

SCEIS Blueprint / GAP

SCOPE:

This section contains a high-level overview of the SCEIS project scope for the areas of people, process, technology, and data. The Inventory Management design is relevant for the following Agencies:

DSIT
Dept of Education
Dept of Mental Health
Vocational Rehab
Dept of Natural Resources
Dept of Parks, Recreation and Tourism
Dept of Motor Vehicles
Dept of Public Safety
Dept of Juvenile Justice
SLED
Criminal Justice Academy
Dept of Corrections (SCDC)
Dept of Corrections (PI)
Dept of Health and Environmental Control
Probation, Pardon and Parole
Department of Transportation (????)

People

It is expected that a similar group and number of people that use the inventory functions prior to SCEIS Project “go-live” date will be using the new SAP Inventory solution in the future.

Process

The project scope for Materials will include the following:

- Create Material Master
- Extend / Change an Existing Material Master
- Delete a Material Master
- Material Requirements Planning (MRP)
- Inventory Replenishment
- Material Transfers between Plants/ Storage Locations
- Request Materials
- Receiving Against a Purchase Order
- Receipt of Used and Reclaimed Material

- Receipt of Transferred Material
- Material Scrapping
- Material Reservations
- Goods Issues Expense
- Goods Issue Transfer
- Serial Number Tracking
- Shelf Life Expiration
- Bar Coding
- Physical Inventory
- Reporting

1.1. Technology

It is anticipated that these functions will be performed within the Materials Management (MM) module. In addition, these functions will integrate with the following:

- Sales and Distribution (SD)
- Controlling (CO)
- Finance (FI)
- Funds Management (FM)
- Grants Management (GM)
- Accounts Payable (AP)
- Human Resources (HR)
- Supplier Relationship Management (SRM)
- Master Data Management (MDM)

1.2. Data

As part of the project scope, the current master data will be cleansed by the agency to meet the standards and guidelines set for the SCEIS SAP design. The data will then be loaded in accordance with the SCEIS Deployment strategy. Open transactional data will also be converted to SAP as per the deployment strategy; however, any historical data will not be converted.

Key Design Decisions:

This section of the document gives an overview of the key decisions that were made as part of the design of the system. It is not intended to be a complete list of all decisions made but rather the critical issues and the resulting decisions that were made.

1.1. People

Description	Resolution
Clarification of roles and responsibilities needed (i.e., MRP Controller, AMML)	Detailed role definition and subsequent assignment of individuals to those roles occurs in the Realization Phase.

1.2. Process

Description	Resolution
CMMDT is responsible for creating material masters	Material Master creation for State wide fields will be created and maintained centrally by the CMMDT. (Central Material Master Data Team).
AMML is responsible for plant level material master extension and changes	Material Master creation for plant level fields will be created and maintained by the AMML. (Agency Material Master Liaison/s).
MRP may be utilized for inventory replenishment. Demand for Inventory may come from Sales Orders or Online Reservations.	Master data and business processes will be setup in SAP to operate in this manner.
All inventory will consume budget	All valuated Inventory on hand will require sufficient funds available in the applicable fund

Description	Resolution
All Inventory Purchase Requisitions and Purchase Orders will encumber funds.	This is a current SCEIS process. STO encumbrance will occur at goods issue.
Inventory will no longer be able to be purchased with Procurement/Purchase cards	This is standard SAP functionality.
Receivers will not be able to receive quantities above the Purchase Order quantity.	This is a current SCEIS process.
An SAP Purchase Order Number will now be required to perform a receipt (except for Free / Reclaimed materials).	This is a current SCEIS process.
The receipt of Free/Reclaimed Material will be a restricted process.	Authorizations / Roles definition will be set up to accommodate this.
All Material Issues and transfers (Except within a plant) will be budget relevant	This is standard SAP functionality.
Receiving plants will be charged for materials from the Warehouses at the time of goods issue.	When materials are issued by the issuing plant the receiving plant's budget is consumed.
Physical inventory adjustments will include reason codes which facilitate reporting	This is standard SAP functionality.

1.3. Technology

Description	Resolution
MDM Catalogs	MDM (Master Data Management) will be used to house any existing catalogs. The items can be ordered via a shopping cart in SRM. (This will only be implemented in May 2010)

1.4. Data

Description	Resolution
Material Master Numbers	Material Master Numbers will be 'non-intelligent' and system assigned. There will be only one number for each material that is common across the state

SAP Organizational Strategy:

Agency	# Plants	# Storage Locations
BCB/DSIT	4	TBD
Dept of Education	47	TBD
Dept of Mental Health	7	22
Vocational Rehab	26	26
Dept of Natural Resources	2	1
Dept of Parks and Tourism	1	1
Dept of Motor Vehicles	2	TBD
Dept of Public Safety	3	3
Dept of Juvenile Justice	1	1
SLED	1	TBD
Dept of Corrections (SCDC)	4	TBD
Dept of Corrections (PI)	9	TBD
Dept of Health and Environmental Control	19	19
Dept of Transportation	TBD	TBD
Probation, Pardon and Parole	2	2
Criminal Justice Academy	1	TBD

This section of the document provides an overview of how the Material Management organizational objects relevant to the project will be used.

1.4.1. Plant

The plant is an operating area or branch within a company. A plant has an address, has a language, and belongs to a country. The plant is embedded in the organizational structure as follows:

- The plant is assigned to a single [company code](#). A company code can have several plants.
- Numerous [storage locations](#), physical locations in which material stocks are managed or ordered to, can belong to a plant.
- A single [business area](#) is assigned to a plant and to a [division](#).

A plant has its own material master data. Data can be maintained at the plant level for the following views on a material master record: MRP (Material Requirements Planning), purchasing, storage, work scheduling, production resources/tools, forecasting, quality management, sales, and costing.

The plant plays an important role in the following:

- Material valuation - If the [valuation level](#) is the plant, the material stocks are valued at plant level. Additionally, material prices can be defined or tracked for each plant, and each plant can have its own [account determination](#).
- Inventory management - The material stocks are managed within a plant.
- MRP - Material requirements are planned for each plant and storage location. Each plant has its own MRP data. Analyses for materials planning can be made across plants and storage locations.
- Costing - In costing, [valuation prices](#) are defined only within a plant.

1.4.2. Storage Location

A storage location is the place where stock is physically kept within a plant. Storage locations are always associated with a specific plant when created. A storage location has the following attributes:

- There may be one or more storage locations within a plant.
- A storage location has a description and can have an address different from the plant.
- It is possible to store material data specific to a storage location (e.g., storage location MRP parameters on the material master).
- Since materials are valued at the plant level, stocks of material are managed only on a quantity basis and not on a value basis at the storage location level.
- Physical inventories are carried out at the storage location level.
- Storage locations are always created for a plant.

Process Definition:

This section of the document gives the process definition, outlining the system and non-system steps that take place. The section is broken into two parts, the first is a list of all the business processes identified, the second is a description of how those processes take place. Specific details of the business rules and the SAP configuration settings are maintained within this section. Process flows have been developed to give a graphical representation of the business process. These flows are also available as an appendix to this document.

1.5. Business Process List

Process ID	Process Description
IM-001	Create a New Material Master
IM-002	Extend / Change an Existing Material Master
IM-003	Delete a Material Master
IM-004	MRP – Materials Requirements Planning
IM-005	Inventory Replenishment
IM-006	Request Material
IM-007	Receiving Against a Purchase Order
IM-008	Receiving Used and Reclaimed Material
IM-009	Receipt of Transferred Material
IM-010	Material Scrapping
IM-011	Material Reservations
IM-012	Goods Issue (Expense)
IM-013	Goods Issue (Material Transfer)
IM-014	Serial Number Tracking
IM-015	Shelf Life Expiration

Process ID	Process Description
IM-017	Bar Coding
IM-019	Physical Inventory

Process Description

IM-001 – Create a New Material Master

Material Masters are created, extended and changed to facilitate the procurement of materials and services as well as inventory processes. A Material Master contains comprehensive information about the item including descriptive data such as type, color and size and all functional data required to perform different activities within SAP such as planning (MRP type and re-order point), Finance and Accounting (valuation class and moving average price) and Purchasing (buyer and price history).

Material Masters are required for all inventoried items and are created using a standard SAP transaction (MM01). Different material types will be used to segregate materials by their intended usage as follows:

- ZMAT - this material type will be used for all valued / inventoried operating supplies.
- ZNVL - this material type will be used for all non-valued materials. It will be determined as part of the data migration whether SCEIS will use this material type or not.
- ZSRV – this material type will be used for all services that are procured and sold by the state.
- ZCON – this material type will be used for configured materials. Materials of this material type will be used predominantly in the Sales and Distribution module. This material allows for one number to have many design configurations

Upon creation by the CMMDT, Material Masters in SAP will automatically be assigned a system-generated, non-intelligent, 6-digit SAP material number. This number replaces any existing Commodity Codes. A cross reference searchable table to existing Commodity Codes will be established as part of the Material Master Data conversion.

