Production Planning and Execution (PP)

This case study explains an integrated production planning and execution process in detail and thus fosters a thorough understanding of each process step and underlying SAP functionality.

Product

S/4HANA 1809
Global Bike

Fiori 2.0

Level

Undergraduate
Graduate
Beginner

Focus

Production Planning and Execution

Authors

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Version

3.3.1

Last Update

May 2019
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MOTIVATION

The data entry requirements in the production planning exercises (PP 1 through PP 6) were minimized because much of the data already existed in the SAP system. This stored data, known as master data, simplifies the processing of business transactions. Examples for this were material master data, bills of materials, and routings.

In this case study, we will create consumption values for a finished product to plan and process a complete manufacturing cycle.

PREREQUISITES

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 PP exercises (PP 1 through PP 6).

NOTES

This case study uses the Global Bike data set, which has exclusively been created for SAP UA global curricula.

SAP University Alliances

Process Overview

Learning Objective Understand and perform a manufacturing process cycle. **Time** 140 min

Scenario In order to experience a complete manufacturing process you will take on different roles within the Global Bike Group, e.g. production supervisor, shop floor worker and plant manager. Overall, you will be working in the Materials Management (MM) and the Production Planning and Execution (PP) departments.

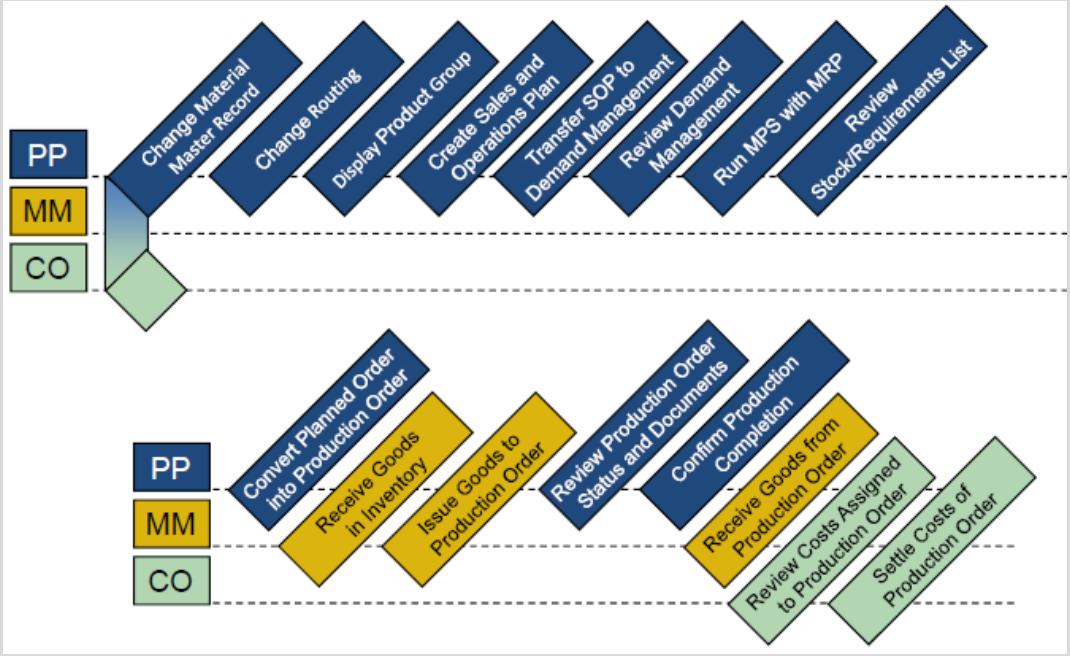
Employees involved

Jun Lee (Production Supervisor)
Hiro Abe (Plant Manager Dallas)
Lars Iseler (Production Order Worker)
Susanne Castro (Receiving Clerk)
Sanjay Datar (Warehouse Employee)
Michael Brauer (Shop Floor Worker 4)
Jamie Shamblin (Cost Accountant)

Before you can start forecasting demand for your touring bike product group, changes in the material master record of the bikes need to be maintained.

Afterwards you will create a 12-month sales and operations plan (SOP) for your product group, receive the production relevant goods from the warehouse storage location and issue them to the production order.

To conclude the process, the production is confirmed as complete, the finished goods are received into the warehouse and costs assigned to the production order are analyzed.



Materials Management (MM)
Production Planning and Execution (PP)
departments.

Table of Contents

***Note: During certain steps in this case study you will be instructed to take a screenshot of your results. Make sure that you complete it before continuing as it may be difficult to repeat later. There are five (5) of these steps.**

Also make sure that the screenshot includes any Master Data which displays your user-id (###). E.g. Material codes, Product groups, Sales forecasts, Stock requirements, Cost analysis

Step 1: Change Material Master Record

Task Prepare a material master record for Demand Planning. **Time** 20 min

Short Description In order to plan Global Bike's deluxe touring bikes (black, silver and red) prepare their material master records by changing the MRP 3 and Forecast view.

Name (Position) Jun Lee (Production Supervisor)

To change a material's view, use the App *Change Material* in the *Production Planning and Execution* group.

Fiori App

In the Material field, find and select your red Deluxe Touring bike **DXTR3###** first.

DXTR3###

If you do not remember its material number, position your cursor in the Material field and click on the search icon or press **F4**. Make sure you are on the Material by Material Type tab. Select Material Type **Finished Product** (FERT) and enter ***###** in the Material field. Remember to replace ### by your three-digit number given by your instructor, e.g. *005 if your number is 005. Then, press *Enter* and select the red Deluxe Touring bike with a double click.

F4

Finished Product

*###

When your material number (**DXTR3###**) is entered in the Material field, click on Continue or press *Enter*.

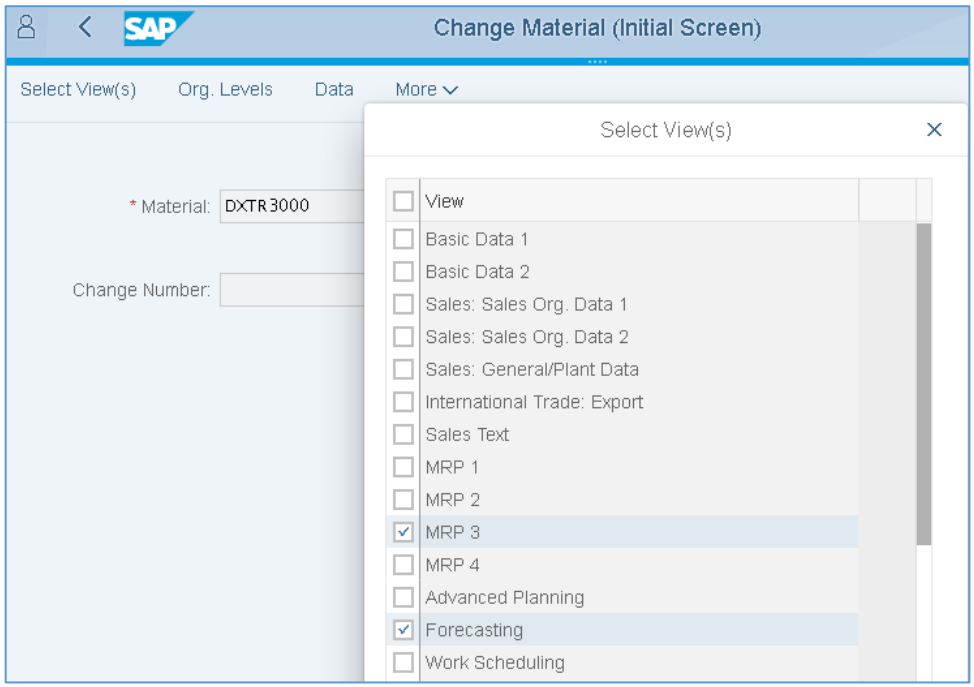
DXTR3###

On the following screen, select **MRP 3** and **Forecasting**.

Then, press *Enter* or click on .

MRP 3

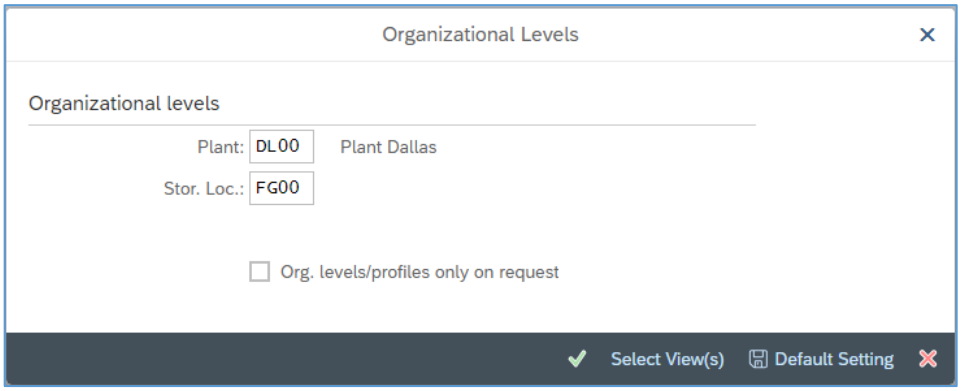
Forecast



In the following pop up enter the Global Bike manufacturing facility in Dallas **DL00** and its Finished Goods Stor. Location **FG00**. Press *Enter* or click on ✓.

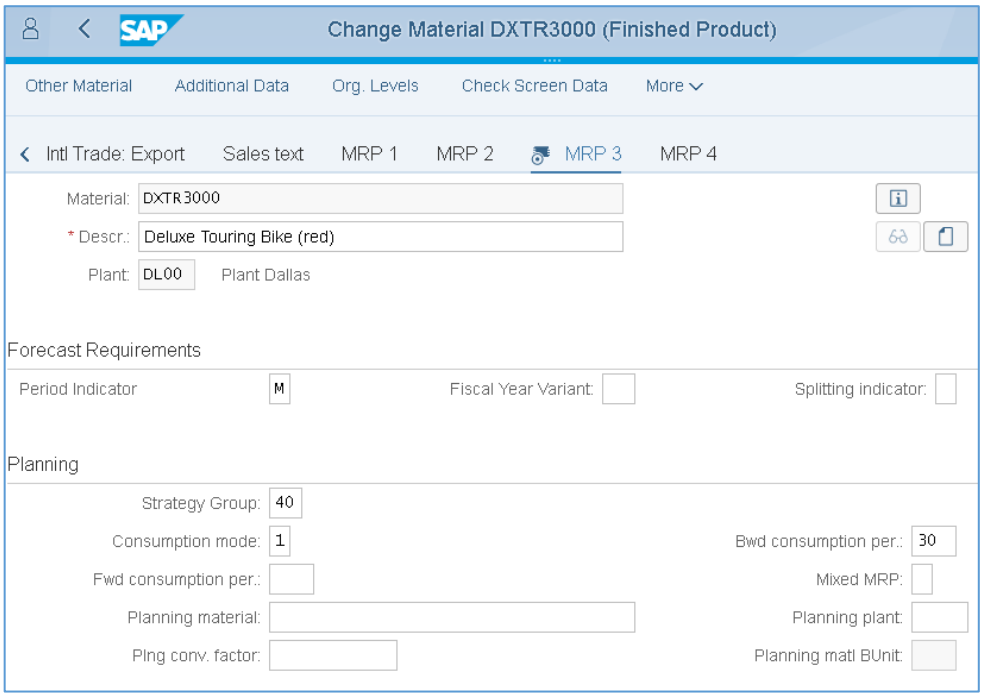
DL00

FG00



In the *MRP 3* tab, enter
Strategy group **40** (Planning with final assembly),
Consumption mode **1** (Backward consumption only) and
Bwd.consumption per. **30**.
Then click *Enter*.

40
1
30

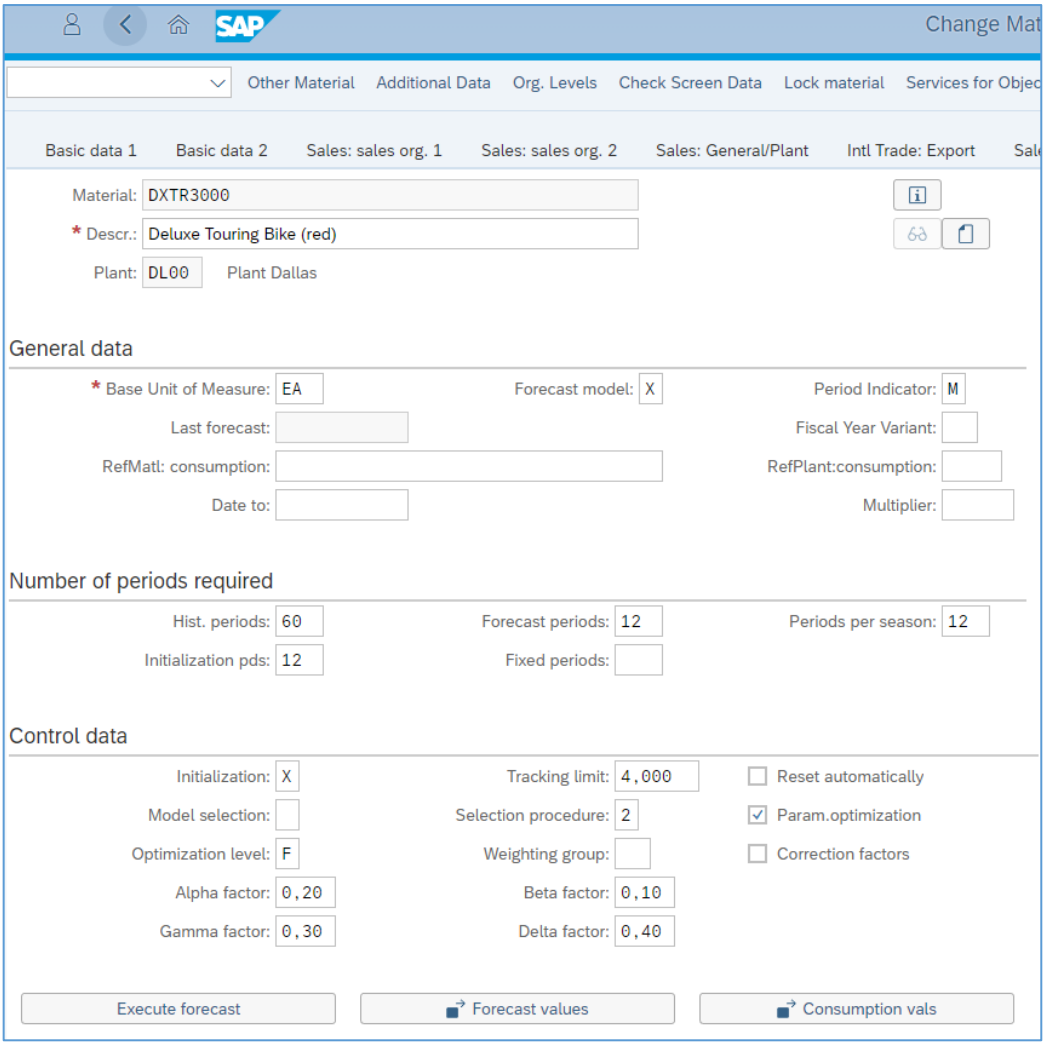


Press *Enter* again to acknowledge the warning message to check the consumption periods.

