Controlling Product Costing (CO-PC I)

This case study explains an integrated product costing process in details and thus fosters a thorough understanding of each process step and underlying SAP functionality.

Product

S/4HANA 2022
Global Bike

Fiori 3.0

Level

Undergraduate
Graduate
Beginner

Focus

Product Costing

Author

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Version

4.2

Last Update

August 2023

MOTIVATION

The data entry requirements in the controlling exercises (CO 1 through CO 3) were minimized because most of the data was stored in the SAP system. This stored data, known as master data, simplifies the processing of business transactions.

In this case study, we create a variant of an existing product in order to calculate associated costs. The cost estimate for this new bike version was initiated by the sales department, which plans on running a sales campaign with a special edition of this bike. After the new material is created in the system, existing bills of materials and routings need to be copied and modified.

After the material has been created the product cost estimate is calculated.

PREREQUISITES

Before you use this case study, you should be familiar with navigation in the SAP system.

In order to work successfully through this case study, it is not necessary to have finished the CO exercises. Anyway, it is recommended.

NOTES

This case study uses the Global Bike (GB) data set.

SAP University Alliances

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Process Overview

Learning Objective Understand and perform an integrated product costing process.

Time 65 min

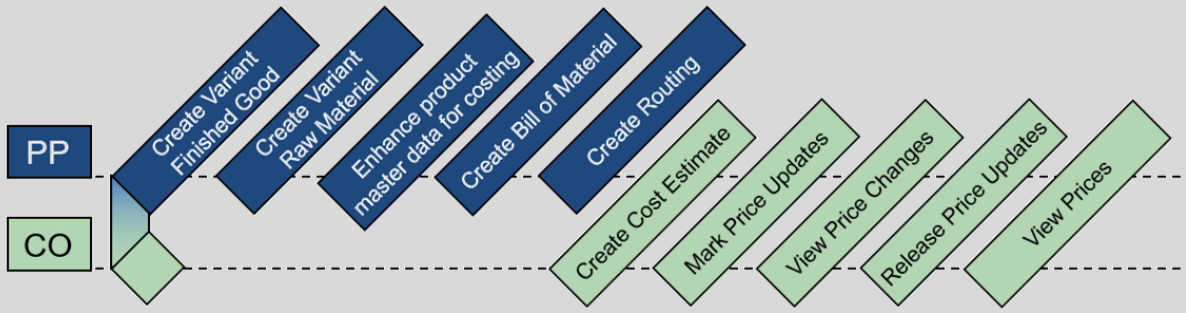
Scenario In order to perform a product costing process you will take on different roles within the Global Bike company, e.g. production data administrator, cost accountant or chief accountant. Overall, you will work in the Production Planning (PP) and the Controlling (CO) departments.

Employees involved Jermain Kumins (Shop Floor Worker 1)

Jamie Shamblin (Controller)

Shuyuan Chen (Head of Accounting)

You start the product costing process by creating a slightly changed version of your top-selling Deluxe Touring bike. As you plan to manufacture and sell a white color in the future, you create new finished goods and necessary raw materials. The bill of material and routing are changed accordingly. Prices are calculated for the new frame and then released.



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Step 1: Copying a finished product

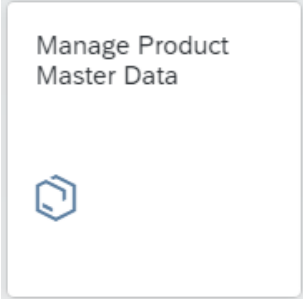
Task Copy the product master data of a finished product. **Time** 10 min

Short Description Create a variant of the Deluxe Touring Bike (black) for product costing. In order to do so, you should create a new product while copying the data from your Deluxe Touring Bike (black).

Name (Position) Jermain Kumins (Shop Floor Worker 1)

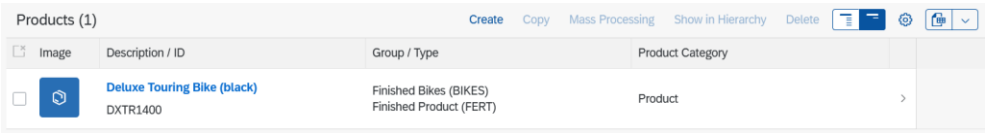
To create the product master record for a finished product, use the *Manage Product Master Data* app in the *Controlling* area on the *Product Cost Controlling* page in the *Shop Floor Worker* role.

Fiori App

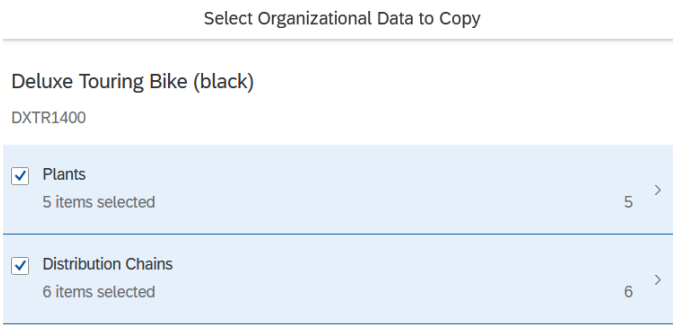


Enter as *Product* **DXTR1###** (replace ### with your three-digit number) and choose Go.

DXTR1###

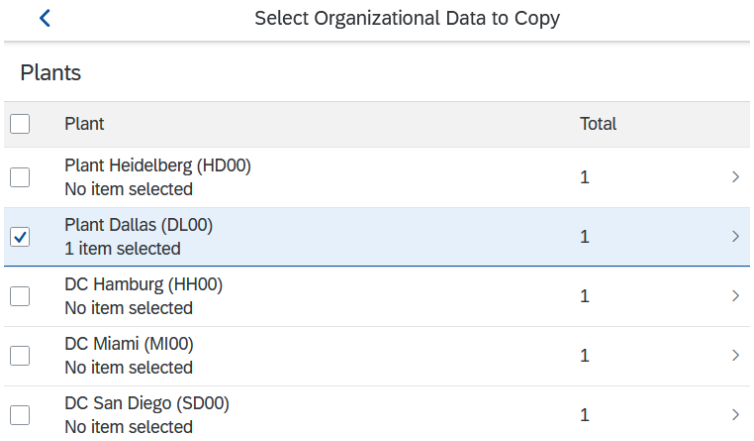


Select the line by clicking the checkbox at the beginning of the line and click Copy. In the following popup, in the Plants row on the far right, select the icon ›.



