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3408 : QM/WM Interface issues with Centralized Vs  
Decentralized WM systems

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# [ Learning Points

- Quality Management in IM( Inventory mgmt), WM (Warehouse mgmt) environments
- Key differences between Centralized and Decentralized Warehouse Management systems
- QM functionality / issues with both WM systems
- Currently available solutions to resolve the issues
- Overview of Quality Mgmt functionality in association with Handling unit mgmt (HUM)

## Quality Management in Inventory managed (IM) environment

- Stocks are managed at Plant / Storage location level. w/with out batch management
- Process flow steps
  - Goods receipt / Goods issue / order release
  - Inspection lot creation
  - Results / Defects recording
  - Usage decision

## Quality Management in Inventory managed (IM) environment ....contd.

- Stock relevant inspection lots. Where Quality information/UD is associated to inventory.
  - Inbound inspections (01 inspection lots)
  - Goods receipt from Process/Production orders ( 04 inspection lots)
  - Stock transfer (08 inspection lots)
- Non stock relevant inspection lots. Where quality info/UD is not associated to inventory
  - Manual inspections (89 inspection lots)

# Quality Management in Inventory managed (IM) environment

## Display View "Default values for the inspection type": Details

Inspection Type

**Inspection variant**

Inspect by task list  Assign reqmts automatically  
 Inspect by specification  Record characteristic results  
 Inspect acc. to config.  Serial nos possible

**Sample**

Sampling procedure  Modification rule   
 100% inspection  Skips allowed  
 Inspection percentage   
 Trigger sample calculation manually  
 Enter sample manually

**Inspection lot creation**

Post to inspection stock  
 Inspection for HU  
 Control insLot

**Inspection lot completion**

Automatic usage decision

Q score procedure

Allowed share of defects

Avg. insp. duration

## Quality Management in (Warehouse managed) WM environment

- Warehouse mgmt : WM allows you to map your entire warehouse complex in detail to storage bin level.
- Along with quantities, you can also always determine exactly where a certain material currently is in your warehouse complex.

## Quality Management in (Warehouse managed) WM environment .... contd

- Process flow
  - GR creates inspection lot.
  - Along with GR, system creates Transfer requirements (TR) for the put away quantity and a positive quant is formed in GR area.
  - Transfer order creation and material is put away into storage.
- Putting away process for QM relevant material depends on whether UD is carried out or not..

## Quality Management in (Warehouse managed) WM environment .... contd

- Process flow (Put away **after** UD)
  - GR creates inspection lot. Sample qty is determined based on IMG settings. Material is in Q status until UD is carried out
  - Along with GR, system creates Transfer requirements (TR) for the put away quantity and a positive quant is formed in GR area.
  - UD is carried out. Quantity released from Q to URS
  - Transfer order creation and material is put away into storage.

## Quality Management in (Warehouse managed) WM environment .... contd

- Process flow (Put away **before** UD)
  - GR creates inspection lot. Sample qty is determined based on IMG settings. Material is in Q status until UD is carried out
  - Along with GR, system creates Transfer requirements (TR) for the put away quantity and a positive quant is formed in GR area.
  - Transfer order (TO) is created sample qty determined. Put away qty calculated. TR for sample qty remains open
  - UD is performed. Qty moved to URS
  - TO for sample qty created and sample qty put away.

