Basic Integrated Quality Inspection Process Using SAP Extended Warehouse Management and Quality Management in SAP ERP
## Document History

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1 Business Scenario

This how-to guide describes the basic setup of an integrated quality inspection process using SAP Extended Warehouse Management (SAP EWM) and the Quality Management (QM) component of SAP ERP. This guide focuses on the setup steps of the specific Q-Inspection Product/Batch Inbound Delivery (inspection object type (IOT) 4) process. This guide also provides an overview of the architecture of quality inspections in SAP EWM and a short overview of other IOTs implemented in SAP EWM.

The business process describes a straightforward quality inspection process for inbound deliveries from an external vendor when the warehouse is run by SAP EWM and the quality inspections are performed in the QM component of SAP ERP.

The start of the inspection process is triggered in SAP EWM either by the activation of an inbound delivery or by setting the In Yard status. The process then proceeds as follows:

1. Based on inspection rules, the system indicates that the inbound delivery item is relevant for inspection.
2. The system creates an inspection document.
3. During goods receipt (or the first partial goods receipt for an item), SAP EWM releases the inspection document.
4. SAP EWM triggers SAP ERP to create a corresponding inspection lot of inspection lot origin 17 (external) in the QM component of SAP ERP.
5. SAP ERP determines the sample size based on the QM setup in SAP ERP.
6. The inspection lot number and the sample size from SAP ERP updates the inspection document in SAP EWM.
7. After carrying out the inspection, the user records the inspection results and the usage decision in the QM component of SAP ERP.
8. The system updates the inspection document in SAP EWM.
9. Based on the decision code, as an optional step, the system triggers a logistical follow-up action.

The inspection process for inbound deliveries described above is depicted in the following figure:

![Inspection Process Diagram](image)
2. Background Information

2.1 Quality Inspection Engine

SAP Extended Warehouse Management (SAP EWM) uses the Quality Inspection Engine (QIE) to implement inspection processes in the warehouse. You can either run quality inspections processes using only the QIE, or if you have already set up the Quality Management (QM) component in SAP ERP, you can use the QIE to integrate your quality inspection processes with SAP EWM.

In terms of software architecture, the QIE is a software component layer in the SAP EWM software stack. This is depicted in the following figure:

Simplified SAP EWM Software Stack Integrated with the QM Component in SAP ERP


2.2 Data Model of the Quality Inspection Engine

The figure below illustrates the data model of the QIE and the relationship between the entities, and is followed by an explanation:

Data Model of the QIE

The inspection object type (IOT) defines the following:
- Business process for the inspection
- Inspected object (for example, the product, handling unit (HU), or delivery)
- Warehouse number

You can have many inspection rules for each IOT. Based on selection criteria (also known as properties), the inspection rule determines which objects to trigger an inspection for and specifies the inspection details, for example, the inspection process, the procedure, the inspection frequency, and codes.
Based on the inspection rule, the system creates multiple inspection documents during the inspection process. An inspection document contains the inspection specification and is used to collect inspection results, findings, and the usage decision for an inspected object.

Each inspection document can have multiple items and samples assigned to it. The inspection documents, its items, and its samples can have many findings, but there can only be one decision. A follow-up action, such as putaway or scrapping, can be assigned to a usage decision.

### 2.3 Supported Inspection Processes/Inspection Object Types

This section gives an overview of the supported quality inspection processes in SAP EWM. For more information about IOTs, see SAP Library for SAP EWM on SAP Help Portal at [http://help.sap.com/ewm](http://help.sap.com/ewm). In SAP Library, choose Quality Management (QM) -> Customizing Settings for QM in EWM -> Inspection Object Types.

#### 2.3.1 IOT 1: Preliminary Inspection Inbound Delivery

Upon activation of an inbound delivery, SAP EWM automatically generates and releases an inspection document to check the delivery. Once the truck arrives with the goods, the inspection is carried out. The user can record the findings and can make a usage decision. Note that the inspection document cannot contain samples or items.

**Note**

IOT 1 is the inspection of one delivery in a truck. Using IOT 1, an inspection on truck level is equal to an inspection on delivery header level. Therefore this type of inspection works when one truck corresponds to one vehicle (if there is a vehicle) and one vehicle contains only one transportation unit (TU).

The preliminary inspection described above is depicted in the following figure:

![Business Process for IOT 1 Preliminary Inspection](image)

#### 2.3.2 IOT 2: Counting Inbound Deliveries

Counting is a quality inspection procedure in goods receipt used to compare the expected quantity as given in the inbound delivery item with the actual delivered quantity.

The system creates an inspection document as defined in the settings either at the activation of the inbound delivery or when the inbound delivery status is set to In Yard. You can perform the following types of counting:

- Explicit counting is performed at a special work center for counting.
- Implicit counting is performed during confirmation of the warehouse task.

If there is a difference between the actual delivered quantity and the expected delivery item quantity, the user records the actual delivered quantity together with an exception code. The counting result is stored in the inspection document.
2.3.3 IOT 3: Q-Inspection Returns Delivery

This IOT is used to process inspections of customer returns. For information about an example of such a customer returns process using IOT 3 in a preconfigured warehouse management process, see the Customer Returns with Quality Inspection business scenario in SAP Solution Manager.

2.3.4 IOT 4: Q-Inspection Product/Batch Inbound Delivery

IOT 4 controls the inspection process of individual products or batches during goods receipt. The system generates the inspection document depending on the configuration either at the activation of the inbound delivery or when the inbound delivery status is set to In Yard.

The system supports several inspection processes, as follows:

- Inspection after goods receipt (SAP EWM 5.0 and higher)
- Acceptance sampling (SAP EWM 9.2 and higher)
  
  Quality inspection before goods receipt posting for externally procured goods (see SAP Library for SAP EWM on SAP Help Portal at http://help.sap.com/ewm. In SAP Library, choose Quality Management (QM) -> Acceptance Sampling.)
- Presampling in production (SAP EWM 9.2 and higher)
  
  Quality inspection before goods receipt during the production process (see SAP Library for SAP EWM on SAP Help Portal at http://help.sap.com/ewm. In SAP Library, choose Quality Management (QM) -> Presampling in Production.)

Note

In SAP EWM 9.0 and higher, stock that has similar properties, such as the same product or batch and that belong to the same document, for example, a purchase order, can be accumulated into the same inspection document. For more information, see Inspection document summary in SAP Note 1906105.