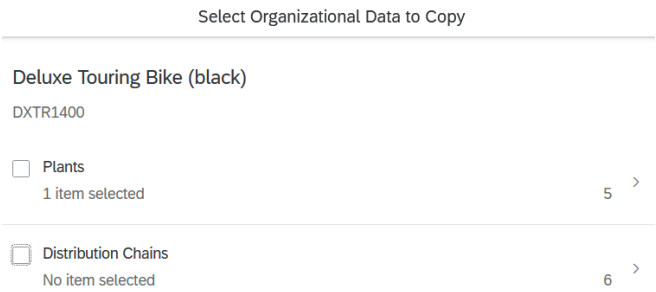
In the following window, limit the selection to the *plant* **DL00** plant.

DL00



To return to the previous menu, press <. Then deselect *Distribution Chains* line.

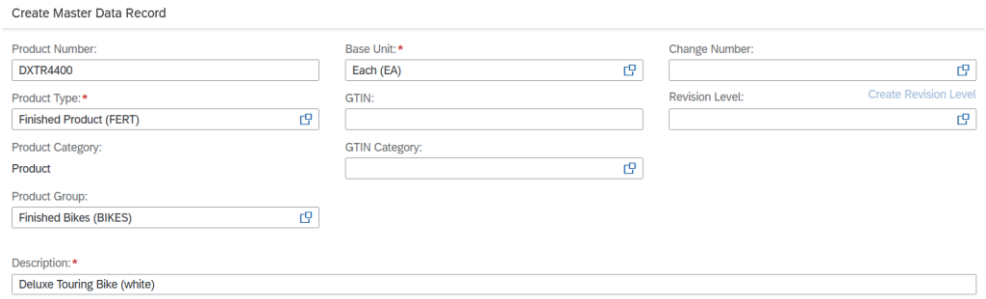
~~Distribution Chains~~



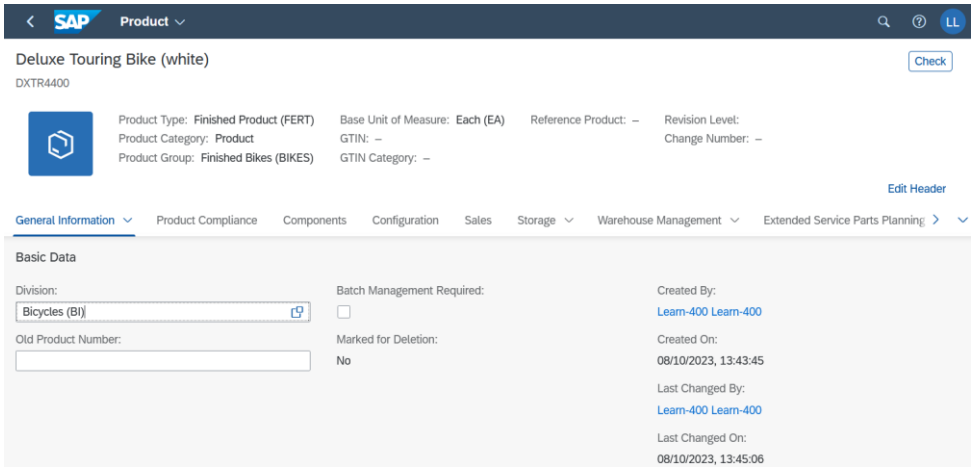
Confirm your Entries with OK.

In the Pop-Up *Create Master Data Record* enter as *Product Number* **DXTR4###**. *Product Type*, *Product Group* and *Base Unit* are already filled. Change the *Description* to **Deluxe Touring Bike (white)**.

DXTR4###.
Deluxe Touring Bike (white)



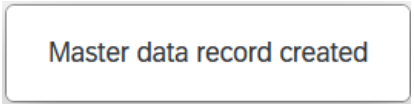
Confirm your Entries with OK. You will now see the detailed information of the new product.



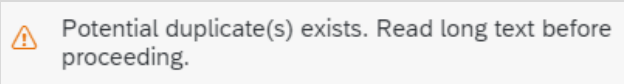
In the *Descriptions* section, you change the product description in the language *DE (German)* to **Deluxe Touring Bike (weiß)**. If you speak Russian or French, you can change the descriptions as well or delete them completely if necessary.

Deluxe Touring Bike (weiß)

Click on **Create** to save your product.



It may be that the system will inform you that your new product is a duplicate, which is quite correct.



Click on **Create** again to proceed. You will get a confirmation from the system.

Click on SAP to return to the SAP Fiori Launchpad.

Step 2: Create a copy from a raw material

Task copy a new raw material for your bike. **Time** 5 min

Short Description Create a white frame as a new material. It will be used later in the BOM of your new Deluxe Touring Bike (white)

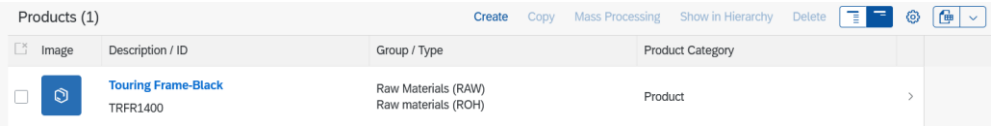
Name (Position) Jermain Kumins (Shop Floor Worker 1)

To create the product master record for a finished product, use the *Manage Product Master Data* app in the *Controlling* area on the *Product Cost Controlling* page in the *Shop Floor Worker* role.

Fiori App

Enter as *Product* **TRFR1###** (replace ### with your three-digit number) and choose Go.