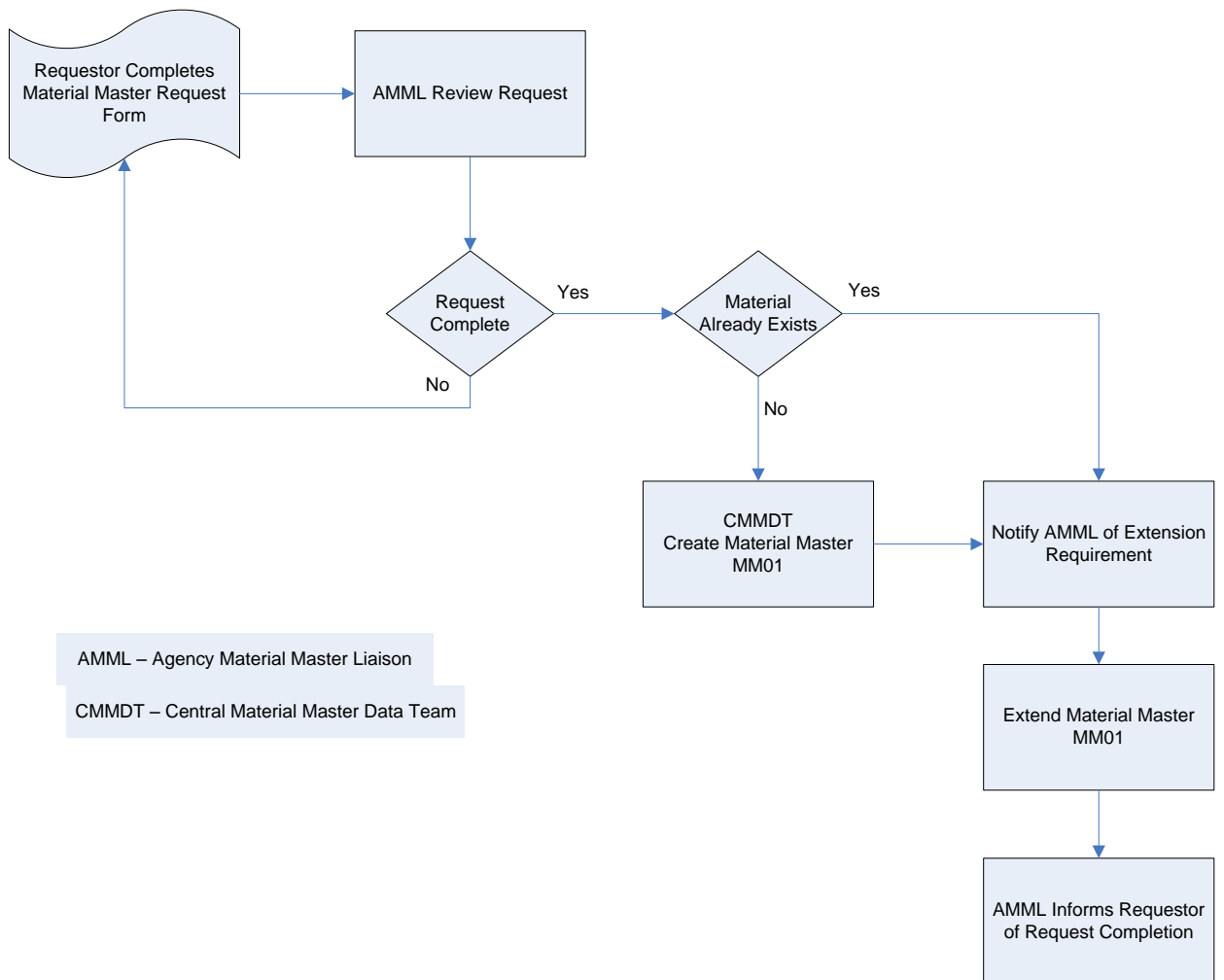
Once material numbers are created centrally, they must be extended to plants in order to be used by these plants. The material creation and extension processes are described in the following sections.

New Material Masters are created centrally by the Central Material Master Data Team (CMMDT). This process is conducted as follows:

- The Requestor completes a Material Master Creation and Extension Form and provides it to their Agency Material Master Liaison Agency Team (AMML) to review.
- The form is then completed and subsequently sent on to the CMMDT if a new material is required.
- If a new material is required, the CMMDT is responsible for creating it. This creation process will include the following:
 - Maintaining all state-wide information including basic data (e.g., description, unit of measure (UOM), material group, etc.)

Upon completion of the Material Master creation process, a manual email confirmation is sent by the CMMDT to the AMML. The AMML then sends the confirmation to the requestor and the completed Material Master Creation and Extension Form is kept on file.

Creating plant specific information for the material is a pre-requisite to using the material for a specific plant. This is discussed in the next section on Material Master Extension.



IM-002 Extend / Change an Existing Material Master

Once material numbers are created centrally they must be extended to a plant in order to be used at that plant. Existing Material Masters are extended using a standard SAP transaction (MM01). This activity will be performed by the AMML. As part of this process of extending the material to the plant, it is anticipated that the following information will be added to the material:

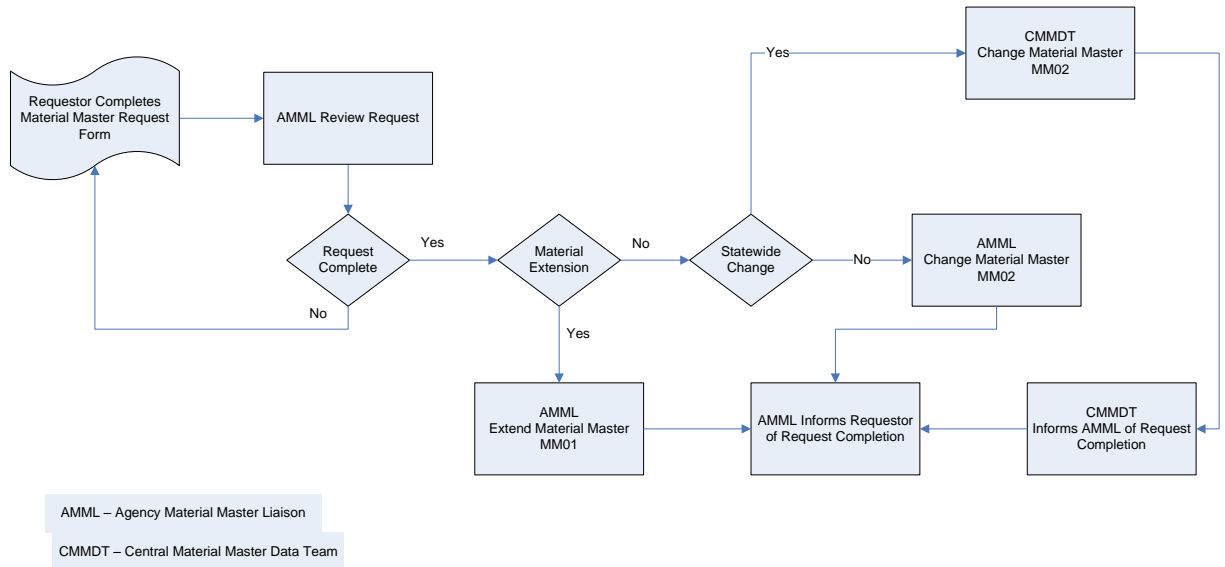
- Accounting Tab
 - Valuation class, moving average price
- Purchasing Tab
 - purchasing group
- Materials Requirements Planning (MRP) Tabs
 - Reorder point, MRP controller, lot size, maximum stock level, planned delivery time, storage location, special procurement key
 - MRP data will include MRP area parameters
- Plant Storage Tab
 - Bin location

Additionally, configurable materials the following will be added to the material:

- Classification Tab
 - Class

Material Description	Services	Materials	Non – Valuated	Configurable
Material Type	ZSRV	ZMAT	ZNVL	ZCON
Copy From	DIEN	HAWA	UNBW	KMAT
# Range	900001 - 999999	100001 - 899999	100001 - 899999	100001 - 899999
Views	Basic Data1 – 2 Sales Org 1 - 2 Sales General/Plant Sales Text Purchasing Purchase Order Text Accounting 1 - 2	Basic Data1 – 2 Sales Org 1 - 2 Sales General/Plant Sales Text Purchasing Purchase Order Text MRP 1 – 4 General Plant / Storage 1 – 2 Accounting 1 – 2	Basic Data1 – 2 Sales Org 1 - 2 Sales General/Plant Sales Text Purchasing Purchase Order Text MRP 1 – 4 General Plant / Storage 1 – 2	Basic Data1 – 2 Classification Sales Org 1 - 2 Sales General/Plant Sales Text Purchasing Purchase Order Text MRP 1 – 4 Accounting 1 – 2
Characteristics	N/A	N/A	N/A	Yes
Class	N/A	N/A	N/A	Yes
Valuation Classes				

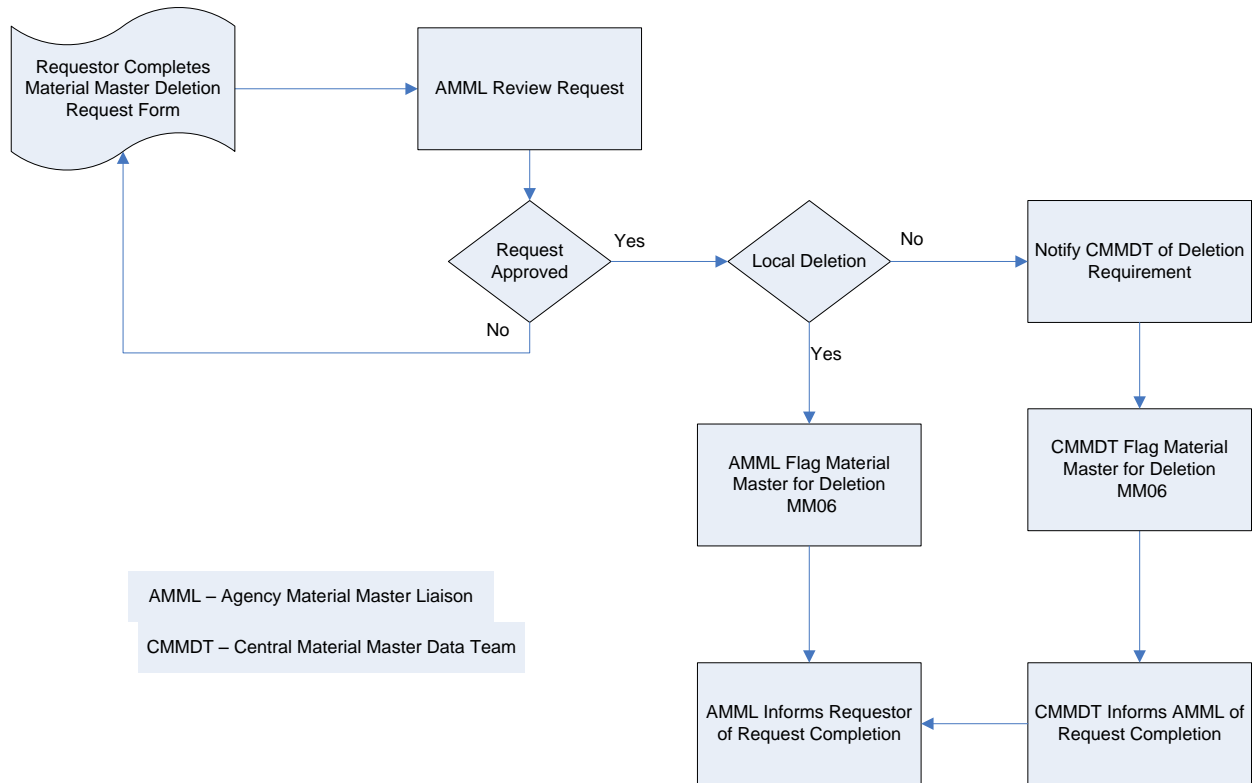
Changing an existing Material Master is accomplished using a standard SAP transaction (MM02). Typically, the information being changed is plant-specific information such as an MRP re-order point. As such, in most cases it is anticipated that the AMML will perform the change. However, changes affecting state-wide fields must be submitted to the centralized change process (i.e., to the CMMDT). In this case a request form must be submitted to trigger the change process.



