

Release notes for PM5 version 5.15.0000 and earlier

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Installation and updates – general information

Please observe – when upgrading from PM5 client of **version 5.11.200 or earlier**, it is necessary to uninstall existing PM5 clients of previous version and then perform new installation of current version of the client.

For detailed instructions regarding installation and upgrade of PM5 to version 5.15.0000, please consult installation and upgrade manual, available at https://pm5.dk/wp-content/uploads/2017/06/Installation_and_upgrade_manual_PM5_5121000.pdf.

Please always remember to make a backup of your database before starting upgrade process of your PM5 system.

Purpose of this document

This document contains detailed information about major additions and changes in every version of PM5. Unlike the change log document, which provides quick overview of changes and bug corrections in each version, this document provides 'in depth' description of new features and extensions to PM5 client.

Release notes for PM5 version 5.15.0000

Detailed Event Log

General description

Event log, introduced in version 5.14.0000 has been extended in this version and can register changes in individual fields of records belonging to main data set. In other words, the event log is now capable to register any changes done in individual records for machines, tasks, spare parts, suppliers, activities and faults.

Activation of event log

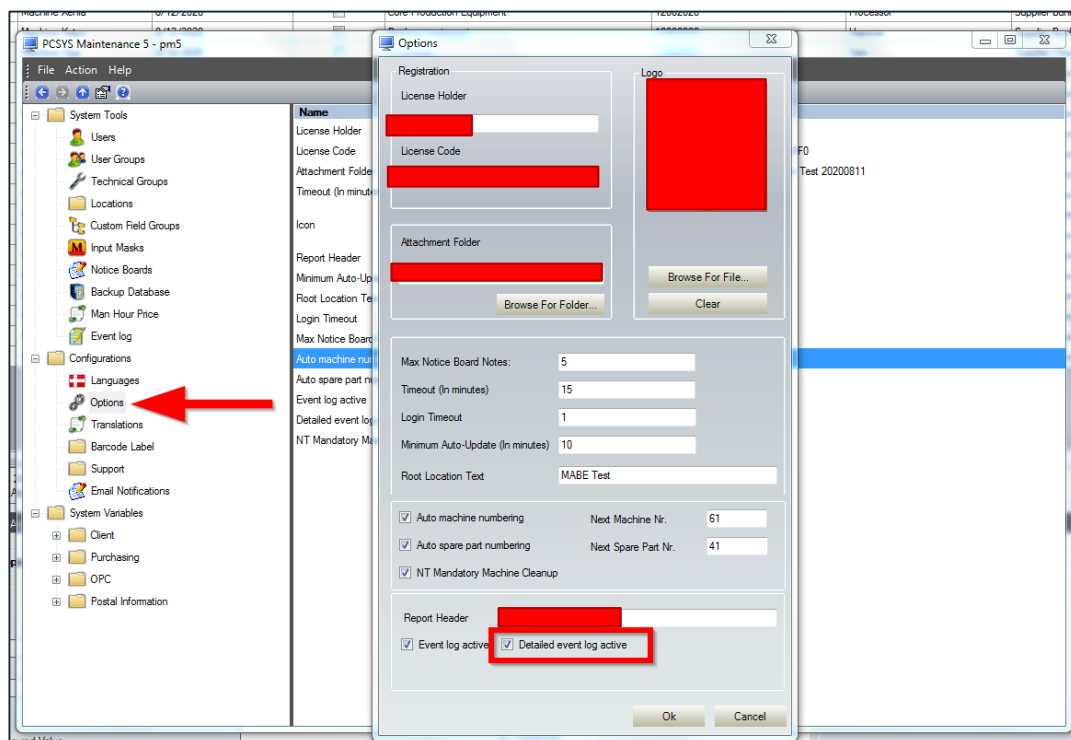
By default, client event log is not activated. To activate event log perform following actions:

- Open Administration module.
- Select and open Settings form.
- Check in 'Detailed event log active' checkbox at the bottom of the form.

Detailed event log becomes active after restart of PM5 client.

It is also important to understand that Detailed Event Log is independent of Event Log activated with help of checkbox Event Log Active. Either one or both event logs can be set to active or inactive.

When active, detailed event log will register changes in every single field in records of main data set. Collected data will give administrator almost complete overview of changes in PM5 over time. However, it also means that event log tables will grow with several hundred (or even thousands of records) rows for each day of operation.



Detailed event log and event log report

Detailed event log records are presented in the event log report introduced in version 5.14.0000. For information about how to access event log report, please refer to section Client Event Log, available in release notes for version 5.14.0000 below.

An individual record registered by detail event log is slightly different than a record registered by event log. Below is an example of four records registering same user action by **event log** and **detailed event log**.

| | | | | | |
|----------------------|---------|-----------------------------|--------|---|-----|
| 8/13/2020 2:29:01 PM | Machine | Valve 1-B-16 - 12082020-003 | UPDATE | | pm5 |
| 8/13/2020 2:29:01 PM | Machine | 12082020-003 | UPDATE | Machine Barcode - 889465465 --> 35711546 | pm5 |
| 8/13/2020 2:29:01 PM | Machine | 12082020-003 | UPDATE | Machine Status - In Storage --> Temporary Out Of Commission | pm5 |
| 8/13/2020 2:29:01 PM | Machine | 12082020-003 | UPDATE | Machine Active - Active --> Inactive | pm5 |

Top record is registered by **event log**. It registered that machine with name Valve 1-B-16 has been edited at specified time and by specified user.

Rows below are registered by detailed event log and are related to same edit event. Each record registers change in a single field where a value has somehow been changed. In this example we can see that user pm5 changed the barcode of the machine, changed its status from *In Storage* to *Temporarily Out Of Commission* and finally deactivated it.

In general terms, record registered by Detailed Event Log contains following information in column Description:

<Name of field that has been edited> - <Original value> → <Edited value>

The only exception to pattern above can be found in records registering changes in **Notes** field for Machine/Task/Spare Part/Supplier/Activity and **Fault Description/Fault Solution** for Faults.

When changes in those fields are detected, the description field will simply say *Note Field has been edited*. This is done to save space in the report. However, both original and new content of edited note fields are saved in database and are available for inspection, if it is required.

One final note regarding presentation of detailed event log records in the report. In some instances information in Description column may look like this:

| | | | | | |
|----------------------|------|------------------------|--------|------------------------------|-----|
| 8/13/2020 2:45:12 PM | Task | TASK 20200721 NOVEMBER | UPDATE | To be signed by - --> User E | pm5 |
|----------------------|------|------------------------|--------|------------------------------|-----|

At first glance it may look incomplete – there is no information about original value in field *To be signed by*. Information presented in this record is however correct. The fact that there is no original value in *To be signed by* indicates exactly that – signing person was originally not specified for that task, but that has been rectified and the task is now assigned to User E.

What data is registered by detailed event log

All changes in data that are editable through detail forms for Machine, Task, Spare Part, Supplier, Activity and Fault are automatically registered when detailed event log is active.

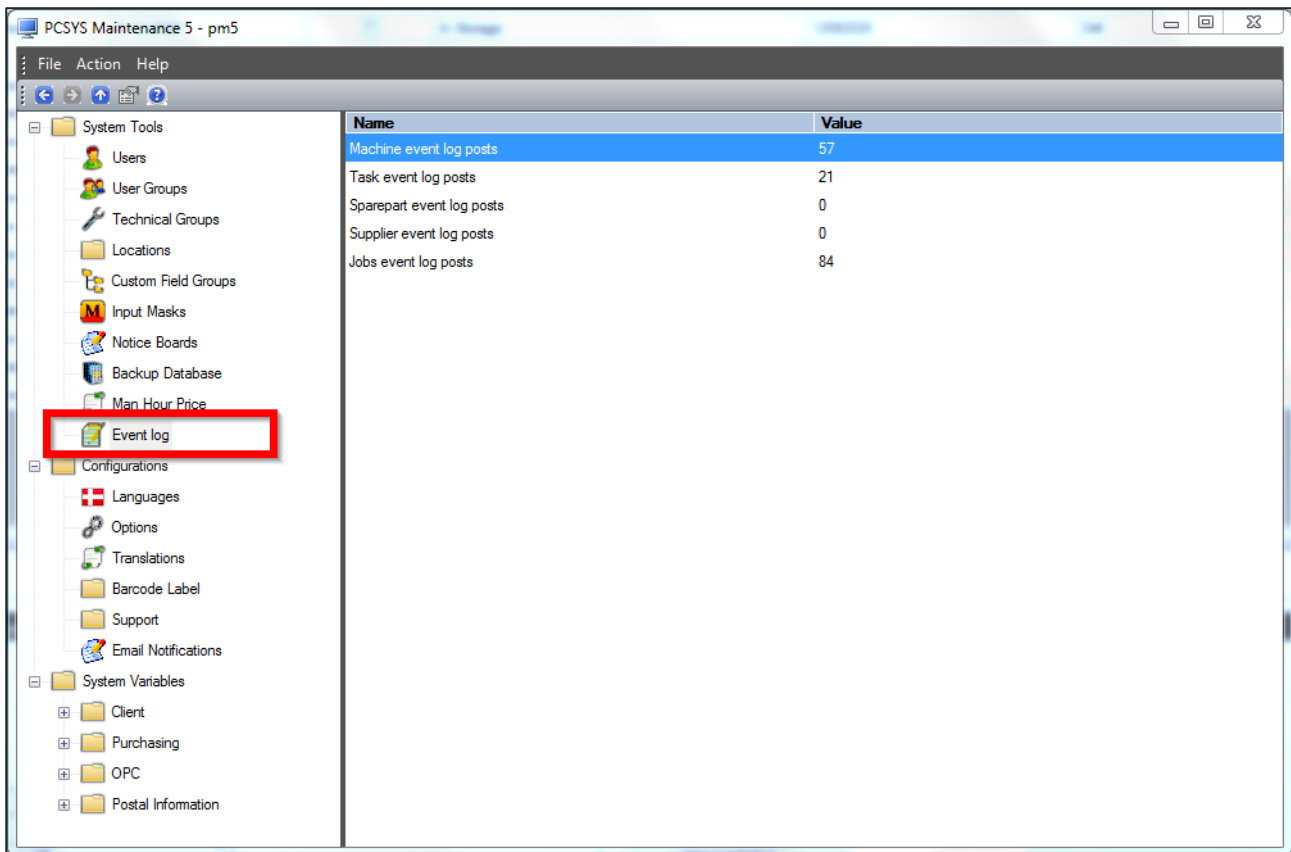
When are changes in records registered by detailed event log

Detailed event log registers changes in main dataset when:

- Detail form for the record is closed.
- Batch edit tool is used to change selected set of records.
- Batch finish tool is used to finish selected set of activities and faults.
- When a machine or machines is moved to another location with help of drag and drop function. This action triggers registration of change of location.
- When data in activity is indirectly modified by changes in task to which it belongs. Changes in task that trigger registration of “indirect” changes in its activity are:
 - Activation/deactivation of task.
 - Change of task’s priority.
 - Change of person specified in *To be signed by* field.
 - Change of scheduling information in *Days* or *Measured Parameter* fields.

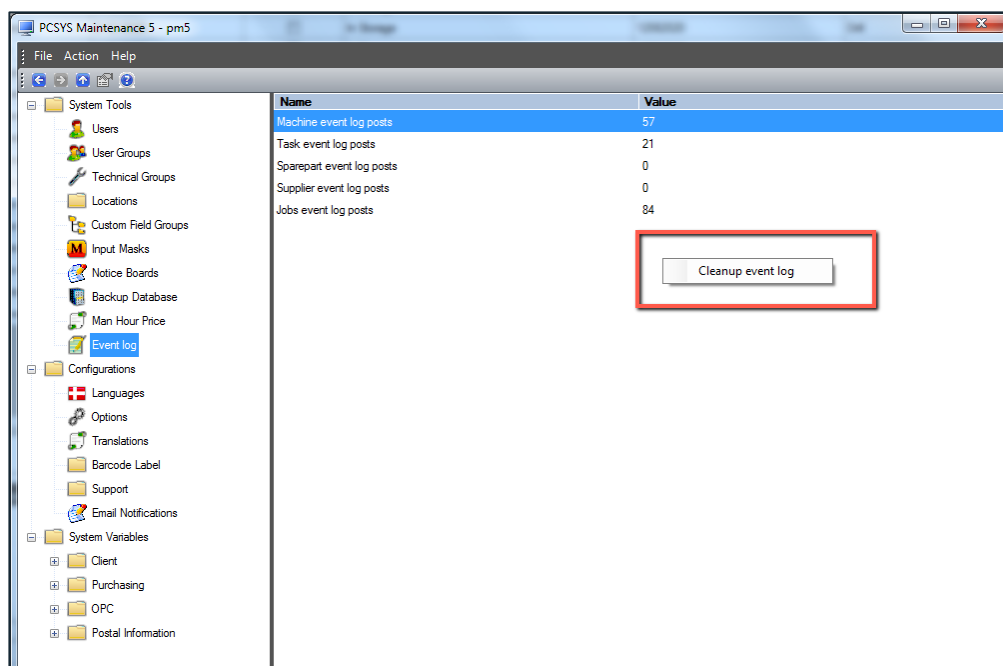
Administering Event Log

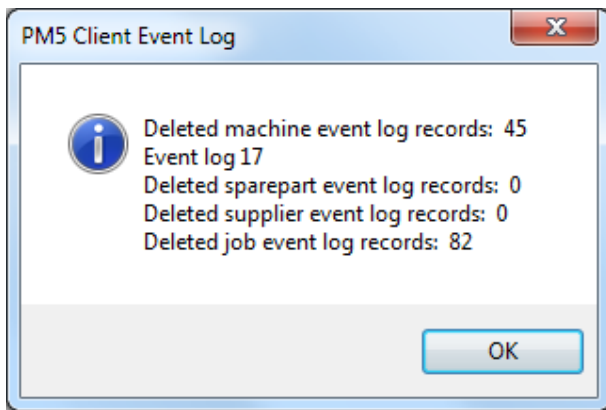
As already mentioned, volume of data generated by both versions of event log can be substantial. Administration module has therefore been extended and has new section, called Event Log.



When Event Log section is selected in PM5 Administration module, the right section of the screen will display statistics about number of log records for each of groups in main data set.

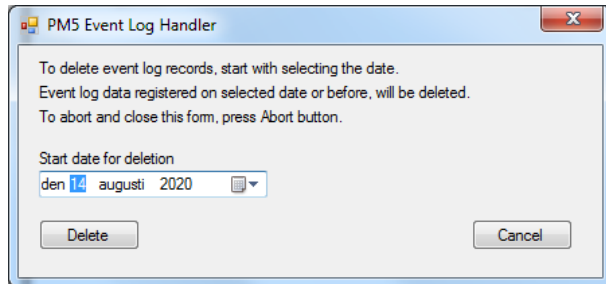
By moving the mouse over right section of screen and clicking on right mouse button, user opens quick menu for Event Log section. At the moment there is one function user can access – cleanup of event log.





When selected, Cleanup event log menu item opens form shown to the left.

Cleanup function is very simple. User selects the date in *Start date for deletion* field and presses *Delete* button. A confirmation of this action is required.



After user confirms the action, all event log records created on selected date or earlier will be deleted from the database. After deletion is completed, a confirmation form showing number of deleted log records is shown on the screen.

Cleanup flag in Activities/Faults

Cleanup flag is a new system variable added to activities and faults. Decision to add this variable is based on new requirements specified in BRC Global Standards Issue 8. Requirement in question demands that there should be a clear indicator showing if the equipment is to be cleaned after maintenance work.

Cleanup flag is optional and will be visible and available for use only after it has been switched on in Administration module. This is done by opening Settings form and checking in checkbox *Mandatory Cleanup After*.

After this settings has been activated, new element with name *Mandatory Cleanup* will be available for use in detail forms for activities and faults. The element consists of two checkboxes, one called *No Cleanup* and the other called *Cleanup Required*.

Either none of the checkboxes is checked in (this is default state) or only one of checkboxes can be checked in.

Thus, the Mandatory Cleanup Element has possible three states:

- When neither of checkboxes is checked in, the cleanup status is unspecified.
- By checking in *No Cleanup*, user indicates that no cleanup is to be performed after this job is completed.
- By checking in *Cleanup Required*, user indicates that a mandatory cleanup of equipment needs to be performed after job is completed.

Corresponding functionality has been implemented in PM5 Mobile. When this function is activated in Administration module, Mandatory Cleanup element will be shown on the screen in following screens on mobile devices:

- Creation of new fault
- Finish activity
- Finish fault

Email Notification System

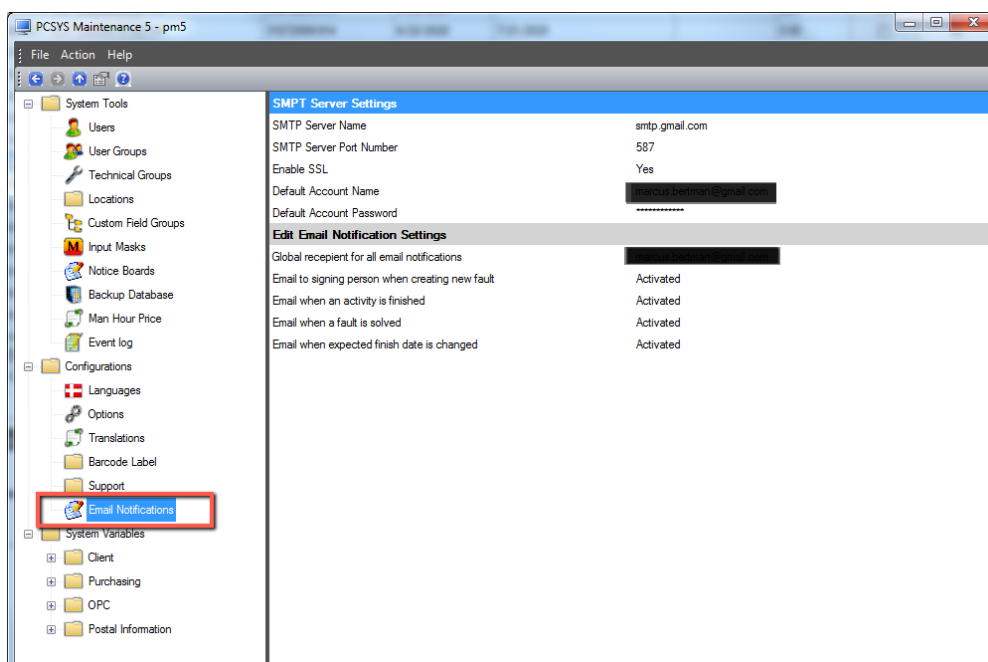
General description

Purpose of email notification system is to provide a simple, automatic method to notify PM5 users when certain events take place in the system. In this initial version, following events will trigger sendout of an email to one or more recipients.

| Event | Recipient |
|---|---|
| New fault reported | <ul style="list-style-type: none">PM5 User specified as responsible for solution in field <i>To be signed by</i>.Global recipient, if such is specified. |
| Fault reported as solved | <ul style="list-style-type: none">PM5 specified in field <i>Discovered by</i>.Global recipient if such is specified. |
| Expected finish date changed in a fault | <ul style="list-style-type: none">PM5 specified in field <i>Discovered by</i>.Global recipient if such is specified. |
| Activity reported as solved | <ul style="list-style-type: none">Global recipient if such is specified. |
| Expected finish date changed in an activity | <ul style="list-style-type: none">Global recipient if such is specified. |

Configuration of email notification system

Email notification system is configured in PM5 Administration module. To access it, open Administration module and select Email Notifications section.



Right section of Administration module presents information about current configuration of email server used for sendouts of notification, as well as which events trigger sendout of an email.

To open configuration form, double-click anywhere in right section of Administration module.

Configuration form consists of two tabs – *SMTP Server Configuration* and *Notification Settings*.

In *SMTP Server Configuration* user needs to specify settings for the email server that will be used for sendouts of email notification. Following information is required:

SMTP Server Name – name of email server used for sendouts

SMTP Server Port Number – port number of server specified above.

Enable SSL – whether SSL encryption is to be used or not. Whether or not it is to be checked in depends on how SMTP server is configured.

Default Account Name – an email account that exists on specified SMTP server.

Default Account Password – password of the account specified in Default Account Name field.

A clarification is needed at this point – as configuration above indicates, all emails triggered by events in PM5 will be sent through a single email account, as specified in the settings. It is suggested that a dedicated email account is created for this specific purpose.

Button *Send test email* triggers sendout of a generic test email to specified account, using specified SMTP server. If configuration is correct the specified email account will send a test email to itself.

In second tab, labeled *Notification Settings*, user can select which events are to trigger sendout of a notification email.

Combobox *Global recipient for all email notification* is used to select a single PM5 user that will receive all emails generated by notification system.

