Inventory Management

Inventory Management in the R/3 System supports tthe following tasks:

- ❑ Management of material stocks by quantity and value
- ❑ Planning, data entry, and documentation of all goods movements
- ❑ Physical inventory

All transactions which bring about a change in stock are entered in real time, as well as stock updates resulting from these changes. This means that the physical stock shown is always accurate. You can obtain an overview of current stock levels of a particular material at any time.

Managing Material Stocks by Quantity

Current data on any change in stock is immediately made available to any section of the company's organizational/production chain requiring the information. In this way, stock marked as "available" in the current stock/requirements list is MRP-updated and, if applicable, a planning file entry is created for the material.

When a goods movement is posted, the stock value is also updated. This causes the values to be updated in other applications:

Managing Material Stocks by Value

- ❑ Automatic posting to the G/L accounts in General Accounting
- ❑ Line items are created for the account assignments involved (for example, cost centers, orders, projects, assets)

The system determines the posted amounts from the data in the order, in the material master record, and so on. For this reason, anyone entering data on a goods movement only has to input the actual quantity being moved.

Goods receipts can also be posted without being valuated. In this case, valuation does not take place until receipt of invoice.

When goods movements are carried out, documents are created which form the basis for updating amounts and values. At the same time, they serve as proof of the goods movement (see Figure 6-1).

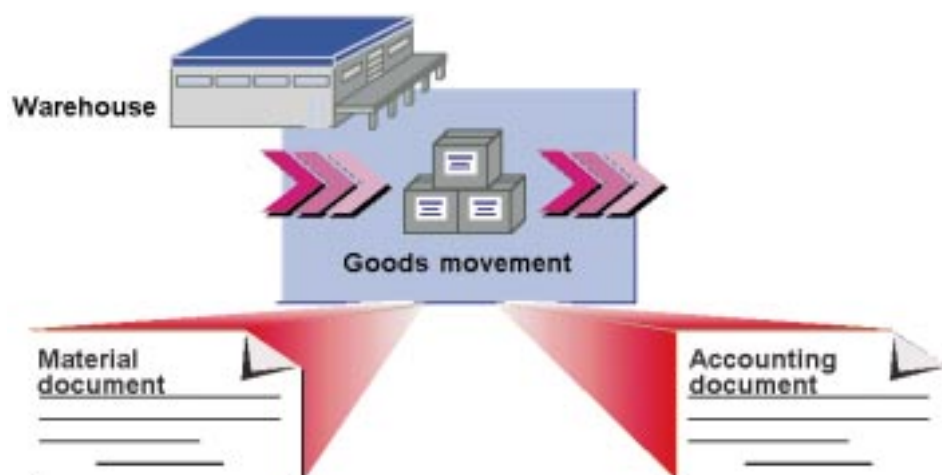*Planning, Data Entry and Documentation of All Goods Movements*

Fig. 6-1: Goods Movement Documents

Planning of goods movements may be done through reservations.

The material document posted for a goods movement can be printed out as a goods receipt/issue slip (with a bar code in some cases). This is used to carry out physical movements within the warehouse.

Inventory Support   The comparison of stocks physically on hand with book inventory balances can be done using different physical inventory procedures (such as periodic inventory, continuous inventory, or sample-based inventory).

Link to Warehouse Management   Inventory Management can be supplemented by the Warehouse management function which manages storage bins in complex warehouse structures.

What are the functions of Inventory Management?

❑ Inventory Management allows you to manage material stocks by quantity and value.

❑ Planning and data entry of goods movements are recorded as documents.

❑ The physical inventory is used to compare physical stock with the book inventory balance.

Goods Receipts for Purchase Orders

When goods are delivered for a purchase order, data entry of the goods receipt is always related to the purchase order. This has the following advantages:

❑ When the goods receipt data is entered, the system proposes default data from the purchase order (for example, materials ordered, quantities). This simplifies data entry and monitoring of the goods received (overdeliveries, under deliveries).

❑ If the vendor gave prior notification of the delivered quantity, the goods receipt can be entered with reference to the shipping notification. This allows the quantity confirmed by the vendor to be used as the default quantity for the goods receipt.

