



# Functional Release Notes

Version 5.11.16

## Release Information



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Author: Ali Egilmez

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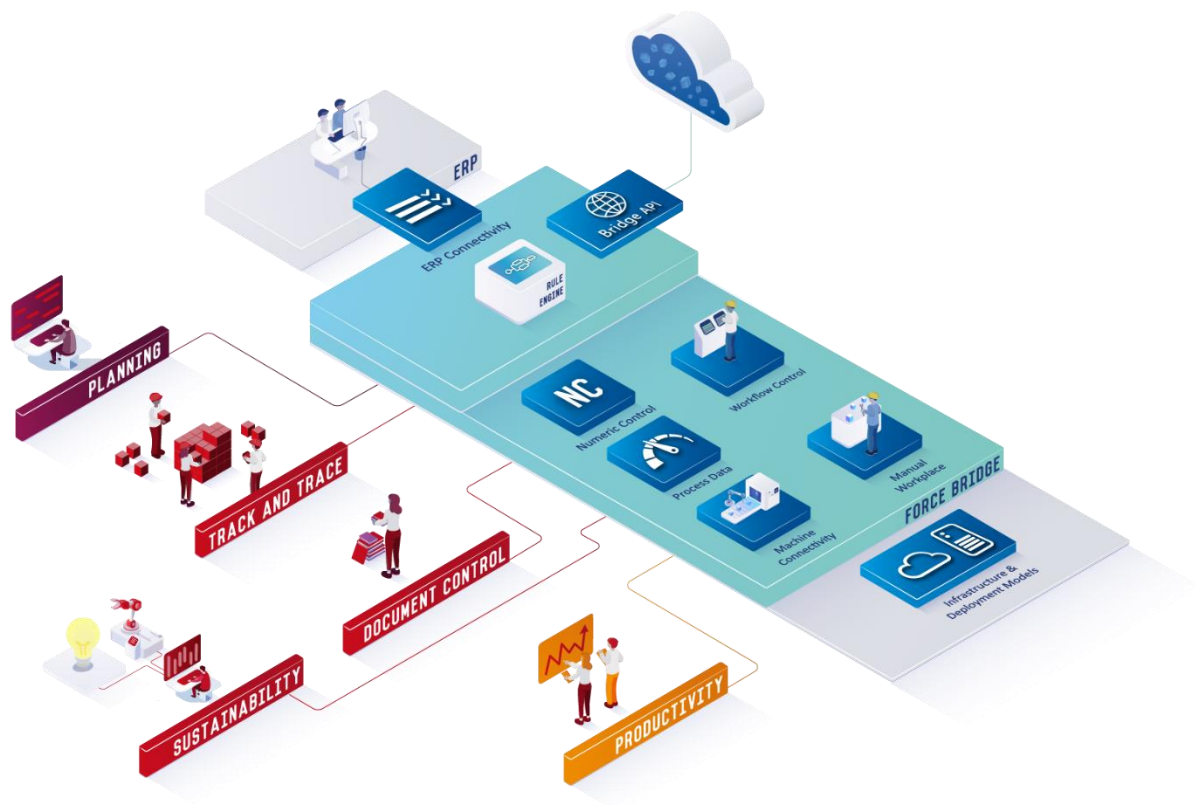
## 1 General

FORCAM provides companies with all the information they need to control and optimize their production. The modular IIoT solution FORCAM FORCE™ is as flexible as the needs of customers. With a variety of production apps, FORCAM helps companies to make their processes more transparent and improve their workflows. In this way, companies create the basis for optimization measures and sustainable success, thereby ensuring their competitiveness.

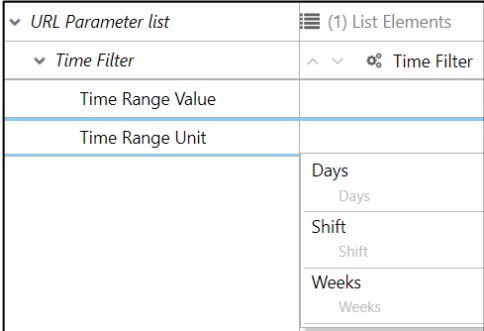
FORCAM is always endeavored to optimize the solution FORCAM FORCE™ further, to enrich it with functions, offering customers consistent growth and greatest possible use. For this purpose, several releases are published throughout the year.

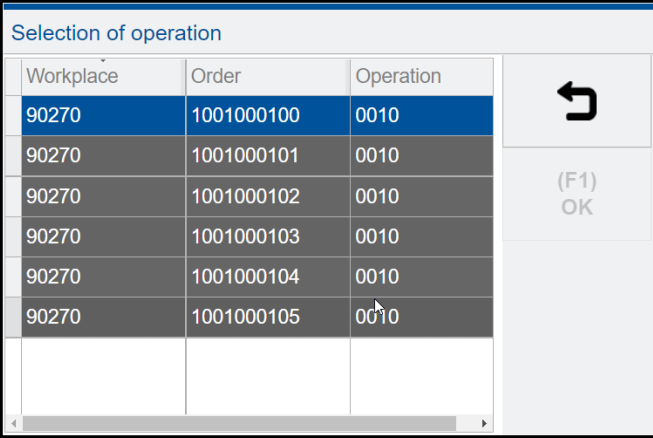
This document lists functions that have been added or changed in the course of the **5.11.16** release. It serves as an overview of the most important features in order to use FORCAM FORCE™ in the best possible way.

Detailed descriptions of the individual functions can be found in the respective product documentation.