Selection of global recipient is voluntary. Please observe that global recipient is the sole recipient for notifications regarding finished activities and change of expected finish date in an activity. Thus, if global recipient is not selected, those two types of notifications system will not work even if they are activated.

The four checkboxes in this tab correspond to the events that trigger sendout of an email. User can select individually which events are to be active and generate sendout of an email.

When are email notifications triggered by PM5

Depending on selection in Configuration, email notifications are sent out in following circumstances.

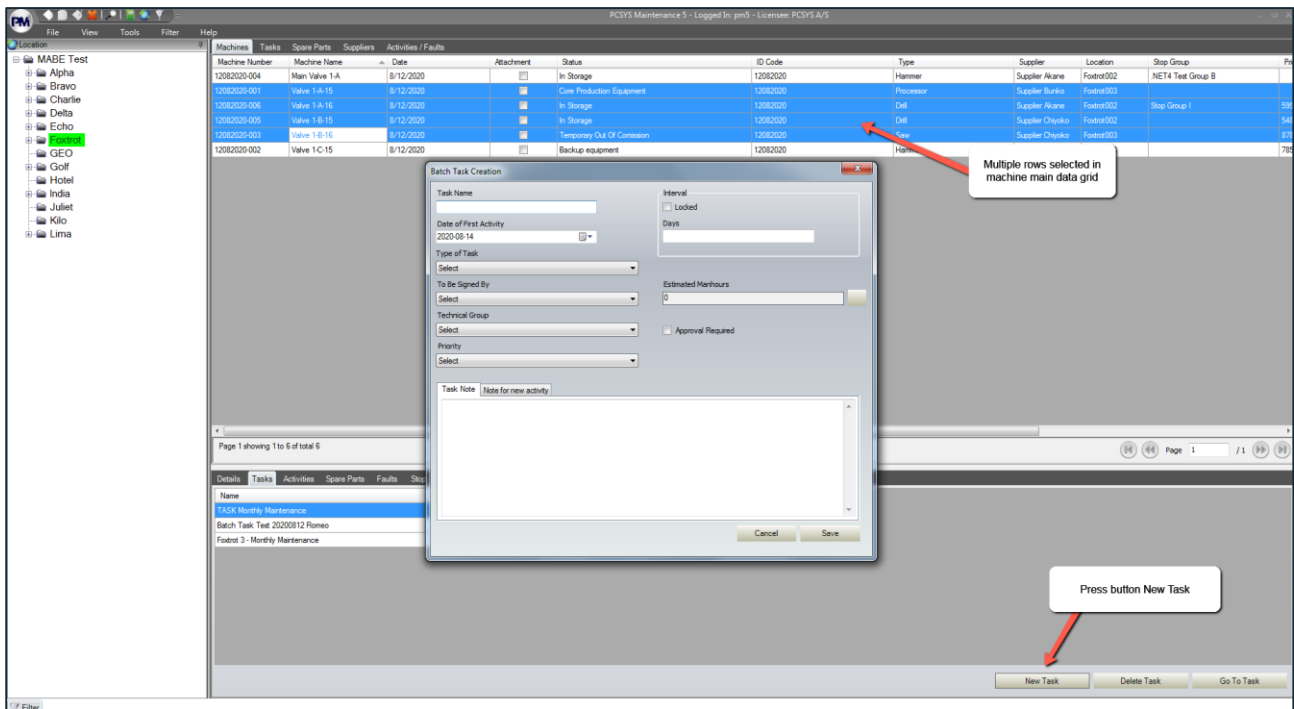
| Event | Recipient |
|--|--|
| New fault reported | <ul style="list-style-type: none">PM5 Windows client, when new fault is created and saved. |
| Fault reported as solved | <ul style="list-style-type: none">PM5 Windows Client, when fault finish status is set to finished and fault is saved.PM5 Windows client, when a fault is successfully set to finished through batch finish tool. |
| Expected finish date changed in a fault | <ul style="list-style-type: none">PM5 Windows Client, when expected finish date is changed and fault is saved.PM5 Windows Client, when expected finish date is changed for a fault through batch edit tool. |
| Activity reported as solved | <ul style="list-style-type: none">PM5 Windows Client, when activity finish status is set to finished and fault is saved.PM5 Windows client, when an activity is successfully set to finished through batch finish tool. |
| Expected finish date changed in an activity | <ul style="list-style-type: none">PM5 Windows Client, when expected finish date is changed and fault is saved.PM5 Windows Client, when expected finish date is changed for an activity through batch edit tool. |

As table above indicates, the email notifications are currently only triggered by events that happen in Windows client. Currently, events that take place in PM5 Mobile will **not** trigger sendouts of email notifications.

Batch task create function

Until now, it was only possible to create tasks one at a time, for single machine. This functionality has been extended – it is now possible to select multiple machines in main data grid and create same task for all machines in the selection, in a single process.

Procedure for task creation for multiple machines is exactly the same as before. The only difference is that user selects more than one machine before pressing on *New Task* button in Machines / Task subpane.

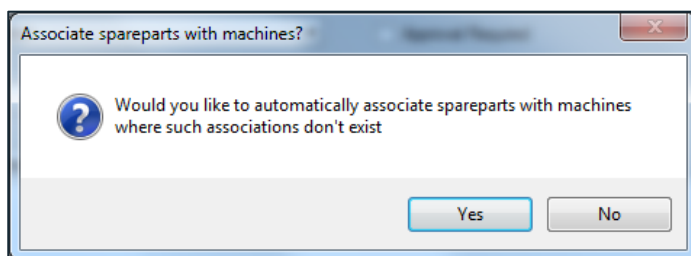


There are few restrictions when creating a task for multiple machinea:

- Definition of the created task – its name, type, specified time period, etc – will upon creation be exactly the same for all tasks. Details for individual tasks can be adjusted after creation.
- It is not possible to create passive tasks. All tasks must have a specified number of days in *Days* field.
- Batch task creation allows only creation of tasks based on days period. Measured parameters cannot be used.
- Scheduled date for first activities will be the same for all activities. This can be adjusted for each individual activity, once it has been created.

New tasks are created when user presses on *Save* button, one task per selected machine.

As in standard procedure, user will also be given opportunity to add spare parts that are to be consumed by each activity based on created task. If user wishes to do that, an additional question regarding automatic association of spare parts will be stated. If user agrees, an association will be automatically between all selected machines and any spare parts not already associated with them.



Once all spare part associations are completed, the procedure is finished and a notification about creation of selected number of tasks will be shown on the screen.

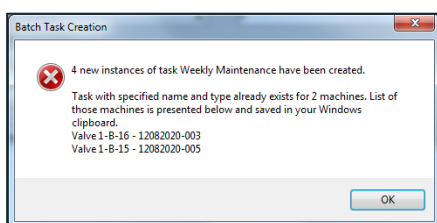
Clarification A

Spare parts and stocks selected in spare part selection – spare part selection is handled in exactly same manner as during creation of a single task. There is however an important difference. When a spare part is associated with single task, only the stocks that are available to machine are available for selection as source stock. In batch task creation, user can select from **all** spare part stocks. If selected stock turn out to be invalid for any of selected machines, stock selection will be automatically reset to 'no stock' selection.

This method is used for obvious reason – selected machines can be located at any location and PM5 cannot know which stock locations to include or exclude. Therefore, it is up to user to select optimal source stock and manually make necessary adjustments for spare part associations that require additional attention.

Clarification B

In connection with this new feature, it is worth recalling existence a rarely encountered restriction for tasks – it is not allowed to create multiple tasks for same machine with **same task type and name**. Under normal circumstances, users rarely encounter this restriction. However, since tasks created with help of batch creation tool are exactly the same, chances are that sometimes one of those tasks will fail to be created due to this restriction. When this happens, user will be notified about such failure in confirmation message. Example of such event is shown below.

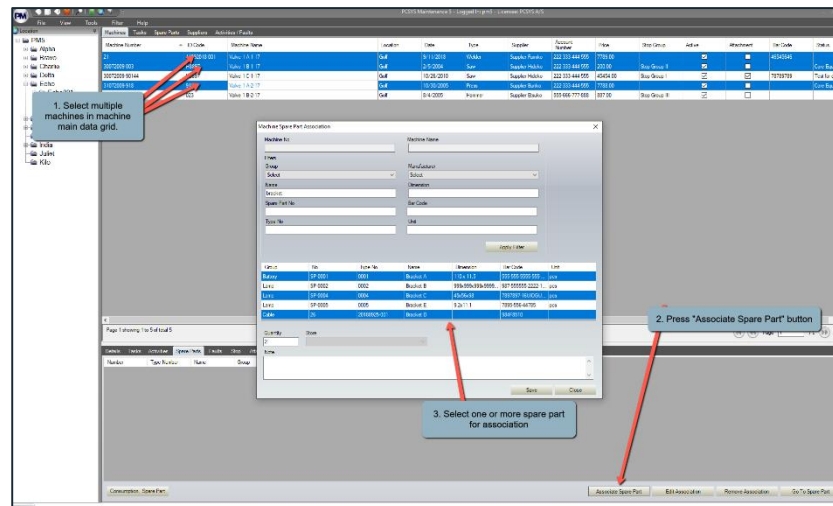


In example message, user tried to batch create a task for six different machines. Creation of the task was successful for four of those machines. It failed for two of the machines, which are listed in the message. Please observe that only up to ten machines will be listed in confirmation message. However a complete list of machines is always saved in Windows clipboard and can easily be revealed by opening a Notepad and copy-pasting it there.

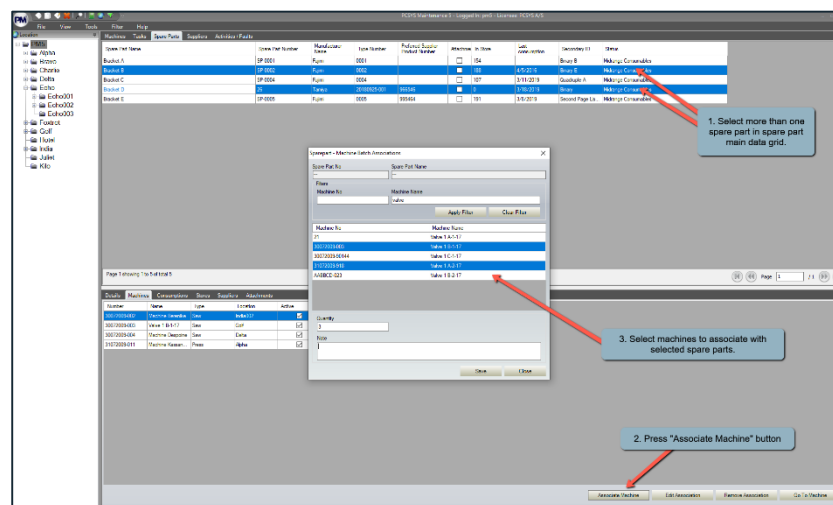
Association of multiple spare parts with a machine in single process

Functionality for creation of associations between machines and spare parts has been extended – it is now possible to create associations between multiple machines and spare parts in single process.

Associations between machine and spare parts is created in section Machines, sub-pane Spare Parts. The procedure is exactly the same as before, the only difference is that now it is possible to select multiple machines in main data grid before pressing on 'Associate Spare Part' button.



Corresponding change has also been made in section Spare Parts, sub-pane Machines. User can also here select more than one spare part in main data grid and then press on button 'Associate Machine'.



Please observe that when assigning a single spare part to multiple machines, all of machines stocks will be available for selection as source for future consumption. However, a validation check is made for each individual association that is created and selected stock will be used only if it is confirmed as valid selection for the machine. If validation fails, the machine/spare part association is still created, but without any reference to specific spare part stock.

Release notes for PM5 version 5.14.0000

Client event log

General description

Client event log, when activated, registers continuously all events regarding main data set. Event log will register:

- Creation of new posts
- Edition of existing posts
- Deletion of existing posts

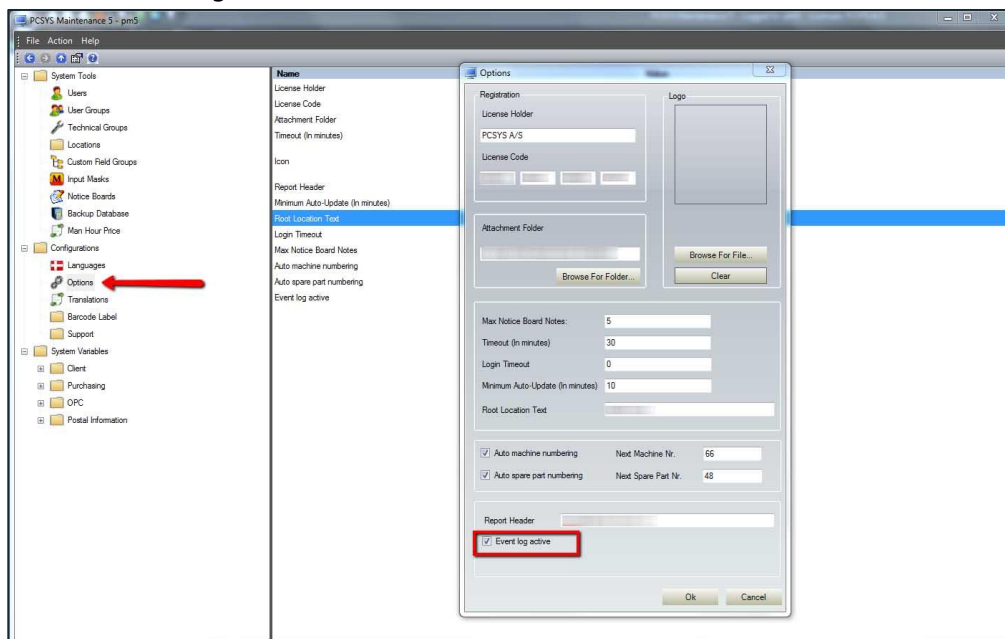
performed in:

- Machines
- Tasks
- Spare Parts
- Suppliers
- Activities/Faults

Activation of event log

By default, client event log is not activated. To activate event log perform following actions:

- Open Administration module.
- Select and open Settings form.
- Check in 'Event log active' checkbox at the bottom of the form.



- Close the Settings form.

Event log will start registering as soon as it has been activated.

Event log report

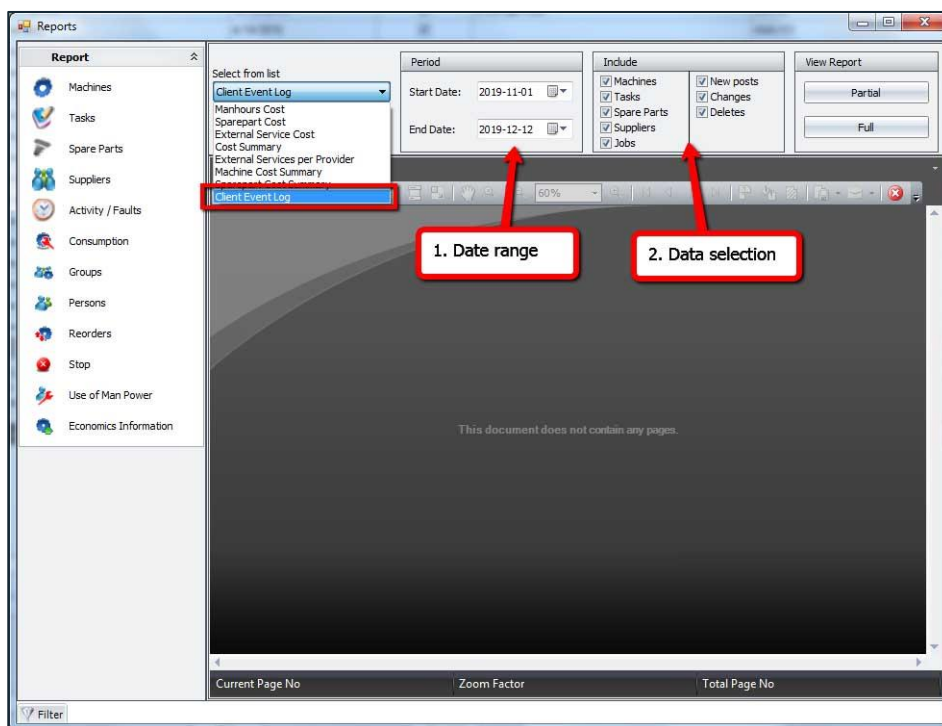
Actions recorded by event log are presented in form of a report.

- Open Report module.
- Select Economic Information section.
- In combo box "Select from list" select *Client Event Log*.

- In filter section "Period" select start and end date for period covered by report.
- In "Include" section, check in main dataset groups and event types that are to be included in report. Please observe that **at least one data group and one event type** must be selected.
- Press button "Full" to generate the report.

Single record in event log consists of:

- **Registered** - date and time of the event
- **Section** – main data set group to which the record belongs
- **ID** – for machines, spare parts and suppliers, the ID and name. For tasks and activities, the name and machines to which task/activity/fault belongs.
- **Event** – type of event. Currently there are three types of events:
 - **CREATE** – creation of new post
 - **UPDATE** – editing/changes in existing record
 - **DELETE** - deletion of record
- **Description** – if applicable, additional information about the event.
- **Done by** – initials of user performing the action.



User defined machine barcode labels

General description

Users can now define their own machine barcode label designs.

Creating new machine barcode layout

To create new machine barcode label, do following:

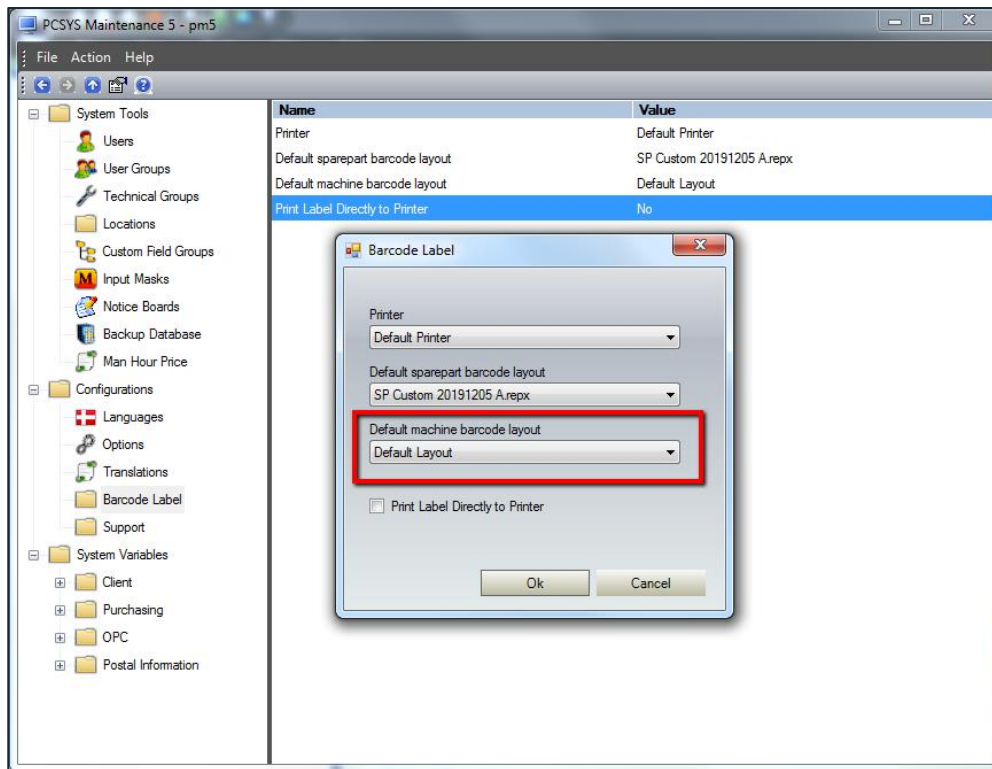
- Open Report Module.
- Select Machines section.
- In combobox 'Select from list' select *Barcode Custom Layout*
- Press 'Full' button to generate machine barcodes.
- Press 'Edit' in menu bar at the top of report presentation form.
- In editor that opens, make required modifications to machine barcode design.

- Save the changes by selecting File -> Save As... in menu at the top of editor.
- Enter name for new report layout and press 'OK' button.

Selecting user defined machine barcode label as default selection for printouts

To select user defined machine barcode layout as default, do following:

- Open Administration module.
- Select Barcode Label section and open it for editing.
- In combobox 'Default machine barcode layout' select name of layout to be used as default selection for printouts.
- Press 'OK' button to save the selection.