IM-003 Delete a Material Master

A Material Master can be “Flagged for Deletion” at a state level, plant level or storage location level. Flagging a Material Master for deletion is accomplished using a standard SAP transaction (MM06). Typically, the material will be flagged at the plant/storage location level and therefore most times it is anticipated that the AMML will perform the change. However, if the material needs to be flagged at a state level, a request form must be submitted through the centralized change process (i.e., to the CMMDT).

Currently, there is no archiving strategy currently in place for SCEIS. As such, if it is desired to de-activate a material, the material status field is populated with a status of ‘blocked’ to prohibit the use of the material in planning, procurement and/or receiving activities. Setting this material status is accomplished using a standard SAP transaction (MM02). If a material is set to ‘blocked’ status using the material status field, the user will receive an error message if they attempt use this material. The material status flag can be reset by an authorized user if the business situation changes with regards to that material.



IM-004 Material Requirements Planning (MRP)

The MRP process will be set up to run automatically on a nightly basis for each plant / storage location. Please note that where required, appropriate individuals will have the ability to run MRP online for individual materials or their plant as needed.

The main purpose of MRP is to calculate suggested replenishment needs for inventoried materials in order to improve operating efficiency as well as minimize material shortages and overstock situations. While MRP planning is mostly done at the plant level, MRP will be set up to respond to storage location-specific replenishment needs on an as required basis.

The MRP planning run takes the following information into consideration in calculating any replenishment needs for a specific material at the plant or plant / storage location level:

- Current inventory levels
- Any open POs
- Reorder point parameters
- Safety stock and lot sizes (if used for the material)
- Pending demands on inventory from production orders, sales orders and manual reservations.
- Administrative and vendor delivery lead times

The above information is used to calculate the suggested material purchase / replenishment quantities. Results from the MRP planning run can always be manually modified (e.g., increase, decrease, or eliminate the requirements quantity for a material) as required.

Once the MRP process is run on a nightly basis, the appropriate individual(s) will review the results of MRP. The main purpose of this activity is to review the planned orders created by MRP to determine if they should move forward through the purchasing process.

There is a standard SAP transaction (MD04) which allows this person to review and act on just the materials and just the plants for which they are responsible. This transaction allows either individual or collective access to the MRP results. Individual access provides the ability to view all MRP-related information for a specific material within a plant and all related storage locations. This information includes planned orders generated by MRP, the current stock situation, upcoming demands for inventory of that material, and planned receipts from existing purchase orders. Collective access allows access to this same information for the complete group of materials. Additionally, an initial summary screen shows one line per material with configurable red / yellow / green 'traffic light' indicators to highlight where the planner should focus their efforts. It is anticipated that collective access will provide the most effective access method.

There are three possible outcomes from review of the planned orders:

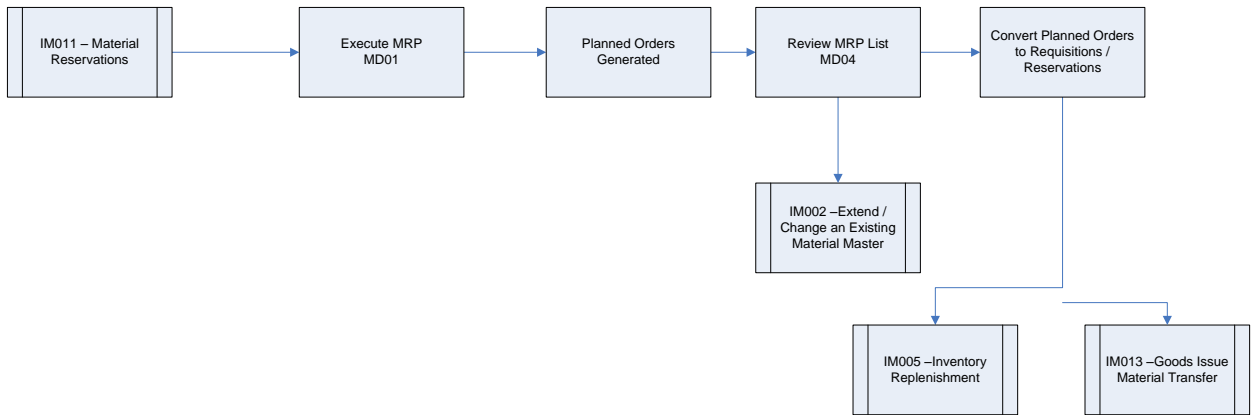
- The MRP-generated planned order is valid and should proceed through the procurement / inventory replenishment process. In this case, the planned order is converted into a purchase requisition for subsequent approval, sourcing, and conversion into a purchase order.
- The MRP generated planned order is valid but needs to be changed (i.e., change to the suggested order quantity or order date) before proceeding through the procurement / inventory replenishment process. In this case, the planned order is converted into a purchase requisition and the appropriate changes are made prior to approval, sourcing, and conversion into a purchase order.
- The MRP generated planned order is not valid. In this case the material's MRP parameters may need to be reviewed and possibly changed to prevent MRP from re-creating invalid planned orders in the future. The process of changing a material's MRP parameters is described in the following section.

As mentioned above, the process of evaluating the planned orders generated from the MRP run could result in some of the planned orders being identified as invalid. In this case, the planner would want to review the material's MRP parameters to make sure they are set correctly. Without a change to the MRP parameters, an invalid planned order will continue to be generated for that material creating additional work for the planner on an ongoing basis. Given that we anticipate most materials will be planned using re-order point planning, this process would involve reviewing the re-order point parameters specified on the MRP views of the material master and making the necessary adjustments.

Specifically the following information would be reviewed and changed using a standard SAP transaction (MM02) as necessary:

- On the MRP 1 view, the re-order point, lead times, maximum stock and any lot sizing parameters that optionally may be set for the material would be reviewed.
- On the MRP 2 view, the safety stock setting that optionally may be set for a material would be reviewed.

Monitoring and changing these MRP parameters will allow the planner to tailor the automated planning process to help ensure that MRP will generate correct planned orders going forward.



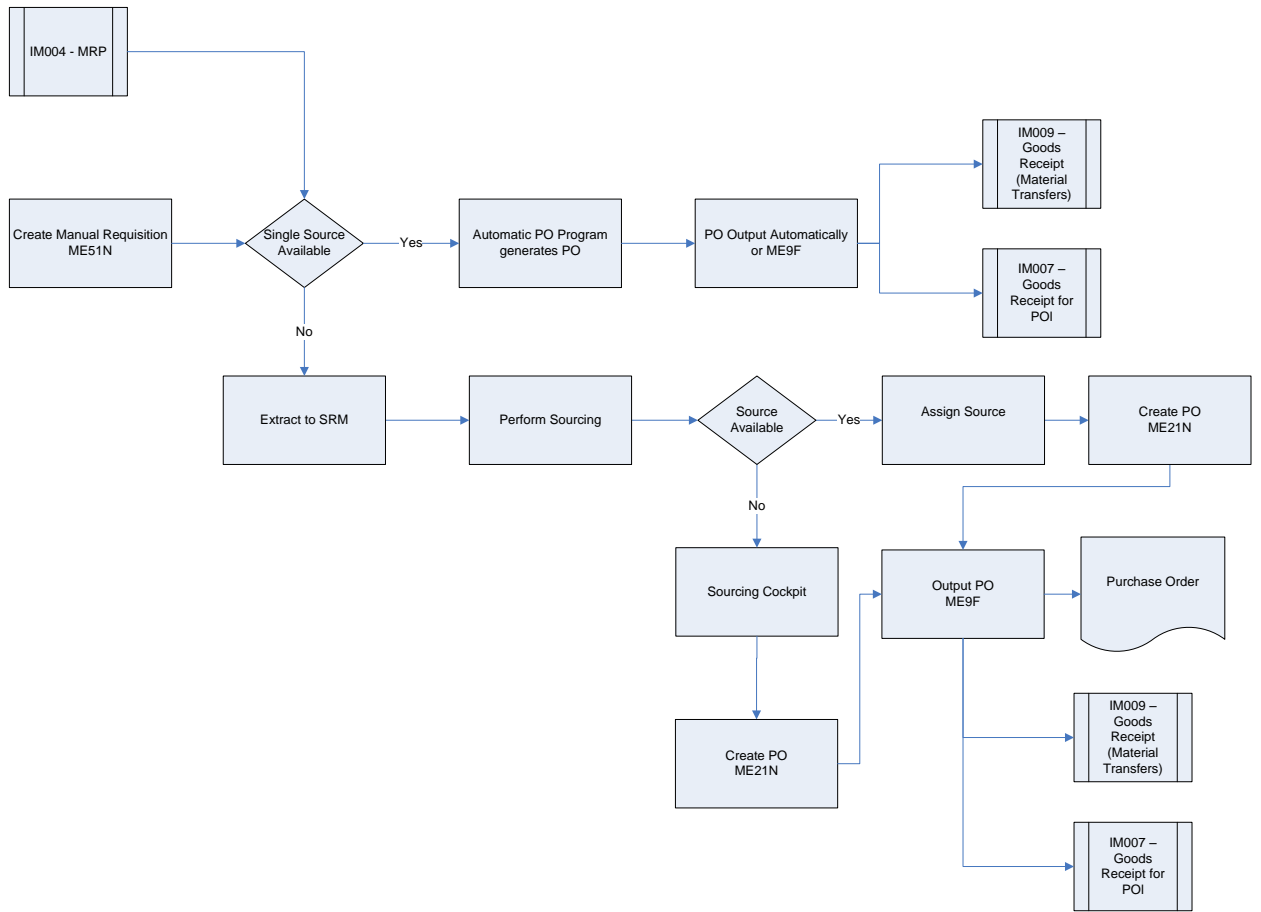
IM-005 - Inventory Replenishment:

