Figure 1

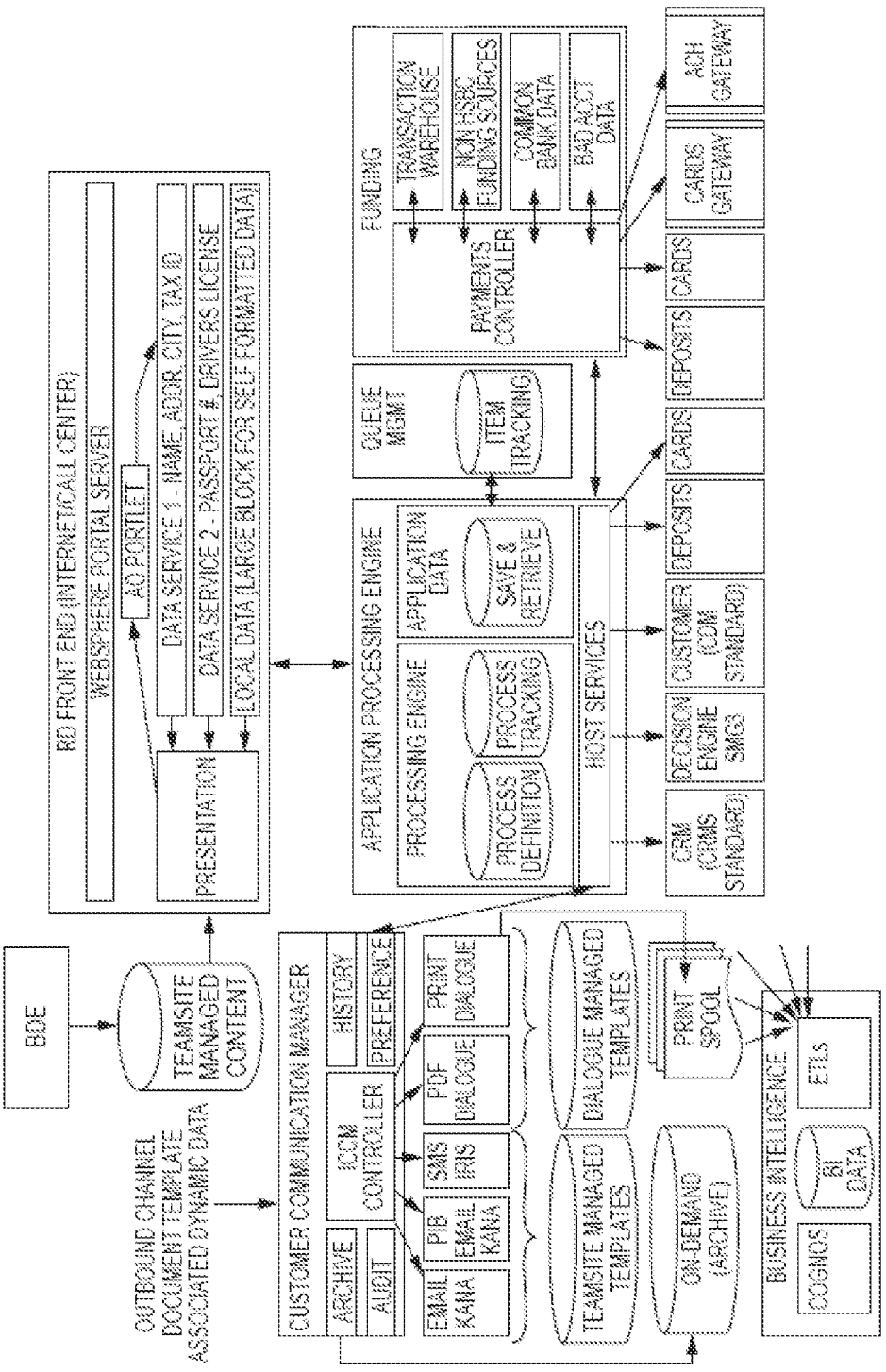

BDE
TEAMSITE MANAGED CONTENT
OUTBOUND CHANNEL DOCUMENT TEMPLATE ASSOCIATED DYNAMIC DATA
RD FRONT END (INTERNET/CALL CENTER)
WEBSPHERE PORTAL SERVER
AO PORTLET
PRESENTATION
DATA SERVICE 1 - NAME, ADDR, CITY, TAX ID
DATA SERVICE 2 - PASSPORT #, DRIVERS LICENSE
LOCAL DATA (LARGE BLOCK FOR SELF FORMATTED DATA)
APPLICATION PROCESSING ENGINE
PROCESSING ENGINE
PROCESS DEFINITION
PROCESS TRACKING
APPLICATION DATA
SAVE & RETRIEVE
HOST SERVICES
QUEUE MGMT
ITEM TRACKING
FUNDING
PAYMENTS CONTROLLER
