

Assembly Planner and Shop Floor Viewer Change Log

12.23.0.0

Released October 10th, 2023

- Bug Fixes
 - General
 - Fixed component data save issue after Check In/Out from Checked Out entities screen.
 - Fixed error when adding newly added model in edit-model-option-mapping, advanced view.
 - Fixed date parameter, save issues when creating a new XinY Scheduler constraint.
 - Fixed broken precedence links between clusters and activity nodes
 - Fixed errors when inserting invalid values for FieldInfo DataType and NETDataType when creating custom fields.
 - Added error message when adding approvers while publishing, if the approval list does not contain the added user/role that does not exist in SFV database.
 - Fixed bug preventing Routing Type, Parent Order Number, and Sales Order fields from being imported to orders via the Order Management Module
 - Ensure that the cloud download file method is capable of replacing existing files. This fixes the template auto refresh issues.
 - Virtual Build
 - Fixed a bug in Process tree - move up/down of workstep does not work.
 - Fixed hidden Add/Remove video button in Observed time study tab when the panel is downsized.
 - Shop Floor Viewer
 - Fixed error when adding associated station to a new user.
 - When maximizing the image in SFV WI page, enlarge the image to fit the window.
 - Disallow Duplicate of Kitting view cart types.
 - Fixed change request image caching and viewing when created within the Work Instructions
 - Fixed Process Tree - Deviation Grid missing UID error
 - Enhancements
 - General
 - Added ability to import files in MDD (Material Determination) module in PFEP, with Role Privilege enabled.
 - Calculated Time Study – New Control (Preview release)
 - View and edit time elements from multiple activities in virtual build.
 - View and edit MUDA (simple or advanced) alongside time elements.
 - Configure columns in the sheet to display Routing, Operation, and/or activity data alongside time elements.
 - Save different layout configurations.
 - Export viewed data to Excel directly from virtual build.
 - Easily add/modify time elements with a spreadsheet interface.
 - Code lookup, summary, and editor panels are movable and dock-able within virtual build.
- Notes:
- Requires PPWebAPI
 - Only available within virtual build
 - Only MODAPTS supported in preview release

- Change Request Management
 - Integrated change request browser into activity module, publishing module, and virtual build module in Assembly Planner.
- Shop Floor Viewer
 - Maintain page breaks in the Work Step Description when displaying in SFV WI
 - Enhanced 'loading' page layouts when navigating through activities.
 - PFEP Dashboard changes
 - o Allow user to Set # of Units (slots) to show that are closed/delivered for each Cart in View.
 - o Allow user to Set # of Units (slots) that are next available for each Cart in View.
 - o Enabled Option to Show or Hide Picked field by Cart (assume this is calculation for carts picked for current day/shift).
 - o Modify cart status letter code to full status description within the dashboard tiles.
 - o Removed red line.

12.21.0.0

Released September 5th, 2023

- Bug Fixes
 - General
 - Fixed error, when the user selects an aggregate task node in the Yamazumi chart and CAD nodes are correctly shown/hidden in CAD viewer.
 - Fixed error when viewing image files with apostrophes in document preview and media control.
 - On any drag-fill operation, the value in the starting cell for the drag fill should never change for locked or unlocked cells.
 - Enable multiselect functionality in estimated time control sheet.
 - Grouped process library station parts and tools report by WorkCenter, and sort groups by lowest to highest OpSeqNo
 - Fixed refresh issues in latest activity library media control
 - When an activity is checked in - the user should no longer be able to open/ edit image editor.
 - Fixed issues when retrieving BOM records in advanced search and mass update.
 - Fixed spreadsheet copy/ paste methods to support drop down cells where the list value descriptions are being displayed.
 - PFEP
 - Fixed bug causing no data to be returned for Kanban Transaction Duration and Kanban Cycle Summary reports in PFEP Reporting Module.
 - Line Balancing
 - Updated TaskFlag to be considered when running the ergonomics exports from Line Balancing
 - Do not consider routings when adding station setup time for line balance scenarios.
 - Fixed errors when applying station/ operator filter in line balancing reports.
 - Fixed error when cloning Line Balancing scenarios.
 - Virtual Build
 - Reset observed time study video control when closing a workspace.
 - Fixed capture CAD snapshot save issue.
 - Shop Floor Viewer
 - When disabling changing station/operator do not disable USN/order selection
 - Block users from signing on to the repair stations.
- Enhancements
 - General

- Performance enhancement when loading MCO and Workflow Module
- Added Project Work Task Number to WPS Export History Report for PPR and RFPI export types.
- Added ability to generate WI Report from the publishing Thin Client Admin tab when no line information exists in the report dataset.
- Replaced "WeightUnitID" field as "Weight Unit" in the component module header.
- Added default time unit to time column label in workstep control.
- Added ability for Administrators to set default dynamic header and dock panel layouts for following modules:
 - o Component Library - Header control
 - o ECO Module - Header control & Dock panels
 - o MCO Module - Header control
 - o Virtual Build - Dock panels
 - o QA Module - QA control, Dock panel for header

Note: Users will still have the ability to create their own layouts and restore as before.
- Line Balancing
 - Added sort and filter functionalities in LB - Model, and Model-Option Mapping tabs.
 - Retrieve assembly line information when running the work instruction report from published data in the publishing module, thin client admin tab.
- ECO & MCO
 - Added customizable ECO and MCO header control layout and properties based on role privilege (dynamic header control).
 - Commonization of dynamic header control and additional functionality for editing standard fields
 - Added persistent sort and filter for ECO and MCO search controls.
 - Added new role privileges to control editing of ECO/MCO header properties.
 - o ECO - EditClosedECOProperties , EditECOHeaderTab
 - o MCO - EditMCOProperties , EditCompletedMCOProperties
 - Added new preference – MCODefaultToDateType
 - Modifications to Load/ Reload process.
 - o Allow user to switch ECO type for reload.
 - o When reloading an ECO, enable auto-reload for other subsequent ECOs since the same file is being used.
 - o Process ECO Imports via the JobQueue so users can view status & view errors from UI via the SQL Jobs Management Module
 - Filter selectable workflow templates by IsVisible column when MCOs are being created.
- Add Block Code Functionality
 - Following block fields were added to the MODAPTS lookup file,
 - o GroupId
 - o groupdescription
 - o Rcode
 - o Rdesc
 - o Rtime
 - Block codes correspond to both left and right hand codes in the same row information
Authoring Example:
 - o MODAPTSLookup file with the newly added block fields and its corresponding values are highlighted below.

	A	B	C	D	E	F	G	H
1	Code	Time	Desc	GroupId	groupdesc	Rcode	Rdesc	Rtime
2	M1P0	1	Move Finger to Simple Put	Gr1	Child1	M1G1	Move Finger for Simple Grasp	2
3	M2P0	2	Move Hand to Simple Put	Gr1	Child1	M2G1	Move Hand for Simple Grasp	3
4	M3P0	3	Move Forearm to Simple Put	Gr2	Child2	M3G1	Move Forearm for Simple Grasp	4
5	M4P0	4	Move Whole Arm to Simple Put	Gr2	Child2	M4G1	Move Whole Arm for Simple Grasp	5

- o Upload the updated MODAPTSLookup file to Admin Tools> Template Manager> TimeEstimation and restart the application.
- o Enter the authored GroupId in either LeftCode or RightCode (Gr1) and hit calculate/save. Corresponding block code attributes will be populated to the spreadsheet as shown below.

	Type	Freq	Block Code	BlockDescription	Left Description	Left Time	Left Code	Normal Time	Total Time	Right Code	Right Time	Right Description
1	M	1	Gr1	Child1	Move Finger to Simple Put	1.000	M1P0	2.000	2.000	M1G1	2.000	Move Finger for Simple Grasp
2	M	1	Gr1	Child1	Move Hand to Simple Put	2.000	M2P0	3.000	3.000	M2G1	3.000	Move Hand for Simple Grasp

- Change Request Management
 - Change Request Management Control Changes (Data Mgmt > Publishing > Change Request Management Tab)
 - o SFV Documents control displayed on the right to show documents attached to the change request as well as notes.
 - o Ability to select change request and right click navigate to activity, for change request with a TaskID associated.
 - Activity Shop Floor Feedback Tab (Library> Activity > Shop Floor Feedback Tab)
 - o Display Change Requests and Change Request Documents as well as documents attached to the activity in the SFV.
 - o Added ability to edit and import Change Request images into the activity documents module.
- Shop Floor Viewer
 - Allow publishing model custom fields to SFV.
 - Allow displaying of model custom fields on the Line Order Sequence Sheet
 - When activity provided in the Ger Work Instruction API is not found, UI navigates the user to build list page instead of first activity for that station.
 - WI Approval redesigned -
 - o Users can select different versions of the published WI within the approval page.
 - o Additions, subtraction, and field changes on the WI will be highlighted in the approval page.
 - o Instead of double tabbed notebooks, added link menu where all the detailed WI information is presented.
 - Added ability to load and preview WI by TaskListUID from the viewer links and through approval page.

