

SAP BUSINESS TECHNOLOGY PLATFORM | EXTERNAL

Configuration Guide

Intelligent Non-PO Invoice Processing using SAP Build Process Automation or SAP Workflow Management

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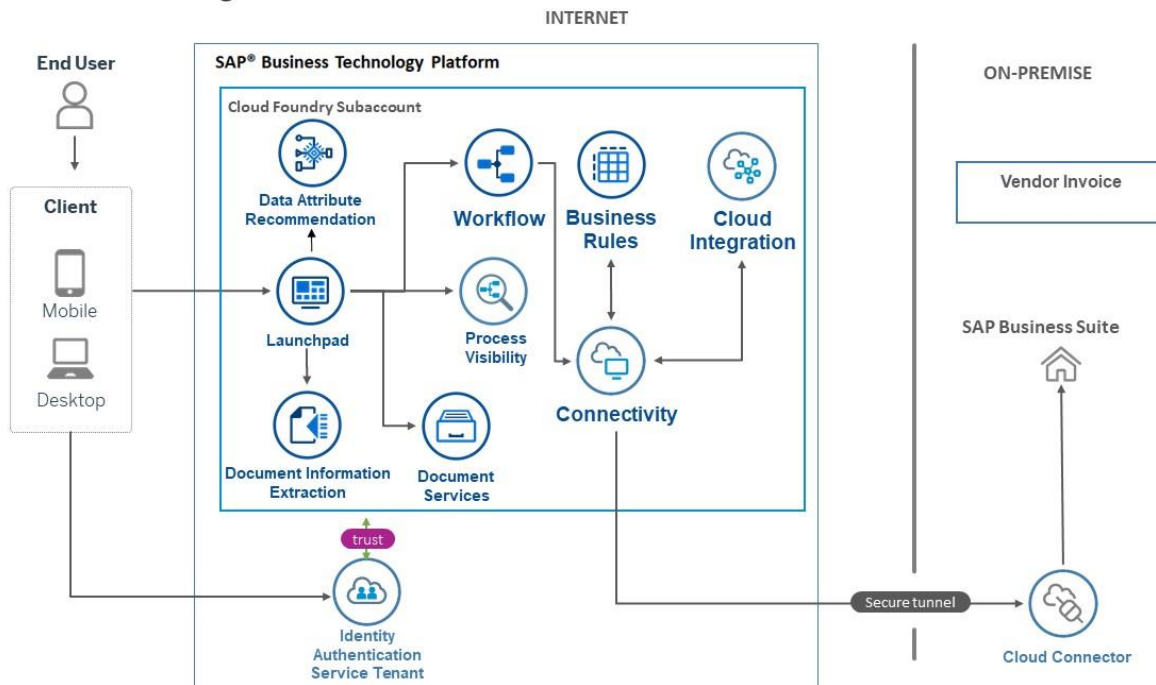
Overview

This document provides information about configuration steps to consume the live process package **Intelligent Non-PO Invoice Processing**. The main audience of this document are Finance experts, Developers and Product owners.

The Intelligent Non-PO Invoice Processing content package enables SAP ERP customers to automate the approvals and posting of Non PO Vendor Invoices using SAP Build Process Automation or SAP Workflow Management without additional development in SAP ERP. Salient features of this content package are:

- Plug and Play with SAP ERP without additional development
- Pre-configured process steps to create net new variants
- New Process variants can be configured in a low-code, no-code approach
- Add additional approvers before the vendor invoice is posted in SAP ERP
- Agent/approver determination using Business Rules or SAP ERP or external systems
- Flexibility in determining process variants based on business conditions
- Master data validations and additional business validation of vendor invoice using business rules
- Pre-built integration content to call SAP ERP RFC from SAP Build Process Automation or SAP Workflow Management
- Out-of-the-box visibility into key process performance indicators

SAP ERP – Manage Invoice without Purchase Order



Live Process Artifacts

A process content package consists of multitarget application, process steps, process templates, process variants, decisions and process visibility models. Please refer [help documentation](#) about these artifacts.

Multitarget Applications

In live process content package, a multitarget application is attached where business process is designed by workflow module. It is a set of business activities and tasks that, once completed, fulfills an organization goal.