User credential "Delete spare parts with stocks"

General description

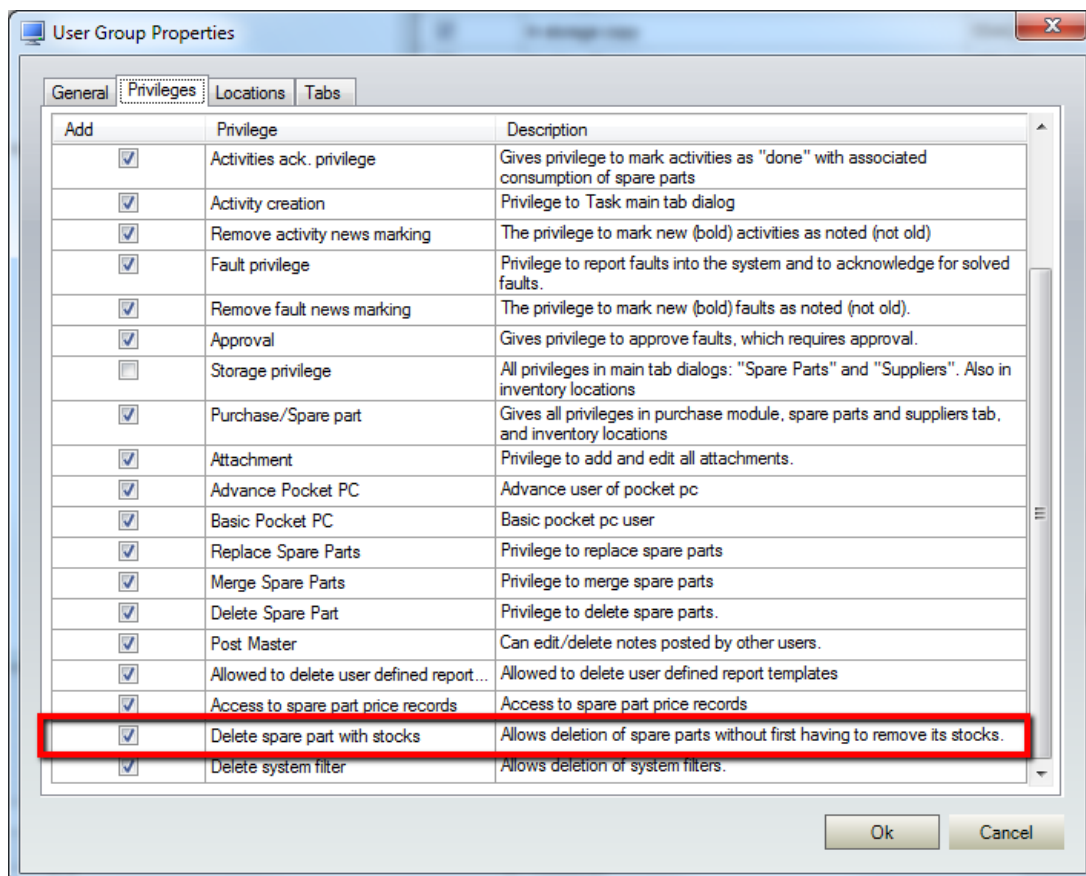
Under normal circumstances it is not allowed to delete a spare part that has one or more associated spare part stocks. Before such spare part can be deleted, all of its stocks must be deleted, one at a time. This is done to ensure that users make a decision about any positive stocks before a spare part can be deleted. Also, it is a security measure ensuring that spare parts aren't deleted unintentionally.

User credential "Delete spare parts with stocks" allows users to bypass this restriction. Users granted this credential are allowed to delete one or more spare parts along with any stocks associated with those spare parts, with a single click on Delete button.

To grant "Delete spare parts with stocks" to a user group, do following:

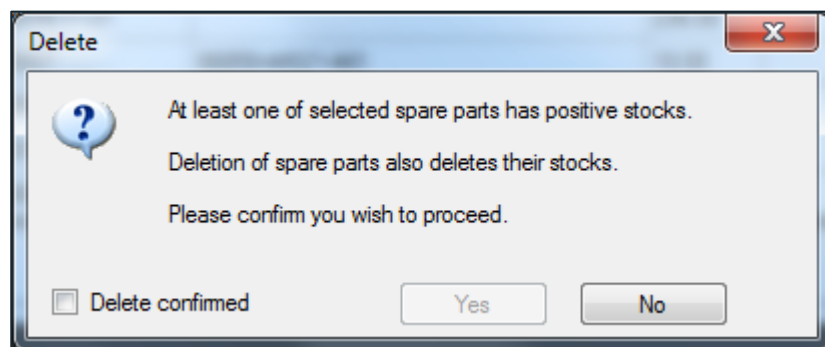
- Open Administration module.
- Select User Groups section.
- Select a user group for editing.
- Select sub-pane Privileges and check in checkbox for credential "Delete spare part with stocks".
- Press "OK" to save changes.

Credential "Delete spare parts with stocks" comes into effect for all users who belong to edited user group **on next launch of PM5 client.**

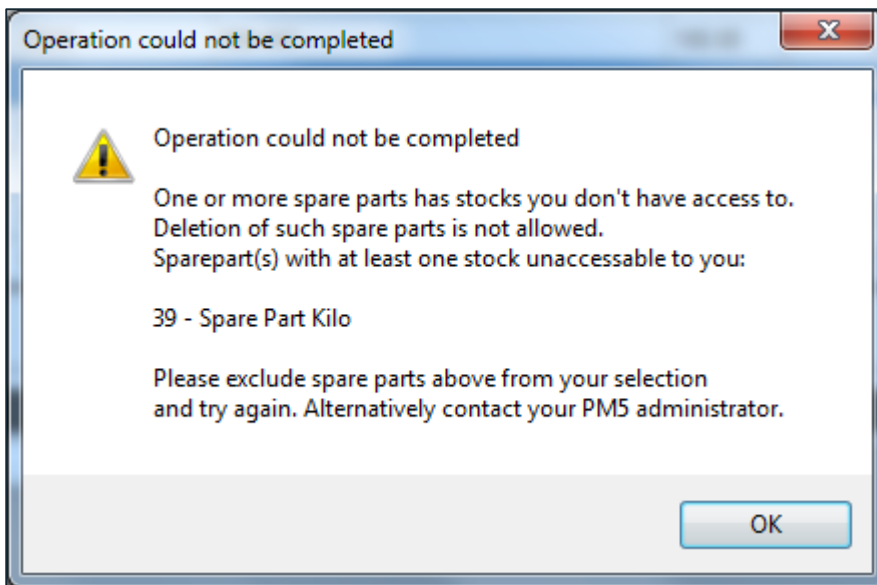


Deleting spare parts with stocks

Users granted credential "Delete spare part with stocks" can select one or more spare parts and delete them by right-clicking and selecting "Delete" menu item in quick menu. Following message will next be displayed on screen:



User has to check in checkbox "Delete confirmed" and press "Yes" button to complete deletion. Under certain circumstances, a different message will be displayed on screen:



This message is displayed when user is attempting to delete at least one spare part which has spare part stocks at store(s) that **are not accessible to the user**. A store is not accessible to the user if it is not associated with any of the locations that user has access to. If a spare part has stock on such store, user is not allowed to delete it under any circumstances, even with user credential "Delete spare part with stocks" granted to him. This constraint is enforced to avoid deletion of spare parts which may not be required at user's location, but which may still be actively in use at other geographical locations, factories or departments without him being aware of it.

If user wishes to proceed with deletion, the spare part(s) listed in the message needs to be excluded from spare part selection. Alternatively, at least one location which is associated with the store to which user doesn't have access to may be added to list of locations accessible to the user.

User credential "Delete system filter"

General description

User credential "Delete system filter" controls user's ability to delete user filters with *System filter* attribute. Users without this user credential will not be able to delete user filters with this attribute.

To grant "Delete spare parts with stocks" to a user group, do following:

- Open Administration module.
- Select User Groups section.
- Select a user group for editing.
- Select sub-pane Privileges and check in checkbox for credential "Delete system filter".
- Press "OK" to save changes.

User Group Properties

General Privileges Locations Tabs

| Add | Privilege | Description |
|-------------------------------------|--|---|
| <input checked="" type="checkbox"/> | Activities ack. privilege | Gives privilege to mark activities as "done" with associated consumption of spare parts |
| <input checked="" type="checkbox"/> | Activity creation | Privilege to Task main tab dialog |
| <input checked="" type="checkbox"/> | Remove activity news marking | The privilege to mark new (bold) activities as noted (not old) |
| <input checked="" type="checkbox"/> | Fault privilege | Privilege to report faults into the system and to acknowledge for solved faults. |
| <input checked="" type="checkbox"/> | Remove fault news marking | The privilege to mark new (bold) faults as noted (not old). |
| <input checked="" type="checkbox"/> | Approval | Gives privilege to approve faults, which requires approval. |
| <input type="checkbox"/> | Storage privilege | All privileges in main tab dialogs: "Spare Parts" and "Suppliers". Also in inventory locations |
| <input checked="" type="checkbox"/> | Purchase/Spare part | Gives all privileges in purchase module, spare parts and suppliers tab, and inventory locations |
| <input checked="" type="checkbox"/> | Attachment | Privilege to add and edit all attachments. |
| <input checked="" type="checkbox"/> | Advance Pocket PC | Advance user of pocket pc |
| <input checked="" type="checkbox"/> | Basic Pocket PC | Basic pocket pc user |
| <input checked="" type="checkbox"/> | Replace Spare Parts | Privilege to replace spare parts |
| <input checked="" type="checkbox"/> | Merge Spare Parts | Privilege to merge spare parts |
| <input checked="" type="checkbox"/> | Delete Spare Part | Privilege to delete spare parts. |
| <input checked="" type="checkbox"/> | Post Master | Can edit/delete notes posted by other users. |
| <input checked="" type="checkbox"/> | Allowed to delete user defined report... | Allowed to delete user defined report templates |
| <input checked="" type="checkbox"/> | Access to spare part price records | Access to spare part price records |
| <input checked="" type="checkbox"/> | Delete spare part with stocks | Allows deletion of spare parts without first having to remove its stocks. |
| <input checked="" type="checkbox"/> | Delete system filter | Allows deletion of system filters. |

Ok Cancel

Wildcard sign for single character in quick search function

Users can now use question mark sign - ? – as a wildcard for a **single character** in search terms entered in quick search forms.

Example 1:

In quick search for machines, user enters **123?456** in field Machine ID. This search term will find any machine with machine id **containing** sequence starting with **123**, followed by **any single character**, followed by **456**.

Example 2:

In quick search for activities/faults, user enters **???123**. This search will list any activities and faults with job id **starting** with arbitrary combination of three characters, followed by numbers 123. Please observe that search result for this string will also return activities/faults with job ID longer than six digits, as long as those digits come after 123.

Example 3:

Perhaps more useful search for job is:s would be **123???**. Such search will return all jobs having job numbers within **123000** and **123999**. Since the three question marks specify that job id **must end with exactly three arbitrary characters**, in this case user is limited to 000-999 at the end.

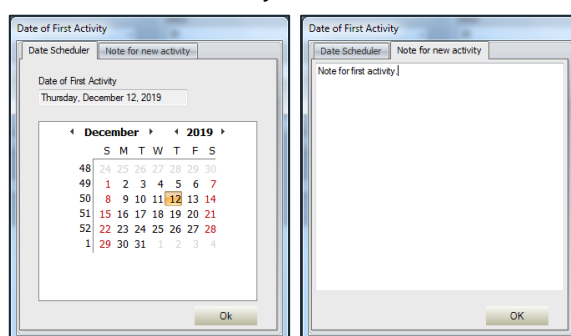
Activity note for next activity.

General description

This function is added to simplify handling of new activities. Quite often there is need to write a note of some sort for next activity – a reminder, a comment to next person who will be working on the activity, etc. Up until now, the new activity had to be found, opened and edited. This new function allows user to type new activity note as part of creation of new task (the note would then be intended for first activity) or at the time when current activity is being finished.

Note for first activity

Note for first activity is typed in when new task is created. When form for scheduling of the date for first activity is opened, user can switch to subpane 'Note for first activity' and enter required note in the text field. Entered text will be saved in 'Activity note' field of first activity.



PM5 Mobile - cap for maximum records in search results

General description

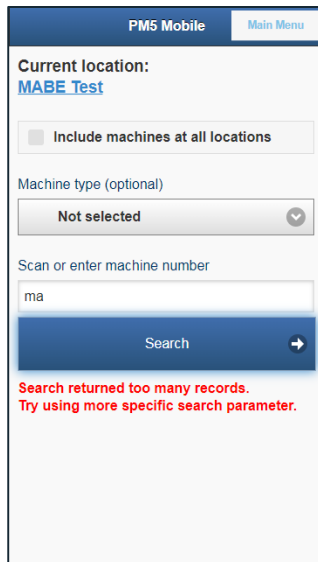
There is now a cap for maximum records allowed in search results when searching for machines or spare parts in PM5 Mobile. There are two reasons for this restriction:

- Search results consisting of several hundred (or thousands) machines or spare parts take very long time to process on mobile devices and may cause communication timeouts.
- Since screens on mobile devices are small, search results resulting in long lists are simply not very practical.

Machine and spare part searches that return too many records

When a search returns too many records, a message saying ***Search returned too many records. Try using more specific search parameter.*** is presented below Search button. When this happens, user needs to enter a more specific search string or use additional filters, if such are available.

Example of this situation is shown in image below.



Value for maximum allowed records in PM5 Mobile searches

Default value for maximum allowed number of records in a search result for machines/spare parts is set to 30. If user wishes to adjust this value, then following steps need to be taken:

- In folder containing files for PM5 Mobile application, navigate to folder Data
- Find and open file with name ***parameters.js*** in a plain text editor (such as Notepad).
- Find line **`var MAXIMUM_NUMBER_RECORDS_IN_SEARCH = 30;`**
- Change the value to required number of records.
- Save the change and close text editor.

Please observe that very large value may impact performance of searches in PM5 Mobile. In extreme cases you may also experience communication timeout errors. In such case, please consider lowering the number of allowed records in search results.

Release notes for PM5 version 5.13.3000

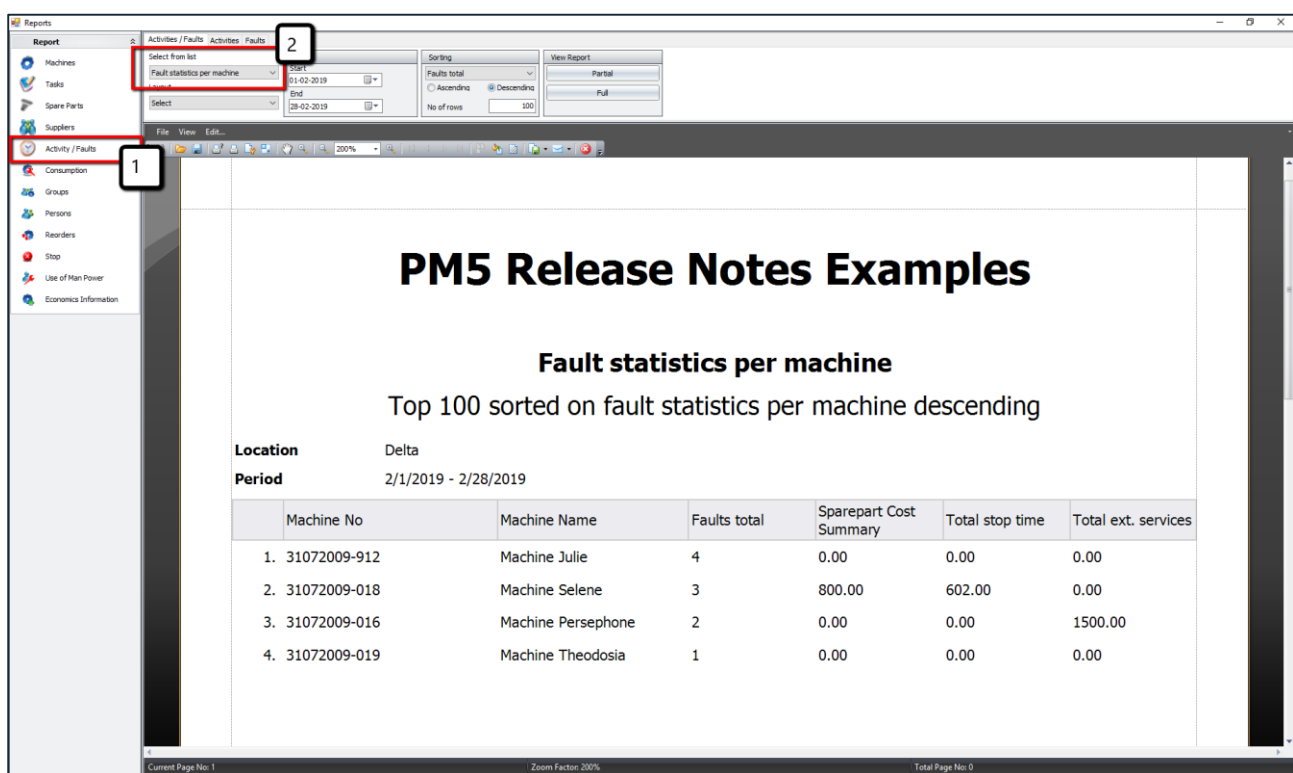
Migration to Microsoft .NET Framework 4.0

For those unfamiliar with the concept, let's start with short explanation of what Microsoft .NET Framework is and why PM5 moving to different version may be of importance.

Microsoft .NET Framework is a 'foundation' provided by Microsoft and used by vast majority of Windows-based programs for much of its basic functionality. PM5 is no different and uses Microsoft .NET Framework in all of its Windows components.

Up until now, .NET Framework used by PM5 was always of version 2.0. Now, as part of an effort to ensure that PM5 continues to be compatible with future versions of Microsoft Windows, we have now moved up – as of this version, PM5 is based on Microsoft .NET Framework 4.0.

Report 'Fault Statistics per Machine'



The screenshot displays the PM5 Reports application. The sidebar on the left contains navigation options: Machines, Tasks, Spare Parts, Suppliers, Activity / Faults (highlighted with a red box and a '1'), Consumption, Groups, Persons, Records, Stop, Use of Man Power, and Economics Information. The top menu bar includes Report, Activities / Faults, Activities, and Faults (highlighted with a red box and a '2'). The main report area shows the title 'PM5 Release Notes Examples' and the subtitle 'Fault statistics per machine'. Below the subtitle, it states 'Top 100 sorted on fault statistics per machine descending'. The report parameters are Location: Delta and Period: 2/1/2019 - 2/28/2019. The report content is a table with the following data:

| | Machine No | Machine Name | Faults total | Sparepart Cost Summary | Total stop time | Total ext. services |
|----|--------------|--------------------|--------------|------------------------|-----------------|---------------------|
| 1. | 31072009-912 | Machine Julie | 4 | 0.00 | 0.00 | 0.00 |
| 2. | 31072009-018 | Machine Selene | 3 | 800.00 | 602.00 | 0.00 |
| 3. | 31072009-016 | Machine Persephone | 2 | 0.00 | 0.00 | 1500.00 |
| 4. | 31072009-019 | Machine Theodosia | 1 | 0.00 | 0.00 | 0.00 |

We have added new rapport to section 'Activities/Fault'.

This new rapport presents a top list of machines based on number of faults reported in PM5 during time period specified by user. A simple overview of costs caused by reported faults is also included.

User can specify how many machines are to be included in this list by entering a value in field 'No of rows'. Selection of machines can be limited to specific location. User can also select what column is to be used for sorting; it is however important to remember that the selection of machines included in the report is always based on number of reported fault, regardless of what sorting column is selected by user.

Report 'Unused Spare Parts'

| Spare Part No | Spare Part Name | Last consumption | Price per unit | In Store | Stock locations | Total stock value |
|---------------|---------------------|------------------|----------------|----------|-----------------|-------------------|
| SP-0001 | Spare Part Aghamora | | 100.00 | 154 | 2 | 15400.00 |
| SP-0002 | Spare Part Brenna | 05-04-2016 | 100.00 | 188 | 2 | 18800.00 |
| SP-0003 | Spare Part Congalle | | 113.00 | 4 | 1 | 452.00 |
| SP-0005 | Spare Part Eveleen | 23-11-2017 | 100.00 | 195 | 2 | 19500.00 |
| SP-0007 | Spare Part Gobinet | 01-06-2017 | 10.00 | 140 | 2 | 1400.00 |
| SP-0008 | Spare Part Hiohair | | 100.00 | 100 | 1 | 10000.00 |
| SP-0010 | Spare Part Liadain | | 100.00 | 100 | 1 | 10000.00 |
| SP-0011 | Spare Part Marisile | | 100.00 | 100 | 1 | 10000.00 |
| SP-0016 | Spare Part Toireasa | | 100.00 | 200 | 2 | 20000.00 |
| SP-0017 | Spare Part Una | | 100.00 | 197 | 2 | 19700.00 |

New report, called 'Unused spare parts', has been added to section 'Spare Parts'.

Purpose of this report is to help identify spare parts that are no longer in use, but still take up place at stores. This report shows spare parts that have not been used during time period starting with date selected by user and ending at current system date. Spare parts included in this list have not been consumed in connection with faults or activities.

Last Consumption column is the key information in this report. If date shown in this column lies very far back in time, it is clear indication that the spare part is no longer in use. If on the other hand, there is no date at all in this column, then spare part may be new or never used.

