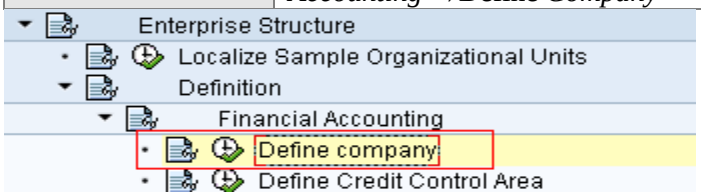
Contents

1. Enterprise Structure

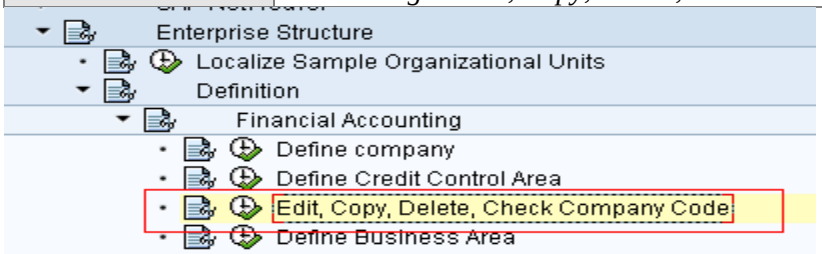
1.1 Creating Company

IMG menu	*Spro*→IMG→*Enterprise Structure* →*Definition* →*Financial Accounting* →Define *Company*



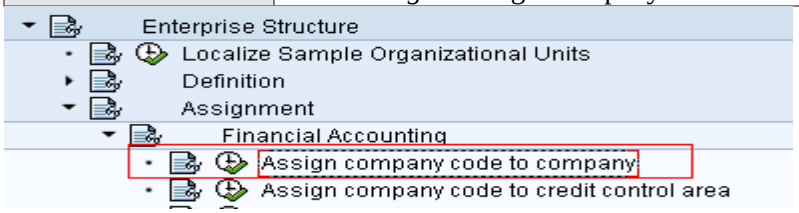
1.2 Creating Company Code

Transaction code	OX02
IMG menu	*Spro*→IMG→*Enterprise Structure* →*Definition* →*Financial Accounting* →*Edit, Copy, Delete, Check Company Code*



1.3 Assigning Company Code to Company

IMG menu	*Spro*→IMG→*Enterprise Structure* →Assignment→*Financial Accounting* →Assign Company code to Company.

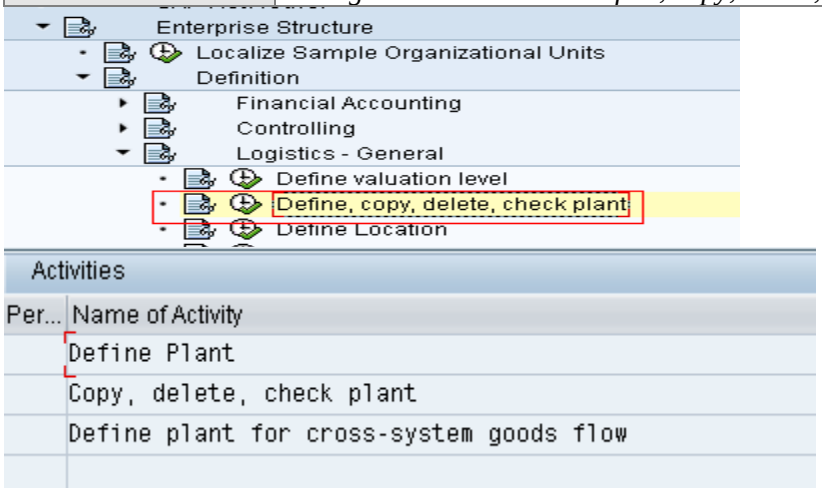


1.4 Defining Plant

A manufacturing facility is called a plant.

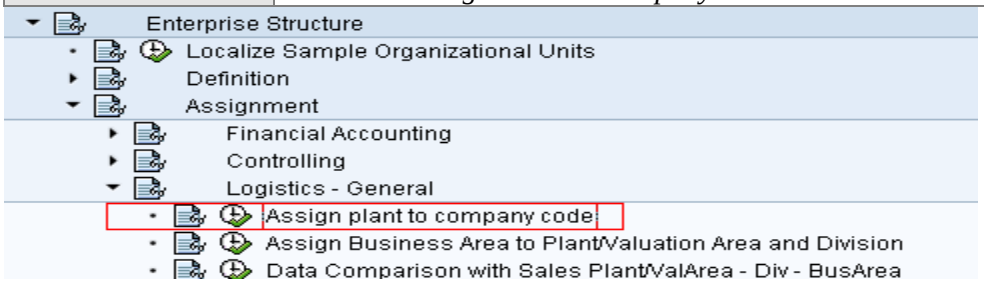
Transaction code	OX10

IMG menu	*Spro→IMG→Enterprise Structure →Definition →Logistics - General →Define, copy, delete, check plant*



1.5 Assigning Plant to Company Code

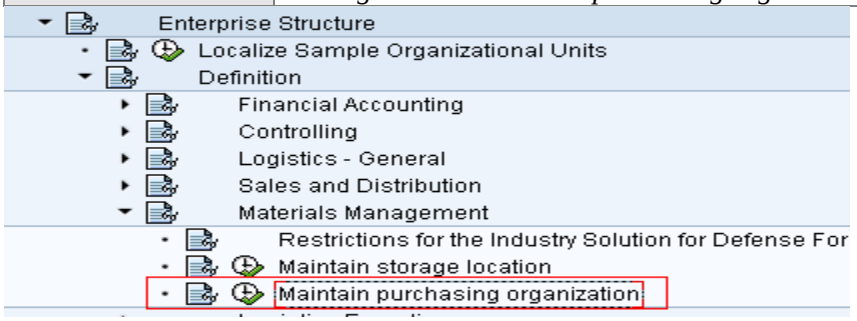
Transaction code	OX18
IMG menu	*Spro→IMG→Enterprise Structure →Assignment →Logistics - General→Assign Plant to Company Code*



1.6 Creating Purchasing Organization

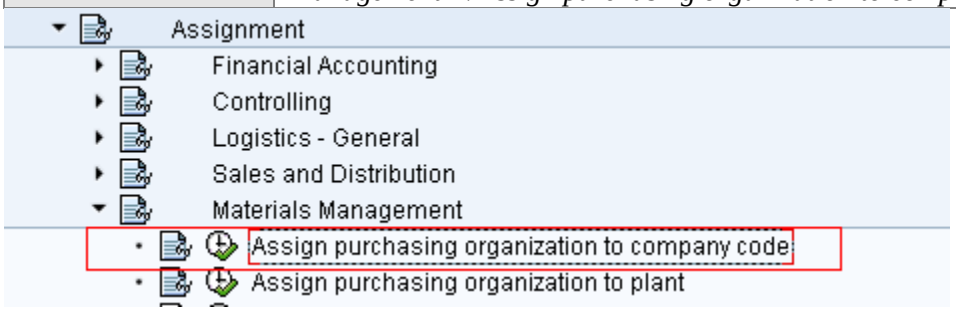
The purchasing department is mapped as a purchasing organization in the SAP Sytem.

Transaction code	OX08
IMG menu	*Spro→IMG→Enterprise Structure →Definition →Materials Management →Maintain purchasing organization*



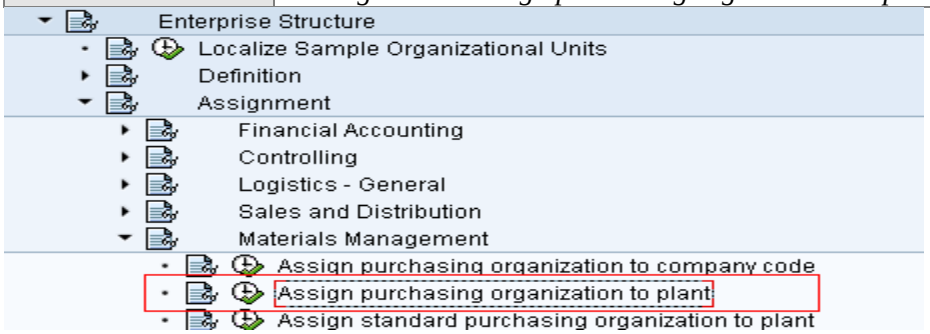
1.7 Assigning Purchasing Organization to Company Code

Transaction code	OX01
IMG menu	*Spro→*IMG*→Enterprise Structure →Assignment →Materials Management →Assign purchasing organization to company code*



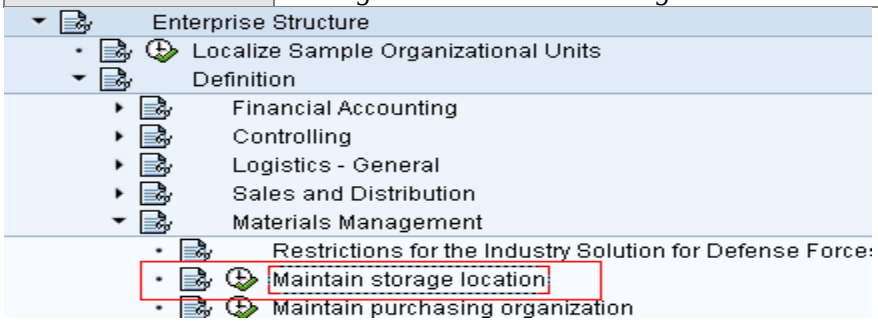
1.8 Assigning Purchasing Organization to Plant

Transaction code	0X17
IMG menu	*Spro→*IMG*→Enterprise Structure →Assignment →Materials Management→Assign purchasing organization to plant*



1.9 Creating Storage Location

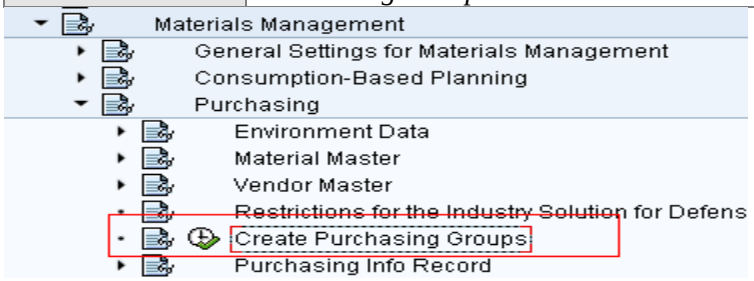
Transaction code	OX09
IMG menu	*Spro→*IMG*→Enterprise Structure →Definition →Materials Management →Maintain Storage Location*



1.10 Creating Purchasing Group

It is a buyer or group of buyers responsible for certain purchasing activities.Internally responsible for the procurement.
Also Purchasing Group is floating entity and it will not assigned to any level.

Transaction code	OME4
IMG menu	*Spro→*IMG*→Materials Management →Purchasing →Create Purchasing Groups*



1.11 Reference Purchasing Organization:

Reference Purchasing Organization is assigned to plant purchasing organization. The reference purchasing organization can negotiate with vendor and create global outline agreements (Contracts and scheduling agreements). Then plant purchase organization can create purchase orders to vendor with referring global outline agreements.

1.12 Standard Purchasing Organization:

Standard Purchasing Organization is assigned to plant. Which is used to create automatic purchase orders (In automatic purchase order system needs to find the purchasing organization. The system gets the plant code from the purchase requisition and from the plant code system determines the standard purchasing organization)

2. Master Data

2.1 Material Master

MM01 – Create Material Master
MM02 – Change Material Master
MM03 – Display Material Master
MM04 – Display changes
MM60 – Material list
MM50 – For extending Material views
MMAM – Change the Material type
MM06 – Flagging Material for deletion

2.1.1 The following list shows some types of information a material master record contains and provides examples of each.

- Accounting
  Valuation and costing/price calculation information. Examples: Standard price, past and future price, and current valuation.
- Materials planning and control

Information for material requirements planning (MRP) and consumption-based planning/inventory control. Examples: Safety stock level, planned delivery time, and reorder level for a material.

- Purchasing
  Data provided by Purchasing for a material. Examples: Purchasing group (group of buyers) responsible for a material, over- and under delivery tolerances, and the order unit.
- Engineering
  Engineering and design data on a material. Examples: CAD drawings, basic dimensions, and design specifications.
- Storage
  Information relating to the storage/warehousing of a material. Examples: unit of issue, storage conditions, and packaging dimensions.
- Forecasting
  Information for predicting material requirements. Examples: How the material is procured, forecasting period, and past consumption/usage.
- Sales and distribution
  Information for sales orders and pricing. Examples: Sales price, minimum order quantity, and the name of the sales department responsible for a certain material.

2.1.2 Levels of Data stored in Material Master:

A. Client - general data

This level contains the data applicable to all individual group companies, all plants, and all warehouses/stores belonging to an enterprise (corporate group). All general data stored at client Level.

B. Plant level Data

This level contains the data for each branch or plant location within a certain company. The data important to Purchasing is stored at this level.

C. Storage location Level

This level contains the data specific to a storage location.

2.1.3 Controlling Functions of Material Type:

It is group of Material having same basic attributes

A. Number Assignment (Internal or External)
B. Number range
C. Procurement type (Internal or External)
D. Allowed Views, Field selection and screen sequence.
E. Price control (Standard or moving average price)
F. Account determination (Determine valuation class)
G. Quantity and value updates in plants.
H. Field Reference keys
I. X-Plant Material status

2.1.4 SAP Standard Material types:

- FERT - Finished products
  Finished products are produced in-house. Since they cannot be ordered by Purchasing, a material master record of this material type does not contain purchasing data.
- NLAG – Non-stock materials
  Non-stock materials are not held in stock because they are consumed immediately.
  In this type we cannot manage these goods are neither on a quantity basis nor on a value basis.
- UNBW – Non-valuated materials

Non-valuated materials are managed on a quantity basis, but not by value.

- VERP - Packaging materials
  Packaging materials are used to transport goods and come with the goods free of charge. A material master record of this material type is managed on both a quantity basis and value basis.
- PIPE - Pipeline materials
  Materials such as oil, power, or water that flow into the production process directly from a pipeline,
- ROH - Raw materials
  Raw materials are always procured externally and then processed. A material master record of this type contains purchasing data, but not sales data since they cannot be sold.
- HALB – Semi-finished products
  Semi-finished products can be procured externally and manufactured in-house. They are then processed by the company. A material master record of this material type can contain both purchasing and work scheduling data.
- DIEN - Services
  Services can be performed internally or procured externally (outsourced). They cannot be stored or transported.
- ERSA - Spare parts
  Spare parts are used to replace defective parts. They may be kept in stock. A material master record of this material type can contain purchasing data, but not sales data.
- HAWA - Trading goods
  Trading goods are always procured externally and then sold. A material master record of this material type can contain purchasing data and sales data.

2.1.5 Procurement of UNBW – Non-Valuated Materials

- While doing PO for this type of materials account assignment category is mandatory example "K".
- These types of materials won't have accounting view.
- Non-valuated materials are managed on a quantity basis, but not by value.
- When you enter an invoice, you can change the account assignment as long as the goods receipt was Non-valuated (Because There is no accounting entries at the time of GR).

2.1.6 Procurement of NLAG – Non-Stock Materials

- While doing PO for this type of materials account assignment category is mandatory example "K".
- We cannot manage these goods are neither on a quantity basis nor on a value basis.
- These materials are Not managed on a quantity basis nor value basis.
- When you enter an invoice, you can change the account assignment as long as the goods receipt was Non-valuated (Because There is no accounting entries at the time of GR).

2.1.7 Changing the Materials Type of a material master – MMAM

Material Type can be changed using transaction MMAM

- Prerequisites:
  - Configuration of both material types must be similar (OMS2 - Material Type configuration)
  - There should be no open PO's against this material
  - There should be no valuated stock against this material (MMBE - Zero Stock)
  - There should be no open line items against vendors for this material (see transaction FBL1N - Vendor Line Item display).

2.1.8 Material Master Table:

MARA – Material Master General data
MARC – Material Master Plant data
MARD – Storage location data
MVKE– Material Master sales data
MAKT – Material description data
MBEW – Material Valuation data
MARM – Unit of Measure

2.1.9 Standard And Moving Average price:

2.1.9.1 Standard Price (S):

This is the price in which the material is valuated without taking goods movement and invoice into account.

Material – CLS9017-100EA
Standard Price (V) of Material – 117 CNY
PO Price – 120 CNY & Fright – 3 CNY
Accounting Document

- Stock/Inventory account (BSX) = 117 CNY
- GR/IR OR Vendor account (WRX) = -120 CNY
- Fright (FRL) = -3 CNY (This amount is not paying to vendor)
- Price difference (PRD) = ((PRD+BSX)-(WRX+FRL)) = 6 CNY

NOTE: PRD (Price difference account) come into picture only for Standard price material

2.1.9.2 Moving Average Price (V):

This is the price in which the material is valuated taking goods movement and invoice into account.

$$\text{Moving Average Price} = \frac{\text{Total Value}}{\text{Total Quantity}}$$

Total Value = Balance on hand value + Goods receipt value.
Total Quantity = Balance on hand Quantity + Goods receipt Quantity.

Material – CLS9018-100EA
Moving Average Price (M) of Material – 117 CNY
PO Price – 120 CNY & Fright – 3 CNY
Accounting Document

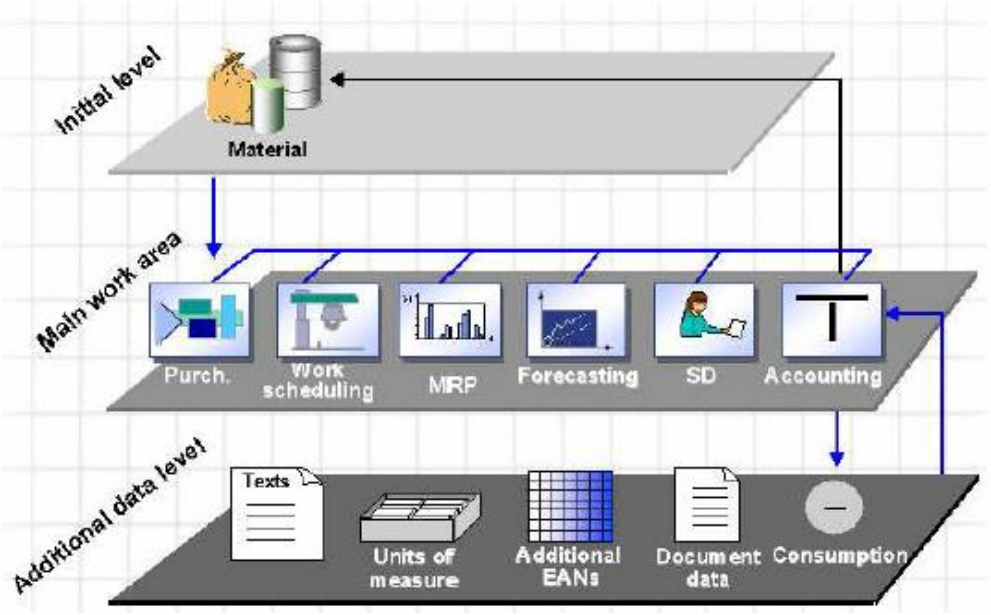
- Stock/Inventory account (BSX) = 126 CNY
- GR/IR OR Vendor account (WRX) = -120 CNY
- Fright (FRL) = -3 CNY (This amount is not paying to vendor)

NOTE: PRD (Price difference account) will not be triggered in Moving average Price

2.1.10 Blocking Of Material:

A. Blocking material at client level –Basic Data view – X Plant Matl status should be 01
B. Blocking Material at plant level – Purchasing view – Plant Sp Matl status should be 01

2.1.11 Data Screens in Material Master Maintenance



2.2 Vendor Master Data

2.2.1 Levels of Data stored in Vendor Master:

A. General Data
Data that applies equally to each company code within your enterprise (address, telephone number, language in which you communicate with your vendor, etc.).

B. Company code Data (Accounting Data) – FK01
Data kept at company code level (payment transaction data or number of control account, for example).

C. Purchasing Data – MK01
Data that is of importance with regard to your enterprise's purchasing activities and which is kept at purchasing organization level (such as contact person or terms of delivery).
It we want to maintain accounting data and purchasing data together then we are using XK01.

2.2.2 Vendor Account Group:

It is used to categorize vendors, and vendors similar in nature are grouped together (such as one-time vendors, domestic vendors, overseas vendors, employee vendors, and so on).

- **Vendor Account Group controls:**
  - Field selection in the vendor master (Required & suppress field).
  - Number Assignment (Internal or External)
  - Number range interval
  - Vendor status (It determines whether the vendor is a one-time vendor) that means particular use of vendor master record in our business.
  - Partner Schema (Determine which partner schemas are valid).

2.2.3 One-Time-Vendor Master:

- In one time vendor we are not maintain master data. Because the details of the vendor is entered only at the time of entering invoice..
- You can create special vendor master records for vendors from whom you procure goods only once or rarely, so-called One-Time Vendor Master Records.
- When creating a "one-time vendor" master record, you must assign a one-time account group. This account group determines that the vendor-specific fields are suppressed. You don't need to enter this data until the time a purchasing document (e.g. a PO) is created.
- When you create a purchasing document with a one-time vendor, you will be asked to enter the vendor address. Enter the vendor's name and address. Like all other master records, you can display, block, or delete one-time vendor master records.

2.2.4 Vendor Sub-Range:

Vendor Sub-Ranges (VSRs) subdivide a vendor's total product range according to a variety of criteria. You can specify which materials or articles belong to which VSR in the info records of the relevant vendor

2.2.5 Vendor Partner Roles:

The Business Partner "vendor" can assume different roles in its dealings with another enterprise. Accordingly, in a procurement transaction, the vendor is first the **ordering address**, then the **supplier of goods**, then the **invoicing party**, and finally the **payee**. For this reason, several partner roles (partner functions) can be assigned to the vendor.

- **ordering address (OA) –** If you define another partner for the partner role BA, a standard PO or release order will not be sent to the address of the vendor (role LF) but to the ordering address of the partner.
- **Supplier of Goods/Goods Supplier (GS) –** If you define another partner for the partner role WL, the address of the goods supplier will be determined for return deliveries in Inventory Management.
- **Invoicing Party (PI) -** If you define another partner for the partner role RS, the invoicing party's account will be charged instead of the vendor's.
- **Payee -** A person or organization that receives a payment

2.2.6 Reconciliation Accounts:

When you create a vendor master created. You need a unique number for the creditor. This is assigned either automatically or manually by the administrator, depends on account group. The Reconciliation Account is G/L account in G/L accounting.

2.2.7 Vendor Master Table:

LFA1 – Vendor Master General data
LFB1 – Vendor Master Company code data
LFM1 –Vendor Master purchasing organization data

2.3 Purchasing Info Record

In purchasing info records. You maintain information about the relationships between vendors and their material.

2.3.1 Purchasing info records types:

A. Standard info record
B. Subcontracting info record
C. Consignment info record
D. Pipeline info record

2.3.2 Purchasing info records tcodes:

ME11 - Create Purchasing info record
ME12 - Change purchasing info record
ME13 - Display purchasing info record
ME17 - Archive info records
MEK1 - Create Conditions

2.3.3 Ways of Creating Purchase Info Record

A. Manual Entry
B. Update from PO
C. Update from quotation

2.3.4 Purchasing info records Tables:

EINA - Purchase Info Record: General
EINE - Purchasing info record: purchasing organization data
KONP - Condition Item
KONH - Condition Header

2.3.5 Levels of Data stored in Purchasing info records:

A. General Data

Data that applies equally to each company code within your enterprise (Material No, Vendor address, telephone number, language in which you communicate with your vendor, etc.).

