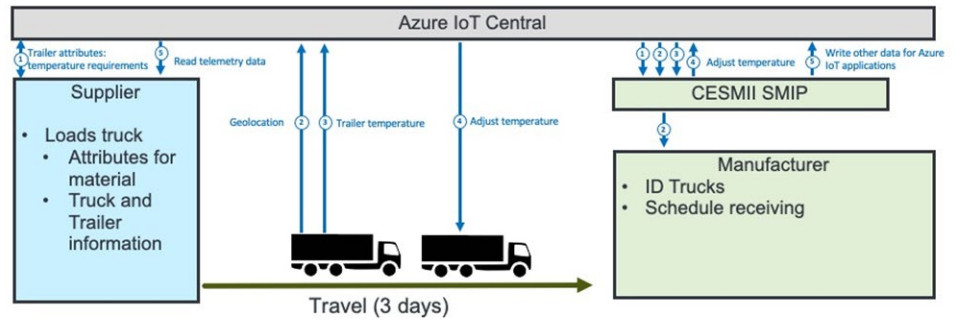


PROJECT CASE STUDY
Azure IoT Bridge

SMIP Azure IoT Bridge Use Case Example



PROJECT LEAD

ThinkIQ

PROJECT TEAM

N/A

PROJECT OBJECTIVE

Improve interoperability of the SMIP through integration with Azure IoT capabilities. This will enable users of the SMIP Azure IoT Bridge to:

- Manage connectivity to Azure IoT Central
- Read and write Device Templates
- Read and write Devices
- Read and write Continuous Data

CESMII Builds Bridge Between the Smart Manufacturing Innovation Platform and Microsoft Azure IoT

BENEFITS TO OUR NATION

Enabling broader access to the CESMII Smart Manufacturing Innovation Platform and Microsoft Azure IoT will make these powerful automation technologies available to manufacturers of all sizes, across all industries. By implementing smart manufacturing tools, US manufacturers will experience productivity gains, reduced production times, and higher profitability.

BENEFITS TO INDUSTRY

CESMII SMIP users will be able to extend their applications to include all the services offered by Azure IoT Central. Combining IT, IoT, and OT data will allow users to extract more value from all types of data in the form of common, contextualized data.

Facilitating compatibility between the CESMII SMIP and Azure IoT will make both technologies more accessible to manufacturers, which will improve manufacturing productivity, reduce waste, and drive growth in the industry.

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

PROJECT DESCRIPTION

TECHNICAL APPROACH

SMIP to Azure IoT Bridge implementation:

- Connecting SMIP to Azure IoT through the Azure IoT Central API.
- The SMIP Information Model Editor and Model Storage will be enhanced to configure integration with Azure IoT Central.
- Azure IoT Devices integrated with the SMIP will get access to all the relevant services offered by the SMIP such as the SMIP Historian and the scripting environment.

ACCOMPLISHMENTS

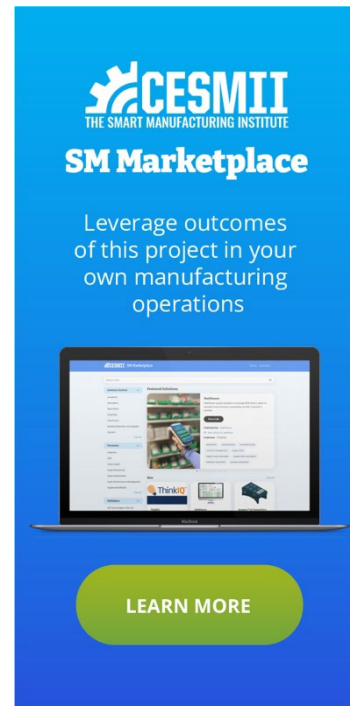
- Developed read device templates from Azure IoT Central (including components)
- Developed read device instances from Azure IoT Central associated with device templates
- Added support for states and geolocation to the model
- Developed ability to connect to multiple Azure IoT Central applications simultaneously
- Developed API used to write the model to Azure IoT Central

DELIVERABLES

- Completed Requirements Document for the Bridge between Smart Manufacturing Innovation Platform (SMIP) and Azure IoT Central
- Developed Read/Write Functionality to pass data between SMIP and Azure IoT Central
- Developed Software Documentation
- Delivered Source Code
- Training Video

REUSABLE OUTCOMES / SM MARKETPLACE

- Bridge to integrate Azure IoT with the CESMII Smart Manufacturing Innovation Platform (SMIP)



The banner features the CESMII logo at the top, which includes a gear icon and the text 'CESMII THE SMART MANUFACTURING INSTITUTE'. Below the logo is the text 'SM Marketplace'. A central image shows a laptop displaying a web interface with various charts and data. At the bottom of the banner is a green rounded rectangle with the text 'LEARN MORE'.

CESMII
THE SMART MANUFACTURING INSTITUTE

SM Marketplace

Leverage outcomes of this project in your own manufacturing operations

LEARN MORE

PROJECT DETAIL

Budget Period: BP3 - BP4
Submission Date: 11/1/2022
Sub-Award (contract) Number:
4550 G YA225
SOPO: 2330

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