12.20.1.0

Released July 12th, 2023

- Enhancements
 - Virtual Build & QA
 - Correctly enable/disable QA controls in virtual build module and QA module if the QA standards are not mapped to the selected entity types.
 - Line Balancing
 - Get order by series when creating new scenarios.
 - Get orderlist custom fields in spreadsheet when creating new scenarios.

- Added ability to pop up current saved scenarios when opening edit order detail menu.
- Ability to export scenarios data including orderlist custom fields.
- Autobuild
 - Automatically retrieve the filter date for the Autobuild based on the Series date.

12.20.0.0

Released July 5th, 2023

- Bug Fixes
 - General
 - Fixed error encountered when replacing an existing document (cloud only), and deleted documents confirmation is in a condensed form.
 - Fixed Expand All Clusters typo in Precedence context menu.
 - Fixed dictionary key error when loading certain records in component module.
 - Disabled editing MUDA times when activity is checked-in
 - Temporary performance fix for updating video record durations in cloud video implementation.
 - Fixed retaining ItemDefaultWeightUnit preference when importing or creating new items.
 - Ensure user is prompted to save upon leaving module, etc. after customizing pivot fields in the pivot grid module.
 - Ensure correct settings are reselected after leaving and returning to the Check-in Validations Module
 - Fixed drag fill issue while saving int dropdown values.
 - ECO & MCO
 - Release new versions of standard ECO and MCO workflows to correct lifecycle stage/status completion errors.
 - Virtual Build & QA
 - Prevent unhandled exception and restore active panel when save fails during panel change in child control.
 - Fixed saving issues with consumption editing
 - Fixed error when filtering ID column in Virtual Build process tree.
 - Fixed QA Module – Customize view error, when multiple fields are selected and rearranged.
 - Shop Floor Viewer
 - Fixed issues related to select boxes when filing or editing Hot Issues
- Enhancements
 - General
 - Created Show/Hide role privilege for the Alternate Parts tab in the component module.
 - Enable editing "Replace Blank Revisions" and "Retrieve Source Item Data" in Item & BOM import for all role privileges.
 - Automatically refresh the template manager UI when the user enters the module and automatically refresh the template cache for the modified templates whenever the user leaves the module.
 - Added preference to disable consumption vs consumption comparison in order to allow checked in operations to be considered in consumption workbench and BOM compare.
 - Process Library Station Tools Report and Station Parts Report are Grouped/Sorted by Operation OpSeqNo
 - Document Import
 - o If a document exists already, the user will be prompted asking if they do want to replace existing document with an incoming one.
 - o Imported documents in ECO module show up in history.

- o Replacing/Deleting multiple documents shows a warning with expandable details which shows file names.
- Replace the media control currently used in Activity library with the new media control used in Virtual Build.
- Added ability to perform a multiplication of Child BOM Quantity with the Parent BOM Quantity when performing a multi-level roll-up of BOM data.
- WI Approval Changes
 - o Comments field in publishing approval UI can be multiline.
 - o Users must select a template from the dropdown if a file has been provided (Templates > Configuration Files > ApprovaList.json).
 - o If no file has been provided, the dropdown will be locked and will display "Default" as the text. Users and roles will need to be manually added to the approvals in that case.
- ECO & MCO
 - Enabled editing Consumption From and To MCOID properties in the virtual build consumption grid
 - Added preference and check box to optionally retrieve past effective BOM records in the MCO revision change date validation form.
- Line Balancing
 - Retain line balancing station/operator assignments for single use tasks by activity/task ID during refresh scenario.
 - Use Series to locate orders for AutoBuild and Line Balancing when property IsSeriesEnabled sets to true.
- Virtual Build & QA
 - Retain sorting and filtering in virtual build process tree, consumption grid, and diff grid when data in the grid is refreshed.
 - Added export to excel and Excel-Style sorting and filtering capabilities for Virtual Build - Consumption, BOM Compare, and Process Tree.
 - Enabled workstep multiselect in FMEA workstep import popup page.
- Multibranch Plant
 - Added RoutingType field to assembly line in plant library.
 - Added RoutingType, ParentOrderNumber and SalesOrder fields to the order list.
- Shop Floor Viewer
 - Enabled customization of process tree nodes for Multi Branch Plant. Customization settings are included to the processtree.json file.
 - USN can be grouped via the order table. Process tree can now show the grouped units.
 - Added role privileges that can limit what users can see in the process tree. Tree scope options are,
 - o Current station and operator only
 - o Current station and all operators
 - o Current line, stations, and operators
 - o All role lines, stations, and operators
 - o All lines, stations, and operators
 - Added new privilege – AllowChangingOfOperatorIDOnly, which allows the user to change the operator ID. This allows the users to switch operators if the other operator at the station is not present for the given day.
 - Allow editing of the notify states associated with an email list and users. The standard notification list includes,
 - o Hot Issues – Create, Modify and Close
 - o Change Request – Create and Modify

- o NCR – Create, Modify and Close

12.19.1.0

Released June 20th, 2023

- Bug Fixes
 - General
 - Fixed dictionary key error caused by BOM Diff Flags when loading certain items in component module.
 - Fixed error when replacing documents in template manager.
 - Corrected Process Library > Station Tools Report and Station Parts Report to be Grouped/ Sorted by OpSeqNo.
 - Temporary performance fix for updating video record durations in cloud video implementation.
 - Line Balancing
 - Enable single file, single-page excel exports for line balancing Model Family Times Report.
 - Retain line balancing station/operator assignments for single use tasks by activity/task ID during refresh scenario.
 - Fixed bug when single tasks in the line balance are reused in the routing.
 - Fix issues with dialogs popping up behind splash screens.

12.19.0.0

Released June 2nd, 2023

- Enhancements
 - General
 - Added sorting and filtering, pasting of files, thumbnail image preview, and editing of records in the document's module grid. Updated in Virtual Build, Routing, Operation, Activity, Component, Template Manager, MCO and ECO documents tab.
 - ECO & MCO
 - Added 'Add From and To MCO ID' fields to be visible in Virtual build - Process tree, and Consumption control, WI Revision and Publishing.
- Bug Fixes
 - General
 - Fixed bug in the BOMDataExtractor for CAD Import handling
 - Fixed issues with the splash screen popup
 - Fixed bugs related to spreadsheet drag-fill.
 - Fixed issues when time values were retrieved from advanced search to populate in the mass update module, selection sheet work for all localization settings.
 - Fixed page navigation issue in search control, which prevents user from paging back prior to page 1.
 - Ensure that edits made in the component where used control are retained when the Mass Edit menu is launched.
 - Fixed Assembly Planner resource import error.
 - Fixed error causing field list to be empty in the mass update, update consumption UI.
 - Fixed background color highlighting (Grey) issues for locked columns in QA sheets after execution of customize view.
 - Fixed error when reading excel files into spreadsheet controls (order import) caused by localization settings.

- No longer hide or show operation or activity effective date columns when the user checks or unchecks the Use Activity ID check box for Process Resource Import.
- Prevent unhandled exceptions and restore active panel when save fails during panel change in child control (Resource and Model Option page).
- Hide QA panels in Virtual Build if the user does not have view privileges.
- Line Balancing
 - Fixed error when calculating task-option-frequency values for non-order-based line balance scenarios.
- ECO & MCO
 - Fixed issue while assigning multiple users to MCO lifecycle stages, when the user's full name contains a comma.
 - Fixed refresh issue after customizing view in ECO parent tab and PFEP Reporting Module (added columns will now be populated, and not blank).
 - Fixed errors saving in the ECO Parent tab when certain columns are hidden.
- Shop Floor Viewer
 - Disable edit, attach and save buttons when attached file is not saved when filing Hot Issues, Change request and File Exceptions.
 - Fixed export data duplication issues when multiple operators signing off a station/ activity at the same time.
 - Fixed broken document report view link.