B. Purchasing organization Data

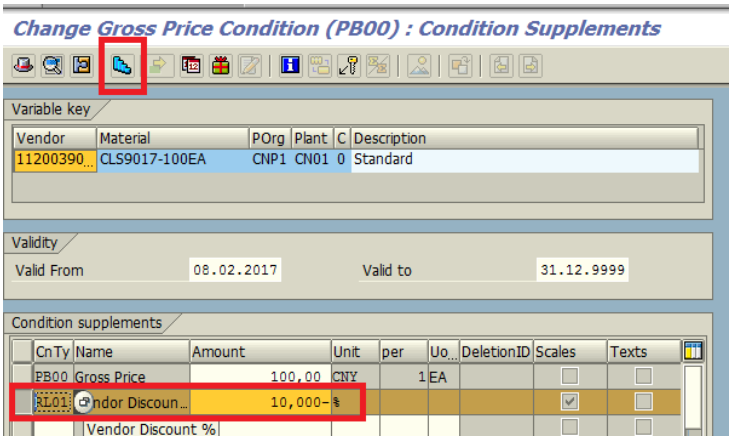
Delivery time, Minimum quantity, gross price, price, discounts, price history, Text, Etc…

C. Purchasing Organization/Plant Data

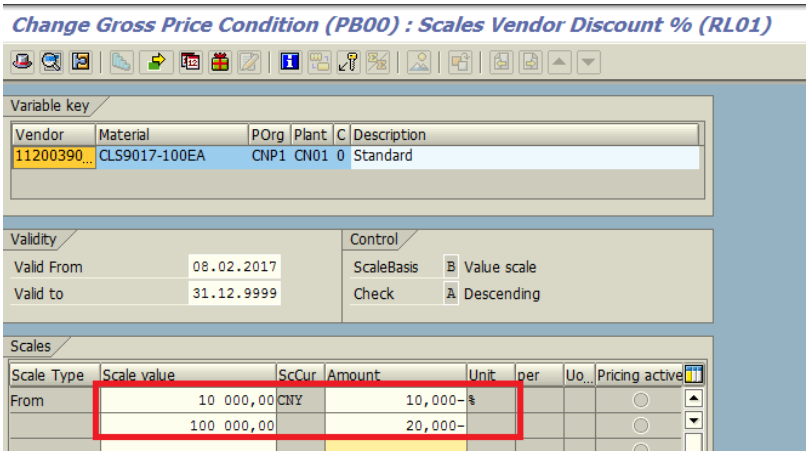
Delivery time, Minimum quantity, gross price, price, discounts, price history, Text, Etc…

2.3.6 Scales in Info-Record

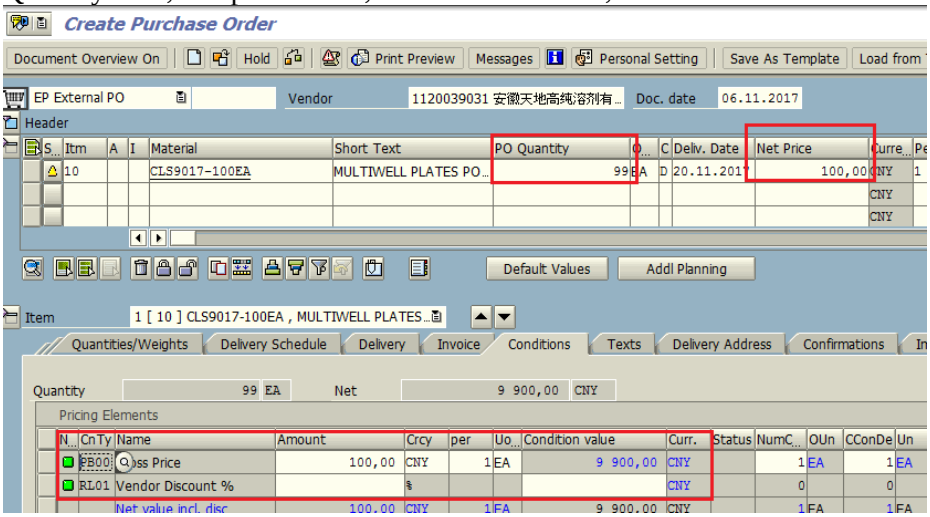
- Suppose Vendor has agreed to provide a material in the following prices:
  1 EA – 100 CNY
  If the Gross price of the PO is more than 10000 CNY then he is agreed to give 10% discount
  If the Gross price of the PO is more than 100000 CNY then he is agreed to give 20% discount
- Based on this the system will fetch the prices into the PO automatically referring the gross price of the PO. If the PO gross price is 20000 CNY then relevant price in the PO taken automatically discount as 10%.
- Now these scales can be maintained for the Vendor and Material combination in the following transactions: MEK1 - Pricing Condition Records "OR" ME11 - Purchasing Info Record (conditions tab)
- Example: We will maintain the Scales in Inforecord ME11
  Condition Tab of Inforecord
  Gross price – PBOO – 100 CNY
  Vendor Discount "RL01" – 10 % then click on scales (Call condition type RL01 in Inforecord)



Now enter scales value
If gross price is 10000 CNY then 10% discount
If gross price is 100000 CNY then 20% discount
SAVE

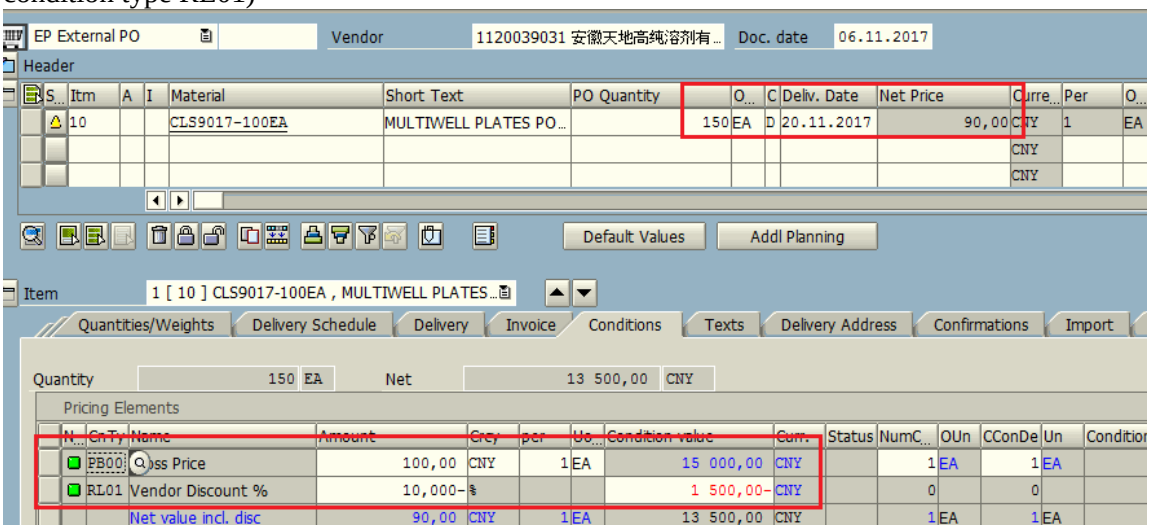


Now Create PO to check the scales
Quantity = 99, Net price = 100, Gross Price = 9900, Vendor discount = NIL

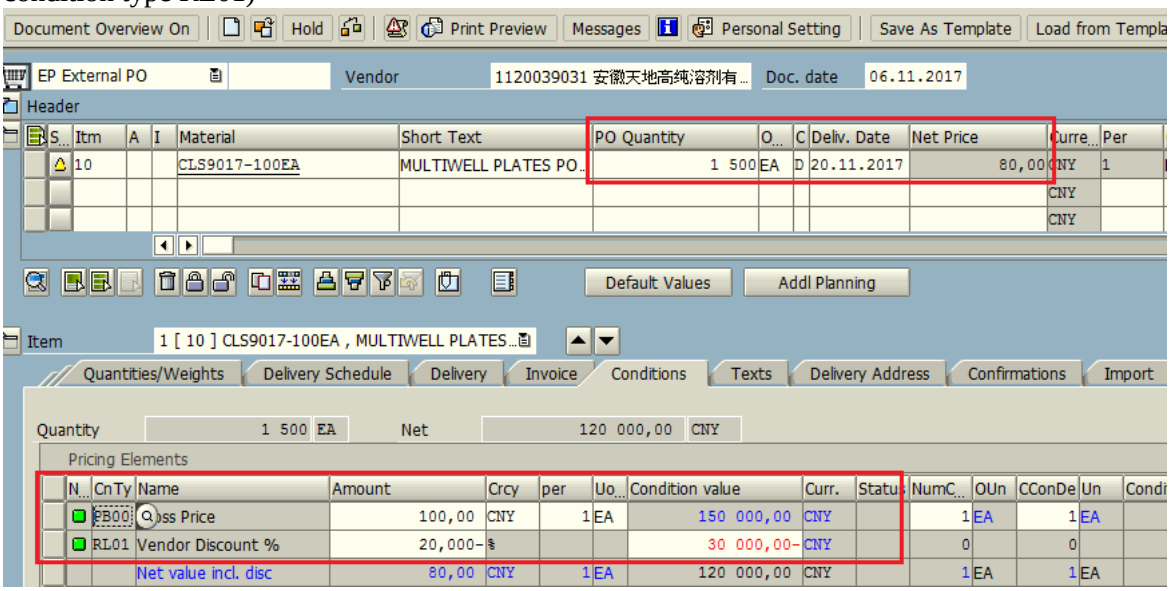


Quantity = 150, Net price = 90, Gross Price = 15000, Vendor discount = 10% (1500 CNY)

(Vendor discount 10% came automatically in PO because scales maintained in Inforecord for condition type RL01)



Quantity = 1500, Net price = 80, Gross Price = 150000, Vendor discount = 20% (30000 CNY)
(Vendor discount 20% came automatically in PO because scales maintained in Inforecord for condition type RL01)



Note:

- Purchasing info records can be created with Material Master data
- Purchasing info records also can be created without Material Master by using Material group.
- Purchasing info records can be created/updated automatically by setting the info update indicator while maintaining a quotation, PO, or Outline agreement.
- Scales can be maintained in ME11 (Condition Tab) by calling appropriate condition type, And if we maintain scales in Inforecord then it is not necessary to maintain condition record in Tcode MEK1
    - MEKI Scales – Discount is Applicable to all materials for that vendor in purchase organization level.
    - ME11 Scales – Discount is Applicable to particular material and vendor combination in that plant level.

2.4 Source List - ME01

- Source List creation: ME01
- Display source list - ME03
- Display changes to source list - ME04
- Activate Source List at plant level: OME5
- Source list can be created automatically from a purchasing info record and an outline agreement.

2.4.1 Source List is used for the following:

- Maintaining a fixed source of supply by selecting fixed indicator.
- Limiting the selection of sources of supply during the source determination process.
- Blocking a source of supply.
- Validity period of source of supply.
- MRP Run –if you want a particular source of supply to be considered during the planning run.

2.4.2 Configuration:

- If you want to make a Source list mandatory for a material. You can set the source list required indicator in the material master record (Purchasing view) of that material.
- If you wish to make the source list mandatory for all materials in a plant then configure in OME5.

2.4.3 Sequence of Source of supply in Purchase order

A. Quota Arrangement
B. Source list
C. Outline agreement
D. info record

2.4.4 In Source list below can be the source of supply

A. Vendor
B. Contracts
C. Quota Arrangement
D. Scheduling Agreement

2.5 Quota Arrangement – MEQ1

Distributing POs among the sources of supply in a systematic manner is called Quota arrangement.

2.5.1 Configuration:

If you want to use quota arrangement for a material, it has to be set in the purchasing view of a material master record

2.5.2 Calculating the Quota Rating:

$$\text{Quota Rating} = \frac{\text{Quota allocated quantity} + \text{Quota base quantity}}{\text{Quota}}$$

- Quota Rating– This is the rating used by the system to determine the source
- Quota Allocated Quantity– This is the total allocated quantity from all purchasing documents for vendor.
- Quota base quantity – The quota base quantity is treated as an additional quota-allocated quantity. (This is used when new source of supply is introduced).
- Quota – This is the number that specifies which portion of a requirement should be procured from a given source of supply.

2.5.3 Priorities in Source Determination:

A. Quota Arrangement
B. Source List
C. Outline Agreement
D. Info Record

2.5.4 Important consideration in Quota Arrangement:

1. The source (vendor) having less quota rating is selected as effective source
2. In the case of quota rating of zero (that is the quota allocated quantity + quota base quantity have the value 0) or if more than one source has a quota rating of zero, the one with the highest quota is the effective source.
3. The quota base quantity should be used if a new source is included in a existing quota arrangement.
4. Quota arranged vendors should have info record to respective material.

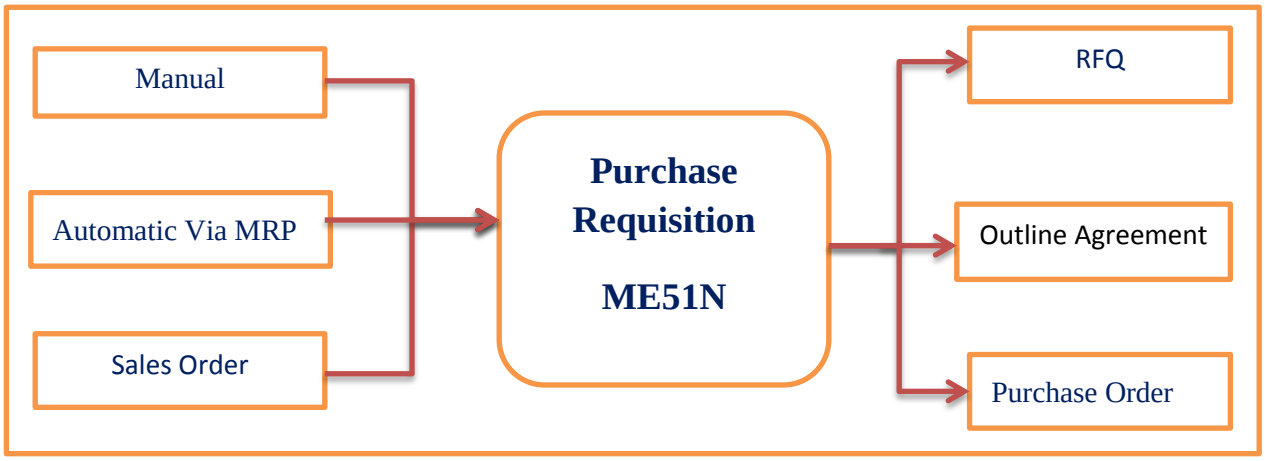
2.5.5 Quota Base quantity calculation procedure

- Individual Calculation
- Collective Calculation

3. Transactional Data

3.1 Purchase Requisition – ME51N

ME51N - Create purchase requisition
ME52N - Change purchase requisition
ME53N - Display purchase requisition
ME54N - Release purchase requisition



- Purchase Requisition are internal document
- Price flows to PR from Material Master
- MRP is created when material is in Bill of Material
- Manual request is made when material is not in the Bill of material.

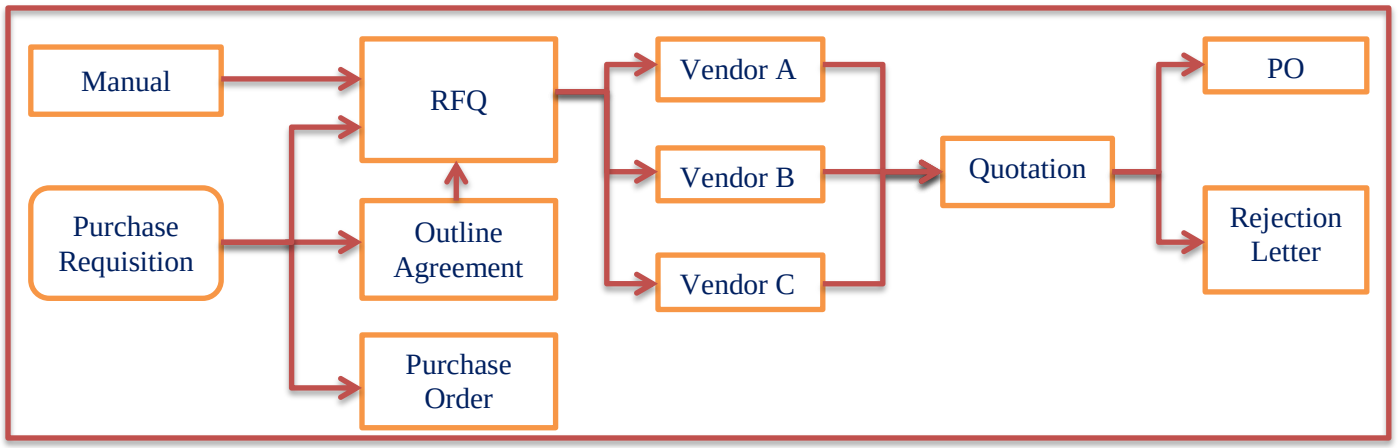
3.1.1 Purchase Requisition Table:

EBAN - General data
EBKN - Any account assignment data related to requisition

3.2 RFQ & Quotation

3.2.1 TCodes of RFQ and Quotation:

ME41 – Create Quotation (Create RFQ)
ME42 – Change Quotation (Change RFQ)
ME43 – Display Quotation (Display RFQ)
ME47 – Quotation
ME49 – Price Comparison



3.2.2 Documents types of RFQ:

- AN – For standard items
- AB – For service items

3.3 Outline Agreement – Contract

3.3.1 TCodes of Outline agreement-Contract

- ME31K Create Contract
- ME32K Change Contract
- ME33K Display Contract
- ME35K Release Contract
- ME31L Create Scheduling Agreement
- ME32L Change Scheduling Agreement
- ME33L Display Scheduling Agreement

3.3.2 Types of Outline Agreement

- Contract
- Scheduling Agreement

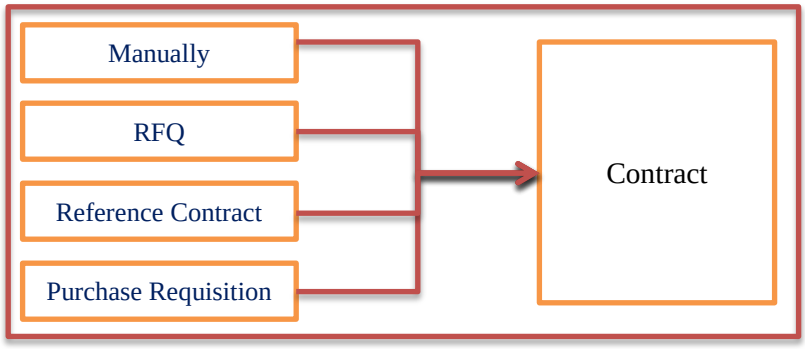
3.3.3 Types of Contract

- Quality Contract – MK
- Value Contract – WK
- Distributed or centrally agreed Contract- DC

3.3.4 Types of Scheduling Agreement

- LP – Standard scheduling Agreement
- LPA – Scheduling agreement with release
- LT – Stock transport scheduling agreement

3.3.5 Different Ways to create Contract



3.3.6 Item Category:

- Standard – (Blank)
- Consignment – K
- Subcontracting – L
- Material Unknown – M
- Material Group – W

3.3.6.1 Item Category M (Material Unknown):

- This is used where the material number is unknown at time of contract creation.
- This item category would be used, for example, when the contract is for similar materials that have the same price but different material numbers.
- The exact kind of material number is maintained in contract release order (PO).
- Material short text and Material group maintained in contract.

3.3.6.2 Item Category W (Material Group):

- This is used for to specify a target value for all materials in a group.
- It can be used for value contracts only.
- The exact kind of material number and price are maintained in contract release order (PO).
- Material short text and Material group maintained in contract.

3.3.7 Contracts v/s Scheduling agreement:

3.3.7.1 Contracts:

- Longer- term contract with subsequent issue of release orders
- Different POs can be released for same contract
- Mainly used for frequent non-predictable requirements e.g. Purchasing office supplies

3.3.7.2 Scheduling Agreement:

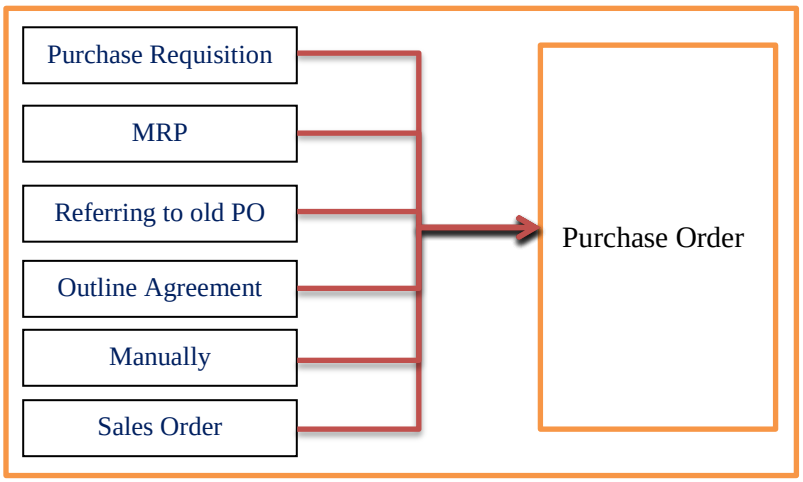
- Longer-term scheduling agreements and delivery schedules
- Mainly used for repetitive/predictable requirements e.g. purchasing spare parts of a large fleet
- Can be tightly integrated with MRP

3.4 Purchase Order – ME21N

3.4.1 Purchase Order Tcodes:

- ME21N - Create purchase order
- ME22N - Change purchase order
- ME23N - Display purchase order
- ME9F – Purchase order message output
- ME29N – Release Purchase order
- ME2L – Purchase order list by vendor
- MEMASSPO – Mass update of Purchase order
- ME59 – PO directly from PR

3.4.2 Different Ways to create PO



3.4.3 Different Purchase Order Document types:

In Document type the allowed item category can be configured

- NB – Standard PO
- UB – STO PO
- FO – Frame work

3.4.4 Document Type controls:

- Allowed Item Category
- Number Assignment (Internal or External)
- Number Range
- Field selection Key (Hidden, Optional, Display & Mandatory)
- Allowed Follow-on Documents

3.4.5 Price Flows in PO:

A. It takes price from info record (OR)
B. It takes price from last PO (OR)
C. Manual price entry is required in PO

3.4.6 Types of Procurement:

A. Direct Material Procurement
B. Indirect Material Procurement (A/c Category ref used for indirect Material)

3.4.7 Item Category:

- Item category to determine what can be procured and how procurement can be carried out. It determines the type of procurement process and is defined in the procurement documents.
- Item Category cannot be defined in configuration

Standard	–	(Blank)
Consignment	–	K
Subcontracting	–	L
Third Party	–	S
Text	–	T
Stock Transfer	–	U
Service	–	D

- Limit – B

The item category controls the

- Material Number
- Material subjected to inventory management
- Account Assignment,
- Good Receipt
- Invoice Receipt

3.4.8 Account Assignment Category:

The account assignment category is used to determine the following:

A. The type of account assignment,
B. The accounts that will be charged when you post the invoice or goods receipt,
C. The account assignment data that you should provide.
D. Account assignment category can be configured as we like
   - Asset – A
   - Cost Center – K
   - Project – P
   - Order – F
   - Sales Order – C

3.4.9 Importance of GR-Bsd IV Flag in PO

In transaction ME21N, invoice tab, it will enforce the system to follow a below process:
Purchase order → Goods Receipt (GR) → Invoice receipt (IV)
ME21N MIGO MIRO

Note:

- Means there is no invoice before Goods Receipt.
- Invoice relates not to the purchase order, but to individual deliveries. That is to say, the reference document for the invoice is not the PO but the delivery note or the goods receipt document.

3.4.10 Delivery completed indicator:

- It has been specified that the "Delivery Completed" indicator is to be set automatically for the plant in question in customizing for inventory management.
- The "delivery completed" indicator specifies whether a purchase order item is considered as closed. This means that no more goods receipts are expected for this item. If the "delivery
- Completed" indicator is set, the open purchase order quantity becomes zero, even if the full Quantity has not been delivered. It is still possible to post goods receipts of remaining quantities.

3.4.11 PO Without material Master Record:

- Instead of Material code enter short text
- Enter Material Group
- Account assignment category

3.4.12 GR-Non Valuated Indicator

If this indicator is ticked in the Purchase Order, then no financial posting is made at the time of posting a Goods Receipt. The only posting would occur on Invoice Receipt.

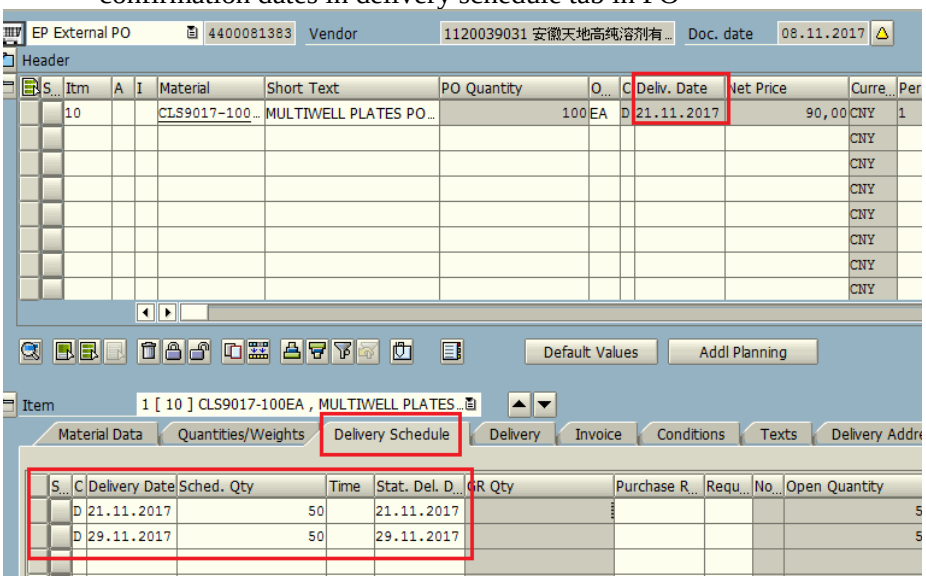
3.4.13 Confirmation control Key in PO

The confirmation functionality is used to get better visibility & control over the goods receipts. Due to this requirement, when you work with confirmations, the system will not propose any

quantity for MIGO unless any confirmations are entered in the PO. Also, MIGO will propose only such quantity for which the confirmation is entered.

