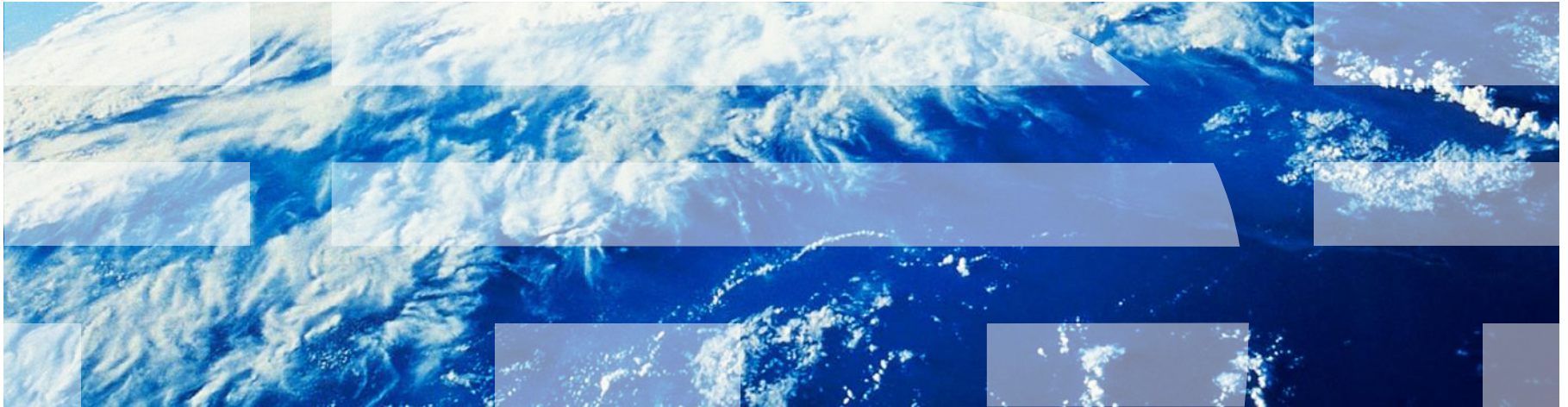# Inventory New Features for Maximo 7.5

*Gina Adkins Leonard, Senior Maximo Applications Support Engineer*

- Item Stock Category

- Inventory Costing
  - Default Costing Method
  - LIFO/FIFO Costing Method

- Consignment Inventory

- Inventory Usage

- Transfers via Shipment

- Hard/Soft Reservations

Item Stock Category

- **Change to the Definition of Stock Category**
  - Previously, stock category controlled automatic replenishment
    - A stocked item was automatically included in the reorder algorithm
    - A non-stocked or special order item was omitted from the reorder process
  - Stock category will now control whether an item is 'stockable' and can exist in a storeroom or whether it is only available for direct order from a vendor (non-stocked).

- **Benefits**
  - Resolves functional gap on usage of stocked/non-stock item terminology. Better alignment with ERP systems.

Item Stock Category

- Stock Category Moved to Item/Organization level
  - Added new field ITEMORGINFO.CATEGORY
  - Controls stockability for items within an organization.
  - If item is Non-Stock (NS) the item is not allowed to exist as an inventory record.

- Org-Level Stock Category Default
  - Added new field ORGANIZATIONS.CATEGORY
  - Used to default to all ITEMORGINFO records for the organization

- 'Reorder?' yes/no flag added to Inventory record
  - Allows for seamless transition from previous functionality

Organization Default Stock Category (ORGANIZATIONS.CATEGORY)	→	Item Organization Details Stock Category (ITEMORGINFO.CATEGORY)
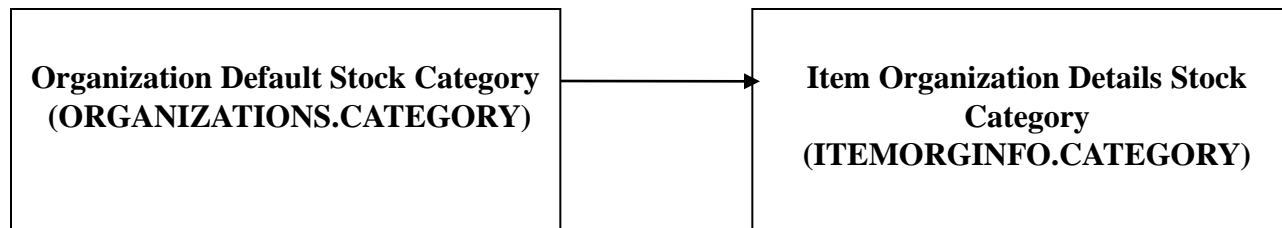
Inventory Costing – Default Costing Method