Non PO Vendor Invoice Header Process – Header workflow provides generic approval process for vendor invoice creation in SAP ERP with invoice validation from SAP ERP and using business rules. Header workflow determines process variants depending on Cost Objects. An Invoice Cost Object is nothing but a combination of invoice’s item fields. The maximum possible combination of cost objects is cost center, profit centre, business area and plant.

For vendor Invoice creation, one header workflow can call multiple process variants for approval process depending on invoice cost objects. If invoice validation failed or approval process is declined or mentioned as not responsible by approver then rework task will be assigned.

Default Baseline Date

This application treats the Document Date [**DOC_DATE**] as the default Baseline Date [**BLINE_DATE**]. To change the baseline date behavior, modify the behavior in the header workflow in the data mapping script – *prepareInvoicePosting.js*

Process

A process template is a set of business activities and tasks that, once completed, fulfills an organization approval process. The Intelligent Non-PO Invoice Processing package contains the following process template:

ItemProcessDefaultTemplate – Create vendor invoice in SAP ERP with a multilevel approval process. It includes two process steps for easy no-code/low-code configuration.

A business process can be broken down logically into smaller parts or steps. Each process step is a collection of activities to perform a specific task. For example, an approval process step can contain an activity to determine the approvers, an approval task itself, notifications activities, and handle the approval result. Table 1 represents the list of process steps available to be used in Intelligent Non-PO Invoice Processing.

Table 1. Process Steps.

| Process Steps | Cardinality | Detailed Description |
|---------------|-------------|----------------------|
|---------------|-------------|----------------------|

| | | |
|--------------|------|--|
| Approval | 1..N | This step initiates and completes one level of approval for a Non PO Vendor Invoice. This step can occur multiple times in the process variant. Based on the number of approvals required, this step can be re-used multiple times. It is possible to rename the step to appropriate approval roles, for example, 'Approval by Finance Head'. The approver is determined based on various conditions using a business rule. The requestor and the approver are automatically notified via mail about the decision and approval task, respectively. |
| Finalization | 1..1 | This step triggers an intermediate message to notify the header process of the status of the approval, i.e. approved, declined, or marked as 'Not Responsible'. This step shall occur only once, and it should be the last step of the process. The requestor is automatically notified via email. |

A process step can have customizable properties and they could determine the outcome of the process step. For example, the Approval step can be reused multiple time and based on these properties the approver is determined.

Approver can see invoice approval history based on invoice cost objects. In rework task, if invoice cost objects are modified by approver then approval history will be shown as per the updated cost object invoice history. If Invoice is modified again to old cost object, then old history will be visible to the approver based on invoice cost object. Please see Table 2 for more details.

Table 2. Process Step Properties.

| Process Step | Properties | Detailed Description |
|--------------|----------------|---|
| Approval | Approval Level | Based on the name of the approval level, the approver is determined using a business rule. Default value is Finance Manager and it can be configured to any approval level, provided the same approval level name is configured in the business rule. |

A Process has attributes and these attributes are available in Process Visibility to search approval process instances and to define process performance indicators. Please see Table 3 for more details.

Table 3. Process Attributes.

| Process Attributes | Detailed Description |
|--------------------|---|
| companyCode | Company Code |
| oneTimeVendor | One-Time Vendor Indicator (True/ False) |
| vendorCode | Vendor Code |
| vendorName | Vendor Name |
| invoiceDate | Invoice Date |
| invoiceDueDate | Invoice Due Date |
| invoiceAmount | Invoice Amount |
| currencyKey | Currency Key |
| approvalStatus | Approval Status |
| requesterName | Requester Name |
| costCenter | Cost Center |

| | |
|----------------------|------------------------|
| discountDate | Discount Date |
| discountAmount | Discount Amount |
| secondDiscountDate | Second Discount Date |
| secondDiscountAmount | Second Discount Amount |