On the *Forecasting* tab, enter
Initialization pds **12**,
uncheck the checkbox **Reset automatically**,
check the checkbox **Param.optimization**,
enter Optimization level **F** (Fine),
Alpha factor **0,20**, Beta factor **0,10**, Gamma factor **0,30**, and Delta factor **0,30**.

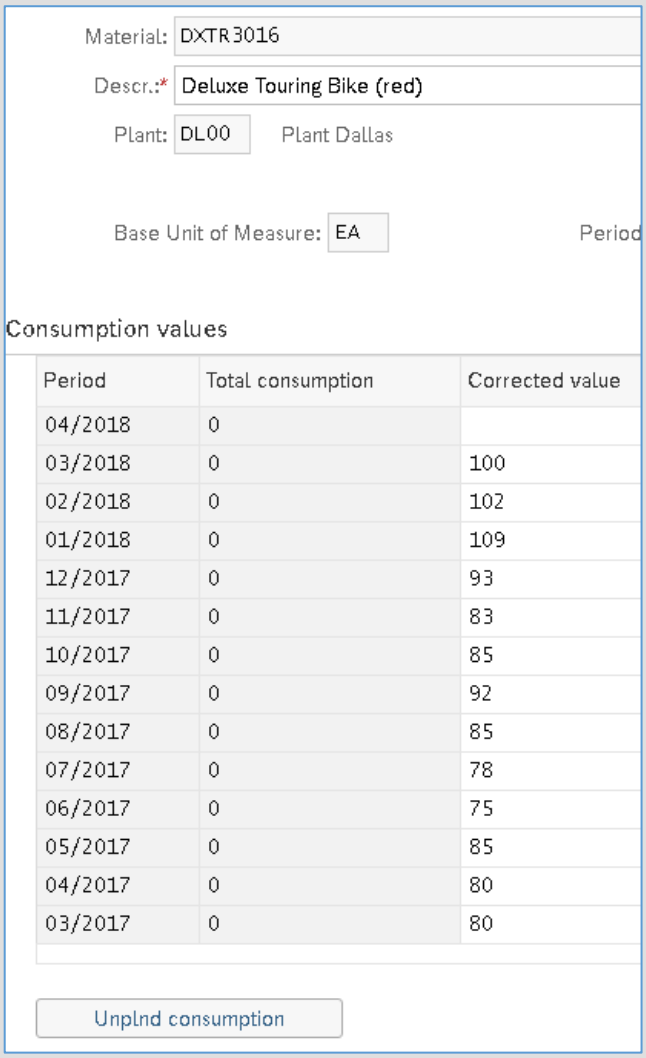
Compare your entries with the screen capture shown below.

12
~~Reset~~
~~automatically~~
Param.optimization
F
0.20
0.10
0.30
0.30



Historic consumption values already have been entered into the GBI system. You can view them on the Forecasting tab, select Consumption vals. If you do not see the Total consumption column, press on Total consumption. Within the table ***scroll down*** to see the Total Consumption for the periods 04.2014 to 03.2018.

These values form the base for later forecasts within this case study.



Please note that within a productive system these values would have been updated based on the goods moved out of the warehouse.

Click on the Main Data menu item to return to the overview.

Click on Save to save your entries for the red bike.

The system informs you, that the material DXTR3### changed.

Repeat the same procedure for the silver and the black deluxe touring bike material master. Start with the silver bike (**DXTR2###**), then modify the black bike (**DXTR1###**).

DXTR2###
DXTR1###

Click on the home icon to return to the Fiori Launchpad overview.
(Click **OK** if you see an “unsaved data” message)

Step 2: Change Routing

Task Change a routing for a finished good. **Time** 15 min

Short Description Change the routing for your red Deluxe Touring bike.

Name (Position) Jun Lee (Production Supervisor)

Component allocation

After the operational steps are laid out, the components must be allocated to the individual operations. This is a progressive process where each operation builds off the materials that entered production in the previous operations.

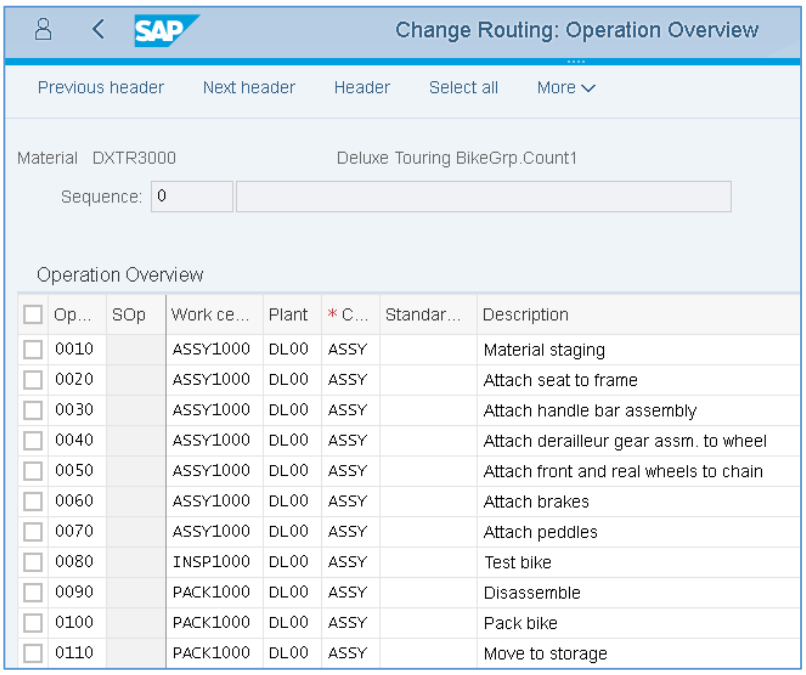
Fiori App

To change a routing, use the app *Change Routing*.

DXTR3###
DL00

Enter the material number for your red Deluxe Touring Bike (**DXTR3###**). In the Plant field, enter Global Bike's Dallas plant number (**DL00**). Please ensure that the Group field is empty.

Then, press *Enter* or click on Continue.



Op...	SOp	Work ce...	Plant	* C...	Standar...	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

Note A routing can be defined using the routing group and group counter. Moreover, the routing contains reference to the material whose production it describes, and, in addition to the standard sequence, can contain parallel or alternative sequences. Alongside the standard values, the routing also contains the time elements that are relevant for scheduling operations. Each operation in the routing may contain its own base quantity, to which these time elements may refer.

TRFR3###
TRSK1###

Choose the Allocation menu item and select the red touring frame (**TRFR3###**) as well as the touring seat kit (**TRSK1###**). Now choose New Assignment.

Item Overview

	P...	Le...	Path	Ite...	Component	Quantity
☐	☐	0	0	0010	TRWA1000	2
☑	☐	0	0	0020	TRFR3000	1
☐	☐	0	0	0030	DGAM1000	1
☑	☐	0	0	0040	TRSK1000	1
☐	☐	0	0	0050	TRHB1000	1
☐	☐	0	0	0060	PEDL1000	1
☐	☐	0	0	0070	CHAN1000	1
☐	☐	0	0	0080	BRKT1000	1
☐	☐	0	0	0090	WDOC1000	1
☐	☐	0	0	0100	PCKG1000	1

0020

In the following pop up, click Oper./act. list.Choose operation **0020** and press ENTER. Back on the Material Component Overview screen, you see that now both components have been assigned to operation 0020.

Item Overview

	P...	Le...	Path	Ite...	Component	Quantity	Sort String	U...	It...	B...	Activity	Seq.
☐	☐	0	0	0010	TRWA1000	2		EA	L			
☐	☐	**0**	**0**	0020	**TRFR3000**	**1**		**EA**	**L**	☐	**0020**	**0**
☐	☐	0	0	0030	DGAM1000	1		EA	L			
☐	☐	**0**	**0**	0040	**TRSK1000**	**1**		**EA**	**L**	☐	**0020**	**0**
☐	☐	0	0	0050	TRHB1000	1		EA	L			
☐	☐	0	0	0060	PEDL1000	1		EA	L			
☐	☐	0	0	0070	CHAN1000	1		EA	L			
☐	☐	0	0	0080	BRKT1000	1		EA	L			
☐	☐	0	0	0090	WDOC1000	1		EA	L			
☐	☐	0	0	0100	PCKG1000	1		EA	L			

Repeat the same process for the other components and assign them to operations as shown below.

Component	Operation
TRHB1### (touring handle bar)	0030
TRWA1### (touring aluminum wheel assembly)	0040
DGAM1### (derailleur gear assembly)	0040
CHAN1### (chain)	0050
BRKT1### (brake kit)	0060
PEDL1### (pedal assembly)	0070
WDOC1### (warranty document)	0100
PCKG1### (packaging)	0100

TRHB1###

TRWA1###

DGAM1###

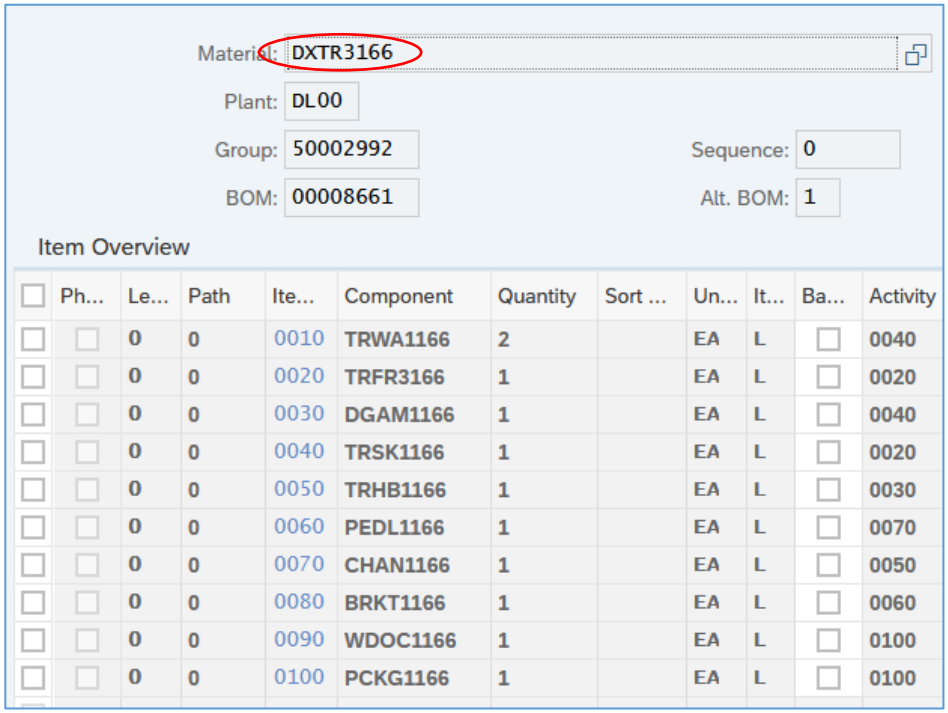
CHAN1###

BRKT1###

PEDL1###

WDOC1###

PCKG1###



STEP A: Take a screenshot of the *Material Component Overview* screen as show above. Make sure that the Material Code (DXTR3###) is included.

Save your entries with Save.

Click on the home icon to return to the Fiori Launchpad overview.

Step 3: Display Product Group

Task Display a product group. **Time** 5 min

Short Description Display the product group (product family) for all your Deluxe Touring bikes.

Name (Position) Jun Lee (Production Supervisor)

A product group (product family) supports high-level planning. This way, it is not necessary to delve into the minutia of creating planning forecasts for every material in the company.

Product group

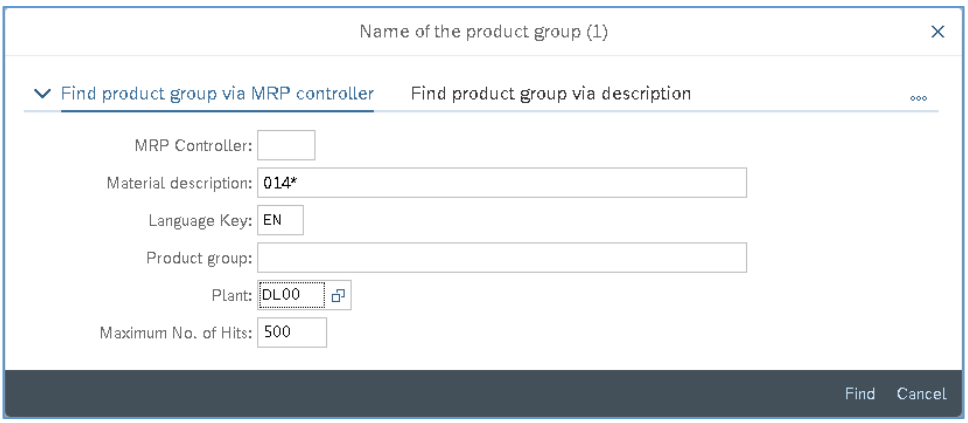
To display the deluxe touring bike product group, use the app *Display Product Group*.

