



# HxGN EAM Approval Workflows

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# Overview

Approval workflows is a module that systematically routes a record in HxGN EAM to a specific user, or group of users, for review. Approvals can take place in HxGN EAM across many different departments throughout an organization. A supervisor may be required to review a work request prior to it being released as a work order. Or the finance department approving a purchase order for spare parts, but only if the purchase order total is over a certain amount.

Approval Workflows can be easily configured to streamline the approval process of these records without the need of a complex status authorization matrix to move the record through various stages of approval. From a single screen, a user can review all pending workflows across all entities, see where the record is currently at in its approval process, and simply click either an 'Approve' or 'Reject' button to process the record.

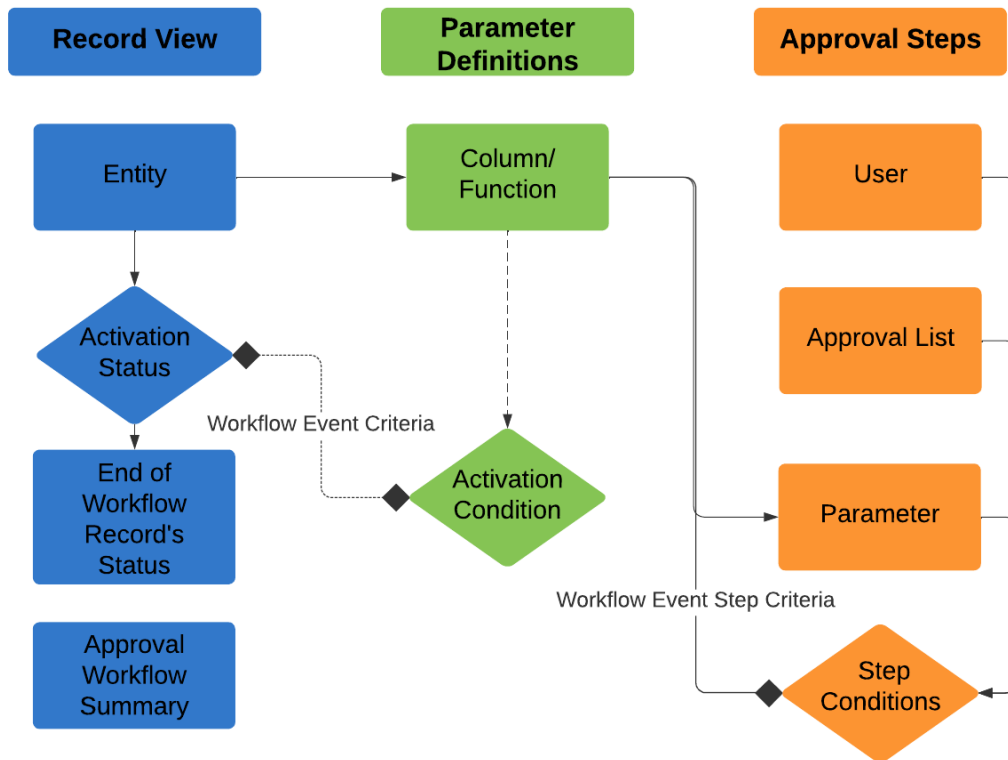
Taking the example of a purchase order, an Approval Workflow Setup record has been activated to start a workflow event when a purchase order status goes into 'Awaiting Approval' (i.e., Activation Status). Once the workflow event is started, the purchase order status field remains protected in 'Awaiting Approval' until the Default Approver user approves or rejects the request on the Workflow Approval screen. Once the workflow has been reviewed and completed, the system will update the purchase order status to the predefined End of Workflow status; based on whether Default Approver approved or rejected the request.

While this is a simple example, more complex examples could include a specific engineering department requiring a Root Cause Analysis on why equipment failed. Or an Environment Health and Safety manager needing to review a safety incident with approval from multiple stakeholders prior to releasing equipment. These tasks are part of daily events within a maintenance organization, but only require approval under certain conditions of the source record.

Automating these business-critical approvals is paramount to reducing bottlenecks throughout an organization's processes, ensuring compliance and accuracy of who is responsible for approval review, and providing an easy mechanism to administer these business rules across various entities throughout HxGN EAM.

# Approval Workflow Setup

The **Approval Workflow Setup** screen is where an administrator configures the processing rules for an approval workflow supported entity. Only when an Approval Workflow Setup record is configured and placed into an 'Active' status, will the system begin processing status updates for the related entity and start the workflow events for approval.