TRANSACTION WAREHOUSE
NON FISBC FUNDING SOURCES
COMMON BANK DATA
BAD ACCT DATA
CRM (CRMS STANDARD)
DECISION ENGINE SMGS
CUSTOMER (COM STANDARD)
DEPOSITS
CARDS
CARDS GATEWAY
ACH GATEWAY
CUSTOMER COMMUNICATION MANAGER
ARCHIVE
AUDIT
HISTORY
PREFERENCE
ICCM CONTROLLER
PDF DIALOGUE
PRINT DIALOGUE
SMS IRIS
PIB EMAIL KANA
EMAIL KANA
TEAMSITE MANAGED TEMPLATES
DIALOGUE MANAGED TEMPLATES
ON-DEMAND (ARCHIVE)
PRINT SPOOL
BUSINESS INTELLIGENCE
COGNOS
BI DATA
ETLs

Figure 2

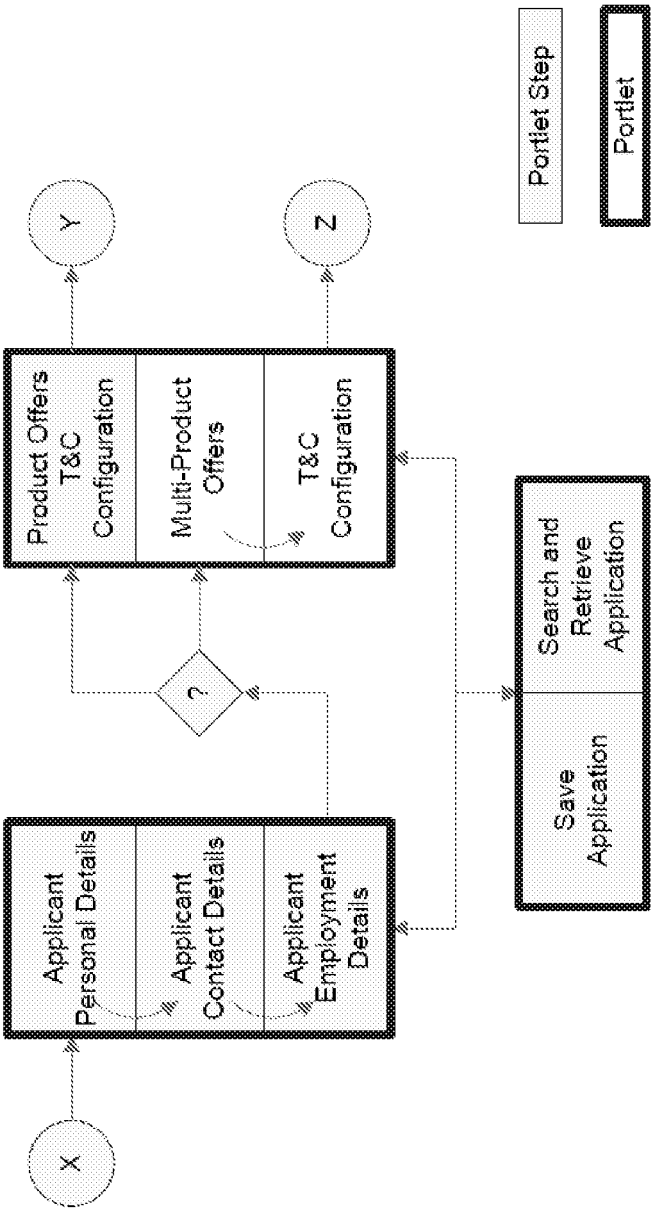
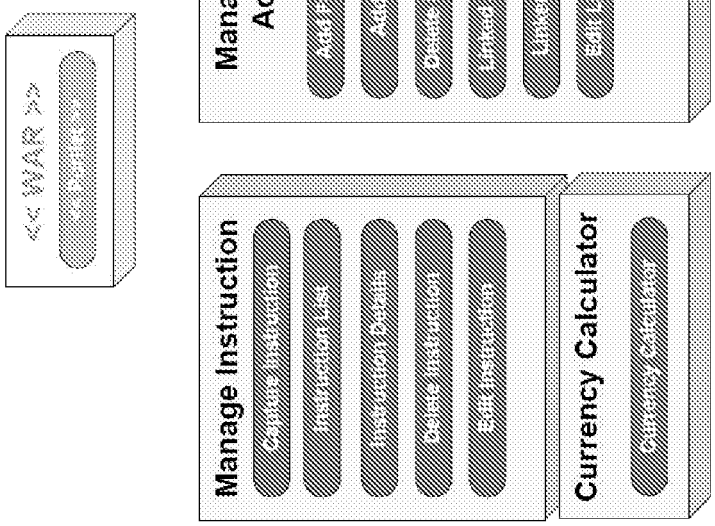