Custom, permanent filter present this report allows user to remove:

- Spare parts that have no stocks specified in the system. This allows user to remove spare parts that are not stored at local stores.
- Spare parts with current stocks = 0.

Report 'Stocks and consumptions with prognosis'

PM5 Release Notes Examples

Stocks and Consumption With Prognosis
1/1/2019 - 12/31/2019

| Location | All | | | |
|---------------|---------------------|---------|--------|----------|
| Spare Part No | Spare Part Name | Planned | Actual | In Store |
| 26 | Spare Part Agata | 187 | 3 | 0 |
| SP-0001 | Spare Part Aghamora | 2 | 0 | 154 |
| SP-0018 | Spare Part Aurnia | 0 | 4 | 164 |
| SP-0002 | Spare Part Brenna | 5 | 0 | 188 |
| SP-0019 | Spare Part Brighid | 0 | 3 | 382 |
| SP-0020 | Spare Part Carlin | 0 | 0 | 74 |
| SP-0003 | Spare Part Congalie | 255 | 5 | -1 |
| 250 | Spare Part Coreen | 11 | 0 | 318 |
| SP-0021 | Spare Part Dairine | 0 | 0 | 90 |
| SP-0004 | Spare Part Damhnait | 1 | 3 | 107 |
| SP-0022 | Spare Part Eirleen | 153 | 3 | 99 |
| SP-0005 | Spare Part Eveleen | 163 | 0 | 195 |
| SP-0023 | Spare Part Felicia | 204 | 4 | 94 |

New report, called 'Stocks and Consumptions with Prognosis', has been added to section 'Spare Parts'.

IMPORTANT – this report uses data generated by Prognosis function. To get accurate prognosis of planned consumptions, please ensure that Prognosis has been run recently before creating this report.

Before the report can be generated, user needs to specify time period it is to cover. Once time period of interest is specified, the report will generate a list of spare parts along with three quantities:

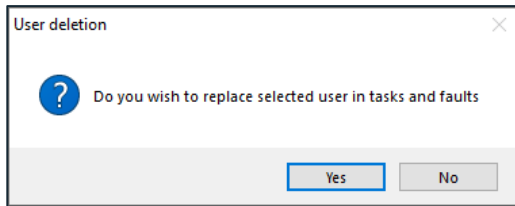
- consumption quantity planned for specified time period
- actual consumption that has already taken place during specified time period
- current quantity in store.

If planned consumption for spare part is larger than current quantity in stock, such spare part will be flagged with red background.

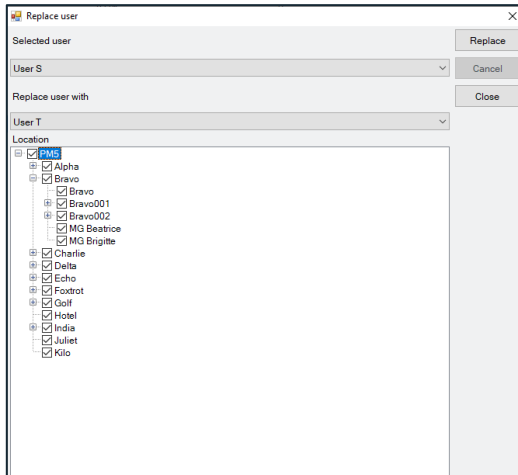
What spare parts are to be included in this report can be controlled by user in usual manner with help of Custom Filter.

Administration module - User deletion and replacement function

User replacement has been integrated into user deletion procedure.



- After a user is selected for deletion, PM5 will ask if user about to be deleted is to be replaced by another user.



- If 'Yes' was selected, then user replacement form will be shown on screen.

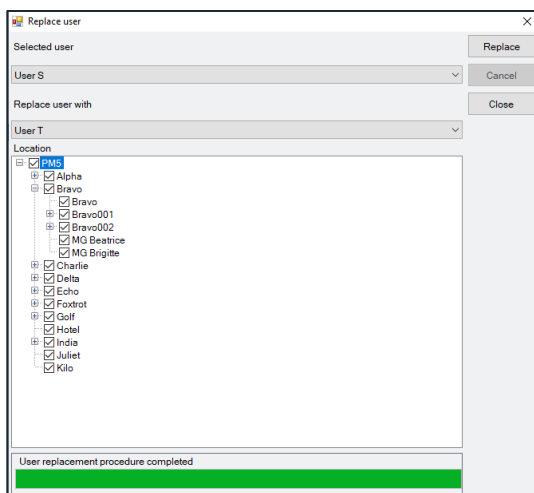
User replacement function allows for replacement of one user with another in following parts of PM5:

- * 'To be signed by' fields of tasks.
- * 'To be signed by' fields of activities.
- * All man-hours consumptions specified at the time of replacement in tasks and jobs that are **not completed**.

Replacement of users does **not take effect** in jobs that are already completed, so historical data is preserved.

- To replace a user, select user to be replaced in combo box 'Selected user'. When user replacement is part of user deletion, the user about to be deleted is preselected when replacement form is opened.
- Next, select user who will be used as replacement.
- Finally select which locations are to be included in replacement procedure. Replacement will take place only for tasks and jobs that belong to machines located at checked locations.
- Then press on button 'Replace' to run replacement procedure.

Please observe that replacement procedure can be run multiple times in a row. By selecting different locations in each run, it is possible to re-assign tasks and jobs of a single user to multiple replacement users.

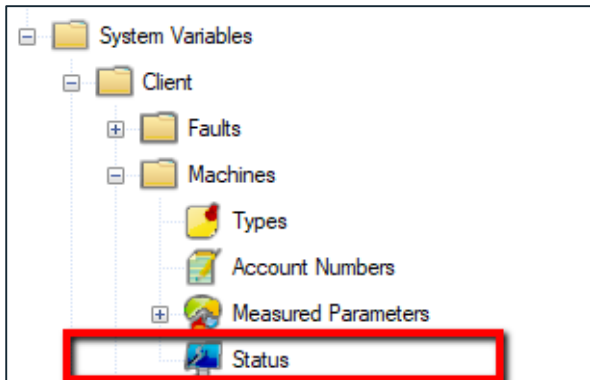


- Once started, progress of replacement procedure is being indicated by a progress bar at the bottom of the screen. When replacement sequence completed, user is notified by a message shown in example picture to the left.

It is possible to interrupt replacement process while it is running (for example if it takes very long time), *but please remember that replacement procedure does not revert and whatever replacements were done while replacement is running will **not** be reverted to original condition after 'Cancel' button has been pressed.*

New system variables

Machine status



New system variable with label Status has been added to machines.

Like other system variables, list of labels available for use in Machine Status field is specified in PM5 Administration.

- Select 'Status'
- Move mouse to right section of Administration module and click right mouse button. Select operation to be performed (Add, Edit, Delete) from quick menu.

A screenshot of the 'Machine' configuration form. The form contains various fields for machine details. The 'Status' dropdown menu is open, showing a list of available status labels. A red arrow points to the 'Status' dropdown.

Machine Status is a non-mandatory system variable, selectable for each individual machine in PM5.

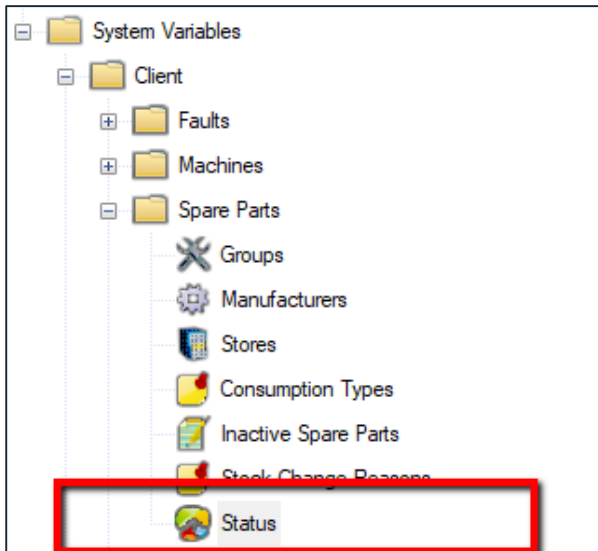
To select Status for an individual machine, open it for editing and select status from the list shown in combo box.

Machine Status is also one of the fields that can be handled with help of Machine Batch Edit function, which is also new addition in this release.

Machine Status is presented in main data grid of machine section.

Machine Status can be used for searches and filtering of data with help of filter tool.

Spare Part Status



New system variable with label Status has been added to spare parts.

List of labels available for use in Spare Parts Status field needs to be specified in PM5 Administration.

- Select 'Status'
- Move mouse to right section of Administration module and click right mouse button. Select operation to be performed (Add, Edit, Delete) from quick menu.

Spare Part Status is a non-mandatory system variable, selectable for each individual spare part in PM5.

To select Status for an individual spare part, open it for editing and select status from the list shown in combobox.

Spare Part Status is also one of the fields that can be handled with help of Spare Part Batch Edit function, which is also a new addition in this release.

Spare Part Status is presented in main data grid of machine section.

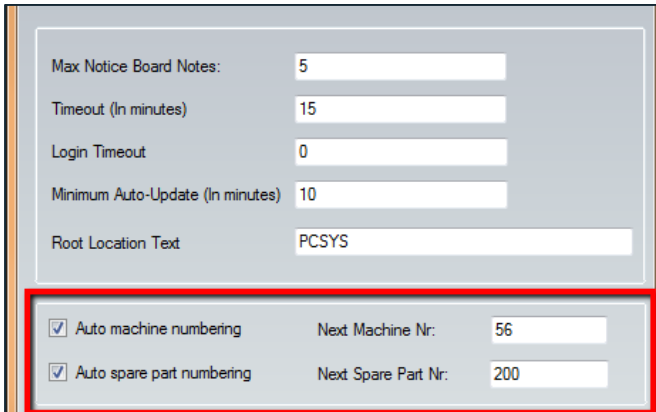
Spare Part Status can be used for searches and filtering of data with help of filter tool.

Changes in auto-generated part numbers for machines and spare parts

An auto-generated part numbers suggestion for new spare parts has been present in PM5 since very first version. In one of recent releases, same feature has been created for machines.

Auto-generated part number suggestion was intended to be a simple function – when new machine or spare part was created, a unique id number was suggested to the user. Starting value for suggested numbers was 1 and upon each suggestion was increased by one.

In this release, auto-generated part number suggestion has been modified to allow users much more control over this function.



In Administration module, Settings form, there are now two new fields:

- Next Machine Nr:
- Next Spare Part Nr:

Numbers in these new fields show what number will be as part number **next** new machine or spare part is added to the system.

Administrator can at any time modify values in those two fields. This allows following new functionality:

- When PM5 is initially set up and configured, administrator can specify exactly what numbers are to be used as starting point for part number suggestions. Default starting value is still 1 immediately after installation of PM5, but it can now be changed to whatever number that is preferable.
- If users, for some reason, wish to move on to new starting number (for example if 'batches' are used for part numbers), they can simply enter new, higher value in appropriate field. For example, let's say that year when machine was added to the system is to be indicated by first digits of machine's part number. Suggested part number for machines could then the beginning year one be set to 1000. At beginning of year two, all user needs to do is to change value in field 'Next Machine Nr.' to 2000 (of course under condition that less than 999 machines were added to the system in course of first year).
- In PM5, new part number is suggested only once. Next suggested number will be increased by one, **even when** previous suggested number was not used and registered in PM5 (for example if user tries to create new machine, but changes his mind and presses 'Cancel' button). Some of our users expressed wish to re-use unused numbers. This is now possible, by simply re-entering original starting number in appropriate field. Autosuggesting function will then automatically move past all part numbers in use and suggest next number that is not in use.

Example

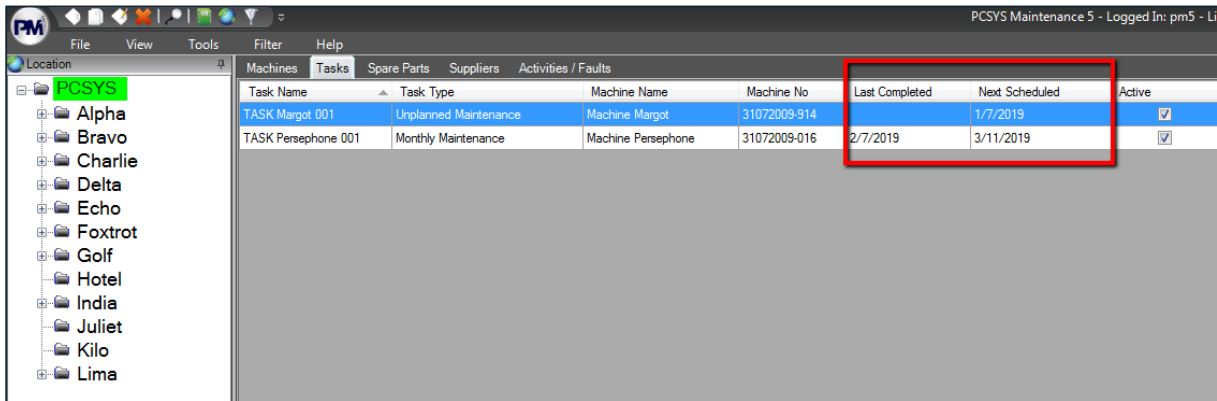
Starting value for machine part numbers was set to 1000. Next suggested number is now 1051. Part numbers 1017 and 1045 are not in use, either because machines with those numbers have been deleted or because numbers were not used at the time they were suggested.

User opens Administration module and in Settings section sets Next Machine Nr. to 1000. Next suggested part number for machine will then be 1017, next 1045 and then (once again) 1051.

New columns in main data grids

Until this release, all columns displayed in main data grids belonged directly to displayed records. In this release, we have added a couple of columns relevance of which may not be immediately apparent and may need short explanation.

Tasks - Last completed and Next Scheduled columns



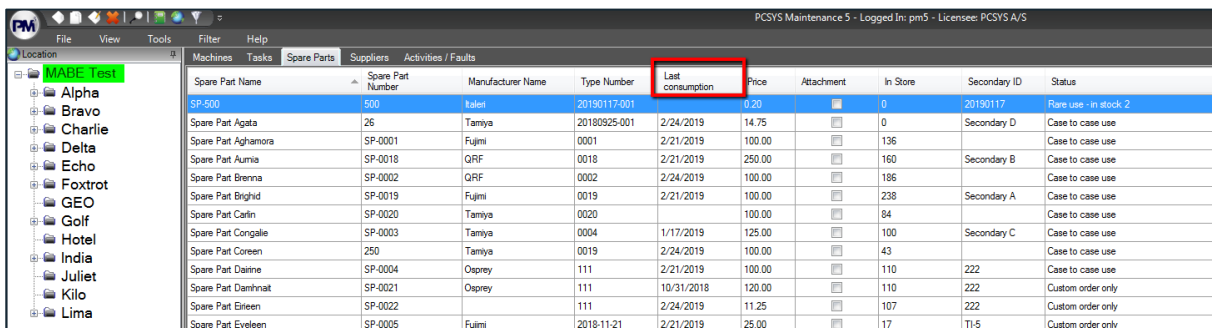
| Task Name | Task Type | Machine Name | Machine No | Last Completed | Next Scheduled | Active |
|---------------------|-----------------------|--------------------|--------------|----------------|----------------|-------------------------------------|
| TASK Margot 001 | Unplanned Maintenance | Machine Margot | 31072009-914 | | 1/7/2019 | <input checked="" type="checkbox"/> |
| TASK Persephone 001 | Monthly Maintenance | Machine Persephone | 31072009-016 | 2/7/2019 | 3/11/2019 | <input checked="" type="checkbox"/> |

In Task section, we have added two new columns:

- Last completed – this field shows completion date of last finished activity based on the task.
- Next scheduled – this field shows scheduled date for next planned activity based on the task.

These two columns have been added to improve overview of task condition. Tasks that are delayed, approaching completion date or maybe are 'abandoned' and no longer in use can now be easily found simply by sorting tasks on one of those dates.

Spare Parts - Last consumption



| Spare Part Name | Spare Part Number | Manufacturer Name | Type Number | Last consumption | Price | Attachment | In Store | Secondary ID | Status |
|---------------------|-------------------|-------------------|--------------|------------------|--------|------------|----------|--------------|-----------------------|
| SP-500 | 500 | Isalet | 20190117-001 | | 0.20 | | 0 | 20190117 | Rare use - in stock 2 |
| Spare Part Agata | 26 | Tamiya | 20180925-001 | 2/24/2019 | 14.75 | | 0 | Secondary D | Case to case use |
| Spare Part Aghamora | SP-0001 | Fujimi | 0001 | 2/21/2019 | 100.00 | | 136 | | Case to case use |
| Spare Part Aurnia | SP-0018 | QRF | 0018 | 2/21/2019 | 250.00 | | 160 | Secondary B | Case to case use |
| Spare Part Brenna | SP-0002 | QRF | 0002 | 2/24/2019 | 100.00 | | 186 | | Case to case use |
| Spare Part Brigid | SP-0019 | Fujimi | 0019 | 2/21/2019 | 100.00 | | 238 | Secondary A | Case to case use |
| Spare Part Carlin | SP-0020 | Tamiya | 0020 | | 100.00 | | 84 | | Case to case use |
| Spare Part Congale | SP-0003 | Tamiya | 0004 | 1/17/2019 | 125.00 | | 100 | Secondary C | Case to case use |
| Spare Part Coreen | 250 | Tamiya | 0019 | 2/24/2019 | 100.00 | | 43 | | Case to case use |
| Spare Part Dairine | SP-0004 | Osprey | 111 | 2/21/2019 | 100.00 | | 110 | 222 | Case to case use |
| Spare Part Damhnat | SP-0021 | Osprey | 111 | 10/31/2018 | 120.00 | | 110 | 222 | Custom order only |
| Spare Part Eileen | SP-0022 | | 111 | 2/24/2019 | 11.25 | | 107 | 222 | Custom order only |
| Spare Part Eveleen | SP-0005 | Fujimi | 2018-11-21 | 2/21/2019 | 25.00 | | 17 | TI-5 | Custom order only |

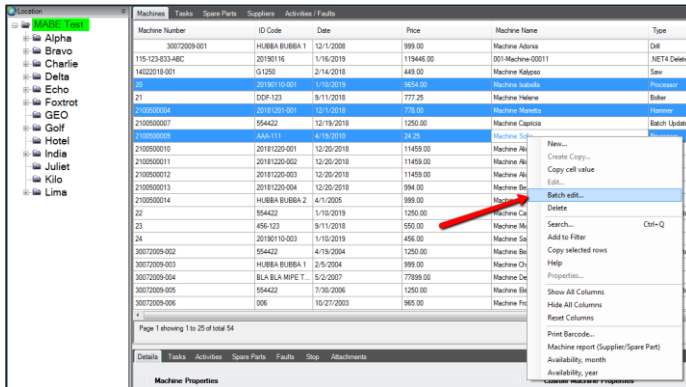
In Spare Part section, we have lifted up date for last consumption of spare part into main data grid. The idea here is to enable users to quickly find spare parts based on when they have been used. User could for example wish to find out which spare parts were used in last couple of days or maybe find spare parts that have not been used for very long time and should be removed from the system.

Please observe that this column is intended to complement rapport *Unused Spare Parts*, another new addition in this version of PM5.

Batch update tool

General description

Until now, editing multiple records in one of main data sets of PM5 could be a bit of a chore. For example, if user wanted to change machine type for ten different machines, then user would have to 'open' first machine for editing, new machine type selected and the change had to be saved. Then same operation had to be done for each of remaining nine machines.



With Batch Edit tool, this change can be done for all ten machines at once – select machines where Machine Type is to be done, open Batch Edit form, select Machine Type you wish for machines to have and complete the update by pressing 'Update' button. That is all.

Batch update tool is available for four of the five main sections in PM5 client – Machines, Tasks, Spare Parts and Activities/Faults.

To use Batch Update, start by selecting one or more rows in main data grid. Next, press right

mouse button and select 'Batch update'. This action will open Batch Update form for currently selected section in PM5 Client.

Picture to the left shows quick menu for Machines and position of Batch Update menu item.

Using Batch Update Tool

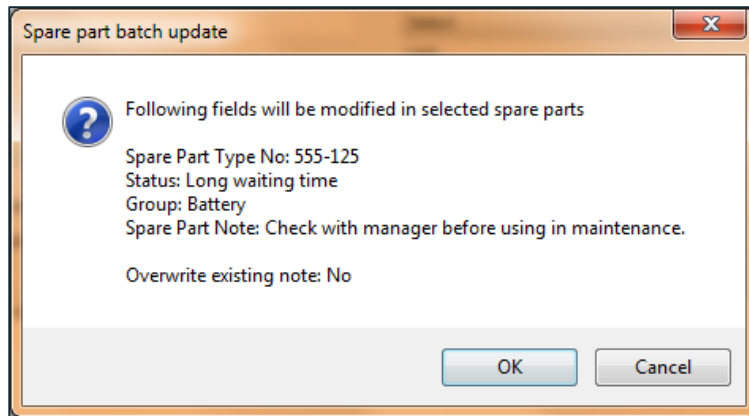
Batch update forms allow editing and changes in multiple records at once. Batch update tool is available for Machines, Tasks, Spare Parts and Activities/Faults and allows editing of values that can be the same for multiple records. For example, many machines share same machine type, while multiple tasks can use same Technical Group.