2.3.5 IOT 5: Q-Inspection Product/Batch Warehouse-Internal

Warehouse-internal inspections are used for goods already stored in the warehouse. Goods might be inspected shortly before the shelf life expiration date (SLED), the best before date (BBD), or periodically (recurring inspections). Inspections can be triggered by the following:

- Radio frequency
  
  A user scans a bin and a HU label in order to create an inspection document.
- Warehouse monitor (monitor node Stock and Bin -> BBD/SLED Overview)
  
  Note that mass creation of inspection documents is available in SAP EWM 9.0 and higher. For more information, see Mass generation of inspection documents for EWM warehouse stock in SAP Note 1906105.
- Desktop transaction (transaction code /SCWM/QIDPR)
  
  A user enters the storage bin and HU or product/batch.
- Report /SCWM/R_STOCK_TYPE_CHANGE (inspection interval in product master)
  
  The report is available in SAP EWM 9.2 and higher. For more information, see SAP Library for SAP EWM on SAP Help Portal at http://help.sap.com/ewm. In SAP Library, choose Quality Management (QM) -> Recurring Inspections.

2.3.6 IOT 6: Preliminary Inspection Handling Unit

You use this process if you want to inspect HUs, for example, pallets, before goods receipt posting.

For each delivery loaded in a TU, all HUs can be classified as “good” or “bad”. After the classification of all the HUs, the system automatically creates a HU inspection document. The system generates one inspection document for each delivery and one item for each HU.
3 Configuration of the Quality Inspection Process

This section gives a step-by-step description of the configuration settings of a simple quality inspection process triggered at goods receipt (inspection object type (IOT) 4) in an SAP Extended Warehouse Management (SAP EWM) driven warehouse and performed in the Quality Management (QM) component in SAP ERP.

3.1 Prerequisites

- SAP EWM 9.0 and higher
  You have activated the SCM_EWM_FND business function (transaction SFW5).
- SAP ERP 6.03 and higher (SAP ERP 2005 with Enhancement Package 3 and higher)
  A preconfigured warehouse exists in the SAP EWM system (for more information about the Warehouse Management with Preconfigured Processes business scenario, see SAP Solution Manager).
- The data exchange between the SAP EWM warehouse and the corresponding SAP ERP system is set up as described in the implementation guide for the preconfigured warehouse.

3.2 Integration of SAP ERP System and the Quality Inspection Engine

In this section, you learn the technical integration settings between the Quality Inspection Engine (QIE) in your SAP EWM system and the QM component in your SAP ERP system.

3.2.1 SAP ERP System: Required Business Add-In (BAdI) Implementation

In standard SAP EWM and SAP ERP systems, the default communication technology between the QIE and the QM component of SAP ERP is SAP NetWeaver Process Integration (SAP NetWeaver PI). However, a standard SAP EWM system communicates with SAP ERP using the queued remote function call (qRFC) communication technology. To avoid using different communication technologies in SAP EWM and the QIE, we recommend switching the SAP standard communication technology setting in the QIE from SAP NetWeaver PI to qRFC as follows (see section 5.1 in the appendix for screenshots):

1. Open the BAdI Builder: Initial Screen for Implementations screen by entering transaction SE19 to start maintaining enhancements.
2. In the Create Implementation screen area, select the New BAdI radio button.
3. In the Enhancement Spot field, enter QPLEXT_COMM_TEC and choose the Create Impl. button.
4. In the Create Enhancement Implementation dialog box, enter a name for the enhancement implementation, for example, Z_QPLEXT_COMM_TEC, and a meaningful description in the Short Text field.
5. In the Enhancement Implementation Z_QPLEXT_COMM_TEC: Create BAdI Implementation dialog box, do the following:
   a) Assign a name to your BAdI implementation, for example, Z_QPLEXT_COMM_TEC.
   b) Assign a name to your implementation class, for example, ZCL_QPLEXT_COMM_TEC.
   c) Select BAdI definition QPLEXT_COMM_TEC.
6. In the Create Implementation Class dialog box, do the following:

\[1\] The described process works in SAP EWM 5.1 and higher but the configuration steps given in this guide are based on the preconfigured warehouse in SAP EWM 9.0 and higher.
a) Select class \texttt{CL_QPLEXT\_COMM\_TEC}.

b) Choose the \textit{Copy Sample Class} button.

7. Save and activate your implementation.

As a result, enhancement implementation \texttt{Z_QPLEXT\_COMMTEC} has an implementation class assigned and is activated.

\begin{quote}
\textbf{Note}
For more information, see SAP Note \texttt{1278425}.
\end{quote}

\section*{3.2.2 \ SAP EWM System: Defining an External QM System}

SAP EWM is a decentralized system and as a consequence, the SAP ERP system must be defined as an external QM system in the Customizing of the SAP EWM system.

Customizing Path: \textit{Cross-Application Components -> Quality Inspection Engine -> Central Settings -> Communication with an External QM System -> Define External QM Systems}

Create a new system type and enter a name for the external QM system, for example, \texttt{SAP\_ERP\_QM}, and a meaningful description.

\subsection*{3.2.2.1 QM System Attributes}

Select the new system type, for example, \texttt{SAP\_ERP\_QM}, and maintain the attributes as shown in the following figure:

\begin{figure}
\centering
\includegraphics[width=\textwidth]{attributes.png}
\caption{Attributes Transferred When an Inspection Is Passed onto the External QM System (SAP EWM)}
\end{figure}

\subsection*{3.2.2.2 QM System Installations}

Select the new system type, for example, \texttt{SAP\_ERP\_QM}, and maintain the installations. You have the following options for assigning installations to your external QM system:

\begin{itemize}
\item [First Option (Recommended):]
\begin{enumerate}
\item In the \textit{Installation} field, enter your installation.
\item Give your installation a name of your choice and add a description.
\item In the \textit{XI Business System} field, enter the business system for the connected SAP ERP system as shown in the following figure:
\end{enumerate}
\end{itemize}
Installation Settings for External QM System (First Option) (SAP EWM)

You can find the connected business system for SAP ERP in Customizing for Extended Warehouse Management under Interfaces -> ERP Integration -> General Settings -> Define Business System, as shown in the following figure:

System Landscape Data (SLD) of Business System2 (SAP EWM)