- Previously, costing method was defined at the site-level
  - All storerooms, and inventory records below a site use the same inventory cost

- MAM 7.5 - Costing method will now be functional at the Inventory level
  - Added new field INVENTORY.COSTTYPE.
  - The costing method will continue to be defaulted from the site level
  - Costing method can be set differently between inventory records within the same storeroom and site

- Adding items to storeroom. User will have the opportunity to override the cost type defaulted from the site level.

- New Inventory action, 'Change Cost Type'
  - Callable from the list page or individual record.
  - Allows the user to change the cost type of item(s).
    - Any Inventory Balances (INVBALANCES) records related to the inventory item must have a balance of zero and the "Reconciled?" must be set to true.

Inventory Costing – LIFO/FIFO Costing Method

- 'New' costing method to allow for valuation at actual receipt costs on a LIFO or FIFO basis
  - Costs will be associated to quantities and receipt dates.
  - Cost records are stored in the INVLIFOFIFOCOST table.
  - The LIFO/FIFO quantity must always match the sum of the inventory current balances.
  - LIFO/FIFO cost will be dictated by the transaction that increases the balance.
    - The following transactions can create records in the INVLIFOFIFOCOST table: Receipt, return, transfer in, reconcile balance adjustment and current balance adjustment.

- Upon consumption: (issue, transfer, balance adjustment)
  - As LIFO/FIFO items are consumed from inventory, the cost utilized for transaction creation will either be the 'oldest' (for FIFO) or the 'newest' (for LIFO) cost date.
  - Cost records are 'consumed' and deleted from the table when the quantity for the cost record equals zero.
  - In the case where a transaction requires more than one cost record to satisfy the quantity of a transaction, multiple transactions will be written, one for each cost used. In this case the unit cost on the screen will be the average of the cost records.

Consignment Inventory

- Consignment Inventory
  - Adds support for 'vendor-owned' inventory valuation
  - Allows for items to be paid for on use rather than pay on receipt
  - Consignment Prior to MAM 7.5:

- Simple YORN flag

- No additional functionality such as:
  - Usage tracking
  - Payment processing
  - Replenishment notices

Consignment Inventory

- The consignment flag and associated details are at the inventory level.
    - The add items to storeroom dialog box allows users to set an item as consignment as well as specify the consignment details for the item.
    - Additionally the user can set/modify the consignment detail via the 'View/Edit Consignment Details' action in the inventory application
    - The Consignment Vendor is the vendor that 'owns' the consignment inventory.
    - The Invoice Generation Type is used to set how Consignment Invoices should be generated:
        - CONSUMPTION – Use this to generate a consignment invoice on each consumption transaction (issue, transfer, adjustment)
        - FREQUENCY – Use this to generate a consignment invoice on a frequency. Must specify the frequency units and next invoice date. (example, every 90 days)
        - MANUAL – Use this to indicate that consignment invoices will be generated manually. The user will use the invoices application to consolidate consignment usage onto an invoice to pay the vendor

View/Edit Consignment Details

Consignment? ✓

* Consignment Vendor:

Manufacturer: WES

Model:

Catalog #: AG-1000

* Invoice Generation Type: CONSUMPTION

Frequency:

Frequency Units:

Next Invoice Date:

OK   Cancel

Inventory Usage Application

- Inventory Usage is a new application which replaces the Issues and Transfers application
  – Similar look and feel
  – Simplified flow - Issues and transfers are recorded from the same tab

  NOTE: Issues and Transfers will no longer be available out of the box starting with MAM 7.5.
  – The functionality and presentations can be unhidden by the user for reference and migration of customizations. In this way Issues and Transfers would be supported as a user's custom application, and maintenance will be limited.