Values that have to be unique for individual records cannot be handled with help of Batch Update Tool. For example, machine number must be unique for each machine – therefore, any changes in that field can only be done for one machine at a time.

While fields in each Batch Update form are different, each form works in same way:

- Start by selecting records in main data grid that are to be modified.
- Open Batch Update form.
- Type in values in text fields that are to be modified.
- Select values in combo boxes that are to be modified. Observe that if no selection is valid choice in a combo box, then at the bottom of selectable list there will be a selection that resets selections already made to *No selection*. For example if you wish to remove a Priority from selected tasks, select *No priority* in Priority combo box of Task Batch update form. This will remove all already selected priorities from tasks that are to be updated.
- **If no change is to be done in a field, then leave it as it is. Updates are only made in fields and comboboxes where values have been entered.**
- Modifications to note fields can be done it one of two ways:
 - As default, any text entered in Notes field of Batch Update form will be **added** to any already existing text in Notes fields of records that are to be updated.
 - If user wishes to **replace existing notes** with text entered in Batch Update Form, then 'Overwrite existing note' needs to be checked in before update is committed. If such selection is done, then all texts in Notes fields for selected records will be **overwritten** with new content.
- To apply changes to selected records, press 'Update' button.

- Before changes are applied, user will be presented with a list of fields that will be updated and what values will be used in the update. Below is an example of an update to spare parts. By pressing 'OK' button user will commit the changes. By pressing 'Cancel' user will discard the update and Batch Update form will close without any changes being done.



- Under some circumstances, requested changes may not be valid for one or more selected records. When such situation occurs, user will be notified with an error message.

Please observe that all updates that are valid will always be performed.

Batch Update Tool for Machines

Select or enter new values for machines to be updated.
Fields and parameters without new content will not be changed.
New machine note is by default appended to existing machine note.
To replace old notes with new one, check in 'Overwrite existing notes' radio button.

Machine Type: Select
Supplier: Select
Manufacturer: Select
Account: Select
Stop Group: Select
Machine Status: Select

ID Code:
Price:
Capacity:
Power:
Measured Parameter: Select

Handling existing note
☒ Append to existing note
☐ Overwrite existing note

Machine Note:

Update Cancel

Machine batch editing tool allows editing of following fields of machines selected in main data grid:

- **Machine type** – allows change to one of machine types currently specified in PM5. Since machine type is a mandatory machine value, there is no option to set machine type to 'no selection'.
- **Supplier** – allows change to one of suppliers currently present in the system. Supplier is a mandatory value for machines, therefore there is no option to set machine supplier to 'no selection'.
- **Manufacturer** – allows change to one of manufacturer specified in PM5 Administration.
- **Account** – allows change to one of machine accounts specified for the system. If previously selected accounts are to be removed as selection for machines, then select 'No account' in this combo box.
- **Stop Group** – allows change of stop group to which machines belong. If user wishes to remove previously selected stop groups for machines selected in data grid, then selection 'No stop group' is to be selected in this combo box.
- **Machine Status** - allows change of machine status of machines selected in main data grid. If user wishes to remove any previously selected status, then value 'No selection for machine status' is to be selected in this combo box.
- **ID Code, Price, Capacity, Power** – any text entered in one of those four fields will **replace** current values in corresponding fields of machines selected in main data grid. **If no input is made in these fields, then no changes will be made to values currently specified for selected machines.**
- **Measured Parameter** – allows change of measured parameter used by machines currently selected in main data grid. Selection of 'No measured parameter' will remove measured parameter currently used by selected machines. **Please consider carefully changes done to measured parameters in this manner, since those changes will affect any tasks dependent on them for scheduling purposes.**

- **Machine Note** – if 'Append to existing note' is selected, then any text entered in this field will be added to already existing machine notes. If 'Overwrite existing note' is selected, then text entered in this field will overwrite any text present in Machine Note field of selected machines.

Batch Update Tool for Tasks

Task batch editing tool allows editing of following fields of tasks selected in main data grid:

- **Task name** – name entered in this field will replace name specified for tasks currently selected in main data grid. See additional information below.
- **Task Type** - allows change to one of task types currently specified in PM5. Since each task must have specified task type, there is no option to set task type to 'no selection'. **Also observe that there can be no more than a single task per machine that has same task type and name.** If user specifies an update of name **and** task type for more than one task for same machine, then only first of those tasks will be updated. Changes to remaining tasks belonging to same machine will be discarded and a warning message will be presented on screen.
- **Technical Group** - allows change to one of technical groups specified for the system. If previously selected technical groups are to be removed as selection for the tasks, then select 'No technical group' in this combo box.
- **To be signed by** – allows selection of person responsible for the tasks currently selected in main data grid. Since it is not allowed to have tasks without valid selection in this field, there is no 'no selection' in this combo box. Please observe that changes in this field cascade over to all **unfinished** activities that are based on tasks that are to be updated.
- **Days** – value entered in this field will overwrite current value specified in this field for all tasks selected for update. 0 is **not** a valid input in this field. Please observe that change of this value does not trigger rescheduling of next unfinished activity and will be used for scheduling only **after** current unfinished activity is finished.
- **Units** – value entered in this field will overwrite current value specified in this field for all tasks **that belong to machines with specified measured parameter.** If machine to which task belongs lacks specified measured parameter, then updates requested for this field will be discarded. 0 is **not** a valid

input in this field. Changes in this field will come into effect next time activity re-scheduling is triggered (usually next time read value is entered for relevant measured parameter).

- **Locked** – here user can switch on or off Interval locked conditions for tasks selected in main data grid.
- **Approval required** – here user can switch on or off approval requirement for tasks selected in main data grid.
- **Priority** - allows change of priority of tasks selected in main data grid. If user wishes to remove any previously selected priority, then value 'No priority' is to be selected in this combo box. Change of task priority affects immediately all unfinished activities that belong to edited tasks. Status of finished activities is not affected.
- **Task Note** – if 'Append to existing note' is selected, then any text entered in this field will be added to already existing task notes. If 'Overwrite existing note' is selected, then text entered in this field will overwrite any text present in Task Note field of selected tasks.

Batch Update Tool for Spare Parts

Select or enter new values for spare parts to be updated.
Fields and parameters without new content will not be changed.
New spare part note is by default appended to existing activity note.
To replace old notes with new one, select 'Overwrite existing notes' radio button.

Spare Part Name

Spare Part Type No

Secondary ID

Status

Group

Manufacturer

Unit

Dimension

Handling existing note
☒ Append to existing note ☐ Overwrite existing note

Spare Part Note

Update Cancel

Spare Part batch editing tool allows editing of following fields of spare parts selected in main data grid:

- **Spare Part Name** – name entered in this field will replace name specified for spare parts currently selected in main data grid.
- **Spare Part Type No** – value entered in this field will replace type number specified for spare parts currently selected in main data grid.
- **Secondary ID** – value entered in this field will replace secondary ID specified for spare parts currently selected in main data grid.
- **Status** - allows change of status of spare parts selected in main data grid. If user wishes to remove any previously selected status, then value 'No status selected' is to be selected in this combo box.
- **Group** - allows change of group to which spare parts selected in main data grid are belonging. Since each spare part must belong to specific group, there is no 'No selection' available for this field.
- **Manufacturer** – allows change to one of manufacturer specified in PM5 Administration. Manufacturer is a mandatory value for spare parts, therefore there is no option to set spare part manufacturer to 'no selection'.
- **Unit, Dimension** – any text entered in one of those two fields will **replace** current values in corresponding fields of spare parts selected in main data grid. **If no input is made in these fields, then no changes will be made to values currently specified for selected spare parts.**
- **Spare Part Note** – if 'Append to existing note' is selected, then any text entered in this field will be added to already existing spare part notes. If 'Overwrite existing note' is selected, then text entered in this field will overwrite any text present in Task Note field of selected spare parts.

Batch Update Tool for Activities/Faults

Batch update tool for activities and faults consists of two separate forms, each in its own pane. If jobs selected in main data grid are all activities or all faults, then only relevant pane will be shown on screen. If, on the other hand, selected jobs are a mix of both activities and faults, then both panes will be shown on screen. In such case, it is important for user to remember that update values need to be entered in both forms, even if they have same meaning for both activities and faults (for example expected finish date for started jobs).

Batch Update Tool for Activities

Batch edit

Activity batch update | Fault batch update

Select or enter new values for activities that are to be updated.
Fields and parameters without new content will not be changed.
New activity note is by default appended to existing activity note.
To replace old notes with new one, check in 'Overwrite existing notes' radio button.

Activity started status
Don't change current status

Approval status
Don't change current status

Expected End Date
2019-03-14

Approved By
Select

Handling existing note
☒ Append to existing note ☐ Overwrite existing note

Priority
Select

Activity Note

Update Cancel

Activities batch editing tool allows editing of following fields of activities selected in main data grid:

- **Activity Started Status** – here user can switch on or of Activity Started status for selected activities.
- **Expected End Date** - this field is automatically activated if Activity Started Status is set to 'Set to started'. Default selected date is always current system date. User needs to change selected date to expected finish date for jobs that will be marked as started.
- **Approval Status** – here user can switch on or off approval status for selected activities.
- **Approved By** – this combo box is activated only if Approval Status is selected to 'Set to approved'. When this condition is satisfied, user can specify approving person for activities selected in main data grid.
- **Priority** - allows change of priority of activities selected in main data grid. If user wishes to remove any previously selected priority, then value 'No priority' is to be selected in this combo box. Change of priority affects only activities selected in main data grid.
- **Activity Note** – if 'Append to existing note' is selected, then any text entered in this field will be added to already existing activity notes. If 'Overwrite existing note' is selected, then text entered in this field will overwrite any text present in Activity Note field of selected activities.

If Activity Note is empty, content of Activity Note belonging to selected activities will be unchanged by batch update.

Batch Update Tool for Faults

Faults batch editing tool allows editing of following fields of spare parts selected in main data grid:

- **Fault Started Status** – here user can switch on or of Fault Started status for selected faults.
- **Expected Finish Date** - this field is automatically activated if Fault Started Status is set to 'Set to started'. Default selected date is always current system date. User needs to change selected date to expected finish date for jobs that will be marked as started.
- **Approval Status** – here user can switch on or off approval status for selected faults.
- **Approved By** – this combo box is activated only if Approval Status is selected to 'Set to approved'. When this condition is satisfied, user can specify approving person for faults selected in main data grid.
- **Fault Type** - allows change to one of fault types currently specified in PM5. Since each fault must have specified task type, there is no option to set task type to 'no selection'.
- **Fault Cause**- allows change of fault cause to one of causes currently specified in PM5. If user wishes to remove previously selected fault cause , then value 'Fault cause is not selected' is to be selected in this combo box.
- **Priority** - allows change of priority of faults selected in main data grid. If user wishes to remove any previously selected priority, then value 'No priority' is to be selected in this combo box.

- **Technical Group** - allows change to one of technical groups specified for the system. If previously selected technical groups are to be removed as selection for the faults, then select 'No technical group' in this combo box.
- **Alarm Code** – any alarm code entered in this field will **replace** alarm codes currently specified for faults selected in main data grid. **If nothing is entered in this field, then currently specified alarm codes will remain unchanged.**
- **Fault Description** and **Solution** – input in these two fields is handled according to same rules as those used for handling of Notes in other batch update fields. If 'Append to existing note' is selected, then any texts entered in these two fields will be added to already existing fault description and solution notes. If 'Overwrite existing' is selected, then texts entered in these two fields will overwrite any texts present in Fault Description and Solution fields of selected activities.

If these fields are empty, content of Fault Description and Solution fields of selected faults will be unchanged by batch update.

Release notes for PM5 version 5.13.2000

Job event log

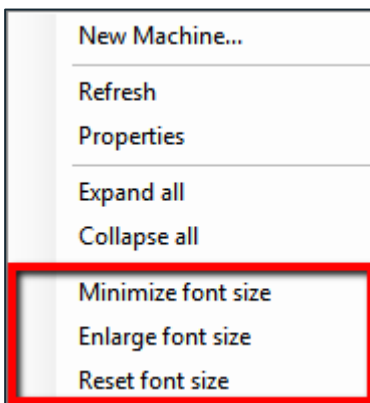
Appearance of navigation tree and custom filter

Appearance of navigation tree is now user controllable in two respects:

- Font size used by navigation tree
- Text and background color used for selected location/machine group

Increasing and decreasing font size used by navigation tree

To adjust font size used by navigation, move mouse pointer over navigation tree and right click to bring up quick menu for navigation tree. If you're familiar with PM5, you will notice that there are three new menu choices at the bottom:



- Minimize Font Size – selecting this menu choice will decrease the font size used by navigation tree by one font size unit. This action can be repeated until the font size is according to user's preferences or until minimum allowed font size is reached. When this happens, user is notified that it's not possible to make the font any smaller. Minimum font size is 6px.
- Enlarge Font Size – selecting this menu choice will increase the font size used by navigation tree by one font size unit. This action can be repeated until the font size is according to user's preferences or until a maximum allowed font size is reached. When this happens, user is notified that it's not possible to make the font any larger. Maximum allowed pixel size is 20px.
- Reset Font Size – selecting this menu choice adjusts the font size to the size used currently as default font size for navigation tree – 8px.

Font size selected for navigation tree is a persistent personal setting – it can be selected individually by each user and is remembered between sessions.

Adjusting background and text color for selected location

This function allows the user to quickly change the colors used for display of currently selected location in navigation tree. Up until now, depending on type of screen, computer type and ambient lightning conditions, it could sometimes be difficult to see either what location is currently selected or what its name is. User has now complete control over this detail and can adjust colors according to own preferences.

Selection of colors used for selected location is done in user's personal settings. Open Options form and use following controls to adjust the colors in use according to personal preferences:

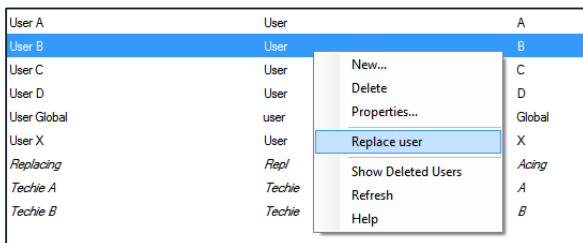
Background – specifies background color for selected location

- Text – specifies text for selected location
- "Preview" shows how the combination of the selected colors will look on the screen.
- "Restore Colors" button restores color settings of selected location to default black text and mid-grey background color.

Color selection for selected locations is a persistent personal setting – it can be selected individually by each user and is remembered between sessions.

Changes to user replacement function

User replacement function has been reworked and is now much quicker, especially on PM5 systems with large amount of data and many locations.



Basic functionality of user replacement function works the same as before. Selection of user to be replaced is done by right-clicking on user name in Administration/Users section and selecting 'Replace user' from quick access menu. This will bring up the 'Replace user' form.

In 'Replace user' form, select replacing personal. Next select locations where the replacement is to take effect. To complete user replacement at selected locations, press 'Replace' button.

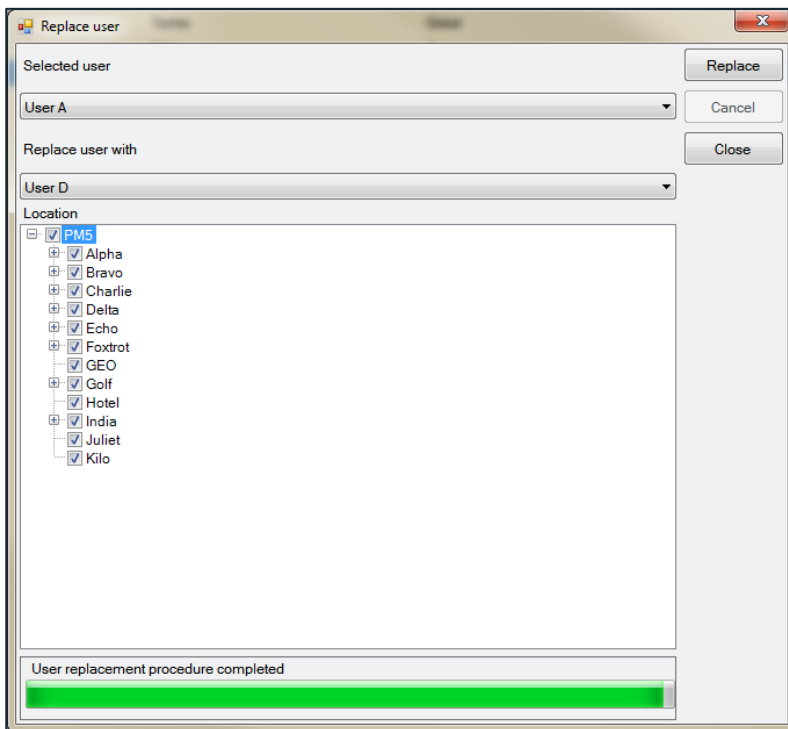
The adjustments in 'User Replacement' function result first and foremost in it being significantly faster than in previous versions.

Business logic of user replacement function has been slightly modified and automatically adjusts user rights of the replacing user:

- Replacing user becomes automatically a member in all technical groups in which the replaced user is a member.

Furthermore, user can track its progress through selected locations with help of progress bar shown at the bottom of the form while the replacement procedure is running.

Finally, user can interrupt replacement procedure in progress by pressing 'Cancel' button. Please observe that if the replacement procedure is interrupted, it **does not** restore the system to state before the procedure was started. Job assignments that have been adjusted prior to interruption remain assigned to replacing user, while those that haven't been handled are still assigned to original user.



Job event log

Job event log is a new feature that allows users to document progress of individual jobs with help of notes formed in same manner as those in notice board.

To add new job event log note, open activity or fault and press button 'Job Log' in left lower corner. If job event log contains previous notes, then this is indicated by number of log posts presented above the button.

The left screenshot shows the 'Activities' form. It has fields for 'Signed By', 'Job No', 'Priority', 'To Be Signed By', 'Task Name', 'Type of Task', 'Machine Number', 'Machine Name', 'Date Scheduled', 'Activity Done', 'Expected End Date', 'Used Man Hours', and 'Estimated Man Hours'. There are also checkboxes for 'Done', 'Started', 'Fixed Date', 'Ext. job exists', and 'Approved'. A 'Job Log' button is at the bottom left, with a red arrow pointing to it. The right screenshot shows the 'Edit fault' form. It has fields for 'Machine', 'Machine Ines', 'Job No', 'Fault Type', 'Discovered (Date)', 'Discovered By', 'Priority', 'Beatrice', 'Alarm Code', 'Technical Group', 'Estimated Manhours', 'Used Man Hours', 'Signed By', 'Expected End Date', 'Approval Required', 'Approved', 'Approved By', 'Solved', 'Date Solved', 'Cause Type', 'Fault Description', and 'Solution'. A 'Job Log' button is at the bottom left, with a red arrow pointing to it.

Job Event Log form presents all previously entered log posts that belong to the job. It also allows addition of new posts and editing of existing posts. Please observe that currently it is not possible to delete posts from the log, this omission is on purpose.

The 'Progress log for fault 212' form displays a table with the following data:

| Date | Initials | Note |
|--------------------|-------------|---|
| 8/27/2018 11:28 AM | User Global | In quis ligula nulla. Etiam eget mattis lacus, a condimentum felis. Vestibulum euismod, turpis et venenatis tincidunt, lorem elit molestie augue, a convallis ligula eros in justo. Quisque ullamcorper leo nec orci vestibulum, quis tristique libero ultrices. Sed at augue odio. Nunc pellentesque nisl metus, nec consectetur orci suscipit eu. Integer finibus diam quis velit interdum semper a a ex. Vivamus non risus non purus finibus congue. Nulla porttitor nulla in lorem rutrum accumsan quis et leo. |
| 8/27/2018 11:27 AM | User A | Pellentesque nulla nunc, ultrices in lacus a, interdum accumsan ante. Donec quis eleifend turpis. Etiam ligula nisi, dapibus non facilisis id, iaculis a tortor. Etiam vehicula vel diam non rutrum. Fusce rutrum, lacus at volutpat rutrum, urna libero volutpat elit, vitae cursus mi felis ac ante. Nunc congue id ante dapibus tempor. Sed sapien nibh, gravida ac metus id, malesuada congue eros. |
| 8/27/2018 11:24 AM | pm5 | Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin congue odio diam, vel sodales elit pellentesque ut. Suspendisse nec diam sed elit ornare ultrices. Maecenas pellentesque sodales lacus non ultrices. Phasellus consequat bibendum luctus. Aliquam risus velit, feugiat et arcu nec, auctor imperdiet velit. Suspendisse in suscipit augue. Interdum et malesuada fames ac ante ipsum primis in faucibus. |

At the bottom of the form are buttons for 'New', 'Edit', and 'Close'.