4. Activate an example BAdI implementation as follows (see section 5.2 in the appendix for screenshots):
   a) Open the BAdI Builder: Initial Screen for Implementations screen by entering transaction SE19 to start maintaining enhancements.
   b) In the Create Implementation screen area, select the New BAdI radio button.
   c) In the Enhancement Spot field, enter QIE_COMMUNICATION and choose the Create Impl. button.
   d) In the Create Enhancement Implementation dialog box, enter a name for the enhancement implementation, for example, Z_QIE_COMMUNICATION_NL, and a meaningful description in the Short Text field.
   e) In the Enhancement Implementation Z_QIE_COMMUNICATION_NL: Create BAdI Implementation dialog box, do the following:
      i. Assign a name to your BAdI implementation, for example, Z_EX_QIE_NL.
      ii. Assign a name to your implementation class, for example, ZCL_EX_QIE_NL.
      iii. Select BAdI definition QIE_EX_COMMUNICATION.
   f) In the Create BAdI Implementation dialog box, select enhancement implementation /SCWM/ESI_QIE_COMMUNICATION with BAdI implementation /SCWM/EXI_QIE_COMMUNICATION_NL and choose the Copy Sample Class button.
   g) Save and activate your implementation.

As result, enhancement implementation Z_QIE_COMMUNICATION_NL has an implementation class assigned and is activated.

2 We used the recommended naming convention (RFC destinations (see Prerequisites for System Connection in ERP and EWM), logical systems in SAP ERP (see Configuring Logical Systems in ERP), and logical systems in SAP EWM (see Configuring Logical Systems in EWM)) for the setup of the integration of SAP ERP with SAP EWM.
We recommend this option for the following reasons:

- The business system name can have up to 60 characters; the second option can have only 15 characters.
- The entry in the Installation field is copied into each inspection rule. Note that if you change the entry in the Installation field later, all inspection rules become invalid.

For more information, see SAP Notes 1893172 and 1897546.

Second Option:

1. As described in SAP Note 1278425, in the Installation field, enter the business system for the connected SAP ERP system as defined in Customizing for Extended Warehouse Management under Interfaces -> ERP Integration -> General Settings -> Define Business System.
2. Enter a descriptive text in the Description field.
   The XI Business System field is not evaluated in this option and can be left empty.

The steps described above are shown in the following figure:

The second option is the way the external QM system setting has been done historically. The disadvantage of this option is that the name of the installation can have a maximum of 15 characters (see SAP Notes 1893172 and 1897546).

Furthermore, as the installation name gets copied into each inspection rule, all inspection rules become inconsistent if you change the installation name later because you connect another SAP ERP system. Client copies are a typical use case when this happens.
3.3 Customizing Settings

This section gives a step-by-step description of the Customizing settings required in SAP ERP and SAP EWM for implementing the quality inspection process.

3.3.1 SAP ERP System: QM Customizing Settings

This chapter describes the necessary QM Customizing settings in SAP ERP to run a simple example of an integrated quality inspection process using SAP EWM and the QM component of SAP ERP, as follows:

1. To use an inspection plan, you need to define a task list usage.
2. For the quality inspection lot creation, you need to define an inspection type for the relevant business process (in this case, goods receipt) and assign it to inspection lot origin 17. Inspection lot origin 17 is used for externally triggered inspections (that is, triggered from the SAP EWM system). For more information, see SAP Library for SAP ERP on SAP Help Portal at http://help.sap.com/erp. In SAP Library, choose SAP ERP Central Component -> Logistics -> Quality Management (QM) -> Quality Inspection (QM-IM) -> Inspection Lot Creation -> Inspection Lot Creation -> Inspection Type.
3. You need to define code groups and decision codes for the usage decision.

3.3.1.1 SAP ERP System: Defining Task List Usage

In most cases quality inspections are based on an inspection plan. Customizing Path: Quality Management -> Inspection Planning -> General -> Define Task List Usage

Define a new task list usage as follows:

1. In the Usage field, enter a name for your task list usage, up to a maximum of three characters.
2. In the Description field, enter a meaningful description of your task list usage.
3. In the DCr (Dynamic Modification Criterion) field, enter 001 (Material).

The steps described above are shown in the following figure:

![Task List Usage for Inspection Plans Used for SAP EWM-QM Integration (SAP ERP)](image)

3.3.1.2 SAP ERP System: Defining Code Groups and Decision Codes for Usage Decisions

Code groups are required for usage decisions of inspection lots that belong to IOTs 4 or 5. A code group should contain usage decision codes for accepting and rejecting usage decisions.

Note

The specific values of code groups and decision codes described below are just examples used within the simple quality inspection setup described in this guide. If a user is already using the QM component of SAP ERP, the user will already have maintained their own code groups and decision groups.

---

3 The inspection type determines how an inspection is performed.
Customizing Path: Quality Management -> Quality Inspection -> Inspection Lot Completion -> Maintain Catalogs for Usage Decisions

Define the code group and decision codes as follows:

1. To create the code group, select the Edit Code Groups and Codes activity.
2. In the Catalog field, enter Usage Decisions (3) and choose the Create/Change button.
3. In the Short Text field, enter a meaningful short text.

The settings for the code group described above are shown in the following figure:

![Settings for Code Group (SAP ERP)](image)

Settings for Usage Decision Codes (SAP ERP)

4. Define the decision codes for the new code group for the usage decisions, as shown in the following figure:

![Settings for Usage Decision Codes (SAP ERP)](image)

The decision codes and code group you define must also be defined in the SAP EWM system with exactly the same names. The codes and code group used in the screenshot correspond to SAP EWM codes and code groups as contained in BC Set /SCWM/QM_DECISION_CODES.
5. Select the new set and maintain the selected set codes as follows:
   a) Choose the codes from the code group you created earlier.
   b) Choose proper valuation codes and quality scores (mandatory field).

The settings for the selected usage decision codes described above are shown in the following figure:

3.3.1.3 SAP ERP System: Inspection Types for Externally Created Inspection Lots

For quality inspections to be processed in the QM component of SAP ERP, you must set up inspection types for the affected business processes, that is, inspections during goods receipt or presampling in production.

Setting Up Inspection Types

For our example of a quality inspection process, we use and adapt inspection type 17 for the goods receipt inspection triggered by SAP EWM as an external system.

Customizing Path: Quality Management -> Quality Inspection -> Inspection Lot Creation -> Maintain Inspection Types

The Customizing mentioned above is shown in the following figure:
Note
Print control is set to print the inspection instruction.

