

**BPM263**

## **Using Adobe Forms in SAP NetWeaver BPM**



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# Agenda



## 1. Introduction to BPM and Interactive Forms by Adobe

- BPM
- SAP Interactive Forms by Adobe Software

## 2. BPM and Interactive Forms Solution

- BPM Engine sending/receiving offline forms setup
- Designing and Storing Offline Forms
- BPM Forms Repository Infrastructure
- Offline Forms as task activities in BPM process

## 3. Information Packages based on SOA (Additional Information)

- Time Sheets for External Employees
- SAP EcoHub ([ecohub.sap.com](http://ecohub.sap.com))

# SAP NetWeaver Business Process Management

Embedded in SAP NetWeaver Composition Environment



SAP



## SAP NetWeaver Business Process Management

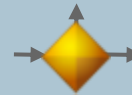


Process  
Composer

Process  
Desk



Process Server



### ■ Comprehensive process management

- Unifying human and system automation processing steps
- Business Process is more than just service orchestration

### ■ Composition of event-driven processes

- Seamless combination of service, event and human task
- Enterprise services consumption
- Tightly integrated with native Business Rules Management

### ■ Benefits of an integrated composition environment

- Model-driven development
- Integrated toolset
- Out-of-the-box ESR integration
- Lifecycle management

## SAP NetWeaver Composition Environment

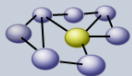
Composite  
Processes



Composite  
Views



Composite  
Services



Eclipse 3

JEE 5

## Design layout

SAP NetWeaver Developer Studio  
ABAP Workbench



## Deliver forms Process data

SAP NetWeaver  
Application Server



## Capture data

User Front-end



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# Using Offline Forms in a BPM Process

## Use Cases



*Forms in BPM process help retrieve input from users not directly involved in the process due to various reasons. For example an external collaboration where a firewall is sitting between the user and the system, or collecting survey results*

### ■ Use a Form as Task/Human Activity inside a BPM process

- Forms are distributed via e-mail.
- User fills out the form and submits it back replying to this email.
- As the end result: Form data is exposed to the process context the BPM process continues with the next activity.

### ■ Offline Form to instantiate a new process – **will be delivered with future releases)**

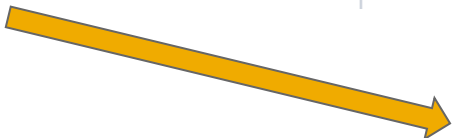
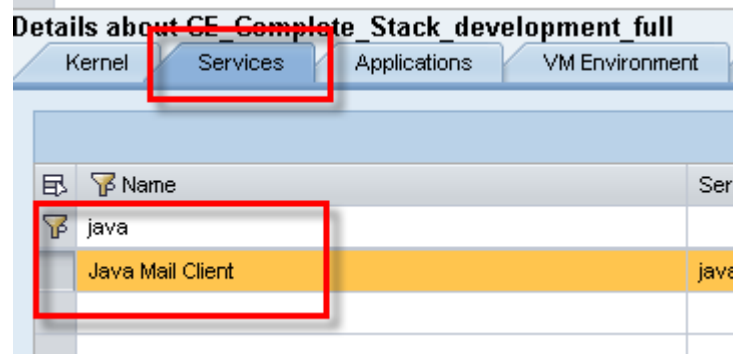
- Form is published for download or sent to one or several individuals.
- The form submit calls BPM and triggers a process
- Form data is exposed to the process context
- The form could be reused several times.

# Mail Server Connectivity Properties Processing Offline Forms in BPM



## ■ Sending e-mails with attached forms

- E-mail sending functionality for the *Notifications* in BPM is re-used.
- The **Java Mail Client** service **SMTP** properties are used along with the authentication and connection properties.
- The sender of the e-mail is set to be the value of the configuration property *mail.mailbox.address* (see *Receiving e-mails with attached forms*).



Properties			
Save Restore to Default Modify Show Details			
Name	Default Value	Online Modifiable	Custom Value
mail.pop3s.host		<input checked="" type="checkbox"/>	
mail.pop3s.password	*****	<input checked="" type="checkbox"/>	
mail.pop3s.port	995	<input checked="" type="checkbox"/>	
mail.pop3s.user		<input checked="" type="checkbox"/>	
mail.smtp.auth	false	<input checked="" type="checkbox"/>	
mail.smtp.host		<input checked="" type="checkbox"/>	localhost
mail.smtp.password	*****	<input checked="" type="checkbox"/>	*****
mail.smtp.port	25	<input checked="" type="checkbox"/>	
mail.smtp.submitter		<input checked="" type="checkbox"/>	
mail.smtp.user		<input checked="" type="checkbox"/>	teched
mail.smtps.auth	false	<input checked="" type="checkbox"/>	
mail.smtps.host		<input checked="" type="checkbox"/>	
mail.smtps.password	*****	<input checked="" type="checkbox"/>	