The following (sample) context required to start the header Workflow:

```
{
  "invoiceDetails": {
    "items": [
      {
        "itemNumber": 1,
        "amount": 1000,
        "costCenter": "1006",
        "itemGroupNo": 0,
        "internalOrderDesc": "",
        "profitCenter": "",
        "taxCode": "V2",
        "itemText": "Item 1",
        "internalOrder": "",
        "businessAreaDesc": "",
        "businessArea": "",
        "glAccountDesc": "Cafeteria equipment",
        "taxCodeDesc": "7% domestic input tax",
        "plant": "",
        "currencyKey": "USD",
        "plantDesc": "",
        "profitCenterDesc": "",
        "glAccount": "470100",
        "costCenterDesc": "Cafeteria Cost Center"
      },
      {
        "itemNumber": 2,
        "amount": 200,
        "costCenter": "1006",
        "itemGroupNo": 0,
        "internalOrderDesc": "",
        "profitCenter": "",
        "taxCode": "V2",
        "itemText": "Item 2",
        "internalOrder": "",
        "businessAreaDesc": "",
        "businessArea": "",
        "glAccountDesc": "Cafeteria equipment",
        "taxCodeDesc": "7% domestic input tax",
        "plant": "",
        "currencyKey": "USD",
        "plantDesc": "",
        "profitCenterDesc": "",
        "glAccount": "470100",
        "costCenterDesc": "Cafeteria Cost Center"
      }
    ]
  }
}
```

```

],
"paymentTerms": [
  {
    "days": 15,
    "percentageAmount": 3
  },
  {
    "days": 30,
    "percentageAmount": 0
  },
  {
    "days": 0,
    "percentageAmount": 0
  }
],
"headerDetail": {
  "initiatorMailId": "user@email.com",
  "paymentTermDesc": "15 days 3%, 30 days net",
  "initiator": "Sumit",
  "initiatorComments": "submit",
  "invoiceAmount": 1200,
  "reference": "Test",
  "exchangeRate": 1.8876,
  "requesterName": "Requestor Name",
  "countryCode": "DE",
  "companyCodeDesc": "SAP A.G.",
  "requestDate": "2020-10-12T17:30:31.643Z",
  "currency": "USD",
  "text": "Test",
  "oneTimeVendorName": "",
  "companyCodeCurrency": "EUR",
  "requester": "RequestorID",
  "companyCode": "0001",
  "taxableAmount": 1284,
  "oneTimeVendorCountry": "",
  "invoiceTotalAmount": 1284,
  "invoiceDate": "20201012",
  "paymentMethodDesc": "Scheck (mit Scheckmanagement)",
  "oneTimeVendorCountryDesc": "",
  "vendorNumberDesc": "ABC PVT LTD",
  "oneTimeVendorCity": "",
  "oneTimeVendor": false,
  "paymentMethod": "C",
  "vendorNumber": "100806",
  "paymentTerm": "PT02"
}
}
}

```

Process Variants

A process variant consists of multiple process steps configured by a Line of business expert. It is possible to

create multiple variants of the same process. For example, if the price variance is higher than 20% then there could be a multi-level approval process, otherwise one-level approval is sufficient, or for plant 10001 the approval steps can be skipped, etc. Please refer [help documentation](#) about how to import content packages and configure a process variant.

Non PO Vendor Invoice Approval Process Variant

An example of a Non-PO Vendor Invoice Process Variant is given below. It is possible to configure multiple variants of this process.



Import Intelligent Non-PO Invoice Processing and Configure Process Variants with SAP Build Process Automation

1. In the [SAP Build Process Automation Store](#), search for live process package Intelligent Non-PO Invoice Processing and import the same. This content package has one process template and process variant(s) for that template.
2. In the Application Development [Lobby](#), click to open the package with name Intelligent Non-PO Invoice Processing. This opens the package in a new tab/window.
3. Click the + icon next to the process template to create a new process variant.
4. Enter Name of the new Process Variant (ex, Two Step Approval).
5. Click the newly created Process Variant tile to save and activate the process variant.
6. The process variant has a default implementation with two steps and at least one level of approval.
7. It is possible to remove steps like “Approval for Intelligent Non-PO Invoice Processing” from a process variant only if there are multiple approvals. Please note that whether a step is mandatory or optional, and how many a times any step can be used within a variant, are dependent on the constraints defined on the process steps.

8. Save and activate the variant. A successful activation will create a new workflow definition in the account that can be viewed in the [Monitor Processes and Workflows app](#).

Import Intelligent Non-PO Invoice Processing and Configure Process Variants with SAP Workflow Management

1. Import content package Intelligent Non-PO Invoice Processing Process. Please refer the standard help document about [how to import a content package](#)
2. This content package has a process template and a process variant for that template is required
3. Create a new variant of Non PO Vendor Invoice Approval Process
4. Open content package Intelligent Non-PO Invoice Processing Approval Process in Flexibility Cockpit and click Process Variants
5. Click New Process Variant of Non PO Vendor Invoice
6. Enter Name of the new Process Variant and select “Invoice Without Purchase Orders Approval Template” as the Process. Click Create button
7. Click the newly created Process Variant tile to save and activate the process variant
8. The Process Variant editor is opened with default variant. The default variant is enough, click Save and Activate
9. The newly added Process Variant has a default implementation with three steps
10. Configure Step Property for Approval process step – “Level Name”

Level Name property is used to determine the Approver using the business rule Determine Approver.