This process documents the steps to source purchase requisitions (PReqs) for inventory items and to automatically create purchase orders when the system can identify a single source of supply.

Part of the To-Be vision for inventory replenishment includes minimizing the manual work associated with sourcing purchase requisitions (PReq). The purpose of this process is to find a suitable source for each PReq and to automatically trigger the creation of a purchase order (PO) for each sourced PReq.

As described above, the MRP process creates planned orders based on demand placed on inventory. This demand will come primarily from sales orders, production orders and manual reservations. The MRP controller will assess the planned orders and convert them into purchase requisitions. This process includes manually created PReqs. SAP configuration will have the "Source Automatically" flag set on all Inventory PReqs. Those purchase requisitions with a valid source will be converted into purchase orders and sent to the appropriate supplier (i.e., external vendor or internal vendor). Purchase requisitions without a valid source will be extracted to SRM and follow the same sourcing process as Non-Inventory Purchase Requisitions.

A batch program will be run periodically throughout the day to automatically pick up all sourced inventory PReqs and convert them to POs. It is currently anticipated that this job would run at 9AM, noon, and 3PM. Immediately after each run another job will run to extract to SRM those requisitions where a single source of supply could not be assigned. If an insufficient funds situation occurs during the batch PO creation process, an error report will be generated to facilitate investigation and resolution. In this situation, the PO does not get created. Rather, the PReq remains and once the error situation is corrected, the PReq can be converted into a PO during the next run. Additionally, contract requirements (such as open contract quantities) are checked at this time as well.



IM-006 – Request Material

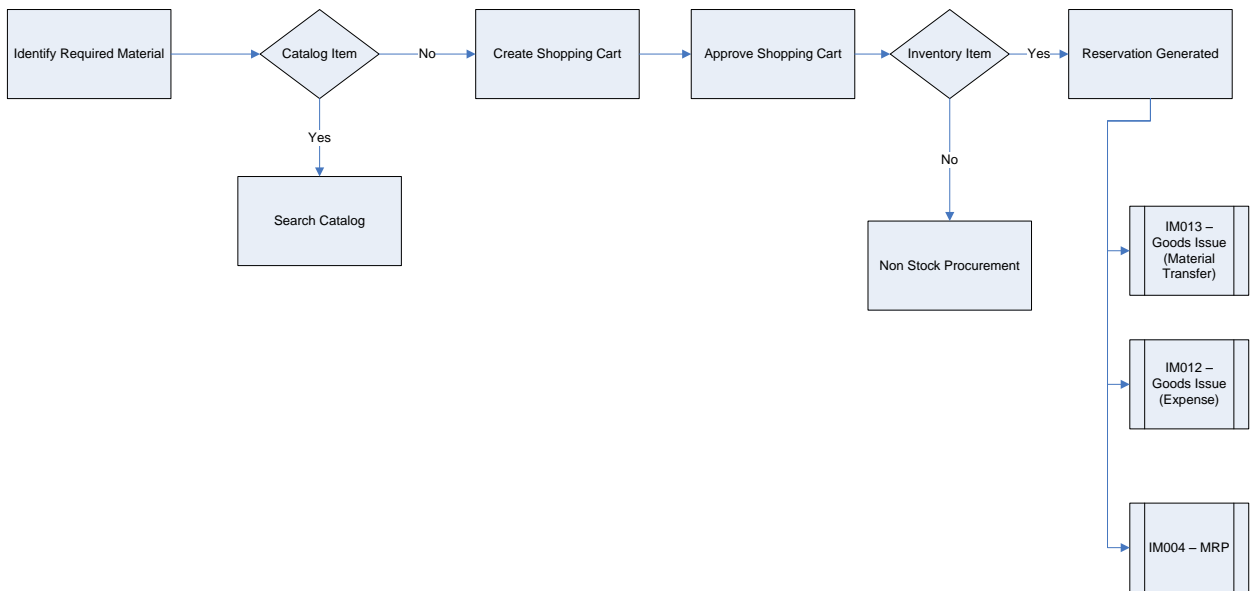
When users want to request material from inventory they will search for the material in SRM using the “Internal Goods and Services” functionality.

When the user saves the shopping cart it will go through the same approval process as a request for Non-Inventory requirements.

Once the shopping cart is approved it will generate a Reservation in the designated delivery plant in ECC.

If the agency has a catalog (DSIT, SCDC) the user will start in MDM and select the relevant material. This will then follow the same approval and reservation creation process as described above. (This functionality is expected to “go live” in May 2010.)

Material Requests can also be performed on demand, by means of a “walk-up” request, or by creating a reservation directly in ECC.



IM-007 Goods Receipt for a Purchase Order (PO)

The process of receiving against a PO applies to the receipt of material from an external vendor and warehouse. There are two types of purchase orders used:

- 'ZINV' –will be configured in realization. It is envisioned that we will use this Doc Type for inventory purchases from external Vendors.
- 'ZSTO'- will be configured and used to perform transfers of materials between plants. These POs are sometimes referred to as Stock Transport Orders (STOs).

For both document types, the standard SAP transaction MIGO is used for receiving. Additionally, the same features and functionality are available for both document types with regards to quantity tolerances, moving average price updating, reversals and returning materials.

It is anticipated that the receiving process will be conducted as follows:

- Prior to the physical arrival of the materials at the plant location, the plant will have visibility of expected quantities and planned arrival dates. This information is automatically evaluated as part of the MRP process and can be manually evaluated through reporting and list displays in real time at any time. If required, PO date and quantity information can be changed to reflect changes in supplier delivery that may have been communicated.
- Upon physical arrival of the materials at the plant location, the receiver will visually inspect the materials. Procedurally, the goods receipt will be done for the quantity that is to be moved into inventory (vs. the quantity delivered). For instance, if 20 were ordered and delivered, and 2 were defective, the goods receipt would be performed for 18, and the 2 defective items returned to vendor via a manual process outside of SAP.
- The receiver will enter the PO number either from paperwork provided from the supplier or from a PO search conducted within the system using any number of search criteria.
- The receipt quantity will always default to the open PO quantity (i.e., for an initial receipt for a PO line item, the system will default to the full amount quantity for that line item. The receiver must change the quantity to match what was actually received. If a quantity less than the order amount has already been received for a material, the system will display the open balance due when a user starts the process to do the next receipt.
- Scanning of Packing Slips or other shipping documents may be performed.
- Receiving in SAP is performed at the plant / storage location level. This information will automatically copy into the receiving transaction if specified on the PO. Regardless, the receiver will have the ability to change the receiving storage location at the time of goods receipt if necessary.
- SAP uses standard movement type 101 for the goods receipt against a PO and standard movement type 102 to easily allow reversals of goods receipts when needed.

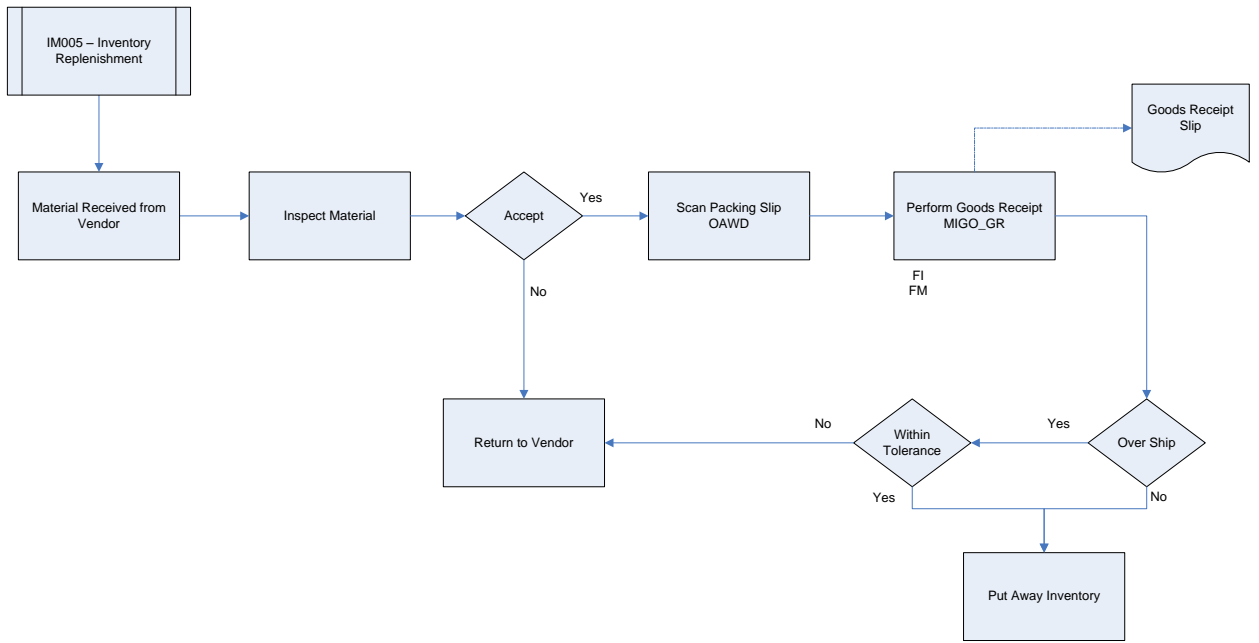
- Once this receiving transaction is saved, SAP will automatically update the available (unrestricted) stock quantity. If the goods receipt was for a PO from an external supplier, a goods receipt / invoice receipt financial entry is made pending the subsequent receipt of the supplier invoice.
- At any time, a receiving history report against a specific PO can be viewed using transaction ME23N.