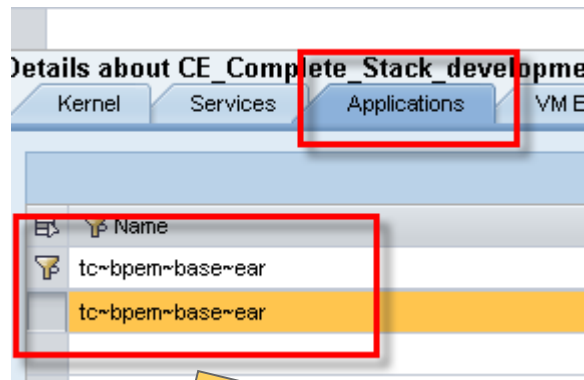


# Mail Server Connectivity Properties Processing Offline Forms in BPM



## ■ Receiving e-mails with attached forms

- When the form is submitted by the end user, a new e-mail is created with the submitted form as an attachment.
- The receiver of this email is configured mailbox used by BPM



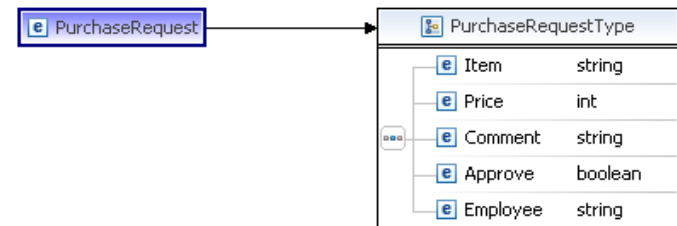
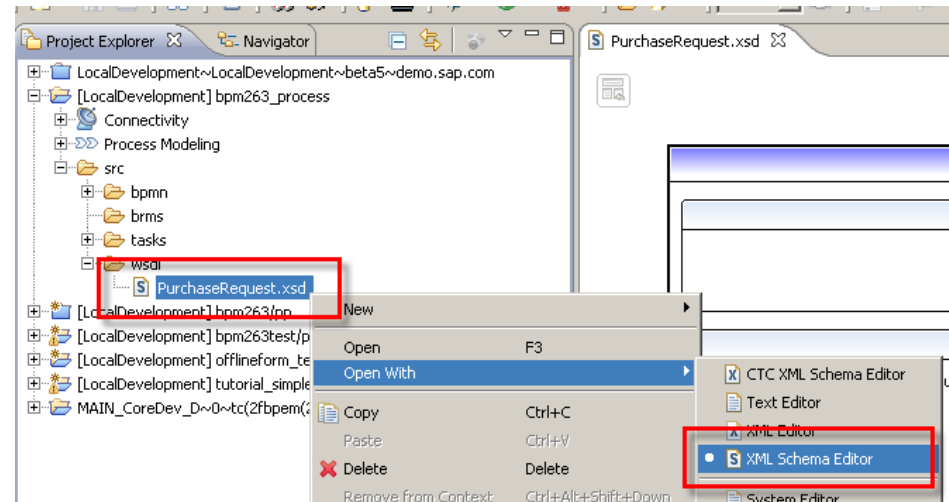
Properties			
Save Restore to Default Modify Show Details			
Name	Default Value	Online Modifiable	Custom Value
mail.from		<input type="checkbox"/>	teched@system.mail
mail.mailbox.address		<input checked="" type="checkbox"/>	teched@system.mail
mail.mailbox.folder		<input checked="" type="checkbox"/>	Inbox
mail.mailbox.password	*****	<input checked="" type="checkbox"/>	*****
mail.mailbox.protocol	imap	<input checked="" type="checkbox"/>	pop3
mail.mailbox.reader.timeout	60	<input type="checkbox"/>	10
mail.mailbox.username		<input checked="" type="checkbox"/>	teched
mail.received.attachments.logging	true	<input checked="" type="checkbox"/>	
mail.sent.attachments.logging	true	<input checked="" type="checkbox"/>	

## Properties of application ***tc~bpem~base~ear***

- ***mail.mailbox.reader.timeout*** - Default value 60 sec, min – 10,
  - *Very high value could lead to **full mailbox (potential lost emails)** between two reads*
  - *Property is from type **Long***
  - *If not required, for performance reasons should not be set to low values.*
- ***mail.mailbox.address***
- ***mail.mailbox.username***
- ***mail.mailbox.password***
- ***mail.mailbox.folder*** - For example *Inbox*
- ***mail.mailbox.protocol*** - possible values ***imap4***, ***pop3***, ***imap4s*** and ***pop3s***
- ***mail.mailbox.server***