Checking the Assignment of Inspection Type 17

You then assign inspection type 17 to the lot origin (17) that is used for externally triggered inspections. Customizing Path: Quality Management -> Quality Inspection -> Inspection Lot Creation -> Maintain Inspection Lot Origins and Assign Inspection Types

First you check the data of origin 17 as follows:

- **LO** (Inspection Lot Origin): 17
- **No** (Number Range Number): 17
  Check that number range 17 exists in Customizing for Quality Management under Quality Inspection -> Inspection Lot Creation -> Maintain Number Ranges.
- **TL Type** (Task List Type): Q (Inspection Plan)
- **Status**: 4 (Released (General))

The data mentioned above is shown in the following figure:
Settings for Inspection Lot Origin Used for Externally Triggered Inspections (SAP ERP)

Then, you select inspection lot origin 17 and choose Inspection Types for the Origin to check the entry as follows:

- **Var.** (Variant of the Inspection Lot Origin): two digit number
- **InspType**: Your new inspection type

**Checking the Default Values for Inspection Type 17**

The default values of the inspection type control how quality inspections are performed. These values are set on the Quality Management view of the material master as the default settings for inspection type 17.

Customizing Path: Quality Management -> Quality Inspection -> Inspection Lot Creation -> Define Default Values for Inspection Type

Maintain the settings for the new inspection type as shown in the following figure:
3.3.2 SAP EWM System: QM Customizing Settings

This chapter describes the necessary QM customizing settings in SAP EWM to run a simple example of an integrated quality inspection process using SAP EWM and the QM component of SAP ERP, as follows:

- You generate, maintain, and activate an IOT version for your inspection process.
- You define the indices for the QIE object that are necessary for searching inspection documents.
- You maintain possible follow-up actions to be performed based on the usage decision of your inspection lot.
- You maintain the same code groups and decision codes in the SAP EWM system as you did previously in the SAP ERP system.

3.3.2.1 SAP EWM System: Inspection Object Types

IOTs are used to define in which software component, in which process, and for which object the inspection documents can be created in the QIE.

Generating IOT Versions

Generate a new version of IOT 4 (Q-Inspection Product/Batch Inbound Del.) as follows:


⚠️ CAUTION ⚠️

If a version of IOT 4 already exists, carefully align the generation of a new version with all possible stakeholders of the IOT. Activation of a new IOT version deactivates all existing inspection rules for the IOT.
Furthermore, you need to define an index for the QIE objects for your new IOT versions and update your item type and sample type with the new IOT version.

1. Select the entry for IOT 4 and choose the Generate New Version button.
2. Note down the generated process name in the Process column.

The steps described above are shown in the following figure:

![Generation of IOT Versions (SAP EWM)](image)

**Note**

When you open this maintenance dialogue, a dialog box might inform you about read-only mode. You should still be able to generate new versions.

## Maintaining IOT Versions

You activate the IOT and define the properties that need to be used to search for an appropriate inspection rule. You then bring these properties into a sequence relevant for the inspection rule determination, according to the level of detail for your search.

**Customizing Path:** Extended Warehouse Management -> Cross-Process Settings -> Quality Management -> Basics -> Maintain Inspection Object Types Version

Maintain the current version for IOT 4 by entering the following data:

1. In the InspObjTyp (Inspection Object Type for Quality Inspection) field, enter Q-Inspection Product/Batch Inbound Del.
2. Select the Act.InsObj (Activation of Inspection Object Type) checkbox to activate the IOT.

The steps described above are shown in the following figure:

![Maintain Inspection Object Type Version (SAP EWM)](image)

3. Select the new IOT version and double-click the Maintain Properties folder.
4. Maintain the properties as shown in the following figure:
Defining Number Range for IOT 4

You must define and assign a number range for IOT 4 as follows:

Customizing Path: Extended Warehouse Management -> Cross-Process Settings -> Quality Management -> Settings for Inspection Rules -> Define Number Ranges for Inspection Documents

1. Choose the Define Number Ranges activity.
2. Choose the Intervals button and check that an entry exists for number range number 04 as follows:
   - From Number: 004000000000
   - To Number: 004999999999
3. Choose the Assign Number Ranges to Inspection Documents activity.
4. Create an entry for the number range that you want to use for IOT 4 inspections and assign the number range the number 04.

The steps described above are shown in the following figure:

Defining Indexes for Quality Inspection Engine Objects

To search inspection documents by attributes such as product, batch, or reference document number (REFDOCNO), you must define an appropriate search index.

The search index described above is shown in the following figure:

Basic Settings for New Index (SAP EWM)

You define the properties for the IOT that the index is to contain, as shown in the following figure:

Defining Properties for New Index (SAP EWM)

Note
You can specify a maximum of 10 properties.
If inspection documents, samples, or items already exist in your system, the following message will appear:

Message to Run Index Update Report (SAP EWM)

The report *Activate Indexes and Delete Indexing for Locked Indexes* (QIE_INDEX_UPDATE) indexes the existing inspection documents, samples, and items. You run the report as follows:

1. Run the report QIE_INDEX_UPDATE in transaction SE38.
2. Enter the data of your new index as shown in the following figure:

   ![Index Update Report (SAP EWM)](image)

   **Index Update Report (SAP EWM)**
   3. Execute the report.
      The system gives you a message indicating whether the indexing was successful.

**Activating IOT 4**

You activate the IOT for your warehouse so it can be used.

Customizing Path: *Extended Warehouse Management* -> *Cross-Process Settings* -> *Quality Management* -> *Basics* -> *Warehouse-Dependent Activation of Inspection Object Type*

You maintain the data as shown in the following figure:
You maintain follow-up actions for an inspection outcome. You can use follow-up actions for quality control or simply for informative purposes. You maintain follow-up actions as follows:


2. You check the follow-up action settings:

   For the simple quality inspection process discussed in this document, the following follow-up actions are set up:
   A – Putaway
   D – Scrapping

   The follow-up actions mentioned above are shown in the following figure:
Setting for Follow-Up Actions (SAP EWM)

a) Select the follow-up actions and double-click the Follow-Up Actions for Quality Results folder, as shown below:

Setting for a Putaway Follow-Up Action (SAP EWM)

Setting for a Scrapping Follow-Up Action (SAP EWM)
b) Assign the follow-up actions to the new decision code group as follows:
   i. Select the entry for the new decision code group.
   ii. Double-click the Assign Follow-Up Actions folder and enter the three follow-up actions, as shown below:

Assignment of Follow-Up Actions to the New Decision Code Group (SAP EWM)

3.3.2.3 SAP EWM System: Code Groups and Decision Codes for Usage Decisions

If the quality inspection process integrates an SAP ERP system with an SAP EWM system, you must define identical decision code groups and decision codes in both systems (see here for the SAP ERP part).