- Inventory Usage records consist of a statusable header and related lines records.
  – Allows for business process to be employed *prior* to transaction creation.
  – Workflow can be enabled on Inventory Usage documents

- Robust 'out-of-the-box' business functionality
  – Optional automatic creation of inventory usage documents.
  – Split quantities across multiple supplying bins.
  – Staging functionality to set aside balances for issue or transfer and hold these balances in a staging bin until 'picked up'.
  – Shipping - Transfers that require the use of an intermediary location (courier, shipper, truck, etc) can create shipment records to track items in transit.

Inventory Usage Application – Key Design Elements

- New application, built from the ground up.

- Application will consist of a header and lines concept (similar to PR/PO).
  - Users will be inserting a document that will be processed via status change. Status change will drive transaction creation.
  - New Objects:

```
        INVUSE
              → INVUSELINE
                        → INVUSELINESPLIT
```
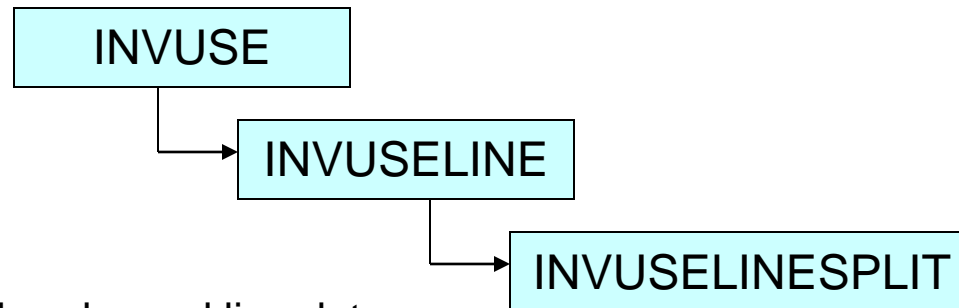
- Single-tab for recording of header and line data.
  - Issue and transfer transactions will be created and managed from the same tab.

- Relevant business rules migrated forward.

Inventory Usage Application – Key Design Elements

- Usage type – Header and Line attribute
  - Header usage type will be used to drive what lines can be associated with this document.
    - ISSUE – Only Issue/Return lines can be recorded.
    - TRANSFER – Only Transfer lines can be recorded.
    - MIXED – Allows ISSUE/RETURN/TRANSFER lines to be recorded against the same document.
  - Line usage type will default based on the header value.
    - If user changes line to an allowed value, this action will modify the line details to support the appropriate transaction entry….eg: changing from issue to transfer would remove charge details for WO/ASSET etc and add Transfer To details. (conditional UI)

- Splitting Quantities – Allows for the creation of a single usage line that will create multiple transactions upon completing the document.
  - Two Use Cases:
    - Multiple Bin Selection – Used in the event that the specified bin has insufficient quantity to meet the request. User can select multiple bins to meet the request.
    - Rotating Item Selection – Used in the event that a rotating item for a quantity in excess of 1 is requested. User can select additional rotating assets to be used for the transaction.
  - Auto-Split - This function can be used to automatically select multiple bins or rotating assets if necessary.

Inventory Usage Application

- Splitting Quantities - Upon status change the system will evaluate the material requirement and determine if the requested qty can be satisfied by the specified bin. If not, the 'split usage quantity' dialog box is displayed.