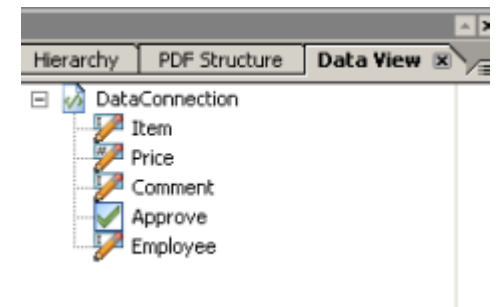
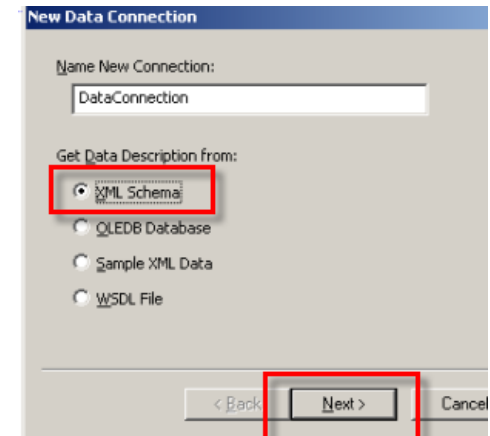
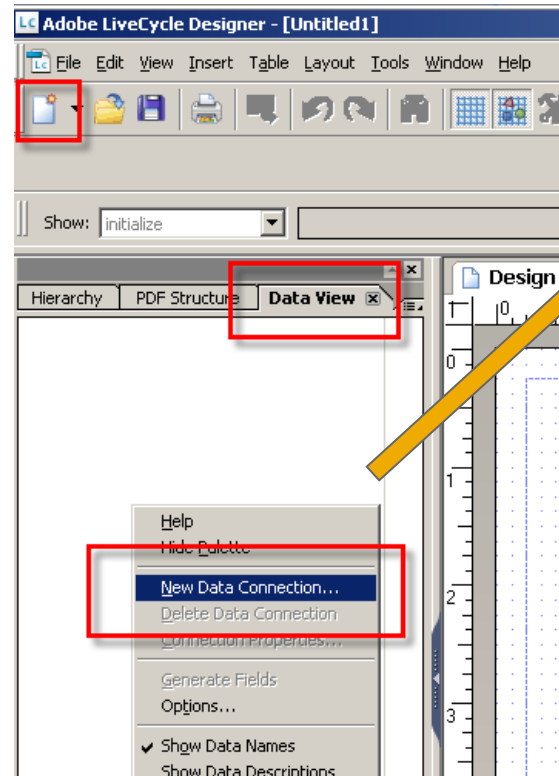
These properties are also incorporated into the *CTC Template for Galaxy Process Server*.

- Use NWSD -> ***XML Schema Designer View*** to define ***Form XML Data Structure***.
- Use Adobe LiveCycle Designer -> Data Connection to import XML schema
- Use Form *Button Submit* as *PDF* functionality to implement submit back to process functionality.
- *Note:* The BPM engine will populate the required e-mail address at runtime.



# Designing Offline Form 2/3

- Use NWSD -> XML Schema Designer View to define Form XML Data Structure.
- Use **Adobe LiveCycle Designer -> Data Connection** to import XML schema
- Use Form *Button Submit* as *PDF* functionality to implement submit back to process functionality.
- Note: The BPM engine will populate the required e-mail address at runtime.



# Designing Offline Form 3/3



- Use NWSD -> XML Schema Designer View to define Form XML Data Structure.
- Use Adobe LiveCycle Designer -> Data Connection to import XML schema
- Use Form **Button Submit as PDF** functionality to implement submit back to process functionality.
- **Note:** The BPM engine will populate the required e-mail address at runtime.

The screenshot shows the 'Design View' of a SAP form titled 'Purchase Request Form'. The form contains several input fields: 'Employee', 'Item', 'Price', and a larger 'Comment' field. Below these fields are two radio buttons labeled 'Approve' and 'Reject', and a 'Submit' button with a warning icon. A yellow arrow points from the 'Submit' button in the form to the 'Submit' button in the 'Object' properties panel on the right.

This screenshot shows the 'Object' properties panel for the 'Submit' button. The 'Type' is set to 'Button'. The 'Caption' is 'Submit'. The 'Appearance' is 'Raised Border'. The 'Highlighting' is 'Inverted'. The 'Control Type' is set to 'Submit' (selected). The 'Presence' is 'Visible'. The 'Locale' is 'Default locale'.

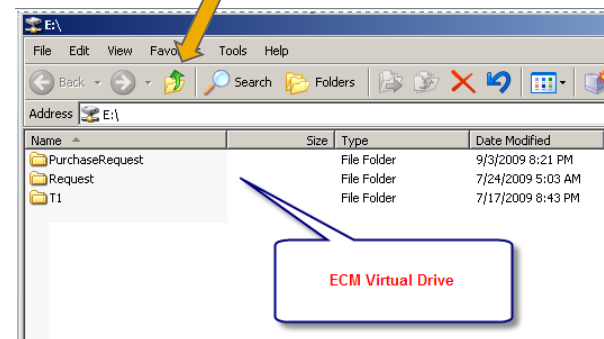
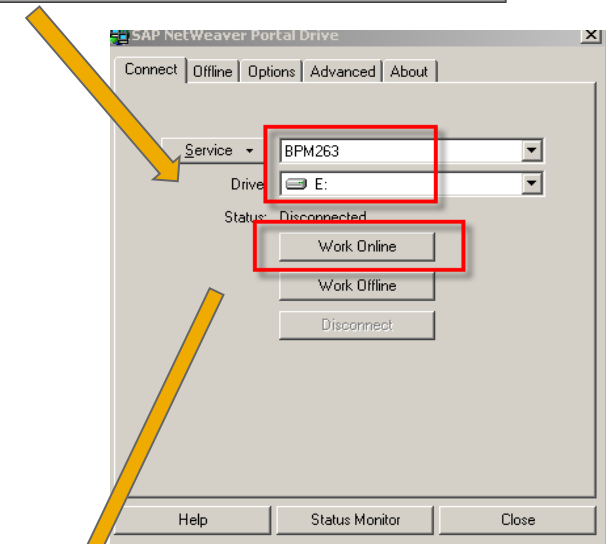
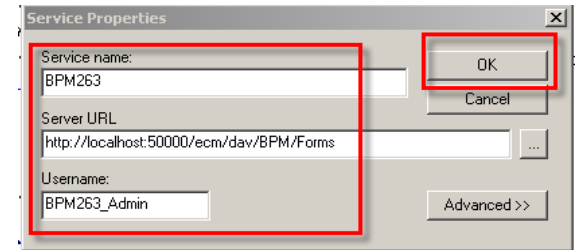
This screenshot shows the 'Object' properties panel for the 'Submit' button, specifically the 'Submit As' section. The 'Submit to URI' is empty. The 'Submit As' dropdown is set to 'PDF'. The 'Sign Submit' checkbox is unchecked. The 'Include' dropdown is set to 'XML Data (XML)'. The 'Data Encoding' is 'UTF-16'.