❑ The goods receipt data is updated in both the purchase order history and vendor evaluation. This allows Purchasing to trace the purchase order history and, in the event of non-delivery, institute the necessary reminder procedures. The goods receipt data also enables vendor evaluation to determine the vendor's reliability regarding adherence to delivery dates and the accuracy of quantities delivered.

❑ The vendor invoice is verified using the quantity ordered and delivered.

❑ Valuation of the goods receipt (GR) in the R/3 System is based on the price stated in the purchase order and/or invoice.

Reference to Purchase Order   If there is no purchase order number on the delivery note enclosed with the goods, you can look up the purchase order under either the material or vendor number.

Goods receipts for several purchase orders may be entered in one transaction.

Reference to Shipping Notification   If a shipping notification relating to a PO exists, the GR can reference the shipping notification. If the number of the shipping notification is unknown, you can search for it through the transport identification code (for example, truck number).

Entering the purchase order number or the shipping notification number calls up a collective entry screen displaying all open purchase order items in the plant — or throughout all the plants. After verifying the data, you can either post the goods receipt document at once or call up detailed information on an item and enter additional data (for example, item text, unloading point).In the case of goods receipts for purchase orders, data from the purchase order is proposed for selection. The purchase order history is then updated.

The goods receipt can be entered using different units of measure. The storage location and quality inspection indicator are copied from the purchase order item or set manually. The delivery costs planned for the purchase order are transferred automatically. Underdelivery and overdelivery tolerances are checked.

You can enter several good receipt items for one purchase order item, for example, when posting a partial quantity to quality inspection, to another storage location, or to goods receipt blocked stock.

If the goods go straight to consumption and not to storage, the system copies the account assignment (for example, cost center, order) in the purchase order data. For items with multiple account assignment, the quantities delivered can still be assigned to the specific accounts after data entry of the goods receipt.

The relevant employee in Purchasing is automatically notified of the goods receipt through the SAPmail system.

If the material received represents a "missing part," the responsible MRP controller is also notified of this goods receipt through a mail message and can switch directly from the SAPmail system to backlog processing.

What are the features of goods receipts for purchase orders?

- ❑ Default data from the purchase order makes data entry easy
- ❑ Update of purchase order history
- ❑ Link to vendor evaluation
- ❑ Direct posting to consumption for purchase orders with account assignment

Reservations

Reservations are used to plan goods movements for specific dates. Reservations can either be entered manually, or they are generated automatically during creation of an order, network, or project.

A reservation can be created for one or more types of material. The data entry for a reservation lists the material number (or batch number, if applicable), planned quantity, scheduled delivery date, and use.

A dynamic availability check is run whenever a reservation is entered. The system verifies that the material is not reserved for another purpose.

The reserved quantity reduces the available stock in material requirements planning and is shown under the reserved stock for the material.

> What is the main function of reservations?
>
> Reservations allow goods movements to be planned in advance.

Goods Issues

Planned/Unplanned Withdrawals

Postings of material withdrawals mean a reduction in the quantity and value of warehouse stock. All transactions are treated as planned or unplanned withdrawals. Accordingly, planned and unplanned consumption is updated separately in the consumption statistics.

If the goods issue relates to a reservation, the system proposes the withdrawal quantity and account assignment given in the reservation. To specify the destination, entry of a goods recipient is necessary. This is printed out on the withdrawal slip.

Storage Location/ Batch Selection List

When a goods issue is entered, you can display all the storage locations of a given material. With materials subject to batch management, all batches in the selection list are displayed.

Negative Stocks

If organizational situations exist which require goods issues to be posted before the corresponding goods receipts, you can allow negative stock balances for standard price materials. When the relevant goods receipts are entered, the negative stocks are eliminated.

> What effects do goods issues have?
> - ❑ Reductions in warehouse stock
> - ❑ Consumption statistics updates

Transfer Postings and Stock Transfers

Stock Transfers

Depending on how your company is organized (for example, decentralized storage) or what sales and distribution policy is used, goods movements may involve more than the receipt and issue of goods. Stock transfers within the company may also be necessary.