Defining Decision Codes and Code Groups


2. You check the decision code settings:
   Customizing Path: Extended Warehouse Management -> Cross-Process Settings -> Quality Management -> Result -> Define Decision Codes

Decision Codes

You define decision codes for the new code group for the following usage decisions, as shown below:

Definition of Decision Codes (SAP EWM)
Code Groups

You define the code group as follows:

1. Create an entry for the code group you defined previously for the SAP ERP system.
2. Enter a meaningful description.

The steps described above are shown in the following figure:

Definition of Code Group for Decision Codes (SAP EWM)

3. Assign the decision codes to the new code group as follows:
   a) Select the entry for your code group.
   b) Double-click the Codes folder and add your decision codes as shown in the following figure:

Assignment of Decision Codes to Code Group (SAP EWM)

Note that the first decision code, SA, is used for the automatic inspection decision.

3.3.2.4 SAP EWM System: Quality Inspection Application Log

Maintaining Application Log Sub-Object


---

5 Use case: If there is a skip in the context of dynamic modification, the inspection is completed immediately after it is created. The code with the indicator for the automatic inspection decision is used for the inspection decision. For information about dynamic modification, see SAP Library for SAP EWM on SAP Help Portal at http://help.sap.com/ewm. In SAP Library, choose Quality Inspection (QM-IM) -> Master Data -> Dynamic Modification.
2. You check the decision code settings by maintaining view cluster APPL_LOG using transaction SM34 and checking the entries for object /SCWM/WME (Extended Warehouse Management).

The step described above is shown in the following figure:

Application Log Object (SAP EWM)

3. You check if sub-object QINS is maintained, as shown in the following figure:

Application Log Sub-Object (SAP EWM)

**Activating the Quality Inspection Application Log**

Activate the application log for sub-object QINS (Quality Inspection) on the SAP Easy Access screen under Extended Warehouse Management -> Settings -> Application Log -> Activate Application Log (transaction /SCWM/ACTLOG), as shown in the following figure:

3.4 Master Data

3.4.1 SAP ERP System: Master Data

This chapter describes the master data necessary in SAP ERP to run a simple example of an integrated quality inspection process using SAP EWM and the QM component of SAP ERP, as follows:

1. You must add QM settings in your material master data.
2. You must create QM-specific master data, such as:
   - Inspection characteristics
   - Sampling procedure
   - Inspection plan for the inspected material
3. You must transfer your material master to SAP EWM using the Core Interface (CIF).
3.4.1.1 SAP ERP System: Material Master with Active Quality Management Settings

For information about the Configuration of Warehouse Structure and Master Data for SAP EWM business scenario, see Creating Products in SAP Solution Manager.

1. Copy one of the material masters that was created during the master data setup of the preconfigured warehouse on the SAP Easy Access screen under Logistics -> Materials Management -> Material Master -> Material -> Create (General) -> Immediately (transaction MM01).

   The step above is shown in the following figure:

   Selection Screen Entries for Copying Material Master (SAP ERP)

2. Select the following views:
   - Basic Data 1
   - Basic Data 2
   - Sales: Sales Org. Data 1
   - Sales: Sales Org. Data 2
   - Sales: General/Plant Data
   - Purchasing
   - General Plant Data/Storage 1
   - General Plant Data/Storage 2
   - Quality Management
   - Accounting 1
   - Accounting 2

   The views mentioned above are shown in the following figure:
3. Enter the same values for the plant, storage location, sales organization, and distribution channel as the organizational level for the template and copied material master, as shown in the following figure:

![Organizational Levels](image)

Selection Screen for Copying Organizational Data (SAP ERP)

4. Copy all data from the material master template.
6. Choose the Inspection Types button and enter the following values:
   - InspType: 17
   - Preferred InsTyp: Yes (checkbox selected)
   - Active: Yes (checkbox selected)
   - Insp. Type Det.: Choose the Detail button
7. Maintain the following detailed information for the inspection type:
   - Q-Score Procedure. From Usage Decision Code (06)
   - Insp. with Task List: Yes (checkbox selected)
   - Automatic Assignment: Yes (checkbox selected)
- **Check Chars**: Yes (checkbox selected)
- **Automatic UD**: Yes (checkbox selected)

The properties mentioned above are shown in the following figure:

Quality Management Setting in Material Master (SAP ERP)

Continue to take over the remaining data of the material master template.

After these steps, in transaction **MM01** you must also create the product for storage location ROD. Create the product for the **General Plant Data/Storage 1** material master view.

### 3.4.1.2 SAP ERP System: Maintaining Quality Management Data

This chapter describes the QM master data necessary in SAP ERP to run a simple example of an integrated quality inspection process using SAP EWM and the QM component of SAP ERP.

The following necessary steps are explained:
1. Creating inspection characteristics
2. Creating a sampling procedure
3. Creating an inspection plan

**Creating Inspection Characteristics**

You create a master inspection characteristic as a basis for inspections. In our example inspection process, we use an example characteristic for which a concentration is measured and captured as a percentage.

1. On the **SAP Easy Access** screen, choose **Logistics - > Quality Management - > Quality Planning - > Basic Data - > Inspection Characteristic - > Create** (transaction **QS21**).

   The initial screen for creating a master inspection characteristic is displayed, as shown in the following figure:
Initial Screen for Creating Inspection Characteristics (SAP ERP)

2. On the *General Data* screen, maintain the data as shown in the following figure and press *Enter*:
3. The system displays the following dialog boxes for you to enter control indicator data:

![Inspection Characteristics - First Control Indicators Dialog Box (SAP ERP)](image1)

4. Choose the **Quant. Data** button to maintain the quantitative data, which is shown in the following figure:

![Inspection Characteristics - Second Control Indicators Dialog Box (SAP ERP)](image2)
5. In the field next to the Status field, enter Complete Copy Model.
6. In the Status field, enter Released, press Enter, and save your data.