12.18.0.0

Released May 15th, 2023

- Enhancements
 - General
 - Integrated SOP reports into Consumption Parent Labor Report.
 - Renamed "Close" to "Compare" in consumption workbench and BOM compare selection form.
 - Disable flyout functionality for collapsed eBOM and MBOM panels in the BOM control and existing and new consumption panels in consumption workbench.
 - Apply shared spreadsheet drag-fill method to additional controls and ensure only data is copied during drag-fill.
 - Added new properties to the Supplier Item Mapping table to support SFV ItemSerialNo validations.
 - Time sheet is set to default when calculated time control loaded in activity module.
 - Added TempPublishingSettings record to database to support validation of process data during publishing.
 - Added fields to Option and Assembly Line to support the Shop Floor Viewer Paint Line scheduling feature.
 - Rearrange child controls and allow smaller minimum size for check-in validations header control.
 - ECO & MCO
 - Added USN from/to and MCO from/to properties to Routing Item Mapping.
 - QA Module
 - Remove entities from the QA Module search drop down if no QA standards for those entities are enabled for the current user.
 - Virtual Build
 - Allow user to rename imported images in media control when copy pasting images from PowerPoint or other forms.

- Modified 3D view functionality. Disabled ribbon and added right-click menus to capture/ edit 3D views.
- Changed Home CAD views icon and display name.
- Added functionality to un-assign SOP images for workstep and activity in Virtual Build.
- Allow users to display preview images as zoom or clip in media control.
- Shop Floor Viewer
 - Upgraded the CAD viewer in the SFV and Hoops demo app to 2023 version.
 - Added 'clear sign on' and 'clear sign on and off' buttons in signoff manager.
 - Updated role privilege sort order
 - Hided more menu button in work instruction page, when making a change request snapshot
 - IoT Worksteps - Added button to send a start job from default template.
 - Updated media saving functionality when filing hot issues, change requests, NCRs, Roadblocks, Test Failures, Activity Skips and Hot Issues.
 - Added auto focus to the first complex part attribute requiring input in work instruction page.
 - Disabled scroll wheel for workstep numeric test-type dimensions.
 - Added new functionality in process tree with repair stations. Repair stations are allowed to preview, but never sign on.
 - Enable Hot Issue notification via email/ SMS from the work instruction page.
 - Paint Line Scheduling – following functionalities were added to SFV.
 - Order sequence management
 - Order import via SFV
 - Aggregate activity worksteps from multiple units
 - Multi-unit (group) sign on/off.
 - Work instruction page grouping
 - Dashboard that shows current state of units for a line
 - Unit Sign Off Report - Unit Progression - a different version of Factboard where you see your units go through the stations on the line - can be used by all customers, with or without grouping.
 - Custom Report - Unit Option Group - will allow users to see the data collected for the Unit Option Groups in the work instructions.
 - Order table and build list page – show unit grouping and option groups.
- Bug Fixes
 - General
 - Prevent users from deleting and role change in all system user accounts.
 - Fixed spreadsheet group and group mapping data export issue when exporting data from the Tools > Manage View Settings menu.
 - Fixed SQL Job Management, insufficient permission error.
 - Fixed error when extra parameter being passed into InitializeSpreadSettings method from the advanced search fields spreadsheet control. This disables spreadsheet drag-fill to place invalid values and data types in cells.
 - Fixed issue when editing estimated time data in activity list, that causes MUDA data to be cleared from the database.
 - Fixed save issue when setting the Ergonomics Enable Only Standard Scores for EMMURI Preference.
 - Fixed item mapping tab error. Updated column count in routing item mapping control initialization.
 - Fixed error when adding item in the item mapping tab. Added DataMember attribute for RoutingItemMapping

- MCO
 - Fixed MCO save issues when editing the checklist control, right-click and create a new MCO.
- Virtual Build
 - CAD viewer> Selection color> Transparent color highlining is fixed.
 - Fixed index out of range error when opening VB workspace that has broken CAD model.
 - Fixed role privilege issues when adding work step to an Activity in VB module. Role privileges are correctly implemented for all virtual build process tree menu items.
 - Fixed implementation of process checkout permissions in Virtual Build Module.
 - Fixed save issues when reassigning activity OpSeqNo:Station between operations.
 - Fixed process tree refresh issues when deleting child process.
 - Made panel visibility drop down popup to be consistent and added multi-select button.
 - Fixed invalid error message when user check out-all at all operation level. Only check selected entity permission when checkout all processes for error message.
- Shop Floor Viewer
 - Fixed build list page refresh issue, which displays more number of units instead of selected units per page.
 - Fixed a bug when viewing 3D CAD views in SFV.
 - Fixed error when adding NCR part that caused a crash, because createdby was not defined.

12.17.2.0

Released May 1st, 2023

- Enhancements
 - General
 - Ported work service and other backend components over to .net6.
 - Enabled maximize button for Add from library - Component Search popup.
- Bug Fixes
 - General
 - Fixed spread formula to handle all different localization settings.
 - Fixed bugs related to regional setting/custom fields issues in the component module.
 - Fixed error when deleting items from BOM Control if PrevOpSeqNo custom field does not exist or is not visible in the UI.
 - Fixed media control, quick edit – value cannot be null error.
 - Fixed time precision in Precedence - Activity properties popup.
 - ECO & MCO
 - Fixed error when promoting during the analyze stage and selecting "Complete" as the subsequent workflow.
 - Virtual Build
 - Fixed date-based effectivity filtering issues in Virtual build process grid.
 - Fixed file locking issue in Windows Explorer when image is copy pasted/ drag dropped.
 - Fixed check-in/out process tree refresh issue for operation without activities.
 - Allow publishing control to load even if there is an error retrieving CAD workspace.

12.17.1.0

Released April 25th, 2023

- Enhancements
 - General
 - Enabled window resizing for add from BOM/ Library popup.

- Clarified error message when adding QA revision to a blank sheet.
- Bug Fixes
 - General
 - Fixed time study issue for foreign clients, added formula for different languages in observation time control.
 - Disabled editing of workflow module checklist template items grid.
 - Removed Expand All menu from right-click BOM control. It was never intended to be added/functional.
 - Fixed media control, quick edit and CAD snapshot save issues.
 - Fixed error when uploading .jpeg files to image editor.

12.17.0.0

Released April 18th, 2023

- Enhancements
 - General
 - Allow users to update video references by browsing for a new video.
 - Retain selection, scrolling, and expansion of folders and studies in scenario and study forms when refreshing the UI.
 - Changed logic on parent filter in consumption parent labor report, where the children of the parents are grouped returned in the report.
 - Virtual Build
 - Added right click assign/unassign consumption record to work step from consumption grid.
 - QA Module
 - Integrated advance search framework into QA module entity search control.
 - Added QA advanced search to consumption workbench process filter.
 - Shop Floor Viewer
 - Added quantity field to test failure action summary.
 - Added test failure validations and verifications when removing the parts, so at least one part must be selected.
- Bug Fixes
 - General
 - Fixed check-in validation manager header scaling issue.
 - Fixed timeout issues when saving option/ option group data by only passing modified data through the network.
 - Fixed issue causing process selections to be removed from the consumption workbench when the tool is being used simultaneously by multiple users.
 - Line Balancing
 - Fixed error in displaying previous station and parts information in line balancing scenario diff report.
 - Virtual Build
 - Fixed Ctrl+v issues with images from windows applications in media control
 - Fixed process tree time units refresh issues when time preference is changed.
 - Fixed model-option popup splash screen issues.
 - Added time unit to process tree time field.
 - Fixed error when populating/saving videos in the Virtual Build media and activity media tab.
 - Fixed media tab refresh issues.

