Enterprise Asset Management (EAM)

This case study explains an integrated enterprise asset management process in detail and thus fosters a thorough understanding of each process step and underlying SAP functionality.

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| Product  S/4HANA 1809  Global Bike  GUI 7.50  Level  Beginner  Focus  Enterprise Asset Management  Authors  Robert Häusler  Chris Bernhardt  Stefan Weidner  Version  3.3  Last Update  May 2019 | MOTIVATION  Based on continuous automation of production processes, availability and quality of manufacturing facilities means that plant maintenance becomes more important. Plant maintenance comprises the three following activities: inspection, maintenance and repair.  The focus is not only on availability of manufacturing facilities but rather further aspects like system safety, product quality, procedure optimization and environment protection play a decisive role.  SAP offers a flexible facility management and maintenance system to strengthen these factors and increase the success of a company. |  | PREREQUISITIES  Before you use this case study, you should be familiar with navigation in the SAP system.  In order to successfully work through this case study, it is not necessary to have finished the EAM exercises. However, it is recommended.  NOTES  This case study uses the Global Bike (GBI) data set, which has exclusively been created for SAP UA global curricula. |

|  | Process Overview | |
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| **Learning Objective** Understand and perform an integrated maintenance process.  **Scenario** It is summer and the production line is getting into top gear for the upcoming event “Race Across America“. There has been a sudden and unpredictable malfunction in a circulation fan in the air conditioning system. In order to process a complete maintenance process, you will take on different roles within the GBI company to solve the problem.  **Employees involved** Jun Lee (Production Planner)  Jermain Kumins (Production Manager)  Ozzy Sandall (Shop Floor Worker)  Pamela Ross (Shop Floor Worker) | | **Time** 60 min |
|  | | |
| A fan in the production facility is defective. As a Shop Floor Worker, it is your task to create the malfunction report. Before you create the notification, you have to locate the exact defective part and record the technical details for the repair. After that, you have to plan the production operations until the final repair of the faulty fan unit. The defective parts shall be exchanged and followed by a function test. After the successful installation of the spare filter, you can finish the order technically. As a final step, you can check if all the maintenance tasks have been carried out correctly.  The following graphical illustration depicts the whole process (8 tasks). | | |
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|  | Step 1: Create Malfunction Report | |
| **Task** Create a malfunction report.  **Description** Use the SAP Easy Access Menu to create a malfunction report and a solution.  **Name (position)** Pamela Ross (Shop Floor Worker) | | **Time** 10 min |
|  | | |
| **Hint** Mobile inventory (e.g. machines, circulation fan, PCs, vehicles) is defined as equipment in the SAP system. In general, equipment is allocated to a technical place that has got immobile character (e.g. streets, power plant, pipe systems).  A malfunction report normally is created by the corresponding requesting person (e.g. production employee). A malfunction report is used for messages about malfunctions and problems. | | Equipment  Malfunction Report |
|  | |  |
| Please use the following menu path to create a malfunction report:  Logistics ► Plant Maintenance ► Maintenance Processing ► Notification ► Create (Special) ► Malfunction Report | | Menu Path |
| Now you should see the following screen. | |  |
|  | |  |
| In the description field enter **Circulation fan defective** besides Notification. Fill in the field Functional loc. in the Reference object area. Therefore, use the input help  or press F4. | | Circulation fan defective |
| Choose the tab *Text (= Description)* with help of the  button and enter **\*DL00\*** as Functional Location Check if **EN** is chosen as Language Key. | | DL00-S-SHFL1000  EN |
|  | |  |
| Press Enter. A list is produced, which has the abbreviation DL00 as structure indicator (similar to ID). Double click at **Shop Floor** to choose this as Functional Location. | | Shop Floor |
|  | |  |
| **Hint** The functional location is an organizational unit of logistics that structures the objects of a company to be maintained according to functional (e.g., drive unit), process-oriented (e.g., condensation), or spatial (e.g., hall) aspects. A functional location represents the location where a maintenance measure is to be performed. | |  |