## 2 SFT Configuration

Title	Description	Affected module	Affected area	Status
Time filter as URL parameter	<p>Added the possibility to configure a time filter as URL parameter for activity steps related to displaying Office reports in the SFT. The following time ranges can be configured:</p> <ul style="list-style-type: none"> <li>— Shifts (actual/last X shifts in time filter)</li> <li>— Days (actual/last X days in the filter)</li> <li>— Weeks (actual/last X weeks in time filter)</li> </ul>  <p>The time filter was added to the Machine Monitoring view. The time filter was also added to the following activity steps:</p> <ul style="list-style-type: none"> <li>— Navigation to a URL</li> <li>— Construct and/or call up a URL with parameters</li> <li>— Dialog to the navigation of URL with workplace</li> </ul>	Workbench	Shopfloor Terminal	New

Title	Description	Affected module	Affected area	Status
Barcode scan for split operations	<p>The barcode scan behavior is extended for the Operation View base page to handle the scenario where multiple operation rows are matched to a scanned barcode. Previously, the first matched row was selected. With this extension, the user is presented an operation selector dialog to select from multiple matched results. This only applies if the feature is configured manually.</p>  <p>The following parameters are added to the barcode scan configuration (only in the Operation View base page):</p> <ul style="list-style-type: none"> <li>Result dialog width - Width of the operation selector dialog</li> <li>Result dialog height - Height of the operation selector dialog</li> <li>Auto close search result dialog - If set, the operation selector dialog will close after a row is selected.</li> <li>Multi result selection table - Configuration for the operation grid of the operation selector dialog <ul style="list-style-type: none"> <li>No multi result table - Default selection. No operation selector dialog is configured. The first matched row is selected (existing behavior).</li> <li>Operation table - Operation grid configuration</li> </ul> </li> </ul>	Workbench	Shopfloor Terminal	New

## SFT Configuration

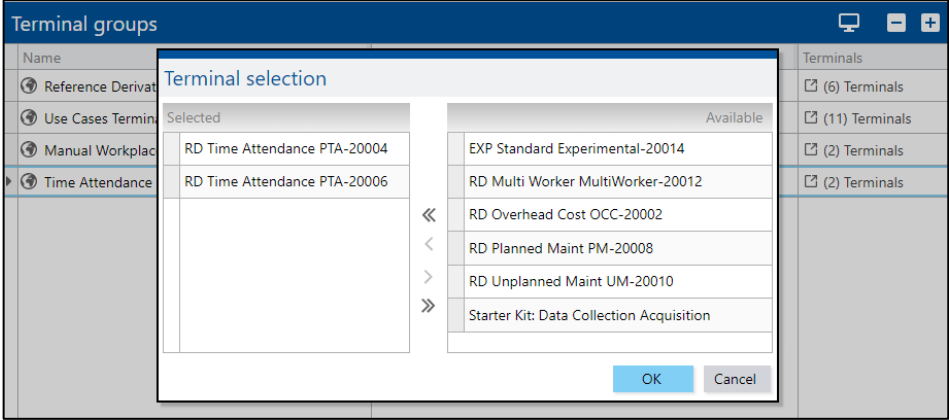
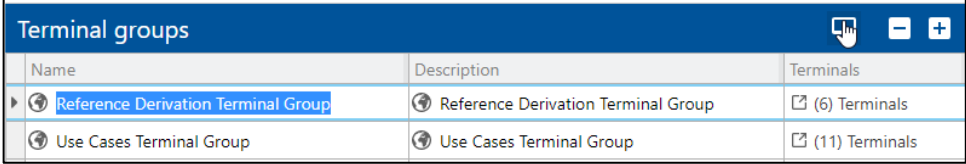
Title	Description	Affected module	Affected area	Status
	<div> <div>Operations list sorting ascending order - Keep <input type="checkbox"/></div> <div> <div>▼ Barcode scan configuration</div> <div> <div>Input pattern of valid barcode scan</div> <div>Result dialog width 600</div> <div>Result dialog height 400</div> <div>Auto close search result dialog <input type="checkbox"/></div> <div> <div>› Multi result selection table</div> <div>Search operations on all terminal workplaces</div> <div>› Terminal identification</div> <div>› NC/DNC configuration</div> </div> </div> </div> <div> <div>Single value scan</div> <div>Operation table</div> <div>No multi result table</div> <div>No multi result table repre</div> <div>Operation table</div> <div>Representation of operatic</div> </div> </div>			

Title	Description	Affected module	Affected area	Status																						
Default comment for “Request maintenance”	<p>Added a new parameter “Ticket preset by operating state” to the “Request a maintenance” activity step to populate the comment field with the operating state value.</p> <table><tr><th>Identifier</th><th>Value</th></tr><tr><td>▼ Request a maintenance</td><td></td></tr><tr><td>Activity step name</td><td> Request a maintenance</td></tr><tr><td>› Configuration of execution conditions</td><td></td></tr><tr><td>› Sizing</td><td></td></tr><tr><td>› Input parameters</td><td> (1) List Elements</td></tr><tr><td>Output parameters</td><td> (0) List Elements</td></tr><tr><td>Show messages on local message bar</td><td><input checked="" type="checkbox"/></td></tr><tr><td>Person information required</td><td><input type="checkbox"/></td></tr><tr><td>Ticket class</td><td></td></tr><tr><td>Ticket Preset By Operating State</td><td><input checked="" type="checkbox"/></td></tr></table>	Identifier	Value	▼ Request a maintenance		Activity step name	 Request a maintenance	› Configuration of execution conditions		› Sizing		› Input parameters	 (1) List Elements	Output parameters	 (0) List Elements	Show messages on local message bar	<input checked="" type="checkbox"/>	Person information required	<input type="checkbox"/>	Ticket class		Ticket Preset By Operating State	<input checked="" type="checkbox"/>	Workbench	Shopfloor Terminal	New
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<ul style="list-style-type: none"><li>— If the parameter is active, the selected operating state will be pre-populated as a comment for the ticket in case of a requested maintenance. The same behavior is generated when the status detail is changed within the dialog.</li><li>— If the parameter is inactive, the comment field will not be pre-populated with any value for the requested maintenance.</li><li>— A comment to generate a ticket is not a mandatory field. If a comment is available, a ticket will be created, otherwise not.</li></ul>																										