12.16.2.0

Released April 4th, 2023

- Enhancements
 - Virtual Build
 - New functionality to add images through virtual build media control via drag/drop, copy/paste, and file browser.
 - QA Module
 - Added Risk Assessment/Risk Prediction count and count summary repx report.
- Bug Fixes
 - General
 - Fixed playback issue in video player when playing splits or when playing segments of splits.
 - Fixed error loading video clips to associate VA/NVA/SVA in observed time when activity video has been converted.
 - Fixed resetting recorded time issue on stop, in observed and calculated time VA/NVA/SVA editor.
 - Fixed video time index issues in the observed time, observation edit start and end time dialog.
 - MCO
 - Fixed MCO workflows that were adding incorrect history records, referencing implement and analyze status values.
 - Fixed a bug causing interaction between item and process checklists when promoting an MCO.
 - Virtual Build
 - Corrected error when docking CAD viewer in Component Library.
 - Fixed incorrect splash screen message in VB Quality Analysis.

12.16.0.0

Released March 23rd, 2023

- Enhancements
 - General
 - Replaced the display name of "Work Center" as "Station" through the software.
 - Virtual Build
 - Update Hoops converter to support 2023 version of all CAD file formats.
 - QA Module
 - Added before and after views in QA sheets for multi-revision selection.
 - Added functionality to export and restore QA user settings data.
 - Added entity type icons to QA details.
 - Shop Floor Viewer
 - Added terms and conditions to the SFV and Factboard welcome screen.
- Bug Fixes
 - General
 - Fixed saving errors in check-in validation manager
 - Fixed error when importing resources.
 - Allow uploading video file path and file name values up to 1000 characters.
 - Fixed incorrect time stamp in publishing effectivity for WIR revision date fields.
 - Correct object reference error when user selects blank in the templates dropdown when no approvals templates exist in the list.
 - Fixed object reference error when disabling media related role privileges.
 - Fixed padding for tab headers in Assembly Planner library module.
 - Fixed Search, BOM, Tree and other Form controls, right-click behavior issues.

- BOM Control – TimeOutFlag is updated in BOM Tree when Effective To is changed and data is saved.
- Fixed multi-select item type filter in component module header.
- ECO & MCO
 - Fixed error searching for MCOs when MCOSortField preference is set to ID.
 - Prevent duplicate error messages on popups during MCO creation when there is a failure retrieving workflow templates.
 - Fixed ECO assign plant error.
- Line Balancing
 - Fixed total weighted time calculation in Balance Time Classification Report.
 - Fixed issues related to grouped tasks in Yamazumi Chart Time Category view and the roll-up of times in the aggregated tasks tile.
 - Prevent error running Work Instruction report in line balancing when an activity has been removed from the routing.
- Virtual Build
 - Fixed spreadsheet save issues, when save is triggered while the editor is still open.
 - Fixed activity list in Virtual build module to save estimated time.
 - Fixed error messages saving data when validations fail in child controls.
 - Fixed save validations in activity model-option control.
 - Fixed activity list sorting error when an activity is edited and saved.
 - Always display media ribbon page
 - Fixed issues in image editor and media control.
- QA Module
 - Fixed error in QA sheet customize view when group name is same as column name.
 - Fixed QA Module entity search control refresh issues.
- Shop Floor Viewer
 - Fixed sign-off bug in Job Cover Matrix logout page.

12.15.2.0

Released March 2nd, 2023

- Enhancements
 - General
 - Included approval name to the subject of WI publishing and approval email.
 - Updated OPL template
 - Virtual Build performance optimization
 - Included child item description to the standard BOM compare report.
 - Process publishing validation – added framework to validate global process data prior to publishing.
 - o Ensure none of the processes (Routing/ Operation/ Activity) being published are in the checked out state.
 - o Ensure activity custom field is set to released state.
 - MCO
 - Added framework to validate Operation Procedure (OP) and Routing/ mBOM approval workflow.

12.15.1.0

Released February 28th, 2023

- Enhancements
 - General
 - Added Expiration Date/ Draft information in the Work Instruction report footer.
 - MCO
 - Added additional logic to prevent MCO PDF publishing and prevent MCO promotions based on role assignment and permissions.
 - QA Module
 - Performance optimization when loading Formulas and Conditional Formatting in the FarPoint sheet.
 - General performance enhancement in Quality Analysis module
 - Shop Floor Viewer
 - Enabled keyboard inputs (arrow keys) for navigating workstep images.
 - IoT Printer – Disable auto printing when the data has been already printed/in queue for printing.
- Bug Fixes
 - Shop Floor Viewer
 - Fixed kit cart search bug
 - Fixed etching API export issue

12.15.0.0

Released February 14th, 2023

- Enhancements
 - General
 - Base template changes for printer work step
 - New QA ribbon added to the Virtual Build Module
 - Activity initiated label printing.
 - Utilize Activity-Workstep to initiate the generation of a PDF file and association to the Unit-Documents
 - Utilize Activity-Workstep to initiate printing of the PDF file
 - QA Module
 - Added dock manager for QA header control
 - Added dynamic header, rewrite saving and restoring of QA Header layouts.
 - Added ability to display multiple revision data on the same sheet.
 - Multi select field editing for customize view properties.
 - Inherit default view's customize view property settings, when adding a new view
 - Shop Floor Viewer
 - Optimizations for models and stations in Batch report and force partial sign-off when batch totals are updated.
 - IoT Printer – Move the Print service over to the worker service instead of being on its own
- Bugs
 - General
 - Fixed 'OperationText' field displays as 'ActivityText' for Process Structure Activity Imports
 - Fixed invalid row index error in Order Data Management – Options list – Find next. Replaced custom search for order dates and option list forms to automatically sort and filter the sheet
 - Fixed custom field not showing in the import UI, issue related to changed column duplication
 - Virtual Build
 - Enable copying consumption grid values, even when the process entities are checked-in
 - Fixed restore default layout issue that hides FMEA related panels
 - QA Module

- Fixed formula issues related to handling values from drop down list
- Fixed an error while enabling the operation level fields visible in activity entity
- Fixed sort order issue while saving revisions and in the generated revision comparison report.
- Fixed standard report error when show for child processes is checked
- Disabled editing the process related fields after standard QA report is generated.
- Fixed revision combo box reset issue upon save.
- Fixed header panel repaint issues.
- Fixed column header issues when multilevel header groups are created.
- Line Balancing
 - Fixed an error in line balancing WI report, when moving or removing activities from the process library

12.14.3.0

Released January 23rd, 2023

- Enhancements
 - General
 - Enabled multilevel BOM selection for component search control, child status query report
 - Adding new publishing settings option for publishing all models
 - ECO
 - Add customized ECO workflow that makes lifecycle stages optional.
 - QA Module
 - Removed conditional formatting and formulas from Customize View and enabled it only through Custom Fields Manager
 - Added station operator filter in QA module.
 - QA module icon changed.
 - Shop Floor Viewer
 - Batching – added hyper-link to the build list, which displays detailed order status of an unit
 - Enabled multi-line filtering for batch time results report.
 - IOT Enhancements – allow stations with space in name, console logging, and reattach for SignalR
- Bugs
 - General
 - Fixed invalid cast error when importing consumption data.
 - Enabled spreadsheet sort and filter on the Parent Part Description column in the consumption control.
 - Fixed missing item fields in Check-in Validation Manager
 - Corrected advanced search bug caused by editing field selection form in Check-in Validation Module
 - Virtual Build
 - Fixed broken splash-screen instance while performing auto-build model option mapping.
 - QA Module
 - Fixed issues with module- level access in QA Module role privileges
 - Prevent duplicating of QA records issue when activity is reused.
 - Line Balancing
 - Operators won't be added to line balancing total operator count, if they belong to the excluded stations from the balance
 - Corrected dictionary key error when computing task option rates in line balancing
 - Shop Floor Viewer
 - Fixed tool tip issues on drop down buttons.