Other receiving related comments:

- SCEIS business practice requires that all receipts for inventory from external vendors or warehouse locations be done with reference to an SAP PO. This is critical since information is automatically pulled into the receiving transaction directly from the PO (e.g., open quantity, purchase price, etc.) and because the subsequent 3-way match upon receipt of the vendor invoice can only work if the goods receipt has been conducted with reference to the PO.
- Since used and reclaimed material is not being received from an external vendor or warehouse location, it will be received as a miscellaneous receipt rather than a purchase order.

Agency Related Requirements:

- Dept. of Education: Upon goods receipt, DOE has the requirement for some bus parts to be batch-managed according to the manufacturer of the part.

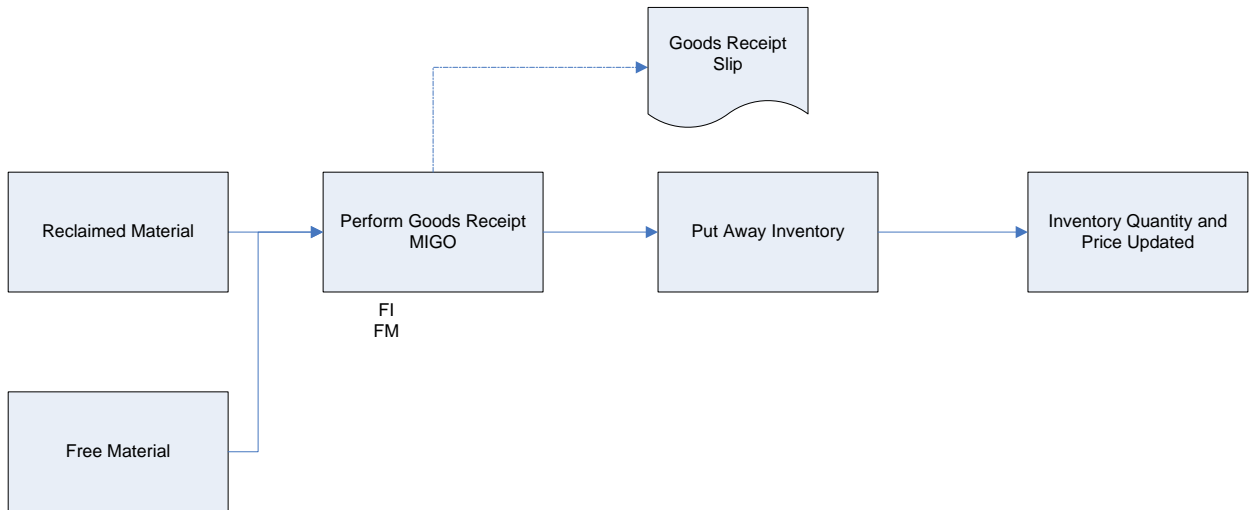


IM-008 Goods Receipt Free and Reclaimed Material:

Used and reclaimed material is material that is residual from an activity and is being returned to stock for future use or material that has been received free of charge. As part of the SCEIS design, it has been determined that these used and reclaimed materials should be brought back into inventory at the value of current moving average price.

The receipt of used and reclaimed material is accomplished using a standard SAP transaction (MIGO) with a movement type of 501. A G/L Account will be established as an offset for the inventory posting.

A standard SAP transaction (MB51 - lookup by movement type) can be used to view the history of movements related to this 501 movement type.



IM-009 Goods Receipt Material Transfer:

Material transfers between plants may occur for a variety of reasons. Often these transfers are the result of a low stock situation at one plant while excess stock is available at another plant. Given that MRP parameters will be set up to help ensure stocks are replenished appropriately at each plant/storage location, it is expected that material transfers between plants would occur in most plants on an exception basis. Transfers across agencies may also occur.

Materials will be transferred between plants using a two-step inventory transfer, meaning both a goods issue and a confirming goods receipt must be entered. This is an existing transaction in SAP (MB1B), which will be budget relevant at the time of goods issue.

NOTE: Stock Transport Order (STO) is covered in Receipt of Purchase Order

This transfer is accomplished as follows:

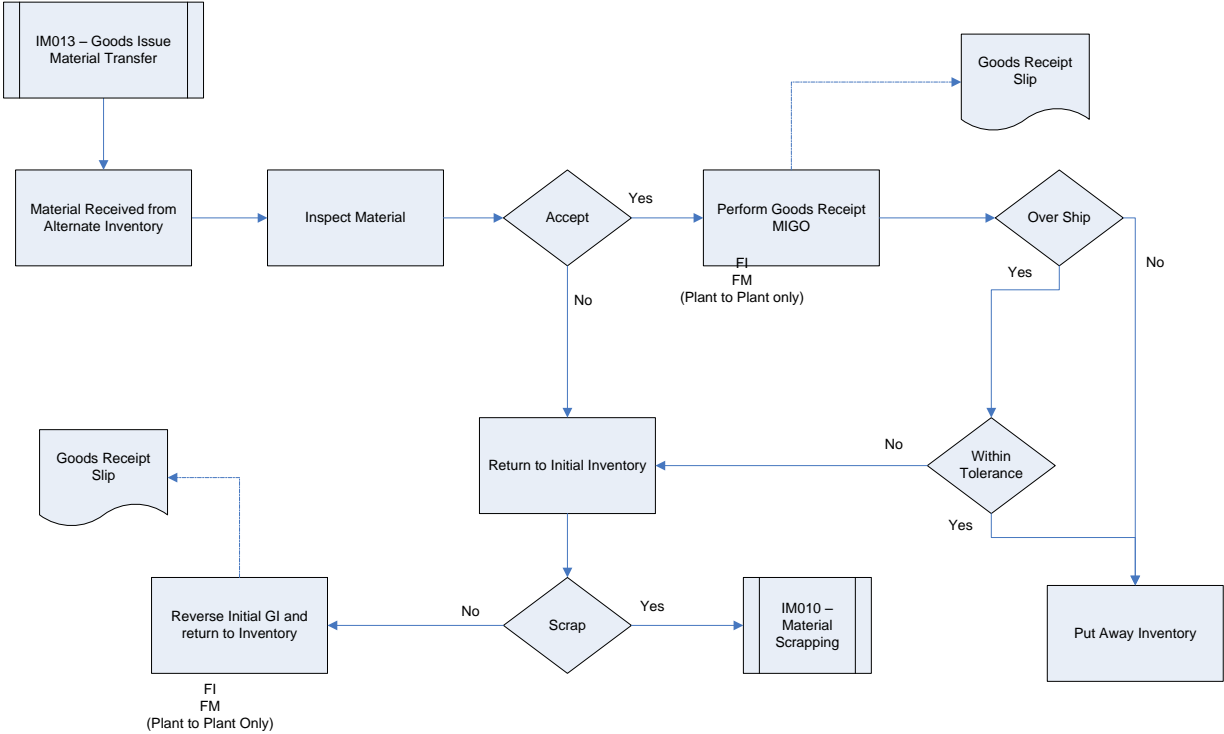
- The sending plant uses transaction MB1B with movement type 303 (plant to plant transfer in two steps – stock removal). This puts the quantity 'in transit' between the two plants and charges the receiving plant's budget for the material at the moving average price of the sending plant. The goods issue reduces the available stock at the sending plant and puts the quantity of material into 'in-transit' stock at the receiving plant.
- If a mistake was made and the issue needs to be reversed, an MB1B transaction can be performed using movement type 304 (reversal - plant to plant transfer in two steps – stock removal).
- Upon arrival at the receiving plant, if the received material is acceptable, the MB1B transaction with movement type 305 (plant to plant transfer in two steps – put away) is performed to bring the stock into inventory. The receipt increases stock on hand at the receiving plant and decreases the 'in-transit' quantity.
- Again, there is a reversing movement type 306 (reversal - plant to plant transfer in two steps – stock put away).

Other comments about this process are as follows:

- In-transit stock is not available for use until the receiving location enters the goods receipt. However the in-transit quantity is relevant for MRP purposes.
- This existing SAP process will be used to print a Goods Issue Slip that can be used as a packing slip.
- An error will occur if a receiving plant tries to receive more than the quantity that was 'in transit'.
- There is no message if less than the 'in transit' quantity is received. The un-received quantity will remain in the 'in transit' bucket at the receiving plant. The receiving plant periodically needs to review and resolve quantities that remain 'in transit'.
- If all (or a portion) of the material physically received is not accepted, the material is returned to the issuing location without the receiving plant doing any transaction in the

system. A manual process is used to ship the material back and the issuing location will process an issue reversal.