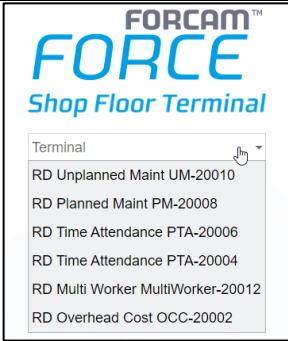
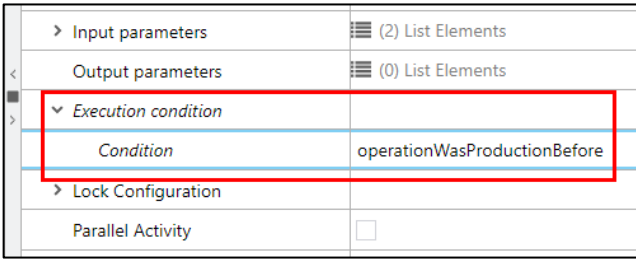
Title	Description	Affected module	Affected area	Status																
Maintenance status without request ID	<p>Added the new parameter “Maintenance request required” to the activity step “Maintenance status change”. This parameter lets the user decide whether a maintenance request is required in order to change the maintenance status. By unchecking the check box, the value is set to false, which enables the user to change the maintenance status without the request ID. When the box is checked (i.e., true), the existing workflow is not changed.</p> <table><tr><th>Identifier</th><th>Value</th></tr><tr><td>▼ Maintenance status change</td><td></td></tr><tr><td>Activity step name</td><td>Start Maintenance</td></tr><tr><td>› Configuration of execution conditions</td><td></td></tr><tr><td>› Input parameters</td><td>(1) List Elements</td></tr><tr><td>Output parameters</td><td>(0) List Elements</td></tr><tr><td>Maintenance status</td><td>Maintenance</td></tr><tr><td>Maintenance request required</td><td><input type="checkbox"/></td></tr></table> <p>Implemented a new logic component “Maintenance Status Simple” to react directly on “WorkplaceMaintenanceStatusCommand” and set the maintenance status according to the maintenance status code.</p>	Identifier	Value	▼ Maintenance status change		Activity step name	Start Maintenance	› Configuration of execution conditions		› Input parameters	(1) List Elements	Output parameters	(0) List Elements	Maintenance status	Maintenance	Maintenance request required	<input type="checkbox"/>	Workbench	Shopfloor Terminal	New
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## SFT Configuration

Title	Description	Affected module	Affected area	Status
Shopfloor Terminal groups	<p>Introduced a new configuration UI “Shopfloor Terminal groups” under the “Configuration” node/tile. In this UI, the user can select multiple shopfloor terminals and group them under a desired name in order to better organize and sort configured terminals.</p>  <p>It is possible to call-up the SFT group by selecting it in the UI and clicking on the “Copy to clipboard” icon.</p>  <p>After pasting the URL to a browser, the user will be able to select a terminal from within the selected group.</p>	Workbench	Configuration	New

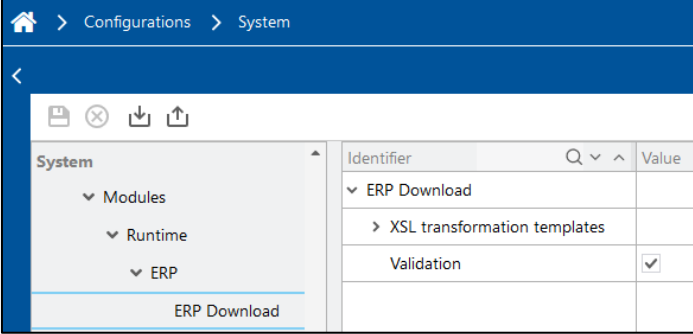
## SFT Configuration

Title	Description	Affected module	Affected area	Status
				
<b>New Execution condition</b>	<p>Added a new Execution condition variable for button enabling/disabling. The new variable “operationWasProductionBefore” lets the user enable/disable a button based on whether the selected operation was previously in production or not.</p> 	Workbench	Configuration	New

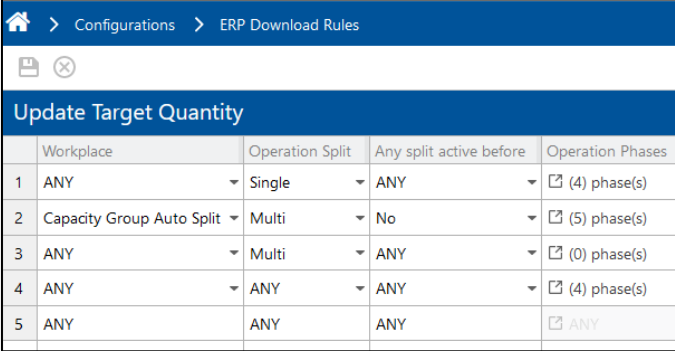
### 3 FORCAM FORCE™ Common

Title	Description	Affected module	Affected area	Status
<b>Performance improvement for event processing and reporting</b>	<p>The performance of FORCAM FORCE™ is generally optimized regarding data and their processing and display. With the release version 5.11.16, FORCAM FORCE™ set the basics for the option of enhancing the performance and reaction speed of the event processing and report execution for cases in which the performance is critical due to customer-specific data. This enhancement is disabled by default to minimize risks on customer side. The enhancement can be individually assessed and executed in close coordination with FORCAM. The following enhancement is possible:</p> <ul style="list-style-type: none"> <li>— Due to the changes of the views, reports may execute up to 1,5 to 2 times faster.</li> <li>— Regular events (any events which are not corrections) may execute faster. The impact depends on the size of the interpretation caches, but a reduction of 50 % is possible.</li> <li>— Corrections may execute faster and cause less DB load. The impact depends on the size of the timelines, but a reduction of 50 % is possible.</li> </ul>	Workbench/ Office	Event Processing/ Reporting	Changed

## 4 Platform & Connectivity

Title	Description	Affected module	Affected area	Status
<b>ERP download validation</b>	<p>Added the option to validate data sent via ERP download. If an ERP system provides data in the form of generic XML, this option ensures that the XML contains all relevant information and that the data is consistent with the specification based on the XSD.</p> <p>The feature is active by default but can be deactivated in the workbench under Configurations &gt; System &gt; Modules &gt; Runtime &gt; ERP &gt; ERP Download</p> 	Connectivity	ERP	New
<b>Heidenhain plugin for Linux on Wine</b>	<p>Extended the Heidenhain plugin to allow it to run in a Linux/Wine environment. The previous Heidenhain plugin variant, which uses HeidenhainDNCLib, can be used at the same time as the new variant, even for the same machine.</p> <p>The old or new variant is used depending on the configuration parameters for the connection.</p> <ul style="list-style-type: none"> <li>HeidenhainDNCLib: <ul style="list-style-type: none"> <li>Supported by 32 and 64 bits (option 18 is required on the Heidenhain controller)</li> <li>For connecting, using the same name as in the HEIDENHAIN DNC Connection App is required. Example: TNC640.</li> <li>Alternatively, the IP address, the CNC type and the protocol can be configured. Example: <ul style="list-style-type: none"> <li>for a TNC640: TNC640:10.48.113.128:10:5</li> <li>for an iTNC 530: i530:10.48.113.54:1:2</li> </ul> </li> </ul> </li> </ul>	Connectivity	Heidenhain plugin	Changed

