Datalogic Automation fits the bill for Toyota – South Africa

Founded in 1961, Toyota-South Africa (S.A.) is the market leader for importing, assembling, manufacturing and marketing motor vehicles and motor vehicle parts. During 2000, Toyota sold 100,000 vehicles and had an annual turnover of $860 million.

Toyota-S.A. decided to strengthen their leadership position by implementing an Automatic Tracking System (ATS) in their manufacturing facility. The old Job Card system for capturing manufacturing information required too much effort and lacked real time information. Toyota needed real-time WIP information for the shop floor, stock control and financial management.

The Job Card systems of data tracking contained only the product build information needed by the assembly technician at a particular station. The system did not have the capacity for real-time data tracking. It could not be relied on for quick access to build process information, item location, build problems and failure analysis. Furthermore, vehicles on the assembly line could move no faster than the flow of the paperwork. Stock would be held in the product distribution yard for 3 days, due to manual paperwork processing, before it could be released. Needless to say, this method of tracking information was very slow, prone to error and lacked the capacity to offer any forward planning for future product builds. What Toyota S.A. realized was that it needed an ATS that could begin collecting data from the start of the production process through the various build processes and with the far reaching scope of tracking the vehicle along its distribution path throughout the country.

After reviewing the various ATS systems available to them, Toyota-S.A. quickly realized that the only logical method to achieve their data capture goals was to implement a Radio Frequency Identification (RFID) system. RFID offers capabilities that other tracking systems such as bar code fail to offer. RFID can survive the harsh conditions found in automotive build facilities (e.g. dirt, oil, extreme oven temperatures). Also, RFID tags do not require line-of-sight with their readers. This allows the RFID Tag to be placed in a variety of different locations on the product, offering a versatile solution.

Toyota-S.A. tested several RFID systems to determine which one offered the best solution. After testing several different systems, Toyota S.A. soon realized most of the systems either failed their application testing or exceeded the limits of their budget. The one system that both passed both Toyota S.A.'s rigorous testing and met their budget needs was based on Datalogic Automation RFID.

Datalogic Automation has a long-standing history with many of the leading Domestic and International automotive manufacturing companies. Datalogic Automation has the expertise within the automobile manufacturing industry to ensure a successful and cost-effective RFID solution. That is what Toyota-S.A. needed to move forward and ensure a successful application.

To fulfill their tracking requirements, Toyota installed fourteen of Datalogic Automation HMS820 Passive Reader/Writers, one MM80 MicroMux Bus module and five hundred of Datalogic Automation HMS150HT tags. The HMS820 units read and write information to the tags at each data transfer location. The MM80 provides the communication interface between the HMS820 Reader/Writers and the paint line network. And the HMS150HT Passive, High-Temperature Read/Write RFID tags are

mounted to the Auto Paint Shop Dollies and Hangers, providing a remote database at each dollie and hanger. Importantly, these particular tags are subjected to various de-greasing diptanks and water spray stations as part of the preparation for the paint station. Once in the oven, they are exposed to temperatures as high as 215&Mac176;C. The HMS150HT tags handle this environment effortlessly. Furthermore, the tags serve a dual purpose in Toyota's application. The tags enable Toyota to track the vehicles at all points during the painting process, thus fulfilling their real-time tracking needs, and they provide the capability to track the maintenance records of each dollie and hanger. This allows proper maintenance schedules for the dollies and hangers to be routinely followed, helping to alleviate any unnecessary downtime.

Johan Stoop – General Manager Toyota S.A. says "Datalogic Automation RFID solution is working great for us in the 'Paint Oven' application. We are currently implementing the second phase of the project, which entails tracking our vehicles from the 'Body and Assembly' through our distribution channels. We are very impressed with the capabilities of the Datalogic Automation product line and their flexibility to work with us to develop a solution that really works."