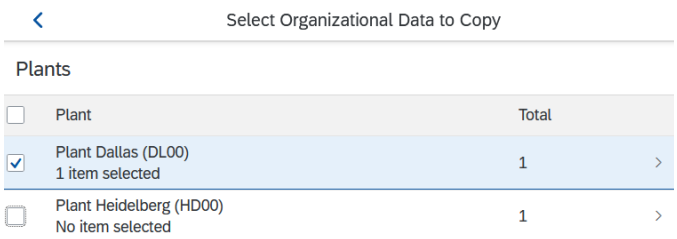
TRFR1###



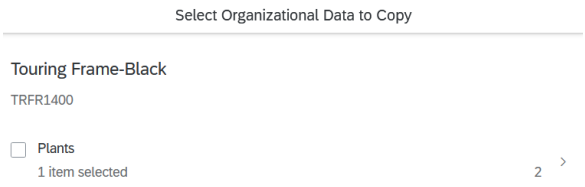
Select the line by clicking the checkbox at the beginning of the line and click Copy. In the following popup, in the Plants row on the far right, select the icon >.

DL00

In the following window, limit the selection to the *plant* **DL00** plant.



To return to the previous menu, press <.

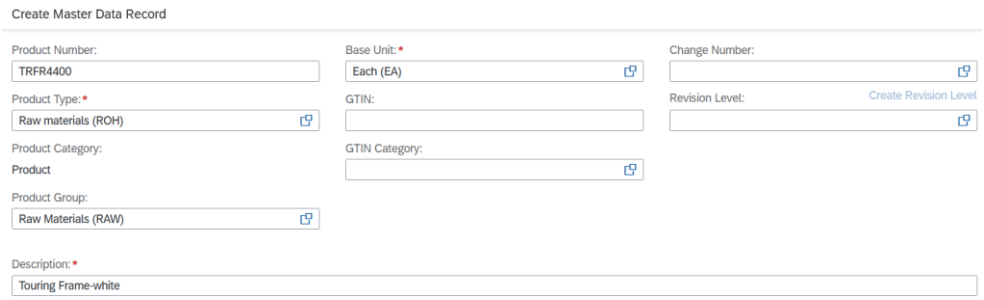


Confirm your Entries with OK.

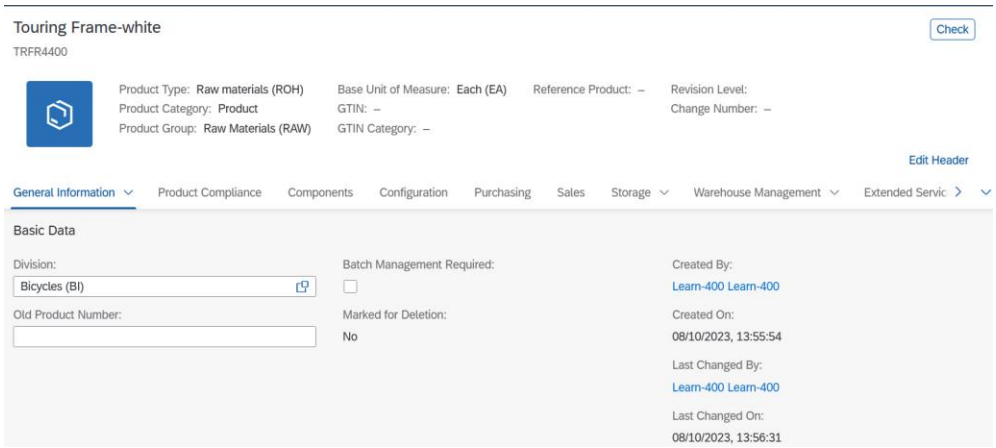
In the Pop-Up *Create Master Data Record* enter as *Product Number* **TRFR4###**. *Product Type*, *Product Group* and *Base Unit* are already filled. Change the *Description* to **Touring Frame-white**.

TRFR4###

Touring Frame-white



Confirm your Entries with OK. You will now see the detailed information of the new product.



In the *Descriptions* section, you change the product description in the language *DE (German)* to **Touring Bike Rahmen - weiß**. If you speak Russian or French, you can change the descriptions as well or delete them completely if necessary.

Touring Bike Rahmen - weiß

Click on Create to save your product.

Click on SAP to return to the SAP Fiori Launchpad.

Step 3: Extend your raw material for calculation

Task Enhance your raw material master data. **Time** 5 min

Short Description In order to enable the cost calculation with quantity structure, the previously created master record must be extended

Name (Position) Jermain Kumins (Shop Floor Worker 1)

To extend the material master record for your raw material, use the *Change Material* app in the *Controlling* area on the *Product Cost Controlling* page in the *Shop Floor Worker* role.

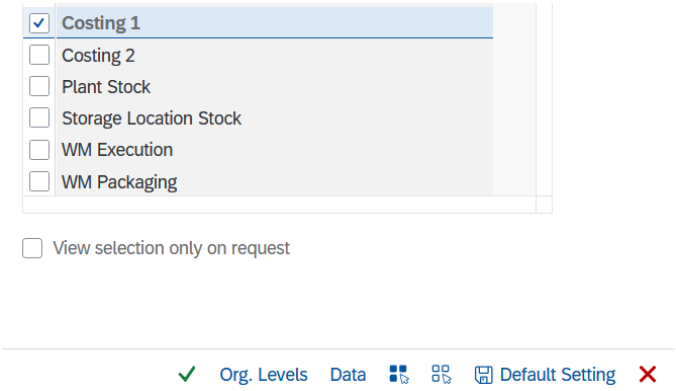
Fiori App

Enter as *Material* **TRFR4###** and press **Continue**. You will enter the view selection.

TRFR4###

Choose view *Costing 1* and confirm with ✓.