# QM/WM Interface

**Display IMG**

Existing BC Sets | BC Sets for Activity | Acti

Structure

- Logistics Execution
  - Direct Store Delivery
  - Decentralized WMS Integration
  - Warehouse Management
    - Concept for Warehouse Management
    - Master Data
    - Strategies
    - Hazardous Materials
    - Activities
    - Storage Units
    - Cross-docking
    - Value-Added Services (VAS)
    - Planning and Monitoring
    - Interfaces
      - Inventory Management
      - Shipping
      - Define Production
      - Stock Transfer for Kanban
      - Define Quality Management
      - Task and Resource Management
      - External Systems
    - List of Temporary Storage Bins
    - Archiving Concept
    - Tools





# QM/WM Interface

## Change View "WM/QM Interface: Sample Processing": Overview

WM/QM Interface: Sample Processing

WhN	Q	QM Control Description	Typ	Insp.bin	Insp. sampl	F/	Round off i
		Indicator: Inspection sample handl...		3		D	<input type="checkbox"/>
				3		D	<input type="checkbox"/>
				3		D	<input type="checkbox"/>
				3		D	<input type="checkbox"/>
				3		D	<input type="checkbox"/>

Indicator: Inspection sample handl...

Sample hand...	Short Descript.
1	Stock transer to insp. sample bi
2	Remains in GR zone
3	Put Away
4	Ignore

## Centralized & De-centralized Warehouse Mgmt

- Centralized Warehouse Mgmt
  - Goods Receipts, Put away, Goods Issues, Assembly, Packing and shipping are performed in the same client where mySAP system resides.
- De-Centralized Warehouse Mgmt
  - Goods Receipts, Put away, Goods Issues, Assembly, Packing and shipping are performed independently compared to my SAP system operations.

## Quality Management in Centralized Warehouse Mgmt --- advantages

- Stock relevant inspection lots during several lot origins such as goods receipts, goods issues, stock transfers etc.
- Stock relevant inspection lots has inventory attached to Quality.
- Usage Decisions will have impact on Inventory when stock relevant inspection lots are created
- Batch Where used list can associate with inspection lots if they are stock relevant

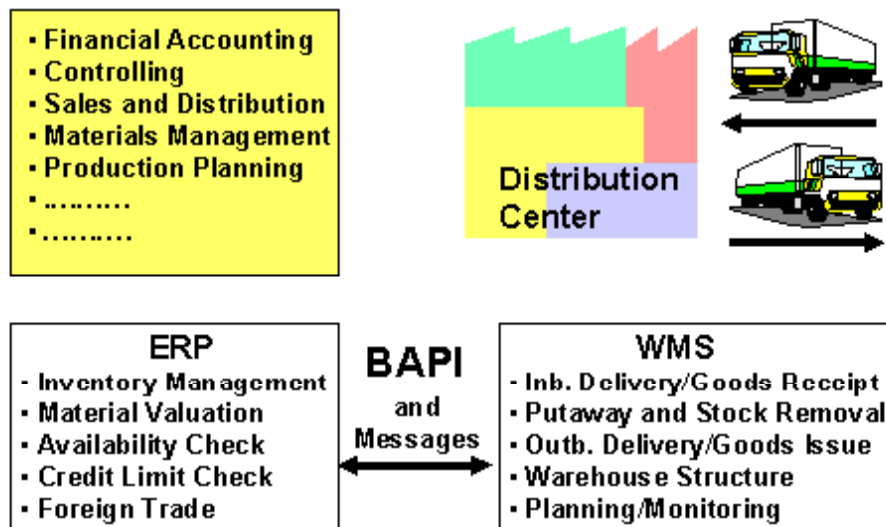
## Why De-Centralized Warehouse Mgmt?

De centralized WM systems are chosen to

- achieve 24hrs uninterrupted operations
- Operate high throughput with quick response times
- Operate independently with low downtime risk
- Suitable for distribution centers