- Fixed error when loading summary tile at operation sign-off.
- Corrected WI report UID issue

12.14.2.0

Released January 4th, 2023

- Enhancements
 - OPL
 - New approval workflow
 - Work Instruction revision expiration warnings
 - Work Instruction template updates
 - Worker service and assembly planner publishing changes
 - QA Module
 - Added role privileges to QA standards
 - Functionality to save and view multiple revisions.
 - Functionality to add groups to the QA Module column header fields through customize view
 - Functionality to edit the customize view field properties.
 - Ability to add formulas and conditional formatting for QA sheets through customize view properties.
 - Shop Floor Viewer
 - Functionality to attach SFV documents (image/ video/ media) to Hot issues, Roadblocks, NCRs, Test failures and Activity skips
- Bug Fixes
 - Time Study
 - Fixed error loading calculated time in MOST code
 - Shop Floor Viewer
 - Fixed issues with pin code sign-off

12.14.1.0

Released December 22nd, 2022

- Enhancements
 - General
 - Customizable component module header control
 - Item – imported, newly added, and cloned items are created directly in the checked-out state
 - Added customizable item check-in validation configurability to the UI
 - MCO & ECO
 - Automate setting DateOfDetermination value for cloned activities during MCO PDF Publishing
 - Implemented MCO workflow setup for ECO and ME initiated changes
 - Approval to promote ECO processing status prior to BOM/ Item export
 - Ability to control the scope of BOM/ Item to be exported via MCO item checklist
 - QA Module
 - General enhancements
 - Show for child processes allows users to view and edit data from the higher process levels.
 - Customizable QA module header control
 - Virtual Build
 - QA Module functionalities merged into Virtual Build (Routing/ Operation/ Activity)
 - Show QA control multi-select process tree results in Virtual Build
 - Shop Floor Viewer

- Added – 'Ad-hoc' add parts function to test failure
 - Test Failure
 - Added new action for 'Add Part Modify mBOM.'
 - Added new Role Privilege, allowing filing test failure action type
 - User Interface
 - Users can input the quantity, item revision, serial number, lot, and manufacturing date against the added part record on the New Action screen
 - Update EVIRUnitItemSummary report for Test Failure-Action
 - Modify the Components tab to display parts on the unit, including those added outside of a work instruction revision.
- Added the following file format types as acceptable extensions to the video import streaming service - .mp4, .m4v, .mpg, .ogm, .ogg, .wedm
- Allow users to attach documents (images/ videos/ files) associated with Test Failures. These documents can also be viewed within the work instructions
- Allow for editing all Hot Issue fields from the SFV
- SFV/reference document changes to show images in reference docs and header margin changes
- Removed build list filtering using previous stations on additional batch information
- Fully functional Job Cover Matrix
 - General
 - Display station sign-in/ out screen upon SFV login – tied with role privilege.
 - Display warning/ notification page to the user – where station specific alert messages and PPE requirements are shown
 - Station logout warning message when sign-in is still active
 - SFV Administration
 - Bulk user import
 - Creating/ managing station and operator qualifications
 - SFV list management
 - Template Management – to upload/ manage PPE and Work Step Key images.
 - Email/ SMS Management – notify line lead upon operator sign-on, when the operator does not meet station qualification.
 - Role Privileges
 - LogoutAfterStationSignInOut – Used to sign-out the operator from station.
 - ShowStationSignInOutAfterLogin – Displays station sign-in/out page when users log in to the SFV
 - Reports
 - Job Matrix – highlights operator/ station qualification and operator experience
 - Employee Assignment – assign a qualified operator to a station
 - Sign-in/out report – shows operator/ station parameters and missing qualifications

- Bug Fixes

- General
 - Image Editor – Insert, and ribbon tools are enabled.
 - Enabled editing of custom fields in the Virtual Build consumption grid
 - Fixed dynamic header custom field behavior issues in the component library.
 - QA Module bug fixes
- Time Study
 - Corrected idle time calculation errors in MTMB reports.
 - Corrected broken border and pie chart paint issues in MTMB reports
- Line Balancing

- Fixed error when dragging tasks from unassigned list to station/operator list.

12.13.1.0

Released December 1st, 2022

- Enhancements
 - General
 - Item Mapping added to Advanced Search and Export Framework
 - Publishing
 - Added validation when Publishing Process data by analyzing items.

12.13.0.0

Released November 22nd, 2022

- Enhancements
 - General
 - Updates to Handling Item Revisions
 - Create New UserControl to Display Item/Revision/Effectivity Information
 - Modify Create Item Form to Handle Revision Effectivity
 - Enable Revision Tracking at Item Level
 - Enable Single Revision BOM Processing
 - Routing-item Mapping will now be Included in the WI Rev Dataset
 - Shop Floor Viewer
 - Job Cover Matrix – Skills and Certifications Matrix
- Bug Fixes
 - ECO
 - Fixed Timeout when Processing an ECO with Custom ECO BOM Diff. Logic
 - Added Sort String as a Key for BOM Processing

12.12.0.0

Released November 22nd, 2022

- Enhancements
 - General
 - Create a Separate Banned Character List for Scenario/File Names
 - PFEP
 - PFEP Requests – New Rack Label Reports
 - MCO
 - Restrict Review Assignment based on Custom Logic
 - Shop Floor Viewer
 - Unit Serial Number Generation – Unitized Batch (Sub-Assemblies)
 - Database Update to Version 2.640.0.0
 - Add Order Import Validations
 - Display Related SOP Image for Selected Workstep
- Bug Fixes
 - General
 - Fixed Workstep.SOPImageID – Allowing the user to enter valid values upon selection.
 - Fixed SOP SOS Report Generation Error

- Resolved Error with Populating Alias after Adding Models/Options to the Model Option Tab
- Time Study
 - Fixed Save As Function in Time Study Module
 - Fixed Operator Form in Observed Time Study Type
 - Fixed Reloading a Video in the Observed Time Study
- MCO
 - Fixed MCO workflow to no longer skip stages.
- Publishing
 - When a Publishing Job is Cancelled, all Child Processes are Cancelled with it – Returning an Error
 - Fixed discrepancies between WI Report Generated in ASY compared to SFV
- Virtual Build
 - If Activity does not have an Image, Media Control shows Object Reference Error Message
- Quality Analysis Module
 - Fixed Right Click Lookup Functionality

12.11.0.0

Released October 10th, 2022

- Enhancements
 - Shop Floor Viewer
 - Add Report for Unit Time Details at the Activity Level

12.10.5.0

Released October 2nd, 2022

- Enhancements
 - General
 - Add missing references to Option Frequency when computing weighted times.
 - Upgrade DevExpress to Version 21.2x
 - ECO
 - Allow users to select ECO Type from a list when performing Excel based ECO Import
 - MCO
 - Enabled custom logic to get applicable users for MCO lifecycle stages
 - Modify code to get applicable users for workflow templates during MCO Import
 - Virtual Build
 - General Enhancements
 - Add Notification when application is loading for user awareness.
 - Process Authoring Enhancements
 - Integrate Activity Worksteps Control
 - Integrate Activity Model Option Mapping Control
 - Integrate Activity "Resource" control.
 - Convert EditChildOptionsForm for Integration in VB
 - Integrate "CustomFields" tab
 - Add Flag when Process-Filtering is Turned On
 - CAD Library Enhancements
 - Show Image Preview of CAD Model to improve Performance Loading
 - Consumption Editing Enhancements
 - Remove Publicly Exposing Consumption and Diff Grid
 - Display Consumption based on Entity Selected in Process Tree
 - User capability to Highlight Consumed Parts for a Selected Activity or the Entire Model

- Custom View during Consumption Editing Mode saves for Future Use
 - Ability to Capture SOP Image while Consumption is being Highlighted.
 - Precedence Enhancements
 - Demand Load / Refresh Workspace in Precedence
 - CAD Model Reloads with Routing and Component Libraries Refresh
 - Enable switching Workspaces in Precedence
 - Yamazumi Enhancements
 - Ability to Move Activities in Yamazumi Chart
- Bug Fixes
 - Time Study
 - Enabled two locked Ergonomic Motion Categories under Calculated Time Study
 - Updated Observed Time study ergonomic spreadsheet to match task spreadsheet.
 - Correct rounding references to display consistent values between pie chart and legend
 - Fix error with Frequency String related to BMOST and MaxiMOST time standards
 - MCO
 - Add timeout to MCO Promotion
 - Virtual Build
 - Process Authoring Bug Fixes
 - Improve Process Refresh Performance after Filtering
 - Fix EditValue is Null Error Message when updating Process Tree
 - Enhance Refresh Performance with Process Tree
 - CAD Library Bug Fixes
 - CAD Library Upload Errors have been resolved.
 - Precedence Bug Fixes
 - Moving Tasks in Precedence Graph now Reflects correctly in CAD Viewer
 - Zoom All Button is Fixed
 - Fixed Precedence Graph to work with Clusters.