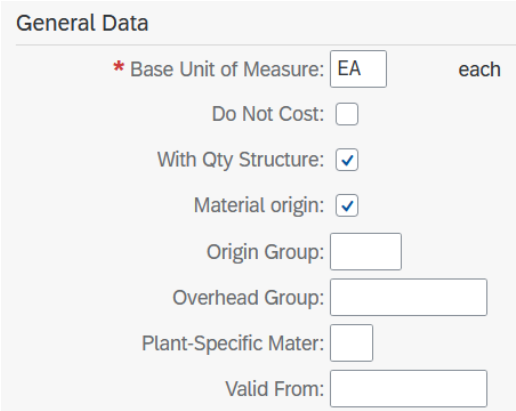
Costing 1



Enter *Plant* **DL00** and confirm with ✓.

DL00

Select the Checkboxes *With Qty Structure:* and *Material origin:*



Choose Save afterwards.

You will get the following confirmation:

Material TRFR4400 changed

Click on SAP to return to the SAP Fiori Launchpad.

Step 4: Create Bill of Material

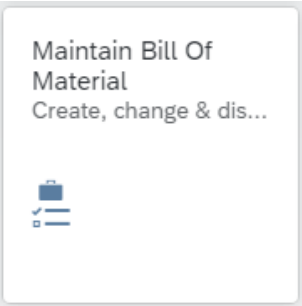
Task Create a new BOM. **Time** 10 min

Short Description Create a new BOM for your Deluxe Touring Bike (white) to be used in the product costing process.

Name (Position) Jermain Kumins (Shop Floor Worker 1)

To create a bill of material, use the *Maintain Bill of Material* app in the *Controlling* area on the *Product Cost Controlling* page in the *Shop Floor Worker* role.

Fiori App

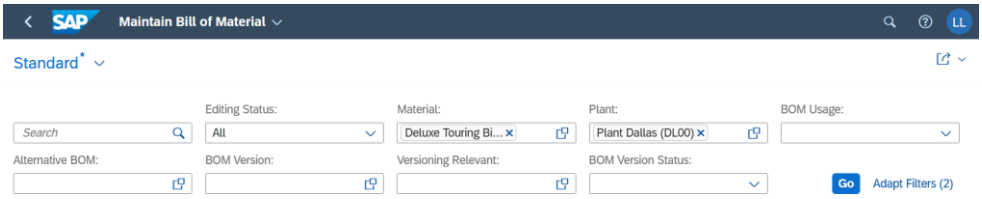


A *bill of material* contains all the components that go into the manufacture of a product. Bills of material are used in material requirements planning, production, procurement and product costing. Furthermore, alternative BOMs can be used to represent the same product by several BOMs. This is used, for example, to represent different manufacturing processes.

Bill of Material

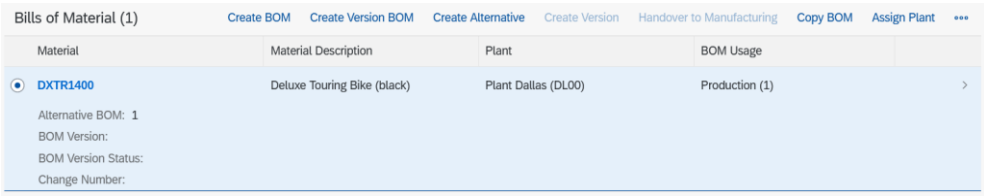
On the screen *Maintain Bill of Material* enter in the field *Material:* **DXTR1###** and in the field *Plant:* enter **DL00**.

DXTR1###, DL00



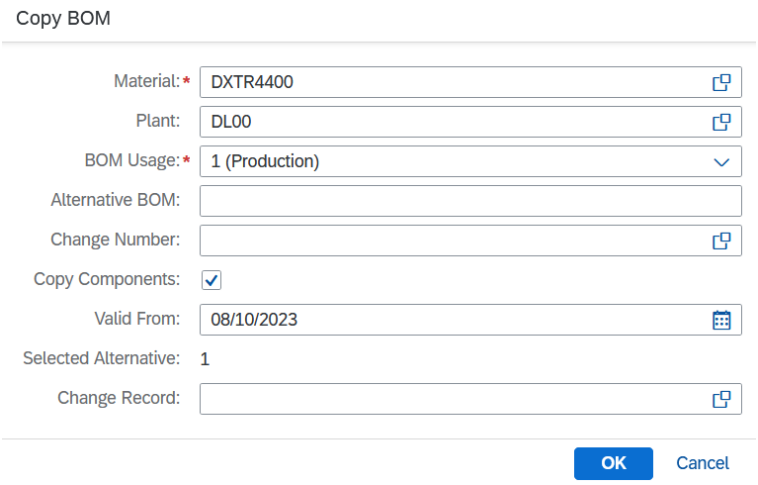
Press Go to find the corresponding bill of material to your product

Select the entry and choose Copy BOM.

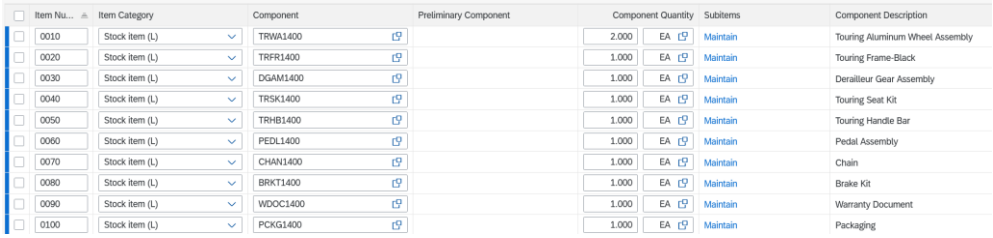


In the *Copy BOM* pop-up, enter **DXTR4###** in the Material field and **DL00** in the *Plant* field, and select **6 (Costing)** in the *BOM Usage* field.

DXTR4###
DL00
1 (Production)



Click on OK to apply your entries. You will get to the new screen *Maintain Bill of Material*.