Title	Description	Affected module	Affected area	Status
	<ul style="list-style-type: none"> <li>Adontec Supercom Heidenhain Library: <ul style="list-style-type: none"> <li>Supported by 32 bits only (option 18 is <i>not</i> required on the Heidenhain controller)</li> <li>For connecting, use the format <b>Any connection name:&lt;IP-Address&gt;:&lt;Port&gt;@supercom</b>. Example: <ul style="list-style-type: none"> <li>for a TNC 640: TNC640:10.48.113.128:19000@supercom</li> <li>for an iTNC 530: i530:10.48.113.54:19000@supercom</li> </ul> </li> </ul> </li> </ul>			
<b>Operation quantities via callback</b>	It is now possible to be automatically informed about booked quantities via Callbacks in BridgeAPI. Added a new logic component "operation quantities sender" for the realtime processing. Enabling this component in the realtime process causes a server event to be sent.	Connectivity	BridgeAPI	New
<b>FANUC plugin update</b>	Updated the FANUC library to the 2018 version, making it now compatible with Linux.	Connectivity	FANUC plugin (MDC)	Changed

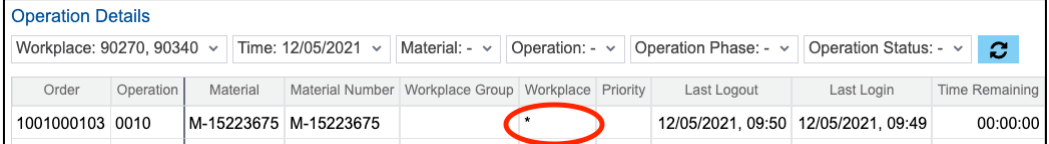
Title	Description	Affected module	Affected area	Status
ERP download rules	<p>Introduced a new UI to configure rules when a target quantity update should be allowed (Configurations &gt; ERP Download Rules).</p>  <p><u>Configuration</u>        Each rule in a row consists of an evaluation and a decision.        The evaluation checks for a matching rule and if the rule does not match, the next evaluation is checked.        The following properties are part of the evaluation:</p> <ul style="list-style-type: none"> <li>Workplace type</li> <li>Amount of operation splits</li> <li>Any active operation split before</li> </ul> <p>The decision determines whether the target quantity update is allowed. The following properties are part of the decision:</p> <ul style="list-style-type: none"> <li>Current operation phase</li> </ul> <p><u>ERP Download</u></p> <ul style="list-style-type: none"> <li>Creates the default (product) Update Target Quantity rules</li> <li>Applies the configured Update Target Quantity rules when processing order/operation ERP data</li> </ul>	Connectivity	ERP	New

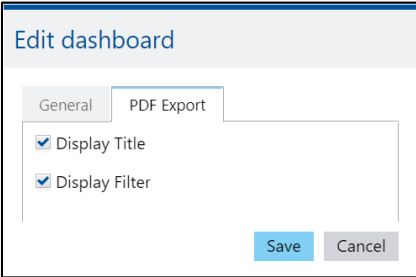
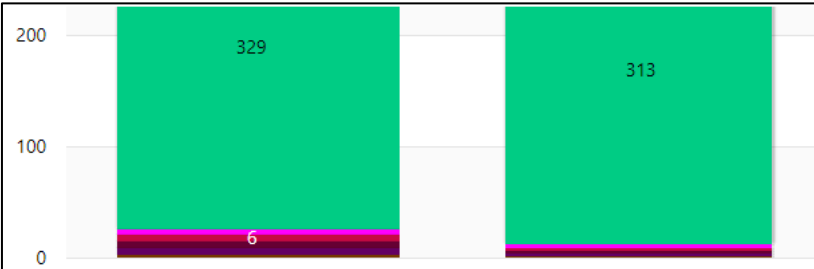
Title	Description	Affected module	Affected area	Status
Log macro variable transaction in database	When sending a machine sequence or a recipe from ffworker or ffworkbench, entries in the database are written as described below. The affected tables are "FF_NC_USR_ACTION_LOG" (already existing) and "FF_NC_SIGNAL_ACTIONS" (new). If an error occurs during sending, this is also reported there. For each action (sending machine sequence or recipe signals), there is one entry in the "FF_NC_USR_ACTION_LOG" table:	Connectivity	Database	New/Changed
	ID			
	Hibernate ID (referenced by FF_NC_SIGNAL_ACTIONS)			
	ACTION_TS			
	Time when the action was done			
	USR_ID			
	Username (for ffworkbench) or terminal name (for ffworker)			
	ACTION_CODE			
	40 for machine sequence, 41 for recipe signals			
	PACKET_ID			
	Packet ID (reference to FF_NC_PACKET)			
	MACHINE_ID			
	Machine ID (reference to FR_MD_MACHINE)			
	PERSON_ID			
	Person ID of logged on person (reference to FR_MD_PERSON)			
	RESULT_CODE			
	0 for success, other value if any of the signals returned an error			
	SOURCE			
	"ffworker" or "ffworkbench"			
	For each signal sent, there is an entry in the new "FF_NC_SIGNAL_ACTIONS" table:			
	Name	Type	Description	
	ID	BIGINT	Hibernate ID	
	ACTION_LOG_ID	BIGINT	Action log ID (Reference to FF_NC_USR_ACTION_LOG)	
	ACTION_TIME	TIMESTAMP	Time when the signal was sent	
	BOOLEAN_VALUE	BOOLEAN	Boolean value if the signal is of Boolean type, otherwise NULL	
	CONTROLLER_ID	BIGINT	Controller ID (Reference to FF_JAVIS_CONTROLLERS)	
	ERROR_CODE	INTEGER	Error code of the signal sending	
	ERROR_TEXT	VARCHAR(256)	Error text of the signal sending. If this is a literal key, the English translation is written.	
	NUMERIC_VALUE	DOUBLE	Numeric value if the signal is of numeric type, otherwise NULL	
	SIGNAL_ID	BIGINT	Signal ID (Reference to FF_JAVIS_SIGNALS)	