The settings above are shown in the following figure:

---

Dialog Box for Setting Quantitative Data for Inspection Characteristics (SAP ERP)

2. In the Sampling Procedure field, enter FQI_SP1 and press Enter.
3. Maintain the following data and save your data:
   - Description: First Quality Inspection: Sample Proc.
   - Sampling Type: 100 Fixed Sample
   - Valuation Mode: 500 Manual Valuation
   - Without Insp. Points: Yes (checkbox selected)
   - Sample Size: 1

The settings above are shown in the following figures:
General Data for Sampling Procedure (SAP ERP)

Set Sample Size for Fixed Sample (SAP ERP)
Creating Inspection Plan for QM Material


2. Enter the material, plant, and a name for the inspection plan group as shown in the following figure, and press Enter:

   ![Create Inspection Plan: Initial Screen](image1)

   Inspection Plan Entry Screen (SAP ERP)

3. In the Usage field on the Create Inspection Plan: Header Details screen, enter the usage that you maintained previously (FQI).

4. In the Status field, enter Released (General) (4).
   The settings mentioned above are shown in the following figure:

   ![Create Inspection Plan: Header Details](image2)

   Header Data for Inspection Plan (SAP ERP)

5. Choose the Operations button.

6. Select the first operation and maintain the following data:
   - Control Key: QM01
   - Description: Check concentration
   The settings mentioned above are shown in the following figure:
7. Select the operation line and choose the *Inspection Characteristics* button.
8. Go to the first line and enter the previously created master inspection characteristic `EWM_CON`.
9. Press Enter, and assign your sampling procedure `FQI_SP1`, and save your changes.

The settings mentioned above are shown in the following figure:

Assign Inspection Characteristics to Inspection Plan Operations (SAP ERP)

### 3.4.1.3 SAP ERP System: Changing CIF Model

Add your new material to the CIF integration model. For more information about the *Integration of SAP ERP with SAP EWM*, see SAP Solution Manager. For information about adding your new material to the CIF integration model, see the *Activating Master Data Transfer Using CIF in ERP* section in the *Integration of SAP ERP with SAP EWM* guide in SAP Solution Manager.

### 3.4.2 SAP EWM System: Master Data

This section describes step-by-step the master data setup required in the SAP EWM system for a simple QM process.

#### 3.4.2.1 Creating Products

For information about the Configuration of Warehouse Structure and Master Data for SAP EWM business scenario, see *Creating Products* in SAP Solution Manager.

You create products on the *SAP Easy Access* screen under *Extended Warehouse Management* -> *Master Data* -> *Product* -> *Maintain Warehouse Product* (transaction `/SCWM/MAT1`). You make additional warehouse product settings for product `PROD-S01-QM` as shown in the following figure:
3.4.2.2 Creating Inspection Rules

Based on selection criteria (also known as properties), the inspection rule determines which objects to trigger an inspection for and specifies the inspection details, for example, the inspection process, the procedure, the inspection frequency, and codes.


2. Choose (Create).

   In the current example, you are creating an inspection rule for IOT 4 Q-Inspection Inbound Delivery.

3. In the Inspection Process field in the Properties screen area, enter 0 (Inspection After Goods Receipt).

4. In the Product field, enter PROD–S01–QM.

   This indicates that whenever an inbound delivery item contains product PROD–S01–QM, the inspection rule triggers the creation of an inspection document for the delivery item of product PROD–S01–QM.

The settings mentioned above are shown in the following figure:
5. In the Arguments – General screen area, specify the inspection as follows:
   - Inspection Procedure – for example, C (100% inspection)
   - Code Group and Code Group Item
   - Number Range
   - Indep. ST Arg. (Location-Independent Stock Type) – for example, QQ (Stock in Quality Inspection)

   The settings mentioned above are shown in the following figure:

![Settings in Inspection Rule of IOT 4 (Q-Inspection Inbound Delivery) (SAP EWM)](image)

6. In the Arguments – External System screen area, set the integration settings with the QM component in SAP ERP as follows:

   7. In the Inspection Type field, enter inspection type 17 to be used for material PROD-S01-QM, as defined in section 3.4.1.1.
   8. In the Task List Type field, enter Q (Inspection Plan).

   The settings mentioned above are shown in the following figure:

![Inspection Rule Settings for Arguments - General (SAP EWM)](image)

![Inspection Rule Settings for External QM System (SAP EWM)](image)

Note

If you leave the Task List Group and Group Counter fields empty as shown in the figure above, SAP ERP determines the inspection plan. If you specify the task list group and the group counter, for example, FQ and 1, then SAP ERP does not determine the inspection plan. Instead, the inspection plan is determined based on your SAP EWM inspection rule settings.
4 Quality Inspection Process Step-by-Step

This process extends the Inbound Process Without Packing Information (Manual WT) business process of the Warehouse Management with Preconfigured Processes business scenario by a simple quality inspection process integrated with the Quality Management (QM) component of SAP ERP. For information about this business process in the Warehouse Management with Preconfigured Processes business scenario, see SAP Solution Manager.

You use this business process to receive goods on pallets from external vendors. Each pallet contains only a single product. In addition, your vendor adds a non-stock relevant sample to each delivery item. You check the goods in the goods receipt (GR) zone. Upon goods receipt posting, warehouse orders are created in SAP Extended Warehouse Management (SAP EWM) and inspections lots are created in the SAP ERP system. You bring the samples and the printed inspection instructions to the sample bin.

Depending on the product attributes, you move the goods to different areas in the warehouse using the information contained in the printed warehouse order.

Independently from the logistical processes in the warehouse, the quality inspector picks up the samples with attached inspection instructions from the sample bin and brings them into the laboratory for inspection. After recording the inspection results, a usage decision is made. Based on the usage decision, a follow-up action for the related stock in the warehouse is triggered, for example, posting the inspected stock from quality stock into free available stock.

4.1 Process

The figure below illustrates a simple inbound process with a quality inspection and is followed by an explanation:

Sketch of Simple Inbound Process with Quality Inspection

1. The truck arrives at the checkpoint and the truck driver is assigned a warehouse door.
2. The truck driver brings the delivery note to the GR office.
   If the vendor has sent an ASN to SAP ERP, the GR office clerk finds the inbound delivery in the SAP EWM system. Otherwise, he creates the inbound delivery.
3. The warehouse worker unloads the truck and checks the goods against the delivery note.
4. The warehouse worker brings the checked, and possibly, revised delivery note to the GR office.