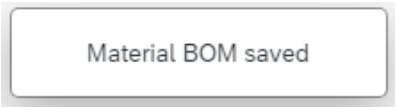


Item Nu...	Item Category	Component	Preliminary Component	Component Quantity		Subitems	Component Description
0010	Stock item (L)	TRWA1400		2.000	EA	Maintain	Touring Aluminum Wheel Assembly
0020	Stock item (L)	TRFR1400		1.000	EA	Maintain	Touring Frame-Black
0030	Stock item (L)	DGAM1400		1.000	EA	Maintain	Derailleur Gear Assembly
0040	Stock item (L)	TRSK1400		1.000	EA	Maintain	Touring Seat Kit
0050	Stock item (L)	TRHB1400		1.000	EA	Maintain	Touring Handle Bar
0060	Stock item (L)	PEDL1400		1.000	EA	Maintain	Pedal Assembly
0070	Stock item (L)	CHAN1400		1.000	EA	Maintain	Chain
0080	Stock item (L)	BRKT1400		1.000	EA	Maintain	Brake Kit
0090	Stock item (L)	WDOC1400		1.000	EA	Maintain	Warranty Document
0100	Stock item (L)	PCKG1400		1.000	EA	Maintain	Packaging

Change the *Component* in Item Number 20 to your previously created frame **TRFR4###** and press Enter.

TRFR4###

Click on Create. You will get a confirmation from the system.



Click on SAP to return to the SAP Fiori Launchpad.

Step 5: Create Routing

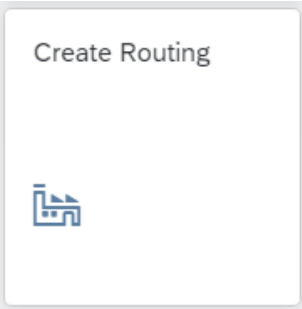
Task Create a new routing. **Time** 5 min

Short Description Create a new routing for your Deluxe Touring Bike (white) to be used later in the product costing process.

Name (Position) Jermain Kumins (Shop Floor Worker 1)

To create the routing, use the app *Create Routing* in the *Controlling* area on the *Product Cost Controlling* page in the *Shop Floor Worker* role.

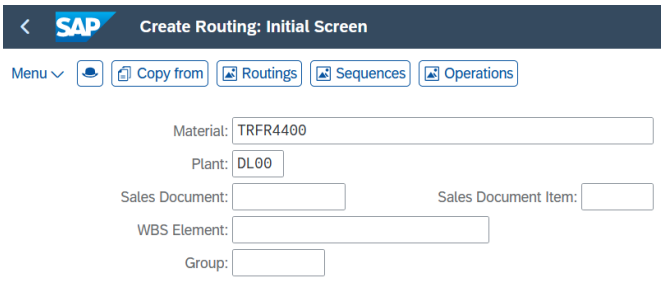
Fiori App



Note: Routings contain the steps that are necessary for production and these steps are called operations. Routings include the sequence in which the operations occur, and the work centers at which the operations are to be executed.

Enter your *material* **DXTR4###** and plant **DL00**. Then, click on Copy from.

DXTR4###
DL00



Make sure that **Routing** is selected on the *Select Type* pop up.

Routing

Klick on ✓ (*Continue*). On the next screen *Create Using Copy Function: Select Object to be Copied* enter the *Material* **DXTR1###**. As *Plant* **DL00** should already be entered. If not, enter it.

DXTR1###
DL00

Create Using Copy Function: Select Object to be Copied

Material: DXTR1400
Plant: DL00
Sales Document: Item:
WBS Element:

Group:
* Key Date: 08/10/2023

Again, click on ✓ (*Continue*). In the next screen *Create Routing: Header Data Check* set the *Overall Status:* to **4** (Released (General)). 4

General Data

Deletion Flag:
* Usage: 1 Production
* Overall Status: 4
Planner Group:
Planning Work Center:
CAPP order:
Lot Size From:
Old Task List No.:

Press Enter to confirm your changes. The system now shows you in the *Operation Overview*, all operations necessary to assemble your bike. Enter

Operation Overview

Ope...	SOp	Work Ce...	Plant	* C...	Standard...	Description
0010		ASSY1000	DL00	ASSY		Material staging
0020		ASSY1000	DL00	ASSY		Attach seat to frame
0030		ASSY1000	DL00	ASSY		Attach handle bar assembly
0040		ASSY1000	DL00	ASSY		Attach derailleur gear assm. to wheel
0050		ASSY1000	DL00	ASSY		Attach front and real wheels to chain
0060		ASSY1000	DL00	ASSY		Attach brakes
0070		ASSY1000	DL00	ASSY		Attach peddles
0080		INSP1000	DL00	ASSY		Test bike
0090		PACK1000	DL00	ASSY		Disassemble
0100		PACK1000	DL00	ASSY		Pack bike
0110		PACK1000	DL00	ASSY		Move to storage

Make sure that the modified BOM is already valid by selecting operation *0010* and clicking Allocation. If this option is not displayed, you will find it in the pull-down menu under *Menu* ► *Goto* ► *Allocation*.

Your previously created frame should be listed as *Item Number 20*.

Item Overview

Ph...	Le...	Path	Ite...	Component	Quantity
	0	0	0010	TRWA1400	2
	0	0	0020	TRFR4400	1
	0	0	0030	DGAM1400	1

Click on Save. You will get a confirmation from the sytem.

Routing was saved with group 50000003 and material DXTR4400.

Click on SAP to return to the SAP Fiori Launchpad. You may get a pop up stating this page contains unsaved data. Click on Ok.

Step 6: Create Cost Estimate

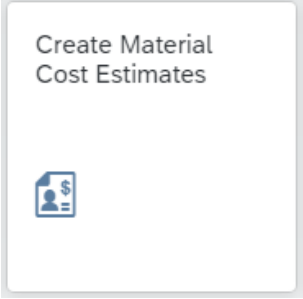
Task Create a cost estimate for your bike. **Time** 10 min

Short Description Create a cost estimate for your white Deluxe Touring Bike and review the cost components.

Name (Position) Jamie Shamblin (Controller)

Product costing calculates the cost of goods manufactured and the cost of goods sold per product unit. Products are costed automatically using bills of materials and routings from Production Planning.