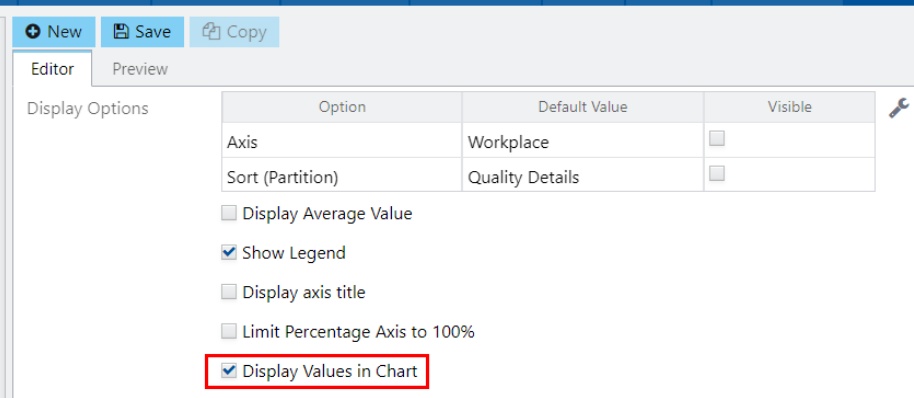
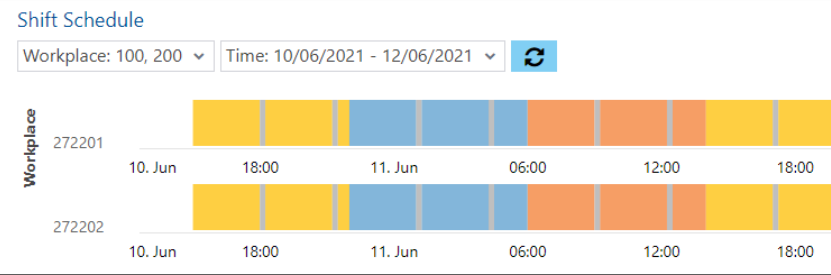
Title	Description			Affected module	Affected area	Status
	STRING_VALUE	VARCHAR(256)	String value if the signal is of string type, otherwise NULL			
	SUCCESS	BOOLEAN	success of the signal sending			
	<p><u>Database cleaning</u></p> <p>The “FF_NC_USR_ACTION_LOG” and “FF_NC_SIGNAL_ACTIONS” must be purged at regular intervals using the purge command starting at a specified timestamp. The purge command can be configured time-dependent in the Workbench: Configurations &gt; General &gt; System &gt; Purge Command Configuration.</p> <div><div><div>System</div><div><div>Configurations</div><div><div>General</div><div><div>System</div><div>Caches</div><div>Ignite Caches</div><div>Object update</div><div>Logging</div><div>Time synchronisation</div><div>Authentication</div><div>Import/Export</div><div>Production tool resources</div><div>Allowed resources for groovy scriptin</div><div>Purge Command Configuration</div></div></div></div></div><div><div>Identifier</div><div>Q</div><div>^</div><div>Value</div><div><div>Purge Configuration</div><div>Execution interval to check obsolete entries</div><div><div>Purge Details</div><div>(1) List Elements</div><div><div>Purge Detail</div><div>^</div><div>^</div><div>Table Name</div><div>FF_NC_SIGNAL_ACTIONS</div><div>Active</div><div><input type="checkbox"/></div><div>Time Column</div><div>STATE_TIME</div><div>Where Clause</div><div>PROCESSING_STATE IN ('D', 'E')</div><div>Maximum Threshold of deletion</div></div></div></div></div></div>					

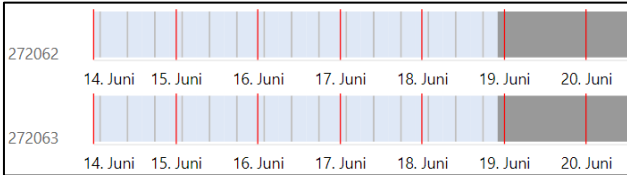
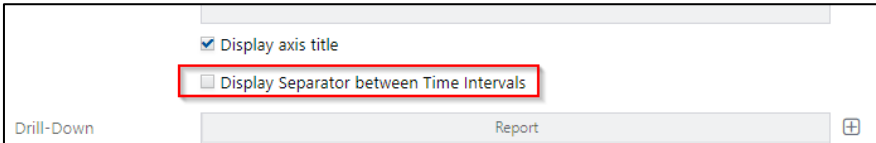


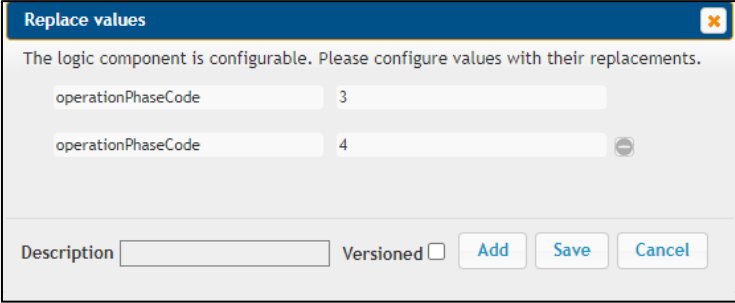
## 5 Productivity

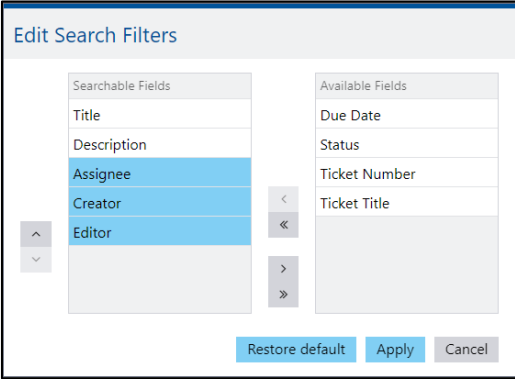
Title	Description	Affected module	Affected area	Status
Aggregation of values when rescheduling operation	<p>The report “Operation Details” was adapted to aggregate target values and actual values when an operation is rescheduled to another workplace, i.e., each operation is only shown once. If an operation has been rescheduled, a “*” is shown instead of the workplace description in the corresponding column. When filtering for workplaces, the operation is only found when searching for the latest workplace the operation was executed on.</p> 	Office	Reporting	Changed
Warning icon when correcting active operation quantities	<p>In the Total Quantity Correction and Single Quantity Correction UIs, the current operation phase on which the quantity correction takes place is displayed to the user. Depending on the configuration of the booking logic (“Quantity correction compensation for machine counters” = true), a warning icon with a tooltip is now displayed to the user. This icon indicates that a quantity correction takes place on an active operation and affects the recorded quantities.</p>	Workplace	Correction	Changed

