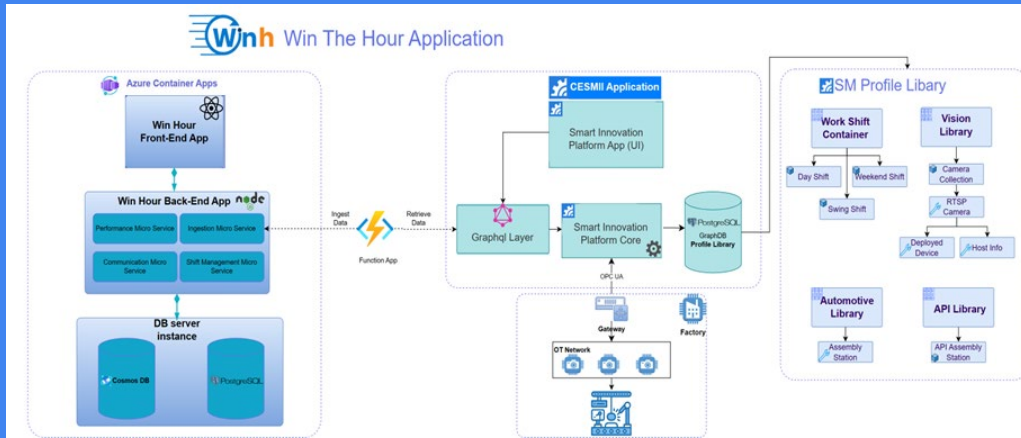


PROJECT CASE STUDY
 Innovation &
 Technology for
 Scaled Impact for
 Small & Midsize
 Enterprises



Real-time Process Monitoring Increases Productivity and Reduces Scrap

PROJECT LEAD

FullBore

PROJECT TEAM

N/A

PROJECT OBJECTIVE

Design and build a solution called "Win the Hour (WTH)" that enables Small & Midsize Enterprises to drive productivity improvements by monitoring and managing their daily productivity performance on an hourly basis.

[MORE ON CESMII.ORG](https://www.cesmii.org)

BENEFITS TO OUR NATION

By leveraging real-time production data monitoring and analytics, manufacturers can enhance production efficiency, minimize downtime, and optimize resource utilization in discrete parts manufacturing processes. This proactive approach enables better decision-making and process optimization, leading to increased productivity and reduced scrap. By investing in advanced technologies for data monitoring and management, American manufacturers will become more competitive in the global market. Ultimately, the implementation of these systems fosters a more agile, efficient, and sustainable manufacturing sector, contributing to economic growth and job creation across the nation.

BENEFITS TO INDUSTRY

Monitoring and managing discrete parts manufacturing production data presents invaluable advantages to manufacturers. Utilizing these real-time process monitoring and management tools enable proactive decision-making and process optimization, leading to enhanced production efficiency and improved resource allocation. Additionally, detailed production data facilitates continuous quality improvement initiatives that drive growth and profitability. Implementing advanced data monitoring and management tools will enable discrete parts manufacturers to bolster competitiveness and become leaders in their respective markets.

PROJECT DESCRIPTION

TECHNICAL APPROACH

The "Win the Hour" App will be augmented to include a new Smart Manufacturing profile for an assembly asset at the industrial partner site. The App will be built using a microservices architecture and integrated to the CESMII Smart Manufacturing Innovation Platform (SMIP). To develop the App, FullBore will leverage connectors in the edge layer of the CESMII SMIP to connect and ingest real-time data from the factory floor asset through the OEM platform and store the data in a time series database in the Smart Manufacturing Innovation Platform.

ACCOMPLISHMENTS

- Defined User Requirements.
- Defined Data Model/Data Map
- Developed Win the Hour Navigation Map
- Integrated Equipment Information Model into the CESMII SMIP
- Integrated Process Information Model into the CESMII SMIP
- Demonstrated Win the Hour Application functionality with test data
- Demonstrated Win the Hour Application functionality with Industrial Partner manufacturing facility real data

DELIVERABLES

- Delivered Complete Source Code Package
- Delivered Network Connectivity Schematics
- Delivered App Training Manual and Training Materials

REUSABLE OUTCOMES / SM MARKETPLACE

- Win the Hour App

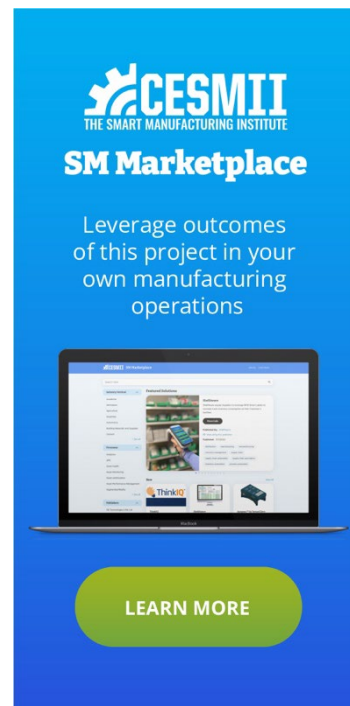
RESULTS

↑ 13.7%

A 13.7% increase in discrete part production translates to an annual savings of \$142,000 at the plastic injection molding SMM test site.

↓ 4%

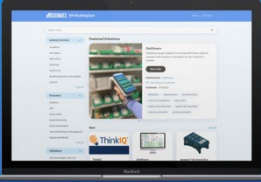
A 4% reduction in scrap translates to an annual savings of \$23,800 at the plastic injection molding SMM test site.



CESMII
THE SMART MANUFACTURING INSTITUTE

SM Marketplace

Leverage outcomes of this project in your own manufacturing operations



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PROJECT DETAIL

Budget Period: BP5
Submission Date: 4/03/2024
Sub-Award (contract) Number:
4550 G IA089
SOPO: 2357

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