Fiori App

In the Display Product Group: Initial Screen, in the Product group field find and select your group for deluxe touring bikes. In order to do so, press the search icon  (or pressed F4), enter **###*** in the Material description field. Remember to replace ### with your three-digit number, e.g. enter 009* if your number is 009. Enter **DL00** as Plant.

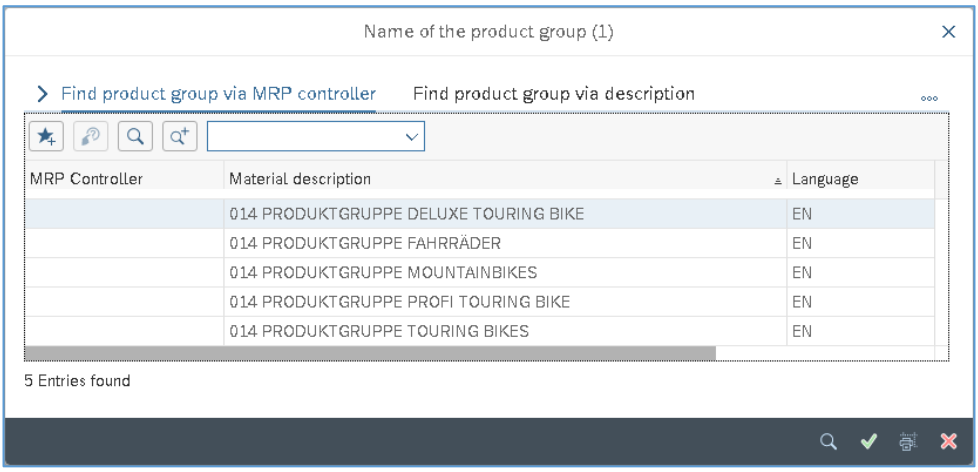
###*

DL00



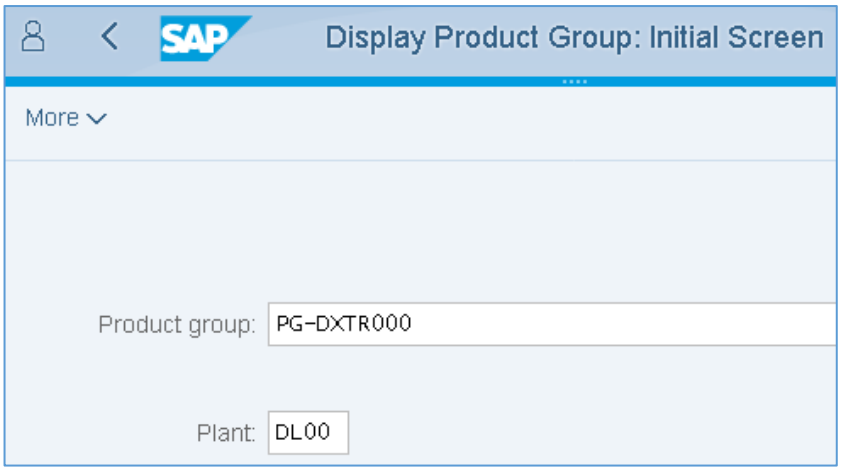
Then, press *Enter* or click on Find to display the search results.

Compare with the screen shown below. Double-click on the line for deluxe touring bicycles to select the group.



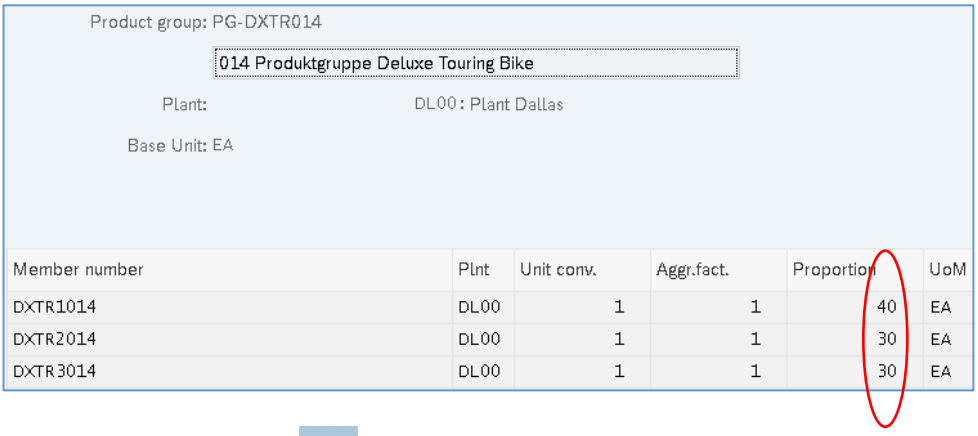
Now that the correct product group (**PG-DXTR###**) is filled in, make sure that Plant **DL00** is entered.

PG-DXTR###
DL00



Then, press *Enter* to display the product group details.

On this screen you can see that this product group defines proportions for three different bikes: the black, silver and red deluxe touring bike. For the black bike a share of 40% will be considered and 30% for the silver and the red bikes each.



Click on the home icon  to return to the Fiori Launchpad overview.

Step 4: Create Sales and Operations Plan

Task Create a sales and operations plan for a product group. **Time** 20 min

Short Description Create a 12-month sales and operations plan (SOP) for your product group.

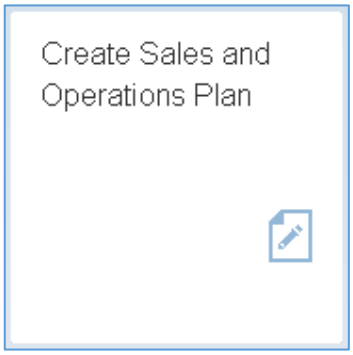
Name (Position) Jun Lee (Production Supervisor)

Sales and operations plan

A sales and operations plan (SOP) is a planning tool used to consolidate data for forecasting future sales and production levels as well as the methods needed to meet those requirements. In this task, our SOP will be based on historical consumption values taken from a fixed period. This is in contrast to forecasting within a real-life system which would base the prediction on previous periods and their respective consumption.

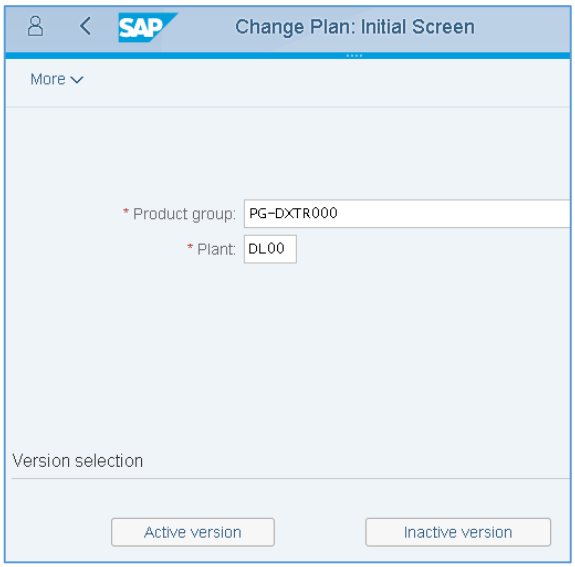
Fiori App

To create an SOP, use the app *Create Sales and Operations Plan*.



PG-DXTR###
DL00

Make sure that Product group **PG-DXTR###** and Plant **DL00** are entered



Then, select Active version.

Record the version number:_____

In the menu bar, select:

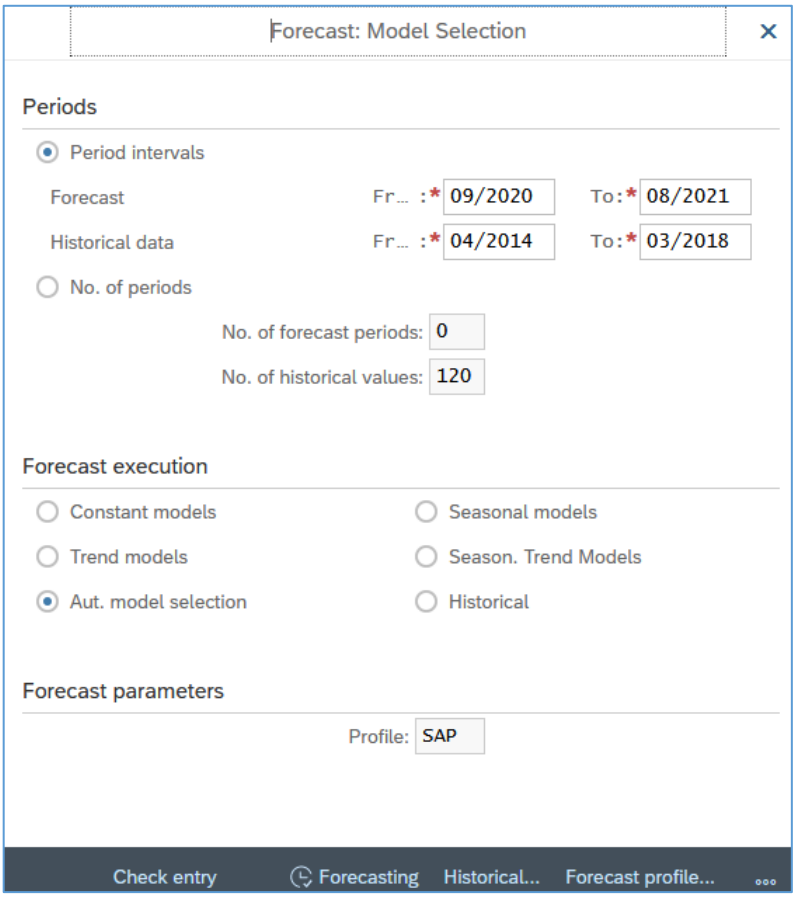
More ▶ Edit ▶ Create sales plan ▶ Forecast…

Menu bar

Select **Period intervals**,
Forecast from **current period/current year** to **previous period/next year**,
Historic Data from **04/2014** to **03/2018**,
Forecast execution **Aut. model selection**.

Period intervals
current period/current year
previous period/next year
04/2014
03/2018
Aut. model selection

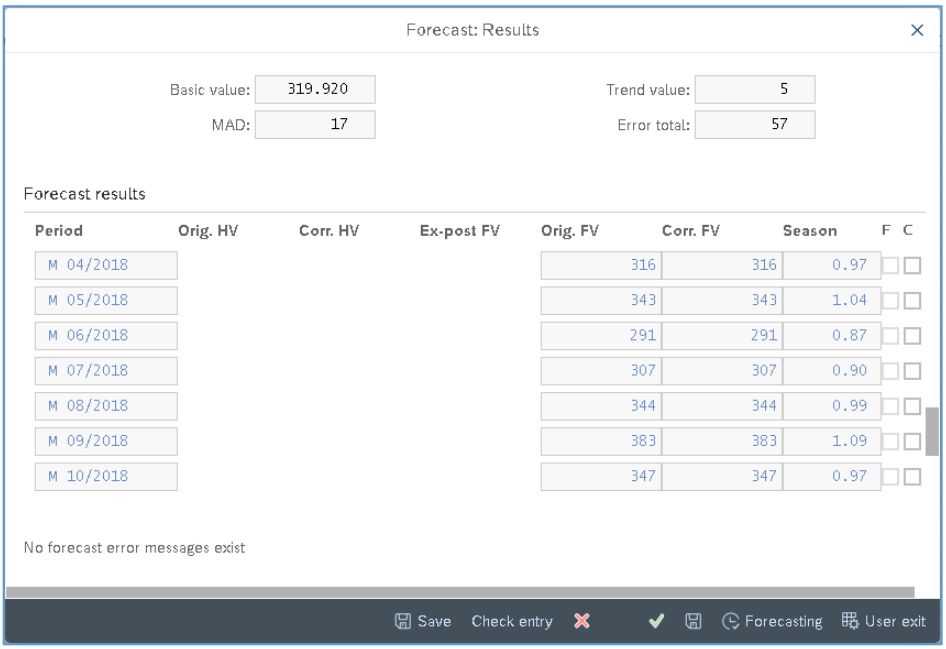
Compare your screen with the one below before clicking on Forecasting.



If there are any warning messages click on and continue.

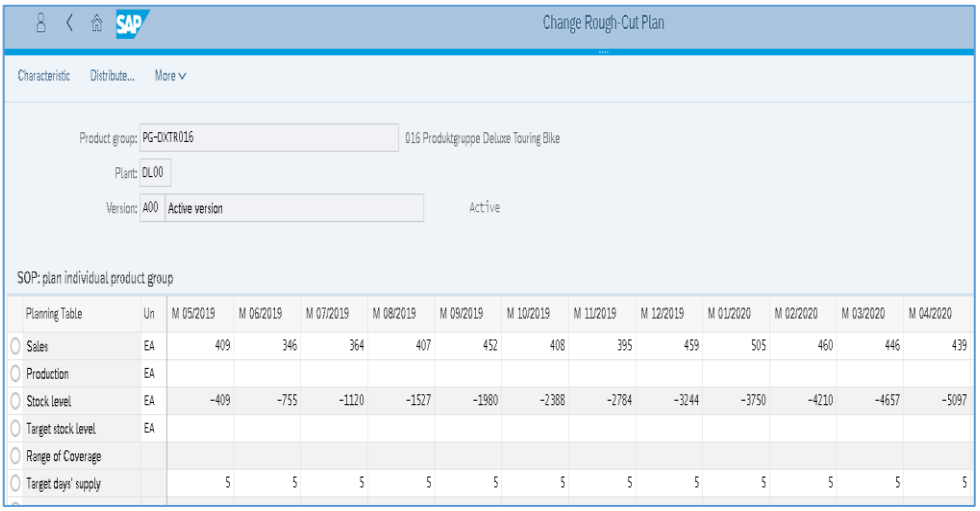
You will see that the system has selected ***Trend and season***. Click on Forecasting again.