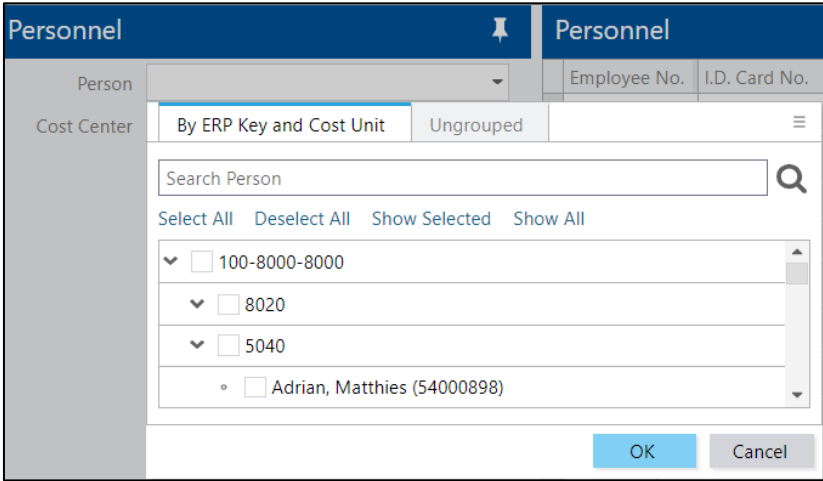
Title	Description	Affected module	Affected area	Status
<b>Show/hide title and filter for export</b>	<p>Added the option to show/hide report titles and filter configurations for PDF exports of dashboards. The dashboard settings are now divided into two tabs:</p> <ul style="list-style-type: none"> <li>General: General settings which were previously available</li> <li>PDF Export: Settings which only affect the PDF export such as for displaying report title or filter options on the export/print itself</li> </ul> 	Office	Dashboard	New
<b>Display values in bar/column chart</b>	<p>Added the option to display values of a bar/column chart. For regular bar/column charts, the values are displayed outside the bars/columns. For stacked bar/column charts, the values are displayed inside the bars/columns.</p> <p><u>Note:</u> The values are not displayed if there is not enough space to display them. Accordingly, for stacked bar/column charts, if the space of the partition is too small, it might not be clearly visible to which partition the value belongs to.</p>  <p>The option to display values in a chart can be activated by checking the corresponding box in the report editor:</p>	Office	Reporting	New


Title	Description	Affected module	Affected area	Status
				
<b>Visual optimization of shift plans and shift overview</b>	<p>Visually optimized shift plans and the shift overview timeline report:</p> <ul style="list-style-type: none"> <li>Added a new color column to the Shift Type Definition in the Workbench to assign a color to a shift type. The colored shift is visible in the report "Shift Overview [Timeline]" which is a sub report of the "Shift Schedule" report.</li> </ul> <p>The shift area in the timeline report will display the color defined for the shift type. This is also valid for non-working shifts. If different colors are defined for non-working shifts, the "no shift" areas may appear in different colors. The color for breaks is <i>not</i> configurable.</p> <p>If this feature is used, the shift color will no longer differentiate whether a shift is in the past or in the future.</p> 	Workbench/ Office	Shift Type Definition/ Reporting	New

Title	Description	Affected module	Affected area	Status
	<p>— Added the option to display a separator line between time intervals when creating a new timeline report.</p>  <p>This feature is disabled by default. It can be activated in the Report Editor.</p>  <p><b>Note:</b> The separator lines will be displayed in the PDF export, but <i>not</i> in the Excel export.</p>			
<b>IDoc tag for forced logoff</b>	<p>Introduced the new IDoc tag “ZWABM” to differentiate whether a person is forcefully logged off or normally in case of time attendance. This new tag was added to “ATTOF” (Time Attendance SAP message). If the person is logged off forcefully, the tag value is 1, otherwise 0.</p> <p>This new configuration is added to SAPUpload.xml automatically during migration but can also be added manually by the user via Workbench under Configurations &gt; System &gt; ERP Upload &gt; IDoc Template.</p>	Rule Engine	ERP Upload	New

Title	Description	Affected module	Affected area	Status
Logic component for expired target setup time	<p>Introduced a new logic component to enable the user to see exactly when the target setup time has expired, even if there is a stoppage in between. The new configurable logic component “TARGET SETUP TIME MONITORING” calculates the exact value of the target setup time when it gets expired, even if there is a stoppage (e.g., with active “Processing” phase) in between several setup phases. This logic component inside the “realtime preprocessing process” flow has the following default configuration:</p>  <p>In the case of the above-mentioned configuration with “operationPhaseCode” = 3 (setup) and “operationPhaseCode” = 4 (processing), the previous spent setup time will not be reset. It will take the previous spent setup time into account to reach the configured target setup time.</p>	Rule Engine	Business Logic Modeler	New

Title	Description	Affected module	Affected area	Status
<b>User consolidation for tickets</b>	<p>Consolidated the Ticket Editor and Ticket Activity Editor in terms of different users (Creator/Editor/Assignee).</p>  <p><u>Ticket Editor Data Source</u>        Changed “Creator Name” to “Creator” and introduced a new field “Editor” along with configurable filters.</p> <p><u>Ticket Activity</u>        Introduced the field names “Creator”, “Editor” and “Assignee” along with configurable filters. These fields have already existed in the data field but were not available in the UI yet due to a different mapping configuration. The mapping has been consolidated now.</p>	Office	Schedule & Dispatch	New/ Changed
<b>Logic library and project releases</b>	<p><u>Scope</u>        With this update, logic projects must be updated to a logic lib of version 5.11.16 using the business logic modeler (ffmodeler). Afterwards, fforce will automatically use the newest logic library version. From this point on, logic lib updates with the business logic modeler are only necessary for major version changes (e.g., 5.11 to 5.12).</p> <p><u>Version number change</u>        At startup, ffruntime will compare the logic library referenced by the configured logic project against the logic library version which is required by this ffruntime version. The following decisions are done if auto updates are enabled (which is the default):</p> <ul style="list-style-type: none"> <li>— If the logic library in the project is compatible and newer than the version in ffruntime, it will load the version from the project.</li> </ul>	Rule Engine	Logic Library	Changed