## Supported Entities

The following entities are available to enable an Approval Workflow Setup record against:

Description	Entity	Table	Screen
Call Center Service Request	COCT	R5CONTACTRECORDS	CSCCTR
Capital Planning Requests	CPRQ	R5CAPITALPLANNINGREQUESTS	WSCPRQ
Case Management	CASE	R5CASEMANAGEMENT	CSCASE
Document Repository Requests	DORQ	R5DOCUMENTREQUESTS	BSDRRS
Equipment	OBJ	R5OBJECTS	OSOBJA, OSOBJP, OSOBS
Equipment Revisions	OBRV	R5OBJREVISIONS	OSEQRV
Invoice	INV	R5INVOICES	PSINVO

Description	Entity	Table	Screen
Non-PO Invoice	NPOI	R5INVOICES	PSINVO
Operational Equipment	OPEQ	R5OBJECTS	OSOBJA, OSOBJP, OSOBSJ
Packages	PCKG	R5PACKAGE	SSPACK
Part Catalog Requests	PCRQ	R5PARTCATALOGREQUESTS	SSPCRQ
Permit to Work	PTW	R5PERMITTOWORK	WSPMTW
Pick tickets	PICK	R5PICKLISTS	SSPICK
Project	PROJ	R5PROJECTS	JSPROJ
Purchase order	PORD	R5ORDERS	PSPORD
Requisition	REQ	R5REQUISITIONS	SSREQU
Work order	EVNT	R5EVENTS	WSJOBS

## Supported Supplementary Screens

The following screens are supplementary screens of an entity which will behave such as the parent entity for honoring the record while undergoing a workflow event, as well as triggering a workflow event on a status change.

Please note that the Workflow Approval tab is not available on these screens. Additionally, from the standalone Workflow Approval screen, the View Source Record button will not hyperlink to these screens. These screens are to support end users that are not approvers but provide relevance to what is currently occurring to the records.

Description	Screen	Entity	Table
Work Requests	WSWREQ	EVNT	R5EVENTS
Part Requisitions	SSREQ	REQ	R5REQUISITIONS
Equipment Operational Status	OSSTAT	OBJ	R5OBJECTS
Work Orders   Closing Tab	WSJOBS   CLO	EVNT	R5EVENTS

## Approval Workflow Setup screen

On the Record View of this screen, you select the entity for which you want to setup the workflow. Here you define the status that triggers the workflow and the statuses that represent the approve and reject status for example.


The **Approval Workflow Setup** record view has the following important attributes:

1. **Workflow**— The unique code assigned to the Approval Workflow Setup.
2. **Description**— Short description of the Approval Workflow Setup.
3. **Organization**— Organization of the Approval Workflow Setup (see [Considerations](#) section).
4. **Entity**— Select the entity which the system will process status updates, and subsequent activation conditions, to start a Workflow Event. After a selection is made, the system will populate the entity description and associated database table.
5. **Sequence**— The sequence in which the system will process the Approval Workflow Setup record for the specified entity. The first record that satisfies all conditions will be selected for creating a workflow event against the source record. The system will not continue

processing against higher sequenced Approval Workflow setup records for a source record once a workflow event has been created. (see *Considerations* section).

6. **Status**— System Codes status entity 'WFST'.
  - a. **'Unfinished'** – Record view and related tabs are unprotected and are editable. Record is NOT being considered in creating Workflow Events against the specified entity.
  - b. **'Active'** – Record view and related tabs are protected and not editable. Record is being considered in creating Workflow Events against the specified entity.
  - c. **'Deactivated'** – Record view and related tabs are protected and not editable. Record is NOT being considered in creating Workflow Events against the specified entity.
7. **Approval Flow Type**
  - a. **'Parallel – All'** – Approvers can approve their assigned approval step in any order. All **Approval Steps** must be approved for the workflow event to become approved. If a single approver rejects, the workflow event becomes rejected. See *Responsibility* example.
  - b. **'Parallel – Any'** – Approvers can approve their assigned approval step in any order. Unlike 'Parallel All', where all users must approve, here only a single user that approves their assigned approval step is enough to approve the workflow event (i.e., first come, first serve).
  - c. **'Sequential'** – Approvers can only approve in the provided sequence. The first approval step (lowest sequence) will be created with an approval step status of 'Pending', while all subsequent (higher sequenced) approval steps will be created in the 'Pending; Contingent' status. When a 'Pending' approval step is approved, the system will update the next sequenced approval step from 'Pending; Contingent' to 'Pending'.
 

Note that an approver may reject the workflow event while their approval step is 'Pending; Contingent'; but cannot approve until the previously sequenced approval steps are approved, and the assigned approval step is in 'Pending' status.
8. **Workflow Activation Status**— Specifies which status update (**From Status** to the **Activation Status**) will trigger the start of a workflow event. For example, when the purchase order goes from status unfinished to awaiting approval or the work request goes from request approval to ready for planning.
  - a. **From Status**
    - i. **Note:** Selecting '-' – On Insert will create workflow events on the record's creation if the record is created in the Activation Status.
  - b. **Activation Status**
9. **End of Workflow Record Status**— Specifies the status which the system will update the source record to at the end of the workflow event.
  - a. **Approved Status** – If the workflow event is **Approved**, the system will update the source record to this defined status.
  - b. **Rejected Status** – If the workflow event is **Rejected**, the system will update the source record to this defined status.

- c. **Cancelled Status** – If the workflow event is **Cancelled**, the system will update the source record to this defined status.
10. **Summary**— Free text field used to communicate to end users the summary of the Approval Workflow. When a workflow event is started against a source record, the summary text will be shown on the source record's protected status field by hovering over an information  icon.
- a. **Summary supports translations.** Navigate to the **Summary Translations** tab to define the summary in all desired languages. This will show the translated value of the current logged on user's language when hovering over the information icon, as well on the Workflow Approval screens.

## Approval Workflow Setup - Parameter Definitions tab

On the **Parameter Definitions** tab of the **Approval Workflow Setup** screen, you can define which fields of the source record are copied to the workflow event when the **Activation Status** is met. These fields (and more specifically, the value of these fields) can be used by the workflow event to determine thresholds for approval (purchase order amount approval levels for example) or they can be used in the emails the system can send to request approval. This is achieved by selecting the relevant columns and/or functions of the selected entity table. Important attributes are:

1. **Parameter**— Unique integer assigned to the parameter. This value can be changed. Only the first 25 can be used for the email.
2. **Column**— Column and/or function of the entity table as specified on the record view.
3. **Alias**— Common name to describe the parameter.
4. **Activation Condition**— When a record is flagged as an **Activation Condition**, the system will un-hide and make required an operator and value field. The system will only create the workflow event when all the **Activation Conditions** are met. For example, the purchase order must be worth more than \$1000. The operators available in the dropdown are dependent on the data type of the selected column.

**IMPORTANT:** If no **Parameter Definitions** are flagged as **Activation Conditions**, a workflow event will be created each time the **Activation Status** criteria is met.

**Tip:** To find the name of the column for a specific field on a desired screen, you can leverage **Screen Designer** and **View Field Details** of the field to view its related column name.

## E-mail Notifications

The **Parameter Definitions** values can be leveraged in **E-mail Notifications** to notify an approver when a workflow event is pending their approval. This template is specified on the **Approval Steps** tab.

The **Parameter** integer of the **Parameter Definition** record needs to equal the desired parameter variable as specified in the **E-mail Template**.

- For example, Parameter 1 of the **Parameter Definition** record is the purchase order code.
  - Column = ORD\_CODE
- The **E-mail Template** subject line would be written as:
  - "Purchase Order %1 is pending your approval."

If the specified **E-mail Template** has a **Button Content Type** of Approval Workflow, the e-mail will be sent with a drill back URL that will hyperlink the user to the standalone **Workflow Approval** screen for the Workflow Event embedded in the Call-to-Action button.

If the specified **E-mail Template** has **Push Notification** checked, EAM will send a Push Notification to the user's registered mobile device. The Push Notification contains a hyperlink that when tapped, will navigate the user to the standalone **Workflow Approval** screen for the Workflow Event.

See [HxGN EAM E-mail Messenger & Notifications Functional Brief](#) for more information.

## Approval Workflow Setup - Approval Steps tab

On the **Approval Steps** tab of the **Approval Workflow Setup** screen, you specify the user(s) that are responsible for reviewing and approving the workflow event. There are multiple **Approval Step** types you can choose from to get a user (or list of users) as approvers on a workflow event. You can also specify whether the system should auto-approve or auto-reject a workflow event, if desired.

Important attributes are:

1. **Sequence**— Unique integer specifying the order in which the approval step will be processed when added to the workflow event.
2. **Type**
  - a. **User ID** – Choose a static **User ID** from a lookup.
  - b. **Approval List** – Choose a static **Approval List** from a lookup.
    - i. When an **Approval List** is selected, each user specified on the **Approval List** will be added as an individual **Approval Step** line on the workflow event, in **Sequence** and **Responsibility** as defined on the **Approval List**. Approval lists are created on the Approval Lists screen and are part of revision control in EAM.
  - c. **Parameter – User ID** – Choose a **Parameter Definition** record. The selected column from the source record needs to contain a valid **User ID** value, such as the 'Created By' fields.
  - d. **Parameter – Person** – Choose a **Parameter Definition** record. The selected column needs to contain a valid **Employee** value, such as the **Assigned To** field on a work order (EVT\_PERSON).
  - e. **Parameter – Approval List** – Choose a **Parameter Definition** record. The selected column needs to contain a valid **Approval List** value.
  - f. **System Auto-Approve** – When added to the workflow event, the system will bypass any user approval steps created, approve the workflow event, and update the source record's status to the specified **End of Workflow Approved status**.
    - i. **Note:** This type should have **Step Conditions** applied. For example, the purchase order is less than \$500. Otherwise, it will always be processed.
  - g. **System Auto-Reject** – If you select this option, you must specify the required **Reject Reason** field. When added to workflow event, the system will bypass any user approval steps created, reject the workflow event, and update the source record's status to the specified **End of Workflow Rejected status** and

populate the **Reject Reason**. The Reject Reason will be displayed to the user in as a system message to provide context.

- i. **Note:** Just like auto approval, this type should have **Step Conditions** applied. Otherwise, it will always be processed.
  - ii. **Reject Reasons support translations.** This is to provide the reason why the reject cannot be further processed in the user's language.
3. **Responsibility**— Optional free-text field to specify a **Responsibility** grouping. When a user approves their **Approval Step** with a **Responsibility** defined, all **Approval Steps** that share the same **Responsibility** grouping value will also be approved. If there are three safety coordinators that can all approve the work order safety analysis, the first safety coordinator to do so will approve for the other two.

## Approval Workflow Setup - Step Conditions tab

Approval Steps can have one or more **Step Conditions** assigned to them so that they are only added to a workflow event when all **Step Conditions** are met. Not specifying any **Step Conditions** to an Approval Step means the approval step would always be applied to every workflow event when created.

1. **Column** – Choose a **Parameter Definition** record. The system will un-hide and make required an operator and value field.

## Approval Workflow Setup - Revision Control

Approval Workflow Setup supports Revision Control. This is to maintain historical records when changes are made and allow a mechanism to revert to a previous revision, if desired. You may select any previous revision of an Approval Workflow Setup to be copied as the latest revision. Once the most recent revision is moved to the Approved status, any previous revisions that are not superseded will be moved to the Superseded status.

1. **Create New Revision** – Click the **Create New Revision** button on the Approval Workflow Setup record view.

## Approval Workflow Setup - Workflow Event History

This list view will display all Workflow Events, and their related Approval Steps, for the selected Approval Workflow Setup record.

Note: Selecting Include Step Details in the dataspy will show all Approval Step lines for each associated Workflow Event; and when not selected, it will only show the individual Workflow Event parent records.

## Considerations

1. Only one workflow event can be Started (Pending) against a source record at a time.
2. When a workflow event is Started, the status of the source record is protected and cannot be updated. The remainder of the fields on the screen will behave normally, as the system logic of the chosen **Activation Status**. For example, if the **Activation Status** for a purchase order approval workflow is in the system status of 'Unfinished', the status will be protected; but all other fields will be editable. If desired to have all the fields protected during the

workflow event, choose an **Activation Status** that protects all the fields ('Awaiting Approval' for example).

3. For multiple **Approval Workflow Setup** records against the same entity, the system will process each **Approval Workflow Setup** record in sequence. If two setup records have the same **Activation Status** and **Activation Conditions**, the first sequenced setup record will be processed and, if conditions are met on the source record, the higher sequenced record will not have the chance to be processed. Consider organizing the more specific setup records to be sequenced first.
4. Cancelling a workflow event is an administrative task. This button is defaulted as Not Available in screen designer and should only be enabled for the relevant user groups. Consider creating a unique user code status for **End of Workflow Cancelled Status** to easily identify records that need to have the workflow "restarted", if desired.

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# Workflow Approval

Once a **Workflow Event** is created, an approver can review, approve, and reject the request from the **Workflow Approval** screen. There are two types of the **Workflow Approval** screens:

- The standalone **Workflow Approval** screen, which shows all Workflow Events agnostic of the workflow's status across all entities. This screen is beneficial for users who review requests across multiple entities from a single screen and leverage the **View Source Record** button to hyperlink to the relevant source record screen. Additionally, the **Workflow Event** history can be reviewed from this screen.
- The **Workflow Approval** tab, which is an available tab on each screen that supports workflow, like Requisitions, Work Orders, etc. The tab only shows the **most recently created** workflow event for the selected parent record. The workflow event history is not available on this tab.
  - Additionally, there is a **Workflow Event History** tab on each screen that supports workflows to display all Workflow Events, and their related Approval Steps, that have taken place against the selected source record.
  - **Note:** Selecting Include Step Details in the dataspy will show all Approval Step lines for each Workflow Event; and when not selected, it will only show the individual Workflow Event parent records.

## Approving

Click the **Approve** button. You can only approve a workflow event if an approval step for a workflow event under the following scenarios:

1. An approval step is assigned to your User ID and is in the Pending status.
2. An approval step exists assigned to your User ID shares the same responsibility of a Pending approval step.
3. You are a current Designated Approver for a User ID that has a Pending approval step.
  - a. See *Designated Approver* section for more information.

## Rejecting

Click the Reject button. Rejecting a workflow event is also driven by the current logged on user having an **Approval Step** that is assigned to them for the selected record, but the user can reject the workflow when their **Approval Step** is in the Pending or Pending; Contingent status.

When a user clicks the reject button, they will be prompted to enter a **Reject Reason**.

## Cancelling

Click the **Cancel Workflow** button. Cancelling a workflow event is an administrative action when the started workflow event is no longer valid or desired. This button should only be made available to specific user groups that are allowed to do so.

Once cancelled, the system will place the source record in the predefined **Cancelled Status**. It is recommended to use a unique user status to easily identify source records that have had a workflow event cancelled to allow the administrator to “restart” another workflow or move the record to a desired status.

## Reassign Approver

Click the **Reassign Approver** button. This provides a mechanism to reassign a pending approval step to a different User to review. Clicking the button will launch a popup which you select a User ID that currently has a pending approval step assigned to them. Then you select a new User ID to reassign the approval step to and a Reason for Delegation. You can also optionally add a note.

The original approval step will be moved to a Reassigned status, re-sequenced as the last approval step of the workflow event, and reference the User, Reason for Delegation, and any notes entered in which why the approval step was reassigned.

A new approval step will be created with the same sequence as the original approval step, but assigned to the new User ID.

**Note:** The Reason for Delegation is defined in System Code entity REDL. This entity is also leveraged for Designated Approvers. See *Designated Approvers* section in this brief for more information.

## View Source Record

Click the **View Source Record** hyperlink button and the system will bring you to the source record’s entity screen, relevant to their user group permissions. This hyperlink button will support cloned screens by bringing the current logged on user to whichever screen they have permissions for of the source record’s entity.

Additionally, for workflow events against **Work Orders**, **Equipment**, and **Case Management** entities, the system will check if **Screen Setup** records exists and check the **Class** and/or **Type** of the source record and look for a matched screen to hyperlink. This is an incredibly powerful tool for configuring clones of screens that are hyper-specific to an **Approval Workflow Setup**.

Please note the following **Supported Supplementary Screens** are not supported when clicking the **View Source Record** button:

- Work Requests
- Part Requisitions
- Equipment Operational Status
- Work Orders | Closing Tab

# Designated Approvers

To support scenarios such as Out of Office, temporary/permanent delegation, change in personnel, or other such situations; you can specify that a User can approve or reject a Workflow Event on behalf of another User during a specific period. This functionality is intended to be used on planned delegation scenarios, where Reassign Approver functionality can be leveraged on an as needed basis. See *Reassign Approver* section for more information.

## Example Scenario:

- **BILL** has been determined to be a designated approver for **MARY** for the next two weeks while Barry is on vacation.
- On **MARY**'s User Setup record, **BILL** is added on the Designated Approver tab with a date range ending two weeks from today.
- Workflow Event has approval step that is Pending for **MARY**.
- **BILL** can see pending workflow event in his My Pending Workflows dataspy, although the approval step is still assigned to **MARY**.
- **BILL** clicks **Approve** button.
- Approval step for **MARY** is approved and is completed by Designated Approver **BILL**.

## User Setup - Designated Approver tab

On the User Setup screen, select the User ID that requires other users to approve or reject on their behalf. Once selected, navigate to the Designated Approver tab. Select a user that will be able to approve or reject on behalf of the selected parent user record. Specify the time range in which this user is permitted to approve/reject on their behalf. Ensure the status is Approved to be considered in allowing the User to approve or reject when on the Workflow Approval screen. If no longer desired to allow the Designated Approver to approve or reject on behalf of the parent user, and the End Date is in the future, you can move the status to Withdrawn.

**Note:** If desired to have the Designated Approver record be created in the Approved status, it is recommended to set the Default Value to Approved in screen designer.

## Reason for Delegation

The Reason for Delegation is defined in System Code entity REDL. This entity is also leveraged for Reassign Approver functionality on the Workflow Approval screen. This is to assist in reporting on these two similar, but different actions of allowing users to approve or reject approval steps that were originally assigned to other users.

There are three system codes for REDL entity to consider when implementing this feature.

- \* – Visible on Designated Approver tab on User Setup **and** Reassign Approver popup.

- **D** – Visible only on the Designated Approver tab.
- **R** – Visible only on the Reassign Approver tab.

This entity supports Out of Service if desired to omit any reason from the dropdown.

# Approval Workflow Examples

## Purchase Order > Default Approver Example

**Scenario:** In my organization the buyer creates the purchase order and enters the Default Approver field who needs to review and approve it. Once the buyer is done with the purchase order they will place the record into 'Awaiting Approval' status. The Default Approver should then receive an email with the purchase order number, description, PO total, and the store and the request to review the order and approve or reject it.

### Approval Workflow Setup

#### Record View

Entity	Approval Flow Type	From Status	Activation Status
Purchase Orders	Parallel - Any	Unfinished	Awaiting Approval

#### Parameter Definitions

Parameter	Column	Alias	Activation Condition	Operator	Value
1	ORD_CODE	PO	-		
2	ORD_DESC	PO Desc.	-		
3	ORD_PRICE	PO Total	-		
4	ORD_DFLTAUTH	Default Approver	-		
5	ORD_STORE	Store	-		

#### Approval Steps

Sequence	Type	Parameter	Column	Alias	E-mail Template
10	Parameter – User ID	4	ORD_DFLTAUTH	Default Approver	PO-EMAIL

## E-mail Template

E-mail Template	Subject	Body
PO-EMAIL	PO %1 - %2 is Awaiting Your Approval	PO: %1 - %2 with a total of %3 is awaiting your approval for %5.

## Workflow Event Processing

**Action:** For purchase order 10000, the buyer populates the Default Approver field with user JSMITH and moves the PO status from 'Unfinished' to 'Awaiting Approval'.

1. The system captures the Parameter Definition values for the purchase order.

Parameter	Column	Alias	Value
1	ORD_CODE	PO	10000
2	ORD_DESC	PO Desc.	Replenishment of Stock Purchase Order
3	ORD_PRICE	PO Total	500.00
4	ORD_DFLTAUTH	Default Approver	JSMITH
5	ORD_STORE	Store	STORE-01

2. System creates the workflow event and approval steps:

Sequence	User	Status	Responsibility
1	JSMITH	Pending	ORD_DFLTAUTH

3. System sends out email using the **E-mail Template** supplied on the **Approval Step** setup record:

<b>Recipient</b>	<a href="mailto:jsmith@acme.test">jsmith@acme.test</a>
<b>Subject</b>	PO 10000 – Replenishment of Stock Purchase Order is Awaiting Your Approval
<b>Body</b>	PO: 10000 – Replenishment of Stock Purchase Order with a total of 500.00 is awaiting your approval for STORE-01.