| To choose the equipment, use F4 again. Click the button to switch to the tab *Equipment by equipment list* (a new window opens) and enter **10000###** (exchange ### for your number e.g. 012) in the first field besides equipment. The rest of the fields can be left blank. Now press . Afterwards (if the object was not defined exactly) double click on the equipment (**Circulation Fan**) and press Enter to confirm your entries up to then. | | 10000011  Circulation Fan |
| Furthermore, enter the following in the Notification tab. In the Subject Area enter for Subject Long Text **Circulation fan does not work correctly** with the request **Exchange Filter**. | | Circulation fan does not work correctly  Exchange Filter |
|  | |  |
| In the Responsibilities Area enter **P00/DL00** as Planner Group, **MANT1000/DL00** as Main WorkCtr. and **LEARN-###** as Reported by. | | P00/DL00  MANT1000/DL00  LEARN-029 |
| Afterwards enter in the Item Area **VENT/1003** (Circulation Fan Objects / Filter) as Object part and add **VENT/1002** (Filter Wear) as Damage. Use F4 to choose **Normal Wear and Tear** (PM-2000/1004) as Cause Code. Enter **High dust accumulation** as Cause text. | | VENT / 1003  VENT / 1002  PM-2000 / 1004  High dust accumulation |
| Compare your entries with the following screenshot. | |  |
|  | |  |
| In the *Activities* tab (please scroll up to find it) use F4 to choose **PM01** as Code group and set the Activity code to **Replacement (Spare)**. Enter the Activity text **Replace Filter**. | | PM01  Replace (Spare)  Replace Filter |
|  | |  |
| Save. | |  |
|  | |  |

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|  | Step 2: Open Maintenance Order from Malfunction Report | |
| **Task** Open a Maintenance order from the Notification  **Description** Use the SAP Easy Access Menu to create an order directly from the malfunction report.  **Name (Position)** Jun Lee (Production Planner) | | **Time** 10 min |
|  | | |
| If you stayed in the last window as it was required, you will be able to go on with the next step now. Otherwise use the following menu path to create a maintenance order from a malfunction report:  Logistics ►Plant Maintenance ► Maintenance Processing ► Notification ► Change | | Menu path |
| To open a notification from the malfunction report, click  besides the field Order*.* | |  |
| **Note** Each maintenance notification contains header data, which is the information used to identify and manage the notification. The header data is valid for the complete maintenance notification.  You enter and maintain data in a notification item to determine a problem, find any damage, or view maintenance activity executed in greater detail. A notification can contain several items.  Activities document the work performed for a notification. They are particularly important for inspections because they prove that certain tasks have been performed. | |  |
| A new window appears where you enter **PM01** (Maintenance order) as Order Type, **DL00** as Planning plant, **BI00** as Business Area and **MANT1000/DL00** as Main work center. Afterwards click on . | | PM01  DL00  BI00  MANT1000 / DL00 |
|  | |  |
| Change to the tab *Operations* and exchange the original description Circulation Fan defective for **Exchange filter immediately**. For Work enter **2**, for unit **H**, Number **1**, Dur. **2** and a further entry for unit (Un) **H**. Choose **Calculate duration** from the Dropdown Menu and enter **MLABOR** as ActTyp. | | Exchange filter immediately  2 hrs.  1 hrs.  2 hrs.  Calculate duration  MLABOR |
|  | |  |
| **Note** Work effort relates to the work that must be done. The number must be related to the employees. The duration defines the time when the object cannot be used for work. So, if the work effort is 8hrs and 2 people are working on it, work will be done in 4hrs. Another example is the varnishing of an object. Here the effort is lower than the duration since the object needs to dry some time and no work is done at the object within the drying process. | |  |
| Open another Operation by clicking in a new line. Enter **0020** for OpAc, **Functional test** as Operation short text and plan duration for the work for **15 min**. Enter a Number of **1** and a Duration of **15 min**. Choose **Calculate duration** as CcKey and **MLABOR** as ActTyp. | | 0020  Functional test  15 min  1  15 min  Calculate duration  MLABOR |
|  | |  |
| Press Enter to confirm your entries. | |  |
| Now mark your Operations and choose . You will get to operation **0010** automatically. Use the F4 help to choose the corresponding spare part in the field Component. Therefore, select tab *Material Number/Material Description* using the button  and enter the material **FLTR1###** (exchange ### by your number). | | FLTR1029 |