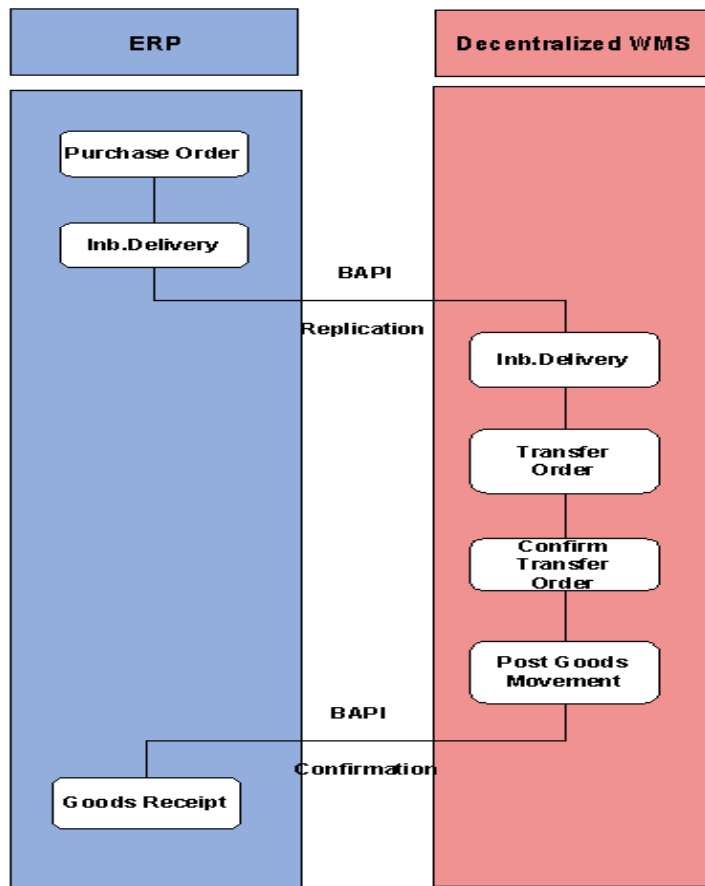
# Why De-Centralized Warehouse Mgmt?

## Warehouse Management System As a Stand-Alone Component



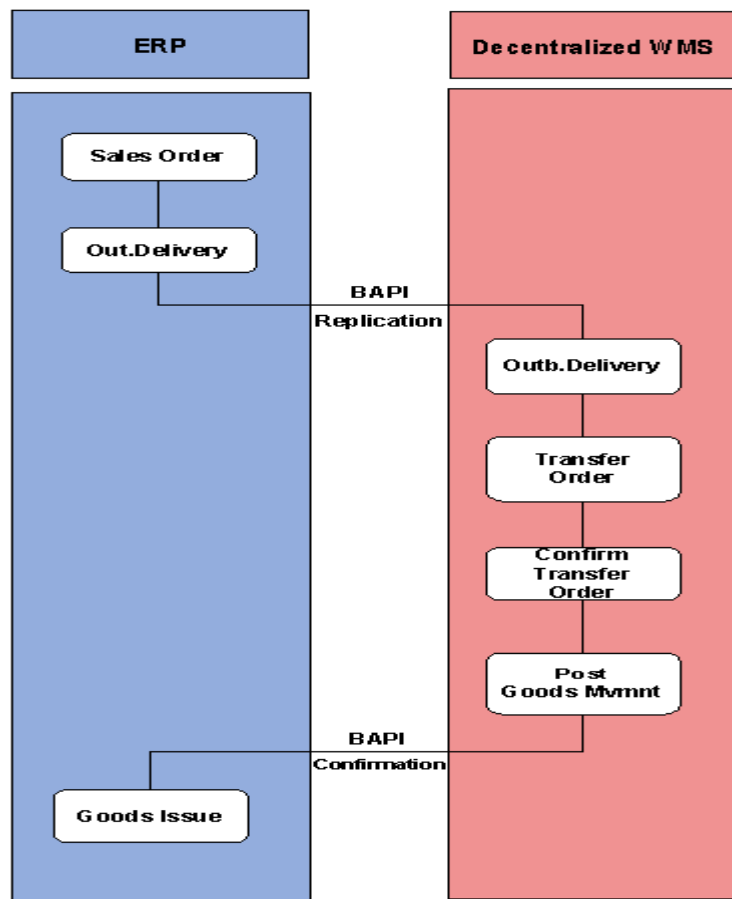
ERP system handles inventory/financial mgmt functions and WM responsible for Goods receipt, Warehousing and distribution

