

The logo for GadgEon, with 'Gadg' in blue and 'Eon' in orange.

Engineering Smartness

AUTOMATION OF PRODUCTION LINE CHANGES

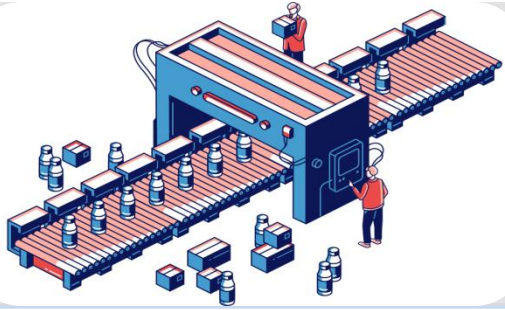
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Version 02





Automation of Production Line Changes



A leading manufacturer in FMCG sector was looking for a solution that improves efficiency in Production Line changes in the labelling process. Current manual process is time intensive and inefficient with heavy dependency on technician's skill and performance.

Solution Description

- Gadgeon retrofitted the existing manual readout (Scale) to a digital scale. These digital measurements will flow to an edge gateway (DelEdge™) via an aggregator.
- The DelEdge processed the data received and compared against reference values for bottle types. The results are used to adjust the positions in the scale as well to display the readout in a User friendly HMI for the Technician.
- Used industrial grade laser measurement sensor with an accuracy of $\pm 0.1\text{mm}$ to measure equipment positions.
- The collected data is further used for analytics and computation of Technician KPIs

Outcome and Benefits Delivered

- Digitized the mechanical labelling setup process using sensors. Technicians were able to visually monitor the status of the changes using a real time HMI, resulting in reduced setup time and improved overall efficiency.
- The data collected is used for analysing the trends and computing of Technician related KPIs.
- Overall we have delivered a **60%** reduction in the change-over setup time in the bottle labelling section



The Business Challenges of the Customer

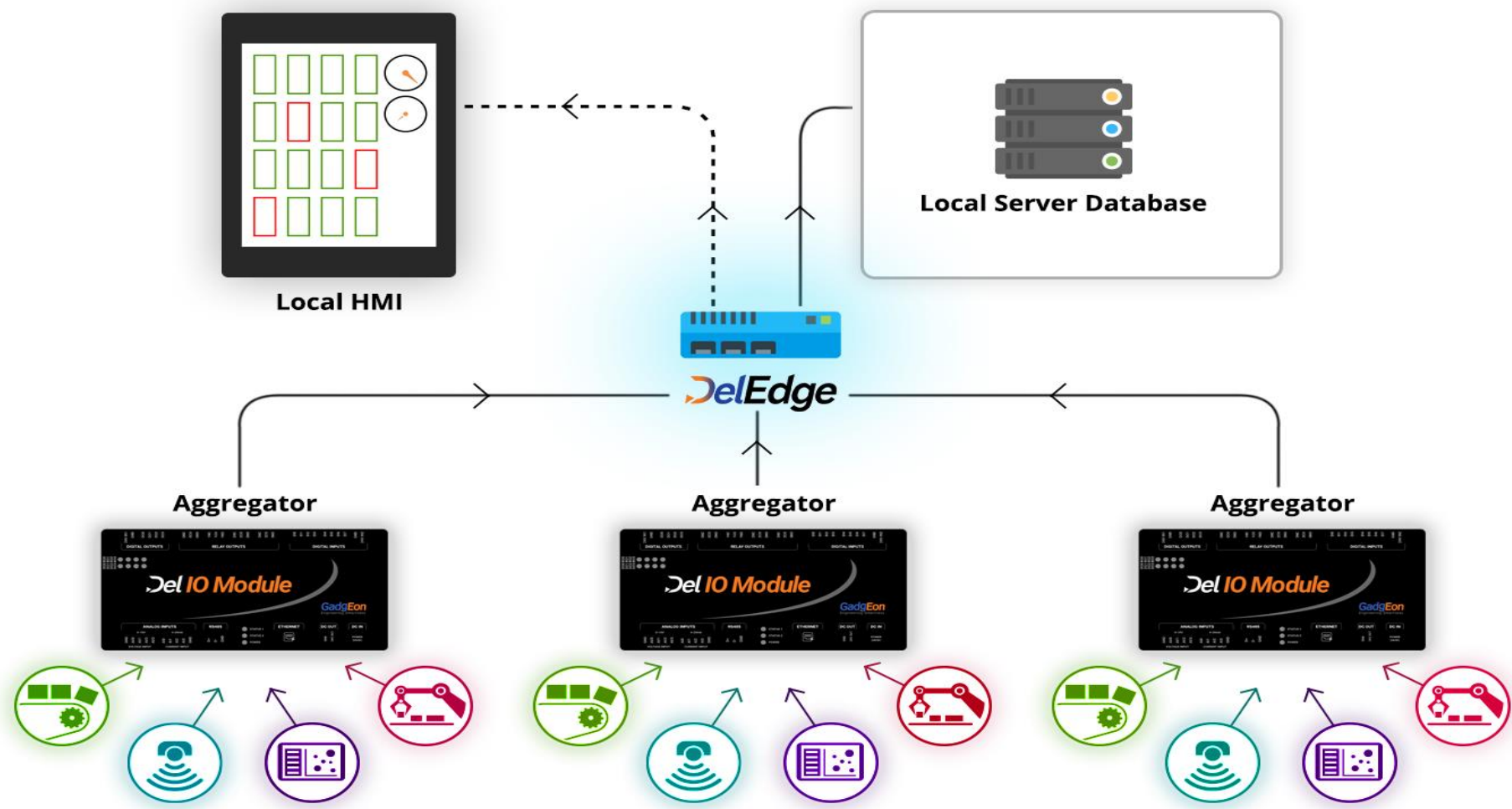
A bottle travels through different processing stages like Un-scrambler, Filler, Capper, Labeller, Bundler etc.

- Every time Technician has to manually adjust the setup with respect to different product lines.
- They have to change the components involved in the process for every bottle size.
- It takes roughly 90 minutes for a complete change-over and also heavily dependent on Technician's skill level and experience
- Currently do not have a mechanism to measure the performance parameters (KPI) of Technicians across work shifts



Our Solution - System / Architecture Description

- Gadgeon proposed its proprietary Delpheon platform for data aggregation and dashboarding
- Gadgeon worked with process team to identify the points which can be digitized to help the technicians
- Laser sensors were installed to measure the set up point and it was displayed using an intuitive dashboard
- The classification of the deviation were done (Green & Red) to display the severity and it enabled the technician to do immediate corrective action





The System Description

Gadgeon retrofitted the existing manual readout (Scale) into a digital scale. These digital measurements will flow to an Edge gateway (DelEdge™) via an aggregator. The DelEdge will perform the processing and will display the readout in a User friendly HMI screen.

Sensors

We have used industrial grade laser measurement sensor with an accuracy of $\pm 0.1\text{mm}$ to measure equipment positions. The sensors will be mounted at appropriate locations in the plant. The sensors constantly monitors the position and send the information to Aggregator.

Aggregator

The Aggregator will collect all the analog/digital output from the sensors and will convert to Modbus TCP protocol for Edge gateway. There may be more than one Aggregator depending on the location.

Edge Gateway (DelEdge)

DelEdge is a Linux based gateway software running on an Off the shelf hardware. DelEdge collects data from the sensors through the Modbus interface and stores in a local DB. The system will compare the received values against reference values based on the bottle type and the results will be displayed on the screen. The screen can be accessed using any standard browser from any of the devices in the factory network.

THANK YOU



For More Details, Let's Connect



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