3.4.14 Delivery Schedule in PO

The vendor acknowledgement duly arrives. However the date in acknowledgement differs from that in the PO. And if vendor agrees to deliver the goods in two dates then we can enter these confirmation dates in delivery schedule tab in PO



3.4.15 Blanket/Frame Work PO

The FO document type provided by sap is used to create blanket POs. This document type enables you to enter a validity period at the PO header level. And use item category B (Limit item) for POs.

- No Goods Receipt in Frame work PO
- Material master record aren't required to create Frame work PO
- Blanket PO are valid for the long term (There you don't need to create them every time).

A. Create PR – ME51N
   - Document Type – FO (Frame work PO)
   - Item Category – B (Limit)
   - A/c category ref – K (Cost center)

B. Create PO – ME21N (Referring to above PR)

C. Post the invoice – MIRO

3.4.16 Invoicing Plan in PO

The invoicing plan is a facility that allows you to schedule desired invoicing dates for planned procurements independently of the receipt of the relevant goods or services. It lists the dates on which you wish to create and then pay the invoices in question.

You do not wait each time for the vendor to submit an invoice for goods supplied or services performed, but can have invoices created automatically by the system on the basis of the data available in the purchase order and then release them for payment to the vendor.

3.4.16.1 Two types of invoicing plan:

A. Periodic Invoicing Plan

The periodic invoicing plan can be used for regularly recurring procurement transactions (e.g. rental, leasing, or subscriptions).

B. Partial Invoicing Plan

The partial invoicing plan can be used for the invoicing of high-cost material or projects involving the procurement of external services that are to be subject to stage payments (such as plant construction projects, or the invoicing of individual stages of a building project following completion in each case).

3.4.16.2 Pre Requisites:

- ERS must be selected in the vendor master record.
- Tax code and Terms of payment must in PO
- IR indicator and ERS Indicator must be set in PO.
- Account assignment is must.
- SAP recommends the Frame work order type (FO document type) in PO.

3.4.16.3 Procedure:

A. Create a purchase order with the order type FO – Tcode **ME21N**
   - Document Type – FO
   - Enter Validity start date and Validity end date (Header – Additional data) in PO
   - Enter Account assignment Category
   - Don't set GR-based invoice verification in PO. IR must be set, and you must set Evaluated receipt settlement
   - Enter Invoicing plan (Item Details – Invoice Tab – Invoicing Plan) by selecting one invoicing plan type (Periodic Invoicing Plan or Partial Invoicing Plan).

B. The automatic settlement happens using transaction **MRIS**

3.4.17 PO Tables:

- EKKO – Purchasing Document Header
- EKPO – Purchasing Document Item
- EKBE – History per Purchasing Document
- EKET – Delivery Schedules
- EKKN – Account assignment in Purchase document
- EKBZ – History per Purchasing Document Delivery cost
- EKPV – Shipping specific data of Purchase order

3.4.18 Accounting Entries in Simple PO:

A. Goods Receipt:

Stock A/C debited	=	BSX (+)
GR IR Clearing A/C credited	=	WRX (-)

B. Invoice Receipt:

Vendor A/C credited		
GR IR Clearing A/C debited	=	WRX (+)

3.4.19 Version Management:

- We can control and manage purchasing document changes via SAP's version management functionality, Which can be activated for both internal (PR) and external purchasing documents (PO).
- If version management is active then system creates first version as "0" and second version as "1" and so on.

- Version management is activated for the combination of document category and document type.
- We can see version in PO Header in PO
- Customization -> Img – Material Management – Purchasing – Version Management

3.4.20 Parameters EFB & EVO

EFB = Conditions in an outline purchase agreement are displayed to a user.
EFB = A user may create a PO without reference to a preceding document
EVO = Planned delivery time is checked against the delivery date during the source determination process.
EVO = Influence the default values for the info update indicator in purchase order & quotations
EVO = Price from the last purchase order appears as the default value when a new PO is created.

3.5 Creation of Purchase Order Automatically

3.5.1 Creation of Purchase Order Automatically

A. Create Purchase Order Automatically in Purchasing
B. Create Purchase Order Automatically in Inventory Management

3.5.1.1 Create Purchase Order Automatically in Purchasing

A. Prerequisites:-

- Activate Auto PO in Material Master (Material Master – Purchasing View)
- Activate Auto PO in vendor Master (Vendor Master – Purchasing View)
- Create info Record for Material and Vendor combination with price
- Maintain Source List with fixed vendor and MRP field.

B. Process:-

- Run MRP with Tcode MD02 and Generate PR or Create PR Manually with Tcode ME51N
- Then Generate Automatic Purchase order with above generated PR through Tcode ME59N

3.5.1.2 Create Purchase Order Automatically in Inventory Management

A. Prerequisites:-

- Define Standard Purchase Organization
- Assign plant to Standard Purchase Organization
- Maintain purchasing information record with price
- Maintain the Auto PO indicator for movement types 101 & 161
- Maintain Purchase Group and Material group for material in Material Master

B. Process:-

Receive Goods directly without purchase order through Tcode – MB01

3.6 Release Strategy

3.6.1 Different Types of Release Procedure

A. Release procedure without classification.

In the procedure without classification, we can set the release based on the following four criteria.

- Plant
- Value
- Material Group
- Account assignment category.

B. Release procedure with classification.

Release procedure without classification.	Release procedure with classification.
1. Without classification allows us to release the document at item level as well as header level. 2. Only PR Can be released (Both in item and header level) 3. Requisitions without classification can have Account Assignment category, Material Group, Plant and Total Value only as characteristics,	1. With classification allows us to release the document only at header level 2. All documents – PR, PO, RFQ & Outline agreement only at header level. 3. Where as in with classification you can define your own characteristics with CEBAN, CEKKO Etc…

3.6.2 Configuration of release strategy needs these following components:

1. Characteristics
2. Class
3. Release group
4. Release Code
5. Release indicator
6. Release Strategy.

3.6.2.1 Characteristics:

- Creating Characteristics of each attribute of Selection criterion
- Table name CEKKO – used for PO Release strategy
- Table name CEBAN – used for PR Release strategy

3.6.2.2 Class:

- Create Class & link to characteristic
- Class Type must be – 032

3.6.2.3 Configure Release Group:

Create Release Groups & link to class

3.6.2.4 Configure Release Codes:

Create all the release code and assign to Release Group

3.6.2.5 Configure Release Indicator

The release indicator specifies whether the purchasing document can be processed or is blocked

3.6.2.6 Configure Release Strategies

3.6.3 Tcodes:

- ME29N – PO Release
- ME54N – PR Release
- ME84 - Release Scheduling Agreement (if Document type is LPA)
- ME35K - Release Contract
- ME45 - Release RFQ
- CL20N – Create Characteristics in release strategy

3.7 PLANNING PROCESS (MRP & CBP)

3.7.1 PLANNING PROCESS

MRP (Material requirement planning)

- MRP TYPE – PD
- Planning is done as per current demand like sales order
- MRP does not consider any forecast information or historical data
- MRP is done only for absolute requirements/demands on hand

Consumption based planning

CBP uses past consumption data (Historical data) to calculate future requirements with the help of the material forecast or statistical planning procedures

- Reorder Point Planning
  A. Manual Reorder Point Planning
  B. Automatic Reorder Point Planning
- Forecast-Based Planning
- Time-Phased Planning

Reorder Point Planning

Once stocks falls below the reorder point then system will trigger the procurement proposal

A. Manual Reorder Point Planning
B. Automatic Reorder Point Planning

Forecast-Based Planning

- It takes historical consumption data and plans the future demand for given interval of future periods
- MRP Type – VV (Forecast based planning)
- LOT Size – "Y9" Single PR for entire quantity means & "EX" multiple separate PR's for all forecasted quantity.
- Period Indicator – "M" for monthly "W" weekly basis forecast
- Forecast Model – "D" Constant forecast model
- Give forecast details like History Periods (12 Months), Period per season (12 Months).

Time-Phased Planning

- MRP TYPE – R1
- Planning Cycle – CL1
- Planned Delivery – 5 Days
- TPP Can be carried out in 2 ways
  A. MRP
  B. CBP
- If a vendor always delivers a material on a particular day of the week (Depends on Planning Cycle), it makes sense to plan this material according to the same cycle, in which it is delivered.

Manual Reorder Point Planning

- Manual Reorder Point planning both the reorder level and the safety stock level manually maintained in material master
- MRP Type – VB (Manual reorder point planning)
- Lot Size – HB (Replenish to maximum stock level)
- MD03 – In MRP run new PR gets generated if stock available falls below the reorder point
- MD03 – In MRP run newly created PR quantity is equal to = Maximum stock level mentioned in material master – Available stock in warehouse as per MD04

Automatic Reorder Point planning

- Automatic Reorder Point planning both the reorder level and the safety stock level are determined by the integrated forecasting program
- MRP Type – VM (Automatic reorder point planning)
- MD03 – In MRP run new PR gets generated if stock available falls below the reorder point
- MD03 – In MRP run newly created PR quantity is equal to = Maximum stock level mentioned in material master – Available stock in warehouse as per MD04.

The main function of material requirements planning is to guarantee material availability, that is, it is used to procure or produce the requirement quantities on time both for internal purposes and for sales and distribution.

3.7.2 MRP Controller:-

The MRP controller is responsible for all activities related to specifying the type, quantity, and time of the requirements, in addition to calculating when and for what quantity an order proposal has to be created to cover these requirements.

3.7.3 MRP Type:-

The MRP type is a key that controls the MRP procedure to be used for planning a material. The MRP type belongs to the plant-specific data.
Example: ND - No planning & PD – Planning

3.7.4 Difference between MRP & CBP

3.7.4.1 Material requirement planning: -

is carried out using current and future sales figures. The planned and the exact requirements quantities trigger the net requirements calculation.

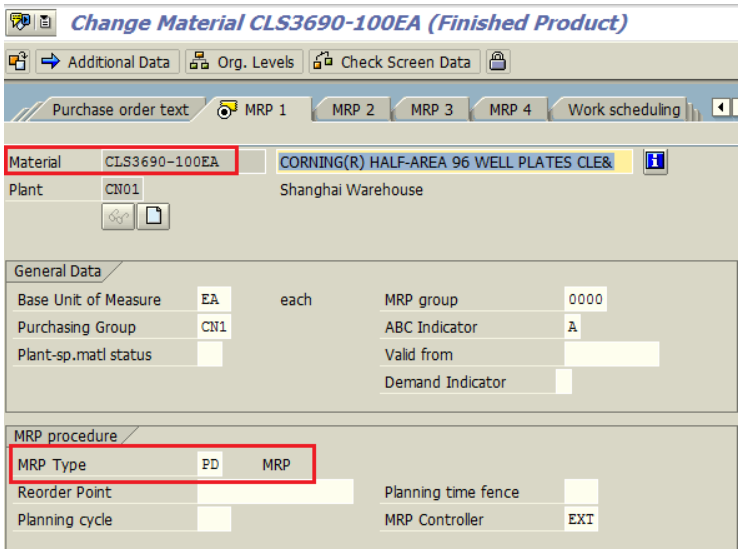
3.7.4.2 Consumption Based planning: -

uses past consumption data (historical data) to calculate future requirements with the help of the material forecast or statistical planning procedures. The net requirements calculation is not hereby triggered by an independent or dependent requirement, but is triggered either when stock levels fall below a reorder point or by forecast requirements.

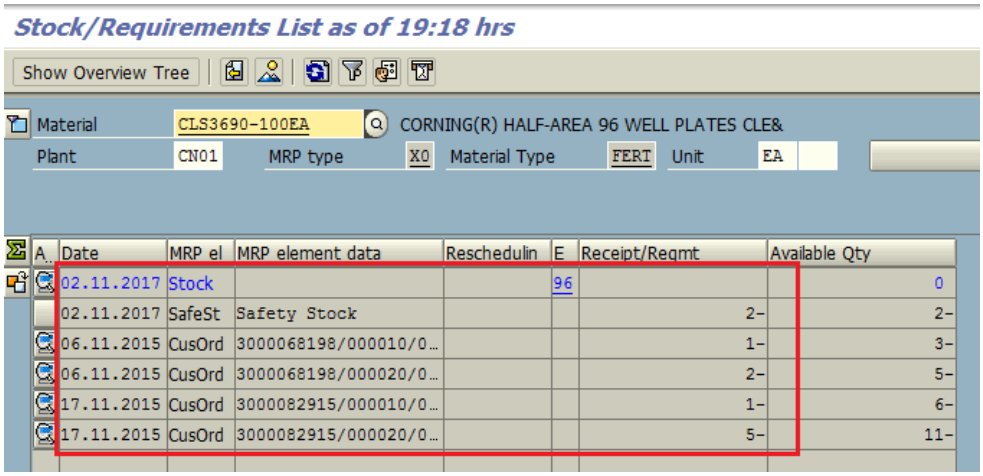
3.7.5 MRP (Material requirement planning – MRP Type is PD

- The planning is carried out for the quantities planned through planned independent requirement or quantities planned through incoming sales orders (made-to-order or made-to-stock). The planning is done with respect to the master plan.
- The planning process does not consider any forecast information or historical consumption patterns. Material planning is done only for absolute requirements/demands on hand

In Material Master – MRP 1 View – MRP Type as PD and save the Material



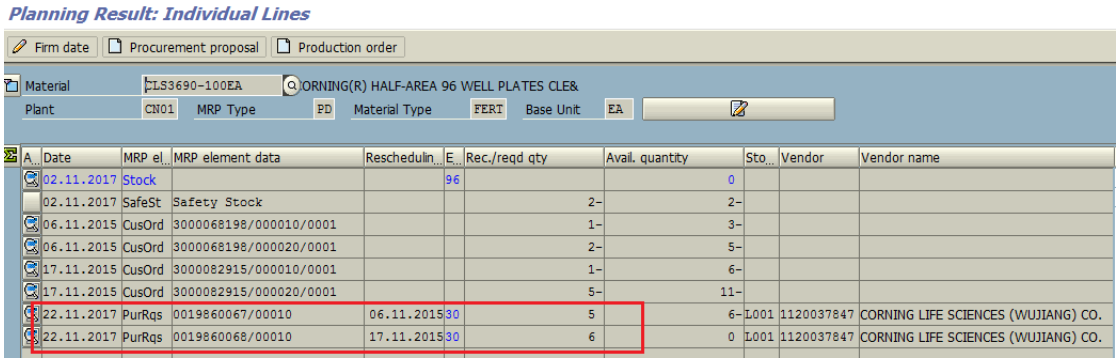
Now see the status of Material CLS3690-100EA in MD04 Tcode



A.	Date	MRP el	MRP element data	Reschedulin	E	Receipt/Reqmt	Available Qty
	02.11.2017	Stock			96		0
	02.11.2017	SafeSt	Safety Stock			2-	2-
	06.11.2015	CusOrd	3000068198/000010/0…			1-	3-
	06.11.2015	CusOrd	3000068198/000020/0…			2-	5-
	17.11.2015	CusOrd	3000082915/000010/0…			1-	6-
	17.11.2015	CusOrd	3000082915/000020/0…			5-	11-

As per above
In hand stock is = 0
As per material master safety stock is = 2
From 4 sales order required quantity is = 1+2+1+5 = 9
As per above screen demand is = 11

Now run the MRP – MD03



A…	Date	MRP el…	MRP element data	Reschedulin…	E…	Rec./reqd qty	Avail. quantity	Sto…	Vendor	Vendor name
	02.11.2017	Stock			96		0			
	02.11.2017	SafeSt	Safety Stock			2-	2-			
	06.11.2015	CusOrd	3000068198/000010/0001			1-	3-			
	06.11.2015	CusOrd	3000068198/000020/0001			2-	5-			
	17.11.2015	CusOrd	3000082915/000010/0001			1-	6-			
	17.11.2015	CusOrd	3000082915/000020/0001			5-	11-			
	22.11.2017	PurRqs	0019860067/00010	06.11.2015	30	5	6-	L001	1120037847	CORNING LIFE SCIENCES (WUJIANG) CO.
	22.11.2017	PurRqs	0019860068/00010	17.11.2015	30	6	0	L001	1120037847	CORNING LIFE SCIENCES (WUJIANG) CO.

Now it will generate 2 PR's 19860067 & 19860068 for total quantity of 11 EA

(In MRP Scenario it will consider only demand order for MRP Run)

3.7.6 Consumption Based Planning (MRP Procedures Supported in CBP):-

- Reorder Point Planning
  A. Manual Reorder Point Planning – MRP Type VB
  B. Automatic Reorder Point Planning – MRP Type VM
- Forecast-Based Planning – MRP Type VV
- Time-phased planning

3.7.7 Reorder Point Planning

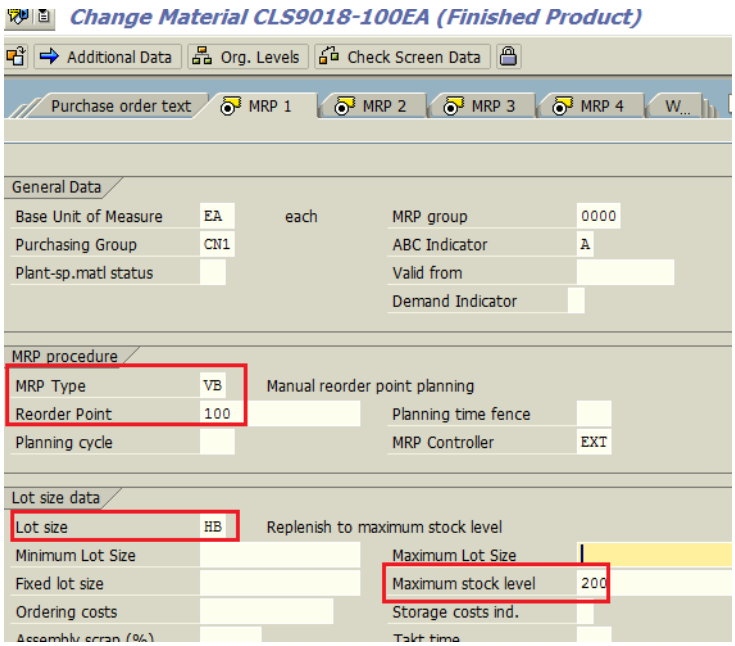
In RPP once stocks falls below the reorder point then system will trigger the procurement proposal. There are two types of reorder point planning.

A. **Manual Reorder Point Planning**: In manual reorder point planning both the reorder level and the safety stock level manually maintained in material master.
B. **Automatic Reorder Point Planning**: In automatic reorder point planning, both the reorder level and the safety stock level are determined by the integrated forecasting program.

3.7.8 Manual Reorder Point Planning – MRP TYPE VB

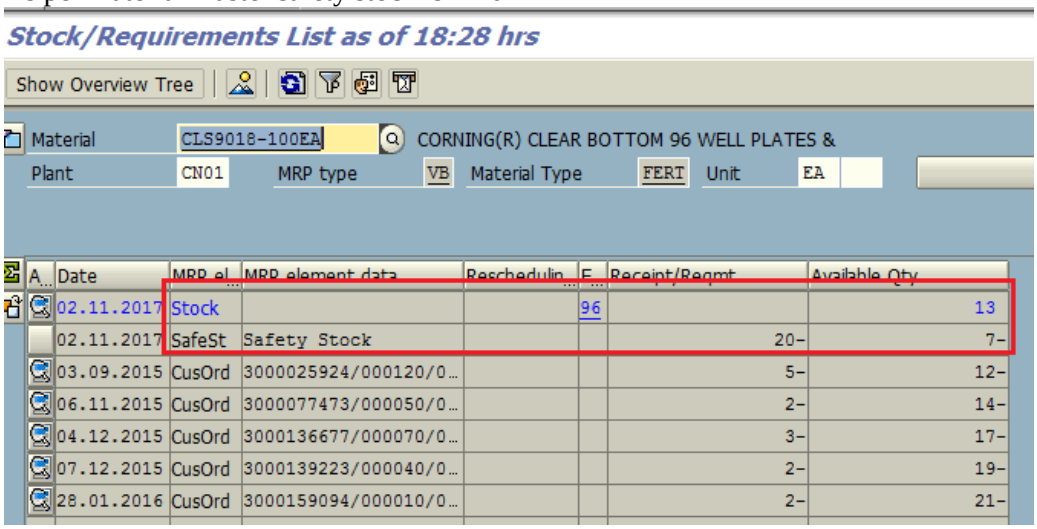
In Material Master MRP View 1, enter the data as below

- MRP Type = VB (Manual reorder point planning)
  (MRP Type - Key that determines whether and how the material is planned. You have the following options)
- Reorder point = 100
  (Reorder point - If the stock falls below this quantity, the system flags the material for requirements planning by creating a planning file entry.)
- Lot Size = HB (Replenish to maximum stock level)
  (Lot Size - Key that determines which lot-sizing procedure the system uses within materials planning to calculate the quantity to be procured or produced.)
- Maximum stock level = 200
  (Maximum stock level - Quantity of the material in this plant that may not be exceeded.).
- In MD03 new PR gets created if Stock available falls below the Reorder point.
- In MD03 newly created PR will have quantity equal to = Maximum stock level in Material master – Available stock in warehouse as per MDO4 Tcode
- Newly generated PR will have fixed vendor as per the source list

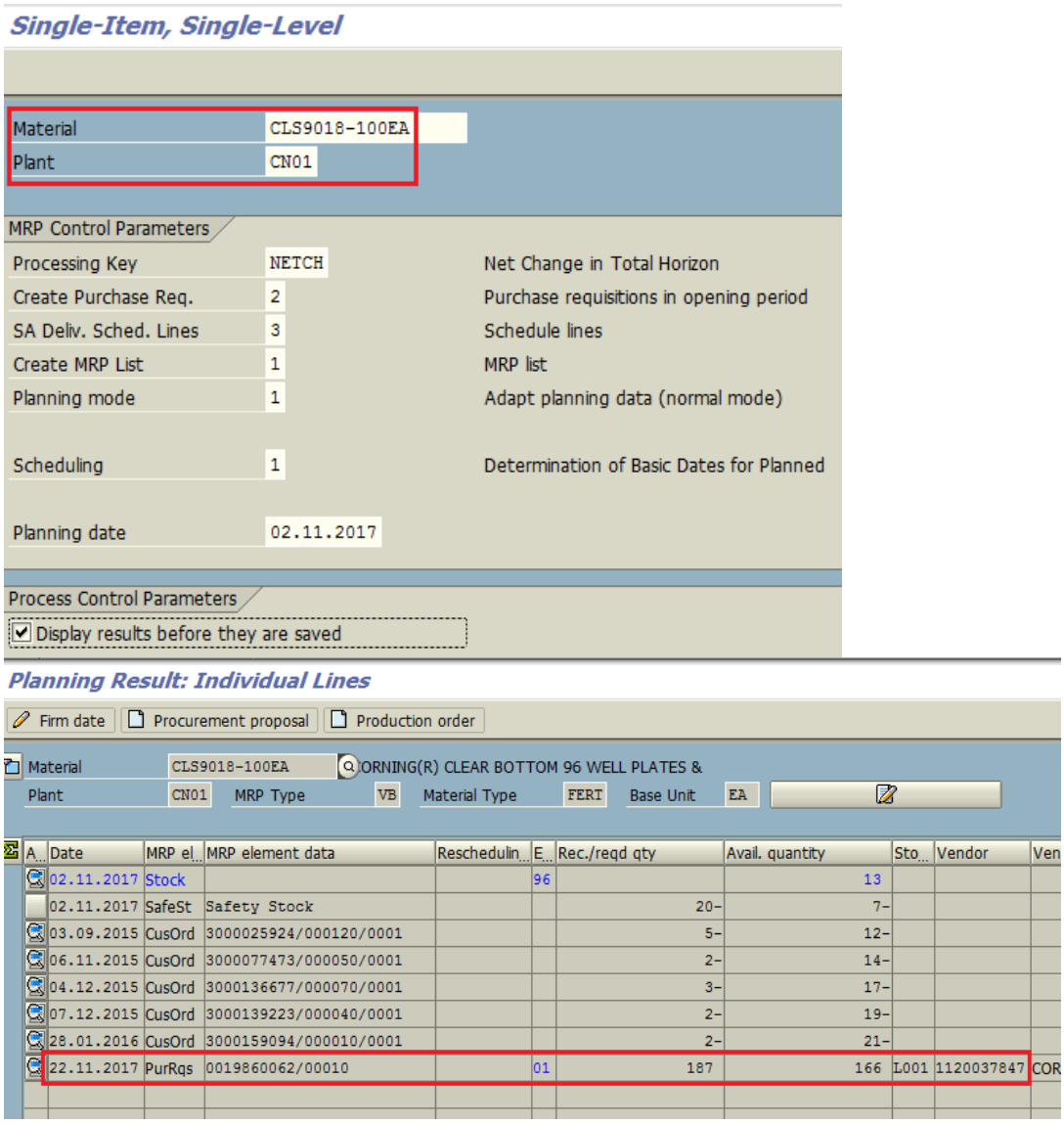


Save the Material

Now run the Stock requirement – MD04
Material in stock is = 13 EA
As per material master safety stock is = 20 EA

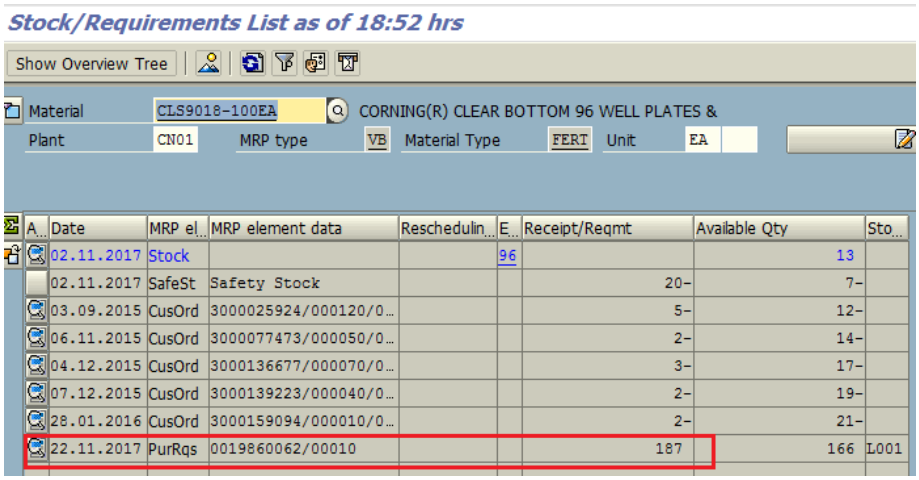


Now we will run the MRP – MD03

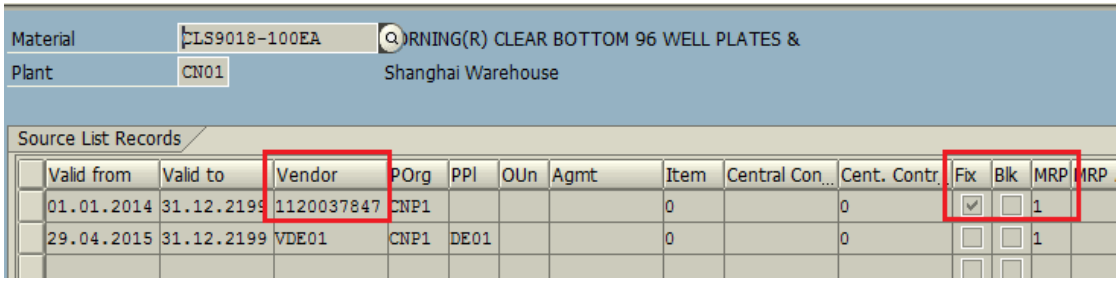


It is generating new PR 19860062 with 187 Quantity and fixed vendor 1120037847 as per source list (Quantity in New PR 187 = Maximum stock level in Material master "200" – Available stock in warehouse as per MDO4 Tcode)
Save
MRP carried out for CLS9018-100EA for CN01 Plant

Now check MD04 again



Also we will check the source list ME03



Vendor 1120037847 is fixed and made MRP relevant for material CLS9018-100EA.