It is possible to add additional Approval steps to a process variant. Drag and drop the Approval step between the steps. It is mandatory that these approval steps should be between Initialization and Finalization steps.

Add new Process Steps to an existing Process Variant.

It is possible to add additional approval steps, or even remove all approval process steps from the process.

1. Open content package Intelligent Non-PO Invoice Processing in Flexibility Cockpit and click Process Variants tile
2. Select the variant that needs modification
3. Drag and drop Approval step as an additional.
4. Modify the step name in the properties pane
5. Modify the Level Name property as needed
6. Save and Activate the new Process Variant
7. Update the Determine Approver Policy to include the level name to the rule
8. Update the Determine Process Variant Policy to include the process variant name to the rule

Decisions & Policies

Decisions allow to encapsulate the business logic from core applications and supports the reuse of business rules across different business processes. Decisions enable customers to adopt changes in processes without changing the underlying workflows or application logic. SAP Build Process Automation or SAP Workflow Management has decision management capabilities that enables customers to centrally manage all decisions. Please go through the [Decision Management capabilities](#) in SAP Build Process Automation or SAP Workflow Management.

Non PO Vendor Invoice process will enable the customers to flexibly configure decisions to gain the flexibility.

1. Perform (additional) business validation on Non PO Vendor Invoice
2. Determine Item Group
3. Determine process variant
4. Determine Approvers
5. Determine Approver Determination Strategy

Validate Non PO Vendor Invoice Business Data

With this decision, it is possible to add any business-specific validation on a Vendor Invoice. For example, enable/disable the cloud application for a specific company code, invoice date, currency, cost center, plant etc.

Rule Service: Validate Invoice

Input Data Object 1: Invoice Header Details (Structure)

| ATTRIBUTE | TYPE | DESCRIPTION |
|----------------|--------|--|
| Company Code | String | Company code is an organizational unit within financial accounting. |
| Invoice Date | Date | Specifies the issue date of the original document. |
| Reference | String | Reference refers to the external document number printed on the physical copy of vendor invoice. |
| Currency Key | String | Currency key refers to the key to the document currency. |
| Payment Terms | String | Key for defining payment terms composed of cash discount percentages and payment periods. |
| Payment Method | String | A method that specifies how payment is to be made: check, bill of exchange, or bank transfer. |

Input Data Object 2: Invoice Item Details (Structure)

| ATTRIBUTE | TYPE | DESCRIPTION |
|------------|--------|--|
| GL Account | String | General Ledger represents the code to record the expenses. |

| | | |
|--------------------------|--------|--|
| Plant | String | Plant is an organizational unit for dividing an enterprise according to production, procurement, maintenance, and materials planning. |
| Business Area | String | Business Area is an organizational unit of financial accounting that represents a separate area of operations or responsibilities within an organization and to which value changes recorded in Financial Accounting can be allocated. |
| Cost Center | String | An organizational unit within a controlling area that represents a defined location of cost incurrence. |
| Internal Order | String | Internal order is a simple task or measure within a controlling area. |
| Profit Center | String | An organizational unit in Accounting that reflects a management-oriented structure of the organization for the purpose of internal control. |
| Threshold Invoice Amount | Number | Total amount of item group in document currency |

Output Data Object: Validation Result (Structure)

| ATTRIBUTE | TYPE | DESCRIPTION |
|--------------------|--------|--|
| Validation Message | String | Validation Message |
| Is Valid | String | 'True' if validation is successful and 'False' if validation failed. |

Determine Item Group

Determine item group field combination for approval process. Depending on item group approval process will be processed. The maximum combination of item group fields are cost center, profit center, business area and plant.

Rule Service: Determine Item Group

Input Data Object 1: Invoice Header Details (Structure)

| ATTRIBUTE | TYPE | DESCRIPTION |
|---------------|--------|--|
| Company Code | String | Company code is an organizational unit within financial accounting. |
| Invoice Date | Date | Specifies the issue date of the original document. |
| Reference | String | Reference refers to the external document number printed on the physical copy of vendor invoice. |
| Currency Key | String | Currency key refers to the key to the document currency. |
| Payment Terms | String | Key for defining payment terms composed of cash discount percentages and payment periods. |

| | | |
|----------------|--------|---|
| Payment Method | String | A method that specifies how payment is to be made: check, bill of exchange, or bank transfer. |
|----------------|--------|---|

Output Data Object: Item Group List (Table Type)

| ATTRIBUTE | TYPE | DESCRIPTION |
|-------------|--------|--|
| Cost Object | String | Cost objects are used to build item grouping as per the business objects. Cost objects can be maximum 4 fields, which are cost center, profit center, business area and plant. |

Determine Approval Process Variant:

Policy to determine the process variant based on various business criteria like company, invoice date, currency key, payment terms, due date, exchange rate and payment method.

Rule Service: Determine Process Variant

Input: Invoice (Structure)

| ATTRIBUTE | TYPE | DESCRIPTION |
|------------------|--------|---|
| Company Code | String | Company code is an organizational unit within financial accounting. |
| Invoice Date | String | Specifies the issue date of the original document. |
| Currency Key | String | Currency key refers to the key to the document currency. |
| Payment Terms | String | Payment Terms are conditions agreed with vendor for the payment of invoices. The conditions define the due date and the cash discount offered for payment of the invoice within a certain period. |
| Invoice Due Date | Number | This is the date on which the vendor open item will be due for payment. The due date for net payment is calculated from the invoice date based on payment term. |
| Exchange Rate | Number | Exchange rate is translation ratios, this rate is used to translate the document currency to local currency. |
| Payment Method | String | Mode of payment with which the vendor open items needs to be paid. |

Along with the above attributes the other Header and Line Items attributes can also be added as input parameters in this business rule.

Output: Process Variant Details (String)

| ATTRIBUTE | TYPE | DESCRIPTION |
|-----------|------|-------------|
|-----------|------|-------------|

| | | |
|--------------------|--------|---|
| Process Variant ID | String | A preconfigured Workflow Definition Id. The value of workflow definition id will be available in Monitor Workflows-Workflow definitions application after activation of a Process Variant of type Non PO Vendor Invoice Maintenance Approval. |
|--------------------|--------|---|

Approver Determination Strategy

The application will have two way to identify approver. To identify the approver determination strategy below rule service will be used. It can be 'Business Rules' based or 'External Service' based.

Rule Service Name: Approver Determination Strategy

Input: Invoice (Structure)

| ATTRIBUTE | TYPE | DESCRIPTION |
|--------------------------|--------|---|
| Company Code | String | Company code is an organizational unit within financial accounting. |
| Currency Key | String | Currency key refers to the key to the document currency. |
| GL Account | String | This field contains the number of the G/L account to which the transaction figures are updated |
| Plant | String | Plant is an organizational unit for dividing an enterprise according to production, procurement, maintenance, and materials planning. |
| Cost Center | String | An organizational unit within a controlling area that represents a defined location of cost incurrence. |
| Business Area | String | An organizational unit of financial accounting that represents a separate area of operations or responsibilities within an organization and to which value changes recorded in Financial Accounting can be allocated. |
| Profit Center | String | An organizational unit in Accounting that reflects a management-oriented structure of the organization for the purpose of internal control. |
| Threshold Invoice Amount | Number | Total amount of item group in document currency |

Along with the above attributes the other Header and Line Items attributes can also be added as input parameters in this business rule.

Output: Approver Determination Strategy (Structure)

| ATTRIBUTE | TYPE | DESCRIPTION |
|------------------------|--------|--|
| Determination Strategy | String | Approver Determination strategy can either "Business Rule" or "External Service" depending on Invoice details. |

Determine Approvers

Rule service used in the item level approval process step to identify the potential approvers based on different company policy. Approver will be determined depending on Invoice details. In this business rules Due date will be this business rules determined by a text rule based on Invoice details. Every approver will have their respective due date in their approval task.