Portlet Step
Portlet
Y
Z
Product Offers T&C Configuration
Multi-Product Offers
T&C Configuration
Search and Retrieve Application
Save Application
?
Applicant Personal Details
Applicant Contact Details
Applicant Employment Details
X

Figure 3



Portlet	Description
Capture Instruction	Creates a new payment instruction
Instruction List	Provides a list of all historic and upcoming payment instructions
Instruction Details	Displays the details of a single payment instruction.
Edit Instruction	Updates a payment instruction.
Delete Instruction	Deletes a payment instruction.
Add Funding Source	Adds a funding source to the customer's "From" account list.
Add Beneficiary	Links an account (individual, business or bill) to the customer's "To" account list
Delete Linked Account	Removes a linked account from the "To" or "From" customer account list.
Linked Account Details	Functionality for viewing the detailed information related to an account that has been linked with a customer's profile.
Linked Account List	Provides a list of accounts linked to a customer's profile.
Edit Linked Account	Updates a customer linked account.
Currency Calculator	A currency exchange rate calculator.

Figure 4

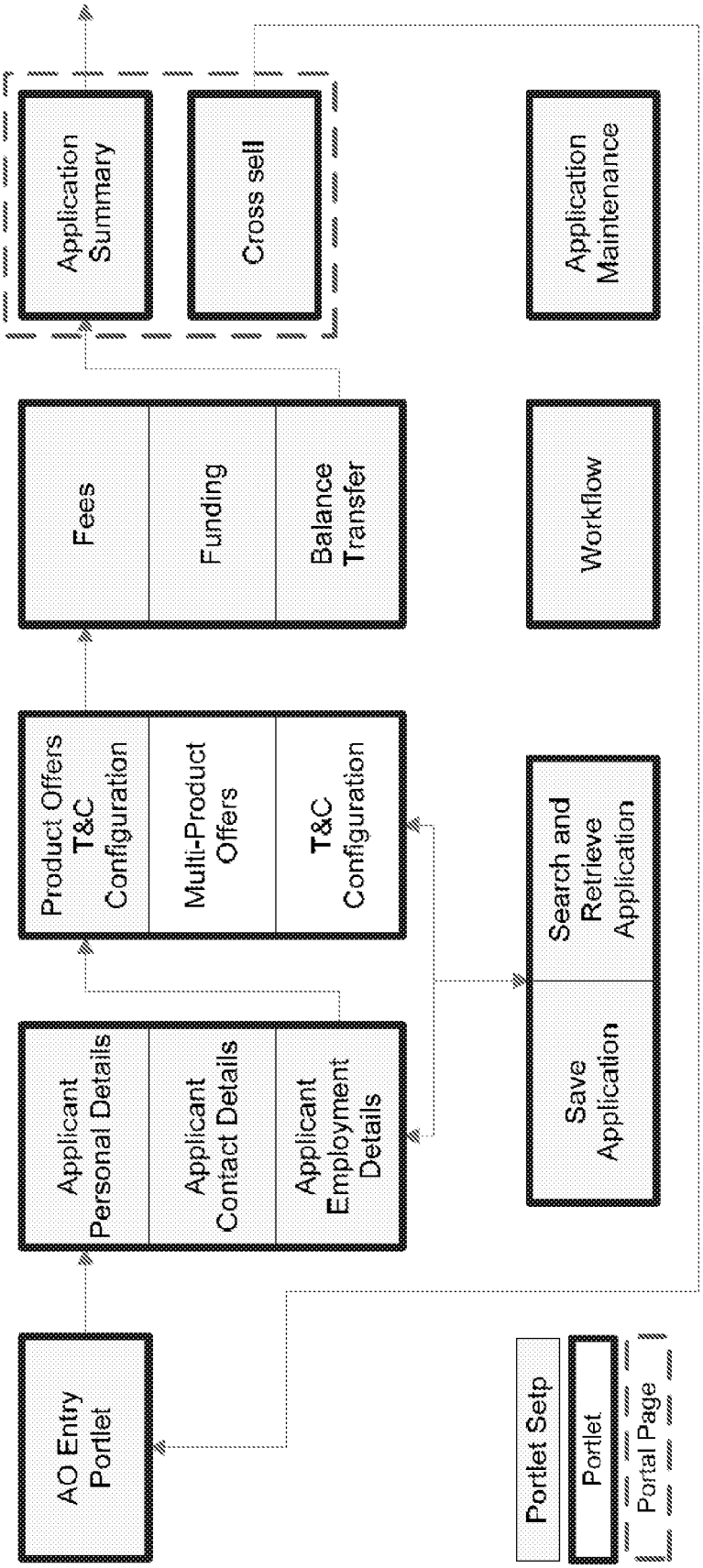

Application Summary
Cross sell
Application Maintenance
Fees
Funding
Balance Transfer
Workflow
Product Offers T&C Configuration
Multi-Product Offers
T&C Configuration
Search and Retrieve Application
Applicant Personal Details
Applicant Contact Details
Applicant Employment Details
Save Application
AO Entry Portlet
Portlet Setp
Portlet
Portal Page