---

6 The sample is not listed in the delivery note or advanced shipping notification (ASN). It is just physically added to the delivery item by the vendor, for example, attached to the first pallet of a delivery item.
5. The GR office clerk posts the GR.

6. Upon GR posting, the system automatically creates and prints warehouse orders for the inbound delivery to move the goods into the warehouse.

7. At the same time, the system triggers the creation of inspection lots of origin 17 in the SAP ERP system and prints the inspection instruction for the samples.

8. The truck leaves the warehouse.

9. The warehouse work picks up the sample instructions for the GR-posted delivery items from the printer, attaches them to the samples delivered by the vendor, and brings them to the sample bin.

10. The warehouse worker moves the goods from the GR zone into the warehouse to its final putaway storage bin.

   Note that as long as the quality inspection result is not available, the stock remains in quality stock.

   Independently of the logistical process in the warehouse, at a later point in time the quality inspector picks up the quality samples from the sample bin and takes them to the laboratories for inspection.

   During the inspection, the results are recorded and the usage decision for the inspection lot is made. Based on the usage decision, a follow-up action is triggered, for example, posting the inspected stock from quality stock into free available stock.

### 4.2 Test Case

<table>
<thead>
<tr>
<th>Step</th>
<th>Step Description</th>
<th>Step Processor</th>
<th>Input Data</th>
<th>Expected Result</th>
</tr>
</thead>
</table>
| Preparation Step 1 | Create a purchase order (PO) (SAP ERP) | | 1. In SAP ERP, start transaction ME21N.  
2. Enter the following data:  
   - Vendor: For example, VEND001  
   - Purchasing Organization: 0001  
   - Purchasing Group: 001  
   - Company Code: 0001  
   - Material: For example, PROD-S01-QM  
   - PO Quantity: 1 PAL  
   - Delivery Date  
   - Net Price and Currency  
   - Plant: PLO1  
   - Storage Location: ROD  
3. Save your entries. | The PO, for example, 4500000203, is created. |
| Preparation Step 2 | Create an inbound delivery (SAP ERP) | | 1. In SAP ERP, start transaction VL31N.  
2. Create an inbound delivery with reference to the PO, for example, 4500000203.  
3. Enter an ASN number in the External ID field. Make a note of the ASN number as you need it in later steps.  
4. Save your entries. | The inbound delivery, for example, 1800000319, is created and sent to SAP EWM. |
<p>| 1 | A truck arrives at the checkpoint and drives to the door | Truck driver and checkpoint clerk | This step is carried out outside of the system. |</p>
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Responsible Party</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Unload the truck and check the goods</td>
<td>Warehouse worker</td>
<td>This step is carried out outside of the system. The warehouse worker checks the goods.</td>
</tr>
</tbody>
</table>
| 3    | Post GR (SAP EWM)                                | GR office clerk   | 1. Start transaction /SCWM/GR.  
2. Search for the inbound delivery using the ASN number.  
3. Edit the inbound delivery.  
4. Select the GR posting checkbox and save.  
5. Post the GR.  
The putaway warehouse orders are created based on the palletization data that you created for your products.  
The putaway warehouse orders are printed. You can check the spool requests in transaction SP01. |
| 4    | The truck leaves                                 | Truck driver      | This step is carried out outside of the system.                      |
| 5    | Put away sample (SAP ERP)                        | Warehouse worker  |                                                                 |

**5.1** Print inspection instruction (SAP ERP)  
After GR posting, the system automatically creates an inspection lot and prints the inspection instruction, as shown in the following figure:  
The inspection lot is created and the inspection instruction is printed.  
You can check the spool requests in transaction SP01.  
Sample is printed by background user

**5.2** Put away sample to sample bin  
This step is carried out outside of the system.  
The warehouse worker attaches the inspection instruction to the sample and puts the sample delivered by the vendor into the sample bin.  

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Responsible Party</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Put away the goods and post the GR (SAP EWM)</td>
<td>Warehouse worker</td>
<td>This step is carried out outside of the system.</td>
</tr>
</tbody>
</table>

**6.1** Put away the goods  
This step is carried out outside of the system.  

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6.2 Confirm the putaway warehouse orders

| Warehouse clerk | 1. Start transaction /SCWM/TO_CONF.  
2. Search for the warehouse order (see screenshot at step 5.1 above) then confirm and save it.  
3. The putaway warehouse orders are confirmed. The stock is moved to the final storage bin. Stock is still in stock type Q4 (Stock in QI in Warehouse). |

7 Quality inspection in the QM component (SAP ERP)

| Quality inspector | This step is carried out outside of the system. |

7.1 Pick up sample from sample bin

| Quality inspector | This step is carried out outside of the system. |

7.2 Perform quality inspection and record results (SAP ERP)

| Quality inspector | 1. Start transaction QE51N.  
2. Select inspections lots in the work list for the following:  
- Your plant  
- Insp. lot origin 17  
- Material PROD-S01-QM  
- Lot created on <today’s date>  
3. Check the inspection lot number on the inspection instruction attached to the sample.  
   For more information, see 4.3 Screenshots: Capturing Results.  
4. Record the inspection result by selecting characteristic 0010 FQI: Concentration [%] and entering the mean value, that is, the measured (mean) value for the concentration.  
5. Save your changes.  
6. On operation level 0010, check the concentration and accept or reject the characteristic.  
7. Choose (Close), save your changes, and exit the screen.  
8. A list of open inspection lots is shown.  
   Once the results for the characteristic is recorded, the characteristic gets a green traffic light.  
9. You can access the work list for inspection lots using transaction QA32. |
<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
</table>
| 7.3  | Record usage decision (SAP ERP) | Quality inspector  
1. If you are still in transaction **QE51N**, double-click the inspection lot whose results you recorded in the previous step. Alternatively, start transaction **QA11** and select your inspection lot.  
2. Record the usage decision for the inspection lot. For more information, see section 4.4 Screenshots: Capturing Usage Decision: ACCEPT or section 4.5 Screenshots: Capturing Usage Decision: REJECT.  
3. Save.  