## Goods Receipt in Decentralized Warehouse Mgmt



1. PO's are created at ERP system.
2. Inbound deliveries are created and replicated to WMS system
3. When vendor delivers goods TO's are created at WMS and then put away at WMS
4. Goods receipt clears the interim storage bin at WMS
5. Goods receipt in inventory mgmt posted at ERP

## Goods issue in Decentralized Warehouse Mgmt



- 1) ERP system creates sales order & Outbound delivery
- 2) Outbound delivery distributed to WMS
- 3) TO created for outbound delivery at WMS
- 4) Picking is performed at WMS
- 5) Confirmation of TO clears interim storage bin.
- 6) Confirmation initiates BAPI
- 7) No over/under delivery quantity checks occurs at WMS
- 8) Goods issue posting is automatically posted in the ERP system

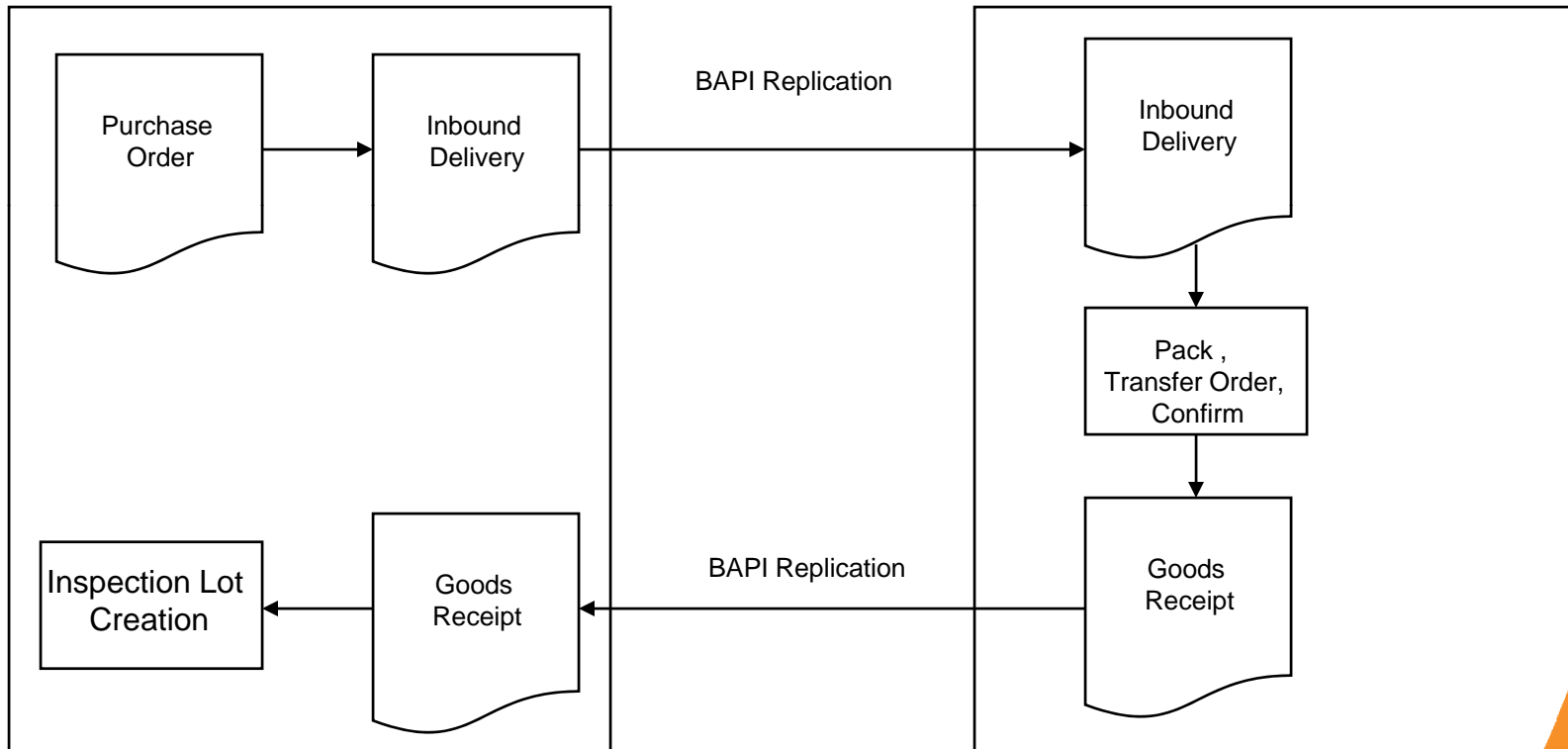
## Quality Management in Decentralized Warehouse Mgmt