Figure 5

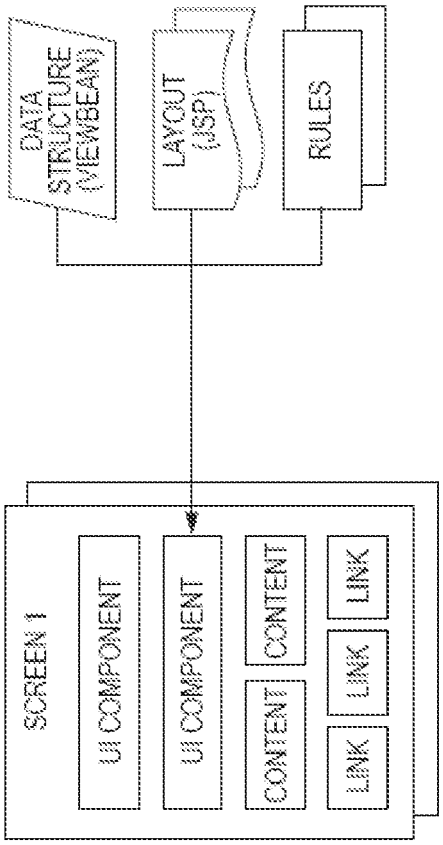

DATA STRUCTURE (VIEWBEAN)
LAYOUT (JSP)
RULES
SCREEN 1
UI COMPONENT
UI COMPONENT
CONTENT
CONTENT
LINK
LINK
LINK

Figure 6

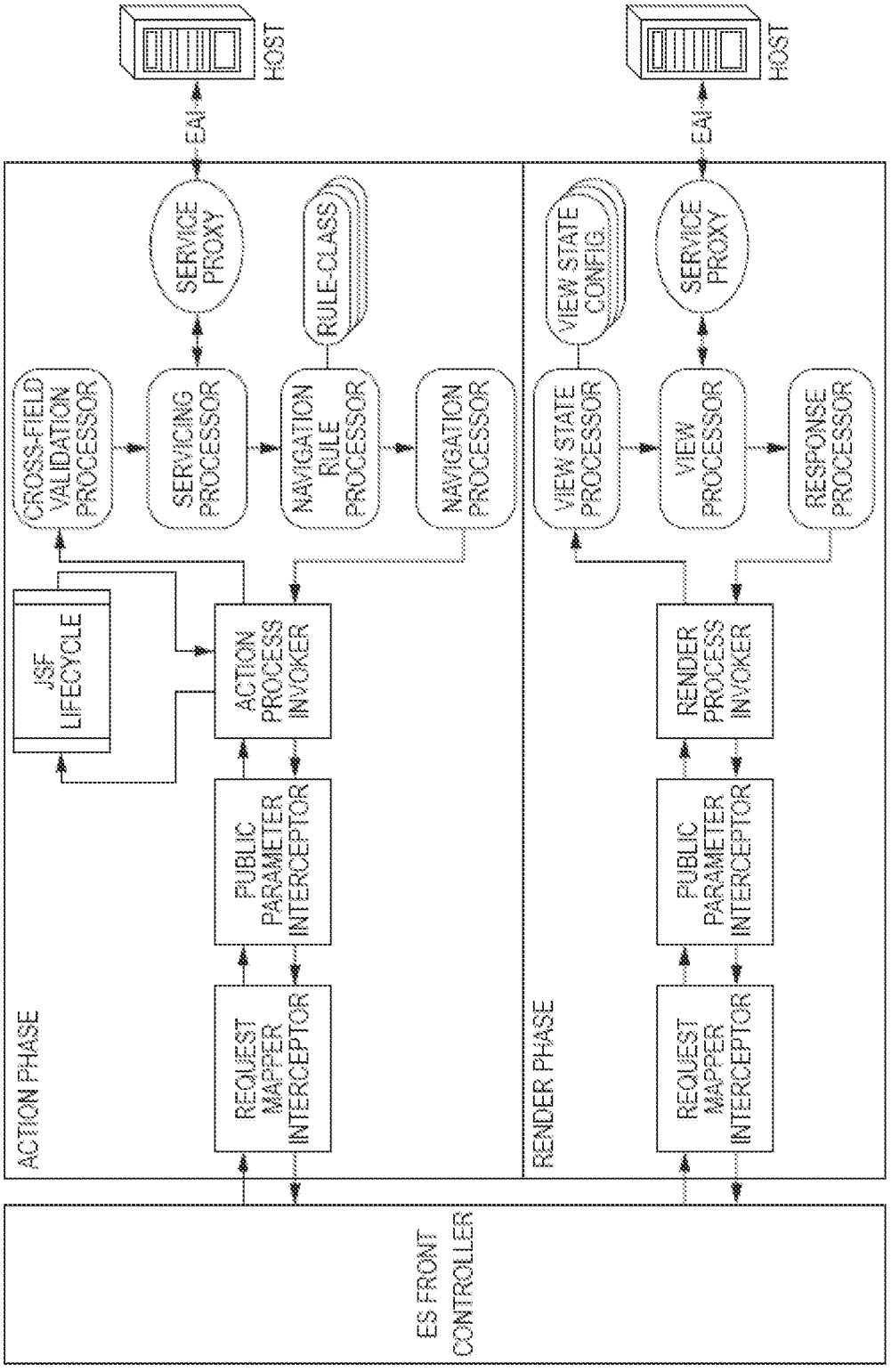

HOST
EAI
HOST
EAI
SERVICE PROXY
RULE-CLASS
VIEW STATE CONFIG
SERVICE PROXY
CROSS-FIELD VALIDATION PROCESSOR
SERVICING PROCESSOR
NAVIGATION RULE PROCESSOR
NAVIGATION PROCESSOR
VIEW STATE PROCESSOR
VIEW PROCESSOR
RESPONSE PROCESSOR
JSF LIFECYCLE
ACTION PROCESS INVOKER
RENDER PROCESS INVOKER
PUBLIC PARAMETER INTERCEPTOR
PUBLIC PARAMETER INTERCEPTOR
REQUEST MAPPER INTERCEPTOR
REQUEST MAPPER INTERCEPTOR
ACTION PHASE
RENDER PHASE
ES FRONT CONTROLLER