In the next pop-up, *Forecast: Results* you can see that the system tested and found Seasonal and Trend tendencies in the past consumption data and has applied a Seasonal Trend Model.



Click on (Copy and Save). The sales forecast is copied into your Sales and Operations Plan.

As *Target day's supply* enter **5** for each forecasted period. (**12 periods only**). 5



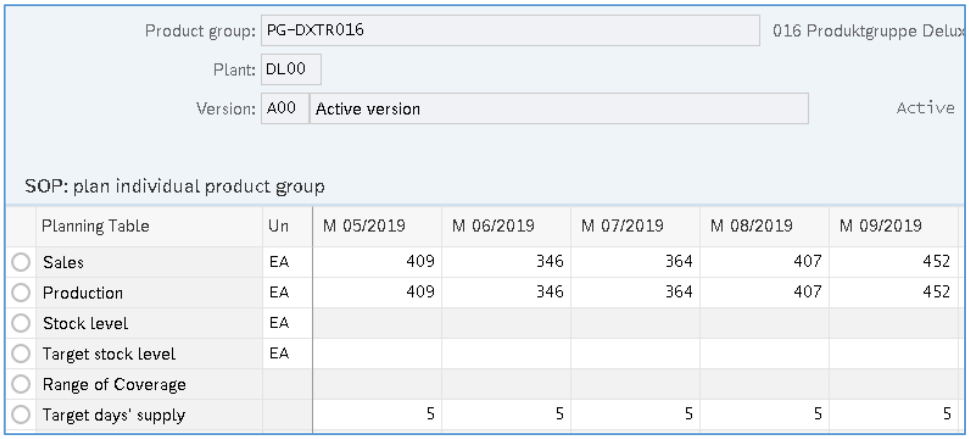
In a production plan, you plan the quantities you need to produce in order to meet your sales plan. The system then calculates stock levels and days' supply for each period on the basis of the sales and production quantities and any target data. There are several different planning strategies available, which differ in the production values and the stock levels proposed.

As the SOP is a high-level planning, discrete production values are not necessary. The SAP system calculates discrete numbers once the SOP is transferred to the Demand Management.

In the menu bar, select:

More ► Edit ► Create product plan ► Synchronous to sales Menu bar

Note the change in the Production and in the Stock level lines. The production plan is created to match the sales forecast. (Your numbers may be different).



Product group: PG-DXTR016 016 Produktgruppe Delux
Plant: DL00
Version: A00 Active version Active

SOP: plan individual product group

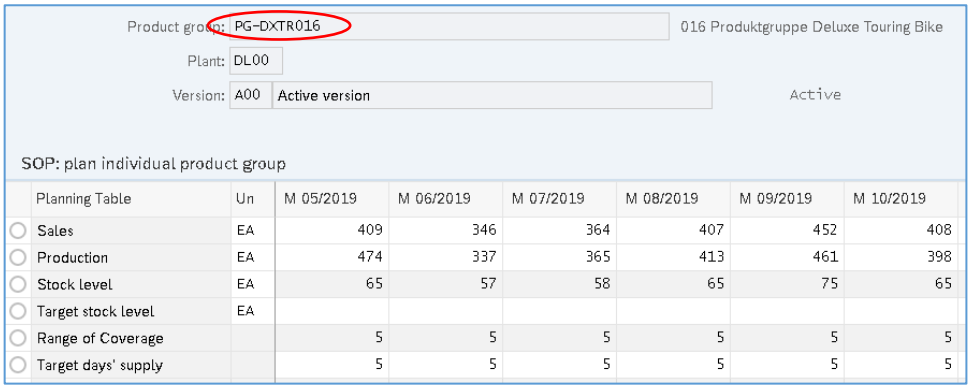
Planning Table	Un	M 05/2019	M 06/2019	M 07/2019	M 08/2019	M 09/2019
Sales	EA	409	346	364	407	452
Production	EA	409	346	364	407	452
Stock level	EA					
Target stock level	EA					
Range of Coverage						
Target days' supply		5	5	5	5	5

In the system menu, select

More ► Edit ► Create productn plan ► Target day's supply Menu bar

Note the impact on the production plan and stock levels. Production levels are generated to match the sales plus produce enough to put into stock to meet the target days of supply specifications.

Review the Planning Table (your numbers may be different).



Product group: PG-DXTR016 016 Produktgruppe Deluxe Touring Bike
Plant: DL00
Version: A00 Active version Active

SOP: plan individual product group

Planning Table	Un	M 05/2019	M 06/2019	M 07/2019	M 08/2019	M 09/2019	M 10/2019
Sales	EA	409	346	364	407	452	408
Production	EA	474	337	365	413	461	398
Stock level	EA	65	57	58	65	75	65
Target stock level	EA						
Range of Coverage		5	5	5	5	5	5
Target days' supply		5	5	5	5	5	5

STEP B: Take a screenshot of the *Change Rough-Cut Plan* screen as shown above. Make sure that the Product Group (PG-DXTR###) is included.

Save with Save.

Click on the home icon to return to the Fiori Launchpad overview.

Step 5: Transfer SOP to Demand Management

Task Transfer SOP to Demand Management. **Time** 10 min

Short Description Transfer the Sales and Operations Plan to Demand Management.

Name (Position) Jun Lee (Production Supervisor)

Demand Management

Demand Management is the tool used to disaggregate planning data from high-level plans down to the detailed planning level. For this task, planning for the Deluxe Touring Product Group will be broken down into the individual components that belong to this group.

Fiori App

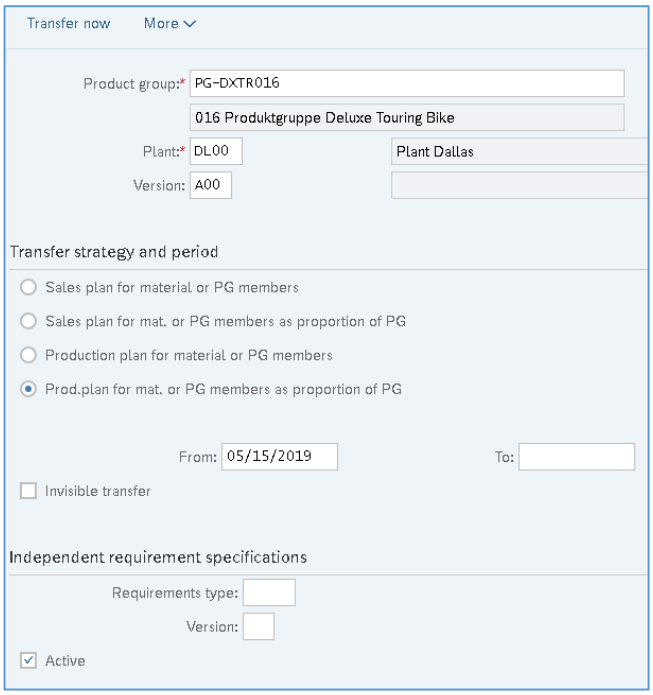
To transfer the SOP to Demand Management, use the app *Transfer SOP to Demand Management – Transfer the Sales and Operations Plan to Demand Management*.

PG-DXTR###
DL00
A00

Enter Product group **PG-DXTR###**, Plant **DL00**, and the version saved in the previous task (**A00**).

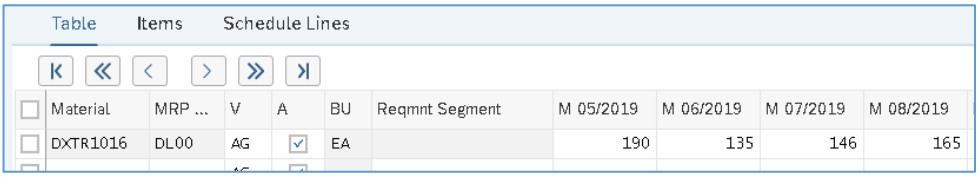
Prod.plan for mat. or PG members as prop. of PG
Active
~~Invisible transfer~~

Select **Prod.plan for mat. or PG members as proportion of PG** and select **Active**.
Then, deselect the **Invisible transfer** indicator to present the disaggregation results on another screen allowing the planner to modify the results before saving them manually to Demand Management.



Select the Transfer now menu item and examine the Planned Independent Requirements generated for **DXTR1###**.

DXTR1###



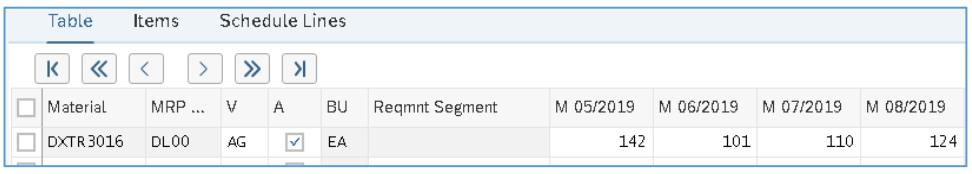
Then, click on Save to save.

The Planned Independent Requirements generated for **DXTR2###** will now be displayed. Save them with Save.

DXTR2###

Finally, review the requirements for **DXTR3###** and save them with Save.

DXTR3###



Click on the home icon to return to the Fiori Launchpad overview.

Step 6: Review Demand Management

Task Review the requirements for a product group. **Time** 10 min

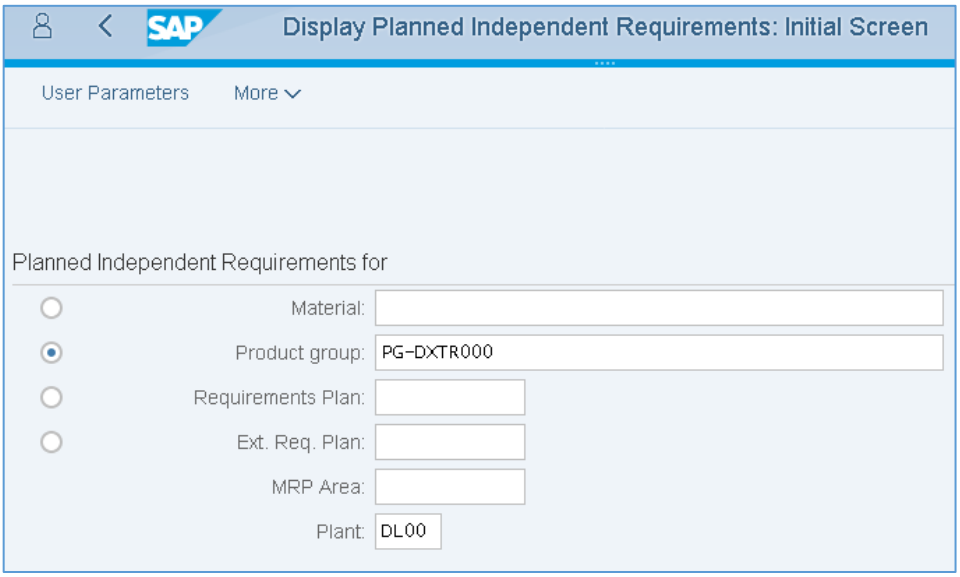
Short Description Review the requirements for the product group to ensure that there are production requirements for the individual production items.

To review planned requirements, use the app *Display PIRs*. (PIR = Planned Independent Requirement).

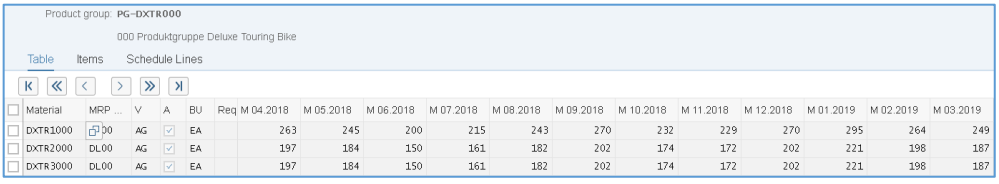
Fiori App

Select the **Product group** radio button, enter Product group **PG-DXTR###**, Plant **DL00**, and select Continue or click *Enter*.