# Storing Offline Forms

## Enterprise Content Management Repository



- **ECM Repository** is used to store all offline form templates/schemas used in BPM processes.
- Access to ECM is done with **WebDAV protocol**.
  - SAP recommends the use of SAP Portal Drive tool available on SMP
  - other *web folder* tools could be used too.
- ECM Repository location is:  
<http://<server>:<port>/ecm/dav/BPM/Forms>
- **SAP\_FPINFRACALLER** role is required to access the ECM repository.
- ECM is delivered with these 2 SCA
  - ECMCORE00\_0.SCA
  - ECMAAPP00\_0.SCA





# Exercises 1, 2, 3

# Agenda



## 1. Introduction to BPM and Interactive Forms by Adobe

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## 2. BPM and Interactive Forms Solution

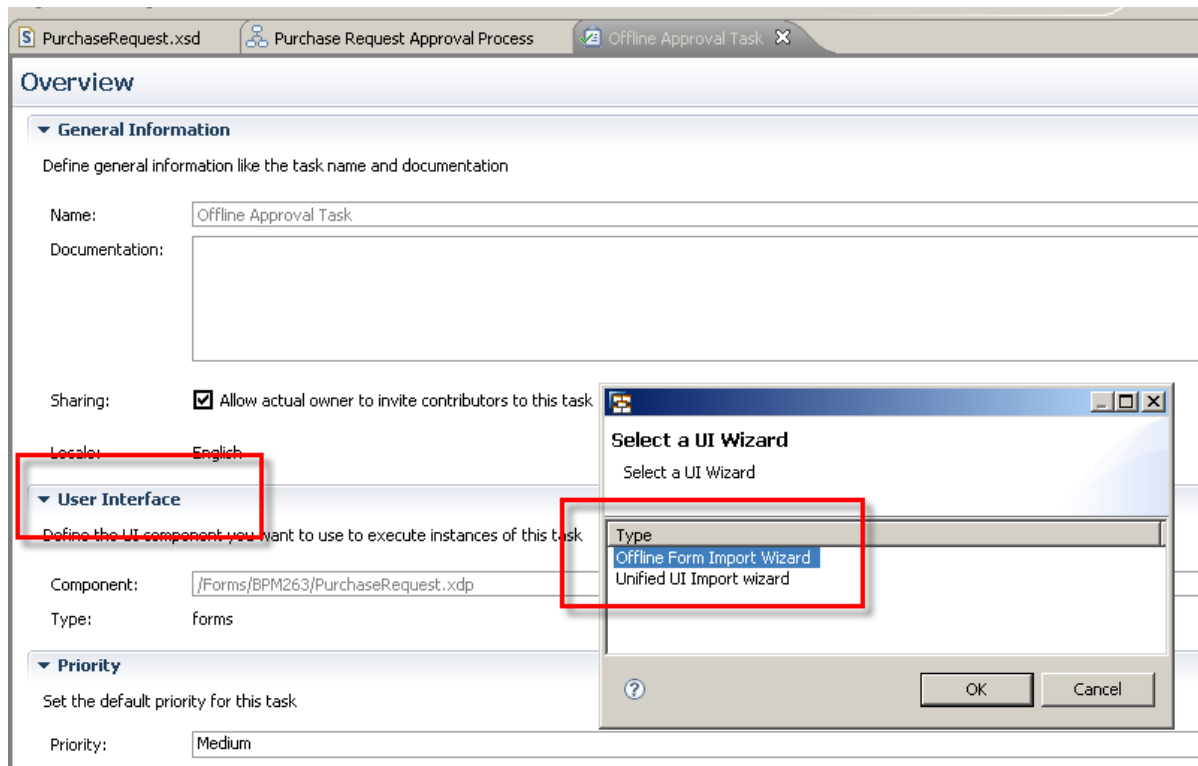
- BPM Engine sending/receiving offline forms setup
- Designing and Storing Offline Forms
- BPM Forms Repository Infrastructure - ECM
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- In SAP NetWeaver CE 7.2, BPM process supports 3 UI components: WebDynpro, VC with the unified UI Wizard, and *Interactive Forms* with the *Offline Form Wizard*



The screenshot shows the 'Purchase Request Approval Process' configuration window for an 'Offline Approval Task'. The 'Overview' tab is active, and the 'User Interface' section is expanded. A red box highlights the 'User Interface' section, which includes a 'Component' field set to '/Forms/BPM263/PurchaseRequest.xdp' and a 'Type' field set to 'forms'. Another red box highlights the 'Select a UI Wizard' dialog, which is open over the 'User Interface' section. The dialog shows a list of wizards, with 'Offline Form Import Wizard' selected. The 'Unified UI Import wizard' is also visible. The 'OK' and 'Cancel' buttons are at the bottom of the dialog.