|  | |  |
| As a description enter **Filter** and choose **1** for amount Reqmt Qty and change the position type IC (item category) to **L** (Stock item). As storage location (SLoc) choose Miscellaneous (**MI00**) using the F4 help. Thereby the plant in Dallas appears automatically. Pay attention to the fact that the amounts are of positive value. | | Filter  1  L  MI00 |
| The second operation needs no other components and therefore no further entries are necessary. | |  |
|  | |  |
| Choose Enter and afterwards click  to save the order. Write down the order number. | | Order number:  4000026 |
| Click . Your answer to the question appearing now must be no. (Since you have just saved your entries, no data can get lost). | |  |
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|  | Step 3: Release Order and Display Documents | |
| **Task** Release theOrder and Display Order Documents.  **Description** Use the SAP Easy Access Menu to release the order and to print the documents for the maintenance person.  **Name (Position)** Jun Lee (Production Planner) | | **Time** 10 min |
|  | | |
| **Note** Different documents can be displayed. | |  |
| Use the following menu path to release the order and to display documents:  Logistics ► Plant Maintenance ► Maintenance Processing ► Order ► Change | | Menu path |
| If the SAP system did not propose an order, enter the order number yourself. You have written down the number previously.  If you do not know your number anymore, you can use the F4 help to search for it. Choose the tabs *PM orders using order list* and as Entered By enter **LEARN-###** in the area *General Data/Administrative Data* (exchange ### for your number). | | LEARN-029 |
|  | |  |
| Press Enter to get to the next page. | |  |
| Choose  to release the order. | |  |
| **Note** The order is released **after** saving it.When you release a maintenance order, the system checks the availability of materials and production resources or tools. At the time of release (at the latest), material reservations become relevant to materials planning, materials withdrawn, and purchase requisitions are generated. You can only perform activities like print shop papers, withdraw material or book goods receipt after you released the order. | |  |
| Due to the fact that the order is released now, you can print and display the order documents now.  Therefore choose:  **More ► Order ► Print ► Order** | |  |
| First, enter **LOCL** as Output Device for each. | |  |
|  | |  |
| There are 2 possibilities to finally release the order:  Press  to print the desired documents. As soon as you pressed the button, the order will be released.  Alternatively, you can release the order by clicking . | |  |
|  | |  |
| Now click  to get back to the SAP Easy Access Menu. | |  |
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|  | Step 4: Confirm Order | |
| **Task** Confirm the order.  **Description** Use the SAP Easy Access menu to confirm the order.  **Name (Position)** Ozzy Sandall (Shop Floor Worker) | | **Time** 10 min |
|  | | |
| The overall completion confirmation is used to capture further data besides working times. For instance, used materials, information about errors, executed work and so on. All of this data is important for future maintenance history and analysis. | |  |
| Use the following menu path to confirm the order:  Logistics ► Plant Maintenance ► Maintenance Processing ► Completion Confirmation ► Entry ► Overall Completion Confirmation | | Menu Path |
| The display should now show the previously prepared order. If this is not the case, you will have to search for the order using F4. | |  |
| **Note** The overall completion confirmation enables you to confirm not only working times, but all of the relevant details for an order on a single screen, configured to suit your individual requirements. Time confirmations and technical confirmations can, therefore, be processed in the same way. | |  |
| Choose **More ► Extras ► Settings** and enter **1** (Maintenance with order number) in the field to save the profile using . | | 1 |
|  | |  |
| Now enter **0010** as operation/activity under the order and press Enter to confirm your entry. | | 0010 |
| Time confirmation, Goods Movements and Causes are entered automatically. In the field Act. Work enter **2** hrs. and mark **F…** (Final Confirmation) and also **N…** (No Remain work). | | 2  Mark F  Mark N |
|  | |  |
| Choose  and afterwards to save. Repeat the steps for operation **0020.**  Therefore enter **15 min** as Act. Work and mark **F** and **N**. | | Repeat for 0020  15 min |
| **Note** Both operations (and therefore the order) were confirmed. This means that you have finished your work. The Operations get the status PCNF (partially confirmed) or rather the status CNF (finally confirmed).You have met the targeted time and have taken a filter from the storage location. | |  |