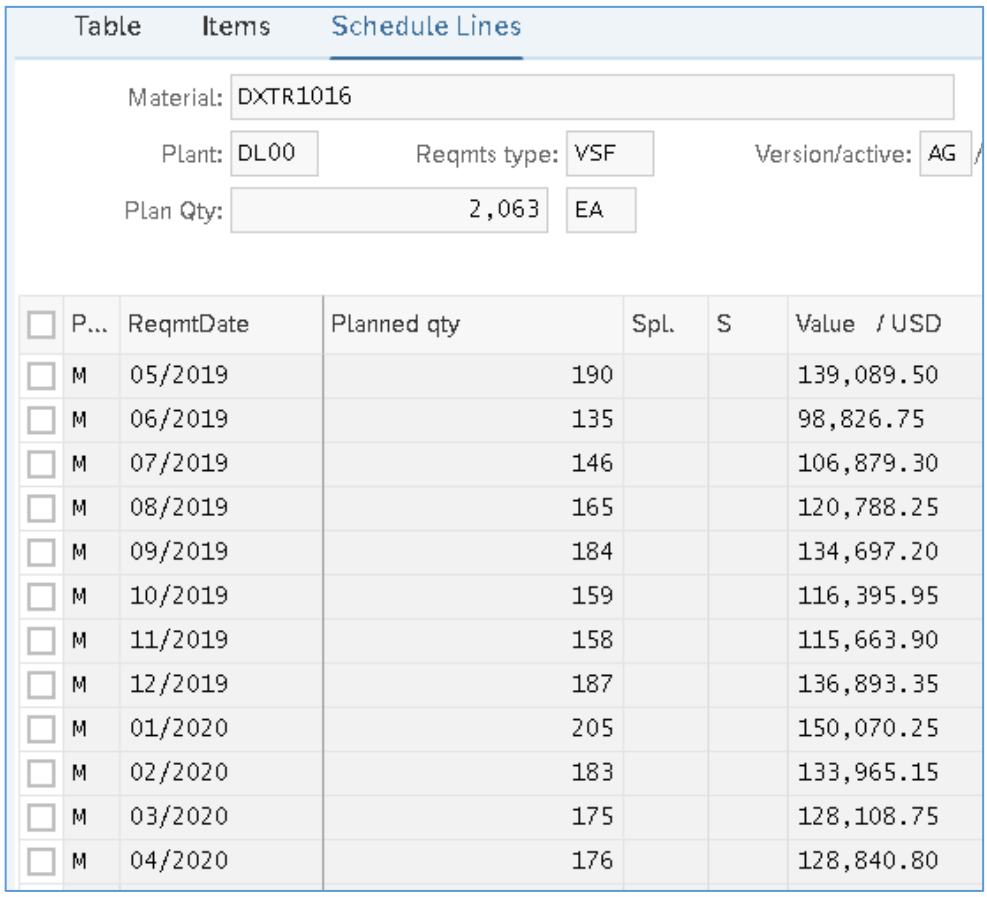
Product group
PG-DXTR###
DL00



On the *Table* tab, review the Planned Independent Requirements for the Deluxe Touring bike product group by material.



On the *Schedule lines* tab, review the requirement dates, planned quantities, values, and total planned quantities.



P...	ReqmtDate	Planned qty	Spl.	S	Value / USD
M	05/2019	190			139,089.50
M	06/2019	135			98,826.75
M	07/2019	146			106,879.30
M	08/2019	165			120,788.25
M	09/2019	184			134,697.20
M	10/2019	159			116,395.95
M	11/2019	158			115,663.90
M	12/2019	187			136,893.35
M	01/2020	205			150,070.25
M	02/2020	183			133,965.15
M	03/2020	175			128,108.75
M	04/2020	176			128,840.80

Select Next item to move to the next material.

Click on the home icon to return to the Fiori Launchpad overview.

Step 7: Run MPS with MRP

Task Run Master Production Scheduling (MPS).

Time 10 min

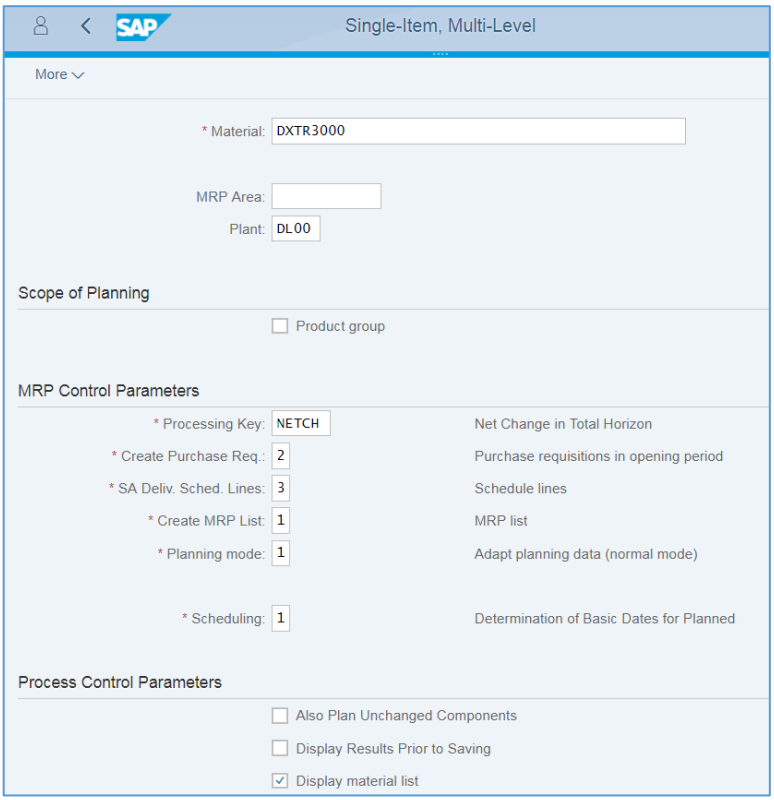
Short Description Run Master Production Scheduling (MPS) to generate a series of planned orders that satisfy the requirements from SOP and demand management. Concurrently with MPS, the MRP materials will be processed leading to the generation of planned orders for dependent requirements that have been created by the BOM explosion process.

To run Master Production Scheduling, use the apps *Schedule MRP Run – Run MPS with MRP*.

Fiori App

Enter your material **DXTR3###**,
Plant **DL00**,
Processing key **NETCH**,
Select **2** (Purchase requisition in opening period), **3** (Schedule lines), **1** (MRP list), **1** (Adapt planning data (normal mode)), and **1** (Determination of Basic Dates for Planned).
Then, select **Display material list**.

DXTR3###,
DL00
NETCH
2
3
1
1
1
Display material list

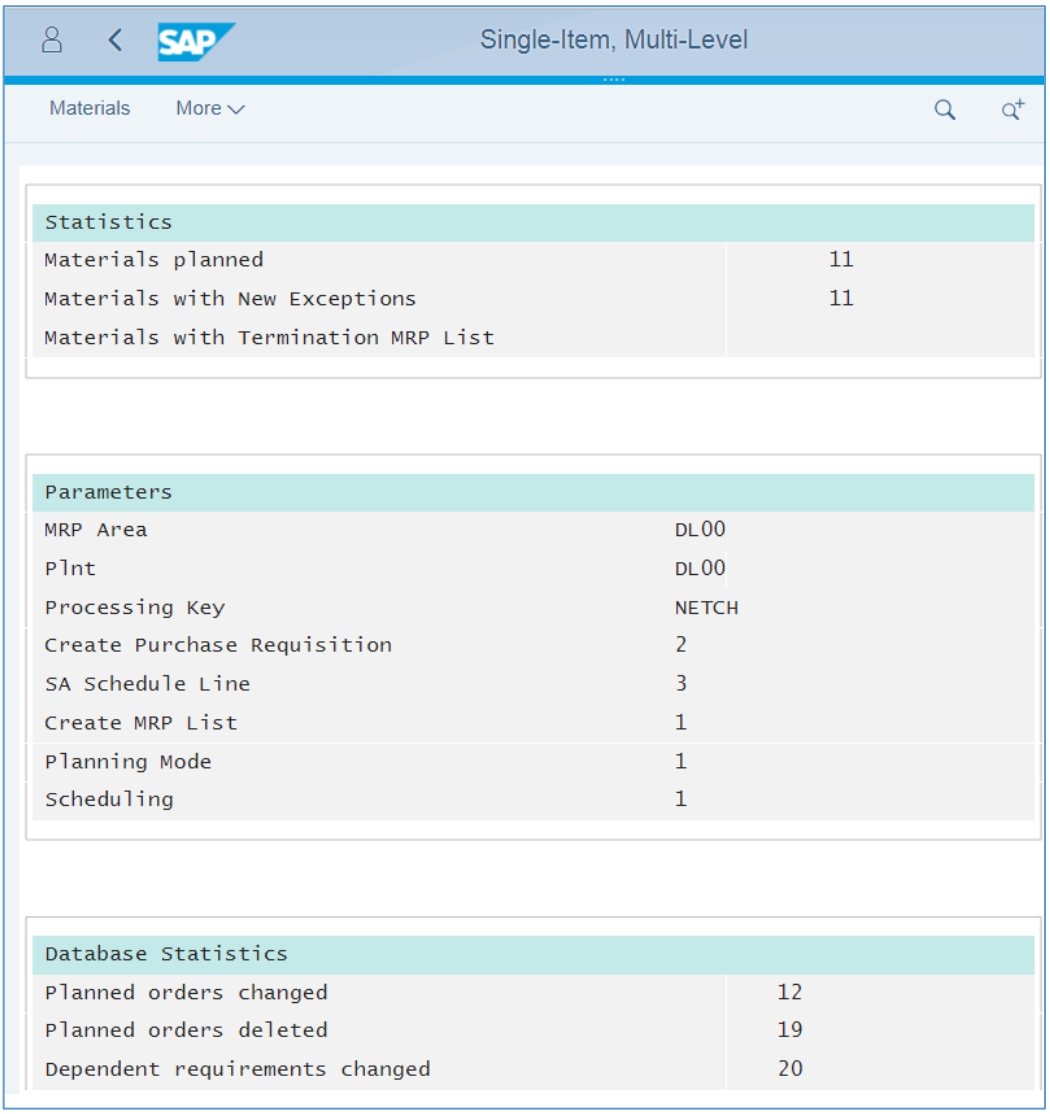


Press *Enter*.

A warning message will appear asking you to check input parameters. Press *Enter* to confirm and bypass the warning message.

Note In MRP, a net requirements calculation is executed in the planning run to determine whether a material shortage exists for a certain material. In addition, stock and fixed receipts that currently exist (for example, purchase orders, production orders, fixed purchase requisitions and planned orders) are compared with the safety stock and requirements. The result of this comparison is the quantity available for planning.

If the quantity available for planning is lower than zero, a material shortage exists. MRP reacts to material shortages by creating new procurement proposals (purchase requisitions and planned orders). The suggested procurement quantity results from the lot-sizing procedure that is set in the material master.



Statistics	
Materials planned	11
Materials with New Exceptions	11
Materials with Termination MRP List	

Parameters	
MRP Area	DL00
Plnt	DL00
Processing Key	NETCH
Create Purchase Requisition	2
SA Schedule Line	3
Create MRP List	1
Planning Mode	1
Scheduling	1

Database Statistics	
Planned orders changed	12
Planned orders deleted	19
Dependent requirements changed	20

If you scroll down, you will see the run-time statistics for the MRP calculation.

Ranking List of Materials with Highest CPU Times (in ms)

Material			MRP Area		Plnt
Runtime	Read	Net Calc.	BOM	LdTmeSched	Update
DXTR3066			DL00		DL00
2,894	77	70	759	0	645
BRKT1066			DL00		DL00
1,098	2	1,045	0	0	39
CHAN1066			DL00		DL00
135	2	36	0	0	86

Click on the home icon  to return to the Fiori Launchpad.

Step 8: Review Stock/Requirements List

Task Review the Stock/Requirements List. **Tim**

Short Description Review the Stock/Requirements List for your deluxe touring bike.

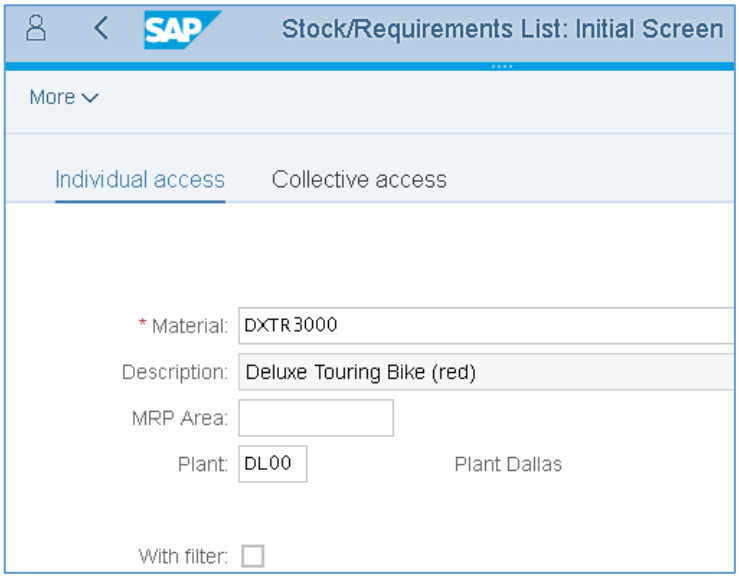
Name (Position) Lars Iseler (Production Order Worker)

The Stock/Requirements List is a list which dynamically changes whenever a transaction occurs using the given material. Display and review the Stock/Requirements List for all materials of the red deluxe touring bike on hand and the demand that exists against these products. The report shows that there is no stock and therefore nothing is available for use at this time.

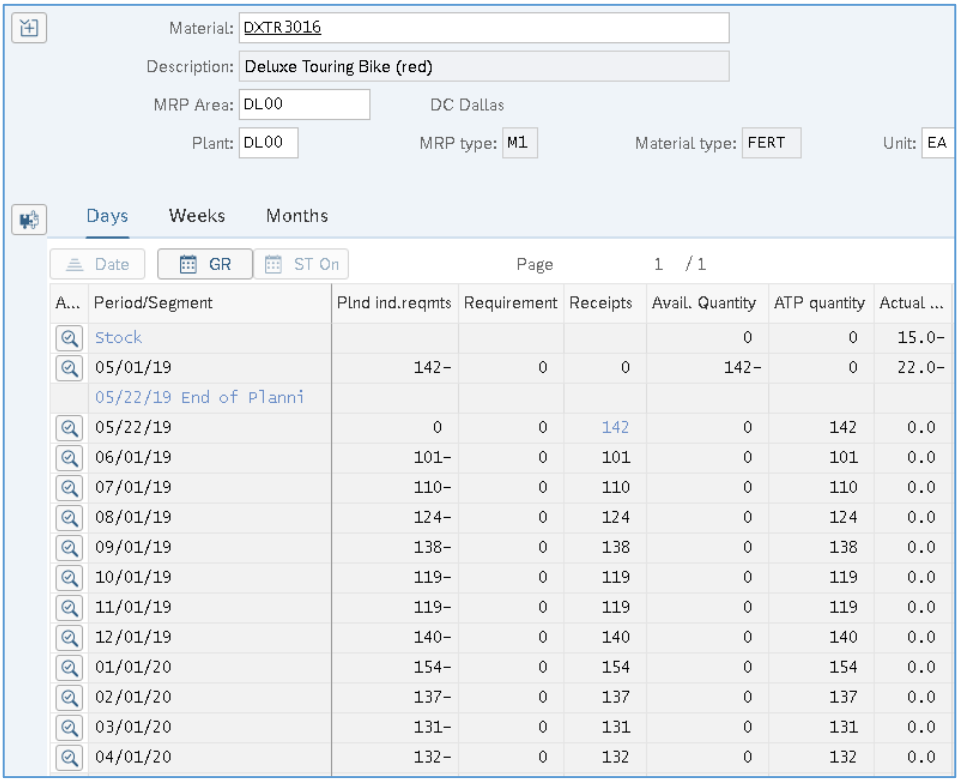
Stock/R

To review the Stock/Requirements List, use the SAP Fiori App *Monitor Stock / Requirements List*.