**Overview**

**General Information**

Define general information like the task name and documentation

Name: Offline Approval Task

Documentation:

Sharing: ☒ Allow actual owner to invite contributors to this task

Locale: English

**User Interface**

Define the UI component you want to use to execute instances of this task

Component: /Forms/BPM263/PurchaseRequest.xdp

Type: forms

**Priority**

Set the default priority for this task

Priority: Medium

**Select a UI Wizard**

Select a UI Wizard

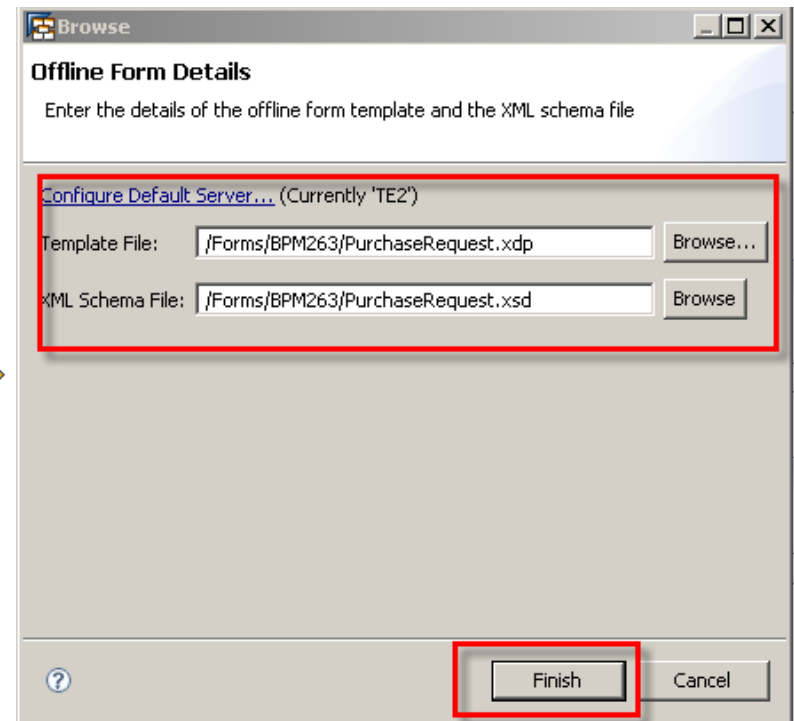
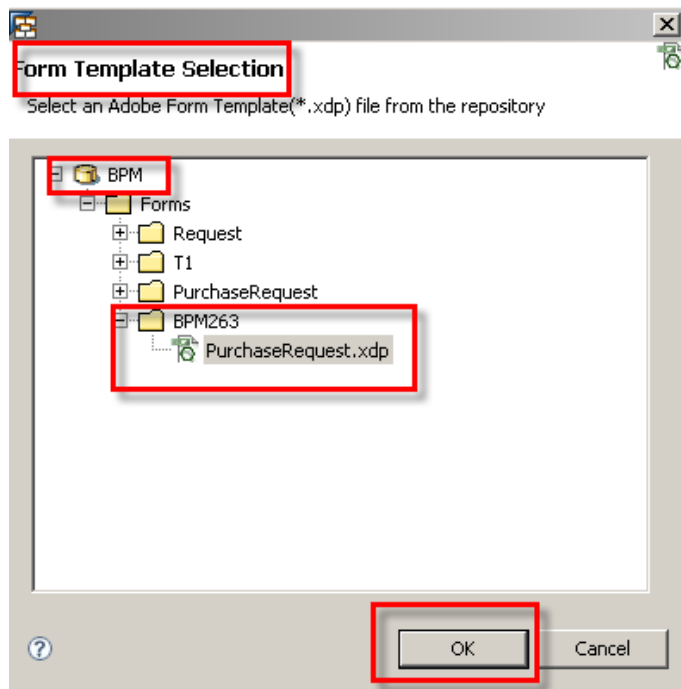
Type

- Offline Form Import Wizard
- Unified UI Import wizard

OK Cancel

# Creating an Offline Form Task

- The *Offline Form Wizard* connects to the ECM Repository in order to load the Offline Form Template and XML schema
- SAP\_FPINFRACALLER role is required to in order to access ECM Repository

