# Connected Factory Worker Hackathon

16. Jan 2023

The Connected Factory Worker application is a set of application used by factory operator addressing specific use cases within a food and/or beverage production to simplify their daily job to check, track and review standard operation using mobile device. It covers center lining, clean, lubrication and inspection, tagging, guiding of machine center operation activities.

We started our journey with an envisioning workshop to identify and justify the business value of potential use cases. Within a architecture design workshop we design a target architecture with a common data model and user experience framework. Within the 5 day Hackathon we splatted the team into four teams to cover one use case during the daily sprints.

## Connected Factory Worker Overview

During the envisioning session we identified four primary use cases:

* **Centerlining** - referred to as Operation Envelopes or run-to-target, is a methodology used in manufacturing and is often used in conjunction with Six Sigma or total productive maintenance. It is a practice that aims to reduce product and process variability while increasing machine efficiency.
* **Clean-Inspect-Lubricate (CIL)** - Through daily inspections, cleaning, and lubrication practices we can measure, prevent, and restore deterioration to our equipment.
* **Tagging** - are mainly used in manufacturing and construction industries, but any workplace that uses machinery, tools and equipment should ensure that all these items are in full working order and that they have been inspected and will continue to be inspected for the safety of the user.
* **Safe Way of Work** - Workplace safety in a manufacturing facility is achievable, provided you know the potential sources of safety hazards and the ways to prevent them. Effective risk assessment can help you stay cognizant of the hazards present in your plant and shed light on the necessary equipment maintenance and repairs.

Timeline

Description automatically generated

A picture containing timeline

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### Connected Factory Worker Centerline application

Graphical user interface, application

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Graphical user interface, text, application, email

Description automatically generated

Graphical user interface

Description automatically generated

### Connected Factory Worker CIL application

Graphical user interface

Description automatically generated

Graphical user interface, application

Description automatically generated

### Connected Factory Worker Tagging application

Graphical user interface, application

Description automatically generated

Diagram

Description automatically generated

### Connected Factory Worker Admin application

Graphical user interface

Description automatically generated with medium confidence

## Prerequisites

The Connected Factory Worker app is built on top of the Power Platform. And there for the following licenses needs to be assigned and configured within the target environment.

* Dataverse environment
* Power Apps
* Power Automate
* Power Bi

## Reusable Components

Connected Factory Worker applications using the new PowerApps component feature for Canvas apps.

This presents a set of custom controls built for Connected Factory Worker applications using the new PowerApps component feature for Canvas apps. As a prerequisite, check out the following blog posts

* [Introducing canvas components | Microsoft Power Apps](https://powerapps.microsoft.com/en-in/blog/components-available-in-preview/)
* [10 Reusable Components: tab control, calendar, dialog box, map control and more | Microsoft Power Apps](https://powerapps.microsoft.com/en-us/blog/powerapps-ten-reusable-components/)
* [Components: Start your Journey with Reusable Controls | Microsoft Power Apps](https://powerapps.microsoft.com/en-us/blog/components-start-your-journey-with-reusable-controls/)
* [Code components for canvas apps - Power Apps | Microsoft Learn](https://learn.microsoft.com/en-us/power-apps/developer/component-framework/component-framework-for-canvas-apps)

The Connected Factory Worker application is a set of application used by the factory operator addressing specific use cases to simplify their daily job to check, track and review standard operation using mobile device.

Image of Connected Factory Worker apps

The Connected Factory Worker Standard Components is a set of Power Apps Canvas components shared to the factor operators who can build now their specific standard operation app based on common UI pattern and Common Data Model exposed by the Common Data Services.

CFW Home Screen

The Home Screen shares common UI pattern like application context (factory, service line center, line, machine center, user and date), operation navigation steps and system info (line and machine center).

Image of CFW Components Home Screen

CFW Map Tag to Line Layout image

To simplify factory operator’s navigation to find relevant tags (reported issues or non-adherence) within the factory, we introduced the concept of show factory layout image and map tags to the layout. Two components are supporting the pattern to capture a position for a specify new tag and to view a list of tags linked using their relative position within the layout image.

View a list of tags linked using their relative position:

Image of CFW Map Tag to Line Layout view

Capture a position for a specify new tag linked to layout relative position:

Image of CFW Map Tag to Line Layout map

CFW Header Control

Static control shows operators their factory context based on selected factory, service line center, line and machine center including visuals for line and machine center.

Image of CFW Header Control

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Property Description

Logo Company logo image

AppName Application name

SelectedFactory Context factory name

SeletcedSLC Context service line center name

SelectedLine Context line name

SelectedMachineCenter Context machine center name

SelectedPackSize Context pack size name

SelectedLineImage Context layout image of the selected line

SelectedMachineCenterImage Context image of the selected machine center

Color Accent header background color

UserImage Logged in user image (ex. User().Image)

UserName Logged in username (ex. User().FullName)

UserAccount Logged in user account name / email (ex. User().Email)

CFW Nav Step Control

Simplified menu control reduced to show process step (screens) within the application context.

Image of CFW Nav Step Control

Download package

Property Description

Logo Company logo image

AppName Application name

CFW Sys Info Control

Image of CFW Sys Info Control

Property Description

Logo Company logo image

AppName Application name

CFW Map Position Set Control

Image of CFW Map Position Set Control

Property Description

SetX Starting X coordinate (can be empty for new tag)

SetY Starting Y coordinate (can be empty for new tag)

CFW Map Position View Control

Image of CFW Map Position View Control

Property Description

Logo Company logo image

AppName Application name

Download package

CFW Daily Tear Off Control

Image of CFW Daily Tear Off Control

Property Description

Logo Company logo image

AppName Application name

Give it a try ! We would love to hear your feedback. We have more open-source components on the PowerApps Tools github repository