

Smart Container: Ensuring Container Location, and Availability for Chemical Components in Semiconductor Fabrication

Panasonic's Logiscend system ensures on-time product delivery, reduces operator errors and container shrinkage through automated tracking and location services.

Business Case

EMD (Emanuel Merck, Darmstadt), a multinational pharmaceutical, chemical and life sciences company, utilizes more than 250,000 specialty, high value containers to manage chemicals and other materials utilized in a variety of manufacturing processes, including semiconductor fabrications.

These containers are filled with high value materials and shipped to their customers in a variety of global locations to utilize in manufacturing processes. Because of the high value (~\$500/each), specialty nature of the containers, once emptied, they are returned to the chemical company for re-use. In fact, in this instance many of the containers are owned by the customer, not the chemical company, so it is essential that the container state/location be tracked.

In most industries it is typical to see approximately 20% loss per year; in this case that cost would be extremely high to the company. **Issue #1 — Containers must be returned and cannot be lost or stolen.**

Due to the specialty nature of these containers, and their contents, it is critical that the right container be available at exactly the right time when it comes to processing and fulfillment. When a customer places an order — they are counting on on-time delivery — the containers must be available and ready to fill to meet customer demand consistently and reliably. With hazardous materials involved in the process, this also means that the container must have been inspected or serviced and is ready for use. **Issue #2 — Container location, availability and proof of certification must be ensured (globally/regionally).**



When processes are managed by paper-based systems, it is difficult to ensure accurate process records for auditing or even provide a level of predictive analytics to improve throughput or efficiencies. In addition, manual processes are always highly error prone due to the human element. In a company that deals with highly regulated, hazardous materials, it is critical that errors are minimized — particularly since most of their customers do supplier audits and require a container history. **Issue #3 — Quality control, audit trails and process visibility must be provided.**

Enter Panasonic & Logiscend Smart Container

Logiscend's Smart Container application was selected to help solve the tracking and management of these containers, along with providing process visibility and digitizing records by eliminating paper from the material flow management.

Logiscend connects directly with the company's SAP system to automate the tracking, status, location and availability of containers. When containers are returned, Logiscend receives a notification from SAP and the process tracking begins, through the clean, prep, fill, package and ultimately ship out. All of the process data collected by Logiscend is handed off to SAP for recording. This allows not only a digital trail for each container but also provides time stamps for ship/receive and inventory counts. As a Phase II of the implementation, Logiscend Enterprise will be added. Logiscend Enterprise collects key process data across all global locations to develop more predictive processes (i.e., how long a container is in maintenance, how many containers are at customer locations, when are they due back, etc.)

Some of the data collected includes:

- Process step tracking (ensuring quality, timely customer delivery & audit trail)
- Container state (where is it? empty, full, maintenance, available, shipped, etc.)
- Maintenance records & certifications
- Complete view of where all containers are located (data gathered and aggregated for all global locations)

This process has allowed the company to automate and digitize a process and its corresponding records that had historically been completely paper-based. Logiscend has transformed this process without changing it, making it simple and hands-free for operators and creating the required process records necessary for the business. The goal for this company is on-time delivery — reliability is key for their customers. Logiscend has provided the process visibility necessary to reduce lead times, and ultimately reduce inventory on-hand — reducing costs across the board. The system was started in four global locations, expanded to 20 locations by YE 2019.

System Components

Software

- Logiscend Smart Container
- Logiscend Enterprise

Hardware

- Passive RFID and 2D Barcode
- Handheld and Portal Readers

To learn more about our Smart Container solutions, contact us today!

For more information, please contact IIoT.sales@us.panasonic.com

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