Stock transfers can take place on three levels:

- ❑ Storage location-to-storage location
- ❑ Plant-to-plant
- ❑ Company code-to-company code

One- Step and Two-Step Procedures

A stock transfer may be posted in one or two steps. In the two-step procedure, a specified quantity of stock is removed from storage and placed in transfer stock. It does not become unrestricted-use stock until it is placed in storage at the receiving point. Two-step stock transfers can also be effected by using stock transport orders.

Transfer Postings

Transfer postings can also be entered in the R/3 System. The difference between transfer postings and stock transfers is that transfer postings do not normally involve a physical goods movement. Instead, a transfer posting alters, for example, the stock type, the batch number, or the material number

The following are examples of transfer postings :

❑ Batch-to-batch transfer posting

❑ Material-to-material transfer posting

❑ Release from stock in quality inspection

❑ Transfer from consignment material to company stock

How do stock transfers differ from transfer postings?

❑ Stock transfers are physical movements within an organizational structure.

❑ Transfer postings cause a change in the batch number. They are not accompanied by physical movements.

Goods Movements for Production Orders

Inventory Management is very closely linked to production. On the one hand, it ensures that material components are made available for production orders. On the other, the receipt of the finished products in the warehouse is posted in Inventory Management (see Figure 6-1).
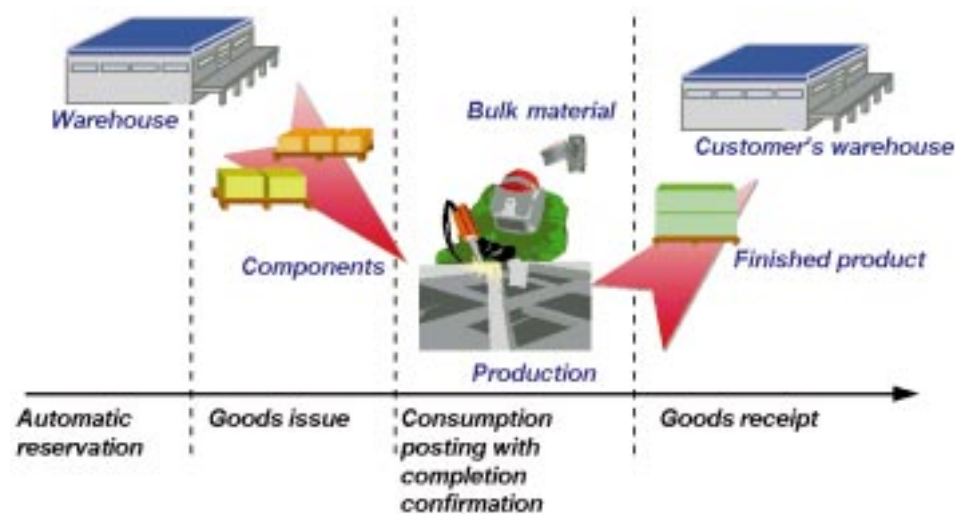

Fig. 6-1: Goods Movements for Production Orders

The components planned for a production order are reserved automatically. In addition, unplanned withdrawals may also be made during production. The components are withdrawn with reference to the production order.

Automatic Reservations

Notification of the quantity of bulk materials used occurs at the same time as completion confirmation of the production order. The receipt of by-products can also be planned.

Bulk Materials

What are the characteristics of goods movements for production orders?

❑ Planned components are reserved automatically.

❑ All movements are posted with reference to the production order.

Quality Inspection

Material from a vendor, production, or warehouse that undergoes quality inspection is first posted to stock in quality inspection. Samples from this stock are then used for the inspection.

If inspection shows that the material can be used, it is transferred from stock in quality inspection to unrestricted-use stock.

Integration with Quality Management If the Quality Management component is being used, the inspection procedures processed by this system can be triggered at goods receipts and issues.

> How is quality inspection integrated into Inventory Management?
> ❑ By the management of stock in quality inspection
> ❑ By inspection procedures that are triggered automatically at goods receipts and issues

Special Stock

Besides the normal stocks of any given material, there may be other stocks that have to be managed separately due to ownership or location. These could be the company's own stocks that are located at vendor or customer sites, or, conversely, stocks belonging to vendors or customers that are stored with your company.