- SAP Quality Management (QM) functions are affected with the Warehouse mgmt (Centralized vs Decentralized)
- QM's master data resides at ERP. Inspection processing occurs at ERP not at WMS

# Quality Management in Decentralized Warehouse Mgmt (In 4.6c with no handling units)

ERP

WMS



## Quality Management in Decentralized Warehouse Mgmt –Issues (In 4.6c with no handling units)

- Decentralized warehouse mgmt results in non stock relevant inspection lots.
- Non Stock relevant inspection lots has no inventory attached.
- Usage Decisions will not have impact on Inventory when non stock relevant inspection lots are created
- Batch Where used list can not associate with inspection lots if they are non stock relevant

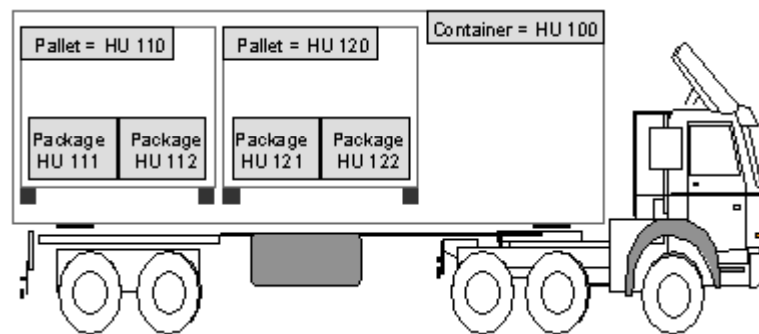
# Quality Management in Decentralized Warehouse Mgmt – Potential solutions

From ECC5.0

- Implement Handling Unit Mgmt (HUM) functionality
  - If inbound delivery is created with Handling units, Inspection lot numbers are transmitted to WMS system and stored in quants
  - Usage decision is performed at ERP system which creates stock posting change and passed on to WMS system
  - At WMS stocks attached to the Inspection lot are affected accordingly.

# Handling Unit Mgmt --- Overview

- A Handling unit is a physical unit that consists of the packaging materials and the goods contained there in.
- Handling unit holds all the information regarding materials , batches and serial numbers



## Quality Management with Handling Unit Mgmt

- Quality Inspections are performed for each Handling unit (HU)
- Inspection lots are automatically created when delivery item is packed
- In HU Inspection lots are NOT created during goods receipt/issue time.
- Usage Decisions are made at each HU level

# Quality Management with Handling Unit Mgmt

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## Quality Management in Decentralized Warehouse Mgmt – Potential solutions

From ECC6.0 onwards

- Take advantage of HUM functionality
- Use Quality Inspection Engine (QIE) with Extended Warehouse Mgmt functionality

## [ Best Practices & Key Learnings

- SAP Quality Management can still be used in high throughput and 24 x 7 Decentralized Warehouse management operations.
- Use stock relevant Inspection lots wherever possible

# Thank you for participating.

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