12.9.0.0

Released August 8th, 2022

- Enhancements
 - General
 - Generate blank SOS Work Instruction report if all activities are filtered out instead of throwing an error message
 - Deviation and ECO Modules
 - Added a hyperlink in the Deviation and ECO module headers to link to the MCO ID / module.
 - Time Study
 - Added support for User Defined Codes in the MODAPTS control (U Code Type)
 - Added 150% BOM function to the Worker Service
 - Factboard
 - Made a change to use the latest sign on unit (complete or not) for the status. Also including breaks in the time calculation when not complete.
 - Shop Floor Viewer
 - Updated the Unit Time Details Report to support a 60 second timeout
 - Modified the email list notification field to support unlimited characters/emails
 - Removed 'Order Quantity' related to Batching for Serialized unit sign off
 - Modified the URL parameters for retrieving work instructions to support an MCO ID to get the MCO From Date to use in filtering. Link will have form similar to this:

<https://servername/SFVsitename/wiViewer?USN=VIN001&StationID=A&OperatorID=1&ActivityID=00000912&MCOID=L0000001>.

- Parameter List: USN, StationID, OperatorID, ActivityID, WorkStepTreeOrder, ModelID (singular), OptionID (singular), MCOID (singular)
- IoT / Device Connection Changes
 - Various changes to implement SignalR and Azure compatibility
 - Added refresh button for devices on IoT Admin page
 - Changes to the IoT Admin page to allow for manipulating multiple devices
- Modified Station Sign Off Screen to include configurable summary tiles
 - Tile will show red/green based on the following logic
 - Test Failure – One or more open test failures
 - Components – One or more missing components (Quantity Installed vs Quantity Required)
 - Deviations – One or more deviations mapped to the unit where the deviation is outside of the effectivity date or does not exist in Assembly Planner
 - Roadblocks – One or more open roadblocks
 - Activity Skips – One or more open activity skips
 - Task Summary – One or more activities or operations in the Signed On state excluding the current Activity and operation
 - Scope of the data considered in the tiles is controlled by new Role Privileges (Full unit status, current station, current station-operator)
 - Modified the Unit Sign Off header label to clarify if the sign off will complete the work at the station or the operator only
 - Change the Station, Operator, and USN labels to match the format used in the main activity page
- Sign Off Export Data feature implemented
 - json file representing all data for a station-table to be created and post sign off event in the Shop Floor Viewer.
 - List of tables to be exported is controlled by the config file at App_Data\customerSettings.json. Example: "SignOffExportTableList": "EVIRUnitItemSummary, EVIRAdminOverride, EVIRConsumption, EVIRUnitStationSummary"
 - Condition for export to be triggered is set by an attribute of the Operation and checked against a setting in the App_Data\customerSettings.json file. Example: "SignOffExportConditionList": "MESConsWrkStp_ExportUnitStationData, =, TRUE"
 - Added fields in Assembly Planner to control the stations to trigger export
 - Operation Entity
 - Add Operation attribute called SFV Export As-Built On Operation Sign Off (bit field)
 - Add Operation attribute (comma separated list) of Workcenter IDs which should be exported (eg Sta5 exports Sta1, Sta2, Sta3, Sta4, Sta5)
 - Add separate Operation attribute which controls if all data associated with a unit should be exported. This will override the list of work center IDs
 - Export Logic: Activate the data export at Operation Sign Off (all operators at the station complete)
 - If the Operation Sign Off is executed multiple times for a station, which could happen in the case of privileged users performing a re-sign on or via a reset (Clear Station Sign Off), then the export should be performed again.

- The file name will be As-BuiltExport-UnitSerialNumber--WorkcenterID--DateTimeStamp with all spaces replaced with underscores
 - The following logic will be used
 - At Operation Sign Off AND Operation.SFVExport = TRUE THEN
 - FOR EACH table specified in the Worker Service Config File
 - Select * from TableName where UnitSerialNumber = Current Unit AND WorkCenterID = (WorkcentersIDs To Be Exported)
 - Json files are posted to a blob storage container. A message is posted to a queue (Azure Service Bus) with a link to the json file.
- Bug Fixes
 - General
 - Fixed an error in the spreadsheet control, introduced in v12.2.30, which allowed for values to be pasted into list-based custom field where the value was not in the list.
 - Fixed an error in number cell types which allows for pasting values outside of the specified allowable range
 - Re-enabled the right-click View History in all documents controls (Time Study, Line Balancing specifically)
 - Factboard
 - Fixed an issue with the Dashboard where the default line takt time was not being used if station specific takt times were not defined
 - Fixed an issue with the Dashboard not updating station color codes correctly

12.8.3.0

Released August 3rd, 2022

- Enhancements
 - QA Module
 - Added Copy function to QA controls which allows specified QA rows mapped to activities (or entities) to copy corresponding object (e.g. worksteps) for the same entities. This is the reverse of the existing Import function in the QA control.
 - Time Studies
 - Various changes to remove hard coded EM MURI MODAPTS functionality to instead allow for different categories to be used. Still requires preference and report modifications per implementation if customization is required.
 - Auth Service
 - Added Login event to Audit Log table (viewable via Auth Service > Administration > Audit Logs screen)
- Bug Fixes
 - Time Study
 - Fixed an issue causing the Activity estimated time to revert after selecting the 'Calculate' button if the MUDA sheet is empty
 - Fixed a variety of errors associated with percentage based time study reports
 - PFEP
 - Fixed an error in the workbench after deleting a row
 - Fixed an error when generating the SOS Work Instruction report using Model-Option Alias filtering

12.8.2.0

Released July 12th, 2022

- Enhancements
 - Line Balancing
 - Modified the Print control to allow for printing charts across multiple pages
 - Updated English translations in Line Balance Leveling and Model Utilization reports
 - Modified search controls to use a central form
 - Time Studies
 - Standardize Activity estimated time calculations and editing. Enabled multi select and delete for Estimated Time MUDA.
- Bug Fixes
 - Time Study
 - Fixed error in the Observed Time report causing extremely high percentage values to be calculated for MUDA summary
 - Fixed an error where the video player would continue to play in the background after leaving the Media or Time tabs
 - Corrected the Estimated Time report to show VA/NVA/SVA percentage totals
 - Prevented editing of estimated time for checked in activities
 - ECO Status Report
 - Updated report to use latest helper service to resolve errors
 - Change Request
 - Fixed docking and anchoring of controls in the Edit Change Request form
 - Advanced Search
 - Fixed an error observed after deleting the last Saved Criteria
 - Line Balancing
 - Corrected idle time metric in the VA chart for stations with interoperator precedence
 - Fixed an issue where Yamazumi Chart option settings (font size, task percent) were not validated resulting in an error
 - Search Controls
 - Corrected issue causing list value selection in the Operation and Resource search controls to jump to a different item on selection
 - Corrected issues with cloud file access due to 'Exists' method
 - Where Used
 - Corrected issue where apostrophe in the ID caused search failure
 - Publishing
 - Disabled 'Add All Routing Models' if no routing is selected in Process Publishing
 - Auth Service
 - Disabled switching of accounts on forced reauthentication. Previously if the Privacy Notice was present it would not load the new account correctly.