To estimate costs, use the *Create Material Cost Estimate* app in the *Controlling* area on the *Product Cost Controlling* page in the *Controller* role.



Fiori App

On the *Create Material Cost Estimate with Quantity Structure* screen, choose your bike **DXTR4###** and plant **DL00**.

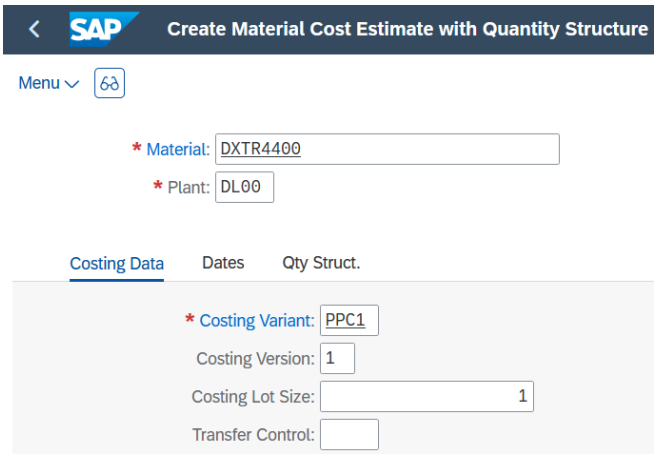
DXTR4###
DL00

On the *Costing Data* tab, choose **Standard Cost Est.** as the *Costing Variant* via the , Costing Version **1** and **1** as the Costing Lot Size.

Standard Cost Est.

1
1

Compare with the screen shown below.

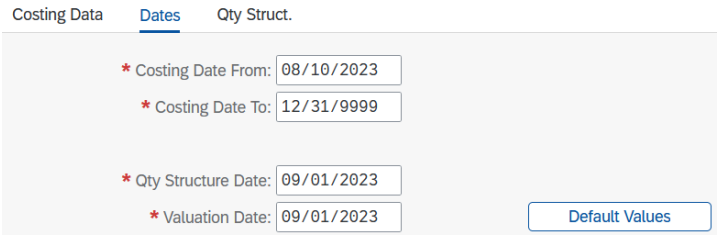


Press **Enter**. If a warning occurs close it and continue.

Enter

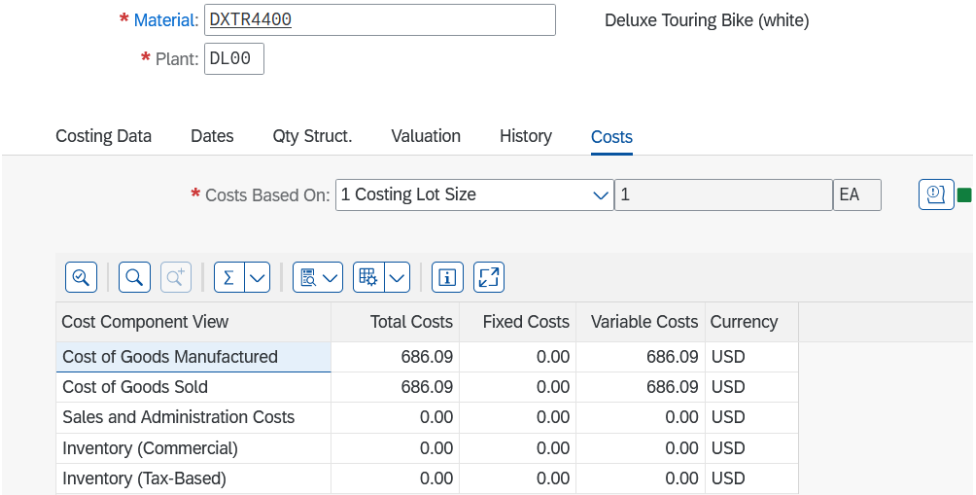
On the *Dates* tab, change the *Costing Date From* to the **current date** and press Enter to confirm all other date entries. The system now calculates the material based on the bills of material and the routings.

Current date



Press **Enter** to confirm all other entries. The system now calculates the costs based on the bill of materials and the routing.

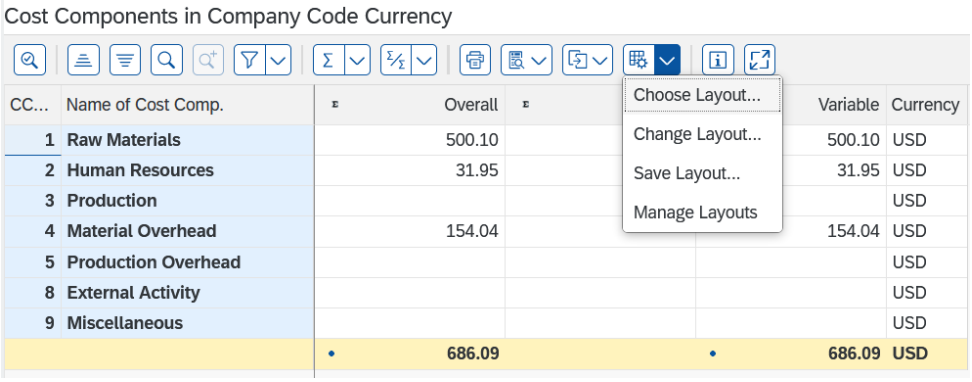
Enter



Material costs of 686.09 USD are calculated for the Deluxe Touring Bike.

To display the exact cost components choose from the Pull-Down-Menu **Menu ► Costs ► Display Cost Components**

Then select in the header area of the lower table and click *Choose Layout...*.



Choose the Layout **1SAP02 - Cost Component Groups**. The table will be altered. 1SAP02

Cost Components in Company Code Currency

Cost...	Name of Cost Comp.	Overall	Fixed	Variable	Currency
1	Raw Materials	500.10		500.10	USD
4	Material Overhead	154.04		154.04	USD
01 Raw Materials		654.14		654.14	USD
3	Production				USD
5	Production Overhead				USD
02 Production					USD
2	Human Resources	31.95		31.95	USD
04 Human Resources		31.95		31.95	USD
8	External Activity				USD
05 External Activity					USD
9	Miscellaneous				USD
06 Miscellaneous					USD
		686.09		686.09	USD

Select Save to save your costing. You will get a confirmation from the system.