3.7.9 Automatic Reorder Point Planning – MRP Type VM

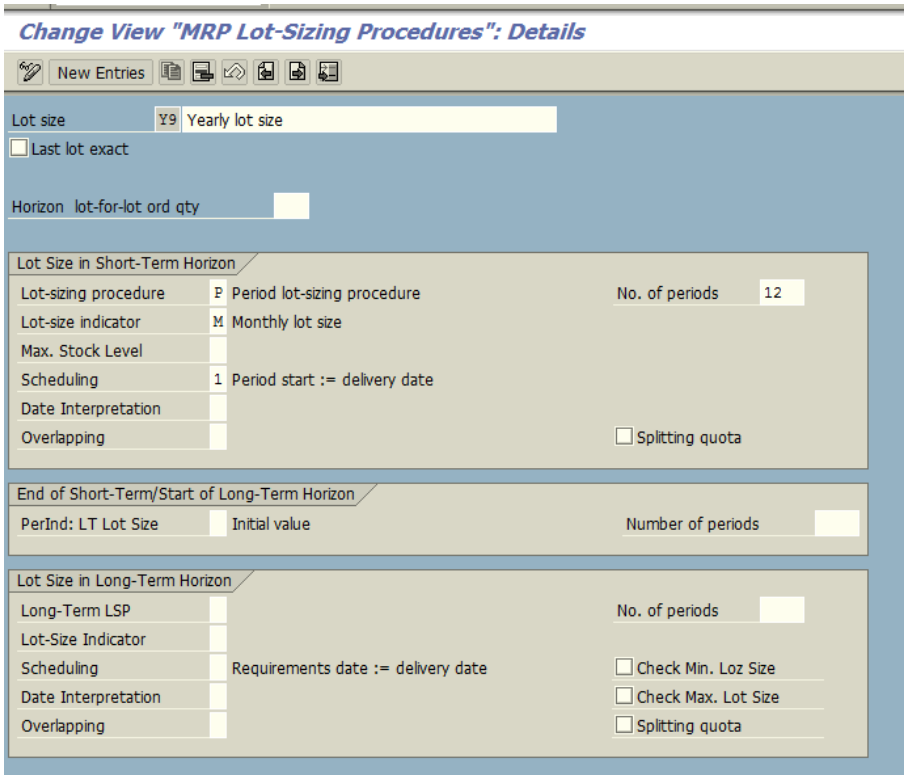
- In the case of ***Automatic Reorder Point Planning (MRP Type VM)*** - a type of consumption based planning, the system calculates the recorder point and the safety stock using the past historical consumption data to derive the future consumption patterns. In this case you would need to extend the material master for the forecast view with a valid forecasting method selected.
- In the net requirement calculations, the available stock is determined as equal to the plant stock and the firmed receipts from purchase and production. Net requirement calculations do not consider the demand from sales order or from planned independent requirements or from material reservations. If the available stocks fall below the reorder point, procurement proposals are raised.

3.7.10 Forecast Based Planning – MRP Type VV

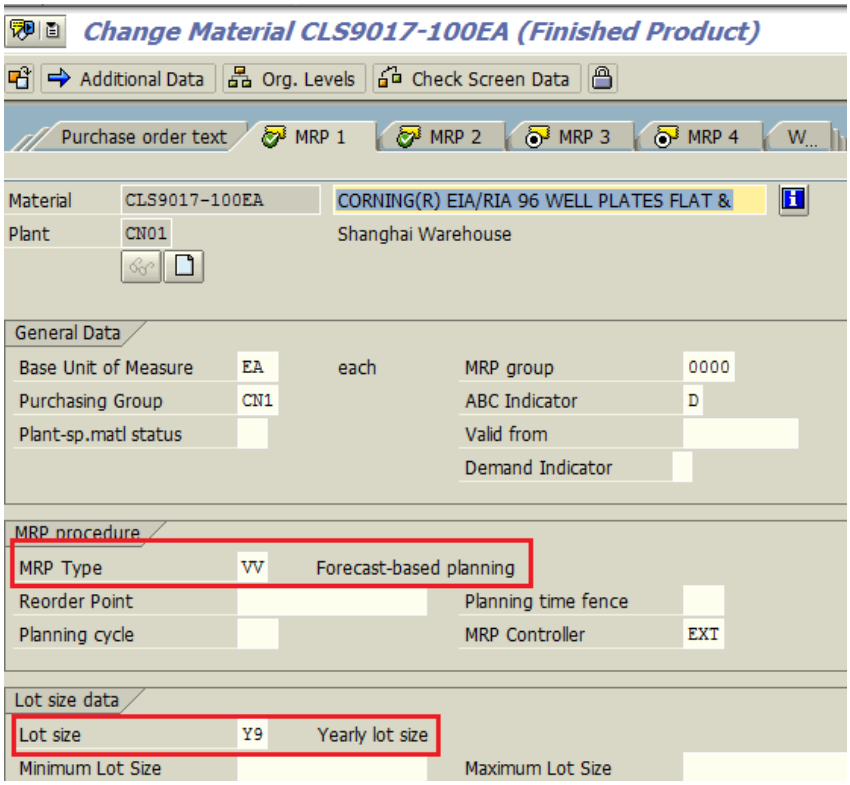
This document briefs the usage of Forecast based planning with yearly lot size and generating single purchase requisition for forecasted requirements against the consumption for year.

- Create a lot Size (OMI4)

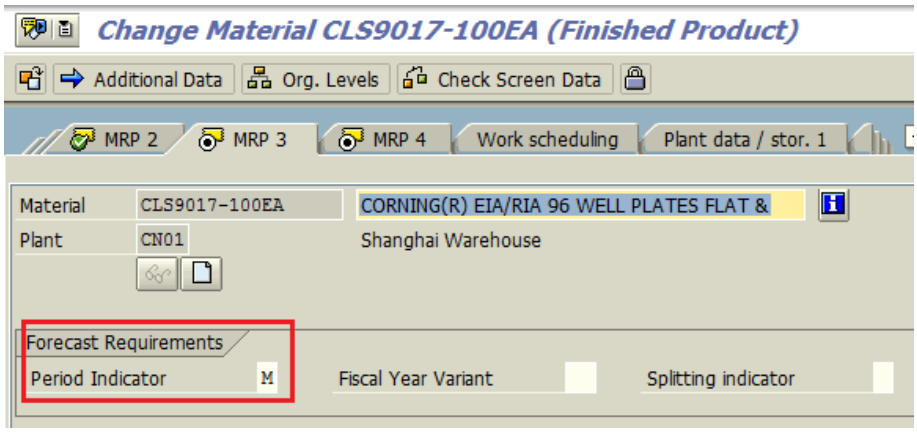
Lot Size – Y9 (This will create single PR for all forecast quantity)



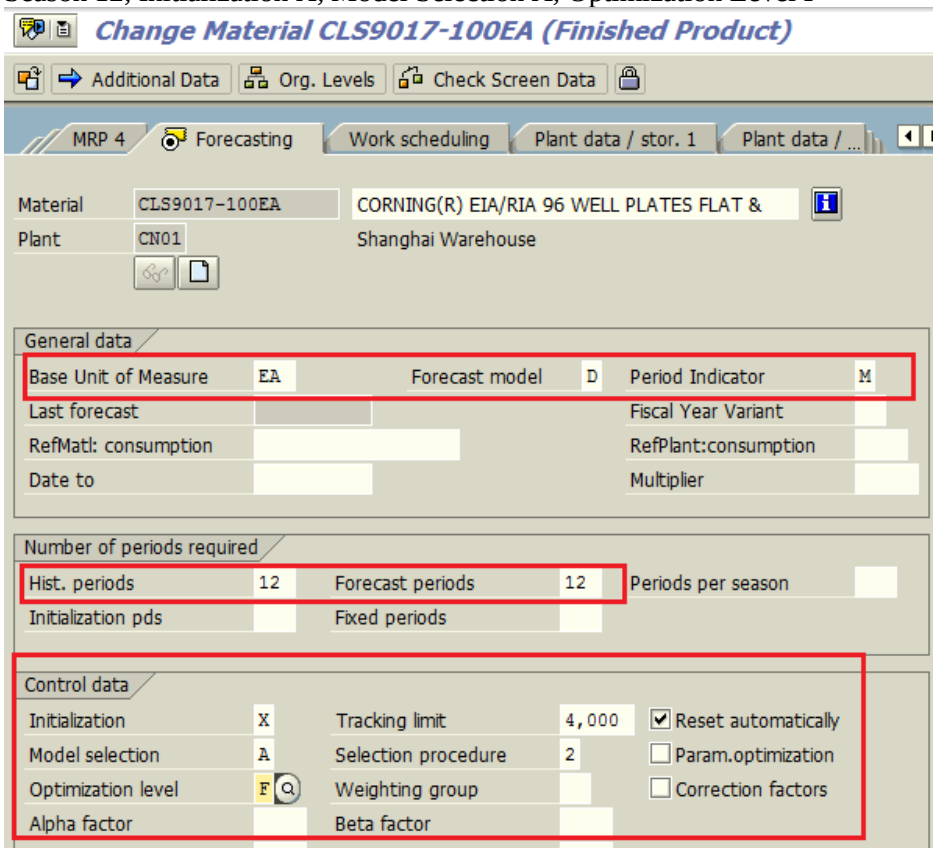
- Change Material Master
- Lot Size = Y9
- MRP TYPE = VV



MRP 3 View – Period indicator = M



Forecasting View: Forecast Model D, Period Indicator M, History Periods 12, Period per Season 12, Initialization X, Model Selection A, Optimization Level F



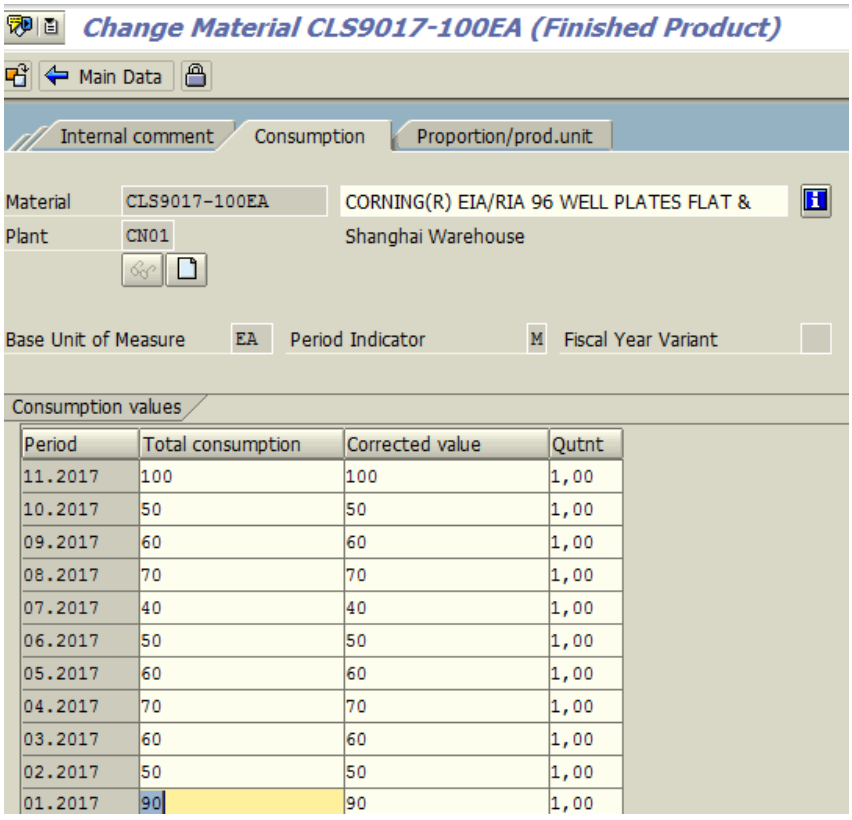
3.7.10.1 Process Steps

a. Maintain consumption values (MM02)
b. Execute Forecast (MP30)
c. Stock Requirement List (MD04)
d. Run MRP (MD03)

3.7.10.2 Process Details

3.7.10.2.1 Maintain consumption values (MM02)

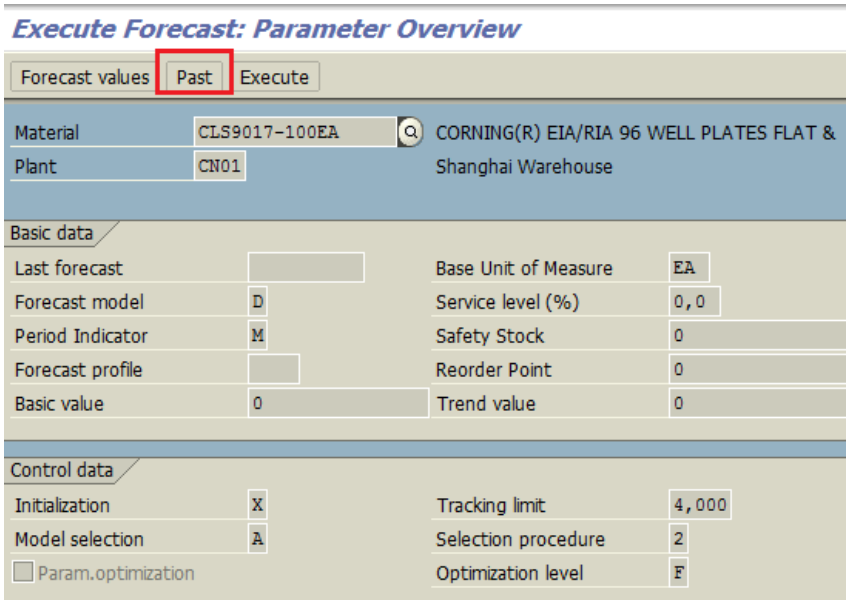
Update the consumption of material in MM02 of Additional data – Consumption tab



Period	Total consumption	Corrected value	Qutnt
11.2017	100	100	1,00
10.2017	50	50	1,00
09.2017	60	60	1,00
08.2017	70	70	1,00
07.2017	40	40	1,00
06.2017	50	50	1,00
05.2017	60	60	1,00
04.2017	70	70	1,00
03.2017	60	60	1,00
02.2017	50	50	1,00
01.2017	90	90	1,00

3.7.10.2.2 Execute Forecast (MP30)

Enter the material number and plant. Then press enter. System will display the below Execute Forecast screen.



Click on PAST Button to see the consumption History as displayed below

Display Historical Values

Mat. number CLS9017-100EA CORNING(R) EIA/RIA 96 WELL PLATES FLAT
Plnt CN01 Shanghai Warehouse

Period	Total consumption	Corrected total consumption
11.2017	100,000	100,000
10.2017	50,000	50,000
09.2017	60,000	60,000
08.2017	70,000	70,000
07.2017	40,000	40,000
06.2017	50,000	50,000
05.2017	60,000	60,000
04.2017	70,000	70,000
03.2017	60,000	60,000
02.2017	50,000	50,000
01.2017	90,000	90,000
12.2016	70,000	70,000

Go back and click on Execute

Execute Forecast: Parameter Overview

Forecast values | Past | Execute

Material CLS9017-100EA CORNING(R) EIA/RIA 96 WELL PLAT
Plant CN01 Shanghai Warehouse

Basic data

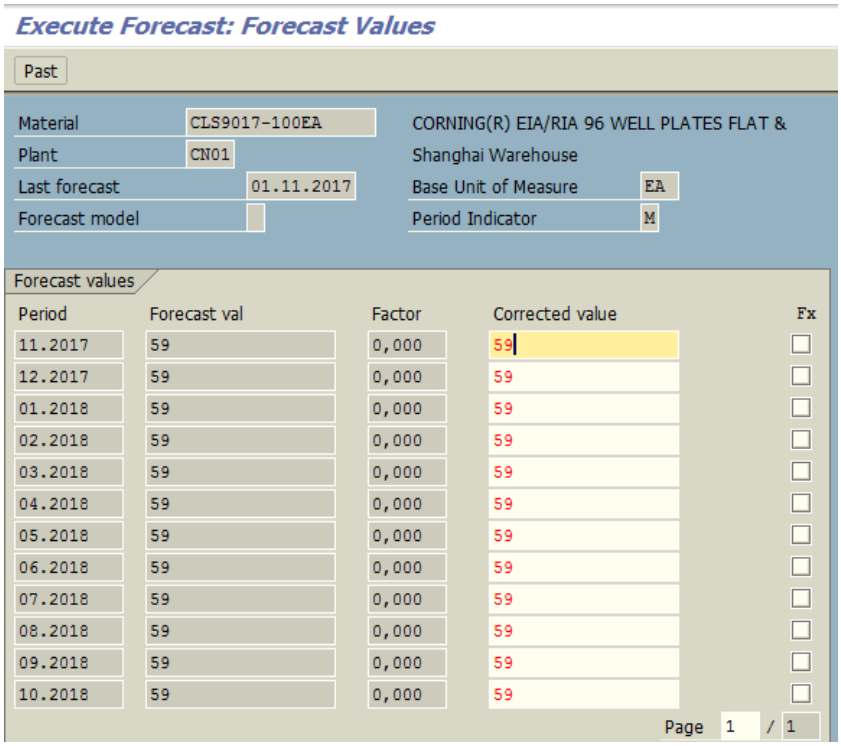
Last forecast		Base Unit of Measure	EA
Forecast model	D	Service level (%)	0,0
Period Indicator	M	Safety Stock	0
Forecast profile		Reorder Point	0
Basic value	0	Trend value	0

Enter Forecast Date

M 11.2017
M 12.2017

Control da
Initializatic 4,000
Model sele 2
Param. F

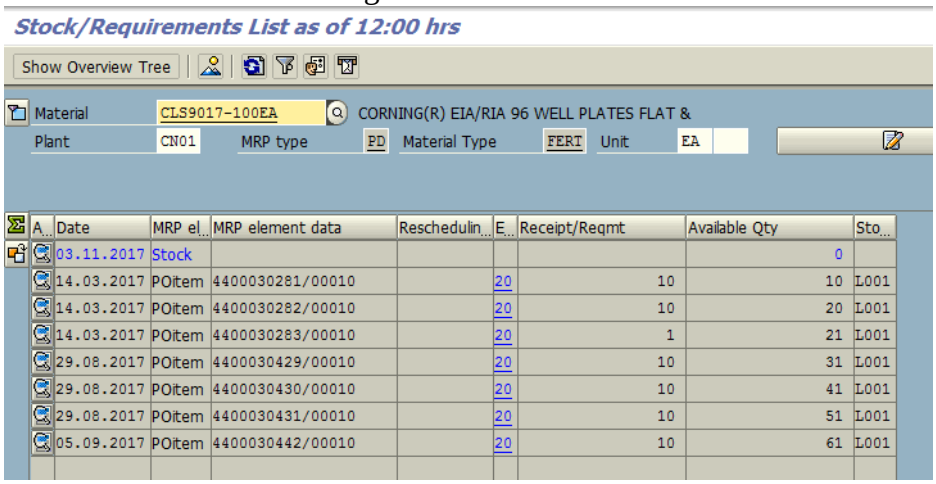
Number of values



SAVE

3.7.10.2.3 Stock Requirement List (MD04)

MD04 Screen before running forecast module



MD04 Screen after running forecast module (Where requirement is 59 quantity as per above forecast module per month)

Stock/Requirements List as of 15:18 hrs

Show Overview Tree

Material CLS9017-100EA CORNING(R) EIA/RIA 96 WELL PLATES FLAT &
Plant CN01 MRP type VV Material Type FERT Unit EA

A	Date	MRP el	MRP element data	Reschedulin	E	Receipt/Reqmt	Available Qty	Sto
	03.11.2017	Stock					0	
	14.03.2017	POitem	4400030281/00010		07	10	10	L001
	14.03.2017	POitem	4400030282/00010		07	10	20	L001
	14.03.2017	POitem	4400030283/00010		07	1	21	L001
	29.08.2017	POitem	4400030429/00010		07	10	31	L001
	29.08.2017	POitem	4400030430/00010		07	10	41	L001
	29.08.2017	POitem	4400030431/00010		07	10	51	L001
	05.09.2017	POitem	4400030442/00010		07	10	61	L001
	01.12.2017	ForReq	M 12/2017			18-	43	
	02.01.2018	ForReq	M 01/2018			59-	16-	
	01.02.2018	ForReq	M 02/2018			59-	75-	
	01.03.2018	ForReq	M 03/2018			59-	134-	
	02.04.2018	ForReq	M 04/2018			59-	193-	
	02.05.2018	ForReq	M 05/2018			59-	252-	
	01.06.2018	ForReq	M 06/2018			59-	311-	
	02.07.2018	ForReq	M 07/2018			59-	370-	

3.7.10.2.4 Run MRP (MD03)

- Now it creating single PR 19860069 of quantity 547
- It has planned for 10 Months from 01.01.2018 (Because material available till December)
- So required quantity is 59*10 = 590
- Already available quantity is = 43
- Final required quantity = 590 – 43 = 547
- As per Forecast based planning it will create one single PR for all 547 quantities when we run MD03 And this is because we have selected LOT SIZE as Y9

Planning Result: Individual Lines

Firm date | Procurement proposal | Production order

Material CLS9017-100EA CORNING(R) EIA/RIA 96 WELL PLATES FLAT &
Plant CN01 MRP Type VV Material Type FERT Base Unit EA

A	Date	MRP el	MRP element data	Reschedulin	E	Rec./reqd qty	Avail. quantity	Sto	Vendor	Vendor name
	03.11.2017	Stock					0			
	14.03.2017	POitem	4400030281/00010	01.12.2017	15	10	10	L001	1120039031	ANHUI WESTON TRADING CO., LTD.
	14.03.2017	POitem	4400030282/00010	01.12.2017	15	10	20	L001	1120039031	ANHUI WESTON TRADING CO., LTD.
	14.03.2017	POitem	4400030283/00010	02.01.2018	15	1	21	L001	1120040822	YANGZHOU CHEMICAL CO., LTD.
	29.08.2017	POitem	4400030429/00010	02.01.2018	15	10	31	L001	1120039031	ANHUI WESTON TRADING CO., LTD.
	29.08.2017	POitem	4400030430/00010	02.01.2018	15	10	41	L001	1120039031	ANHUI WESTON TRADING CO., LTD.
	29.08.2017	POitem	4400030431/00010	02.01.2018	15	10	51	L001	1120039031	ANHUI WESTON TRADING CO., LTD.
	05.09.2017	POitem	4400030442/00010	02.01.2018	15	10	61	L001	1120039031	ANHUI WESTON TRADING CO., LTD.
	01.12.2017	ForReq	M 12/2017			18-	43			
	02.01.2018	PurRqs	0019860069/00010		01	547	590	L001	1120037847	CORNING LIFE SCIENCES (WUJIANG) CO.
	02.01.2018	ForReq	M 01/2018			59-	531			
	01.02.2018	ForReq	M 02/2018			59-	472			
	01.03.2018	ForReq	M 03/2018			59-	413			
	02.04.2018	ForReq	M 04/2018			59-	354			
	02.05.2018	ForReq	M 05/2018			59-	295			

SAVE

Note: - If we select LOT SIZE as "EX" (Lot-for-Lot order quantity) in MRP 1 View of material master, then it will create multiple separate PR's for all forecasted quantity

Example if monthly forecast quantity is 59 then system will create individual PR for all forecasted months.