Title	Description	Affected module	Affected area	Status
	<ul style="list-style-type: none"> <li>– If the logic library in the project is older than the version in ffruntime, it will load the version from ffruntime.</li> <li>– If the logic library in the project is incompatible and newer than the version in ffruntime, startup will stop with an error message.</li> <li>– For changes in the major fforce version (e.g., 5.11 to 5.12), the logic project must always be updated with the Business Logic Modeler as there might be removed logic components.</li> </ul> <p><u>Validation</u> FFRuntime will validate the logic library at startup and execute auto updates. A configuration option exists to control this behavior.</p>			
<b>Personnel and cost unit filter</b>	<p>Added filters for persons and Cost Center related information to better organize and sort the displayed data. The filters were added to the following areas:</p> <ul style="list-style-type: none"> <li>– Personnel (Master Data &gt; Personnel Data &gt; Personnel)</li> <li>– Person Cost Center History (Master Data &gt; Personnel Data &gt; Person Cost Center History)</li> </ul> <p>Example for a filter:</p>  <p>Additionally, the history-related information of an inactive person will be shown in the color grey in the Person Cost Center History.</p>	Workbench	Personnel Data	New

Title	Description						Affected module	Affected area	Status																								
	<div><div><div>Search person Cost Center </div><div><div>Person<input type="text"/></div><div>Cost Center<input type="text" value="2010, 8020, 8010"/></div></div></div><div><div>Search Results</div><table><tr><th>ERP Keys</th><th>First Name</th><th>Last Name</th><th>Employee No.</th></tr><tr><td>100-9000-9000</td><td>Marion</td><td>Huber</td><td>54000001</td></tr><tr><td>100-9000-9000</td><td>Gerd</td><td>Schlotterhe</td><td>54000002</td></tr><tr><td>100-9000-9000</td><td>Jason</td><td>Hocke</td><td>54000003</td></tr><tr><td>100-9000-9000</td><td>Julian</td><td>Fendt</td><td>54000011</td></tr><tr><td>100-9000-9000</td><td>Ivonne</td><td>Heinze</td><td>54000012</td></tr></table></div></div>						ERP Keys	First Name	Last Name	Employee No.	100-9000-9000	Marion	Huber	54000001	100-9000-9000	Gerd	Schlotterhe	54000002	100-9000-9000	Jason	Hocke	54000003	100-9000-9000	Julian	Fendt	54000011	100-9000-9000	Ivonne	Heinze	54000012			
ERP Keys	First Name	Last Name	Employee No.																														
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100-9000-9000	Ivonne	Heinze	54000012																														
Auto-refresh correction results	After correcting the operating state of a machine and manual workplace, the correction result is directly displayed inside the result table. The user does not need to click the search button again to see the results.						Workbench	Correction	Changed																								
Target workplace for quantity booking	Operation quantity booking is now using the target workplace from the operation quantity event instead of the workplace from the operation master data (database table “FR_MD_OPERATION”). The correction of a quantity is using the target workplace from the operation quantity event (database table “FR_EVT_OPERATION_QTY”).						Workbench	Correction	Changed																								
ECM import overwrites	Extended the functionality of the CSV import of error code mappings (ECM). When importing a CSV file, all locally existing error code mappings will be deleted, and new ones will be imported. The import of status details is also included.						Workbench	Workplace Configuration	Changed																								



## Productivity

Title	Description	Affected module	Affected area	Status
<b>New personnel reports</b>	<p>Added the personnel reports below which can show metrics aggregated by time intervals. Enhanced the person filter to also consider person cost unit history information. For now, only “online” versions of the reports are available since the underlying database structure does not support all the report functionality on archived data.</p> <ul style="list-style-type: none"> <li>— OLE Report (online) Displays the OLE data per personnel hierarchy element aggregated over a custom period</li> <li>— OLE Development (online) Displays the chronological development of the OLE for a specific hierarchy element from a personnel hierarchy aggregated per custom time intervals</li> <li>— Personnel Report (Cost Unit/Personnel Grouping) (online) Displays personnel times and person-related quantities per personnel hierarchy element aggregated over a custom period</li> <li>— Personnel Development (Cost Unit/Personnel Grouping) (online) Displays the chronological development of personnel times and person-related quantities for a specific hierarchy element from a personnel hierarchy aggregated for the selected intervals</li> </ul> <p><u>Limitations for personnel development &amp; personnel report</u></p> <p>The OEE time base can only be used for these two reports in the delivered product standard/default configuration regarding phase and status.</p> <p>The change of the status detail assignment is nevertheless correctly considered and can be individualized for each customer.</p> <p>The OLE development and report is not affected and limited in this regard.</p> <p>Default OEE time base structure for correct calculation in these two reports:</p> <p>(1) In progress (phase) + 000 production (status) + individual list of status details</p> <p>(2) Setup (phase) + 020 setup (status) + individual list of status details</p> <p>(3) Every (phase) + 999 stoppage (status) + individual list of status details</p>	Office	Reporting	New

## Productivity

Title	Description	Affected module	Affected area	Status
<b>Reports moved to standard</b>	<p>The reports below are now officially standard reports of FORCAM FORCE™. They were already implemented but were not yet part of the standard due to customer-related reasons.</p> <ul style="list-style-type: none"> <li>— Personnel Activity Log Displays the reporting events for a single person</li> <li>— Personnel Operation Detail Log Displays operating states for each operation per workplace and person</li> </ul>	Office	Reporting	Changed

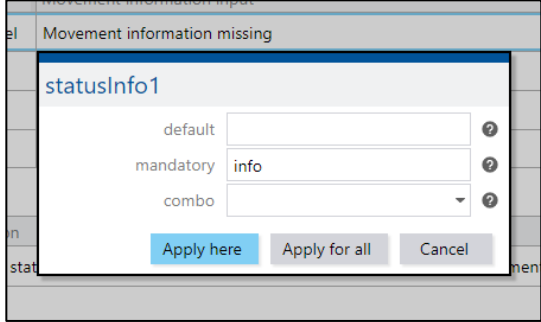
## 6 Process

Title	Description	Affected module	Affected area	Status
<b>Copy data acquisition points</b>	When configuring energy data, the user had to create a data acquisition point for each workplace with mostly the same data. It is now possible to copy an existing data acquisition point to reuse it.	Office	Track & Trace	New
<b>Bulk status change for elements</b>	Added the “Bulk status change” function, allowing the user to change all statuses of a linked element in asynchronous mode. After right-clicking on an element and clicking on “Bulk status change” in the context menu, the following dialog displays the selected element name, the initial status of the element (specifically the one that was clicked on to open the dialog), and a selection to choose the next status from. The table in the dialog lists the packets that the element is linked to and sorts them depending on whether the intended status change is possible or not. Example for a: status change from “Locked” to “Released” for an element that is linked to p1, p2, p3, and p4:	Workbench	Document Control	New