- An MB52 transaction (Display Warehouse Stocks of Material On Hand) can be performed to verify the inventory updates have been completed.



IM-010 Material Scrapping:

Once it is determined that a material is obsolete, damaged, or no longer needed, the scrapping process is used to remove the inventory from the system. Appropriate approvals will be required before scrapping can be transacted in the system.

As with virtually all material movements, scrapping will be a budget relevant transaction. SAP provides a standard transaction (MB1A) and movement type (551) to handle scrapping. The Material Scrapping transaction can be easily reversed in SAP using another movement type (552).

The quantity to be scrapped must be less than or equal to the quantity in stock. You can scrap materials from either unrestricted use stock or blocked stock. Most inventory items will be classified as unrestricted use stock. Only on an exception basis would stock be put into blocked stock. An example of where blocked stock might be used is if a material was damaged and the system user wanted to prevent it from being used before it was scrapped from the system. Once the material is scrapped from SAP, physical disposition of this material will be determined by the subsequent surplus process if applicable.

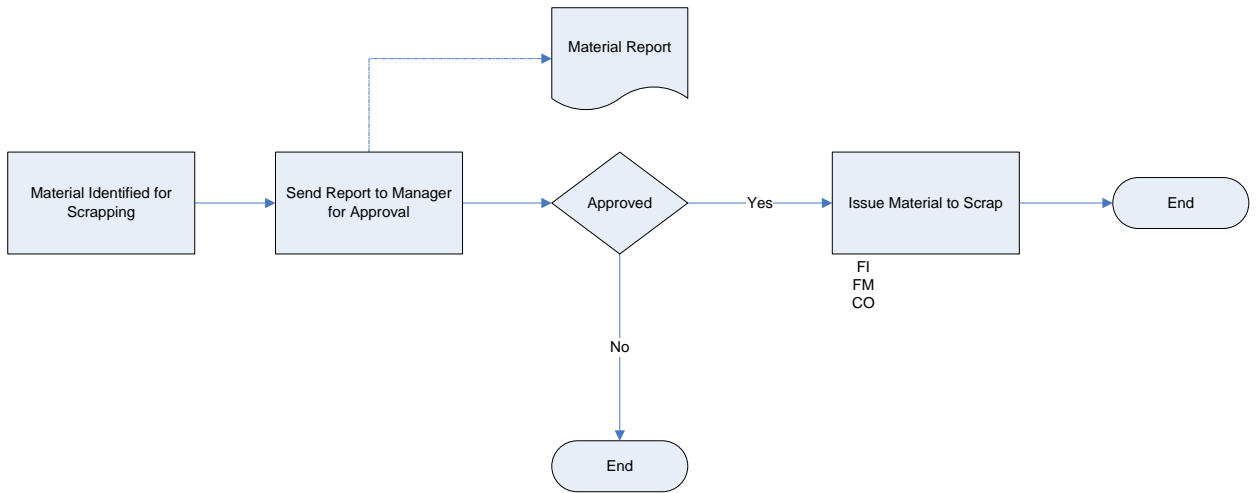
The material scrapping transaction has the following results in the system:

- The relevant stock quantity is reduced.
- The value of the scrapped material is posted from the stock account to a scrap account. The scrap account is predetermined based on plant and material and not entered as part of the MIGO transaction.
- The value used is the moving average price for the material at the time of the posting, and the resulting moving average price before and after scrapping is unchanged.

Reason codes can be configured for the scrapping movement type if desired to facilitate reporting and analysis. The exact reason codes will be determined during the project's Realization Phase, but typical scrapping reason codes include obsolescence and damage.

A standard SAP transaction (MB51) will allow the state to look historically at material movements, and specifically report on any scrapping transactions that have been conducted.

NOTE: Material Scrapping does not supersede the requirements of South Carolina Consolidated Procurement Code & Regulations 19-445.2150-Surplus Property Management. Material Scrapping within SAP would be utilized in conjunction with the proper disposition of obsolete, damaged or no longer needed materials.



IM-011 Create Material Reservations:

As mentioned above incoming demand is captured in SAP through the creation of a manual online reservation. Manual reservations can be created in SAP when the following situations occur:

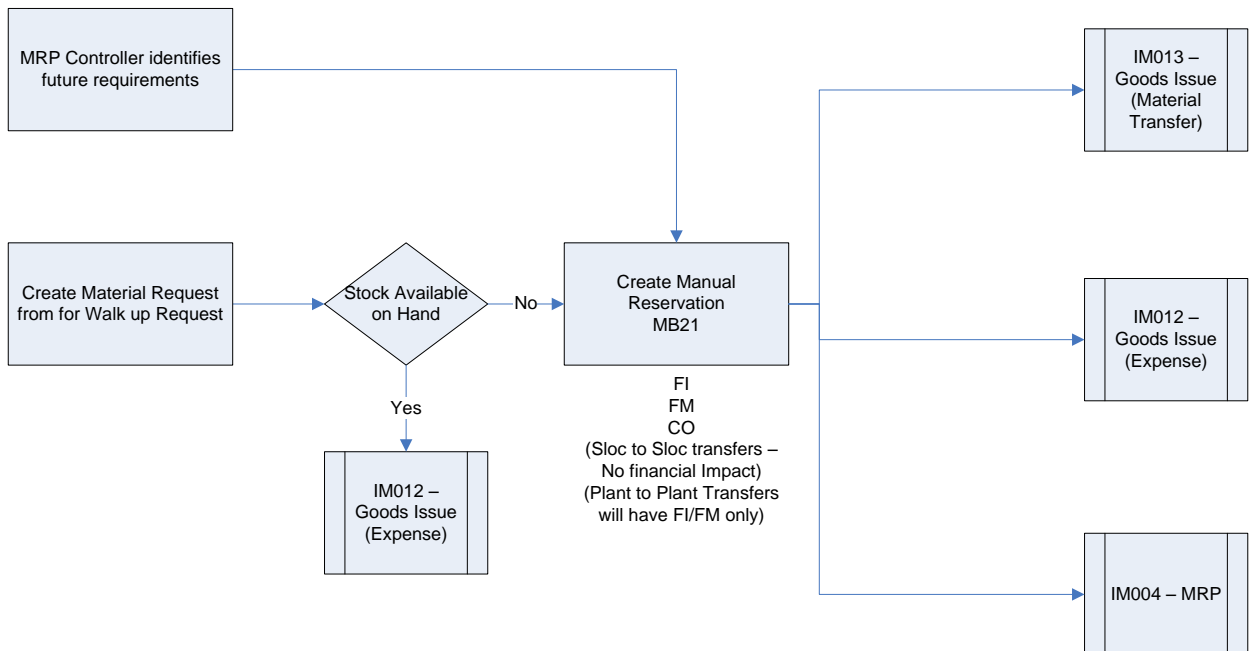
- Insufficient Stock is on hand to fulfill a “Walk Up” customer’s request. The storeman would create the reservation so that when stock becomes available it can be delivered to the requestor.
- Store becomes aware of an upcoming project and wishes to reserve stock.

Reservations will let the warehouse know what material needs to be issued when and also lets MRP know that a requirement exists. This will trigger the replenishment process with enough lead time to satisfy the upcoming demand.

These manually created reservations feed into the MRP run and will result in demand on the relevant plants inventory.

The creation of these manual reservations will be restricted to warehouse staff only.

Requestors have the ability to create reservations via the SRM shopping Cart functionality.



IM-012 Goods Issue (Expense)

The need to issue material can be triggered by demand from sales orders, production orders, manual reservations or from 'walk-up' demand at a warehouse location.

If the material being requested is an inventoried material, it is anticipated the material goods issue process will be conducted as follows:

- If the material is available locally in the warehouse, the warehouse manager would then issue the material using a standard SAP transaction (MIGO). The information entered includes the material, the quantity and the cost object (i.e., where to charge goods issue).
 - SAP performs checks at the time of goods issue and issues an error (hard stop) if either of the following two conditions is found:
 - The requested issued quantity is greater than stock on hand
 - The account that is charged does not have sufficient budget available.

If either of these conditions is encountered, they must be resolved before proceeding. This could require changing an incorrect account code, adjusting MRP replenishment parameters on the material master to make sure they are set properly to ensure timely replenishment, or adjusting inventory counts.

Assuming these problems are not encountered during the goods issue process, the Storeroom Clerk can print a Goods Issue Slip to further document the transaction. A standard SAP transaction (MB90) is used to print a Goods Issue Slip. If the Goods Issue Slip is printed to complete the process, the requestor signs the slip and a copy is kept as a permanent record of the transaction.