3.7.11 Time-phased planning

If a vendor always delivers a material on a particular day of the week, it makes sense to plan this material according to the same cycle, in which it is delivered.

Time-phased planning can be executed using consumption-based planning or MRP:

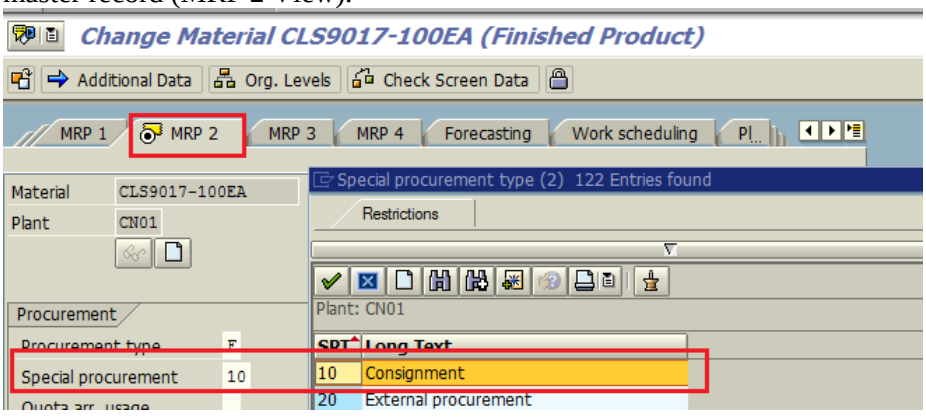
A. If you want to carry out time-phased planning using consumption-based planning techniques, the requirements have to be created using the material forecast. If you use consumption-based planning, only the forecast requirements are included in the net requirements calculation. For reducing the forecast requirements, you can choose the same settings in Customizing as used for forecast-based planning.
B. If you want to carry out time-phased planning using MRP, all the requirements that are relevant to MRP are included in the net requirements calculation. For this purpose, the indicator Time-phased with requirements must have been selected in the MRP type. The forecast requirements can also be taken into account in this process.

Note:-

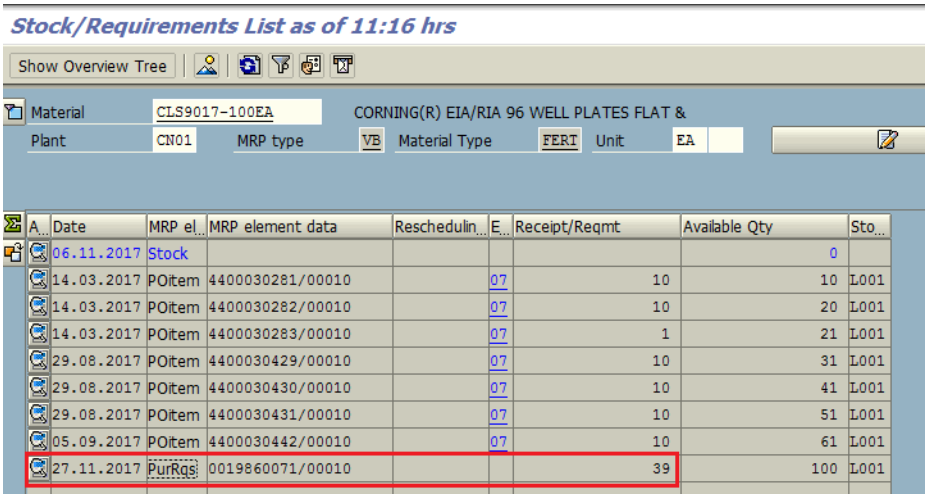
- Material Planning can generate automatically two documents
  A. Purchase requestions
  B. Planned orders

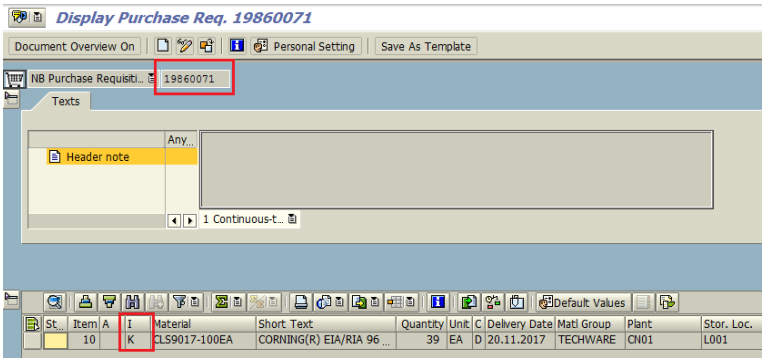
- Material Forecast Based Planning Type
  A. Automatic reorder point planning
  B. Forecast based planning
  C. Time phased planning

- To generate purchase requisitions with the consignment item category in material requirements planning (MRP). We have to Select Consignment as the special procurement type in the material master record (MRP 2 View).



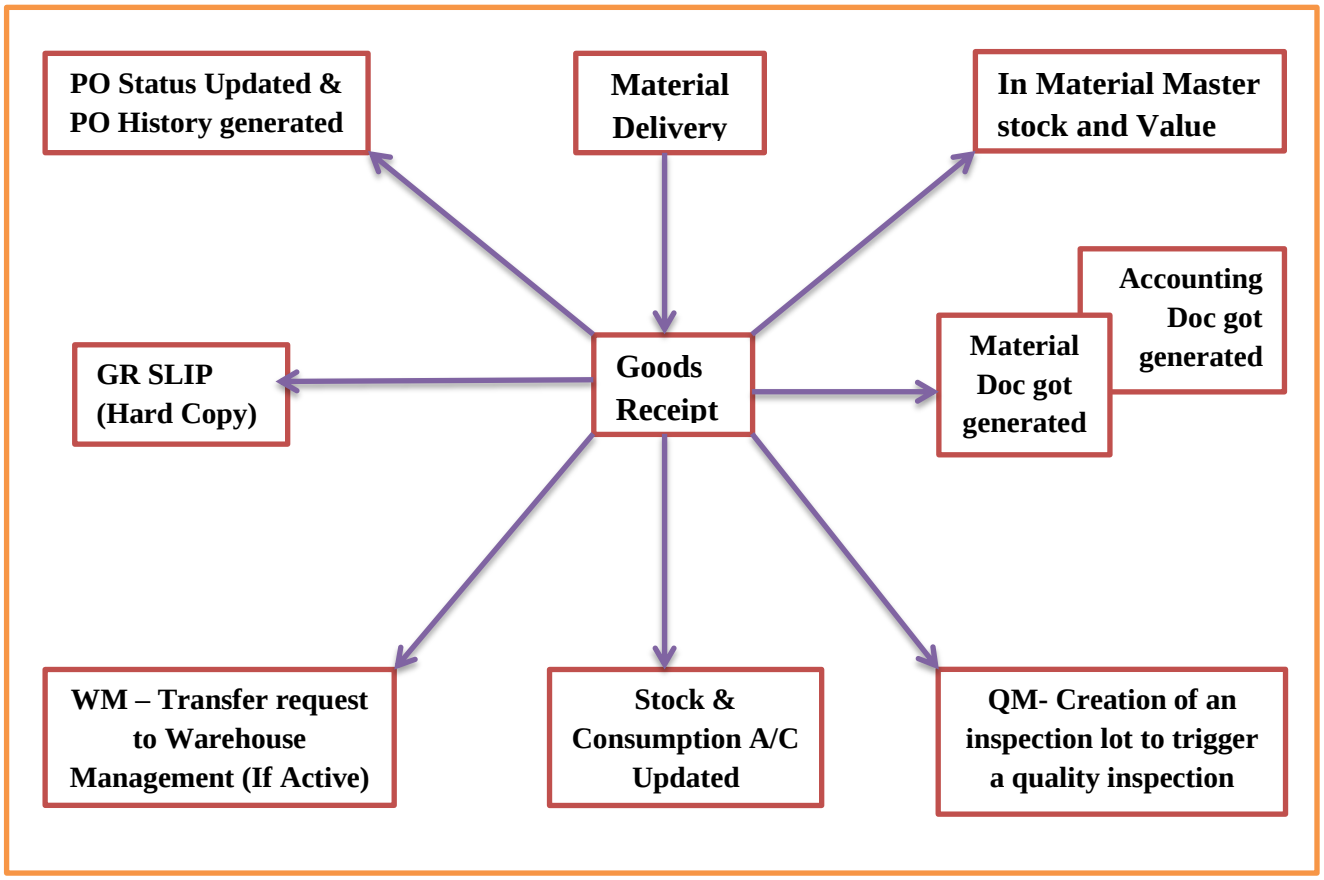
If you generate MRP for this Material then PR will be created with item category "K"


Stock/Requirements List as of 11:16 hrs
Show Overview Tree
Material CLS9017-100EA CORNING(R) EIA/RIA 96 WELL PLATES FLAT &
Plant CN01 MRP type VB Material Type FERT Unit EA
A... Date MRP el... MRP element data Reschedulin... E... Receipt/Reqmt Available Qty Sto...
06.11.2017 Stock 0
14.03.2017 POitem 4400030281/00010 07 10 10 L001
14.03.2017 POitem 4400030282/00010 07 10 20 L001
14.03.2017 POitem 4400030283/00010 07 1 21 L001
29.08.2017 POitem 4400030429/00010 07 10 31 L001
29.08.2017 POitem 4400030430/00010 07 10 41 L001
29.08.2017 POitem 4400030431/00010 07 10 51 L001
05.09.2017 POitem 4400030442/00010 07 10 61 L001
27.11.2017 PurRqs 0019860071/00010 39 100 L001


Display Purchase Req. 19860071
Document Overview On
Personal Setting
Save As Template
NB Purchase Requisiti... 19860071
Texts
Any...
Header note
1 Continuous-t...
Default Values
St... Item A I Material Short Text Quantity Unit C Delivery Date Matl Group Plant Stor. Loc.
10 K CLS9017-100EA CORNING(R) EIA/RIA 96 ... 39 EA D 20.11.2017 TECHWARE CN01 L001

4 Inventory Management and Physical Inventory (MM-IM)

4.1 Effects Of Goods Movement:



4.2 Stock Types:

A. Un Restricted stock
B. Blocked Stock
C. Quality Inspection stock

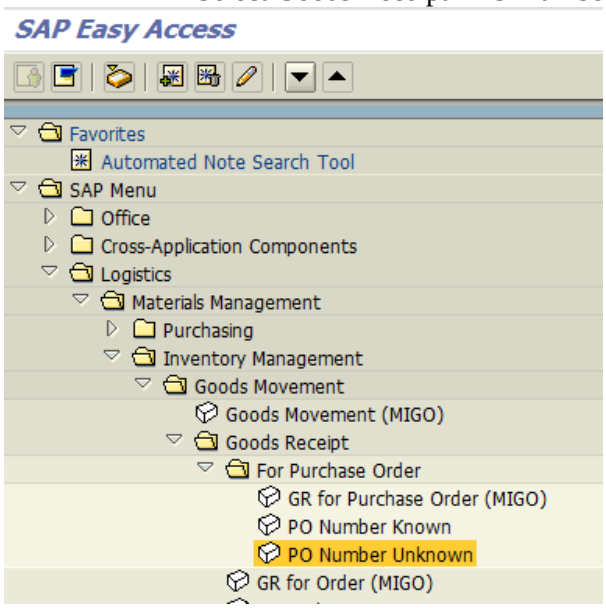
4.3 Important Tcodes in Inventory:

- MIGO – Goods Receipt
- MB1A – Goods issue
- MB1B – Transfer posting
- MB1C – Goods Receipt for without PO (Mvt type 501)
- MB01 – Post goods receipt for PO (Automatic creation of PO)
- MMBE – Stock overview
- MB5B – To see details of posting
- MB03 – Material doc
- MR51 – Accounting doc
- MBST – Cancellation of Material document
- OMJJ – To create new Movement type
- VL31N – Inbound Delivery Creation
- VL10B/VL01N – Outbound Delivery Creation
- MI07 – Process list of Inventory differences

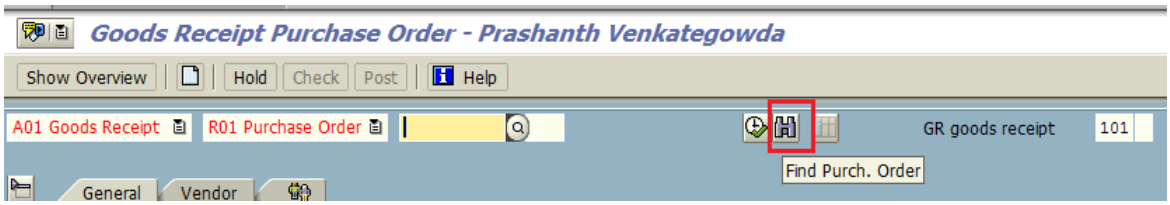
4.4 Goods Receipt when PO is unknown

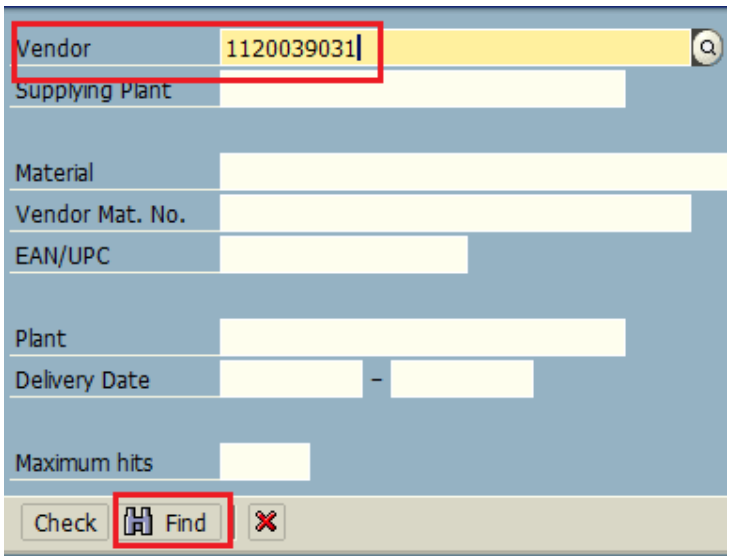
If we wish to enter a goods receipt with reference to a purchase order but do not know the PO number. Then follow below steps:

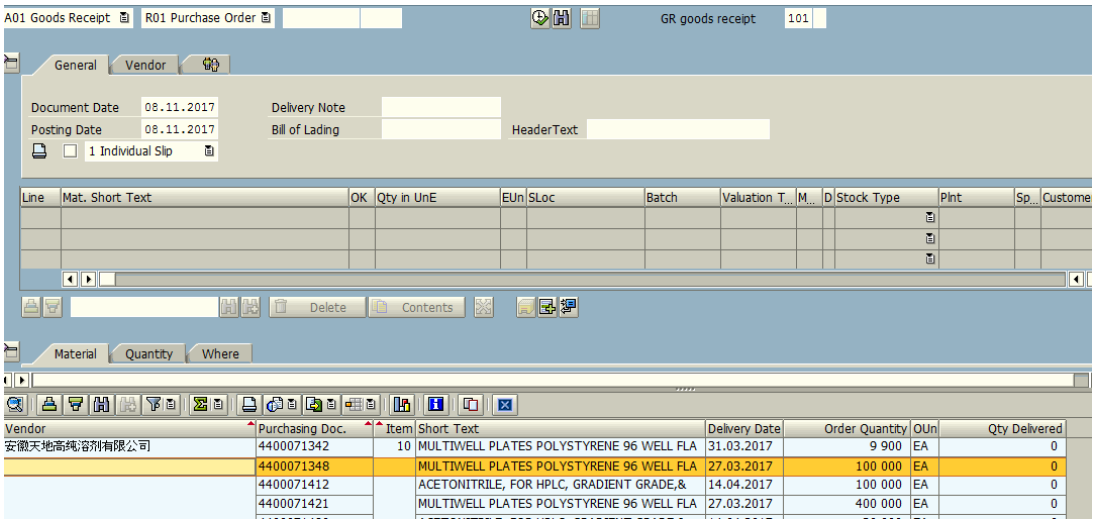
- Select Goods Receipt - PO Number Unknown



- Find Purchase Order



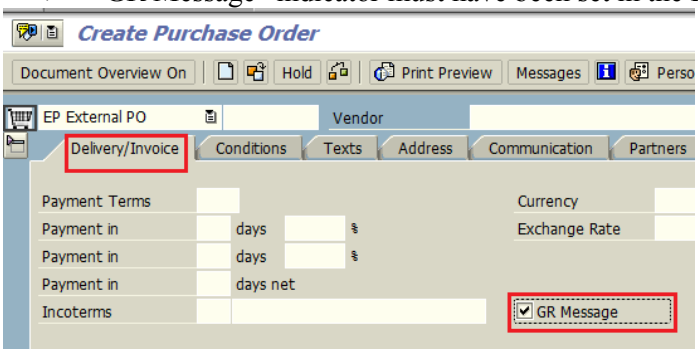




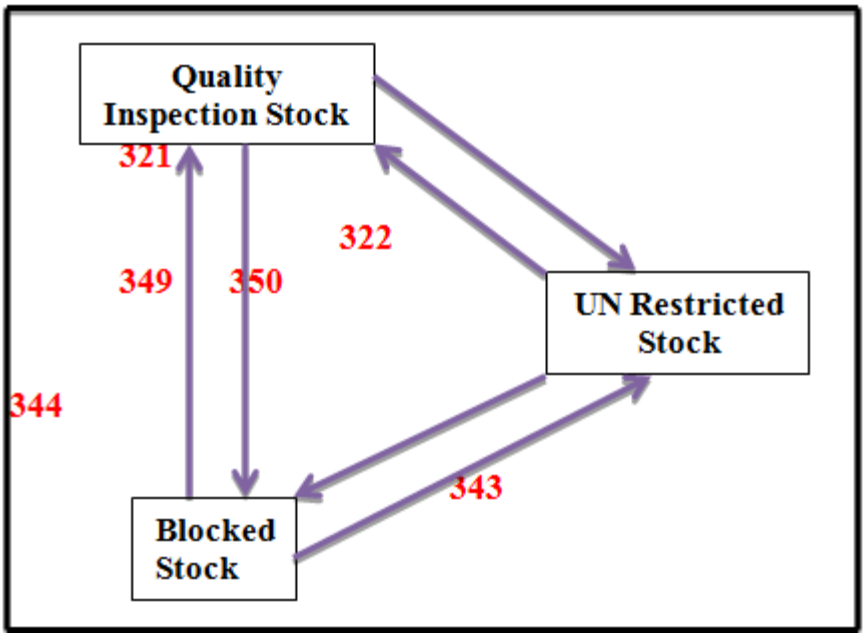
Then select appropriate Purchase order for Goods receipt.

4.5 Settings required in system to send Goods Receipt message to buyer

- Message determination for inventory management must have been maintained.
- A condition record must exist.
- A mail text must have been maintained.
- "GR Message" indicator must have been set in the PO header delivery/Invoice tab.

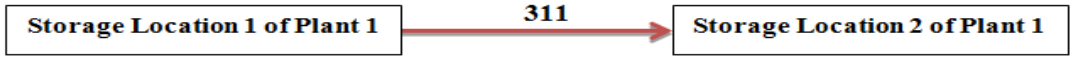


4.6 Transfer Posting – MB1B



4.7 Stock Transfer (Without STO) – MB1B:

A. Storage location to storage location in one step



B. Storage location to storage location in two steps

C. Plant to Plant in one step

D. Plant to Plant in two steps

4.8 Stock transfer relevant for Valuation

- Stock transfer from consignment stores of consignment vendor to our unrestricted-use stock in storage location.
- Stock transfer of a material from plant 0001 to plant 0002. The plants belong to the same company, however the valuation areas are different (valuation level is plant).

4.9 Difference between Transfer posting and Stock Transfer:

- Stock Transfer:-
  - There will be physical goods movement
  - This can be used by using one step or two steps and stock transfer can be possible by using STO Process
- Transfer Posting:-
  - Physical movement may or may not occur

- Also only change in stock type, Batch type or Material Number.

4.10 Tables of Inventory Management

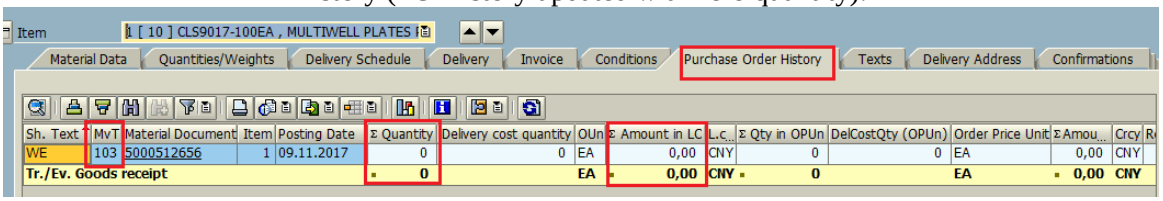
- MSEG – Material Document
- RSEG – Accounting Document
- ISEG – Physical Inventory document

4.11 GR Blocked Stock

Conditionally accepted deliveries for a purchase order are recorded in goods receipt **blocked stock** (**GR blocked stock**). The quantity posted into goods receipt **blocked stock** is not added to the inventory or managed as part of the inventory. And Movement type is 103.

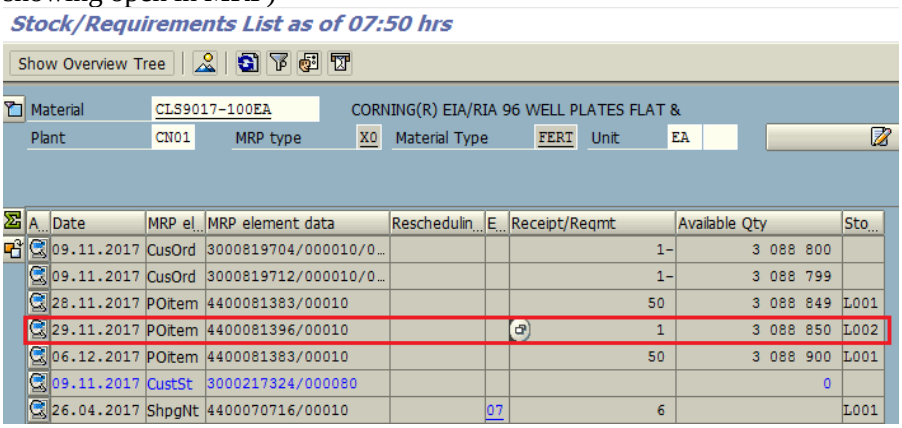
Effects of GR Block stock

- Accounting documents are not generated at the time of GR because inventory is non-valuated.
- GR Blocked stocks are shown in the stock overview of Plant level and not in Storage location level.
- The quantity booked under GR Blocked stock is recorded in the PO History (PO History updated with zero quantity).



- Once you make the GR into GR Blocked stock, PO history updated but PO Status won't update

- The Quantity booked into GR Blocked stock is not yet available for MRP (PO 4400081396 still showing open in MRP)



4.12 Difference between GR Blocked stock and Blocked stock:

- Blocked Stock: Materials are rejected by quality or in production & Goods are valuated.
- GR Blocked Stock: Goods accepted under conditional acceptance &Goods are not valuated.

4.13 Inbound and Outbound Delivery:

4.13.1 Inbound Delivery – VL31N:-

We specify some dates in our PO for delivering material and we will create an inbound delivery with respect to the PO released on that vendor stating that the delivery will be exactly on so and so date. This makes we to have the exact delivery schedule or otherwise it is a pre intimation for vendor by when he could supply the material.