12.8.0.0

Released July 6th, 2022

- Enhancements
 - QA Module
 - Added additional spreadsheet control look and feel settings to the column headers and data fields
 - Font Size and Style
 - Vertical and Horizontal Alignment
 - Resource Search Control

- Added logic to retain the records per page value in the UI after editing by the user and incorporate with advanced search
- Auth Service
 - Added logic to track the 'Account' information for login events
- Shop Floor Viewer
 - Removed Build List optimization logic and added checks to ensure the Station and Operator ID are cleared as needed. Added logic to address Build List duplicating units on last page.
 - Made change to not show OperatorIDs with a length of zero characters
 - Added a busy indicator / splash screen when capturing the Change Request snapshot to inform the user that a process is running
 - Increased the transaction timeout to a minute for the Administrator page
 - Various changes to the application based on feedback from latest security scan
 - Upgraded to latest DevExpress version 21.2.8
 - Implemented queues for IoT connections (SFV Web API ↔ Queue ↔ IoT Service ↔ Devices). RabbitMQ for on premises deployments. Azure Service Bus for cloud deployments.
- Bug Fixes
 - Line Balancing
 - Correct metrics for time and take rate calculations for frequencies in option only balances
 - Corrected error in model bar charts causing averages to not display correctly
 - Time Studies
 - Corrected errors when generating Calculated Time Report from Time Estimation, Routing, and Operations modules
 - Corrected an issue with data types being set incorrectly for custom text fields interpreting strings as numbers and trimming leading zeros
 - Corrected errors in various search controls caused by apostrophes in entity IDs not being handled correctly

12.7.1.0

Released May 23rd, 2022

- Enhancements
 - QA Module
 - Added Excel template lookup feature (Allows for configurability per field similar to legacy hard coded PFMEA RPN lookups)
 - Added ability to access certain process entity fields in the QA sheets.
 - Routings – ID, Description
 - Operation – ID, OpSeqNo, Description, Workstation ID
 - Activity – ID, Description
 - Publishing
 - Removed obsolete 'Unpublished Models' error message and validation from publishing as it is no longer required due to the migration from single model to multi-model work instruction revisions
 - General
 - Removed obsolete code settings spreadsheet column row header height which can cause errors on the upgraded Farpoint spreadsheet
 - Updated code for Ergonomics spreadsheets to handle column headers spanning multiple columns
 - Shop Floor Viewer

- Modified Build List logic to retrieve smaller lists of orders based on paging logic
- Modified Kit Cart Report to allow for multi select of units in the list, highlight units when selected, display the units list by default when the line is selected
- Added logic for setting the default Hot Issue Problem Type and also show/hide the Submit Type field via the Assets/Data/env-settings.json file
- Modified the work instruction media selection (image, video, CAD view) so that the selection persists after going to the Process Tree or a new unit.
- Modified the Change Request snapshot feature to capture the 3D image properly
- Hot Issues SMS / Text Notification Feature
 - Added Mobile number attribute to user accounts
 - Allows for each notification list to control if the users should be notified by email, SMS, or both
- Bug Fixes
 - Line Balancing
 - Corrected issue in the Model Utilization report where the wrong value was returned
 - Time Studies
 - Fixed a bug caused by the Farpoint spreadsheet upgrade where switching between time standards which did not support the same Ergonomic standards would cause an error

12.7.0.0

Released May 16th, 2022

- Enhancements
 - Shop Floor Viewer
 - Added Export to Excel and Column Chooser to Change Request
 - Added last user name from pin code entry into local session storage
 - Batching Changes
 - Initial release of the batching functionality.
 - Added OrderType attribute to order and assembly line (Serialized, Batch, Unitized Batch). Unitized Batch functionality not yet fully implemented. Expose existing 'Quantity' attribute of the order via the Order Data Management user interface.
 - Modified the Shop Floor Viewer
 - Display batch information on the Build List page
 - New privileges to control sign on / off before proceeding to next stations (order is partially complete)
 - Station Sign Off now shows Order Quantity, enables operator to type in quantity complete, quantity reworked, and quantity scrapped
 - Always, Order Quantity equals Quantity Complete plus Quantity Reworked
 - Sign-off is enabled only when Order Quantity equals quantity Complete, and when quantity Reworked equals 0
 - "Update & close" dialog is used when Order Quantity does not equal quantity Complete (during rework/ shift change).
 - Entered quantity information is transferred to the Build List when "update & close" is used.
 - Unit (order) which was "updated & closed," stays on top of the build list.
 - If quantity Reworked is greater than 1, "Has Rework" check mark is turned on in the Build List for that entire unit.

- Added new report for batching with filter for Unit Serial Number, Station, and Model ID. Only units which have been signed-on are returned.
 - Modified Factboard Andon Board to account for batching quantities
-
- Bug Fixes
 - QA Module
 - Fixed various bugs within QA module
 - Virtual Build
 - Added splash screen when loading a workspace
 - Corrected errors thrown when a CAD model is loading and attempting to click in the grid view
 - Fixed issue where CAD zoom was not staying engaged when entering consumption editing
 - Fixed error loading the right click menu from the CW diff control
 - Maintain focus on selected process when refreshing
 - Fixed zoom all button in precedence graph
 - Improve process tree refresh performance
 - Fixed issue setting the process tree node text color
 - Fixed issue displaying work steps within process tree
 - Fixed issue highlighting CAD model nodes in consumption mode
 - General
 - Disabled auto row height in Model Library to improve performance
 - Fixed color coding for New BOM Diff Flag to update after BOM diff and not after export
 - Default zoom all when opening Yamazumi chart

12.6.0.0

Released April 18, 2022

- Enhancements
 - Virtual Build
 - Added Model and Option columns to the Consumption grid
 - QA Module
 - New capabilities to customize headers, format sheet columns, align text, conditional formatting within sheet cells, set default back and forecolor settings, font size and style, and define cell borders
 - Deviations
 - Added capability to allow editing of effectivity dates for Expired New and In Process deviations
 - General
 - Added preference to use ECOID as MCOID and DeviationID as MCOID
 - Enable the editing of Item Properties within the Where Used Control in the Component Library
 - Shop Floor Viewer
 - Replaced 3D model tree within CAD view
 - Change Request updates – ability to file Change Request from Activity Page, markup image, upload images or documents, set Severity, see active and closed Change Requests within Activity document view
- Bug Fixes
 - Fixed error that added duplicate resource IDs when using multi select in search control
 - Fixed issue where Scenario Publishing would fail to publish
 - Fix error running the calculated time report for certain templates

- Corrected Option frequency calculations in Line Balancing when orders have multiple options matching multiple options on an activity
- Multiple fixes within CAD viewer
- Fixed error when using Advanced Search and newly added fields via customize view were not populating
- Corrected issue in Virtual Build where Model/Option filters not working correctly
- Fixed error when performing advanced search in Mass Update and changing the entity selection
- Corrected message handling when attempting to mass update unsupported time standards
- Removed comma separators within Operation search control for Op Seq Numbers
- Allow Where Used search within Consumption – Add from BOM control to show all revisions
- Resolved error while generating Model Family Times Report
- Fixed error in Virtual Build that reset the Consumption Quantity during a refresh
- Fixed error that did not save changes in Precedence when running Reports
- Corrected Line Balance chart labels for EMMURI view
- Corrected bug in Scenario Publishing that duplicated stations in grid view
- Corrected error throw in consumption compare when leaving application open for several days
- Fixed resizing issue within eBOM and mBOM controls
- Automatically add .xlsx extension to save file names during Pivot Grid Export
- Prevent editing of Text Item within mBOM
- Cleanup temp Chromium files when closing the application

12.2.41.0

Released March 7, 2022

- Enhancements
 - Login
 - Added logic to retry opening browser if the cache has been corrupted
 - Quality Analysis
 - Ensure column headers are always center-aligned vertically and horizontally
 - Allow users to set the height of the column header rows
 - Allow users to define default backcolor and forecolor settings for specific fields (columns) in the sheets. This can be set by default for a field but also be overridden for a view.
 - Allow users to define cell borders for a field (column) in the sheets, including width, sides (left, right, top, bottom), and color.
 - Created Import Mapping template for Configuration Files (Template Manager)
 - Improved View>Tree customization form.
 - Shop Floor Viewer
 - Modified the Change Request grid column widths to be adjusted
 - Added a maximum width to the 'Previous Activity' floating action button
 - Set the IoT tab to default to off
- Bug Fixes
 - Reports
 - Fixed error causing report load failures for certain calculated time data sets
 - Publishing – Line Balance Scenario
 - Fixed error causing failure for option frequencies
 - Fixed error causing work step custom fields to be reset to defaults
 - Resources
 - Fixed error when causing the same resource to be selected multiple times when multi select is used

- Fixed error in media streaming causing images to not display in various locations (Media tab, activity properties pop up, some work instruction reports)
- Shop Floor Viewer
 - Fixed error causing work step tests requiring an in spec result to not be enforced
 - Fixed error causing the Process Tree tab widths to be set incorrectly
 - Fixed error causing the Approval tables to display incorrect information following collapse / expand actions
 - Fixed an error causing the 3D model to not allow rotation