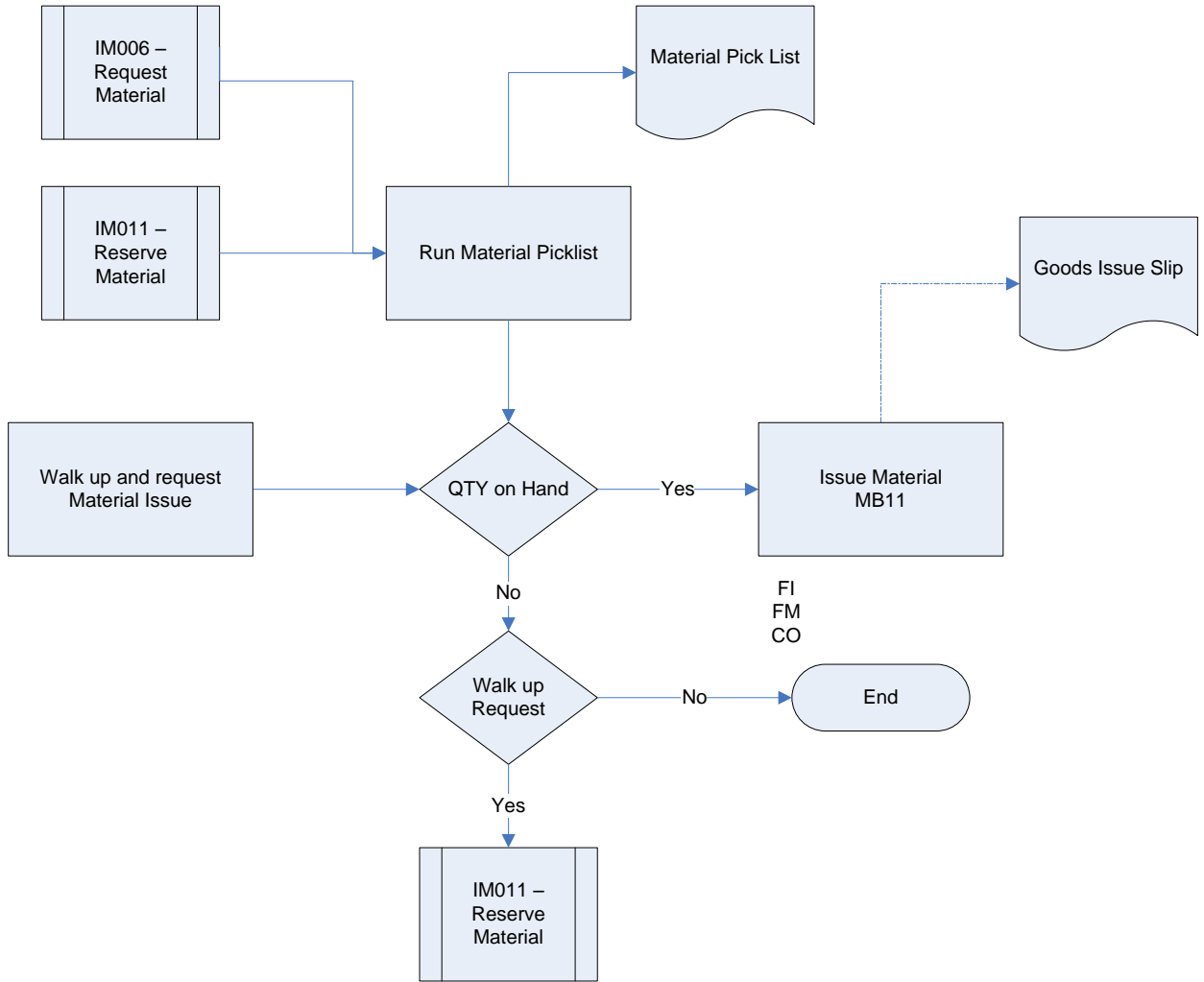
- If the material is not available locally in the warehouse, the following progression is used to find sufficient quantities of the material being requested:
 - Check availability at other plants, and if available, request a material transfer. This transfer would be a two-step inventory move between plants or an STO.
 - If no availability of the requested material exists at other plants it can be procured externally. A standard SAP transaction supports the capability to search for material at other plants and storage locations as required (MMBE).

Completion of the material goods issue reduces the inventory quantity and value at the plant. This means the inventory is consumed, and the inventory costs are allocated to the sales orders or other cost objects (i.e cost centers) referenced on the goods issue.

Agency Specific Requirements:

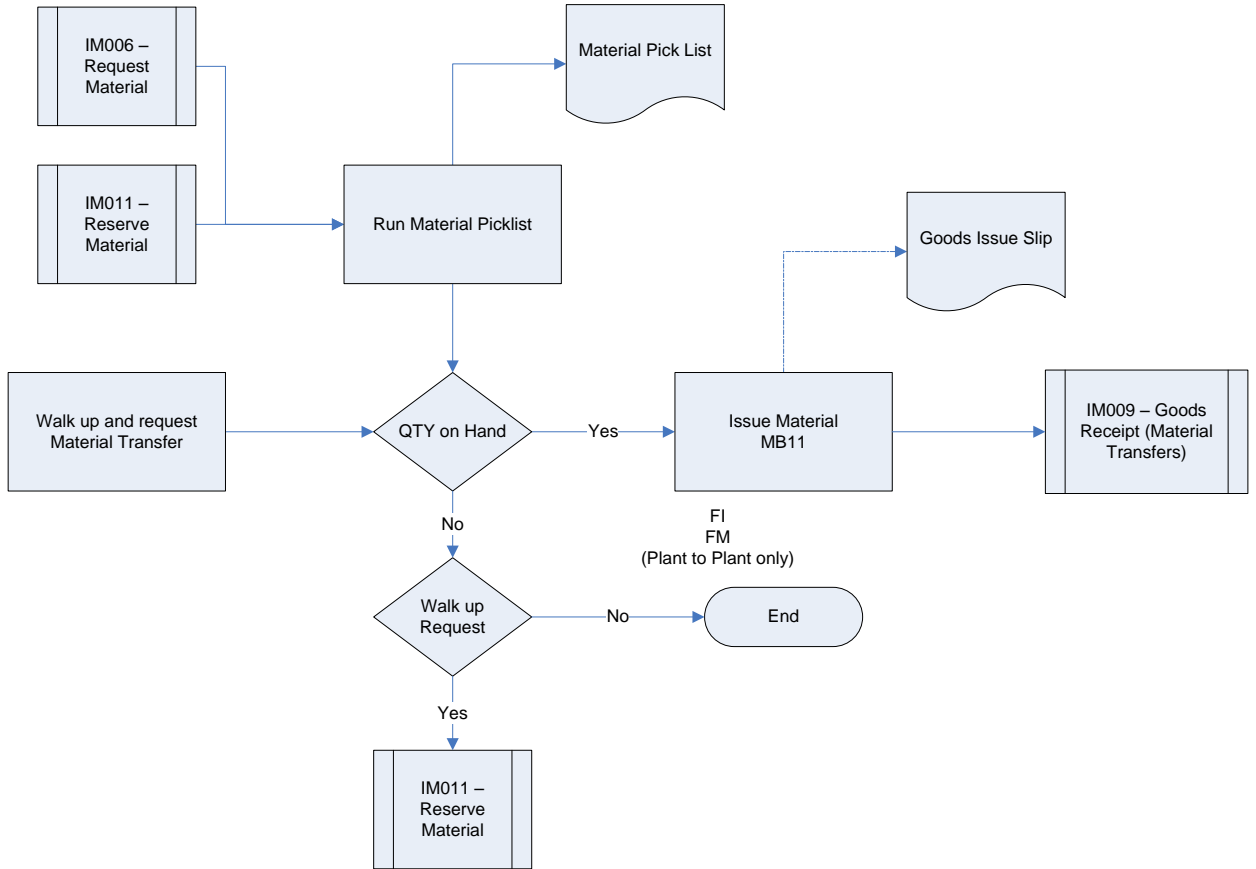
- DSIT, SCDC (Prison Industries) – DSIT and SCDC Prison Industries require Goods Issue with Markup for Materials issued (or sold) to other SCEIS agencies.

- Dept. of Education – DOE requires tracking of Goods Issue that is not standard functionality. Materials issued from parts inventory must be tracked to the individual bus to which the part is issued.
- Dept. of Public Safety, SLED, DNR, SCDC, PP&P – Sensitive items must be traceable to the employee to which they were issued. These items include guns, badges and body armor, etc. Validation of Employee IDs will need to take place during this process.



IM-013 Goods Issue (Material Transfer)

See Goods Receipt (Material Transfer)



IM-014 Serial Number Tracking:

A requirement for Serial Number tracking has been identified at a handful of agencies. There is a need for manually generated numbers to be assigned to inventory materials.

Serial numbers will allow the State to uniquely identify individual items of certain materials. Serial numbers will be recorded for those inventoried items that require serial number tracking. There are certain commodities that State agencies deem to be “sensitive items.” This functionality will provide the capability to manage and track these items by serial number while they are being controlled through Inventory Management.

Agency Specific Requirements:

The following agencies require serial number tracking:

- Dept. of Education: Some bus parts are tracked by Serial Number.
- Dept. of Public Safety: Sensitive items (i.e. gun, badges, body armor, etc.) are tracked by serial number.
- SLED: same as above
- Dept. of Natural Resources: same as above
- SC Dept. of Corrections: same as above
- Dept. of Juvenile Justice: same as above
- Dept. of Probation Pardon & Parole: same as above

IM-015 Shelf Life Expiration:

The Shelf Life Expiration Date (SLED) for warehouse stock is established when goods are received. This date is updated in the Goods Receipt ?? and can be viewed and changed if necessary.

When Shelf Life management is active for a particular material, you must enter the expiration date on the stock placement preparation screen when you create a transfer order. The system can then print the shelf life expiration date on pallet documents.

You enter the shelf life date in to the storage view of the Material Master Record. This data includes:

- The maximum time a material can be stored
- The minimum shelf life a material must have available to be accepted by the system
- A percentage of the total shelf life that must still be available if the goods are to be sent to another distribution point
- The time unit used for the shelf life data (days, weeks or years)
- The total number of days that the goods can be kept – from production to the shelf life expiration date

IM-017 Bar Coding:

The SCEIS solution will provide the capability to integrate with bar coding solutions to capture goods movement activities in the system. Agencies that already use bar code scanners in conjunction with their legacy Inventory Management will have their systems interfaced to the SCEIS solution as part of the statewide rollout. The costs associated with bar coding equipment and additional interface requirements for any agency currently without a bar coding solution that chooses to implement one in conjunction with the SCEIS solution will be outside of scope of the project. The financial requirements will need to be met by the agency.

Currently only DSIT Sumter Street Warehouse has an existing Bar Coding System. An interface will be developed to enable DSIT to continue using their Bar Coding System.

IM-019 Physical Inventory:

The physical inventory process includes identifying, counting, recording, and reporting of inventoried items. Actual counts are conducted for all materials to determine quantities on hand, correct counts, post financial differences per count differences, and measure the accuracy of inventory balances. It is expected that batch inventory scheduling process will be utilized in SAP allowing the physical inventory process to be conducted in a timely manner.

