



The production process of a quadcopter

Starting scenario: We have received a customer order in which 20 individualised quadcopters are ordered.

The following description explains how the production process of a quadcopter can be carried out using the SAP system. Products that are produced usually consist of several individual parts. For the production, the company needs the frame of the quadcopter, which is manufactured in-house, purchased parts as well as the production unit, in our case a 3D printer, and personnel. The actual production process of the quadcopter consists of 3D printing the frame and assembling it.

In many companies, the production process is triggered by **customer orders**. The sales department enters these into the SAP system.

Purchasing is responsible for providing material in sufficient quantities at the right time and place. For this reason, the department carries out a **disposition**. First, the SAP system checks whether there are enough frames for the quadcopters in stock to supply the order. If this is not the case, the frames have to be manufactured again. A **planned order** is automatically created for this purpose. The main purpose of the planned order is to check whether there are enough materials to produce a certain quantity of finished products according to the scheduling. We therefore use the planned order to check the availability of materials as well as resources such as free machine capacity or personnel. The planned order is created by material requirements planning. It can be seen in the stock/requirements list after saving the MRP run. If there are not enough materials available for the production of the quadcopter, the SAP system automatically creates **purchase requisitions** for these materials through the material planning run, which can then be converted into purchase orders and lead to a goods receipt.

The purchasing department/disposition department checks the planned order. If there is enough material to implement the planned order on time, it is converted into a **production order**. With this, we leave the planning level and request production to produce. There is another security level built into the SAP system. The production order must be **released**. Which department in the company carries out the release can be different (e.g. production department, if available controlling etc.). Now the quadcopters are actually produced. Once this process is completed, the finished products are **confirmed**. This means that the ERP system is informed, e.g. by the production department (by filling out a mask in the SAP system), that x quadcopters have been produced. In the positive case, all quadcopters of the production order have been produced. In our scenario, the confirmation automatically includes the stock movements. In technical jargon, this is called **backflushing**. With the confirmation, the required material is booked out of the warehouse and the produced quadcopters are added to the warehouse so that the sales department can now sell the produced quadcopters.

Task: Put the following terms in a meaningful order related to the SAP system.



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Create parts list
Dispatch
Create workstation
Produce
Create production cost centres
Create routing
Enter tariffs
Enter material master data
Create sales order
Create activity types wage and machine



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