The cost estimate is being saved

Click on SAP to return to the SAP Fiori Launchpad. You may get a pop up stating this page contains unsaved data. Click on Ok.

Step 7: Mark Price Updates

Task Mark the standard cost estimate. **Time** 5 min

Short Description Transfer the cost estimate to the material master record (future Price).

Name (Position) Jamie Shamblin (Controller)

The Price Update function is used to transfer the calculated product cost as a cost estimation to the material master record. The cost is transferred into two steps: Marking and release.

To mark prices, in the *Controlling* area, on the *Product Cost Controlling* page in the *Controller* role, use the *Release Material Cost Estimates* app.

Fiori App

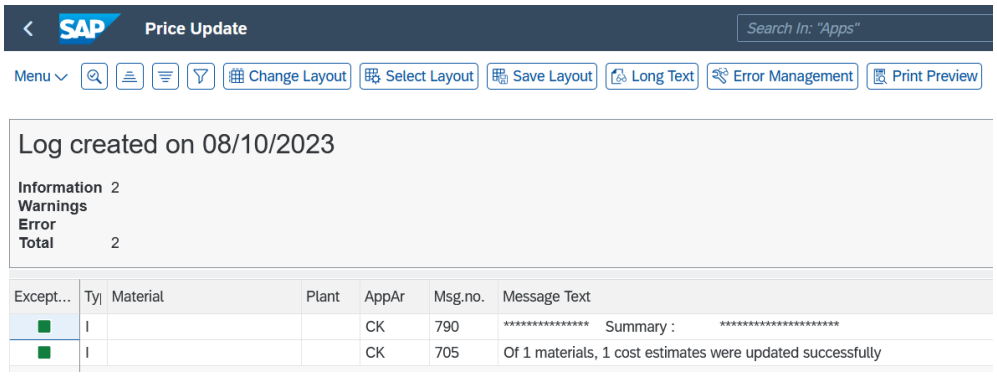
Enter the **current period** (current month), *company code* **US00**, *plant* **DL00** and your bike **DXTR4###** as *Material*.

Current period
US00
DL00
DXTR4###

Remove the indicator from the **Test Run** field. Execute the marking by pressing **Execute**.

~~Test Run~~

The system should display the following message:



Click on SAP to return to the SAP Fiori Launchpad. You may get a pop up stating this page contains unsaved data. Click on Ok.

Step 8: View Prices Changes

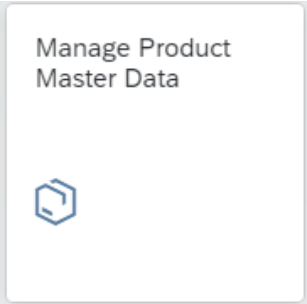
Task View the planned price. **Time** 5 min

Short Description View the planned price in the material master record of your white Deluxe Touring Bike.

Name (Position) Shuyuan Chen (Head of Accounting)

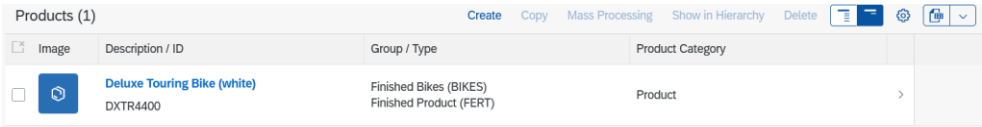
To view prices, in the *Controlling* area, on the *Product Cost Controlling* page, in the *Head of Accounting* role, use the *Manage Product Master Data* app.

Fiori App



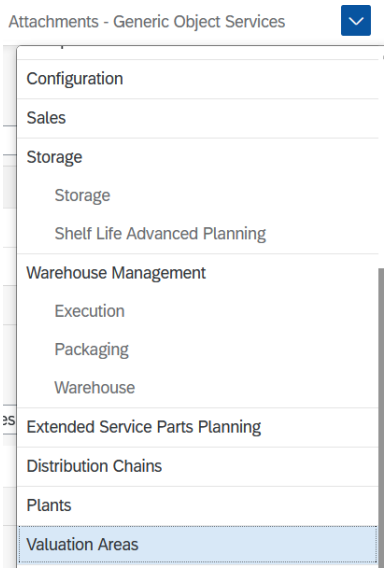
DXTR4###

Enter *Product* **DXTR4###** in the search field and klick on Go. Click within the row of your only search result to open the product details.



Valuation Areas

Use the pull-down menu to select the *Valuation Areas* section. The screen automatically scrolls to the appropriate section.



Choose the row with Valuation Area *DL00* to see further details.

Valuation Area	Valuation Type	Price Control Determination	Valuation Category	Valuation Class	Split Indicator	
DL00		Transaction-Based (2)		Finished products (7920)	Not Applicable	No

Select the *Other Prices* tab ► *Marked Standard Cost Estimate*. You will see a line with the details of the previously planned updated material cost estimate.

Marked Standard Cost Estimate

Currency Type...	Ledger	Currency	Price Unit	Cost		Posting Pe...	Future Fisca...
10	**Leading Ledger** 0L	United States Dollar (USD)	1	686.09	USD	8	2023

For comparison, select the tab *Valuation* ► *Current Period*. Here you can see the currently valid standard price.

Current Period

Currency Type...	Ledger	Currency	Inventory Price		Standard Price		Price Unit	Price Control
10	Leading Ledger (0L)	USD	858.06	USD	858.06	USD	1	Standard price (S)

Click on SAP to return to the SAP Fiori Launchpad.

Step 9: Release Price Updates

Task Release the price updates. **Time** 5 min

Short Description Release the price updates.

Name (Position) Shuyuan Chen (Head of Accounting)

To update the price, in the *Controlling* area, on the *Product Cost Controlling* page, in the *Head of Accounting* role, use the *Release Material Cost Estimates* app.