To see the result, do the following:  
1. Check in the warehouse monitor (transaction /SCWM/MON) at node Inbound -> Documents - Inbound Delivery.  
2. Double-click to open the selection screen and search for your inbound delivery in SAP EWM using the ASN number.  
3. Choose (More Methods) and choose Display Inspection Documents.  
4. Select the inspection document and choose (Form View). In the External Doc. Number field, you find the inspection lot number. In the Decision field, you find the usage decision recorded in this step in transaction **QA11**. Based on the usage decision code, a follow-up action has been determined and automatically entered in the Follow-Up Action field. |
| 8    | Perform follow-up action (SAP EWM) | Automatic step |
| 8.1 | Update inspection document (SAP EWM) | Automatic step | Check in the warehouse monitor (transaction /SCWM/MON) at node Documents -> Inspections by selecting the following:  
• Inspection Object Type 4  
• Release Date (Insp. Document)  
• Product  
• Inspection document  
The Ext. Number field holds the SAP ERP inspection lot number. In the Decision Code field, the usage decision is pulled from transaction QA11 and the corresponding follow-up action is entered in the Foll.-Up Action field.  
For more information, see section 4.4 Screenshots: Capturing Usage Decision: ACCEPT or section 4.5 Screenshots: Capturing Usage Decision: REJECT. |
| 8.2 | Perform follow-up action (SAP EWM) | Automatic step | Check in the warehouse monitor (transaction /SCWM/MON) for stock in the final putaway storage bins. For more information, see section 4.5 Screenshots: Capturing Usage Decision: REJECT. |

- If the usage decision is *ACCEPT (SA)*, stock is posted from stock type Q4 (*Stock in QI in Warehouse*) to F2 (*Unrestricted-Use Warehouse*).  
- If the usage decision is *REJECT (SC)*, stock is posted from stock type Q4 (*Stock in QI in Warehouse*) to S6 (*Scraping from Warehouse*).  
The system creates a warehouse task to move the stock from the current bin to the scrapping zone.
4.3 Screenshots: Capturing Results

Transaction **SP01** - Print Preview for Inspection Instruction (SAP ERP)
Transaction **QE51N** - Record Result Measurement for Inspection Characteristic (SAP ERP)

Transaction **QE51N** - Close Result Measurement for Inspection Characteristic (SAP ERP)
4.4 Screenshots: Capturing Usage Decision: ACCEPT

Transaction **QA11** - Record Usage Decision for Inspection Lot (SAP ERP)
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Transaction QA11 - Recorded Usage Decision for Inspection Lot (SAP ERP)

Transaction /SCWM/MON - Forward Navigation from Inbound Delivery to Inspection Document (SAP EWM)

Transaction /SCWM/QIDPR - Display Inspection Document (SAP EWM) After Usage Decision
4.5 Screenshots: Capturing Usage Decision: REJECT

This section shows screenshots of a REJECT usage decision and its consequences on the stock. The stock type changes from quality stock (Q4) to blocked stock (S6). Furthermore, the system creates a warehouse task to move the stock from its current bin to the scrapping zone (SCRAP-ZONE bin).

Prior to the usage decision, the stock to be inspected is stock type Q4 (*Stock in QI in Warehouse*) and has an inspection document assigned, as shown in the following figure:

<table>
<thead>
<tr>
<th>Storage Bin</th>
<th>Product</th>
<th>Description of Stock Type</th>
<th>Qual.Insp</th>
</tr>
</thead>
<tbody>
<tr>
<td>T020-01-04-A</td>
<td>PROD-501-QM</td>
<td>Q4 Stock in QI in Warehouse</td>
<td>4000000000</td>
</tr>
</tbody>
</table>

Transaction /SCWM/QIDPR - Physical Stock Prior to Usage Decision (SAP EWM)
Transaction **QE51N** - Record Result for Inspection Characteristic (SAP ERP)

Transaction **QE51N** - Close Result Recording for Inspection Characteristic and Decide Inspected Characteristic (SAP ERP)
Transaction **QA11** - Choose Usage Decision REJECT for Inspected Stock (SAP ERP)
5 Appendix

5.1 Business Add-In (BAdI) Implementation: Define Communication Technology

1. Start transaction SE19 to open the BAdI Builder: Initial Screen for Implementations, as shown in the figure below:

   Initial Screen for BAdI Implementation
   2. In the Create Implementation screen area, select the New BAdI radio button.
   3. In the Enhancement Spot field, enter QPLEXT_COMM_TEC.
   4. Choose the Create Impl. button.
   5. Enter a name for the enhancement implementation and a meaningful description, as shown in the figure below:

   Creation of Custom Enhancement Implementation (Example)
6. Assign a name to your BAdI implementation, for example, Z_QPLEXT_COMM_TEC.
7. Assign a name to your implementation class, for example, ZCL_QPLEXT_COMM_TEC.
8. Select BAdI definition QPLEXT_COMM_TEC.

The steps described above are shown in the following figure:

9. In the Create Implementation Class dialog box, select class CL_QPLEXT_COMM_TEC and choose the Copy Sample Class button, as shown in the figure below:
Creation of a BAdI Implementation Class

10. Save and activate your implementation, as shown in the figure below:

Activation of a BAdI Implementation Class

As a result, your enhancement implementation Z_QPLEXT_COMMTEC has an implementation class assigned and is activated, as shown in the figure below:
5.2 BA'dl Implementations for the Quality Inspection Engine

1. Start transaction SE19 to open the BA'dl Builder: Initial Screen for Implementations.
2. In the Create Implementation screen area, select the New BA'dl radio button.
3. In the Enhancement Spot field, enter QIE_COMMUNICATION.
4. Choose the Create Impl. button.
   Some of the steps described above are shown in the following figure:

5. In the Create Enhancement Implementation dialog box, enter a name for the enhancement implementation, for example, Z_QIE_COMMUNICATION_NL, and a meaningful description, as shown in the figure below:

6. In the Enhancement implementation Z_QIE_COMMUNICATION_NL: Create BA'dl Implementation dialog box, do the following:
   c) Assign a name to your BA'dl implementation, for example, Z_EX_QIE_NL.
   d) Assign a name to your implementation class, for example, ZCL_EX_QIE_NL.
   The steps described above are shown in the following figure:
7. In the Create BAdI Implementation dialog box, select enhancement implementation /SCWM/ESI_QIE_COMMUNICATION with BAdI implementation /SCWM/EXI_QIE_COMMUNICATION_NL and choose the Copy Sample Class button, as shown in the figure below: