of latex gloves possible, ensuring they are sound, sanitizing them, and tracking their reuse. This not only eases the environmental impact, but reduces the cost for gloves borne by users. The original GURU system used four Industrial PCs (IPCs) with eight high-definition cameras that provided real-time vision analysis of the gloves. The GURU system faced several challenges:

- **Real-time speed and performance.** Vision processing demands the computing performance and speed to provide real-time capability without disrupting other parts of the system.
- **Camera support.** Four computers—each with their own power, cooling, and maintenance needs—supported the eight cameras used in the system.
- **Technology roadmap.** GURU’s underlying technology framework may not have been able to support newer technologies, which could impact the ability for the product to meet market demands and stay ahead of the competition.

**SOLUTION:**

**Pentamaster GURU Optimizes Vision Processing with Consolidation**

Pentamaster consolidated the IPCs in the GURU from four to two. Part of what made this possible was that the Intel® architecture-based IPCs were much more powerful than those they replaced, so they were able to provide full vision support for all eight HD cameras, including the processing requirements to perform complex algorithms on large image datasets. Not only did the system benefit from the exceptional processing speed of the Intel® Core™ i5 processors, they also delivered efficiency by using multiple cores and integrated graphics processing.

- **Fast vision processing.** Integrated graphics and fast multicore processing allows the GURU to perform real-time image-processing tasks 1.5X faster.
- **Energy efficiency.** A consolidated system delivers the same benefits of multiple systems, but with lower energy use and costs—a key interest to this environmentally conscious company.
- **Ready for the future.** Consolidated systems with Intel Core processors support new vision processing capabilities as they become available.
Pentamaster Wins with System Consolidation

System consolidation brings with it many benefits, from reducing capital outlay and footprint, to lowering operational expenses for power, cooling, management, and more. Intel® Core™ processors provide fast throughput in consolidated systems, with features like Intel® Hyper-Threading Technology¹ to allow each processor core to work on two tasks simultaneously, and Intel® Turbo Boost Technology to increase the processor speed when additional processing performance is required. Consolidating their GURU system with Intel Core processors allowed Pentamaster to increase not only the speed of their solution, but the processing performance. As a result, they doubled the number of cameras per computer in their consolidated solution, which not only results in a more efficient system, but costs less to operate.

Learn More

Contact your Intel sales representative for more information, and learn more about the Intel Industrial Solutions System Consolidation Series at intel.com/industrialconsolidation

Read the complete Pentamaster case study here.

“Previously, we needed four Industrial PCs (IPCs) to support the eight cameras in GURU. With the new processors, we only need two IPCs.”

Mr. You Chin Teik,
Product Development Manager, Pentamaster

RESULT:
A Greener, 50 Percent Faster, and More Competitive GURU

By consolidating the vision processing modules in the GURU with Intel® technology, Pentamaster was able to greatly improve the speed, energy efficiency, and manageability of the system. The overall inspection cycle of GURU improved to less than 2 seconds, boosting output from 600 gloves per hour to 900. Not only does this give them a competitive edge, it enables them to more easily evolve the system in the future.

¹. Intel® Turbo Boost Technology, Intel® Hyper-Threading Technology, and Intel® Virtualization Technology require a computer system with a processor, chipset, BIOS, enabling software and/or operating system, device drivers, and applications designed for these features. Performance will vary depending on your configuration. Contact your vendor for more information.

Copyright © 2014 Intel Corporation. All rights reserved. Intel and the Intel logo are trademarks of Intel Corporation in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.