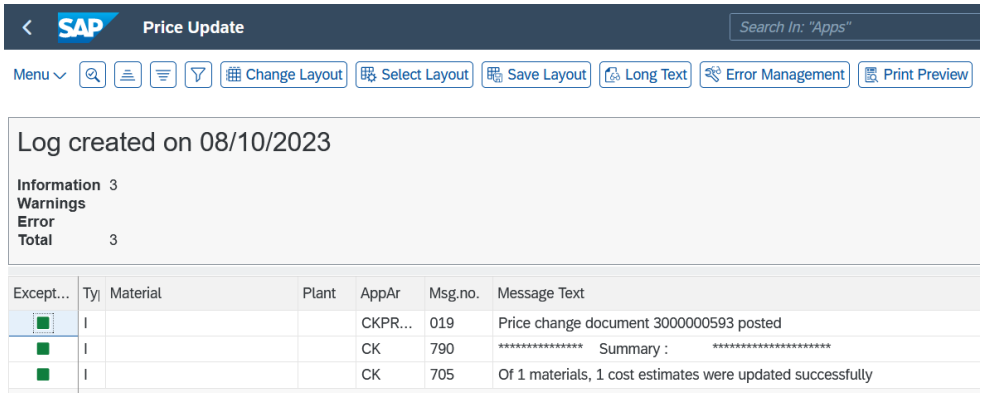
Fiori App

Select Release. Choose the **current period**, *Company Code* **US00**, *Plant* **DL00** and *Material* **DXTR4###**.

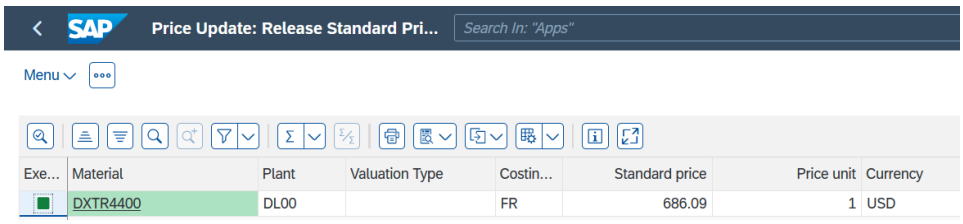
Current period, US00
DL00, DXTR4###

Remove the Test Run indicator and release the price by selecting Execute. Compare with the screen below:

~~Test Run~~



Click on . You should find your material in the *Price Update: Release Standard Price* screen.



Click on SAP to return to the SAP Fiori Launchpad. You may get a pop up stating this page contains unsaved data. Click on Ok.

Step 10: View Prices

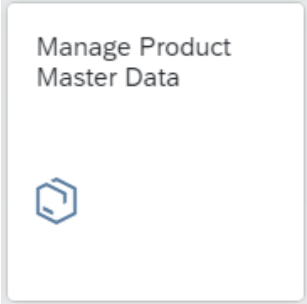
Task Review the current prices. **Time** 5 min

Short Description View the current prices.

Name (Position) Shuyuan Chen (Head of Accounting)

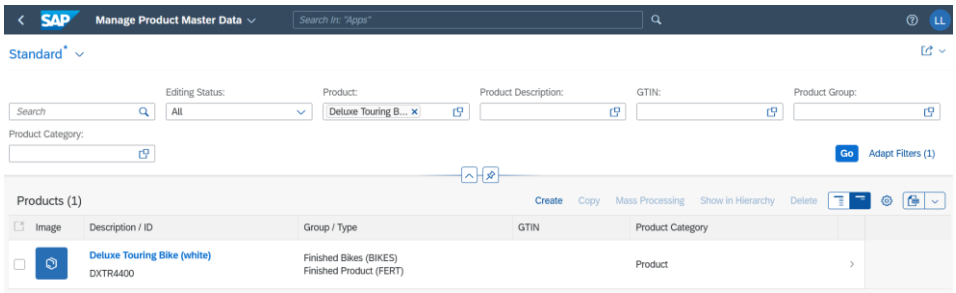
To view prices, in the *Controlling* area, on the *Product Cost Controlling* page, in the *Head of Accounting* role, use the *Manage Product Master Data* app.

Fiori App



DXTR4###

Enter *Product* **DXTR4###** in the search field and klick on Go. Click within the row of your only search result to open the product details.



Valuation Areas

Use the pull-down menu to select the *Valuation Areas* section. The screen automatically scrolls to the appropriate section.

Choose the row with Valuation Area *DL00* to see further details.

Valuation Area	Valuation Type	Price Control Determination	Valuation Category	Valuation Class	Split Indicator	
DL00		Transaction-Based (2)		Finished products (7920)	Not Applicable	No

Select the *Other Prices* tab ► *Marked Standard Cost Estimate*. You will see that there is no more cost estimation present, since it is already posted.

Marked Standard Cost Estimate

Currency Type...	Ledger	Currency	Price Unit	Cost		Posting Pe...	Future Fisca...
10	**Leading Ledger** 0L	United States Dollar (USD)	1	0.00	USD		

For comparison, select the tab *Valuation* ► *Current Period*. Here you can see the currently valid standard price.

Current Period

Currency Type...	Ledger	Currency	Inventory Price		Standard Price		Price Unit	Price Control
10	Leading Ledger (0L)	USD	686.09	USD	686.09	USD	1	Standard price (S)

Click on to return to the SAP Fiori Launchpad.

CO-PC Challenge

Learning Objective Understand and perform an integrated product costing process.

Time 45 min

Motivation After you have successfully worked through the *Product Costing* case study, you should be able to solve the following task on your own.

Scenario In the case study you have personalized the routing and the bill of material for the white Deluxe Touring Bike. Some customers have complained because of bad quality of the tires. For this reason, from next month on two touring tires and two touring tubes respectively should be additionally delivered. This will obviously change the product costing. Calculate the new price onwards so that it will be valid from next month on.

Task Information As soon as this task is based on the *Product Costing* case study, you can use it as guidance. However, it is recommended that you solve it without any help in order to test your acquired knowledge.