On the Individual access tab, enter Material **DXTR3###** and Plant **DL00** and click on Continue.



Choose Σ (Switch to Period Totals). This will allow you to see the planned independent requirements, planned receipts, and Available to Promise (ATP) quantities based on time - days, weeks, or months.



Material: DXTR3016
Description: Deluxe Touring Bike (red)
MRP Area: DL00 DC Dallas
Plant: DL00 MRP type: M1 Material type: FERT Unit: EA

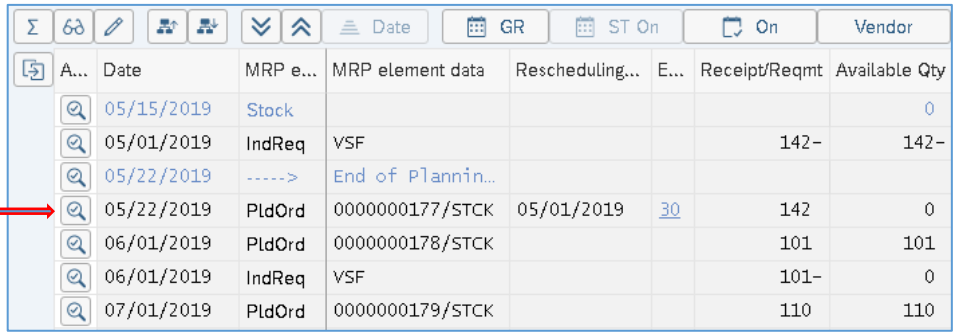
Days | Weeks | Months

Date | GR | ST On | Page 1 / 1

A...	Period/Segment	Plnd ind.reqmts	Requirement	Receipts	Avail. Quantity	ATP quantity	Actual ...
	Stock				0	0	15.0-
	05/01/19	142-	0	0	142-	0	22.0-
	05/22/19 End of Planni						
	05/22/19	0	0	142	0	142	0.0
	06/01/19	101-	0	101	0	101	0.0
	07/01/19	110-	0	110	0	110	0.0
	08/01/19	124-	0	124	0	124	0.0
	09/01/19	138-	0	138	0	138	0.0
	10/01/19	119-	0	119	0	119	0.0
	11/01/19	119-	0	119	0	119	0.0
	12/01/19	140-	0	140	0	140	0.0
	01/01/20	154-	0	154	0	154	0.0
	02/01/20	137-	0	137	0	137	0.0
	03/01/20	131-	0	131	0	131	0.0
	04/01/20	132-	0	132	0	132	0.0

Note that your dates and quantities may be different.

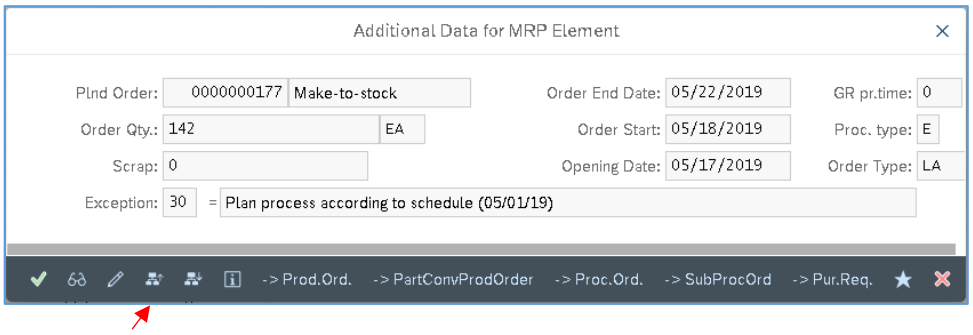
Select  to go back to the individual lines.



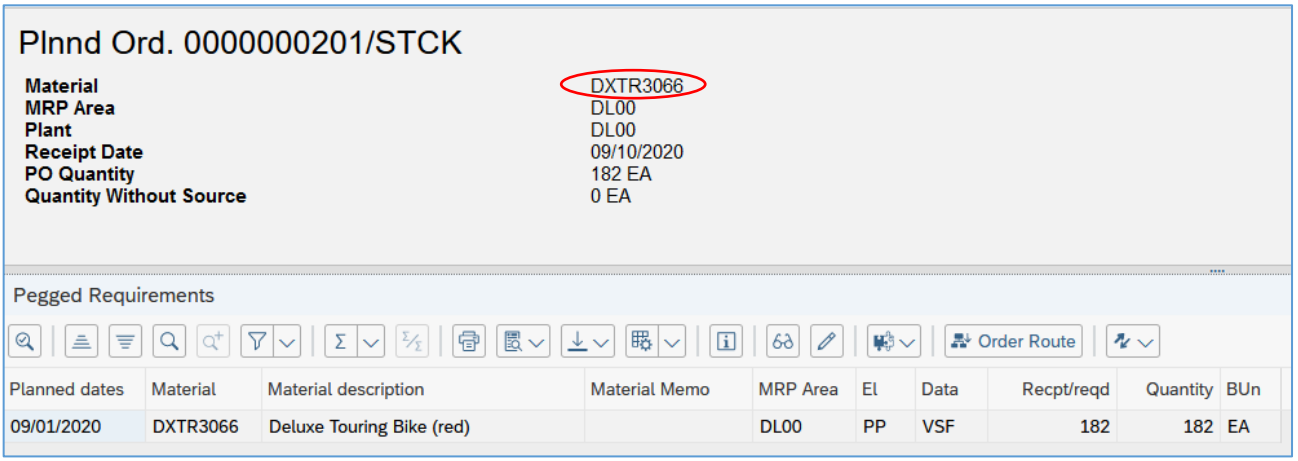
Σ | Date | GR | ST On | On | Vendor

A...	Date	MRP e...	MRP element data	Rescheduling...	E...	Receipt/Reqmt	Available Qty
	05/15/2019	Stock					0
	05/01/2019	IndReq	VSF			142-	142-
	05/22/2019	----->	End of Plannin...				
	05/22/2019	PldOrd	0000000177/STCK	05/01/2019	30	142	0
	06/01/2019	PldOrd	0000000178/STCK			101	101
	06/01/2019	IndReq	VSF			101-	0
	07/01/2019	PldOrd	0000000179/STCK			110	110

To view the details of the **first** planned order (**PldOrd**), select  (Element Details).



Select  (Pegged Requirements).



You can see that this planned order is to fulfill our Safety Stock and the first planned independent requirement that was created when we disaggregated our SOP.

STEP C: Take a screenshot of the *Pegged Requirements* screen as shown above. Make sure to include the Material Code (DXTR3###).

Click on the home icon  to return to the Fiori Launchpad overview.

Step 9: Convert Planned Order into Production Order

Task Convert a planned order into a production order. **Time** 10 min

Short Description Convert a planned order generated in the MPS/MRP run to a production order. The stock requirements list displays the suggested planned orders from the MPS run.

Name (Position) Lars Iseler (Production Order Worker)

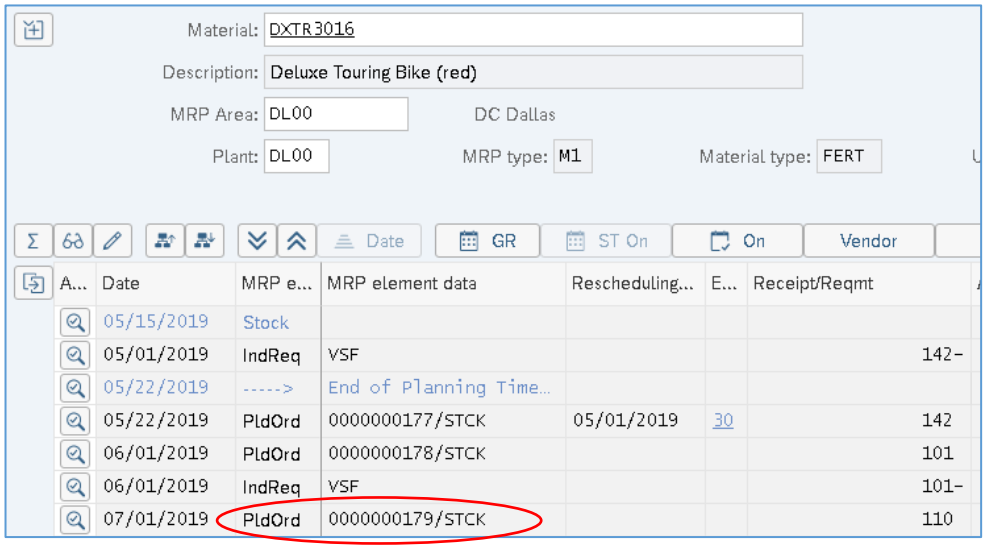
To convert planned orders into production orders, use the SAP Fiori App *Monitor Stock / Requirements List*.

Fiori App

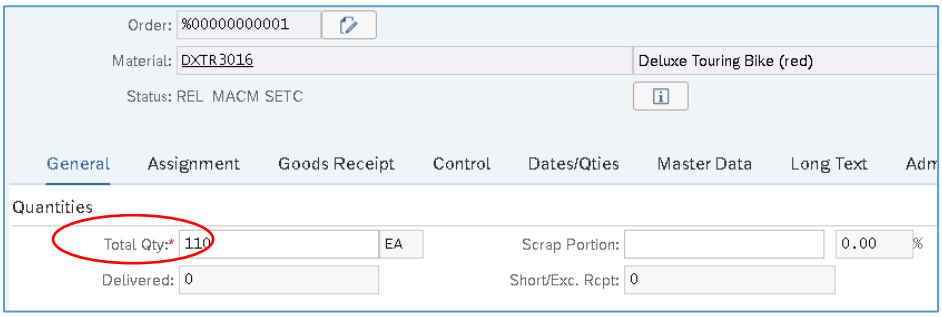
Enter Material **DXTR3###**, Plant **DL00**, and click on Continue. Then, double-click on the **third** planned order.

DXTR3###
DL00

Note that your dates and quantities may be different.



In the Additional Data screen, click on -> Prod.Ord. (Convert planned order to production order).



100

Note At this point, please note down the total quantity in your production order. You will need it later when confirming your order.

Total quantity

_____

Determine the status of your order by clicking on  . What does this mean?

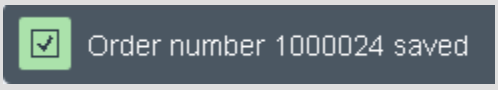
Note When you converted the planned order to a production order scheduling takes place, an availability check was automatically carried out and a reservation was placed on the materials specified within the bill of materials. The order was also automatically released when the production order was created.

Click on  to go back to the *Production order Create: Header* screen and save your production order with Save.

Note When you save the production order the system will automatically calculate the planned costs for the production order and the production order is given a number.

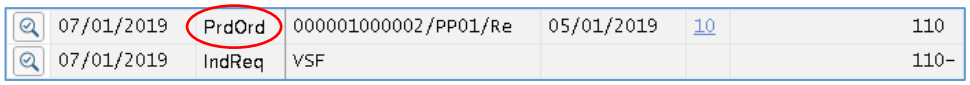
Production order number

_____



Make sure you record your production order number.

Select Refresh to refresh the Stock/Requirements List. In the MRP Element column the planned order **PldOrd** that you selected should now have changed into a production order **PrdOrd**.



Click on the home icon  to return to the Fiori Launchpad overview.

Step 10: Receive Goods in Inventory

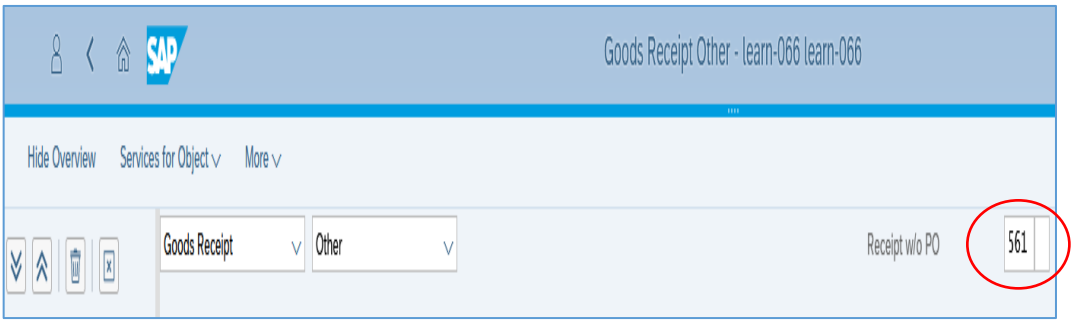
Task Receive goods in the Dallas plant. **Time** 10 min

Short Description Receive enough goods in the Dallas storage locations to start the production process.