4.13.2 Outbound Delivery – VL01N/VL10B:-

We use this process in order to support all shipping activities like picking, packing, transport and goods issue. All information regarding shipping planning is stored in outbound delivery,

4.14 Document Types of inventory Management:

- WA – Goods issue, Transfer postings,
- WE – Goods receipt with reference to PO
- WI – Inventory difference
- WL – Goods issue with reference to delivery (SD)

4.15 Important Movement Types in MM:

A. 101 – Goods Receipt against PO
   102 – Reversal of 101
B. 103 – Goods Receipt against PO into GR Blocked stock
   104 – Reversal of 103
C. 105 – Release GR Blocked stock to Warehouse
   106 – Reversal of 105
D. 121 – Subsequent adjustment for Subcontracting
E. 122 – Return delivery to vendor (Without PO)
   123 – Reversal of 122
F. 161 – Returns for PO (With PO)
G. 124 – Return delivery to vendor from GR blocked stock
H. 201K – Goods receipt for cost center
I. 301 – Transfer posting plant to plant in one step
   303 – Transfer posting plant to plant in two steps (Remove from storage)
   305 – Transfer posting plant to plant in two steps (Place in storage)
J. 309 – Transfer posting Material to Material
K. 311 – Transfer posting Storage Location to Storage Location in one step
   313 – Transfer posting Storage location to Storage Location in two steps (Remove from storage)
   315 – Transfer posting Storage location to Storage Location in two steps (Place in storage)
L. 321 – Transfer posting Quality inspection to Unrestricted stock

322 – Transfer posting unrestricted stock to quality inspection
343 – Transfer posting Blocked stock to unrestricted stock
344 – Transfer posting unrestricted stock to Block stock
349 – Transfer posting Blocked stock to Quality inspection
350 – Transfer posting Quality inspection to Blocked stock

M. 351 – Goods issue for a stock transport order (without Shipping)
N. 411 – Transfer posting of special stocks to company's own stock
O. 501 – Goods Receipt without PO to Un restricted
503 – Goods Receipt without PO to Quality Inspection
505 – Goods Receipt without PO to Blocked Stock
P. 541 – Goods issue to subcontracting vendor
543 – Sub items receive from subcontract vendor
545 – Goods Receipt of By-Product from subcontracting vendor
Q. 551 – Withdrawal for scrapping from unrestricted stock
553 – Withdrawal for scrapping from quality inspection stock
555 – Withdrawal for scrapping from blocked stock
R. 561 – Receipt per initial entry of stock balance into unrestricted stock
563 – Receipt per initial entry of stock balance into quality inspection stock
565 – Receipt per initial entry of stock balance into blocked stock
S. 641 – Goods issue for a stock transport order (With Shipping)

4.16 Stock types considered in Physical Inventory procedure

A. Unrestricted use stock
B. Block Stock
C. Quality inspection stock
D. Vendor Consignment stock
E. Materials provided to Subcontract Vendor

Note: Stocks which are In-Transit & GR Blocked stock are not considered for physical inventory procedure..

4.17 Physical Inventory procedure carried levels

A. Material Level
B. Plant Level
C. Storage location level
D. Stock type

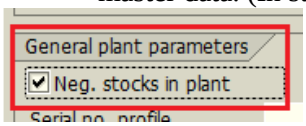
4.18 Negative Stock

If you are issuing material even though there is no stock with you that is the negative stock for that storage location. Negative stocks are required if, for example, goods issues are entered before the corresponding goods receipts for organizational reasons and the material is already physically located in the warehouse.

Once the goods receipts have been posted, the book inventory balance must correspond to the physical stock, that is, the book inventory balance must no longer be negative.

4.19 Prerequisites

A. Customizing system for each valuation area and storage location (SPRO –IMG-MM-inventory management and physical inventory-goods issue / transfer posting -allow negative stocks) – Tcode OMJ1
B. We have to activate the admissibility of negative stocks for a material in the material master data. (In storage location 2 View)



4.20 Example of Negative Stock

- 1000 pieces of a material are delivered. Due to insufficient time, the goods receipt is not yet entered in the system.
- Physical stock: + 1000 pieces
- Book inventory balance: 0 pieces
- The material is needed urgently, and 100 pieces are withdrawn from the warehouse. The goods issue is entered in the system straightaway.
- Physical stock: + 900 pieces
- Book inventory balance: - 100 pieces
- The goods receipt of 1000 pieces is posted at the end of the day.
- Physical stock: + 900 pieces
- Book inventory balance: + 900 pieces

4.21 Stocks

- MC46 - Display the slow moving stock materials,
- MB51 - Display the goods movements for specified materials,
- MB52 - Displays stocks at plant and storage location level,
- MC49 –displays the mean stock value.

4.22 Goods Withdrawal

Goods withdrawal to following account assignment object can be possible in the system.

- Cost Center
- Production order
- Asset
- Sales order

5 Subcontracting

5.1 Process of Subcontract in MM

A. Create the finished goods material code – MM01
B. Maintain the BOM for the finished Material – CS01
C. Create Standard PO with item category as "L" – ME21N
D. Issue material to vendor with movement type 541 – ME2O
E. Receive the material against the PO with movement type 101 – MIGO(Sub items comes with Mvt type 543 and by product as 545)
F. MIRO to account for vendor's invoice for the service charge& material used by him.

5.2 Pre-Request:

A. Create Subcontracting PIR for subcontractor with Finished Material code. Main subcontractor service charge in PIR.

5.3 Master Data Setting:

A. Material Master (MM01)
Maintain special procurement key for subcontracting in MRP 2 view.

B. Bill of Material (CS01)
If a material needs to be returned by the vendor after the subcontracting process is complete, it should be entered as a negative quantity in the Bill of Material (BOM).

5.4 Accounting Entries in Subcontracting PO:

Good Receipt (MIGO):-

a. *Raw Material:-*

Raw Material consumption A/c	=	+ GBB/VBO (Debited)
Inventory A/c	=	- BSX (Credited)

b. *Finished Product:-*

Inventory A/c	=	+ BSX (Debited)
GR/IR Clearing A/c	=	- WRX (Credited)
Vendor A/c or External Service	=	+ FRL (Debited)
Change in stock A/c	=	- BSV (Credited)

Note:-

- In case of goods receipt of subcontracting purchase order. The transaction event key **FRL or FRN** is hitted as sap standard process.
  - FRL - External activity.
  - FRN - Incidental costs of external activities.
- If the purchase account management is active, and if is GR or IR for the subcontract order are concerned, Then system uses posting keys FRL or FRN and BSV instead of posting keys EIN and EKG.

5.5 Different Scenarios

5.5.1 Scenario: 1

Providing R/W Materials to subcontracting vendor From Another Vendor:

Material A	-	Finished Material
Material B	-	R/w Material to created material A
Vendor X	-	Subcontractor
Vendor Y	-	Vendor to supply R/w Material B

- Here we have to create 2 PO's, one as Subcontracting for Material "A" and other as Standard PO for Material "B".
- 1st Subcontracting PO – Create Subcontracting PO to Subcontract vendor "X" for Finished Material "A".
- 2nd Standard PO – Create Standard PO to vendor "Y" for R/w Material "B".
  - In item Details - Delivery address TAB enter subcontract vendor address as delivery address.
  - Ticks mark the Check box the SC vendor beside this field.

- Now inform the vendor Y to send the components B to subcontractor X.

- When Subcontract vendor "X" will confirm you that the components are (material B) arrived at his place take the GRN for purchase order no 2.
- This will directly Transfer the stock of material (B) provided to Subcontract vendor "X" instead of your company/storage location.
- You are liable to pay for vendor "Y" as now the stock is in our Subcontractor place.
- Do normal MIRO for vendor "Y" for Payment.
- Receive the Material "A" against the Subcontracting PO with movement type 101 – MIGO(Sub items comes with Mvt type 543 and by product as 545)

5.5.2 Scenario: 2

Subsequent Adjustment In Process Of Subcontracting – MB04 (Mvt 121):

- After the subcontractor (as vendor) had delivered the ordered material (end product), you posted the goods receipt to the subcontract order. The system determined the necessary components for each purchase order item and created for each component a goods issue item with the quantity that was determined in the purchase order.
- If the vendor informs you after these postings that greater or smaller quantity of the subcontracting components was actually consumed than planned in the purchase order, You must post a subsequent adjustment to correct the goods issue posting with Mvt 121
  - In Tcode MB04 Fill in the Purchase Order Number and hit enter
  - Tick the checkbox of the components you want to adjust and click the Adopt button or press F5
  - Enter the quantity difference. If more of the components were consumed, enter a positive Amount; if fewer were consumed enter a negative amount. Finally, post the document.
  - After saving, the value of the goods receipt is recalculated to include the subsequent quantity.

5.5.3 Scenario: 3

By-Products in Subcontracting:

- In the subcontracting PO we give the BOM in which components issued are given +ve indicator and byproducts &scraps as –ve.
- After finished products are ready at subcontractor, we receive goods with MIGO 101 movement type where components are consumed with 543, by-products are created with 544 and scrap with 545.
- We return the materials to our stock with 542.
- If quantity of scrap is known, we give the percentage of it in BOM. If it is known later, we can move to scrap with 545 and return with 542. We can also use movement type 551 directly to scrapping.

6 Consignment

In consignment processing, the vendor provides materials and stores them on our premises. The vendor remains the legal owner of the material until you withdraw materials from the consignment stores.

- Consignment stocks of the same material from different vendors can be managed independently from one another and at the price of the individual vendors.
- Consignment stocks are not valuated. When the material is withdrawn it is valuated at the price of the respective vendor.
- A consignment material can be allocated to one of three stock types:

- Unrestricted-use stock
- Quality inspection stock
- Blocked stock

You can make transfer postings between these three stock types. Withdrawals can only be posted from unrestricted stock, however.

6.1 Consignment Process:

A. Create Consignment info record in Tcode ME11. (Prices need to be maintained in info record which will be used when settling liabilities with vendor)
B. Create the Purchase Order with item category K in ME21N to order the goods from vendor for consignment.
C. DO the GRN with MVT 101K in Tcode MIGO.
These goods will not be valuated; accounting document will not be posted unless stock is withdrawn from consignment stock to our own use.
D. Transfer consignment stock to your own stock in MVT 411K in Tcode MB1B
This will be valuated and will post accounting document. Now consignment stock is actually valuated.
E. Do the Vendor Settlement in Tcode MRKO.
F. If goods are not withdrawn, you can do 102 (MIGO) or 122 (MB01) with special stock indicator K for consignment to return goods to vendor.
G. Stock in consignment is seen separately in stock overview MMBE for certain material and plant.

6.2 Accounting Entries for Consignment:

Good issue to cost centre-Mvt-201K:-

Raw Material consumption A/c	=	+ GBB/VBR (Debited)
A/c Payable consumption	=	- KON (Credited)

Transfer good to own stock from Vendor-Mvt-411K:-

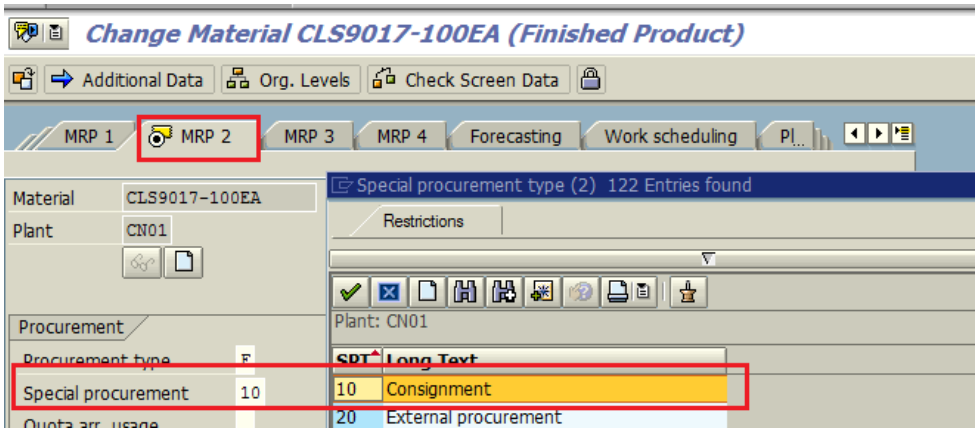
Inventory A/c	=	+ BSX (Debited)
A/c Payable consumption	=	- KON (Credited)

For both Mvt-201K/411K invoice is –MRKO:-

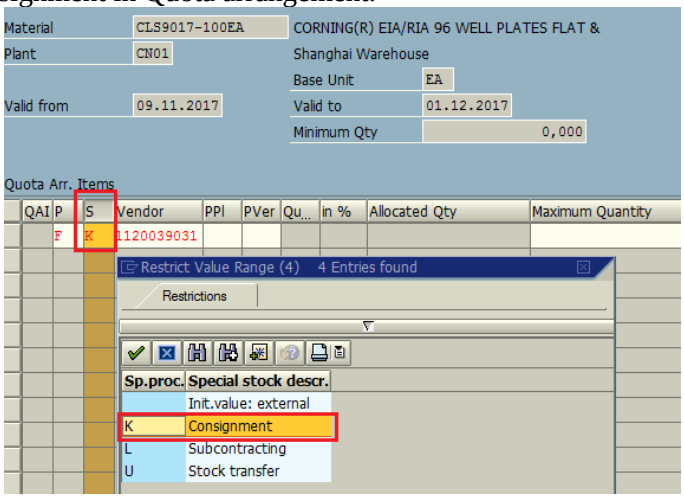
A/c Payable consumption	=	+ KON (Debited)
Vendor A/c	=	- Credited

6.3 Automatic generation of Consignment Purchase requisition

- To generate purchase requisitions with the consignment item category in material requirements planning (MRP). We have to Select Consignment as the special procurement type in the material master record (MRP 2 View). If you generate MRP for this Material then PR will be created with item category “K”



- "OR" we can also generate Consignment purchase requisition in MRP by determining vendor as consignment in Quota arrangement.



7 Stock Transfer & Stock Transport Order

7.1 Types of Stock Transfer – MB1B (Without STO):-

A. Stock Transfer between Plants in One Step (Mvt 301)
B. Stock Transfer between Plants in Two Steps (Mvt 303& 305)

7.2 Stock Transfer between Plants in One Step (Mvt 301 – Tcode MB1B)

301 removes items from one plant's stock, immediately updates the other plant's stock, and makes the items available.

7.3 Stock Transfer between Plants in Two Steps (Mvt 303 & 305 – Tcode MB1B)

303 will remove the stock and put it into "stock in transit." The receiving plant has to do a 305 when the stock arrives to make it available for use.

7.4 Types of Stock Transfer Order:-

A. Stock Transport Order without Delivery (Same Company code)

B. Stock Transport Order with Delivery via Shipping (Different Company code/Inter Company code STO via the SD Component)
C. Stock Transport Order with Delivery and Billing Document/Invoice (Different Company code/Inter Company code STO via the SD Component)

7.4.1 Stock Transport Order without Delivery (Same Company code)

- Create of stock transport order (STO) at receiving plant (ME21N)
  - Document Type – UB (STO PO)
  - Enter Delivery cost in PO
  - Item category – "U"
- Goods issue with respect to STO PO (MIGO-GI) and use Mvt – 351
  - System creates Accounting document at the time of Goods issue
- Goods Receipt at receiving plant (MIGO-GR) with respect to STO PO with Mvt 101.
  - System won't create an accounting document because account postings are already made at the time of goods issue.

7.4.2 Stock Transport Order with Delivery via Shipping (Different Company code/Inter Company code STO via the SD Component)

- Create of stock transport order (STO) at receiving plant (ME21N)
  - Document Type – UB (STO PO)
  - Enter Delivery cost in PO
  - Item category – "U"
- Creation of Replenishment order (Outbound delivery) at Supplying plant with reference to the STO PO (VL10B)
- Ship the Goods (Picking) with Replenishment delivery (Outbound Delivery)and do Goods issue at supplying plant with Mvt 641(T code VL02N)
  - System creates Accounting document at the time of Goods issue
  - If you use the two-step procedure, use movement type 641.
  - If you use the one-step procedure (movement type 647), no goods receipt needs to be posted when the goods arrive in the receiving plant
- Goods Receipt at receiving plant (T Code MIGO) for with Replenishment delivery (Outbound Delivery) with Mvt 101
  - System won't create an accounting document because account postings are already made at the time of goods issue.

7.4.3 Stock Transport Order with Delivery & Billing Document/Invoice (Different Company code/Inter Company code STO via the SD Component)

- Stock transport order in the receiving plant.
  Create a stock transport order with order type NB and item category blank (standard).
- Creating Outbound Delivery – VL10B.
- Changing Outbound Delivery – VL02N.
  To Pick the Material and to do the Post Goods Issue supplying plant will change the above outbound delivery document.
- Creating Billing Document – VF01
  After PGI, A billing Document known Commercial Invoice is created to update the corresponding GL Accounts and same is send to receiving plant (Customer).
- Goods Receipt for Stock Transport Order – MIGO
- Invoice in the receiving plant – MIRO

The receiving plant enters the invoice from the supplying company code in logistics invoice verification.

7.5 Configuration Steps for STO

A. STO Document Type – UB.

Standard document type used is UB and assign allowed item category U (Stock transport order) in UB.

B. Define Shipping Data for Plant.

In this configuration step, customer number is assigned to the plant.

C. Create Checking Rule.

Stock transport orders can do the availability check of the material in the supplying plant.

D. Assign Delivery Type and Checking Rule.

Deliverytype and checking rule are assigned to the supplying plant and STO document type.

For STO Document type UB, the delivery type NL is used with checking rule B

For document type NB, Delivery type NLCC is used with checking rule B.

E. Master Data Configuration.

- Customer number assigned to the supplying plant.
- Materials master should be extended to the sales area.
- Shipping point determination needs to be maintained for the issuing plant.
- Issuing Plant should be created as vendor.

Note: - In STO, the accounting entry happens when you perform the goods issue (Mvt type 351,641).There is no accounting entry passed during MIGO (101)

8 Third-Party Processing

In third-party processing, you place a purchase order with a vendor to deliver goods for a third party (Customer).

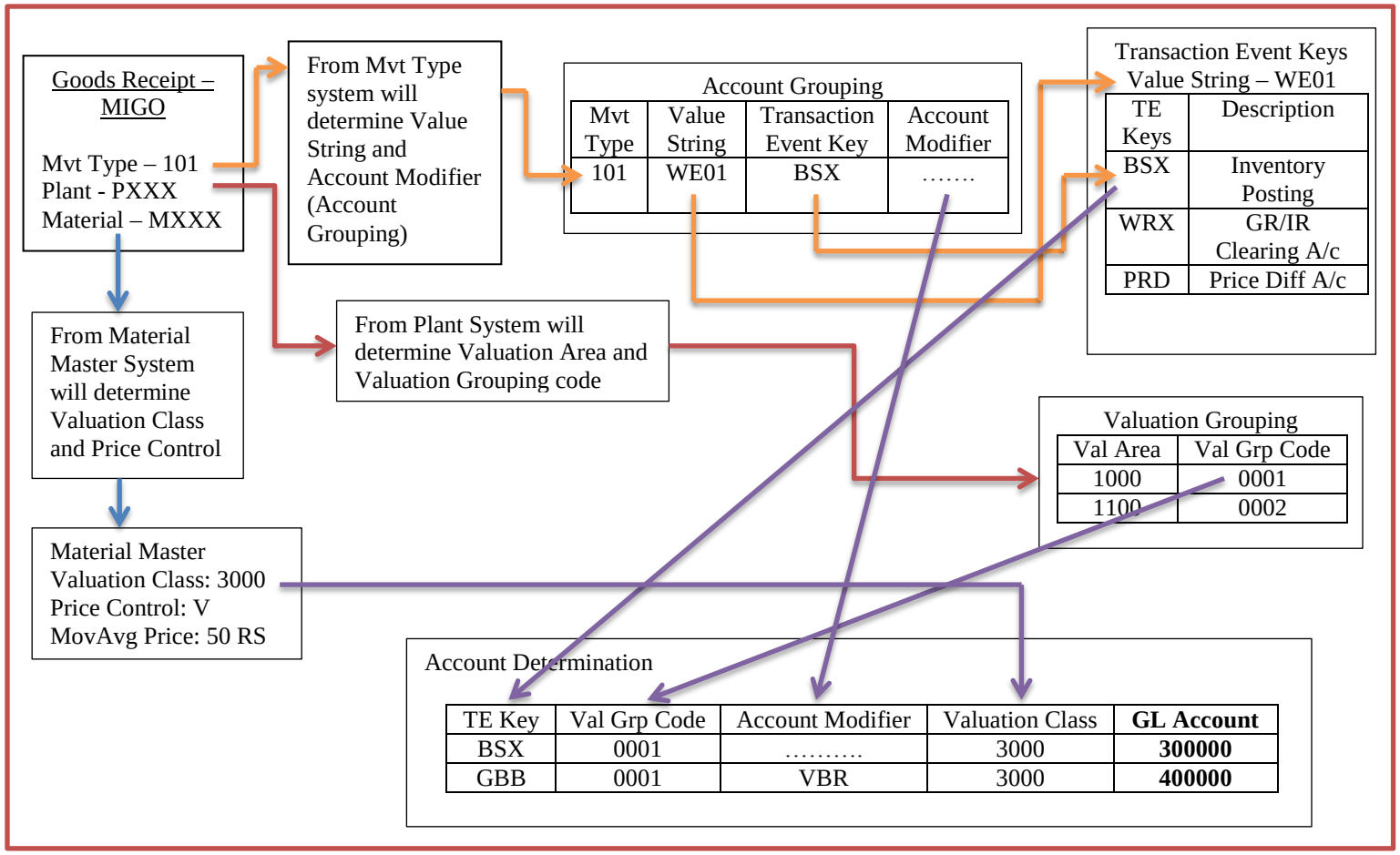
This means that your company does not deliver the material. You forward the order to an external vendor instead, who then sends the material directly to the customer and invoices to you.

8.1 Third-Party Processing

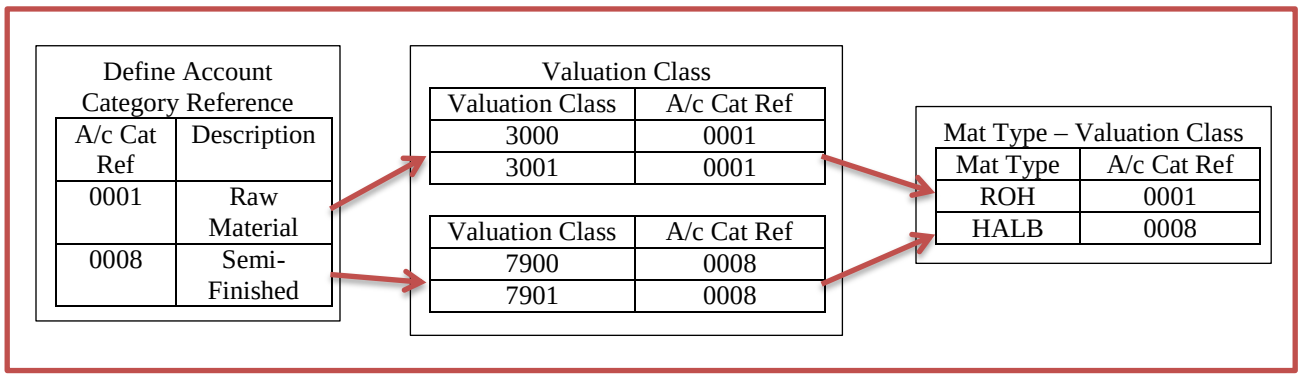
- Creation of third party sales order
- When you create a third-party sales order, the system automatically creates a purchase requisition.
- Manually create a PO for vendor with item category “S”. Enter either the customer number or customer address in delivery address Tab. (Check whether goods receipts can be made for the third-party item. Goods receipts are possible if the goods receipt indicator is set in the item).
- There will be no GR in this case.
- Create an invoice verification document to vendor
- Create an invoice from the SD side w.r.t Sales order.

9 Automatic Account Determination

9.1 Account Determination Process



9.2 Assigning Valuation Class to Material Type via Account Category Reference



9.2.1 Movement Type:

It is a 3 Digit number which indicates movement of stock/Material.

9.2.2 Value String:

- Value string keys are for SAP internal usage. It is just a pointer to the transaction event key which is necessary for automatic account determination.

- Movement types are linked to transaction keys via valuation string in OMWN T-code.
- The value string contains all posting transactions that are possible for a certain transaction.
- Value string WE01, for the goods receipt for a purchase order into stock, contains transactions BSX and WRX
- WE01: BSX, WRX, PRD, KDM, EIN, EKG, BSV, FRL, FRN, BSX, UMB.

9.2.3 Transaction Event Key:

You do not have to define these transaction keys, they are determined automatically from the transaction (invoice verification) or the movement type (inventory management). All you have to do is assign the relevant G/L account to each posting transaction.

9.2.4 Account Modifier:

- A/c Modifier is used for the transactions for which SAP says there may be some business transactions for which we can do posting accordingly for our requirements.
- Mainly focus on GBB, KON and PRD they are offsetting entry for materials, consignment and price difference accounts.
- A/C modifier is attached to value string for a particular transaction.