## Purchase Order > Sequential Flow Type Example

**Scenario:** My organization has a complex approval matrix for approving purchase orders. The purchase order needs approval by the specific site supervisor up to \$5,000. If over \$5,000, then it requires approval from the site manager as well. But if it is over \$25,000, then it needs approval from the Vice President, after the Supervisor and Manager have approved the purchase. To expedite the purchasing process, approvals are not required for purchase orders under \$500.

### Approval Workflow Setup

#### Record View

Entity	Approval Flow Type	From Status	Activation Status
Purchase Orders	Sequential	Unfinished	Awaiting Approval

#### Parameter Definitions

Parameter	Column	Alias	Activation Condition	Operator	Value
1	ORD_CODE	PO	-		
2	ORD_DESC	PO Desc.	-		
3	ORD_PRICE	PO Total	-		
4	ORD_ORG	Organization	+	Is Equal To	ORG1
5	ORD_STORE	Store	-		

#### Approval Steps

Sequence	Type	User ID	Step Condition Parameter	Step Condition Parameter Alias	Operator	Value
10	System Auto-Approve		3	PO Total	Is Less Than	500
20	User ID	SUPERVISOR	3	PO Total	Is Greater Than	500
30	User ID	MANAGER	3	PO Total	Is Greater Than	5000

Sequence	Type	User ID	Step Condition Parameter	Step Condition Parameter Alias	Operator	Value
40	User ID	VP	3	PO Total	Is Greater Than	25000

## Workflow Event Processing > System Auto-Approve

**Action:** For purchase order 10001 that is in organization ORG1, the buyer moves the PO status from 'Unfinished' to 'Awaiting Approval'.

- The system captures the **Parameter Definition** values for the purchase order.

Parameter	Column	Alias	Value
1	ORD_CODE	PO	10001
2	ORD_DESC	PO Desc.	Catering for Safety Training
3	ORD_PRICE	PO Total	450
4	ORD_ORG	Organization	ORG1
5	ORD_STORE	Store	STORE-01

- Since the **Activation Condition** of Organization is met, the system creates the workflow event and approval steps.

Sequence	Type	Status	Responsibility
1	System Auto-Approve	Approved	

- Since the **Step Condition** for the System Auto-Approve **Approval Step** was met with the PO Total being less than \$500, the system updates Purchase Order to the Approved status without any human intervention required.

## Workflow Event Processing > Sequential

**Action:** For purchase order 10002, the buyer moves the PO status from 'Unfinished' to 'Awaiting Approval'.

- The system captures the **Parameter Definition** values for the purchase order.

Parameter	Column	Alias	Value
1	ORD_CODE	PO	10002
2	ORD_DESC	PO Desc.	Capital Expenditure   Purchase of New Asset

Parameter	Column	Alias	Value
3	ORD_PRICE	PO Total	50,000
4	ORD_ORG	Organization	ORG1
5	ORD_STORE	Store	STORE-01

2. Since the **Activation Condition** of Organization is met, the system creates the workflow event and approval steps.

Sequence	User	Status	Completed By
1	SUPERVISOR	Pending	
2	MANAGER	Pending; Contingent	
3	VP	Pending; Contingent	

3. Since the **Approval Flow Type** is **Sequential**, the first **Approval Step** where **Step Conditions** are met is added in the 'Pending' status. All subsequent steps are added in the 'Pending; Contingent' status.

The Manager and VP users are not able to approve until the previous steps have been approved. Once the Supervisor approves his step, the Manager approval step will be updated to 'Pending', and an email will send to the Manager if an **E-mail Template** is supplied on the **Approval Step** setup record.

Sequence	User	Status	Completed By
1	SUPERVISOR	Approved	SUPERVISOR
2	MANAGER	Pending	
3	VP	Pending; Contingent	

## Case Management > 'Parallel – All' Flow Type with Responsibility

**Scenario:** Whenever a breakdown work order has downtime hours notated, EAM is configured to automatically generate a Root Cause Analysis (RCA) case management record for internal review and to mitigate future risks of undesired equipment failure. This RCA is required to be reviewed and approved by the Safety department and the Engineering department. Only one individual from each department is required to approve, but to expedite processing, it is desired to assign it to each employee of both teams for review. This listing of users has been compiled into an **Approval List** with **Responsibility** defined and is added to the RCA record in a User Defined Field.