Usually, at this point the purchasing department in Dallas would take over and procure enough raw materials from vendors to fill the inventory so that the production process can be initiated. In this case study, we are bypassing this procurement process (this process is explained in the MM unit in detail). Because the inventory for all DXTR3### components is empty, we will assume that we find 500 pieces each in the storage location.

To receive goods in the inventory, use the app *Post Goods Movement*.

Make sure that ***Goods Receipt*** and ***Other*** is selected in the drop-down menu.



Enter Movement Type **561** (Receipt per initial entry of stock balances into unrestricted use),
and **today's date** as Document and Posting Date.
Then, press *Enter*. If necessary, confirm the information pop-up.

561
today

If you now click on the *Close Detail Data* button  you will be able to enter the ten materials which are the components that are needed in your production order later.

Enter the Material Code in the *Mat. Short Text* field, and the *Quantity* and *Storage Location* as shown below.

Note that all materials are stored in the **raw materials** storage location in Dallas (**DL00**) except the touring wheel assembly (first component in the list) which is a **semi-finished good**.

DL00

Material	Quantity	SLoc
TRWA1### (Touring Aluminum Wheel Assembly)	500	SF00
TRFR3### (Touring Frame-Red)	500	RM00
DGAM1### (Derailleur Gear Assembly)	500	RM00
TRSK1### (Touring Seat Kit)	500	RM00
TRHB1### (Touring Handle Bar)	500	RM00
PEDL1### (Pedal Assembly)	500	RM00
CHAN1### (Chain)	500	RM00
BRKT1### (Brake Kit)	500	RM00
WDOC1### (Warranty Document)	500	RM00
PCKG1### (Packaging)	500	RM00

TRWA1###
TRFR3###
DGAM1###
TRSK1###
TRHB1###
PEDL1###
CHAN1###
BRKT1###
WDOC1###
PCKG1###

Enter DL00 as *Plnt* in all of the ten lines. After each line, press *Enter*.

DL00

Compare your screen with the screenshot shown below.

Line	Mat. Short Text	Wa...	OK	Qty in UnE	EUn	SLoc
1	Touring Aluminum Wheel Assembly	☐	☑	500	EA	Semi-Fin. Goods
2	Touring Frame-Red	☐	☑	500	EA	Raw Materials
3	Derailleur Gear Assembly	☐	☑	500	EA	Raw Materials
4	Touring Seat Kit	☐	☑	500	EA	Raw Materials
5	Touring Handle Bar	☐	☑	500	EA	Raw Materials
6	Pedal Assembly	☐	☑	500	EA	Raw Materials
7	Chain	☐	☑	500	EA	Raw Materials
8	Brake Kit	☐	☑	500	EA	Raw Materials
9	Warranty Document	☐	☑	500	EA	Raw Materials
10	Packaging	☐	☑	500	EA	Raw Materials

Save your goods receipt with Post and record the material document number.

Material document number

4900014076

Click on the home icon to return to the Fiori Launchpad overview.

Step 11: Issue Goods to Production Order

Task Issue goods to a production order.

Time 10 min

Short Description Now that all necessary components are on stock issue them to your production order in precise quantity.

Goods issue

The goods issue process is fully defined in the production order, BOM, and routing. The quantities and the materials are reserved for this specific production order, they will be withdrawn with reference to the order number and will be used to assign actual costs to the production order for managerial accounting purposes.

Fiori App

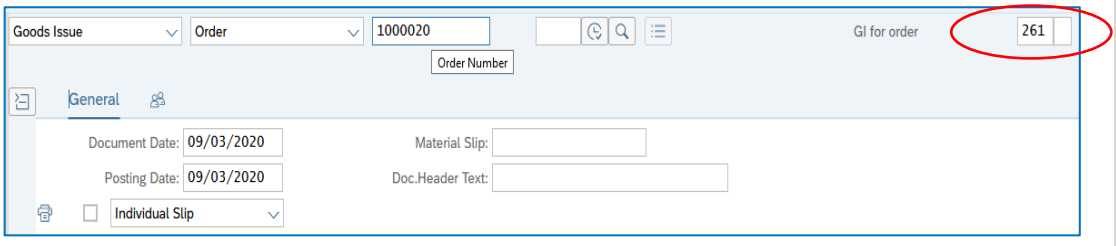
To issue goods to a production order, use the app *Post Goods Movement*.

Make sure that ***Goods Issue*** and ***Order*** is selected.

Note Goods issues posting for the required components is another milestone in the production order process. The following functions are performed when a GI for the components of the production order is posted:

- Storage-location-specific update of the stock and consumption fields
- Reduction of the reservation (for planned withdrawal)
- Update of costs for unplanned withdrawals
- Determination of actual costs (valuation) and order update
- Consumption update
- Generation of material and accounting documents (FI and CO documents)
- Creation of material document.
- Creation of accounting document
- Creation of controlling document
- Printing of GI document

today
today
261



Enter Movement Type **261** (Consumption for order from warehouse),
Enter **today** as Document Date and Posting Date.

Enter your **production order number** from two tasks back (Step 9). Then press *Enter*.

Production order number

If you have not written down your production order number, you can find it in the system. In order to do so, in the Order field press **F4** or click on the search icon  . In the *Order Info System – Input Help for Order Number* screen, enter your material **DXTR3###** in the Material field and click on Execute. Double-click on the result row to adopt your production order number into the initial screen.

F4

DXTR3###

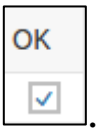
An itemized list will appear. It lists all the materials and their respective quantities that need to be issued to your order. You need to tell the system what Storage Location the materials should be withdrawn from. For the Touring Aluminum Wheel Assembly (TRWA1###), enter **SF00** (Semi-finished goods) and for all other materials **RM00** (Raw materials) in the ***SLoc*** fields. Notice that your quantities could be different.

SF00

RM00

Line	Mat. Short Text	W...	OK	Qty in UnE	EUn	...	SLoc
1	Touring Aluminum Wheel Assembly	☐	☐	322	EA		SF00
2	Touring Frame-Red	☐	☐	161	EA		RM00
3	Derailleur Gear Assembly	☐	☐	161	EA		RM00
4	Touring Seat Kit	☐	☐	161	EA		RM00
5	Touring Handle Bar	☐	☐	161	EA		RM00
6	Pedal Assembly	☐	☐	161	EA		RM00
7	Chain	☐	☐	161	EA		RM00
8	Brake Kit	☐	☐	161	EA		RM00
9	Warranty Document	☐	☐	161	EA		RM00
10	Packaging	☐	☐	161	EA		RM00

OK

Flag each item with **OK** 

. Click on Post and record the material document number.

4900014077

Material document number

Click on the home icon  to return to the Fiori Launchpad overview.

☐

Step 12: Review Production Order Status

Task Review the production order status.

Time 10 min

Short Description Review the current production order with respect to the status of the order.

Name (Position) Michael Brauer (Shop Floor Worker 4)

To display the production order, use the app *Display Production Order*.

Fiori App

Enter the number of your **production order**.

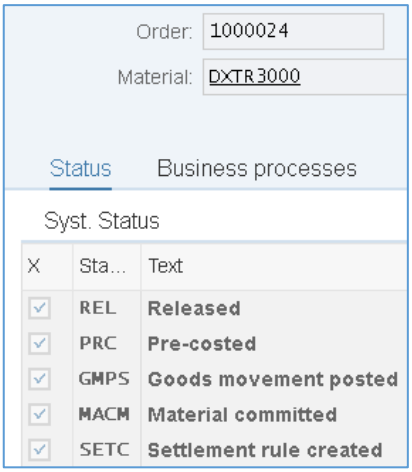
Production order number

If you have not written down your production order number you can find it in the system. In order to do so, in the Order field press **F4** or click on the search icon . In the *Order Number (1)* screen choose the tab *Production Orders by Material and Routing*, enter your material **DXTR3###** in the Material field and click on *Enter*. Double-click on the result row to adopt your production order number into the initial screen.

F4

DXTR3###

When your production order number is entered, click on Continue. Note that the order status has changed and review it by clicking on again.



You did a Goods Issue to the production order in the last task. Now, you want to review the cost assigned to the order, the material document, and the corresponding accounting document.

In order to do so, click on  to go back to the header screen.

Then in the menu bar select:

More ▶ Goto ▶ Costs ▶ Analysis

Menu bar

Order 1000020 DXTR3066
Order Type PP01 Standard production order
Plant DL00 Plant Dallas
Material DXTR3066 Deluxe Touring Bike (red)

Planned Quantity 137 EA each

Target Cost Version 0

Cumulative Data
Legal Valuation
Company Code Currency/Object Currency

Cost Element	Cost Element (Text)	Origin	Total Target Costs	Total Actual Costs	Target/actual var.	T/I var(%)	Currency
720300	Semi-Finished Consumption Expense	DL00/TRWA1066	0.00	30,962.00	30,962.00		USD
			0.00	**30,962.00**	**30,962.00**		**USD**
720000	Raw Material Consumption Expense	DL00/TRFR3066	0.00	27,400.00	27,400.00		USD
720000	Raw Material Consumption Expense	DL00/DGAM1066	0.00	10,275.00	10,275.00		USD
720000	Raw Material Consumption Expense	DL00/TRSK1066	0.00	6,850.00	6,850.00		USD
720000	Raw Material Consumption Expense	DL00/TRHB1066	0.00	3,425.00	3,425.00		USD
720000	Raw Material Consumption Expense	DL00/PEDL1066	0.00	6,165.00	6,165.00		USD
720000	Raw Material Consumption Expense	DL00/CHAN1066	0.00	1,370.00	1,370.00		USD
720000	Raw Material Consumption Expense	DL00/BRKT1066	0.00	9,590.00	9,590.00		USD
720000	Raw Material Consumption Expense	DL00/WDOC1066	0.00	137.00	137.00		USD
720000	Raw Material Consumption Expense	DL00/PCKG1066	0.00	479.50	479.50		USD
Raw Materials			**0.00**	**65,691.50**	**65,691.50**		**USD**
			0.00	**96,653.50**	**96,653.50**		**USD**

Here you can see the costs that were assigned to the production order from our goods issue.

STEP D: Take a screenshot of the *Target/Actual Comparison* screen as shown above. Make sure that you include the Production Order Number and the Material Code (DXTR3###).

Click on the home icon  to return to the Fiori Launchpad overview.

Step 13: Confirm Production Completion

Task Confirm production order completion. **Time** 10 min

Short Description Confirm completion for your production order.

Name (Position) Michael Brauer (Shop Floor Worker 4)

Production completion

When the assembly has been completed for the current production order, we need to confirm that certain procedures and activities have been completed and record the quantity of the finished product that has been manufactured.

Fiori App

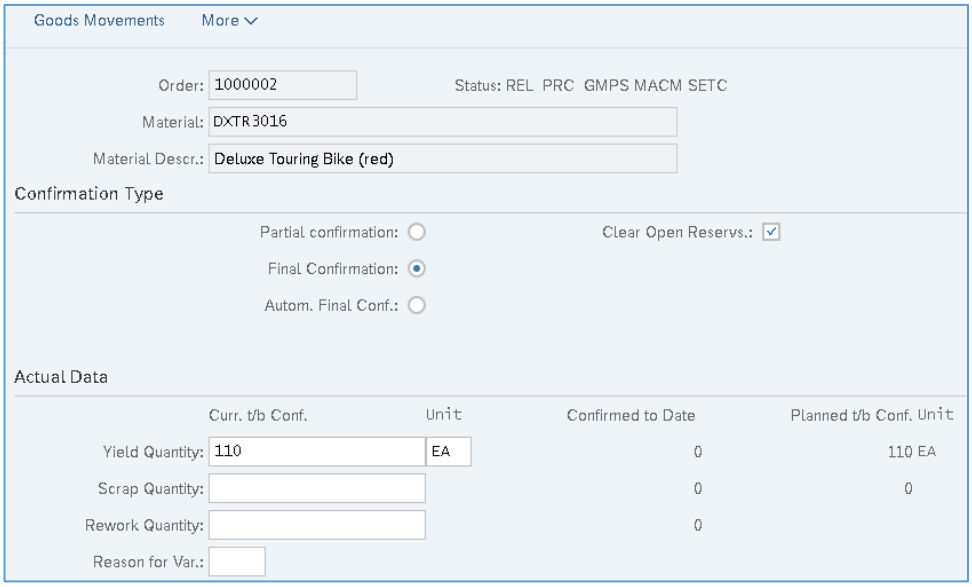
To confirm production completion, use the app *Enter Production order Confirmation*.

Production order number

Enter your **production order** number and click on Continue or *Enter*.

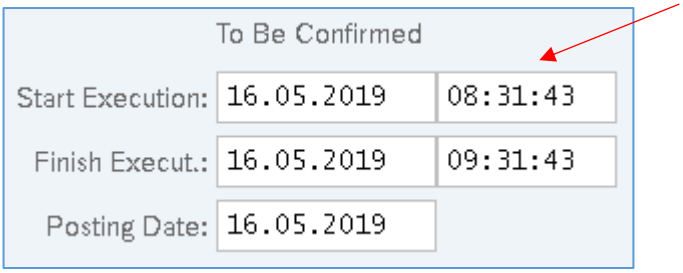
Final Confirm. Clear Reservation Amount

Select **Final Confirmation** and **Clear Open Reserv**. In the Yield Quantity. field enter the **amount** of bikes you were supposed to produce for this order (Ref. Step 9) if the field is not already filled. Remember that your amount might be different from the screen below.



Then, change the Start Execution to **1 hour earlier** than the default time.

1 hour earlier



Click on *Enter* and save your entries with Save.

Note When the confirmation is saved, labor costs for the order are calculated automatically. The quantity yield also establishes the parameters for the goods receipt into Inventory.

Click on the home icon to return to the Fiori Launchpad overview.