To create new job event log post, press 'New' button'. This brings up a form that allows entry of text. Use of tabs and line shifts for formatting purposes is supported. By pressing on 'Save' button, the note is added to selected job event log. Each post consists of entered text, date and time when the note was saved or edited last time and finally who created/edited it.

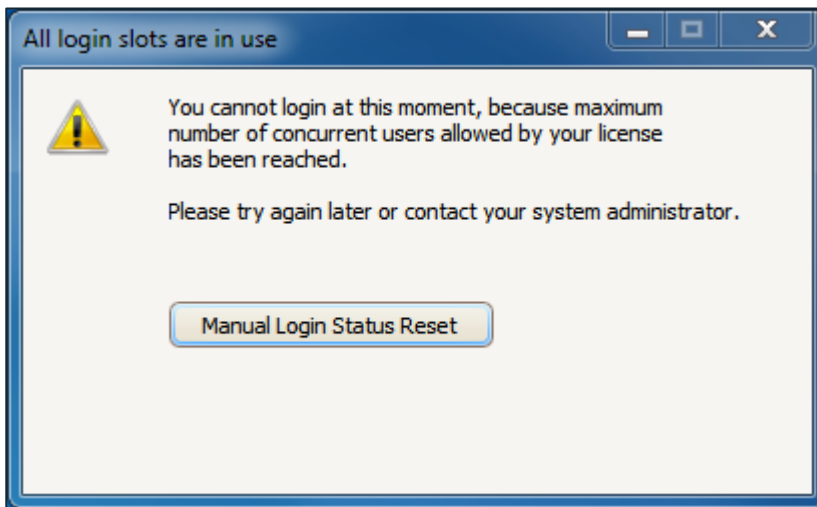
The image shows a dialog box titled "New log note for Fault 212". It contains a large, empty text area for entering a note. At the bottom right, there are two buttons: "Cancel" and "Save".

To indicate presence of job event log posts, a new column called 'Job Log in Use' has been added to main data grid in Activities/Fault section of PM5 client. The column displays a checkbox, which is checked in if at least one job log note has been added to the activity or fault.

| Filter | | Help | | | | |
|-------------------------------------|-------------------------|---------------------|------------------|------------------|-------------------------------------|--|
| Machines | | Tasks | Spare Parts | Suppliers | Activities / Faults | |
| Fault | Task Name // Fault Type | Machine No | Date | Done Date | Job Log In Use | |
| <input checked="" type="checkbox"/> | Critical | 30072009-905 | 3/19/2018 | 3/21/2018 | <input type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Critical | 30072009-905 | 3/23/2018 | 3/23/2018 | <input type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Critical | 30072009-905 | 4/11/2018 | 4/11/2018 | <input checked="" type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Critical | 30072009-905 | 3/14/2018 | 3/19/2018 | <input type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Critical | 30072009-905 | 6/4/2018 | | <input type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Major | 30072009-902 | 6/1/2018 | | <input checked="" type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Critical | 30072009-901 | 3/19/2018 | 3/19/2018 | <input type="checkbox"/> | |
| <input type="checkbox"/> | Agnes 001 | 30072009-901 | 2/14/2018 | 2/9/2018 | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | Agnes 001 | 30072009-901 | 3/11/2018 | 2/15/2018 | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | Agnes 002 | 30072009-901 | 2/9/2018 | 2/9/2018 | <input type="checkbox"/> | |
| <input type="checkbox"/> | Agnes 002 | 30072009-901 | 3/11/2018 | 3/19/2018 | <input type="checkbox"/> | |
| <input type="checkbox"/> | Agnes 001 | 30072009-901 | 3/17/2018 | | <input checked="" type="checkbox"/> | |
| <input type="checkbox"/> | Agnes 002 | 30072009-901 | 4/18/2018 | 4/13/2018 | <input type="checkbox"/> | |
| <input type="checkbox"/> | Agnes 002 | 30072009-901 | 5/13/2018 | | <input checked="" type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Critical | 30072009-004 | 4/13/2018 | | <input type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Critical | 02052018-001 | 6/6/2018 | | <input type="checkbox"/> | |

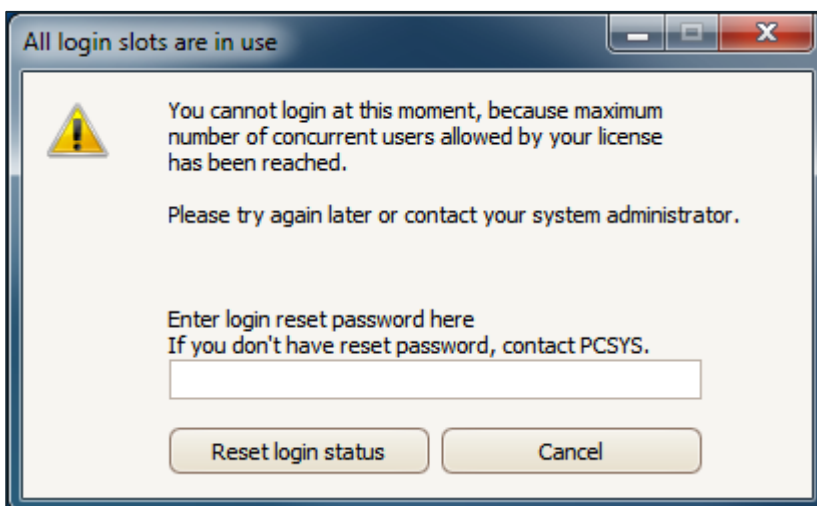
Emergency login status reset when unable to log in onto PM5

Emergency login status reset is new function intended to provide quick solution to scenario where users cannot log in onto PM5, because all login slots are in use (even though they aren't). To make it easier to recover from such situation we have modified login procedure in following manner:

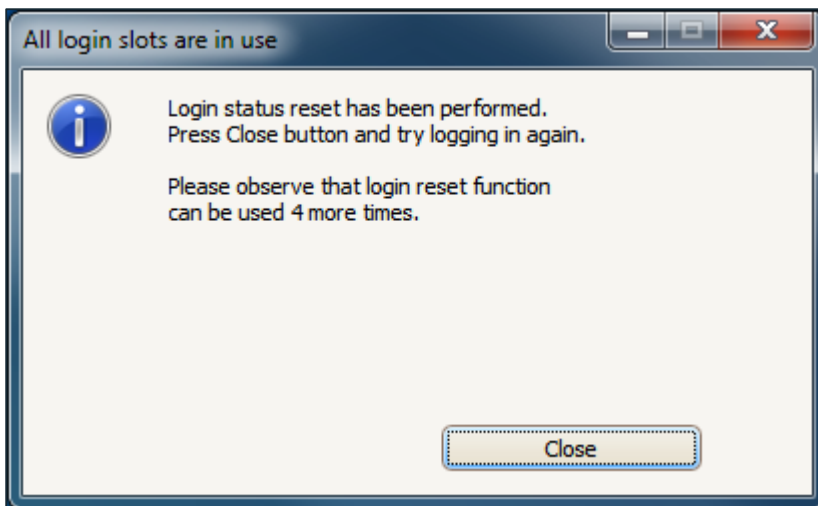


- 1) When user is not allowed to login because all login slots are in use, user receives following message. The upper part is the same as before and if user is aware that all login slots are in use, the situation is to be handled as normal – ask a colleague to log out and try logging in again.

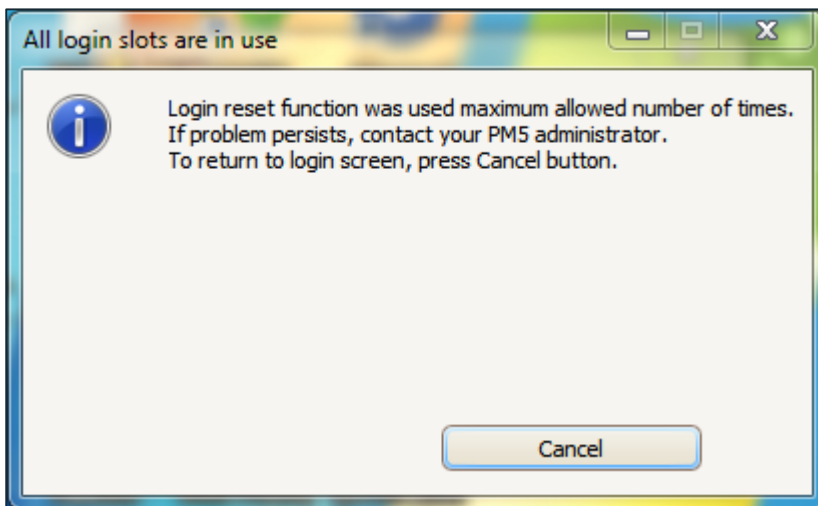
In situations where users are "locked out" and there are no known logged in users in the system that could log out, then user can press "Manual Login Status Reset"



- 2) When "Manual Login Status Reset" button is pressed, user activates the login reset function. User is to enter required password and press "Reset login status" button. This will have two effects:
 - a. 'Always Access' flag is reset for all users.
 - b. Logged in status is set to 'not logged in' for **single user** currently logged in on PM5. The user who is 'logged out' is the one with oldest login timestamp in database.



- 3) If emergency login reset was successful, then user should receive a confirmation message, which will also inform the user about how many more times the function can be used.



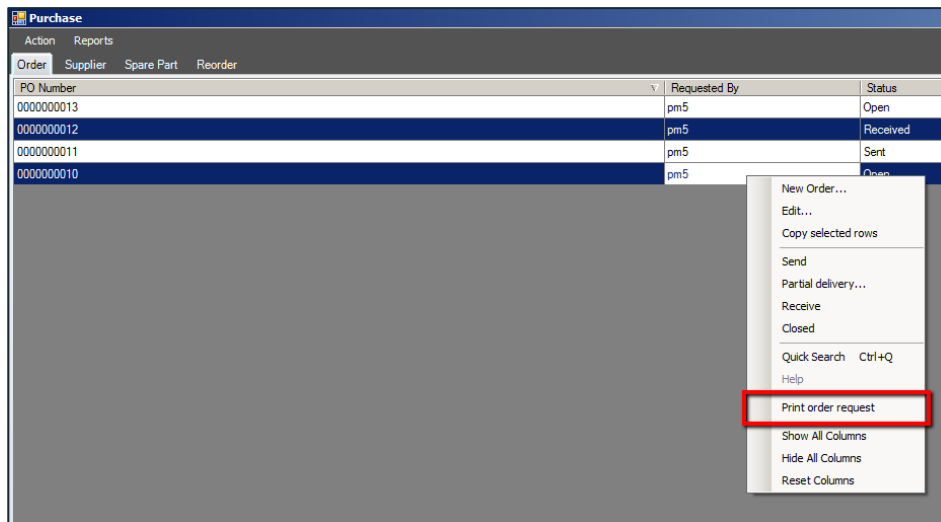
- 4) By default, the emergency login reset function can be used a **maximum of five times**. Thereafter the function is disabled and subsequent attempts will result in message shown above. If that happens, it is recommended for PM5 administrator to contact PCSYS.

After a successful emergency login reset, it is highly recommended that the person who logs in onto PM5 is also a system administrator. After logging in onto the system, administrator user should immediately open Administration module and make necessary adjustments in Users section.

Purchase module –printout of order requisitions for individual orders

Up to now, the printout of purchase order requisitions could be done when order status was changed from *Open* to *Sent* or by ordering printouts through filter tool. This procedure has now been simplified.

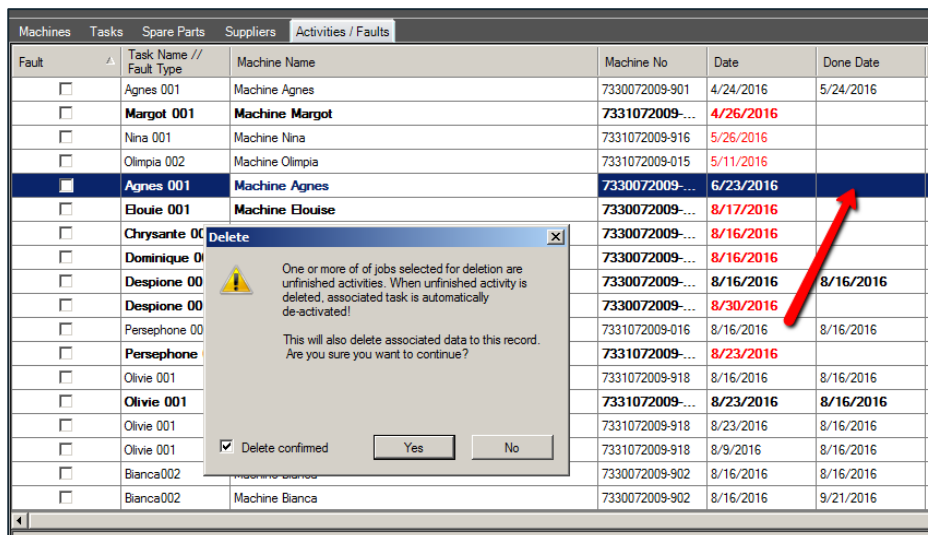
To print one or more order requisitions, user needs to select the orders for which requests are printed and click on right mouse button to bring up quick menu for orders. Then, to print the requests, select menu item *Print order request*. This action will trigger printout of requests for all currently selected orders.



Change in business logic when deleting unfinished activity

Up till now, PM5 allowed deletion of an unfinished activity, even though such action meant that the task to which the activity belonged was deactivated for all practical purposes.

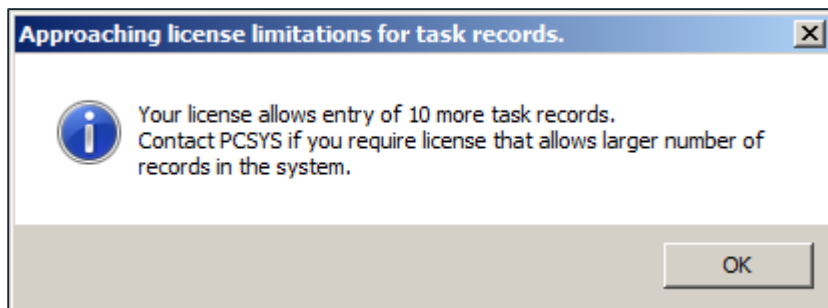
The business logic for this scenario has now been adjusted to reflect practical consequences of deletion of active activities. As example picture below demonstrates, when activity about to be deleted is unfinished (Date Done field is empty), user needs to approve the action before proceeding. When deletion is approved, the task to which the activity belongs will be automatically set to disabled status.



Warning about license limitations

For licenses with limitations on maximum number of records for machines, tasks and spare parts (Demo / Lite / Standard licenses), a warning will be displayed when user approaches the maximum allowed number of records.

First warning will be displayed when ten more records can be entered. Second warning will be displayed when five more records can be entered into the system. Warnings are triggered separately for each record group with license limitations. Example picture below informs the user that ten more tasks can be created in the system before license limitation for tasks is reached.

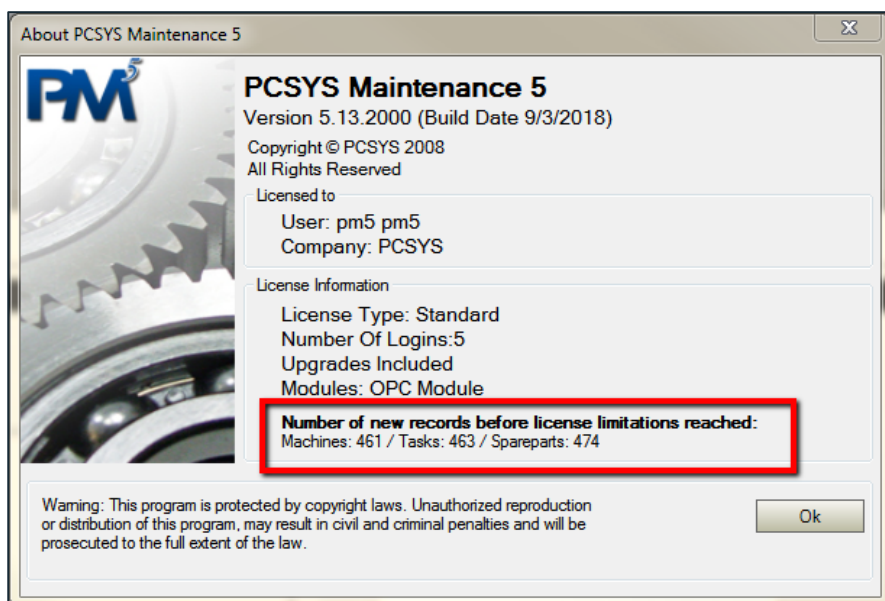


Information about license limitations

When a license with limitations regarding maximum number of records for machines, tasks and spare parts is in use (Demo / Lite / Standard licenses) are in use, information about number of records that can be entered into PM5 is displayed in *About PM5* form.

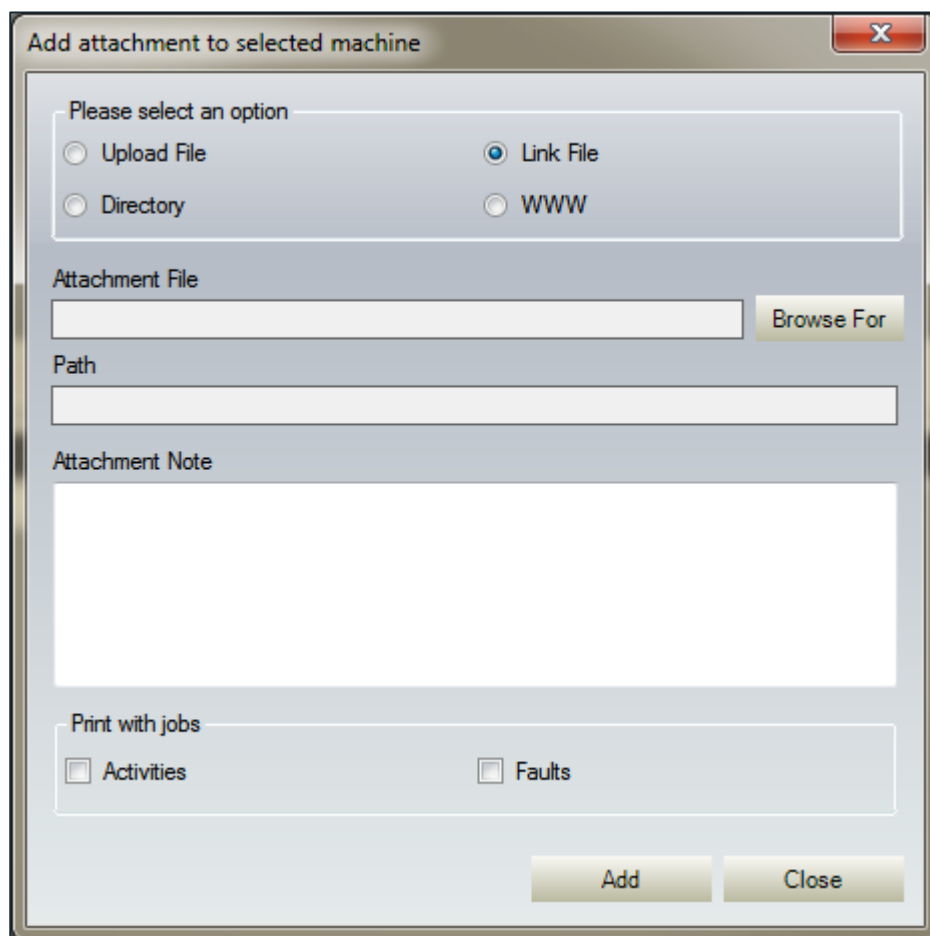
To open *About PM5* form, select *Help* and *About PM5*. See picture below for example of information about remaining record allowance in the system.

Please observe that remaining record allowance is not displayed in systems with Enterprise license., as Enterprise license has no limitations of number of machine/task/spare part records and the system.



Adjustments to Attachment form

Attachment form has been redone and simplified. User interface for selection of adjustment type is now at the top of the form. Depending on selection of attachment type, the other elements of the form are adjusted dynamically.



The screenshot shows a dialog box titled "Add attachment to selected machine" with a close button (X) in the top right corner. The dialog contains the following elements:

- Please select an option:** A group box containing four radio buttons: "Upload File", "Link File" (selected), "Directory", and "WWW".
- Attachment File:** A text input field with a "Browse For" button to its right.
- Path:** A text input field.
- Attachment Note:** A large text area for notes.
- Print with jobs:** A group box containing two checkboxes: "Activities" and "Faults".
- Buttons:** "Add" and "Close" buttons at the bottom right.