## Approval List

Approval List	Sequence	User	Responsibility
RCA-01	10	JSMITH	Engineering
RCA-01	20	JDOE	Engineering
RCA-01	30	BBROOK	Safety
RCA-01	40	HCHAPMAN	Safety
RCA-01	50	BCAMPBELL	Safety
RCA-01	60	PBAKER	Engineering

## Approval Workflow Setup

### Record View

Entity	Approval Flow Type	From Status	Activation Status
Case Management	Parallel - All	Requested	RCA Pending Review

### Parameter Definitions

Parameter	Column	Alias	Activation Condition	Operator	Value
1	CSM_CODE	Case	-		
2	CSM_CASETYPE	Case Type	+	Is Equal To	RCA
3	CSM_UDFCHAR01	Approval List	-		

### Approval Steps

Sequence	Type	Column	Step Condition Parameter	Step Condition Parameter Alias	Operator	Reject Reason
10	System Auto-Reject		3	Approval List	Is Empty	No approval list has been specified on the RCA. Please populate

Sequence	Type	Column	Step Condition Parameter	Step Condition Parameter Alias	Operator	Reject Reason
						and resubmit for review.
20	Parameter – Approval List	CSM_UDFCHAR01				

## Workflow Event Processing > System Auto-Reject

**Action:** For case management record 10000 that has a case type of 'Root Cause Analysis', the maintenance planner populates the form and brings the record to 'RCA Pending Review'

- The system captures the **Parameter Definition** values for the purchase order.

Parameter	Column	Alias	Value
1	CSM_CODE	Case	10000
2	CSM_CASETYPE	Case Type	RCA
3	CSM_UDFCHAR01	Approval List	<empty>

- Since the **Activation Condition** of the Case Type is met, the system creates the workflow event and approval steps.

Sequence	Type	Status	Responsibility
1	System Auto-Reject	Rejected	

- Since the **Step Condition** for the System Auto-Reject **Approval Step** was met by the user not populating an Approval List value, the system updates the case management record status to the Rejected status, as defined on the **Approval Workflow Setup** record.

## Workflow Event Processing > Parallel – All with Responsibility

**Action:** For case management record 10001 that has a case type of 'Root Cause Analysis', the maintenance planner populates the form and brings the record to 'RCA Pending Review'

- The system captures the **Parameter Definition** values for the purchase order.

Parameter	Column	Alias	Value
1	CSM_CODE	Case	10001

Parameter	Column	Alias	Value
2	CSM_CASETYPE	Case Type	RCA
3	CSM_UDFCHAR01	Approval List	RCA-01

2. Since the **Activation Condition** of Case Type is met, the system creates the workflow event and approval steps leveraging the **Approval List** parameter from the user defined field.

Sequence	User	Responsibility	Status	Completed By
1	JSMITH	Engineering	Pending	
2	JDOE	Engineering	Pending	
3	BBROOK	Safety	Pending	
4	HCHAPMAN	Safety	Pending	
5	BCAMPBELL	Safety	Pending	
6	PBAKER	Engineering	Pending	

3. Since the **Approval Flow Type** is **Parallel - All**, all the **Approval Steps** are added in the 'Pending' status. Any of these users can **Approve** their step at any time and **All Approval Steps** are required to be approved in order to approve the workflow.
4. Since **Responsibility** is defined for the users, when the user BBROOK from the Safety department approves, he will also approve other pending approval steps with the same **Responsibility** defined.

Sequence	User	Responsibility	Status	Completed By
1	JSMITH	Engineering	Pending	
2	JDOE	Engineering	Pending	
3	BBROOK	Safety	<b>Approved</b>	<b>BBROOK</b>
4	HCHAPMAN	Safety	<b>Approved</b>	<b>BBROOK</b>
5	BCAMPBELL	Safety	<b>Approved</b>	<b>BBROOK</b>
6	PBAKER	Engineering	Pending	

5. When the user JDOE from the Engineering department approves, she will also approve all other pending approval steps with the same Responsibility defined.

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Sequence	User	Responsibility	Status	Completed By
1	JSMITH	Engineering	Approved	JDOE
2	JDOE	Engineering	Approved	JDOE
3	BBROOK	Safety	Approved	BBROOK
4	HCHAPMAN	Safety	Approved	BBROOK
5	BCAMPBELL	Safety	Approved	BBROOK
6	PBAKER	Engineering	Approved	JDOE

- 6. Since this workflow is a **Parallel – All** approval flow type, this will approve the workflow event and the system will update the Case Management record to the 'Approved' status, as defined on the **Approval Workflow Setup** record.