Inventory Usage Application

- Status Change - ENTERED, STAGED, SHIPPED, COMPLETE, CANCELLED
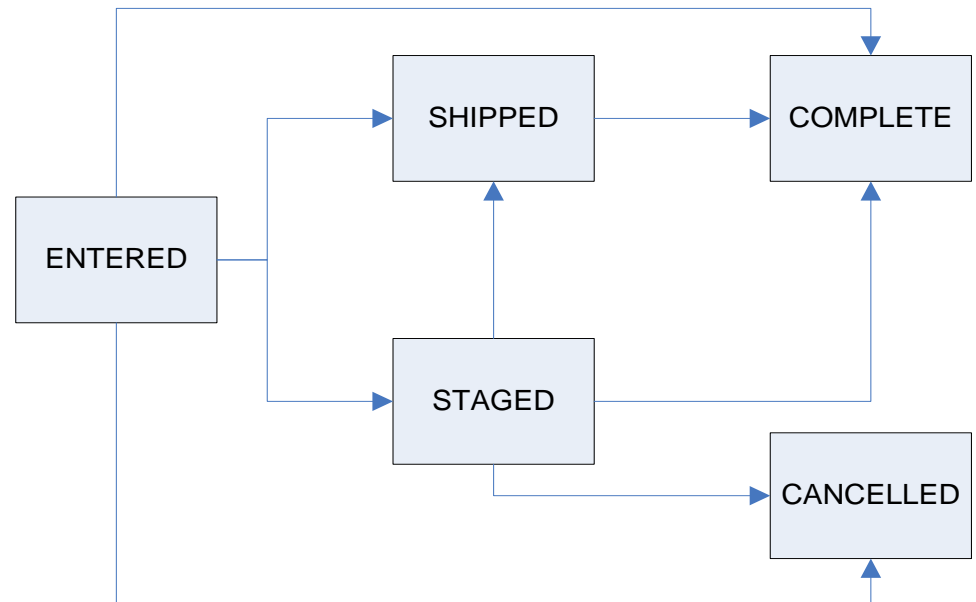
Transferring Via Shipment

- Inventory usage records that are 'shipped' will conform to the following business flow:

```
┌─────────────────────────┐        ◇                  ┌─────────────────────┐
│ User records transfer   │      Create               │ Update balance of   │
│ from storeroom A to     │ ──▶ Shipment = Y ──▶       │ storeroom A         │
│ storeroom B             │       ◇                    │                     │
└─────────────────────────┘                            └─────────────────────┘

┌──────────────────┐   ┌──────────────┐   ┌──────────────────┐   ┌──────────────────────┐
│ Record           │   │ Update       │   │ Create SHIPMENT  │   │ Record receipt       │
│ MATRECTRANS      │──▶│ INVRESERVE,  │──▶│ and SHIPMENTLINE │──▶│ (SHIPRECEIPT)        │
│ transaction of   │   │ if necessary │   │                  │   │ against the shipment │
│ TRANSTYPE =      │   │              │   │                  │   │ and process via      │
│ SHIPTRANSFER     │   │              │   │                  │   │ receiving rules to   │
│                  │   │              │   │                  │   │ MATRECTRANS.         │
└──────────────────┘   └──────────────┘   └──────────────────┘   └──────────────────────┘
```
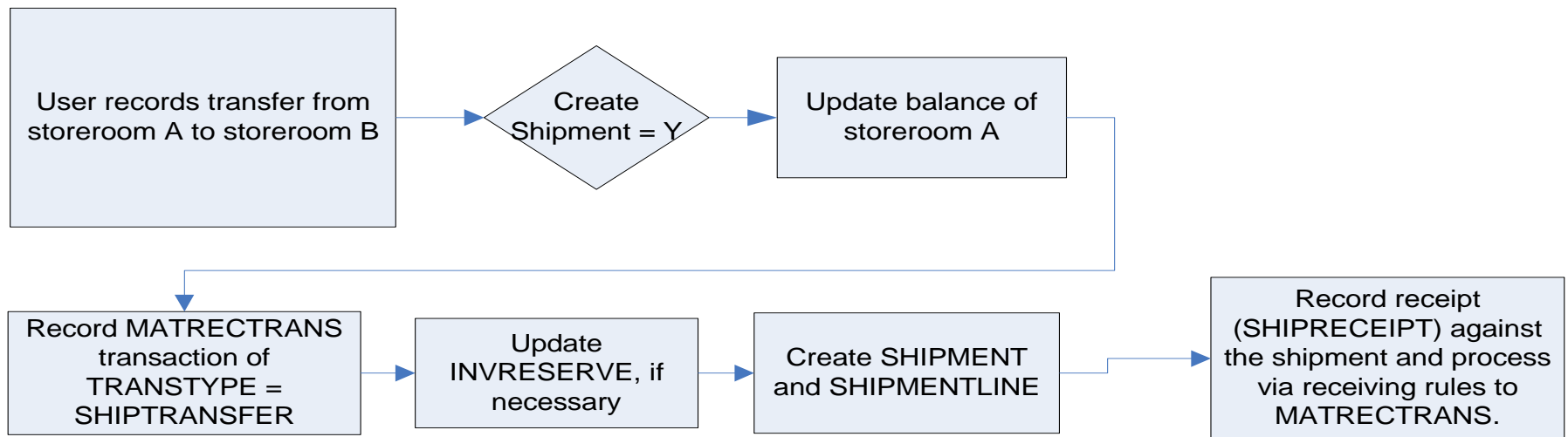
Transferring Via Shipment

- Transfer options – The organizations application will hold this new action to govern when a shipment record is required for transfers:

- NOTE: Internal Purchase Orders used to be required for all cross-organization transfers prior to MAM 7.5. With the advent of the Inventory Usage application it is less likely that customers will be employing internal purchase orders as the Inventory Usage can satisfy the same business requirements (approvals, security, etc).

Transfer Options

Require Shipment:
- ⦿ Across Organizations
- ○ Across Sites
- ○ All Transfers

Require Purchase Order:
- ⦿ Purchase Order Not Required
- ○ Across Organizations
- ○ Across Sites

[OK] [Cancel]

- At minimum, shipments will be required for all cross-organization transfers, and customers can choose to require them for all cross-site transfers or even for every transfer within the system.

- Require Purchase Order controls when an internal purchase order is necessary in order to transfer items.

Transferring via Shipment

- Create Shipment Dialog
  - When the user changes the Inventory Usage document to SHIPPED status, they will be presented with the 'Create Shipment' dialog. This allows them to specify the shipment details and review the lines that will be shipped.

Transferring via Shipment

- At such time as the shipment has been received at the destination storeroom, the user will employ the Shipment Receiving application.

- Shipment Receiving was developed using the Receiving application as its base. The difference being that it records receipts against shipment documents rather than PO's.

- Due to the fact that customers will likely switch between the two applications often, a button has been added to the toolbar of each to allow the user to quickly move between the two.
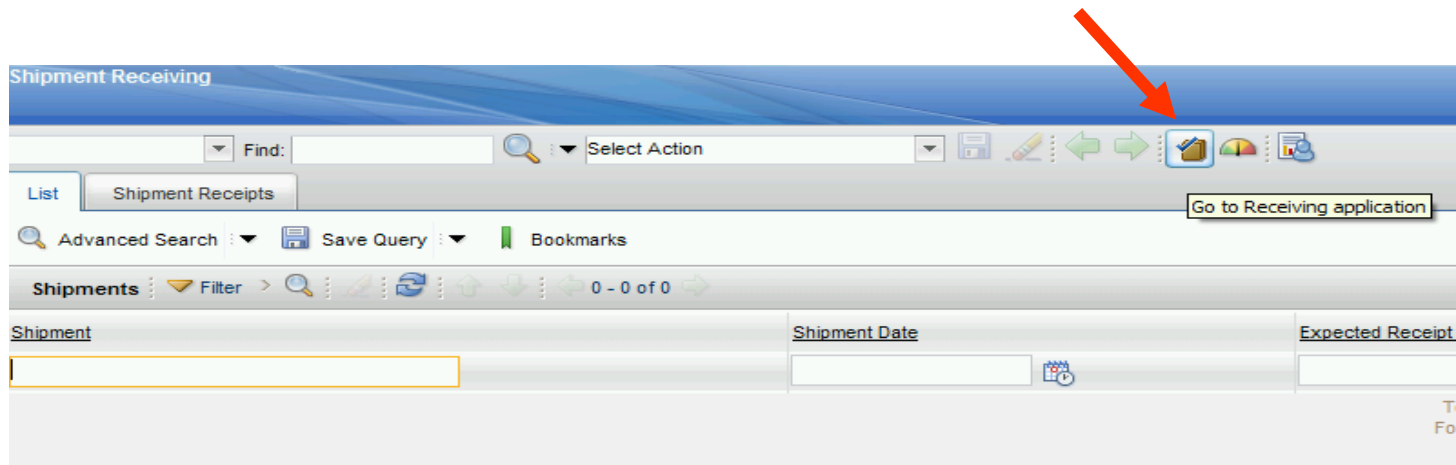
Reservation Management – Hard/Soft Reservations

- A hard reservation is considered to be a firm or committed request for an item from a storeroom. Hard reservations affect available balance and require the balance to be on-hand at the time of reservation creation. In essence a hard reservation ensures that the balance is either on-hand or will be on-hand by the required date of the item.

- A soft reservation would be considered an uncommitted or contingency demand for an item. This is an item that *may* be needed to complete a task but at the time of reservation creation, it's demand is not critical to a task completion.

- Prior to MAM 7.5 all reservations were either hard or soft depending on whether or not negative availability was allowed:
  - Disallowing negative availability for a site essentially means that all reservations were hard reservations
  - Conversely, allowing negative availability means that no reservation gets any priority over another, as reservations can be added even when there is not the available balance to support the demand.
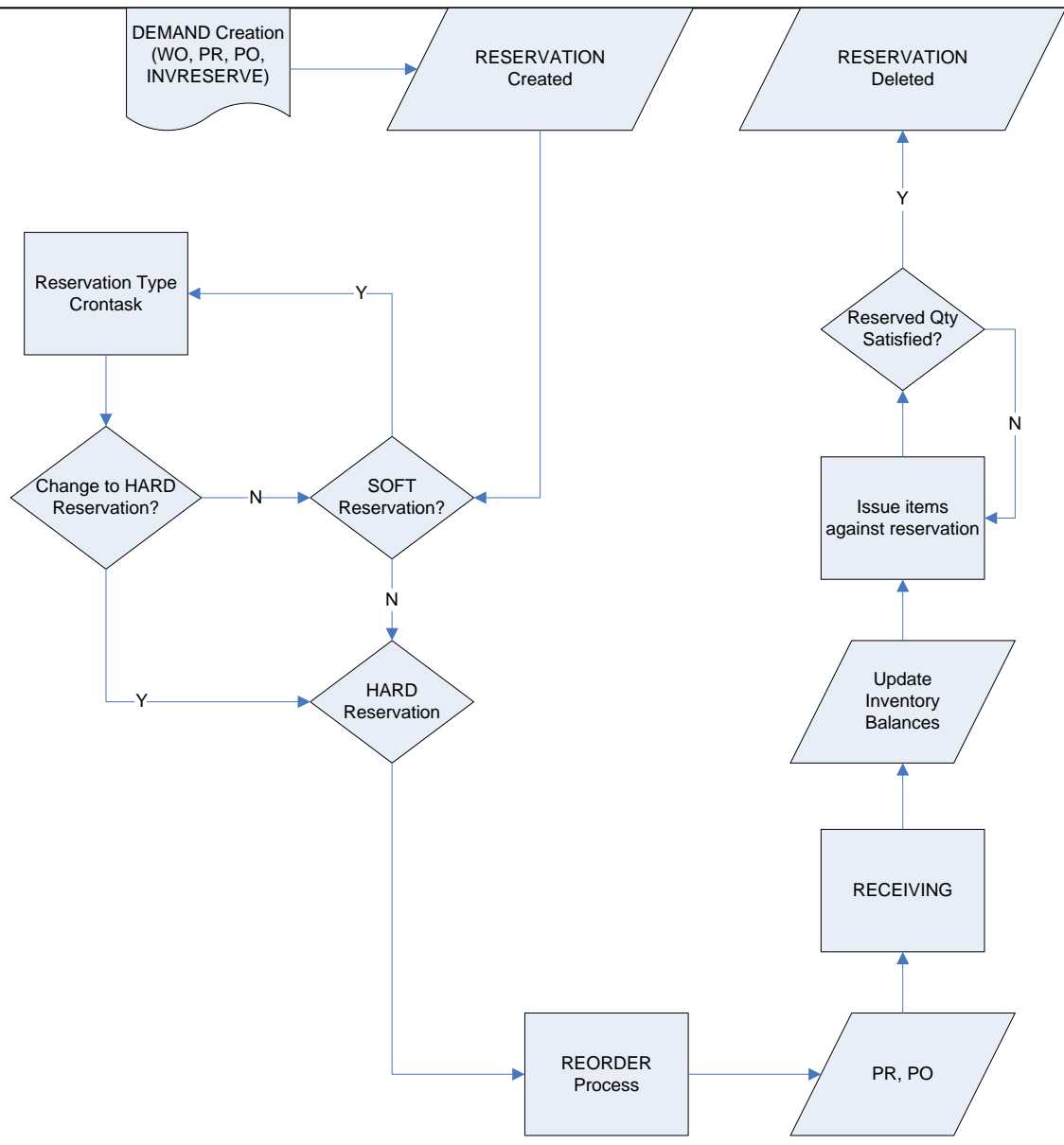
Reservation Management – Hard/Soft Reservations