Release notes for PM5 version 5.13.1001

Status of users assigned for tasks, activities and faults

As the time goes by, status of PM5 users can change – their credentials can change, they can be set to passive status or simply be deleted. Such changes in users' status could mean that they were no longer valid for the jobs they were assigned for. When that situation occurred, they were no longer listed in relevant combo-boxes of relevant tasks, activities and faults. This in turn could cause problems when editing such tasks and jobs.

This situation is now rectified.

When status of a user changes and user is no longer valid selection for assigned task, activity or fault, the user is still listed in relevant combo-boxes, but a **text flag** is displayed to the left of his initials in the combo-box.

Following fields will display these new text flags:

- Task form
 - *To be signed by* combo-box
- Activities form
 - *Signed by* combo-box
 - *Approved by* combo-box
- Fault form
 - *Discovered by* combo-box
 - *To be signed by / Signed by* combo-box
 - *Approved by* combo-box

Currently, three types of **text markers** are in use:

- **User's status has been set to passive** When a user's status has been set to Passive, then this fact will be indicated by a text flag (**Passive**) in combo-boxes of types listed above. In example below, a passive user has been selected as person who discovered and signed for a fault.

The screenshot shows the 'Edit fault' window. At the top, 'Machine' is set to '001.130' and 'Job No' is '86'. The 'Fault Type' is 'Mekanisk'. The 'Discovered (Date)' is 'den 10 januari 2007'. The 'Discovered By' dropdown is highlighted with a red box and shows 'MADE (Passive)'. The 'Signed By' dropdown is also highlighted with a red box and shows 'MADE (Passive)'. Other fields include 'Estimated Manhours' (0.00), 'Used Man Hours' (0.50), 'Priority' (Select), 'Alarm Code', 'Technical Group' (Select), 'Expected End Date' (den 5 december 2017), 'Approval Required' (unchecked), 'Approved' (checked), 'Solved' (checked), 'Date Solved' (den 10 januari 2007), and 'Cause Type' (Q2).

- **User has been deleted.** When a user has been deleted, then this fact will be indicated by a text flag **(Deleted)** in combo-boxes of types listed above. In example below, a user that has been deleted is selected as person responsible for a machine task.

The screenshot shows a 'Task' dialog box with various fields. The 'To Be Signed By' dropdown is highlighted with a red rectangle, showing 'MABE (Deleted)'. Other visible fields include 'Task Name' (Service Oil 30 days), 'Machine' (Indvejningspumpe), 'Type of Task' (Smøring), 'Interval' (30 days), 'Priority' (Select), and 'Estimated Manhours' (1.00). There are also checkboxes for 'Active', 'Locked', and 'Approval Required'.

(1)

- **User's credentials are no longer sufficient.** This is a special case for selections in 'Approved by' combo-boxes of faults and activities. In cases where a user who no longer has credentials for approval of jobs, this fact is indicated by text flag **(Credential removed)** in combo-boxes where he's been previously selected. An example of such scenario is shown in picture below.

The screenshot shows an 'Activities' dialog box. The 'Approved By' dropdown is highlighted with a red rectangle, showing 'MABE (Credential removed)'. Other visible fields include 'Signed By' (MABE), 'Job No' (81), 'Priority' (Select), 'Date Scheduled' (6/14/2007), 'Task Name' (Service Oil 30 days), 'Type of Task' (Smøring), 'Machine Number' (001.130), 'Machine Name' (Indvejningspumpe), 'Used Man Hours' (0.00), and 'Estimated Manhours' (1.00). There are also checkboxes for 'Done', 'Started', 'Fixed Date', and 'Approved'.

The text flags indicating changed status of user in above-mentioned combo-boxes serve two purposes. In historical records, they simply indicate the changed status of the user. **Much more importantly, in active tasks and unfinished jobs, they indicate that the jobs are assigned to personal that most probably is no**

longer able to complete them. It is strongly advised that any active task or unfinished job that is assigned to a user flagged in this manner should be re-assigned to a more suitable user.

Finally, please observe that users flagged as deleted, passive or lacking credentials are only displayed in relevant combo-boxes **as long as they are the selected user**. If another user is selected in their place and this change is then saved, the flagged users are **no longer included** in list of users selectable in a combo-box.

Changes in Batch job finish functionality

Batch job finish functionality has been modified and extended. Following two changes are introduced in this version.

- **Job exclusion**

Activities and faults that are to be finished need to comply with business logic of PM5. If these conditions are not satisfied, the request to finish the job will be rejected. Since earlier following conditions need to be satisfied:

- For activities, the selected completion date cannot be earlier than completion date of any of preceding activities generated by same task as activity about to be finished.
- For faults, fault reason need to be specified either prior to request for completion is made **or** specified in Batch finish form's own Cause Type combo-box.

A third condition has been added in this version of PM5 – activities that include calibration are automatically rejected from batch job finish requests. Our reasoning is that activities of this nature require entry of mandatory calibration data for each individual activity and it is impractical to handle that in batch job finish functionality.

- **Handling of jobs rejected by job finish functionality**

In previous versions, rejection of a job has been indicated in rudimentary manner, by listing its job number in a message box. This behavior has now been modified. Jobs rejected by batch functionality are now listed in Windows standard application Notepad. Each rejected job is listed in its own row – information included is job id number, job type and reason for rejection.

We have chosen to present this information in Notepad, because it allows user to work with PM5 while keeping this information on screen.

In rare cases where Notepad is not installed on the computer where PM5 client is running, same information will be displayed in a Note form. This presentation will allow the user to copy/paste the information about rejected jobs before closing down the Note form and handling relevant records.

In the picture shown, there is an example of Notepad application showing information about jobs rejected in a batch finish job request.

```
PM5 Message - 12/5/2017 2:53 PM - List of jobs rejected in this batch finish sequence
*****
Job No  Type                Rejection reason
*****
88      Activity              Selected finish date is earlier than finished date of last finished activity
99      Activity              Selected finish date is earlier than finished date of last finished activity
107     Fault                 Fault cause is not specified
```

Release notes for PM5 version 5.13.1000

Priority code

Introduction

Priority field has been present in PM5 since the beginning. It is present in Task, Activity and Fault. It was a text field where user could enter a text that was up to three characters long. Purpose of this field was to provide quick and simple way to indicate priority of tasks and jobs.

Priority is now replaced with a user defined system variable **Priority Code**. Purpose of **Priority Code** is exactly the same as that of **Priority**. The major difference is that value in **Priority Code** field is not entered by user on individual basis, but rather selected from a predefined list of priority codes defined by an administrator. Major advantage of this change is that it guarantees consistency in data entry.

Priority code in existing systems

For users who are actively using **Priority** field, this change has following consequences.

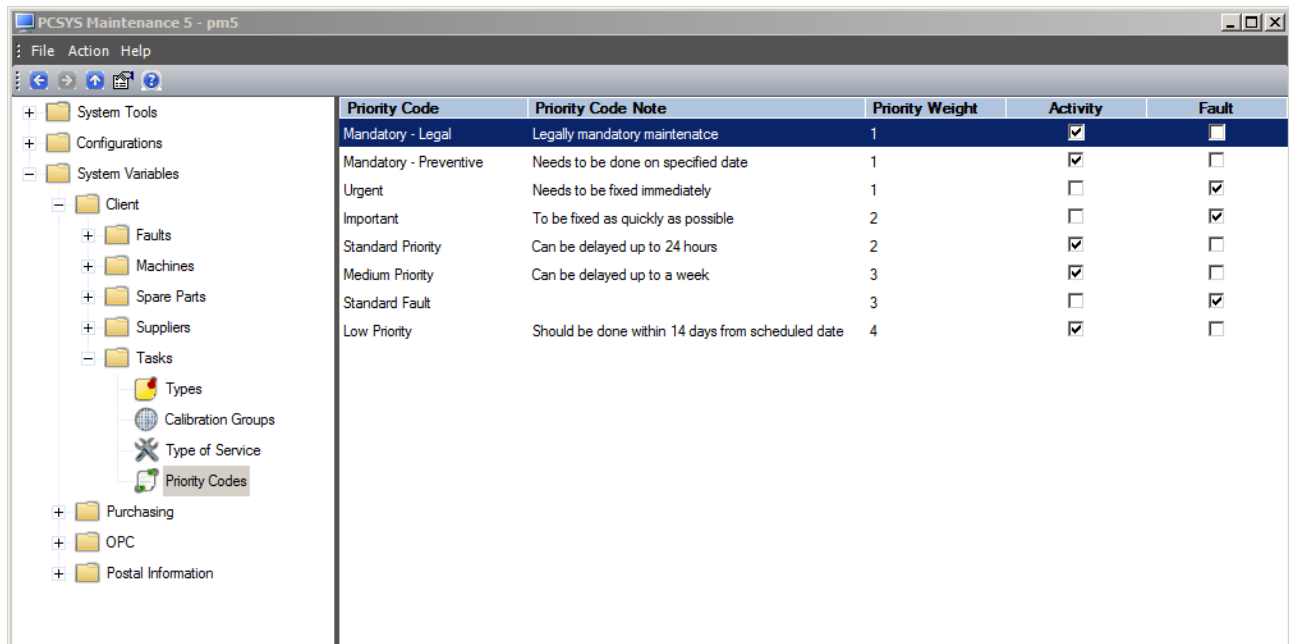
- Fields and columns related to **Priority** are no longer present in the system.
- **Priority** fields have been replaced by a combo box **Priority Code** in forms for tasks, activities and faults.
- **Priority** columns have been replaced by columns **Selected Priority Code** in main data grids for tasks and activities/faults.
- Data that existed in **Priority** fields has been transferred to **Priority Code** as part of the upgrade to this version of PM5.
- All variations of codes entered in **Priority** field at the time of upgrade have been inserted into **Priority Codes** system variable section, which is now present in Administration module.

In other words, all data previously handled by **Priority** field is still present and correctly displayed in PM5 system.

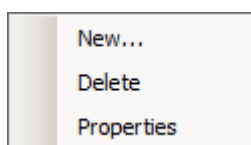
Management of Priority Codes

Priority Code is a system variable that is handled in same manner as other system variables (such as Machine Type, Fault Type or Technical Group) in the system. To create, edit or delete a **Priority Code**, user needs to open Administration module and access Priority Code section, which is located at System Variables/Tasks. When Priority Codes node is selected, list of priority codes defined in the system will be shown in right section of Administration module.

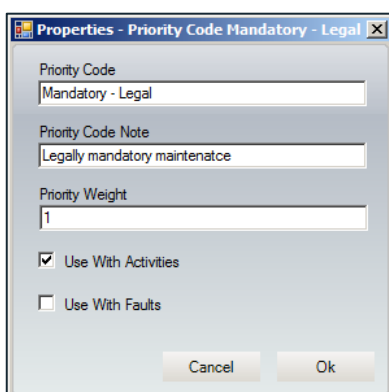
Please observe that the priority list shown in picture below is just an example. In your PM5, the list will initially be either empty **or** if field **Priority** was in use prior to upgrade, it will show all variants of priority codes previously in use. If the second is the case, priority codes will have weight set by default to 1 and will be marked as accessible for activities and faults. These settings can of course be edited at user's convenience.



| Priority Code | Priority Code Note | Priority Weight | Activity | Fault |
|------------------------|---|-----------------|-------------------------------------|-------------------------------------|
| Mandatory - Legal | Legally mandatory maintenance | 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Mandatory - Preventive | Needs to be done on specified date | 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Urgent | Needs to be fixed immediately | 1 | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Important | To be fixed as quickly as possible | 2 | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Standard Priority | Can be delayed up to 24 hours | 2 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Medium Priority | Can be delayed up to a week | 3 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Standard Fault | | 3 | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Low Priority | Should be done within 14 days from scheduled date | 4 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |



To add new, edit or delete new priority code, move mouse pointer to right section and click on right mouse button. This will display a quick menu where appropriate action can be selected. Existing priority code can also be selected by double-clicking on it in the list.



Properties - Priority Code Mandatory - Legal

Priority Code: Mandatory - Legal

Priority Code Note: Legally mandatory maintenance

Priority Weight: 1

☒ Use With Activities

☐ Use With Faults

Cancel Ok

Priority code has following properties:

- Priority Code – name of priority code. This is the name that will be displayed in combobox Priority Code and in column Selected Priority Code in main data grids for tasks and activities/faults.
- Priority Code Note – descriptive note, clarifying purpose of the priority code.
- Priority Weight – a whole number value between 1 and 1000, defining the weight of the priority. 1 is the highest priority and 1000 is the lowest priority. Priority weight is intended to specify importance of the priority code relative other priorities. It is also used for sorting and filtering

purposes, as described below.

- Use With Activities – indicates that this priority code is to be used with tasks and activities. Only the priorities that have this checkbox checked in will be available for selection for tasks and activities.
- Use With Fault – indicates that this priority code is to be used with faults. Only the priorities that have this checkbox checked in will be available for priority selection for faults.

Additional clarification - when a priority code is marked as 'Use With Activities', it will be available for selection in tasks and activities. When a priority code is selected in a task, all activities generated by this task will have same priority selected at the time of creation. It is possible to change priority code for an individual activity. However, an activity will always have its priority set to that which is specified in the task to which it belongs.

To save new priority code or save changes made in pre-existing priority code, press 'OK' button.

Deletion of a priority code can be done at any time, even if it is in use. When a priority code is deleted, all tasks, activities and faults that are using it will be reset and no longer have a selected priority code.

Priority Codes in main data grids

Priority Code can be specified for tasks, activities and faults. Selection is done from a list of available priority codes, defined in Administration module and available in a combo box with same name.

Selection of priority code is not mandatory. Combo box **Priority Code** is always empty as default and selection of priority code needs to be done on individual basis for each task or fault. Activities inherit their priority code from the task they belong to. Priority code of individual activity can be changed at any time after it has been created.

In example picture, Priority Code combo box is expanded and shows list of available priority codes. Please observe that only priority codes with checkbox 'Use with activity' are included in this list.

It is important to remember that the sorting order of the list in Priority Code combo box is **not** by priority code name, but by its weight, in descending order. Thus the priority codes with weight 1 will be put on top of the list, followed by those of weight 2 and so on.

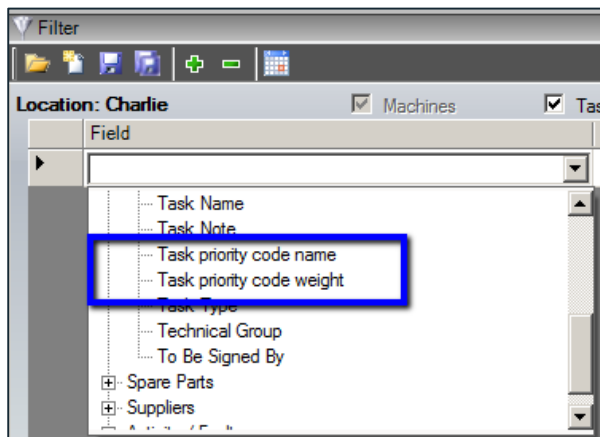
To make a selection, select priority code from list in the combo box and press 'Save' button.

In the client, priority codes and their weight are displayed in main data grids of tasks and activities/faults, in columns **Selected Priority** and **Priority Weight**. There is one important thing to remember regarding the sorting based on priority code – it is done according to the value specified by priority weight, both when selected sorting is on Selected priority and Priority Weight. In example picture below, the sorting column is **Selected Priority**, but the sorting is still done according to the values in **Priority Weight** column. When such sorting is done, the posts with specified weight are always sorted first, in either ascending or descending order. Posts with no weight (no priority code specified) will always be put at the bottom, regardless of selected sorting order.

| Task Name | Task Type | Active | Machine No | Machine Name | Selected Priority | Priority Weight |
|-----------------------------|-----------------------|-------------------------------------|----------------|----------------|------------------------|-----------------|
| Hekate 003 | Monthly Maintenance | <input checked="" type="checkbox"/> | 20170420-001 | Machine Hekate | Mandatory - Preventive | 1 |
| Cerise Priority Code Test 1 | Overview | <input checked="" type="checkbox"/> | 7330072009-903 | Machine Cerise | Mandatory - Legal | 1 |
| Cerise Measured A | Overview | <input checked="" type="checkbox"/> | 7330072009-903 | Machine Cerise | Mandatory - Preventive | 1 |
| Cerise 001 | Lubrication | <input checked="" type="checkbox"/> | 7330072009-903 | Machine Cerise | Standard Priority | 2 |
| Hekate 002 | Monthly Maintenance | <input checked="" type="checkbox"/> | 20170420-001 | Machine Hekate | Medium Priority | 3 |
| Hekate Inactive 500 | Unplanned Maintenance | <input type="checkbox"/> | 20170420-001 | Machine Hekate | Low Priority | 4 |
| Martha 001 | Lubrication | <input checked="" type="checkbox"/> | 7331072009-013 | Machine Martha | | |
| Iris Inactive Alpha | Monthly Maintenance | <input type="checkbox"/> | 20170829-001 | Machine Iris | | |
| Hekate 004 | Monthly Maintenance | <input checked="" type="checkbox"/> | 20170420-001 | Machine Hekate | | |
| Martha Task 001 | Unplanned Maintenance | <input checked="" type="checkbox"/> | 7331072009-013 | Machine Martha | | |

Priority Code in filters

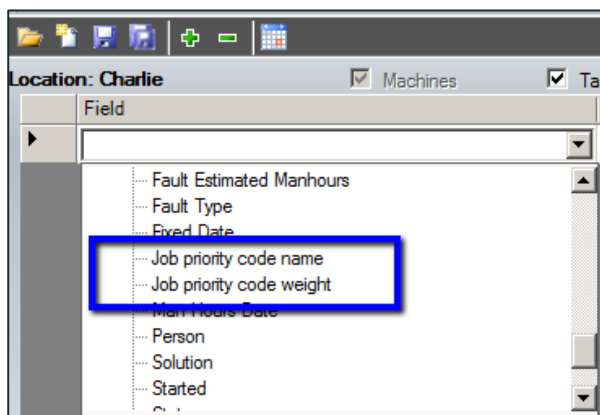
Priority codes can be used for filtering of data presented on the screen. New filter search parameters have been added for tasks and activities/faults.



In Tasks, filter search parameters **Task priority code name** and **Task priority code weight** have been added in selection of field which can be used for filtering.

Task priority code name allows filtering on specific priority code name or names specified for tasks, in similar manner as other system parameters, such as for example task type.

Task priority code weight allows filtering on weight value of priority codes specified in tasks.



In Activities/Faults, filter search parameters **Job priority code name** and **Job priority code weight** have been added in selection of field which can be used for filtering. It is important to remember that searches using these two search fields **will**, as long as search conditions are fulfilled, include both activities and faults.

Job priority code name allows filtering on specific priority code name or names.

Job priority code weight allows filtering on weight value of priority codes specified in activities and faults.

Additional clarification – search parameter priority weight enables filtering by *groups of priority codes*. For example, the filter in example picture below will show **all** unfinished jobs with priority codes that have priority weight 1 or 2.

| Filter - Priority 2 or higher | | | | | | | | | |
|--|----------|----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------|--|
| | | | | | | | | | |
| Location: Charlie | | | | | | | | | |
| <input checked="" type="checkbox"/> Machines <input checked="" type="checkbox"/> Tasks <input checked="" type="checkbox"/> Spare Parts <input checked="" type="checkbox"/> Suppliers <input checked="" type="checkbox"/> Activities / Faults | | | | | | | | | |
| Field | Criteria | Value | Machine | Tasks | Spare Parts | Suppliers | Activities / Faults | Operator | |
| Status | = | Not done | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | And | |
| Job priority code weight | < | 3 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | |

Column 'Qty in stock'

Column **Qty in stock** has been added to subpane Spare Parts in client sections Tasks and Activities/Faults. The value displayed in this column shows available quantity in stock for selected spare part. This information consists of two possible values:

- First number shows quantity in stock at the stock **selected** for the spare part and this specific consumption instance. If no stock has been specified, then a '-' is displayed instead.
- Second number shows a total quantity in stock at **all stocks** that are specified for this particular spare part. If no stocks are specified for the spare part, then a '-' is displayed instead.

Purpose of this new column is to provide quick overview of availability of the spare part for individual jobs. While a spare part may not be available at stock specified for a job, it may be available somewhere else. The two numbers (or lack thereof) provides a snapshot of spare part's availability.

In example picture below, a task has four spare parts specified for consumption. The topmost spare part has no stocks specified for this consumption. Also, the spare part has no stocks specified in the system. Thus, the value displayed in **Qty in stock** is '-/-'.

Second spare part in our example picture has a specified consumption stock which currently contains 100 units of the spare part. The spare part also has at least one other stock with positive quantity and grand total of all stocks is 105. Thus, value in **Qty in stock** column shows '100 / 105'.

Finally the third spare part has no specified stock for consumption. But it at least one stock specified in the system and total quantity in stock is 75. Value in **Qty in stock** shows therefore '- / 75'.

| Machines | Tasks | Spare Parts | Suppliers | Activities / Faults | | | | |
|---|---------------------|-------------------------------------|----------------|------------------------|-------------------|------------------------------|--------------|--|
| Task Name | Task Type | Active | Machine Name | Selected Priority | Priority Weight | Machine No | | |
| Hekate 003 | Monthly Maintenance | <input checked="" type="checkbox"/> | Machine Hekate | Mandatory - Preventive | 1 | 20170420-001 | | |
| Cerise Priority Code Test 1 | Overview | <input checked="" type="checkbox"/> | Machine Cerise | Mandatory - Legal | 1 | 7330072009-903 | | |
| Cerise Measured A | Overview | <input checked="" type="checkbox"/> | Machine Cerise | Mandatory - Preventive | 1 | 7330072009-903 | | |
| Cerise 001 | Lubrication | <input checked="" type="checkbox"/> | Machine Cerise | Standard Priority | 2 | 7330072009-903 | | |
| Page 1 showing 1 to 4 of total 4 Machine located at: Charlie - Charlie002 - Charlie002.2 | | | | | | | | |
| Details | Activities | Spare Parts | Calibration | Attachments | External Services | | | |
| Number | Type Number | Name | Group | Quantity | Note | Store | Qty in stock | |
| SP-0011 | 0011 | Spare Part Marsale | Lamp | 2 | ABC | | / - | |
| SP-0005 | 0005 | Spare Part Eveleen | Bolt | 3 | LKJ | Chelsea - Local BB - FF - II | 100 / 105 | |
| SP-0003 | 0004 | Spare Part Congalie | Pipe | 3 | | | / 75 | |
| SP-0017 | 0017 | Spare Part Una | Pipe | 2 | hvt | Chelsea - Local PL - JB - GF | 96 / 191 | |

Note fields in PM5 client

Note fields in main sections of the client can now be displayed and edited in separate form. To open the Notes form, press on **Expand** button below Notes field.

When Notes form is opened from Details subpane in main client, the note is presented in a locked, non-editable format.

When note is shown in expanded note from a place where it can be edited, the Notes form will also allow editing. To finish editing and close the Notes form, press its **Close** button.

Note forms are resizable and can be placed anywhere on the screen.

Please observe that editing done in Notes form is displayed immediately in Notes field of detail form from Note field was opened. To actually save the edit, user still needs to press the Save button of detail form.

Additional note about content of note forms – limited editing is now possible in notes forms.

- Vertical spacing can now be added with help of Enter key.
- Horizontal spacing can be created with help tab key.

Picture below shows task note in expanded mode. The content of the list is formatted with help of tab key.

Task Note - Task Cerise Measured A / Machine Machine Cerise

Task note, things to consider when completing activity:

1. Read task note.
2. Remember to enter spent time in manhours
3. Check if attachments are present.
4. Read attachments before starting work.
5. Update quantities of used spare parts

Task Form Fields:

- Task Name: Cerise Measured A
- Machine: Machine Cerise
- Type of Task: Overview
- To Be Signed By: Observer A
- Technical Group: Select
- Estimated Manhours: 0.00
- Task Note: Task note, things to consider when completing activity:
 1. Read task note.
 2. Remember to enter spent time in manhours
 3. Check if attachments are present.
 4. Read attachments before starting work.
 5. Update quantities of used spare parts

Buttons: Save, Cancel, Expand, Close

Machine barcode labels

Barcode label functionality, previously available for spare parts, has been extended to Machines.

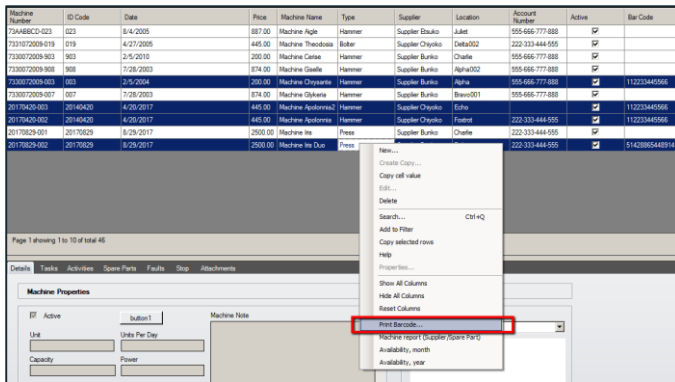
A barcode can be specified for individual machine. To enter a machine barcode, open Machine form and enter the barcode in **Barcode** field. Press **Save** button to save the changes.

Machine Form Fields:

- Machine Number: 7330072009-903
- ID Code: 903
- Machine Name: Machine Cerise
- Bar Code:
- Location: Charlie
- Date: 2/ 5/2010
- Type: Hammer
- Supplier: Supplier Bunko
- Manufacturer: GRF
- Account Number: 555-666-777-888
- Price: 200.00
- Capacity: 200
- Power: 200
- Stop Group: Stop Group II
- Use Measured Value: ☒
- Measured Parameter: MP2 Gilberta
- Unit: Kilometers
- Units Per Day: 20
- Machine Note:

Buttons: Print Barcode, Save, Cancel, Expand

Machine barcodes can be printed in two ways. To print single barcode, open Machine form and press **Print Barcode** button.



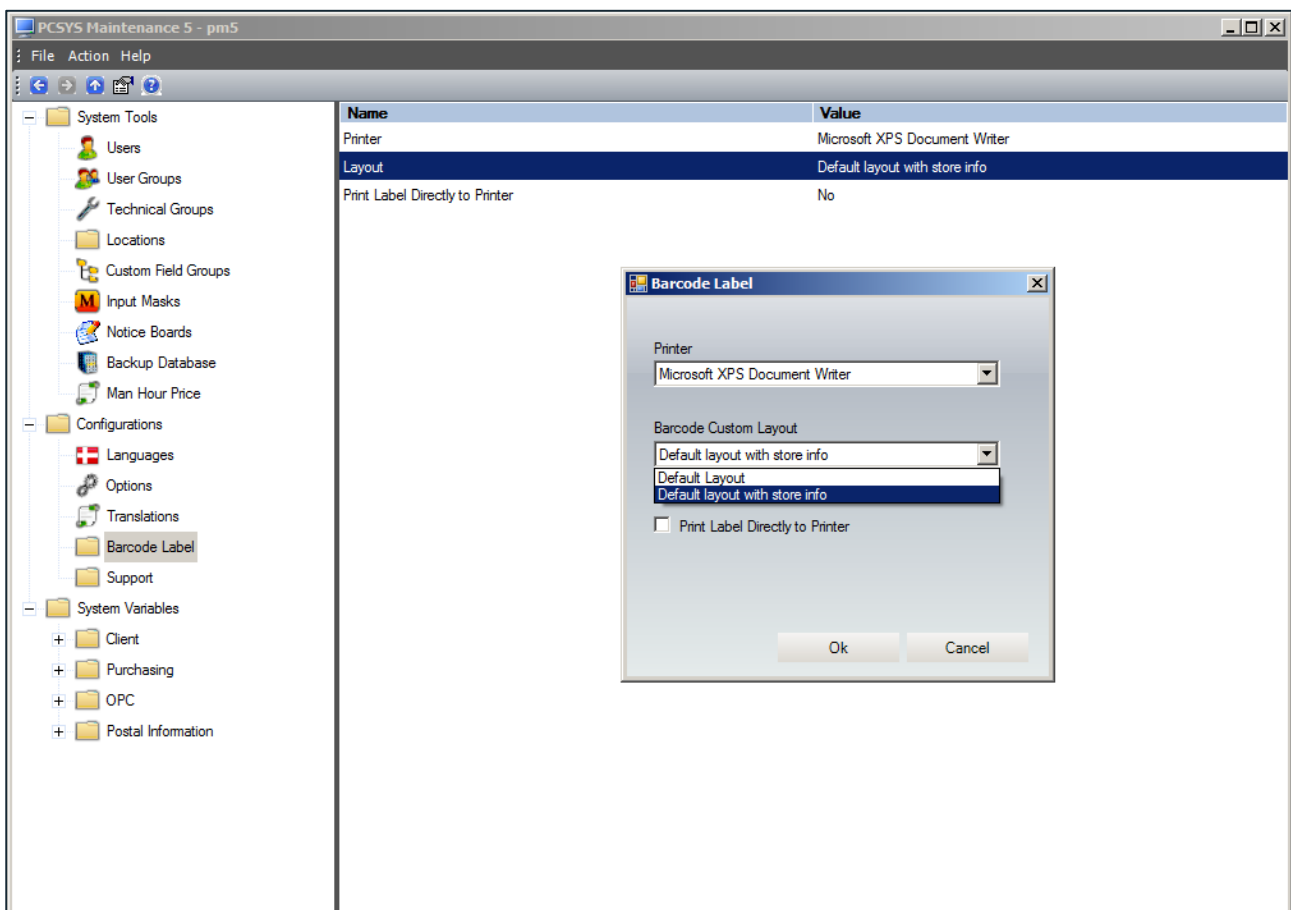
Alternatively, barcodes for one or more machines can be printed by selecting one or more machines in main data grid and opening quick menu by clicking on right mouse button. In quick menu, select **Print Barcode**.

Machine barcodes are printed on the printer specified for label printouts in Administration module, section Configuration / Barcode Label.

Machine barcode labels are configured for printouts on labels of same size as spare part labels, size 75 x 25 mm. Currently only the default label layout, as shown below, can be used for machine barcode labels.

New default layout for Spare Part Label

New layout has been added to selection of spare part label layouts. Which layout is to be used can be selected in Barcode Label Setting in Administration module.



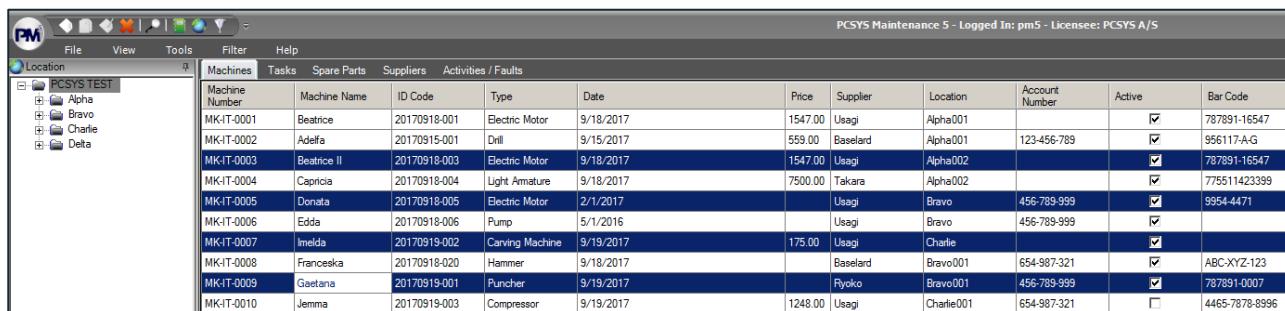
New layout includes stock information for individual stocks of the spare part. If spare parts has more than one stock, then when this new label design is selected, a separate label will be printed for each stock specified in PM5.

Copy rows

In main data grids for Machines, Tasks, Spare Parts, Suppliers and Activities/Faults, there is now possibility to copy rows and paste them into applications supporting paste functionality.

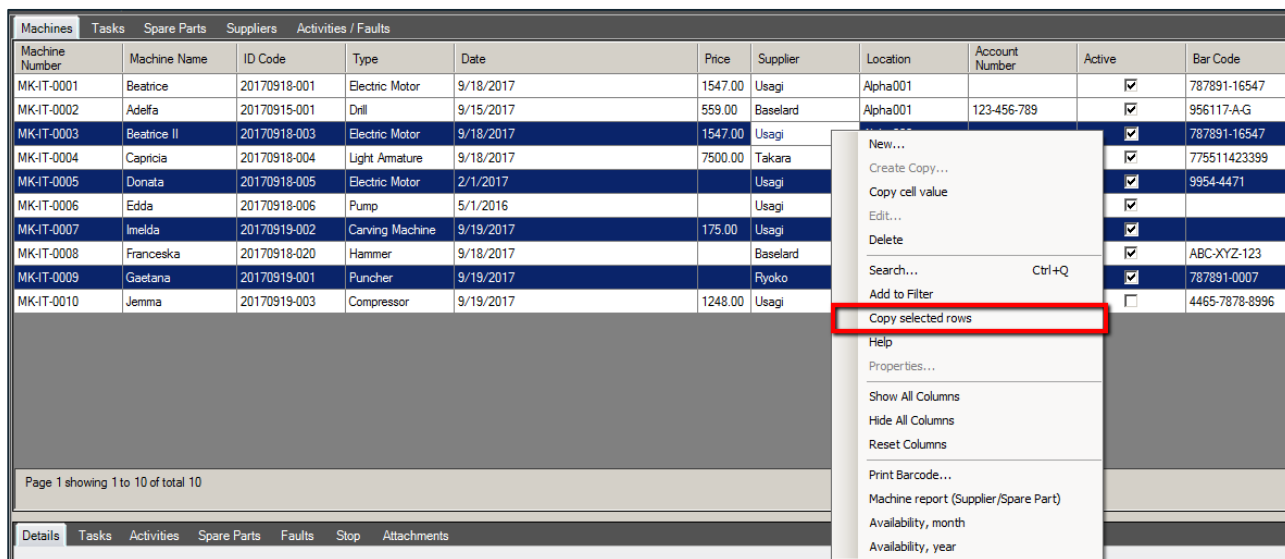
Select the rows you wish to copy in data grid. To select more than one rows that are in sequence, select first row, hold down Shift key and select last row in the selection. To select more than one row that are out of sequence, select first row, hold down Ctrl button and select the rest of the rows.

Your selection could look like this:



| Machine Number | Machine Name | ID Code | Type | Date | Price | Supplier | Location | Account Number | Active | Bar Code |
|----------------|--------------|--------------|-----------------|-----------|---------|----------|------------|----------------|-------------------------------------|----------------|
| MK-IT-0001 | Beatrice | 20170918-001 | Electric Motor | 9/18/2017 | 1547.00 | Usagi | Alpha001 | | <input checked="" type="checkbox"/> | 787891-16547 |
| MK-IT-0002 | Adelfa | 20170915-001 | Drill | 9/15/2017 | 559.00 | Baselard | Alpha001 | 123-456-789 | <input checked="" type="checkbox"/> | 956117-A-G |
| MK-IT-0003 | Beatrice II | 20170918-003 | Electric Motor | 9/18/2017 | 1547.00 | Usagi | Alpha002 | | <input checked="" type="checkbox"/> | 787891-16547 |
| MK-IT-0004 | Capricia | 20170918-004 | Light Amature | 9/18/2017 | 7500.00 | Takara | Alpha002 | | <input checked="" type="checkbox"/> | 775511423399 |
| MK-IT-0005 | Donata | 20170918-005 | Electric Motor | 2/1/2017 | | Usagi | Bravo | 456-789-999 | <input checked="" type="checkbox"/> | 9954-4471 |
| MK-IT-0006 | Edda | 20170918-006 | Pump | 5/1/2016 | | Usagi | Bravo | 456-789-999 | <input checked="" type="checkbox"/> | |
| MK-IT-0007 | Imelda | 20170919-002 | Carving Machine | 9/19/2017 | 175.00 | Usagi | Charlie | | <input checked="" type="checkbox"/> | |
| MK-IT-0008 | Franceska | 20170918-020 | Hammer | 9/18/2017 | | Baselard | Bravo001 | 654-987-321 | <input checked="" type="checkbox"/> | ABC-XYZ-123 |
| MK-IT-0009 | Gaetana | 20170919-001 | Puncher | 9/19/2017 | | Ryoko | Bravo001 | 456-789-999 | <input checked="" type="checkbox"/> | 787891-0007 |
| MK-IT-0010 | Jemma | 20170919-003 | Compressor | 9/19/2017 | 1248.00 | Usagi | Charlie001 | 654-987-321 | <input type="checkbox"/> | 4465-7878-8996 |

Once all rows you want to copy are selected, click on right mouse button and select 'Copy selected rows'.



| Machine Number | Machine Name | ID Code | Type | Date | Price | Supplier | Location | Account Number | Active | Bar Code |
|----------------|--------------|--------------|-----------------|-----------|---------|----------|----------|----------------|-------------------------------------|----------------|
| MK-IT-0001 | Beatrice | 20170918-001 | Electric Motor | 9/18/2017 | 1547.00 | Usagi | Alpha001 | | <input checked="" type="checkbox"/> | 787891-16547 |
| MK-IT-0002 | Adelfa | 20170915-001 | Drill | 9/15/2017 | 559.00 | Baselard | Alpha001 | 123-456-789 | <input checked="" type="checkbox"/> | 956117-A-G |
| MK-IT-0003 | Beatrice II | 20170918-003 | Electric Motor | 9/18/2017 | 1547.00 | Usagi | | | <input checked="" type="checkbox"/> | 787891-16547 |
| MK-IT-0004 | Capricia | 20170918-004 | Light Amature | 9/18/2017 | 7500.00 | Takara | | | <input checked="" type="checkbox"/> | 775511423399 |
| MK-IT-0005 | Donata | 20170918-005 | Electric Motor | 2/1/2017 | | Usagi | | | <input checked="" type="checkbox"/> | 9954-4471 |
| MK-IT-0006 | Edda | 20170918-006 | Pump | 5/1/2016 | | Usagi | | | <input checked="" type="checkbox"/> | |
| MK-IT-0007 | Imelda | 20170919-002 | Carving Machine | 9/19/2017 | 175.00 | Usagi | | | <input checked="" type="checkbox"/> | |
| MK-IT-0008 | Franceska | 20170918-020 | Hammer | 9/18/2017 | | Baselard | | | <input checked="" type="checkbox"/> | ABC-XYZ-123 |
| MK-IT-0009 | Gaetana | 20170919-001 | Puncher | 9/19/2017 | | Ryoko | | | <input checked="" type="checkbox"/> | 787891-0007 |
| MK-IT-0010 | Jemma | 20170919-003 | Compressor | 9/19/2017 | 1248.00 | Usagi | | | <input type="checkbox"/> | 4465-7878-8996 |

New...

Create Copy...

Copy cell value

Edit...

Delete

Search... Ctrl+Q

Add to Filter

Copy selected rows

Help

Properties...

Show All Columns

Hide All Columns

Reset Columns

Print Barcode...

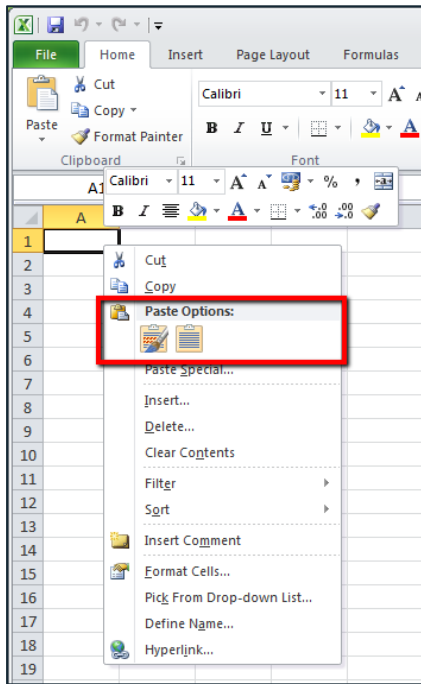
Machine report (Supplier/Spare Part)

Availability, month

Availability, year

Page 1 showing 1 to 10 of total 10

Details Tasks Activities Spare Parts Faults Stop Attachments



When this is done, the content of selected rows is now copied in Windows clipboard and can be pasted into any application supporting Paste function. In picture to the left, the copied rows are pasted into an Excel document.

Rows copied from PM5 are pasted into the Excel document.

| | A | B | C | D | E | F | G | H | I | J | K |
|---|----------------|--------------|--------------|-----------------|-----------|---------|----------|----------|----------------|--------|--------------|
| 1 | Machine Number | Machine Name | ID Code | Type | Date | Price | Supplier | Location | Account Number | Active | Bar Code |
| 2 | MK-IT-0003 | Beatrice II | 20170918-003 | Electric Motor | 9/18/2017 | 1547.00 | Usagi | Alpha002 | | TRUE | 787891-16547 |
| 3 | MK-IT-0005 | Donata | 20170918-005 | Electric Motor | 2/1/2017 | | Usagi | Bravo | 456-789-999 | TRUE | 9954-4471 |
| 4 | MK-IT-0007 | Imelda | 20170919-002 | Carving Machine | 9/19/2017 | 175.00 | Usagi | Charlie | | TRUE | |
| 5 | MK-IT-0009 | Gaetana | 20170919-001 | Puncher | 9/19/2017 | | Ryoko | Bravo001 | 456-789-999 | TRUE | 787891-0007 |