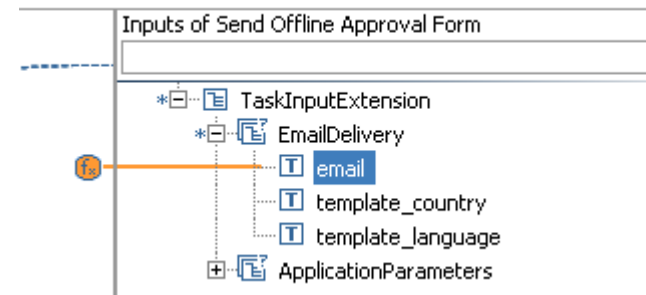


# Define Offline Form E-Mail Recipients



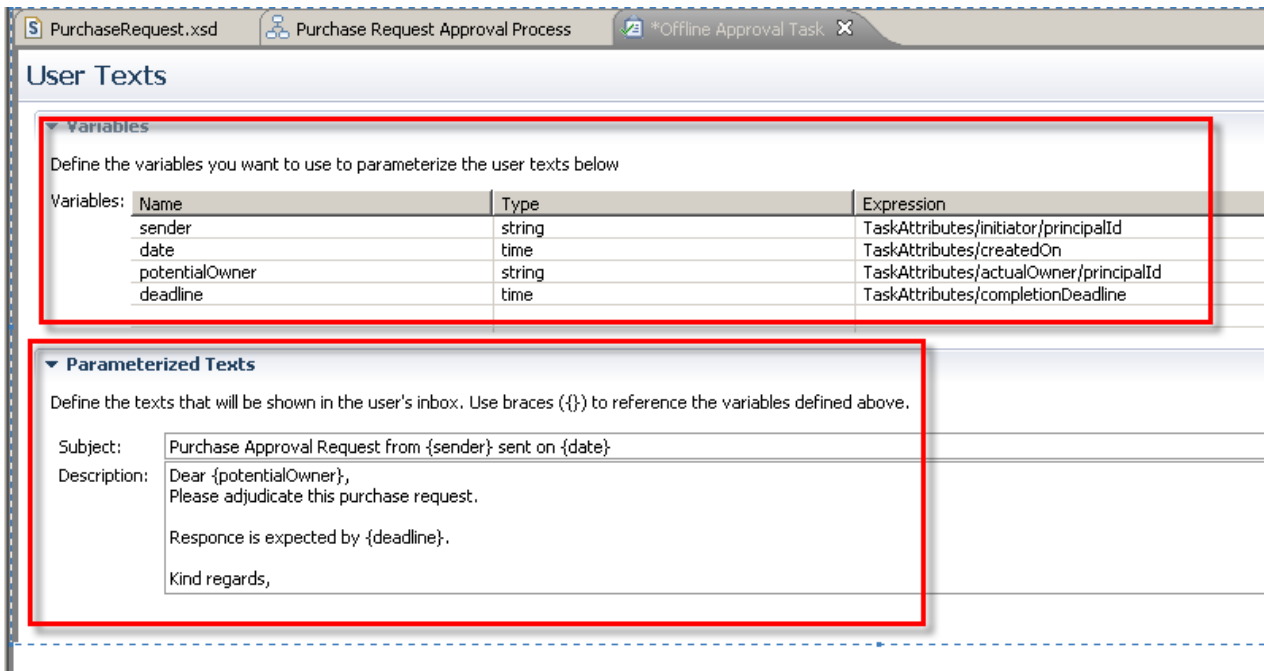
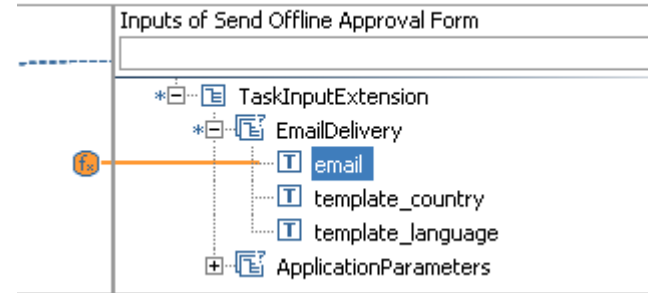
- Two types of recipients are supported: *UME users and External recipients*
- **UME Users** are defined as potential owners of the task.
  - They should have e-mail addresses assigned to their user profiles in the UME.
- **External recipients** are defined by entering their e-mail addresses, distribution lists, as an input data or mapping to element **TaskInputExtensions** -> **EmailDelivery** -> **e-mail**.
- Submissions by external recipients are completed on behalf of the preconfigured internal BPM user: **SAP\_BPM\_Service**

The screenshot shows the 'General Information' tab of a user profile for 'BPM263\_Mngr'. The 'E-mail Address' field is highlighted with a red rectangle and contains the value 'manager@system.mail'. Other fields include 'Last Name: Manager', 'First Name: Manager', 'Form of Address:', 'Language:', 'Activate Accessibility Feature: ☐', 'Security Policy: Default', and 'Unique ID: USER.PRIVATE\_DATASOURCE.un:BPM263\_Mngr'.



The screenshot shows the 'email' configuration window. It displays a list of email recipients, with the first entry being '1 "external\_receipient@partner.com"'. The text 'external\_receipient@partner.com' is highlighted in blue.

- **Task -> User Parameterized Texts**  
is used to customize e-mail *Subject*,  
*Body Data*



**User Texts**

Define the variables you want to use to parameterize the user texts below

Variables:	Name	Type	Expression
	sender	string	TaskAttributes/initiator/principalId
	date	time	TaskAttributes/createdOn
	potentialOwner	string	TaskAttributes/actualOwner/principalId
	deadline	time	TaskAttributes/completionDeadline

Define the texts that will be shown in the user's inbox. Use braces ({} ) to reference the variables defined above.