12.2.40.0

Released February 18, 2022

- Bug Fixes
 - Virtual Build
 - Fixed error causing Show All CAD button to not work in all cases
 - Fixed error in the Process Tree where expanding the Operation nodes does not clear previous Activity nodes
 - Fixed error causing 3D views to be populated multiple times in preview mode
 - Resources
 - Fixed error in column sizing in Resource search control
 - Fixed error when adding resources to BOM
 - Publishing
 - Fixed error in Process Publishing which allowed publishing to occur without a model being selected

12.2.36.0 - 12.2.37.0

Released February 15, 2022

- Bug Fixes
 - Fixed issue that did not map Options to activities via the Edit Model-Option Data view, and caused errors within Activity Model-Option mapping sheet
 - Fixed issue in Activity Search Control where paging was not working
 - Fixed issue that did not launch the image editor
 - Fixed issue that did not preview images in the media tab when image files were available
 - Fixed issue that was not clearing video upload jobs and caused a backlog that could result in videos not being available
 - Fixed issue where Assembly Planner could crash if the user pressed cancel while attempting to load a workspace
 - Fixed issue where images could be modified within activities checked out to other users

12.2.33.0

Released February 4, 2022

- Enhancements
 - Consumption Workbench-after Auto Update perform a re-compare and refresh process consumption
 - Removed time stamp from Date fields within Consumption Diff Results Grid - VB
- Bug Fixes
 - Fixed customize view issue where the last two columns would not be modified
 - Fixed error caused by hiding the Process ID field within the Virtual Build module

- Fixed issue that allowed cell comment boxes to be edited
- Fixed error caused by removing a Routing selection within a Workspace
- Fixed issue that allowed editing post authentication time out
- Fixed issue that allowed editing within consumption editing mode for checked in processes

12.2.32.0

Released January 30, 2022

- Enhancements
 - Removed warning prompt to refresh search when modifying search control options (Group in Folders, Find All Revisions)
- Bug Fixes
 - Fixed failure in customize view within Virtual Build consumption grid
 - Fixed issue where Man Machine Report did not run within operation module
 - Fixed error during Item import with date-based data
 - Fixed error with complex fields in Consumption Grid
 - Fixed typo in Create MCO screen that list Default From twice
 - Fixed incorrect validation error within station list when no duplicate data was present
 - Fixed column sorting issue within ECO BOM tab
 - Fixed issue where custom fields were not populating in the Resource search control

12.2.30.0- 12.2.31.0

Released January 25, 2022

- Enhancements
 - Integrated Consumption Workbench within Virtual Build
 - Highlight selected part in CAD model
 - Zoom/Isolate selected part in CAD model
 - Modify Activity Consumption for selected parts
 - Upgraded comparison results grid control
 - Added ECO Search within the Workbench Selection screen
 - Activity highlighted per selected consumption record
 - CAD Viewer integrated into the Yamazumi Chart, Precedence Graph and Component Library
 - Spreadsheet changes implemented:
 - new Sort and Filter controls
 - ability to zoom in/out
 - Sheet totals, counts, and averages shown in right corner of sheet as data is selected
 - Scheduler conversion to enable use in cloud hosted environments
 - Commonized code within Quick and Advanced Search – Activity Module
 - Implemented framework for handling Alternate Parts within ECO processing
 - Activity Consumption Copy – new feature that allows users to copy the consumption records for an activity to other activities based on custom advanced search criteria
 - Added EMMURI standard for MODAPTS and MTM1
 - Added Restricted security type within Pivot Grid and Mass Update templates
 - Resource Search Control now includes Customize View, Advanced Search, Configurable Paging
 - Resources have been added to the Advanced Search entity list, Pivot Grid Export
 - New QA Module, combining the PFMEA and Control Plan into a single module
 - Allows for configurable Standards/Views, conditional formatting within the sheet
 - Compliance with AIAG standards
 - Optional Risk Assessment and Risk Prediction tools for Safety evaluation

- Pivot Grid Export – added control to total/subtotal rows/columns
- SFV
 - Created Role Classifications
- Bug Fixes
 - Resolved issue in the task summary sheet within Time Study
 - Resolved issues found with certain report references
 - Fixed issue in the Study/Scenario Manager screen that incorrectly disabled the action buttons
 - Fixed issue when trying to delete a Study
 - Fixed issue within the BOM-Where Used control that did not show the correct data for certain fields compared to the Mass Edit View
 - Fixed issue where the application did not focus on the search box within the Line Balance wizard by default
 - Changed Pivot Grid to not reset the fields if the resulting data set is empty
 - Resolved error in BOM changes module when saving with hidden fields
 - Fixed error thrown when selecting Check Out in Where Used Mass Edit screen
 - Fixed issue that allowed edits on Resources that were checked in
 - Fixed Row Index error within Consumption Workbench
 - Fixed issue within Precedence Graph that caused the app to crash
 - Improved performance when loading ECO Item/BOM data
 - General fix for text translations in Line Balancing
 - Fixed Object Reference Error when publishing a Sequence Planner Study
 - Fix error mapping new options to activities
 - Fixed error when Cloning a Routing
 - Fixed bug that did not allow the column widths to be resized in the Routing Search Control
 - Fixed bug in import control where Routing Type was not added as part of standard BOM fields collection
 - Fixed error is WI Publishing ProcessDataExport
 - Fixed issue with BOM Mass Edit right click menu where actions were not enabled/disabled correctly
 - Fixed error caused when searching for Orders without selecting an Assembly Line
 - Made change to limit special characters within key fields (StationID, OperatorID) due to issues created by using them within URL strings
 - Fixed issue within Precedence graph that did not redraw existing lines when clicking default precedence
 - Fixed various typos in dialogue boxes
 - SFV – fixed issue where an activity without a workstep was not displaying the SOP Image
 - SFV – fixed error when promoting a Test Failure to Complete in a Cloud environment
 - SFV – fixed error in WI Approvals page when trying to load work step data
 - SFV – fixed issue where the Process Tree was not being refreshed using refresh button
 - SFV – fixed issue where reference documents were not being saved with correct file name and extension

12.0.31.0-12.0.32.0

Released December 17, 2021

- Bug Fixes
 - Resolved issue when downloading documents in a Cloud hosted environment
 - Fixed issue in QA module that did not auto save when exiting the module
 - Fixed issue in QA module when opening an Activity after a Process Structure search

12.0.30.0

Released November 18, 2021

- Enhancements
 - General
 - Developed the ability to create Publishing Approval Workflows, requiring published WI Revisions to be reviewed and approved by custom list of users via the Shop Floor Viewer
 - Allow for configurable BOM Change Flag comparisons
 - Replaced outdated technology used in several controls throughout the application
 - Documents attached to an Activity or Operation can be flagged and published to the SFV (Shop Floor Viewer), documents can be viewed from the Activity page
 - Developed support for HTML to be added to the Work Steps and displayed on Shop Floor Viewer
 - Allow for task precedence to be published along with task details, including the ability to publish interstation precedence
 - Cleanup/formatting of Excel export table via Pivot Grid Export module
 - Added validations for banned characters within the Station ID, Assembly Line and Operator ID fields
 - Reorder the Entity drop down in Custom Fields to sort Alphabetically
 - Enable searches by values containing apostrophes
 - Security Updates
 - Logging User and Session information upon user Login
 - All administrative functions/actions within the Admin Tools menus are now recorded
 - Added ability to provide Privacy and Security Notices during authentication
 - Application will now timeout due to inactivity and force the user to reauthenticate(login)
 - Modifications for compliance with FIPS 140-2
- Bug Fixes
 - Fixed bug that showed the Activity Description under the Routing Type column in the Where Used control
 - Fixed bug in Where Used control that showed incorrect Icon on consumption record
 - Fixed error when adding Models to the Edit-Model Option mapping control when filters enabled
 - Corrected rounding error within the Line Balancing Time Classification Report
 - Fixed error found after performing an Operation Time Roll up with multiple users navigating between the process libraries
 - Fixed error in advanced search when using multiple Calc Time fields in search criteria (or multiple similarly named fields)
 - Fixed Import Data bug that added Resource IDs to all Activities listed during the Import
 - Fixed Icon on Change MCO From Data control
 - Fixed error when attempting to delete all folders from Scenario Manager