Step 14: Receive Goods from Production Order

Task Post a goods receipt from production order. **Time** 15 min

Short Description Post a goods receipt from your production order.

Name (Position) Susanne Castro (Receiving Clerk)

Goods receipt

Receive the completed products into finished goods inventory. Check the quantity proposed against the quantity specified in the production order and the quantity specified during confirmation. If there are any discrepancies, the system will decide if an error or warning message should be generated depending upon the deviation identified.

Fiori App

To post a goods receipt, use the app *Post Goods Movement*.

Select ***Goods Receipt*** and ***Order*** in the drop-down menu.

101
Production order number

Enter Movement Type **101** and your **production order number**. Press *Enter*.

FG00

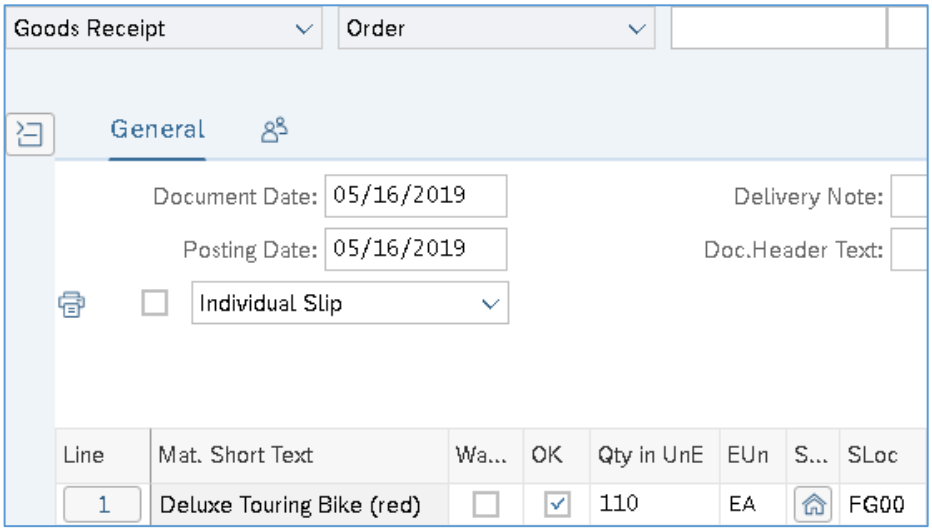
Enter as SLoc **FG00** (Finished Products) and make sure, that the plant DL00 (Plant Dallas) is entered.

OK

Select **OK** for your item.

Review the item to ensure that all the data is correct.

- Movement Type → 101 (goods receipt into Inventory)
- Storage Location → FG00 (Inventory)
- Quantity → should equal the amount that you confirmed in the previous task



Click on Post to post the goods receipt. When you save this material document the actual value of the material produced was entered into the production order.

5000000021

Record the material document number.

Material document number

Click on the home icon to return to the Fiori Launchpad overview.

Step 15: Review Costs Assigned to Production Order

Task Review costs assigned to your production order. **Time** 5 min

Short Description Display and review the costs that have been assigned to your production order.

To display costs assigned, use the app *Display Production Order*.

Fiori App

Enter your **production order number** and click on Continue.

Production order number

In the menu bar select:

More ► Goto ► Costs ► Analysis

Menu bar

Order 1000002 DXTR3016
Order Type PP01 Standard production order
Plant DL00 Plant Dallas
Material DXTR3016 Deluxe Touring Bike (red)

Planned Quantity 110 EA each
Actual Quantity 110 EA each

Target Cost Version 0

Cumulative Data
Legal Valuation
Company Code Currency/Object Currency

Cost Element	Cost Element (Text)	Origin	Total Target Costs	Total Actual Costs	Target/actual var.	T/I ...	Currency
720300	Aufwendungen Halbfertigerzeugnisse	DL00/TRWA1016	0.00	24,860.00	24,860.00		USD
741600	Ausgleich Produktionsmengen	DL00/DXTR3016	0.00	80,525.50-	80,525.50-		USD
			0.00	**55,665.50-**	**55,665.50-**		**USD**
800000	Arbeit	NAPR1000/LABOR	0.00	2,751.75	2,751.75		USD
Production			**0.00**	**2,751.75**	**2,751.75**		**USD**
720000	Aufwendungen Rohstoffe	DL00/TRFR3016	0.00	22,000.00	22,000.00		USD
720000	Aufwendungen Rohstoffe	DL00/DGAM1016	0.00	8,250.00	8,250.00		USD
720000	Aufwendungen Rohstoffe	DL00/TRSK1016	0.00	5,500.00	5,500.00		USD
720000	Aufwendungen Rohstoffe	DL00/TRHB1016	0.00	2,750.00	2,750.00		USD
720000	Aufwendungen Rohstoffe	DL00/PEDL1016	0.00	4,950.00	4,950.00		USD
720000	Aufwendungen Rohstoffe	DL00/CHAN1016	0.00	1,100.00	1,100.00		USD
720000	Aufwendungen Rohstoffe	DL00/BRKT1016	0.00	7,700.00	7,700.00		USD
720000	Aufwendungen Rohstoffe	DL00/WDOC1016	0.00	110.00	110.00		USD
720000	Aufwendungen Rohstoffe	DL00/PCKG1016	0.00	385.00	385.00		USD
Raw Materials			**0.00**	**52,745.00**	**52,745.00**		**USD**
			0.00	**168.75-**	**168.75-**		**USD**

Click on the home icon to return to the Fiori Launchpad overview.

Step 16: Settle Costs of Production Order

Task Settle costs of your production order. **Time** 20 min

Short Description Settle the costs of your production order. The costs are temporarily captured in the production order and they need to be assigned to an appropriate cost object. Compare the actual costs to the planned costs to identify any deviations or potential problems in this regard.

Name (Position) Jamie Shamblin (Cost Accountant)

To settle costs of a production order, use the app *Actual Settlement*.

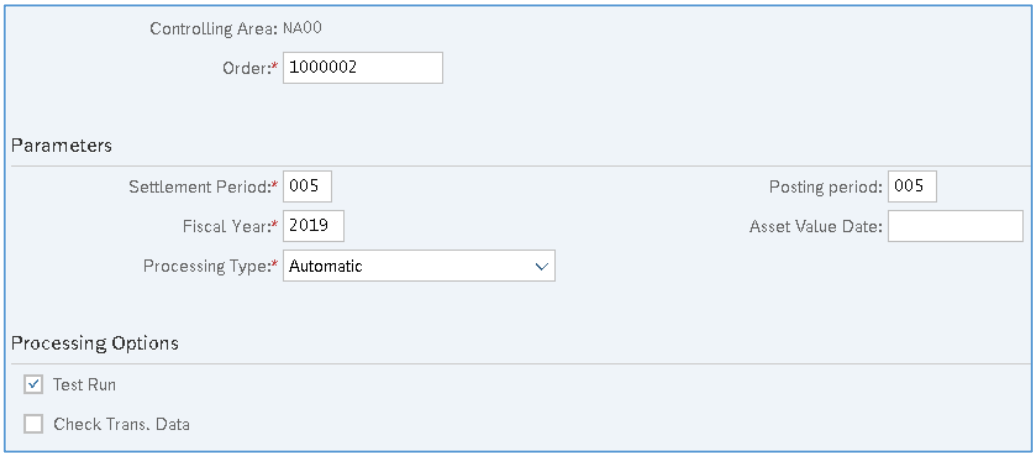
Fiori App

If you have to input the Controlling Area, enter **NA00**, and click on Continue.

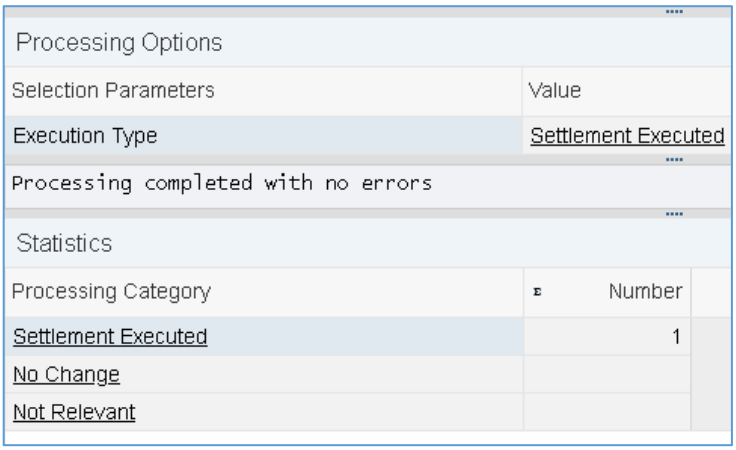
NA00

Enter your **production order number**,
the **current month** as Settlement period (e.g. 007 for July),
the **current month** as Posting period,
and the **current year** as Fiscal year.
Make sure that **Test Run** is selected.

Production order number
current month
current month
current year
Test Run



Click on Execute and confirm any occurring pop-ups.



Click on Detail lists.

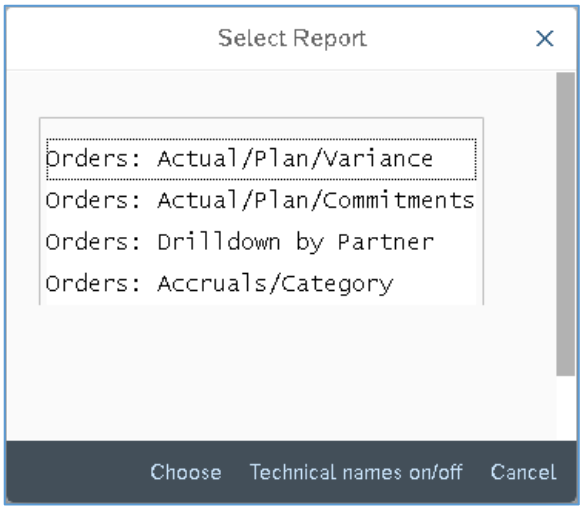
In the menu bar choose:

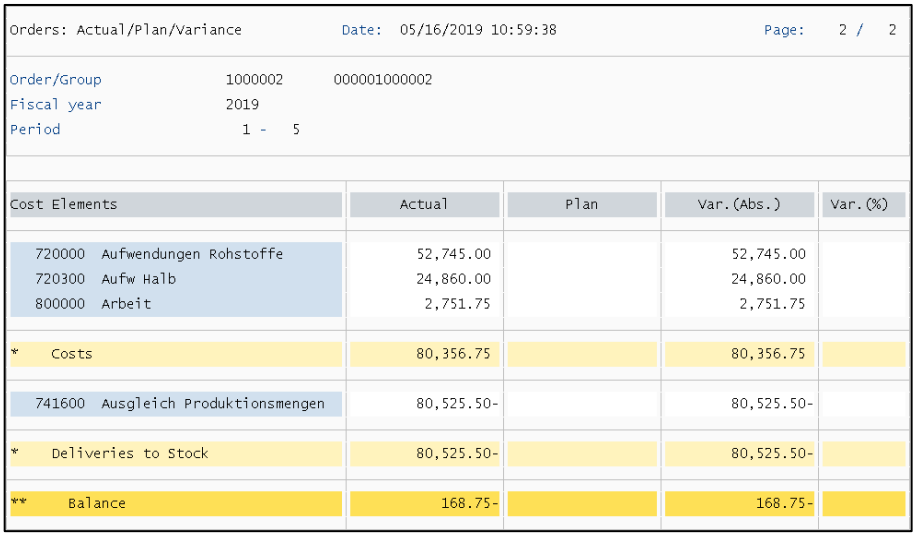
More ► Environment ► Report

Menu bar

Then, double-click on **Orders: Actual/Plan/Variance** to select the report.

Actual/Plan/Variance



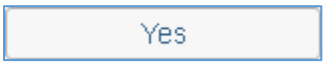


Orders: Actual/Plan/Variance Date: 05/16/2019 10:59:38 Page: 2 / 2

Order/Group 1000002 000001000002
Fiscal year 2019
Period 1 - 5

Cost Elements	Actual	Plan	Var.(Abs.)	Var.(%)
720000 Aufwendungen Rohstoffe	52,745.00		52,745.00	
720300 Aufw Halb	24,860.00		24,860.00	
800000 Arbeit	2,751.75		2,751.75	
* Costs	80,356.75		80,356.75	
741600 Ausgleich Produktionsmengen	80,525.50-		80,525.50-	
* Deliveries to Stock	80,525.50-		80,525.50-	
** Balance	168.75-		168.75-	

Yes

Click on  to go back. Then, select  and click on  twice.

~~Test Run~~

Deselect **Test Run** and execute again with  . Confirm the pop up again with *Enter*. Click on  and select  . Choose report **Orders: Actual/Plan/Variance**.

Actual/Plan/Variance

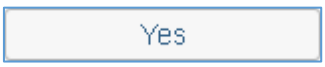
Orders: Actual/Plan/Variance Date: 09/03/2020 14:06:07 Page: 2 / 2

Order/Group 1000020 000001000020
Fiscal year 2020
Period 1 - 9

Cost Elements	Actual	Plan	Var.(Abs.)	Var.(%)
720000 RM Consumpt Expense	65,691.50		65,691.50	
720300 SF Consmpt Expense	30,962.00		30,962.00	
800000 Labor	3,426.75		3,426.75	
* Costs	100,080.25		100,080.25	
741600 Manufac. Output Sett	210.60		210.60	
* Settled Costs	210.60		210.60	
741600 Manufac. Output Sett	100,290.85-		100,290.85-	
* Deliveries to Stock	100,290.85-		100,290.85-	
** Balance				

STEP E: Take a screenshot of the *Orders: Actual/Plan/Variance* screen as shown above. Make sure that you include the Order Number

Yes

Click on  , choose  and Click on the home icon  to return to the Fiori Launchpad overview.

END OF CASE STUDY