- For MAM 7.5 reservations can be set as hard or soft.
  - Allows users to specify reservation priority
  - Hard reservations affect available balance and require the balance to be on-hand at the time of reservation creation
  - Soft reservations would be considered to be uncommitted or contingency demand

- 'Automatic' Reservation Processing
  - Reservations can be created under automatic processing.
  - A reservation type crontask is used to evaluate reservations and modify as necessary.
  - The system will automatically set the reservation to APSOFT or APHARD depending on the required date of the item compared to the lead time to procure the item
  - 'Backorder' functionality to indicate when a hard reservation is desired, but available balance on-hand is insufficient to satisfy a hard reservation.

Reservation Management – Hard/Soft Reservations

- Reservation Types:

  - SOFT – This reservation denotes demand that has been created by a user and set to be SOFT, meaning this reservation is a contingency reservation and is not necessarily a firm request for the item. This type of reservation will remain unless manually changed. It will not be included in the Reservation Type Crontask logic.

  - HARD – This reservation denotes demand that has been created by a user and set to be HARD meaning this reservation is a firm request for the item and the requestor would like to immediately include the request in the availability calculation, to 'set aside' the reservation quantity and if need be, to place an order to ensure that the quantity will be on-hand to satisfy the reservation. This type of reservation will remain unless manually changed. It will not be included in the Reservation Type Crontask logic.

  - APSOFT – This type stands for 'Automatic Processing – Soft.' This denotes that the type has been set by the reservation business logic at the time of creation or has been set based on the logic in the Reservation Type Crontask. The APSOFT reservation type allows that it can be included in the Reservation Type Crontask which may determine that it meets the criteria to be changed to a hard reservation (APHARD).

  - APHARD – This type stands for 'Automatic Processing – Hard.' This denotes that the type has been set by the reservation business logic at the time of creation or has been set based on the logic in the Reservation Type Crontask. The APHARD reservation type allows that it can be included in the Reservation Type Crontask which may determine that it meets the criteria to be changed to a soft reservation (APSOFT).

  - BACKORDER – This type will be set by the system only. It is a third reservation type that is under automatic processing. BACKORDER is only employed when an organization disallows negative availability (MAXVARS.VARVALUE = 'DISALLOW' for the organization for VARNAME = 'NEGATIVEAVAIL'). This reservation type indicates that a hard reservation is needed for the item however, the system cannot create hard reservations in excess of what can be satisfied by the available balance of the inventory record. BACKORDER business rules are explained in their relevant sections below.

Reservation Type Process Flow

DEMAND Creation (WO, PR, PO, INVRESERVE) → RESERVATION Created

RESERVATION Deleted

Reservation Type Crontask

Change to HARD Reservation?

SOFT Reservation?

HARD Reservation

REORDER Process → PR, PO

RECEIVING

Update Inventory Balances

Issue items against reservation

Reserved Qty Satisfied?

Y N

Reservation Management – Hard/Soft Reservations

- Reservation Type
  - Prior to reservation creation the user can set the reservation to be created as HARD, SOFT or AUTOMATIC to let the system determine if the reservation should be set as APHARD or APSOFT. This is done from work order plans (material), desktop requisition line, PR line, and PO line.
  - Once created, a user with rights can modify the reservation type from the 'add/modify reservations' dialog box which is accessible via the Inventory Usage application or via the Inventory application (added in MAM 7.5)

Questions