Subject: Purchase Approval Request from {sender} sent on {date}

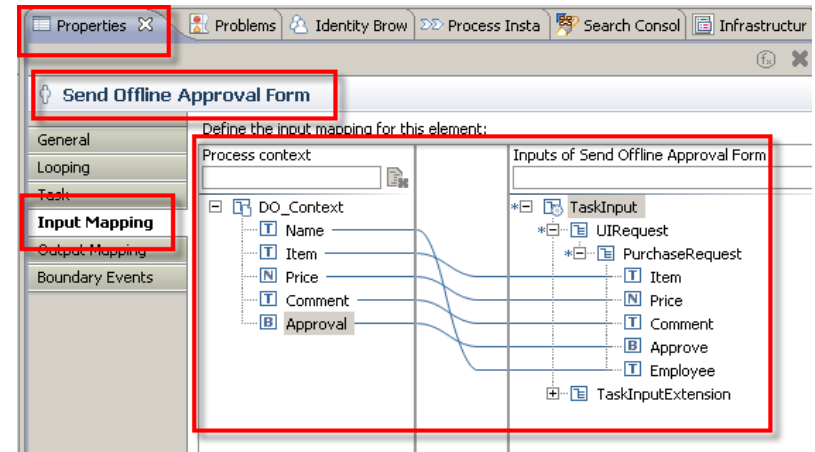
Description: Dear {potentialOwner},  
Please adjudicate this purchase request.

Response is expected by {deadline}.

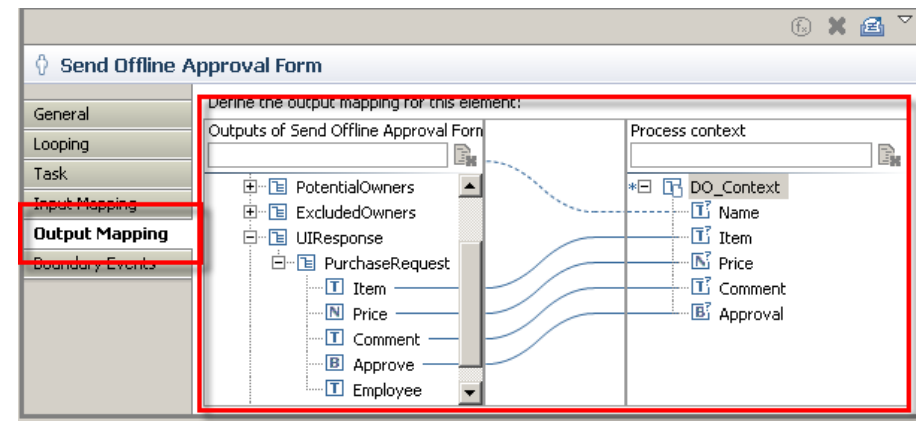
Kind regards,

# Task Activity Context Mapping

- **Input mapping** defines data that will be mapped to offline form *before* the e-mail is sent.
- Activity -> Input Mapping Tab -> map from *DO\_Context* node (left-hand side) to *TaskInput* -> *UIRequest* -> *<Offline Form Data Source>* (right-hand side)



- **Output mapping** defines Offline Form context that is extracted after form is submitted back to process context
- Activity -> Output Mapping Tab -> map from *TaskOutput* -> *UIResponse* -> *<Offline Form Data Source>* (left-hand side) to *DO\_Context* node (right-hand side)





# Exercise 4

# Agenda



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- Offline Forms at Design Time
- BPM Forms Repository Infrastructure
- Offline Forms as task activities in BPM process