9.2.5 Valuation Group Code:

Valuation grouping code is used to group the valuation area to minimize the effort In SAP using two types of valuation area

9.2.6 Valuation Area:

It is the entity where we evaluate the material also SAP recommends to use plant as Valuation Area

9.2.7 Valuation Class:

Valuation class is nothing but group of GL A/c

9.3 List of Transaction Event Keys:

- BSV - Change in stock A/c
- BSX – Stock A/c
- FRE - freight A/c
- FRL - External service
- FR1 - Freight clearing
- GBB - Offsetting entries
  - BSA - for initial entry of stock balances
  - VBO - for consumption from stock of material provided to vendor
  - VBR - for internal goods issues (for example, for cost center)
  - ZOB - for goods receipts without purchase orders (Mvt type 501)
- KON - Consignment liabilities
- PRD - Price differences
- VST - Input tax, Purchasing
- WRX - GR/IR clearing

9.4 Delivery Cost in PO

Transaction event keys in delivery cost comes from

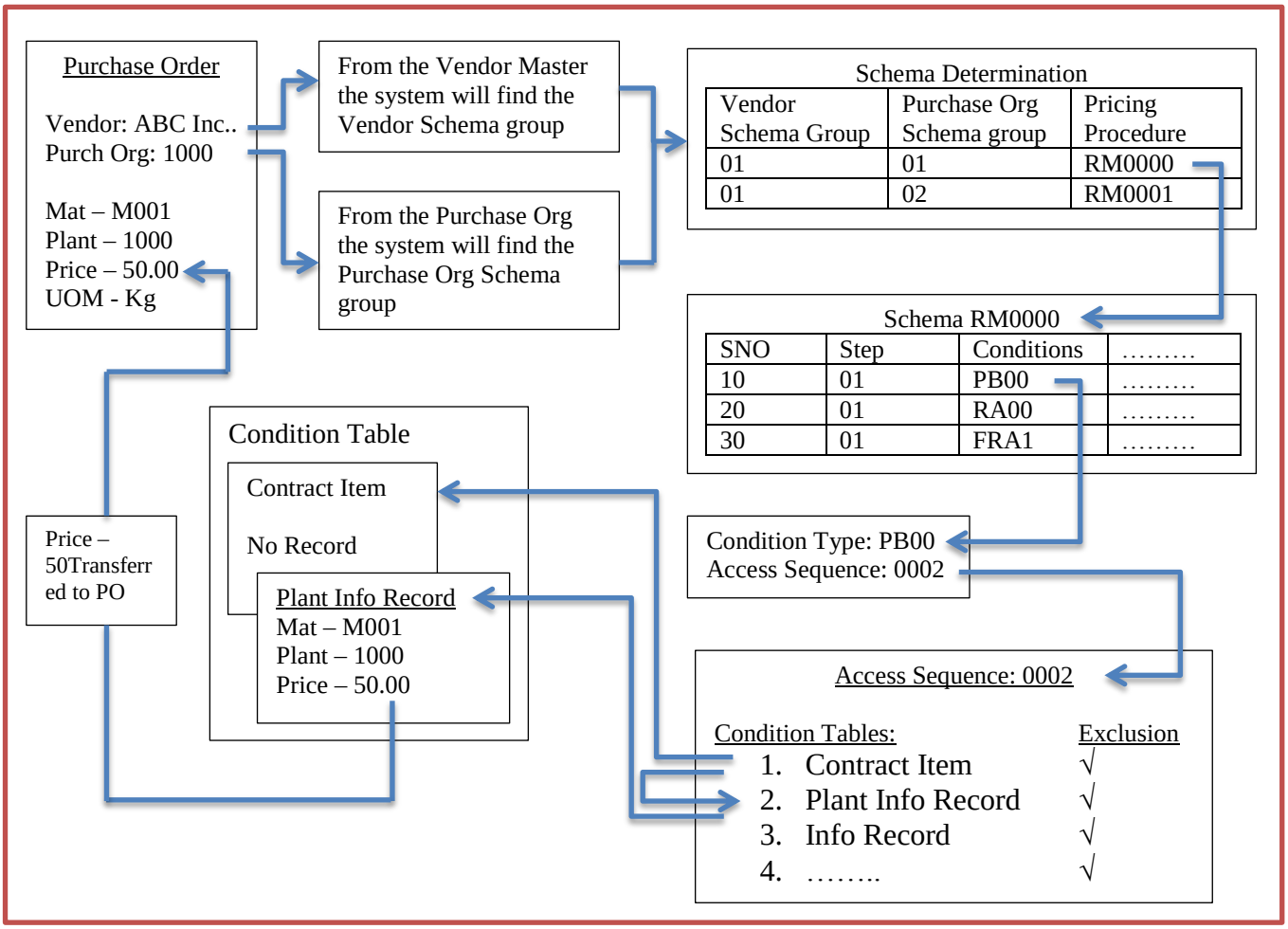
- Value String
- Purchasing calculation schema

9.5 Value string WA01 defined for

- Goods issues
- Other goods receipts

10 Pricing Procedure

10.1 Pricing Procedure: Price Determination process in a PO



10.2 Process Steps

10.2.1 Determine the condition tables.

The system determines the condition tables assigned to the access sequence and it is nothing but the price element.

a. Determine the condition record (Part I)

The condition table of access sequence 0002 consists of many condition records of which contract item has the highest priority. A system search yields no value for this condition record.

b. Determine the condition record (Part II)

In the previous step, the system search yielded no result for the highest priority condition record, which is contract item. Therefore, the system moves to the next condition record, which is Info Record.

10.2.2 Determine the access sequence – 0002.

- An access sequence is a search strategy the sap system uses to search for valid condition records of a certain condition type.
- Condition type PB00 – Assigned to access sequence 0002

10.2.3 Determine the condition type – PB00.

The condition types are used to represent pricing elements such as prices, discounts, surcharges, taxes, or delivery costs in the SAP System. These are stored in the system in condition records.

10.2.4 Define Calculating Schema – RM0000.

A calculation schema - a framework of steps used to calculate or determine something - is used among other things to calculate costs, prices, period-end rebates, and taxes.

10.2.5 Define schema group.

Defining a schema group helps you keep track of this by grouping together the purchasing organization or vendors that use the same calculation schemas.

- Define a vendor schema group.
- Define a purchasing organization schema group.
- Assign a purchasing organization schema group to the purchasing organization.
- Assign a vendor schema group in the vendor master record.

10.2.6 Assignment of Schema Group of Vendor, Schema Group Purchasing Organization and Calculation Schema.

- The calculation schema is assigned for a combination of vendor schema group and purchasing organization schema group.
- The calculation schema is assigned for a combination of a supplying plant and purchasing organization schema group.

10.2.7 Maintain Condition record(MEK1)

Important Points

- Item conditions are conditions relating to a single item of a document.
- Header conditions are entered in the header of a document and relate to all the items of that document.
- An access sequence is a search strategy that enables you to specify the order in which condition tables are to be searched for relevant entries for a condition type.
- The order of the accesses is determined by the order of the condition tables in the access sequence.

- A condition type must have an access sequence assigned to it if you want to maintain conditions with their own validity periods (for example, condition type PB00).
- No access sequence assigned to header conditions, discounts, or surcharges.

11 Logistics Invoice Verification (MM-IV-LIV)

Document from an invoicing party containing the payments to be made based on business transactions performed in Purchasing and Inventory Management. An incoming invoice can be an invoice or a credit memo.

11.1 Important data for Invoice Verification is:

- Master data
- Transaction data

11.1.1 Master data

A. Material Data
   Material number, material name, units of measure, stock data, over delivery and under delivery tolerances, reminder keys, price control data, and prices.
B. Vendor Data
   Vendor address, Bank data, the currency of the vendor, Terms of payment and terms of delivery.
C. Accounting Data
   Account name, the account type, the currency in which the account is managed,

11.1.2 Transaction data

A. Purchasing Document
B. A purchasing document contains information such as the vendor number, the purchase order date, the terms of delivery, the material number, and the order quantity.
C. Material Document
D. A material document is created when a goods receipt is posted. It includes the posting date, the quantity delivered, and perhaps also the delivery note number and the purchase order number that the goods receipt refers to. It documents the quantity-based changes.
E. Accounting Document
F. An accounting document is created when a goods receipt (unless the goods receipt is not valuated) or an invoice is posted. It contains details of the individual postings with the account number, posting key, and the amount. It documents the value-based changes.

11.2 Invoice Transaction (MIRO)

11.2.1 Invoice

You have received a vendor invoice. The vendor invoices you for the goods that you have ordered from that company.

11.2.2 Credit memo

The vendor has invoiced you too much for the last delivery, for example, less than the agreed quantity was delivered and that at the agreed total price, or you have returned part of a delivery to the vendor due to quality problems.

11.2.3 Subsequent debit

You have already received an invoice from your vendor for all the goods received. Subsequently, freight costs are to be taken into account; however, the invoice quantity remains the same.

11.2.4 Subsequent credit

You have already received a credit memo from your vendor for all the goods received. Subsequently, freight costs are to be credited to your company; however, the credit memo quantity remains the same.

11.3 Document Parking/Invoice Parking (MIR7)

You can park invoices or credit memos. This means that you enter the invoice data or credit memo data in the system and save it in a document, but the system does not post this invoice initially.

You can change a parked document as often as you wish, for example, by adding or correcting data. The changes are logged. When you have finished changing the document, you can post the parked document. Only when you post an invoice or credit memo, does the system carry out the normal account movements and make the necessary updates.

11.4 Prepayment

You use prepayment for vendors with whom you have built up good business relations over a longer period of time. This approach benefits both parties:

- The vendor receives prompt payment after issuing an invoice.
- As the ship-to party, you can make optimum use of payment targets, as the system pays the invoice independently of the corresponding goods receipt and the invoice check.

You should only use prepayment if you have built up a business relationship good enough to ensure that you are paid back any unauthorized prepayments.

Prepayment is not required for evaluated receipt settlement (ERS) or consignment settlement, since the invoices are created automatically by the system in these cases and transferred directly to Financial Accounting (FI).

11.4.1 Prerequisites

To enable the system to take account of invoices from a vendor when performing prepayment, you must have made settings in company-code-specific Customizing and for the Prepayment Relevance field in the vendor master.

11.5 Invoice Verification in the Background (MIRA)

This process is suitable for the following transactions:

- Posting invoices with mass amounts of data for which no item check is required
- Posting invoices referring to transactions not yet entered in the system.

11.6 Important Accounts for Invoice Verification

11.6.1 Vendor Account

There is a separate account in the sub-ledger for each vendor that all amounts concerning this vendor are posted to. Making a posting to the vendor account is

not the same as making a payment; payment is only made when the Financial Accounting department posts the vendor's payment to a bank account.

11.6.2 Stock Account (BSX)

In the ERP system, there is no separate account for each material. Instead, different materials with similar features are grouped together in a common account (for example, raw materials: acids). The account relevant for a material is defined in the material master record when a material is created.

11.6.3 GR/IR Clearing Accounts (WRX)

The GR/IR clearing account is an "intermediate" account between the stock account and the vendor account. At goods receipt, the net invoice amount expected is posted to the stock account. The offsetting entry is posted to the GR/IR clearing account. This posting is then cleared by an offsetting entry on the vendor account at invoice receipt.

11.6.4 Tax Accounts

The system makes postings to special tax accounts when invoices include tax.

11.6.5 Price Differences Accounts (PRD Account)

Price differences have to be posted to a price differences account if price differences have occurred in an invoice and when invoices are posted net and no posting can be made to the stock account.

11.6.6 Cash Discount Clearing Account

When you post an invoice net, the cash discount amount is taken into account in the invoice, it reduces the value of the items; the offsetting posting is made to the cash discount clearing account, which is then cleared when payment is made.

11.6.7 Freight Clearing Account (FRL)

The stock account is debited with the planned delivery costs at goods receipt and the system makes the offsetting posting to a freight clearing account. This posting is then cleared by an offsetting entry to the vendor account at invoice receipt.

11.7 Direct Posting

We can also post invoices that do not refer to a purchase order or a delivery. A typical example of this is a bill for expenses.

As in the case of an invoice with a reference, you first need to enter the header data and the vendor information.

In contrast to invoices with a reference, the system does not display any proposed values for the invoice items, since it cannot determine any purchase order items and posted goods receipts for this invoice. As a result, the system does not know which accounts are affected by the offsetting entry for the vendor line item. Therefore, you must specify which accounts the amounts are to be posted to. The SAP System provides the following options:

- Posting to a G/L account
- Posting to a material account

When you enter an invoice without a reference, you may find that a vendor has not been created in the system. You can post this invoice to a one-time account.

11.7.1 Invoices from One-Time Vendors

One-time vendors are vendors that supply your company only once or very rarely. It does not make sense to create master records for these vendors in the system since access to this data is no longer or rarely needed after the original transaction. Therefore, collective accounts are set up for one-time vendors. These accounts are also referred to as one-time accounts.

Since these accounts are used for more than one vendor, the master records do not contain any vendor-specific data. Therefore, data such as address, salesperson, bank details, and so on, must be entered in Purchasing or Invoice Verification.

11.8 Posting Taxes

Which taxes are to be paid and how they are to be posted in the system depends on the tax regulations defined by law in the country of the company concerned. The postings made are controlled by the tax code. A distinction is made between the following:
Deductible taxes
Non-deductible taxes

11.9 Cash Discounts

Percentage discount on the purchase price that you are guaranteed under the terms of payment if you pay the invoiced amount within a certain period. To define exactly when an invoice is to be paid, you can agree terms of payments with your vendor.

11.10 Invoice with Variances

An invoice is said to contain variances if a quantity or value in at least one item is invoiced at a different value to the value that the system proposes.

If you accept a variance in an invoice item and overwrite the proposed value, the system checks if the variance is within the tolerance limits. If it is outside the limits, a warning message is displayed but you can still post the invoice. If an upper tolerance limit is exceeded, the invoice is posted but blocked for payment. You have to release the invoice for payment in a separate step.

11.10.1 Four different types of variance:

- Quantity Variance
- Price Variance
- Quantity and Price Variance
- Order Price Quantity Variance

11.11 Blocking Invoices

An invoice can be blocked for payment due to one of the following reasons:

- Variance in an Invoice Item
    1. Quantity Variance
    2. Price Variance
    3. Schedule Variance
       (The date of invoice entry is before the delivery date agreed in the purchase order)
    4. Variance in Order Price Quantity
    5. Quality Inspection
       (If a material is defined as being relevant for quality management, goods receipts for this material are posted to stock in quality inspection.

Invoices for the material are blocked until the inspection has been successfully completed)

- Amount of an Invoice Item

  (If an invoice item containing a large amount is entered, it is advisable to initially block this invoice to check the amount, especially in the case of invoices that do not refer to a purchase order)

  - Stochastic Block
- Manual Block

11.12 Invoice Release (MRBR)

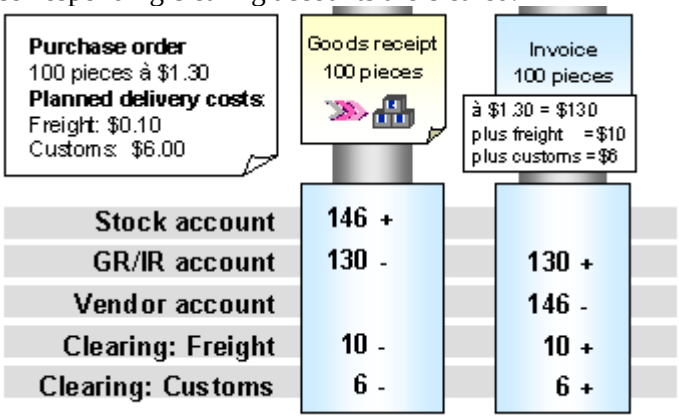
- Releasing Invoices Automatically
  (When you release invoices automatically, the system deletes all blocking reasons that no longer apply)
- Releasing Invoices Manually
  (When you release invoices manually, a list of the blocked invoices that match your criteria appears. In this list, blocking reasons that no longer apply are highlighted in color. You can delete individual blocking reasons or select invoices that are to be released)

11.13 Delivery Costs

Delivery costs are costs that are invoiced for a delivery over and above the value of the delivery itself. This includes freight charges, customs duty, or other costs.

11.13.1 Planned Delivery Costs

Planned delivery costs are agreed upon with the vendor before the purchase order is created. You enter them in the purchase order. (Freight charges, Customs Charges etc.)
Planned delivery costs are automatically posted to clearing accounts at goods receipt. Each origin type has its own clearing account. When you post the invoice for these delivery costs, the corresponding clearing accounts are cleared.



11.13.2 Unplanned Delivery Costs

Unplanned delivery costs were not agreed on in the purchase order and are not entered until the invoice is received.
The system posts unplanned delivery costs to a separate G/L account. Therefore, the unplanned delivery costs do not debit stock accounts or account assignment objects.

The system does not display unplanned delivery costs that were posted to a separate G/L account in the purchase order history.

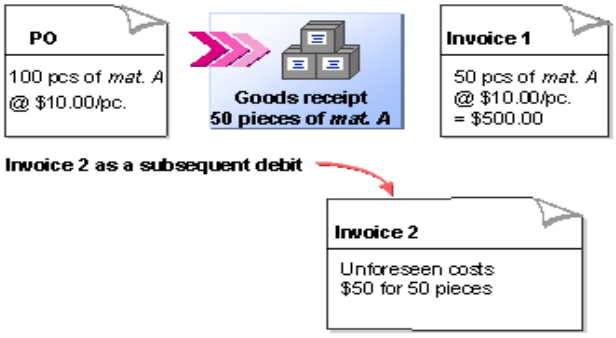
11.14 Subsequent Debits/Credits

A subsequent debit/credit exists when an additional invoice or credit memo is received for a transaction that has already been invoiced.

By posting a subsequent debit/credit, the system updates the ordering transaction on a value basis but not on a quantity basis. The quantity invoiced therefore does not change, but the total value invoiced does.

Examples: Subsequent Debits/Credits

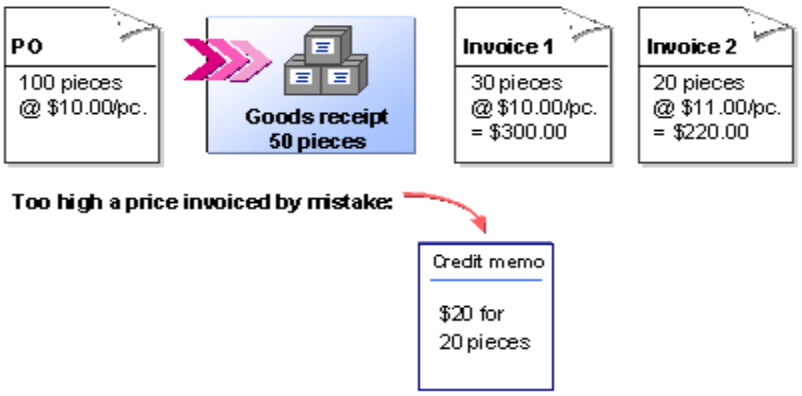
A. Subsequent Debit:-



If you did not post the second invoice as a subsequent debit, the system would interpret this invoice as another partial invoice for the purchase order. When entering the invoice, you would receive warning messages due to quantity and price differences.

When posting the invoice, the quantity update for the purchase order would be wrong. The system would update the invoice quantity with 100 pieces.

B. Subsequent Credit:-



If you did not post the credit memo as a subsequent credit, the system would interpret the credit memo as a reversal.

When posting the invoice, the quantity update for the purchase order would be wrong: The system would update the invoice quantity with 30 pieces.

11.15 Automatic Settlements:-

A. Evaluated Receipt Settlement(MRRL)
B. Consignment and Pipeline Settlement(MRKO)

C. Invoicing plan settlement (MRIS)
D. Revaluation (MRNB)

11.15.1 Evaluated Receipt Settlement (MRRL)

Procedure for settling goods receipts automatically. When you use Evaluated Receipt Settlement (ERS), you agree with the vendor that the latter will not submit an invoice in respect of a purchase order transaction. Instead, the system posts the invoice document automatically on the basis of the data in the purchase order and goods receipts. This eliminates invoice variances.

ERS has the following advantages:

- Purchasing transactions are closed more quickly.
- Communication errors are avoided.
- There are no price and quantity variances in Invoice Verification.
- We can even Post the invoice manually if PO is having ERS Tick

11.15.1.1 Prerequisites

- Evaluated receipt settlement must be flagged in the purchase order item.
- The vendor must be flagged as being subject to ERS in the vendor master record.
- Goods-receipt-based Invoice Verification must be defined for the purchase order item.
- A tax code must have been maintained in the purchase order item or PIR should be maintained with TAX.

11.15.2 Consignment and Pipeline Settlement (MRKO)

Consignment Material is stored at your company premises but belongs to a vendor. The vendor supplies these goods so that they are available to you at any time, but does not initially invoice you for the goods. Only when you have withdrawn stock does payment become due for the quantities used.
Pipeline Material flows directly into the production process. This could be from a pipeline, for example, oil, from a pipe, for example, water, or from a cable, for example, electricity. Payment is due after each withdrawal.

11.15.2.1 Constraints

Consignment and pipeline settlement is not connected to the purchasing information system, because the purchase order history is not updated during consignment settlements.

11.15.3 Invoicing plan settlement (MRIS)

An invoicing plan enables us to schedule invoice creation over a series of future due dates independently of individual procurement transactions and the actual receipt of goods or services. we can inform the vendor when the invoice documents are created.

11.15.4 Revaluation (MRNB)

We use this to determine the difference values on the basis of price changes that are retroactively valid and to create settlement documents for them. You can also revaluate purchasing document items for which you have entered invoices or

credit memos in different currencies. You can send the revaluation settlement documents to the vendors as Messages or via EDI.

11.16 Credit Memo

They are used to correct the purchase order history if the quantity invoiced was too high, for example, if an invoice was too high or if part of the quantity was returned. When you post a credit memo, the total quantity in the purchase order history is reduced by the credit memo quantity.
If you do not want the total quantity invoiced to be reduced, you must post the credit memo as a subsequent credit.

11.17 Reversals/Cancel (MR8M)

Invoice documents in Invoice Verification are either invoices or credit memos. These documents can be cancelled. There are two different cases:

- If an invoice is cancelled, the system automatically creates a credit memo.
- If a credit memo is cancelled, the system automatically creates an invoice.

11.18 Invoices Received via EDI

Information can be transferred between different companies using EDI. This enables a vendor to transfer invoice information electronically instead of in the form of a printed paper invoice. An IDoc is generated for each invoice. The system posts an invoice using the data in this IDoc.

11.18.1.1 Constraints

When you transmit invoice information via EDI, you

- Cannot create subsequent debits
- Cannot settle planned delivery costs
- Cannot post with varying purchase order units of measure
- Cannot post invoices for blocked purchase order items

11.19 Archiving Invoice Documents (MRA1/ MRA2/ MRA3/ MRA4)

We can archive invoice documents.

Create Archive	-	MRA1
Delete Documents	-	MRA2
Display Archived Document	-	MRA3
Manage Archive	-	MRA4

11.20 Tcodes:

- MIRO – Enter Invoice
- MIR7 – Park Invoice
- MIRA – Enter invoices for invoice verification in the background
- MIR4 – Display invoice document
- MR8M – Cancel invoice document
- MRBR – Release blocked invoices
- MR90 – Output Messages
- MRRL – Evaluated Receipt Settlement (ERS)
- MRKO – Consignment and Pipeline Settlement
- MRIS – Invoicing Plan Settlement
- MR11 – Maintain GR/IR Clearing Account

- MR11SHOW – Display/Cancel Account Maintenance Document

12 SAP Methodology

ASAP methodology means nothing but standard process for implementation of SAP, It consists of 5 phases.

12.1 Project preparation

During this phase the team goes through initial planning and preparation for SAP project (consists of identifying team members and developing strategy as how to go).

12.2 Business Blueprint

The purpose of this phase is to achieve a common understanding of how the company intends to run SAP to support their business and Consists of detailed documentation.

12.3 Realization

The purpose of this phase is to implement all the business process requirements based on the Business Blueprint.

12.4 Final Preparation

The purpose of this phase is to complete testing, end-user training and cutover activities to finalize our readiness to go live.

12.5 Go-Live Support

The purpose of this phase is to move from a project-oriented, pre-production environment to live production operation.

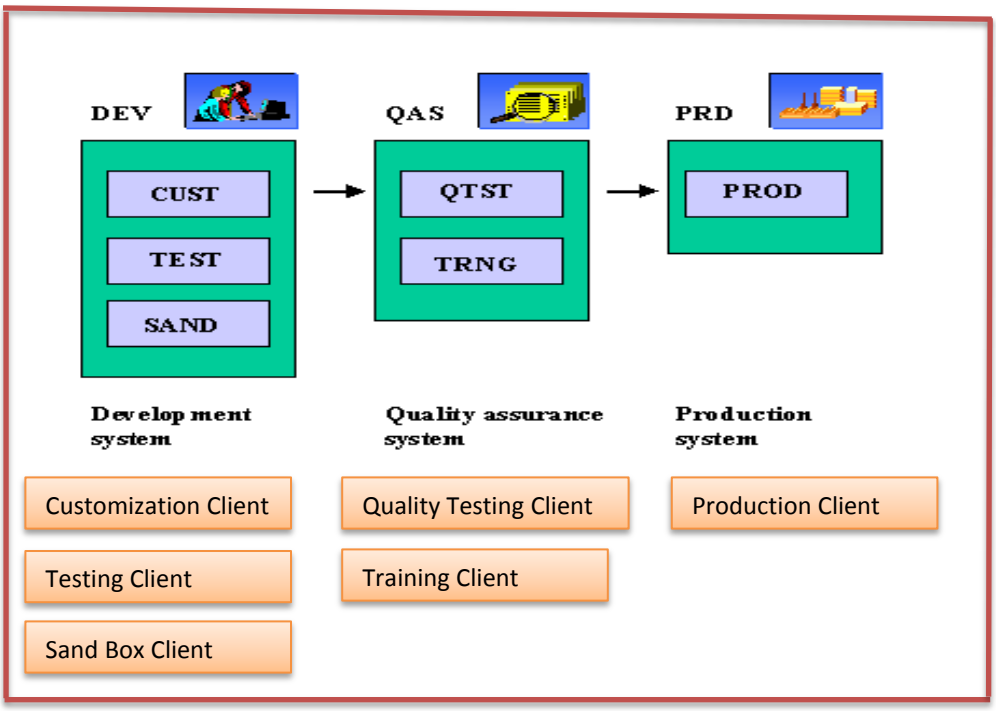
13 System Landscape

Landscape is like a server system or like a layout of the servers or some may even call it the architecture of the servers' viz. SAP is divided into three different landscapes DEV, QAS and PROD.