| Click  and  to get back to the SAP Easy Access Menu. | |  |
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|  | Step 5: Analyze Final Costs and Technical Completion | |
| **Task** Analyze the final costs.  **Description** Use the SAP Easy Access Menu to execute a cost analysis and to finish the order technically. | | **Time** 5 min |
|  | | |
| Use the following menu path to execute a cost analysis and to finish the order technically:  Logistics ►Plant Maintenance ► Maintenance Processing ►Order ► Change | | Menu Path |
| The number of your previously created order will be proposed by the system. If the system should not propose the number, search the order number using the F4 help.  Now choose the Registry entry *Costs*. | | Order Number |
| You will get an overview of actual planned costs and effective costs. | |  |
|  | |  |
| To finish the order technically, choose  . | |  |
| In the dialog window enter the **current date** and **current time** as MalfEnd and confirm with . | | current date and  current time |
|  | |  |
| **Note** The system status of the order will be changed, and the order is saved automatically. | |  |
| Click  to get back to the SAP Easy Access Menu. | |  |
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|  | Step 6: Accounting for the Maintnenance Order | |
| **Task** Accounting for the Maintenance Order.  **Description** Use the SAP Easy Access Menu to settle the accrued costs with the settlement receiver. | | **Time** 5 min |
|  | | |
| Use the following menu path to account for the order:  Logistics ► Plant Maintenance ► Maintenance Processing ► Completion ► Individual Processing ► Settle | | Menu Path |
| Choose **More** ► **Extras** ► **Set Controlling Area** and enter **NA00** as Controlling Area. | | NA00 |
|  | |  |
| If your order number does not appear, either enter it yourself or search for it using F4. Additionally, make the following entries:  Enter the **current month** as Settlement period and the **current year** as Fiscal Year. Make sure that the Processing type is set to **automatic**.  Remove the **Test Run** indicator and click . | | current month  current year  automatic  ~~Test Run~~ |
|  | |  |
|  | |  |
| Click  to get to the detailed list of settlement. | |  |
| Click  to get to the SAP Easy Access Menu. | |  |
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|  | Step 7: Analyze Costs and Finish Order | |
| **Tasks** Analyze costs and finish order.  **Description** Use the SAP Easy Access Menu to perfrom a cost analysis and finish the order.  **Name (Position)** Jun Lee (Production Planner) | | **Time** 5 min |
|  | | |
| Use the following menu path to analyze costs another time and finish the order:  Logistics ► Plant Maintenance ► Maintenance Processing ►Order ► Change | | Menu path |
| The number of your order should be proposed. If this is not the case, search for your order number using F4.  Afterwards choose Enter. | |  |
|  | |  |
| **Note** You will get a message that the document is finished and therefore no changes will be possible. This is done due to the technical closure. | |  |
| To display the relief of the order using the settlement choose **More** ► **Extras** ► **Cost reports** ► **Planned/actual comparison**. | |  |
|  | |  |
| Take a screenshot of this report and submit in BB for grading    Choose  to get back to the previous window. | |  |
| Now click to update the system status of the order and save it. | |  |
| **Note** After the order has been settled, no further costs can be added. | |  |
| Click  to get back to the SAP Easy Access Menu. | |  |
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|  | Step 8: Display Order History | |
| **Task** Display the order history for your equipment.  **Description** Use the SAP Easy Access Menu to see a detailed history about the equipment.  **Name (Position)** Jun Lee (Production Planner) | | **Time** 5 min |
|  | | |
| Use the following menu path to display the order history:  Logistics ► Plant Maintenance ► Maintenance Processing ► History ► Order List ► Display | | Menu path |
| In the following window mark **Completed** and for equipment enter **10000###** (exchange ### for your number) and choose the period from **01/01 current year** up to **today**.  Press F8 or click  alternatively. | | mark completed  10000029  The first of January of the current year  Today’s date |
|  | |  |
| Your order should be displayed automatically. However, if there is more than one order for your equipment please select the order you just finished. | |  |
|  | |  |
| Take a screenshot of this report and submit in BB for grading    Click  to get back to the SAP Easy Access Menu. | |  |
|  | |  |