## 3. Information Packages based on SOA (Additional Information)

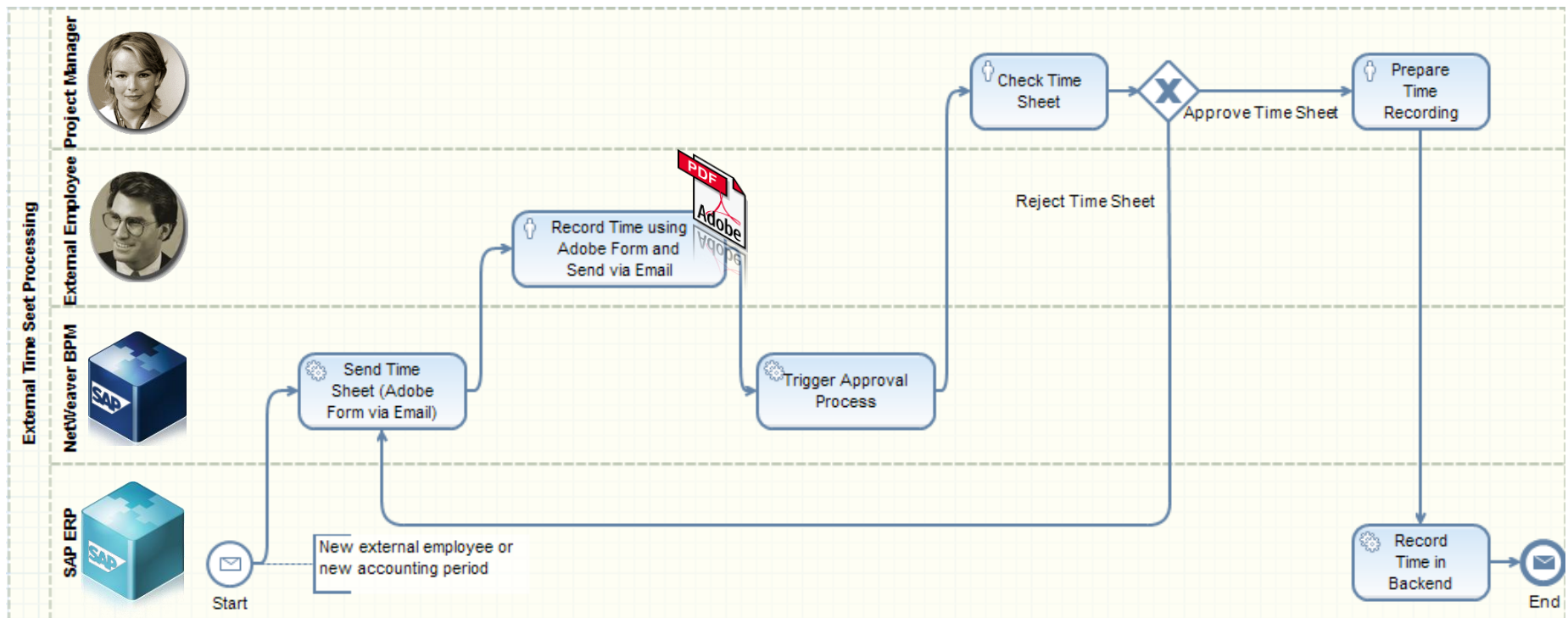
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# Time Sheets for External Employees

## An Implementation Package based on SOA



- Time Recording via SAP Interactive Forms by Adobe (Digital Time Sheets)
- SAP NetWeaver BPM Process for Approval Workflow and Backend Recording





# Time Sheets for External Employees

An Implementation Package based on SOA



## Use Case

- Have external employees record their time using SAP Interactive Forms by Adobe that are exchanged via email and approved using a workflow composite application

## Business Value

- Quicker recording of times by external employees and quicker check of time sheets
- Continuous process without gaps, paper forms, or manual data conversion steps reducing error and improving operational efficiency
- Improved process security as external employees do not require access to internal systems for time recording

## SAP NetWeaver BPM Value

- Rapid solution design with business through the use of the Business Process Modeling Notation (BPMN)
- Flexible architecture allows low-cost adjustments when recording or approval policies change reducing overall cost of operations
- Loosely coupled integration with SAP ERP through the use of Enterprise Services

# SAP EcoHub (ecohub.sap.com)

More Implementation Packages based on SOA



- Search by solution need
- Or type in “Implementation Package” to find them all

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- Visit the Service-Oriented Architecture Community Area
- Join a conversation in the Service-Oriented Architecture Forum

Read and Subscribe to Community Blogs

- Removing the 'Too Hard' button
- Process Integration Handbook Available Now!
- EDI and B2B Support for SAP® Supply Network Collaboration (SAP SNC)
- SAP Co-Innovation Lab Architecture Series: Partner-delivered Enterprise Services - Implementing Services in Java (Part 6)
- SAP Co-Innovation Lab Architecture Series: Partner-delivered Enterprise Services - Leveraging a wizard to automate Service Creation (Part 5)

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Overview Details Specifications Support



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SAP Developer Network (SDN): [www.sdn.sap.com](http://www.sdn.sap.com)

Business Process Expert (BPX) Community: [www.bpx.sap.com](http://www.bpx.sap.com)

SAP BusinessObjects Community (BOC): [www.boc.sap.com](http://www.boc.sap.com)



## Related SAP Education and Certification Opportunities

<http://www.sap.com/education/>



## Related Workshops/Lectures at SAP TechEd 2009

CD107, Best Practices for Designing Forms with SAP Interactive Forms by Adobe, Lecture 1h

BPM262, SAP NetWeaver BPM Integration with Visual Composer, Hands-on 2h

UP264, Creating Online and Offline Form Processing Scenarios with Adobe Forms and Web Dynpro for ABAP, Hands-on 2h

# Virtual SAP TechEd : Extend your SAP TechEd Year Round



**Virtual SAP TechEd** **SAP TECHED 08**

**BPM103**  
**Blending Business Process Management and SOA**

Ann Rozenberg, SAP Denmark  
Marc Dietrich, SAP Deutschland

00:00 / 0:56:42

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- Architecture of Maturity SOA
- SAP Enterprise Service Architecture
- Case study "Jira Feeds"
- The Process Maturity Journey

**Virtual SAP TechEd** **SAP TECHED 08**

**BPM and SOA Governance**

Business Perspective

Service Perspective

IT Perspective

Diagram illustrating the Business, Service, and IT Perspectives of BPM and SOA Governance.

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Be courteous — deposit your trash,  
and do not take the handouts for the following session.

**THANK YOU !**