



## Intelligent machines with no boundaries

In: Automation, Technology No Comments Views: 38 views



Following Rollon's suggestions, the Corenso machine is made with Compact Rail linear rails.

ZTI Smart Machines produces machines for automating and mechanizing the processing of extremely sensitive products, such as vegetables, fruit and flowers. They also offer solutions for the automotive and health care sectors. Their components have to be sensitive too – like the Compact Rail from the Rollon Group: compact size, fast (up to 9 m/s) and quiet, they are easy and inexpensive to mount on all surfaces, even unfinished surfaces, thanks to their capacity to deal with misalignment up to 4 mm.

The development of intelligent machines is a complex process that requires broad knowledge about mechanical engineering and software development, but also the intelligence to use the existing technologies in other sectors. The machines from the Dutch company ZTI process mainly fruit. They peel and cut mangoes in Mexico and kiwi in Qatar. But the company is receiving an increasing number of requests to solve complex problems in other sectors.

### The importance of automation

Hans Keijzer, Director of ZTI said: "Boundaries between the various sectors no longer exist. Robotic technologies and diagnostic imaging are an example of a logical integration of our intelligent machines for processing or of handling packaging. Still today, it is easy to find products being inserted into a machine manually or packaged by hand. This requires more personnel and continuous action, while using diagnostic imaging can enable a robot to do these things." An example of the absence of boundaries is a test instrument developed by ZTI for lifting systems made by Arjo Huntleigh, which makes caring for patients in hospitals or at home easier. "The client has developed a complete test procedure for its lifters, but the load was only tested as a static load, from a stopped position, and a maximum weight of 350 kg was used," said Keijzer. Later, ZTI developed a mobile testing device in the form of an actuator that can simulate a load as the lifter is moving. The Ambulante Tilhulp Tester (ATT) can be connected to a notebook and after having run the test, it produces a report. In this way, it is easy to calibrate equipment. "For the ATT, we apply knowledge from the automation industry to create an intelligent solution for the medical assistance sector. This is an authentic case of technology transfer," affirmed Hans Keijzer with satisfaction. There are also other examples: ZTI tests machines that must function in harsh environmental conditions, with solutions that are currently used in the aeronautical industry, and it experiments with machines in humid environments using technologies that were created for the naval sector.

Software as a support

To make sure that all these technologies from different sectors and all components from suppliers harmonize perfectly, ZTI uses CAD to do broad-scale 3D simulations. "In this way, we can know precisely if the machine fulfills client requirements perfectly and if other problems could emerge. We also want to decide which components are necessary to build the machine and which suppliers we need to contact," explained Keijzer. With these parameters in mind, ZTI develops one or more test plans. Do the components adapt perfectly? Is there a risk that something will jam or be damaged? ZTI wants to know the answers to these questions before starting production. "The challenge for companies, with the elimination of boundaries, is the fact it is necessary to acquire more knowledge than in the past to develop a machine. At ZTI, we are used to doing that, but we have also learned that it is extremely important to be able to count on your own suppliers. All of the technology and components must match perfectly, like in a puzzle, and the success of our work depends on the advice given by our suppliers about the quality and feasibility of our projects," said Keijzer. ZTI handles mainly design and development of machines, and works in close contact with external suppliers that make the components that it needs.

### Trust between partners

An example of this trusting relationship between ZTI and its suppliers is the collaboration with Rollon, the global provider of linear solutions and systems for industrial automation. Keijzer sustains that: "When we developed a dryer with rollers for our client, Corenso, we found ourselves facing a few challenges. Being able to consult with Rollon was a precious resource. The supplier had thought about how to build this system and which rails were best for those environmental conditions." Corenso had asked ZTI if they were able to design a machine that counted tubes, stacked them, dried them and put them in boxes. Data relating to tube diameter, stacking and length was inserted separately into the system so that the machine could adopt precisely the right mode for the tubes being treated. ZTI designed the machine with a fan that blows low humidity conditioned air onto the stack of tubes. The tubes can then be packaged immediately for shipment. Therefore, Corenso does not have to transport large quantities of tubes in a dryer any more. Moreover, the machine allows the company to save 36 hours, because the tubes no longer have to remain in the dryer. One of the design challenges was the way in which the tubes would fall from the moving conveyor belt and land in slightly different ways each time. One solution was to stop the machine and stack the tubes manually in the correct position, but that took too much time. Now, ZTI has a module that positions the tubes precisely one next to the other before stacking them. Another problem is the fact that a large quantity of dust is produced in environments where paper is handled. "Machine components, such as rails, must also be able to handle dust. We can't have the system locking up because the rails are dirty and dogged. Rollon advised us to use the Compact Rail products, which do not require maintenance," said Keijzer. This open rail can be cleaned easily and the rollers on the track are built to withstand dust and lubricants for their lifetime. "This is why this rail is ideal for dusty environments."



For more information:  
ROLLON INDIA Pvt. Ltd.  
Email: [info@rollonindia.in](mailto:info@rollonindia.in)  
Website: [www.rollonindia.in](http://www.rollonindia.in)