Types of Special Stock MM recognizes the following types of special stock:

❑ Vendor special stock

   ○ Consignment material belonging to the vendor and stored on your premises

   ○ Returnable packaging belonging to the vendor and stored on your premises

   ○ Material provided by you to the vendor (subcontractor)

❑ Customer special stock

   ○ Consignment material (your company's) at the customer's location

   ○ Returnable packaging (your company's) at the customer's location

   ○ Sales order stock

   ○ Project Stock

The system manages these stocks separately for each vendor, customer, sales order, or project. The data entries for goods movements involving special stock always include the vendor, the customer, the sales order, or the work breakdown structure (WBS) element.

You can find additional information on vendor special stock in Special Business Transactions. For additional information on customer special stock, please consult the brochure Functions in Details: SAP Sales and Distribution.

What purpose does the creation of special stock serve?

❑ Identification of stock belonging to or stored with the vendor or customer

❑ Assignment of goods movements to this stock

Physical Inventory

Every company must perform a physical inventory of warehouse stock at least once during a business year for the balance sheet. Various procedures may be used to do this.

MM supports the following physical inventory procedures:

❑ Periodic inventory

❑ Continuous inventory

❑ Cycle counting

❑ Inventory sampling

Physical Inventory Procedures

Unrestricted-use stock, stock in quality inspection, and blocked stock can be inventoried under the MM application. It also handles physical inventories of the company's own stock and special stock.
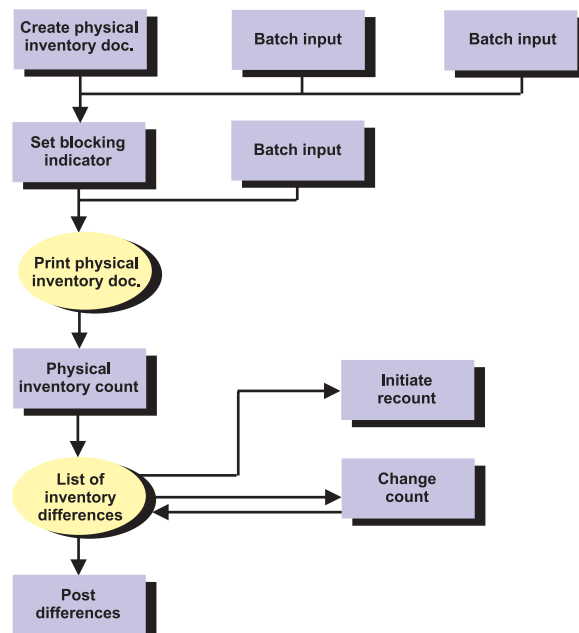
Types of Stock that can be Inventoried

Fig. 6-2: Standard Physical Inventory Sequence

MM offers a wide range of easy-to-use functions for performing physical inventories. These include:

Data Entry Help

❑ Creation of physical inventory documents

❑ Printout of warehouse inventory lists

❑ Block on stock movements of materials being inventoried

❑ Data entry of the count results with reference to the physical inventory documents

❑ Automatic setting of zero count

❑ Transfer of inventory count data recorded with PDC (portable data capture) devices into the R/3 System

❑ Lists of inventory differences

❑ Posting of differences with reference to the physical inventory documents

❑ Creation of recount documents for differences

❑ Recording of every physical inventory of stock over any number of years

Inventory Sampling

The more stock management units a company has in its warehouse, the more complicated a physical inventory of the entire stock becomes. Time and cost can be reduced by determining the stock of select materials, then using the count results to make a projection for all stock management units. The method of inventory sampling is based on this principle. It is a procedure that can be used in both Inventory and Warehouse Management.

Cycle Counting

Cycle counting is a method of physical inventory where inventory is counted at regular intervals within a fiscal year. These intervals (or cycles) depend on the cycle counting indicator set for the materials. Cycle counting allows fast-moving items to be counted more frequently than slow-moving.

The R/3 Inventory Management system offers functions designed for the sole purpose of carrying out physical inventories. The procedures it supports are periodic inventory, continuous inventory, inventory sampling, and cycle counting.

How is the physical inventory process supported?

❑ By all current physical inventory procedures

❑ By functions designed purely for processing physical inventories

❑ By integration with Materials Management (material master, stock quantities)

❑ By a link to Financial Accounting (posting of difference values)