It is envisioned that certain material groups will be selected to be inventoried each month, so that over the course of any 12-month period, each item in inventory is physically counted at least once. However, because of their criticality and dollar value, some inventory groups may be physically counted more frequently. Batch job variants will be defined to trigger the creation of the appropriate physical inventory documents on a monthly basis. A standard SAP transaction (MI31) will be used to trigger the normal monthly physical inventory document creation. Once created, the physical inventory documents are printed in preparation for the counting activity using a standard SAP transaction (MI21).

Additionally, on an exception basis, it is possible to create a physical inventory document for a single material or group of materials if the need arises (i.e., spot checks). This is accomplished with a standard SAP transaction (MI01) and can be run as needed by a specific plant. Physical inventory documents can be displayed using transaction MI03. Additionally, authorized personnel will be able to view existing stocks of a material using transaction MMBE.

The counting process will be conducted using the physical inventory document sheets. If there is a difference between the expected and actual counts during the physical inventory process, a reason code is written on the sheet. This reason code will be entered when the differences are posted to provide insight and reporting on the nature of the difference.

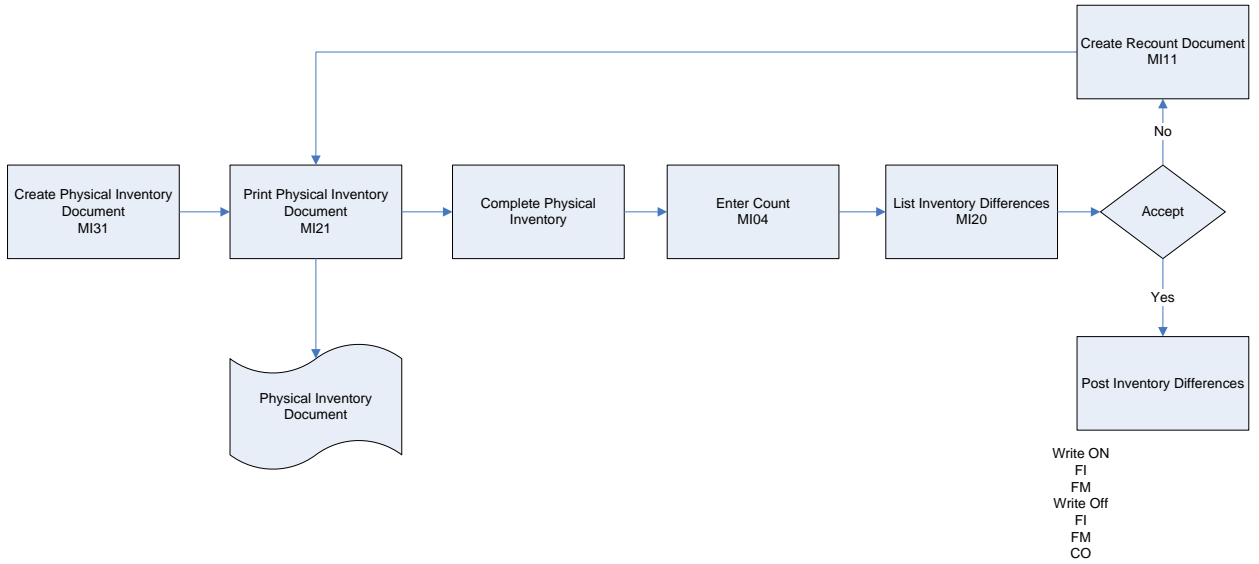
The Physical Inventory List Transaction (MI24) will be run to show which physical inventory documents have been created for which materials and the status of each document (i.e., not yet counted, counted, adjusted, etc.).

Once the inventory is counted and recorded on the PI document, it is reviewed and a recount is conducted if required. There is a standard SAP transaction (MI20) which is used to view differences between the entered count and the inventory book number. If these differences warrant a recount, it can be initiated using a standard SAP transaction (MI11) which triggers the creation of the recount document. Otherwise, the physical inventory counts are posted using transaction MI07. As they are posted, the inventory quantities and values are immediately adjusted. Please note the following:

- All physical inventory difference postings are budget relevant.

- There should be a separation of roles between inventory counting and difference posting. Specifically, we anticipate the difference posting will be performed by an appropriate manager.

Finally, after the fact reporting of the physical inventory will allow tracking of inventory counts, adjustments, postings / differences as well as open items.



Roles:

User Role Name	User Role Description
Central Material Master Data Maintenance	<ul style="list-style-type: none"> • Maintains the Material Master within the SCEIS solution. • Responsible for creating, changing and deleting of the Material Master record and ensuring the Material Masters conform to the agreed standards. • Works closely with the Agency Material Master Liaisons to ensure that the respective agency needs are met for the creation and update of Material Masters.
Agency Material Master Liaison	<ul style="list-style-type: none"> • Works with Central Material Master Maintenance users to ensure that the Agency needs are met for classifying inventory items with the NIGP coding structure. • Creates and maintains agency-specific Material Master Data Records • Processes requests for new or changed agency-specific Material Master Records • Coordinates changes to SAP R/3 Material Master Records
Agency Inventory Issuer	<ul style="list-style-type: none"> • Responsible for issuing goods and goods movements in SAP • Ability to pick, pack, check, and ship material for goods issue, stock transfer, or stock transport order • Counts and recounts physical inventory to support physical inventory in R/3
Agency Inventory Receiver	<ul style="list-style-type: none"> • Responsible for receiving goods into inventory • Prints goods receipts as required
Agency Inventory Administrator	<ul style="list-style-type: none"> • Responsible for all the inventory functions within an agency. • Ability to receive and issue goods, performs physical counts, performs

	<p>inventory adjustments and run reports.</p> <ul style="list-style-type: none"> • Creates goods issues/returns and stock transfers/transport orders in R/3 • Manages inventory scrapping
Agency Inventory Display	<ul style="list-style-type: none"> • Has the ability to display all inventory transactions and run reports for their agency
MRP Controller	<ul style="list-style-type: none"> • Responsible for the setting and maintenance of Material Re-order parameters. • Responsible for converting the planning proposals generated via MRP to requisitions or reservations

Development List:

This section identifies the proposed development required to accomplish the design. It includes the following categories of development:

- **Interfaces:** all data that is passed or accessed between the SAP system and a legacy application or external entity.
- **Custom Code (including User Exits):** custom programs and code developed via user exits (see further explanation below).
- **Custom Forms:** developed to replace the standard SAP forms; printed outputs from SAP.
- **R/3 Custom Reports:** reports that cannot be generated out of the business warehouse (BW) or standard R/3, and therefore are required to be developed
- **Conversions:** programs that are required for the initial load of data from legacy systems into SAP

Custom code is required to implement system functionality that cannot be accomplished through standard SAP configuration. These changes can be developed without changing core code, and are typically made via user exits. User exits are strategically placed ‘exits’ in the SAP code to allow for customer-specific coding to be inserted. Such code typically requires more rigorous testing at the unit, integration and user acceptance testing phases, as well as for any ongoing maintenance (e.g., application of hot packs) or upgrades.

Interfaces:

Interface Name	Interface Description
KARDEX Work Order System	Interface to Dept. Of Education KARDEX work order System
Counterpoint POS	Interface to SC Department of Parks and Tourism Counterpoint POS system
SCDC Canteen POS	Interface to SCDC Canteen POS system
SLED POS	Interface to SLED POS system to perform Goods Issues of materials sold
Bar coding	Interface to allow for use of bar coding to perform goods issues/goods receipt

Custom Code:

Custom Code Name	Custom Code Description
Markup of materials sold	Create 7% markup on all items that are issued from DSIT warehouse that do not reference a sales order
Track materials to specific bus	Track what material is issued to which bus by bus number
Validation of Employee ID from HR Module	User exit for validation of employee ID upon entry in Goods Issue of Trackable Materials
Searchable cross reference for old material numbers	Establish a searchable crosswalk table to allow users to search for SAP Materials by legacy system material number via a matchcode
Automatic Goods Receipt for Account Assigned Stock Transport Orders	Allow for automatic goods receipt of account assigned stock transport orders when materials are requested from one SCEIS agency for another
Backflush BOM items for Voc Rehab	User exit will perform a backflush of BOM items when a misc receipt is performed for finished goods
SRM BADI to Generate Reservation	BADI will need to be updated to allow the creation of Reservations in SAP???

Custom Forms:

Form Name	Form Description
Goods Issue Slip	Document to capture all relevant goods issue information
Goods Receipt Slip	Document to capture all relevant goods receipt information
Physical Inventory Count Sheet	Document to facilitate actual count of inventory items

Manual Request for Inventory (Walk Up)	Manual Request form to allow users without access to a system to request materials from a warehouse.
Material Master Request	Interactive Screen for initial creation of Material Master Record at a state level and Plant Level
Purchase order document	Document to capture all relevant purchase order information to facilitate correct orders and receipts
Packing Slip Document	Document to capture inventory items shipped at time of goods issue

Custom Reports:

Report Name	Report Description
Track Issues to Employees and Buses	When an issue is made to an employee ID or bus # then a report that groups all those movements together is required

Conversions:

Conversion Name	Conversion Description
Material Master Load	Initial load of all material master records into SCEIS
Inventory Balances	Initial load of all balances of inventoried items into SCEIS
Open Purchase Order Load	Program to load all open purchase orders for inventoried items into SCEIS
Contract Update	Program to update contracts to include updated plant codes and inventoried materials

	purchased on existing contracts
Open Goods Receipts	***Need to discuss with FI***?????
Open PO INV	***Need to discuss with FI – program exists but need to check logic***?????
Material Master Extension Program	Program to automatically extend Material Masters to plants with default information