Rule Service Name: Determine Approver

Input: Invoice (Structure data type)

| ATTRIBUTE | TYPE | DESCRIPTION |
|--------------------------|--------|---|
| Company Code | String | Company code is an organizational unit within financial accounting. |
| Currency Key | String | Currency key refers to the key to the document currency. |
| GL Account | String | This field contains the number of the G/L account to which the transaction figures are updated |
| Plant | String | Plant is an organizational unit for dividing an enterprise according to production, procurement, maintenance, and materials planning. |
| Cost Center | String | An organizational unit within a controlling area that represents a defined location of cost incurrence. |
| Business Area | String | An organizational unit of financial accounting that represents a separate area of operations or responsibilities within an organization and to which value changes recorded in Financial Accounting can be allocated. |
| Profit Center | String | An organizational unit in Accounting that reflects a management-oriented structure of the organization for the purpose of internal control. |
| Threshold Invoice Amount | Number | Total amount of item group in document currency |
| Approval Level | String | Approval Level Name for which specific approver will approve the request |

Along with the above attributes the other Header and Line Items attributes can also be added as input parameters in this business rule.

Output Approver Details (Structure)

| ATTRIBUTE | TYPE | DESCRIPTION |
|----------------------|--------|--|
| Is Approval Required | String | Check if approval is required or can be skipped. True if required and false if not required. |
| User Group | String | A user group in SAP BTP who can approve a step in the process. You can provide either user group or user id or both. |

| | | |
|-------------------|--------|---|
| Email | String | Email address of the approver to whom the task notification will be sent. You can add multiple email addresses using a comma separated value. |
| User Id | String | User ID of the individual approver. You can add multiple user ID using a comma separated value. You can provide either user group or user id or both. |
| Task Due Duration | Number | The duration target by which the user task needs to be completed. Used along with the unit of time. |
| Unit of Time | String | Unit of time of due duration like minutes, hours, days, etc. |

Process Visibility

Process visibility enables Process Owners and Process Operators to gain real time visibility on processes and key process performance indicators. Please refer [help documentation](#) for more details.

Intelligent Non-PO Invoice Processing

Intelligent Non-PO Invoice Processing Process content package provides out of the box visibility on all the deployed process variants in SAP Build Process Automation or SAP Workflow Management. A process owner or line of business expert will be able to enhance the visibility scenario.

Configure Visibility Scenarios in SAP Build Process Automation

1. Go to the Application Development Lobby.
2. Select Intelligent Non-PO Invoice Processing Project.
3. Click to open **Intelligent Non-PO Invoice Processing** scenario.
4. Click Activate button.

Please go through the [help documentation](#) on how to configure the visibility scenario.

Configure Visibility Scenarios in SAP Workflow Management

1. Go to Process Flexibility Cockpit
2. Select Intelligent Non-PO Invoice Processing tile
3. Click Visibility Scenarios tile
4. Select Invoices without Purchase Orders scenario

Please go through [help documentation](#) how to model a visibility scenario.

Access Process Workspace in SAP Build Process Automation

1. The process visibility scenario can be accessed using SAP Launchpad Service. Refer to the help document for [creating UI applications on central SAP Fiori Launchpad](#) for SAP Build Process Automation.
2. Once you have added the applications process Visibility Scenario Instances (with app ID

com.sap.spa.pv.instances) and Visibility Scenario Dashboard (with app ID com.sap.spa.pv.ovp), follow the below steps to add a tile to access the Intelligent Non-PO Invoice Processing dashboard.

- a. Navigate into “Visibility Scenario Dashboard”.
- b. On the screen that opens, choose Create a Local Copy.
- c. To use custom texts, choose Edit and adapt the texts in the General section.
- d. You can use a custom title, description, and subtitle for the tile.
- e. Choose the Navigation tab.
- f. Under the Intent section, ensure that the value in the Action tab is unique for every application.
- g. Under the Parameters section, provide the following:

| Parameter Name | Parameter Value |
|----------------|----------------------------------|
| Name | scenariold |
| Default Value | Invoices_without_Purchase_Orders |
| Required | Toggle to Yes |

- h. Choose Save.
- i. Assign the local copy to a group and make sure that they’re visible to users. For more information, see [Assign Apps to a Group and to a Catalog](#) and [Assign Content to a Role](#).

3. Once created, select app that corresponds to “Intelligent Non-PO Invoice Processing”.
4. User will see the process visibility dashboard.

Access Process Workspace in SAP Workflow Management

1. Go to Process Flexibility Cockpit
2. Select Intelligent Non-PO Invoice Processing
3. Click Live Process Insights Invoices without Purchase Orders
4. User will see the below detailed process visibility screen

Please go through [help documentation](#) on how to access process workspace.