## Process

Title	Description	Affected module	Affected area	Status																											
	<div><div><div><div>Bulk status change</div><div>Element: <i>Werkzeuge für Axel Designing.DOCX</i></div><div>Transition from Locked to <div>Released</div></div><div><div>Status change possible</div><div>Select All</div><div>Deselect All</div></div><table><thead><tr><th>Change</th><th>Packet Name</th><th>Status Model</th><th>Movement information input</th></tr></thead><tbody><tr><td><input type="checkbox"/></td><td>p1</td><td>Default Status Model</td><td>No movement information needed</td></tr><tr><td></td><td></td><td></td><td></td></tr></tbody></table><div><div>Status change not possible</div><table><thead><tr><th>Packet Name</th><th>Status Model</th><th>Information</th></tr></thead><tbody><tr><td>p2</td><td>statusModel1</td><td>No authorization for this transition.</td></tr><tr><td>p3</td><td>statusModel2</td><td>The status model does not contain the selected transition.</td></tr><tr><td>p4</td><td>statusModel1</td><td>The initial state of the element does not correspond to that of the selected element.</td></tr><tr><td></td><td></td><td></td></tr></tbody></table><div><div>OK</div><div>Cancel</div></div></div></div></div><div>Depending on the selected target status, the status change is possible for different packets. The reason as to why the status change is not possible depending on the packet and status model is provided in the information field of the “Status change not possible” table.</div><div><u>Movement information</u></div><div>Depending on the selected transition and status model, the user is required to provide movement information:</div><div><div><div>— “Movement information missing”: The movement information has at least one mandatory field that must be provided, otherwise the status transition will not be possible.</div><div>— “Movement information possible”: Movement information can be provided by the user, but they are not mandatory.</div><div>— “No movement information needed”: No movement information can be provided.</div></div></div></div>	Change	Packet Name	Status Model	Movement information input	<input type="checkbox"/>	p1	Default Status Model	No movement information needed					Packet Name	Status Model	Information	p2	statusModel1	No authorization for this transition.	p3	statusModel2	The status model does not contain the selected transition.	p4	statusModel1	The initial state of the element does not correspond to that of the selected element.						
Change	Packet Name	Status Model	Movement information input																												
<input type="checkbox"/>	p1	Default Status Model	No movement information needed																												
Packet Name	Status Model	Information																													
p2	statusModel1	No authorization for this transition.																													
p3	statusModel2	The status model does not contain the selected transition.																													
p4	statusModel1	The initial state of the element does not correspond to that of the selected element.																													

## Process

Title	Description	Affected module	Affected area	Status
	 <p>When all mandatory information is provided, the user can choose from two options:</p> <ul style="list-style-type: none"> <li>— “Apply here”: The provided movement information will be saved for the packet from which the dialog was opened.</li> <li>— “Apply for all”: The provided movement information will be saved for all packets with the same status model as the packet from which the dialog was opened.</li> </ul> <p>When the information is provided, the movement information input field changes its text to “Provided”.</p> <p><u>Select and execute change</u></p> <p>To be able to execute the status transition, the user must select the packets for which the transition is desired. This is done using the checkbox of the “Change” column. If the user wishes to change all possible packets, he or she can use the “Select All” button. The status change will be executed when the user clicks the OK button. This will only work when all the mandatory movement information for the selected packets is provided.</p> <p><u>Configuration</u></p> <p>To configure the new UI, options were added to the General configuration PDM page (Production Data Management &gt; PDM Configurations &gt; General configuration PDM):</p> <ul style="list-style-type: none"> <li>— “Allow taking over parameters for packages from the same status model”: Adds/removes the “Apply for all” button from the movement information input UI.</li> <li>— “Allow manual possible status change for packages”: Adds/removes the “Select All” and “Deselect All” button. Enables/disables the user from choosing for which of the “Status change possible” table entries the transition should be executed (“Change” column will be selected by default without the option to deselect it).</li> </ul>			

## Process

Title	Description	Affected module	Affected area	Status
	<ul style="list-style-type: none"> <li>– “Table configuration: status change possible”: Allows the user to choose any fields they want to display in the “Status change possible” table as columns. Changes to these will not affect the “Change, “Status Model, and “Movement information input” columns.</li> <li>– “Table configuration: status change not possible”: Allows the user to choose any fields they want to display in the “Status change not possible” table as columns. Changes to these will not affect the “Status Model” and “Information” columns.</li> </ul>			
<b>CAQ Integration Module</b>	<p>Introduced “CAQ Integration Module” as a new product in the form of a consistently designed microservice. This microservice provides atomic functions available via the BridgeAPI and barely contains any fixed processes in the code - unless they are required. Thus, code with minimal dependencies and fixed flow definitions is generated. The integrative CAQ processes between CAQ partner systems and FORCAM FORCE IIOT/Shopfloor Terminals are composed on a low-code platform using BridgeAPI via a custom composition layer. The functions of the CAQ Integration Module are also used intensively in this composition. The composition can be used to implement a wide variety of CAQ process flows for customers.</p> <p>This new module is only needed if a customer wants to use CAQ in the production. The new module is to be installed using Finster and FFSetup.</p>	CAQ	CIM	New

## 7 Appendix

Abbreviation	Meaning
<b>CAQ</b>	Computer-aided quality
<b>CIM</b>	CAQ Integration Module
<b>ECM</b>	Error code mapping
<b>ERP</b>	Enterprise Resource Planning
<b>IDoc</b>	Intermediate document (SAP document format)
<b>Lib</b>	Library
<b>MDC</b>	Machine data collection
<b>OLE</b>	Overall Labor Efficiency
<b>SFT</b>	Shopfloor Terminal
<b>UI</b>	User interface
<b>Wine</b>	Windows-compatible runtime environment for Portable Operating System Interface (POSIX) compatible operating systems