Development ---> Quality -----> Production

Development: is where the consultants do the customization as per the company's requirement.
Quality: is where the core team members and other members test the customization.
Production: is where the live data of the company is recorded.

SE10 – To Release the Transport Request



13.1 Meaning of "R" in R/3 systems:

R/3 stands for real-time three tier architecture. Three layers are installed in Different system/server and they are connected with each other.

A. Presentation
B. Application
C. Database

14 SAP Projects & Testing Methods

14.1 Types of SAP Projects:

14.1.1 SAP Implementation Project

Company wants to implement SAP Modules (Ex: PP/MM/SD/FI/CO etc.) for the first time. In implementation projects consultant from various modules do configuration based on company requirements.

14.1.2 SAP Support Project

After implementation of SAP modules customer/business need assistance of consultants in their day to day business operations using SAP software.

14.1.3 SAP Roll-Out Project

Company has upgraded/implemented SAP HR & wants to rollout country specific changes in different countries.

14.1.4 SAP Up gradation Project

Customers are moving from the older versions to new versions. It is called as SAP Migration Projects.

14.2 Testing Methods in SAP Projects:

14.2.1 Development Unit Testing

This is done by developer .Unit test is executed in development system. This tests alone pieces of functionality.

14.2.2 Security Testing

Security testing ensures the SAP security roles and authorization roles provided based on the requirements.

14.2.3 Integration Testing

It is testing of SAP transactions (for example, MM is integrated with SD) you need to test all MM & SD Transactions accordingly.

14.2.4 User Acceptance Testing (UAT)

User Acceptance testing is conducted by a group of business end users to validate that the new developed SAP system meets all requirements.

14.2.5 Regression Testing

Project Team member and/or Super Users of Group Companies to execute several testing scenarios (usually in QAS Environment) to make sure that the new configuration to be set up in PRD Client will not be jeopardize any current settings. What we have to do is to develop all testing scenarios in forms of the so-called Test Scripts which indicates all testing steps that testers shall have to complete.

15 Types of Calls/Tickets & SLA

15.1 Types of Calls:

A. Incidents (Bugs in Productions System)
B. Change Request (Configuration and Development activities)
C. Problem Tickets (Investigation of Re-accruing incidents and problems)
D. Service Request (Task/Repeated activities)

15.2 SLA – Service Level Agreement:

You and the customer can use the SLA to agree on the methods of rendering a guaranteed service.

15.3 SLA for Incidents:

A.	Critical Incidents	–	P1 Incidents	–	4 Clock Hours
B.	High Priority Incidents	–	P2 Incidents	–	2 Business days
C.	Medium Priority Incidents	–	P3 Incidents	–	5 Business days
D.	Low Priority Incidents	–	P4 Incidents	–	10 Business days

15.4 SLA for Change Request:

A.	Major Change Request	–	90 Days
B.	Medium Change Request	–	60 Days
C.	Minor Change Request	–	30 Days

15.5 SLA FOR Problem Tickets & Service Request:

- SLA for Problem Tickets – 90 Days
- SLA for Service Request – 5 Days

16 Configuring SAP for Inbound and Outbound Processing

A. Overview of Partner profile

B. Configuring SAP Inbound Processing
   - Defining Logical System
   - Configuring distribution Model
   - Defining Partner Profiles for Logical system and assign inbound message type to it.

C. Configuring SAP Out-bound Processing
   - Defining Logical System
   - Configuring distribution Model
   - Defining Partner Profiles for Logical system and assign Out-bound message type to it.

D. Partner profile for vendors

16.1 Overview of Partner Profile

16.1.1 Partner Profile in IDOC:-

While Configuring SAP for Inbound and Outbound Processing. During inbound (client) processing, Idocs are transferred to the interface and stored in the R/3 System. The document data is generated in a second step, also in the course of a workflow. Outbound processing in SAP involves event handling.

16.1.2 IDOC and Usage in SAP

Idoc (for intermediate document) is a standard data structure for electronic data interchange (EDI) between application programs written for the popular SAP business system or between an SAP application and an external program.

16.1.3 Port in IDOC – WE21

The port defines the technical characteristics of the connection between SAP and the Subsystem. It also defines the medium in which data is exchanged between the two systems. In the EDI process, Idocs are transferred to external systems via ports

16.1.4 Process Codes in IDOC

Process code refers to a workflow or a function module which helps in reading or writing data from/to Idoc.

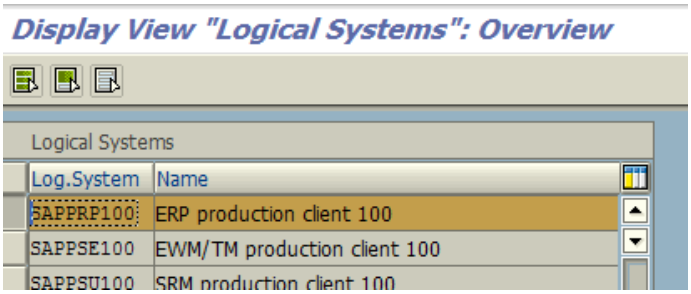
16.1.5 Message type in IDOC

A message type characterizes the data sent across systems and relates to the structure of the data called an IDOC type. For example, MATMAS is a message type for Material Master, and INVOIC is a message type for an Invoice (Billing Document).

16.2 Configuring SAP Inbound Processing

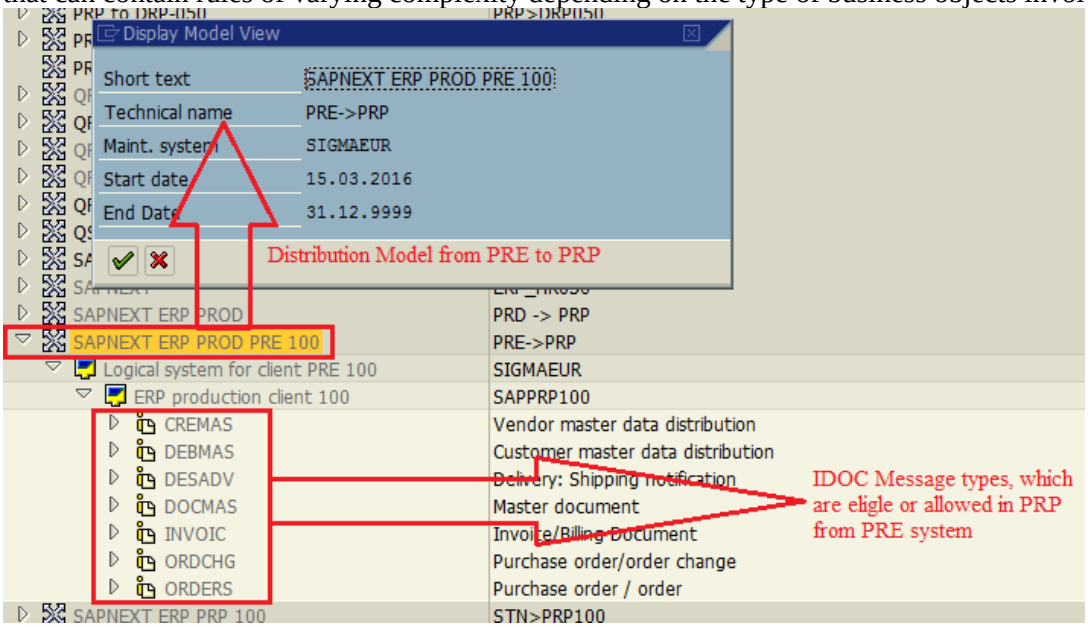
16.2.1 Defining Logical System – BD64

In any distributed environment, each participating system must have a unique ID to avoid confusion. In SAP, the name of the logical system is used as the unique ID. This name is assigned explicitly to one client in an SAP system.
Logical System defined as = SAPPRP100



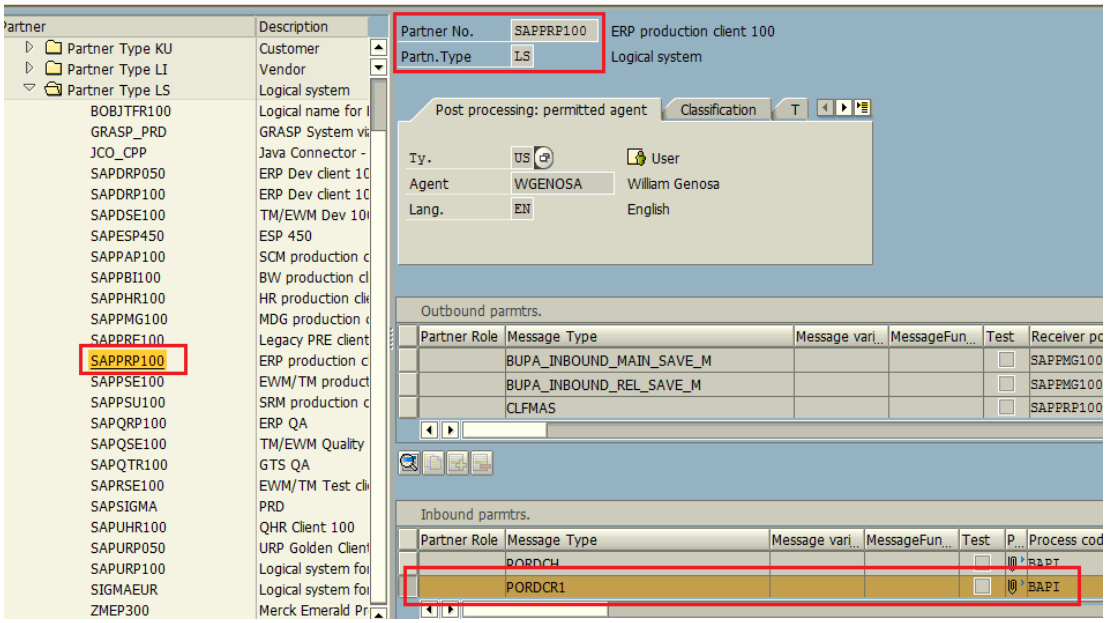
16.2.2 Configuring distribution Model

A distribution model is used to describe the ALE message flow between logical systems. Business objects are distributed to connected recipients according to a unique distribution model that can contain rules of varying complexity depending on the type of business objects involved.

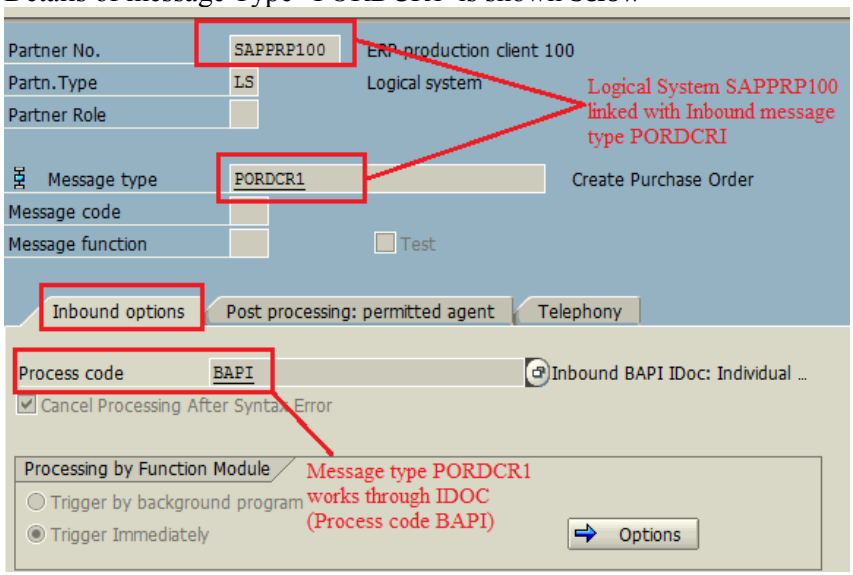


16.2.3 Defining Partner Profiles – WE20

- Partner profiles are a prerequisite for data exchange. This involves defining who can exchange messages with the SAP system and using which port.
- Select Partner as LS and select Logic system SAPPRP100



- Above screen tells you that, Logical system SAPPRP100 having inbound message type as PORDCRI (That means PO created through IDOC in PRP system).
- Details of message Type "PORDCR1"is shown below



- In the **Message type** field, enter the message type you want to use, for example, PORDCR1.
- In the Process code field, enter the process code you want to use, for example, BAPI (On what way data is carried to PRP from PRE).
- In the **Processing by function module** area, select one of the following options:
  - Trigger by background program (In this case the adapter writes Idocs to the SAP database, which is processed immediately).
  - Trigger immediately (In this case, the adapter waits for the SAP system to process IDocs. This can take anywhere from 1 to 15 minutes).
- Click Save

System SAPPRP100 (PRP-100) is ready for inbound processing of Idoc message type PORDCR1 (To Accept PO through IDocs) & Process code BAPI, which comes from legacy system PRE/PRD.

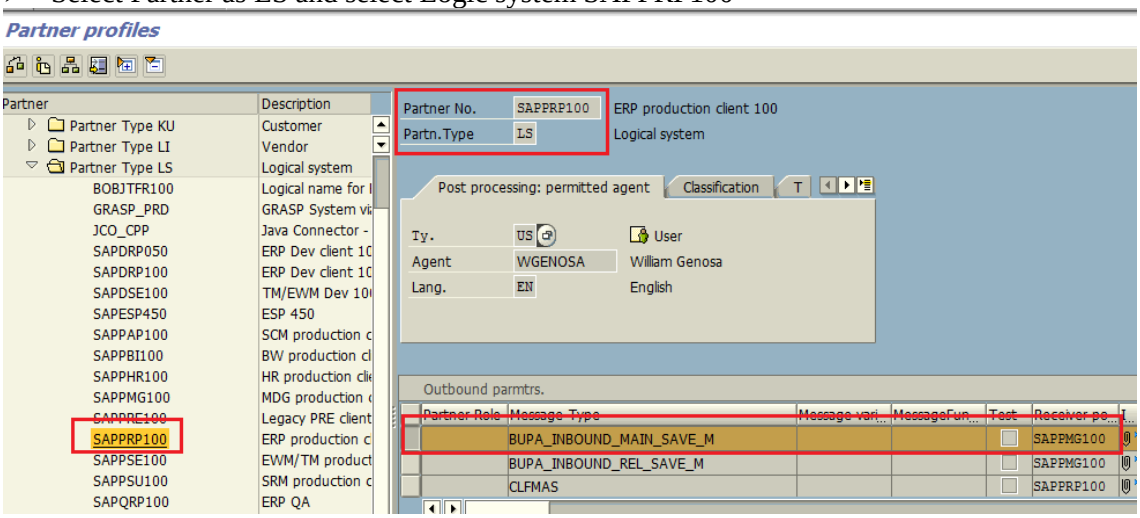
16.3 Configuring SAP Out-bound Processing

16.3.1 Defining Logical System – BD64 (Explained in Above steps)

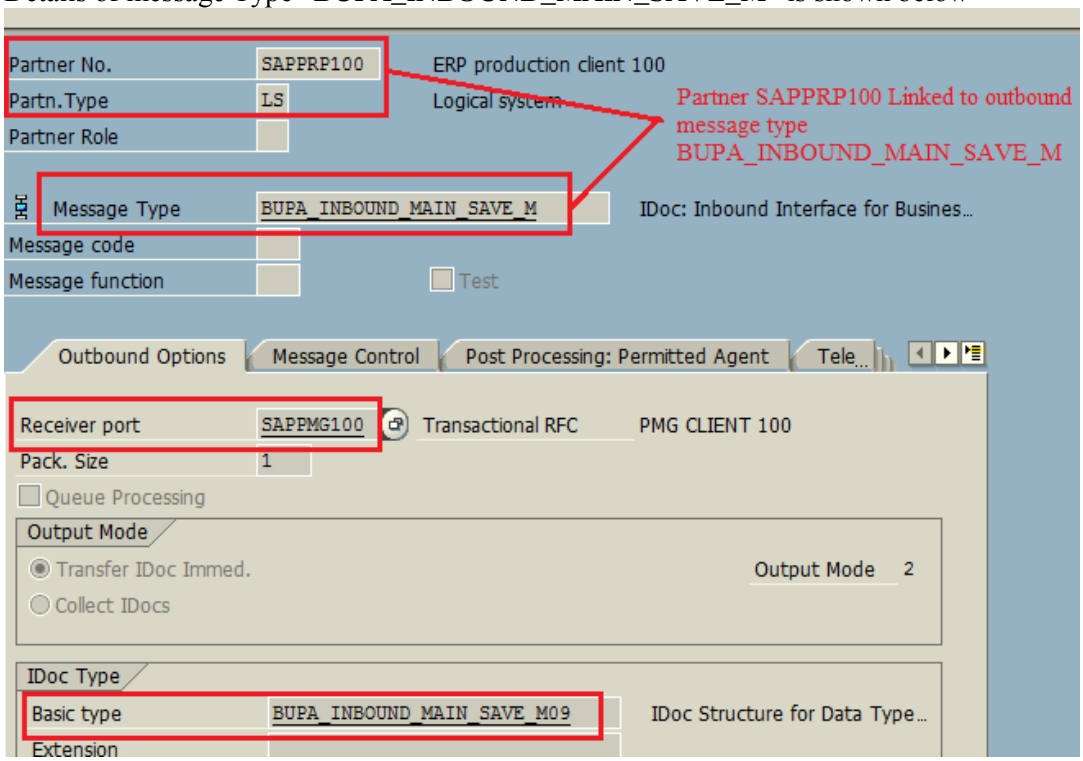
16.3.2 Configuring distribution Model (Explained in Above steps)

16.3.3 Defining Partner Profiles – WE20

- Select Partner as LS and select Logic system SAPPRP100



- Above screen tells you that, Logical system SAPPRP100 having out-bound message type as BUPA_INBOUND_MAIN_SAVE_M (That means PO created through IDOC in PRP system).
- Details of message Type "BUPA_INBOUND_MAIN_SAVE_M" is shown below



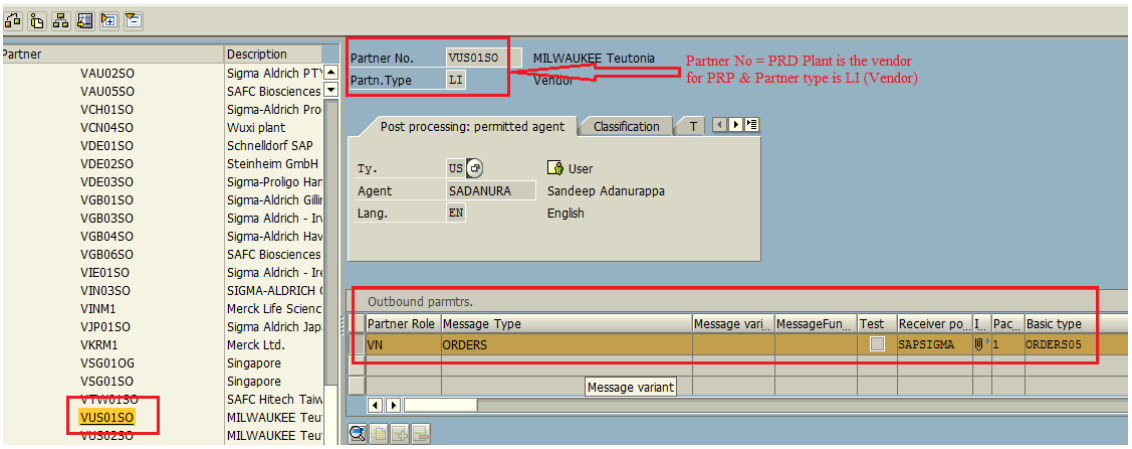
- Click Save

System SAPPRP100 (PRP-100) is ready for Out-bound processing of Idoc message type BUPA_INBOUND_MAIN_SAVE_M & Receiving port is SAPPMG100 System.

16.4 Partner profile for vendors

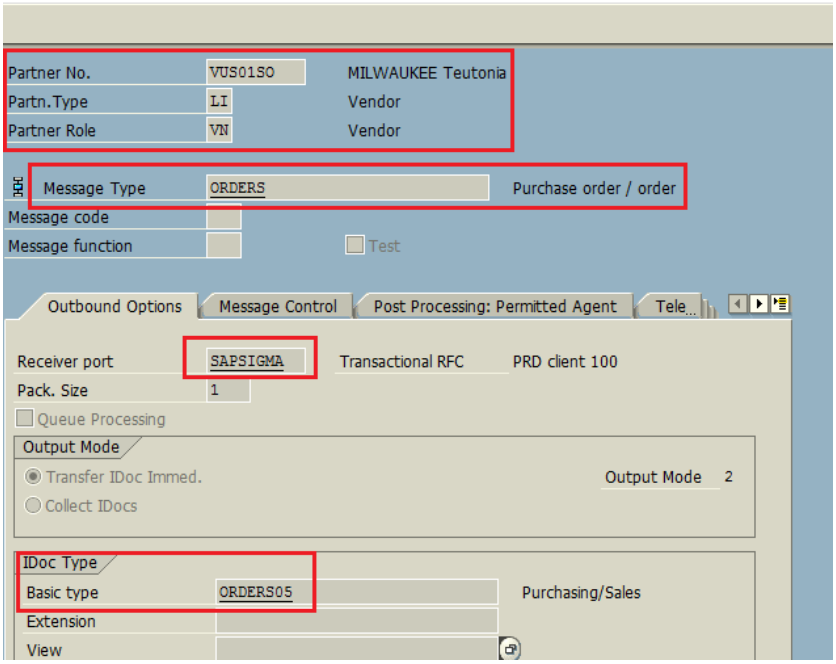
- If Vendor "VUS01SO" is in Legacy System say it is in PRD system (Legacy system Plant is a vendor for PRP System).
- Once we create PO in PRP (ERP System) then Sales order is created to vendor VUS01SO (PRD Plant) in PRD system. For that we have to maintain Partner profile for vendor in PRP System.

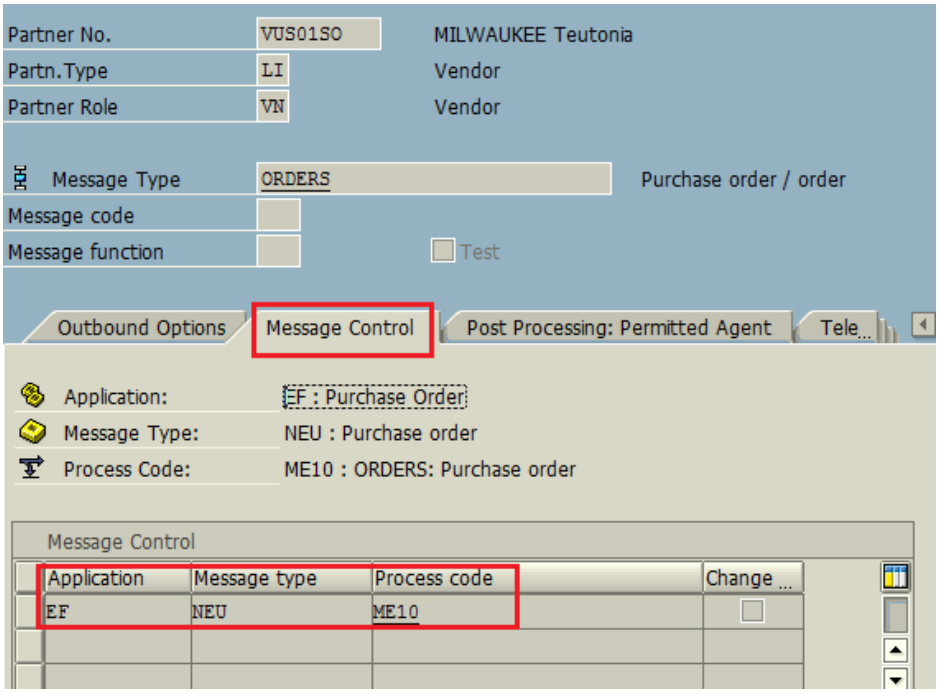
Partner profiles



- For Vendor VUS01SO message type as "ORDERS" is maintained in partner profile.
  - Relation Ship between Partner number VUS01SO and Message type ORDERS is maintained below as per screen shot.
  - Receiving Port is PRD System
  - IDOC Basic type is – ORDERS05
  - Message control as shown below

Partner profiles: Outbound parameters





Note: As per this Partner profile configuration, once PO is created in PRP system for vendor VUS01SO output type NEU triggers and creates Sales order in PRD.