Figure 7

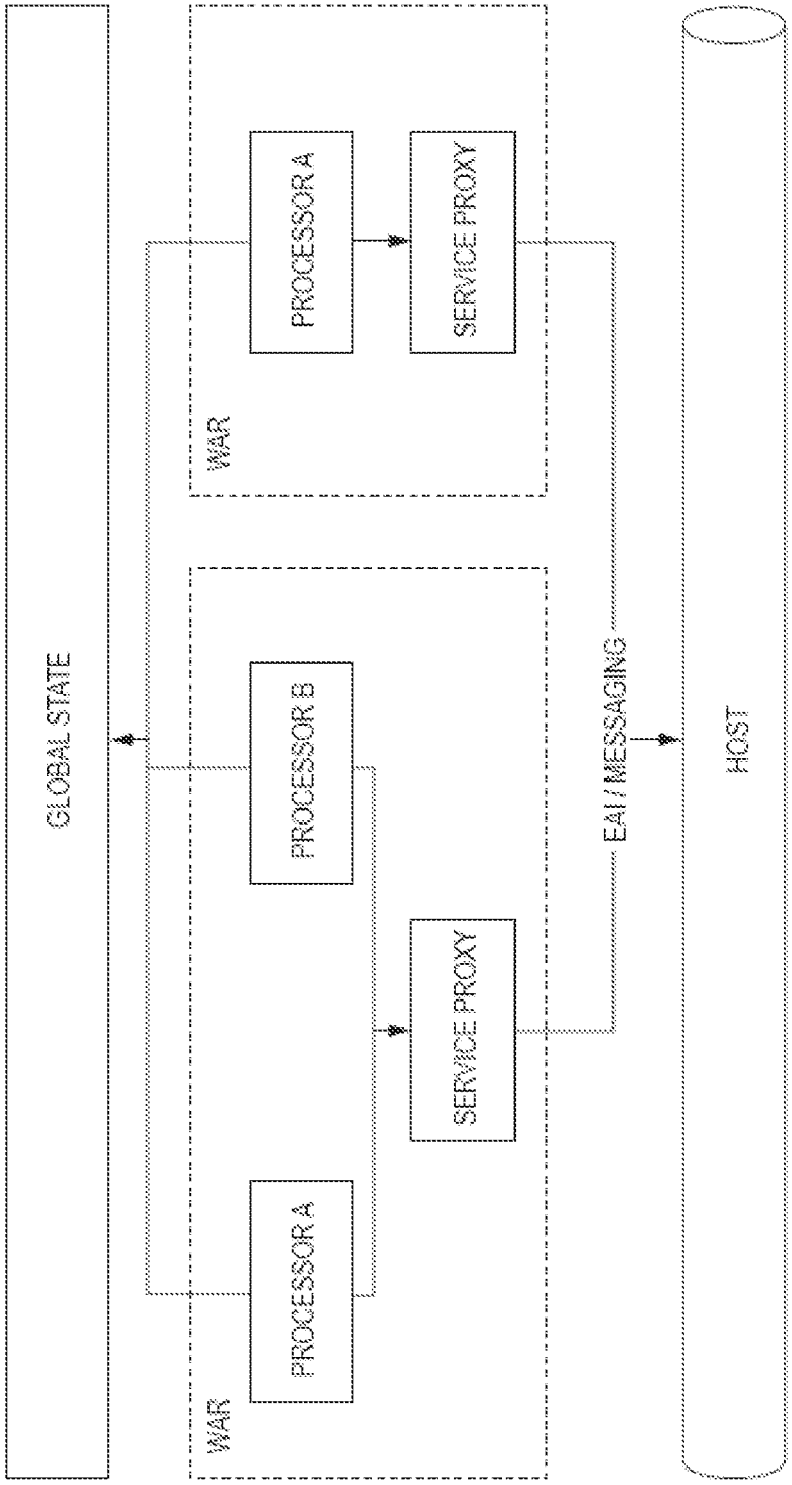

GLOBAL STATE
WAR
PROCESSOR A
SERVICE PROXY
WAR
PROCESSOR B
PROCESSOR A
SERVICE PROXY
EAI / MESSAGING
HOST

Figure 8

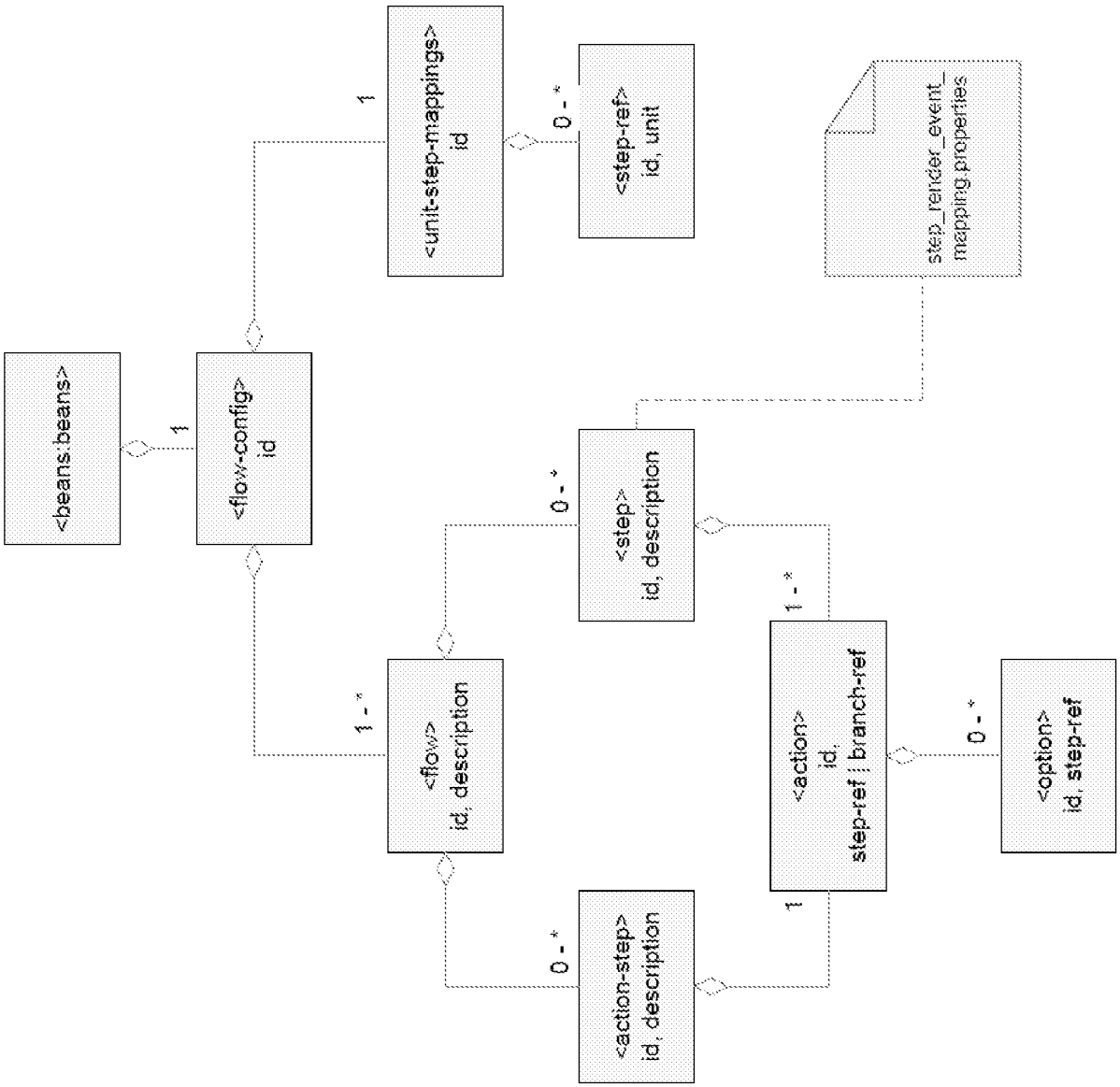

<beans:beans>
<flow-config>
id
<unit-step-mappings>
id
<step-ref>
id, unit
step_render_event_
mapping.properties
<step>
id, description
<flow>
id, description
<action>
id,
step-ref | branch-ref
<option>
id, step-ref
<action-step>
id, description
1
1 - *
0 - *

Figure 9

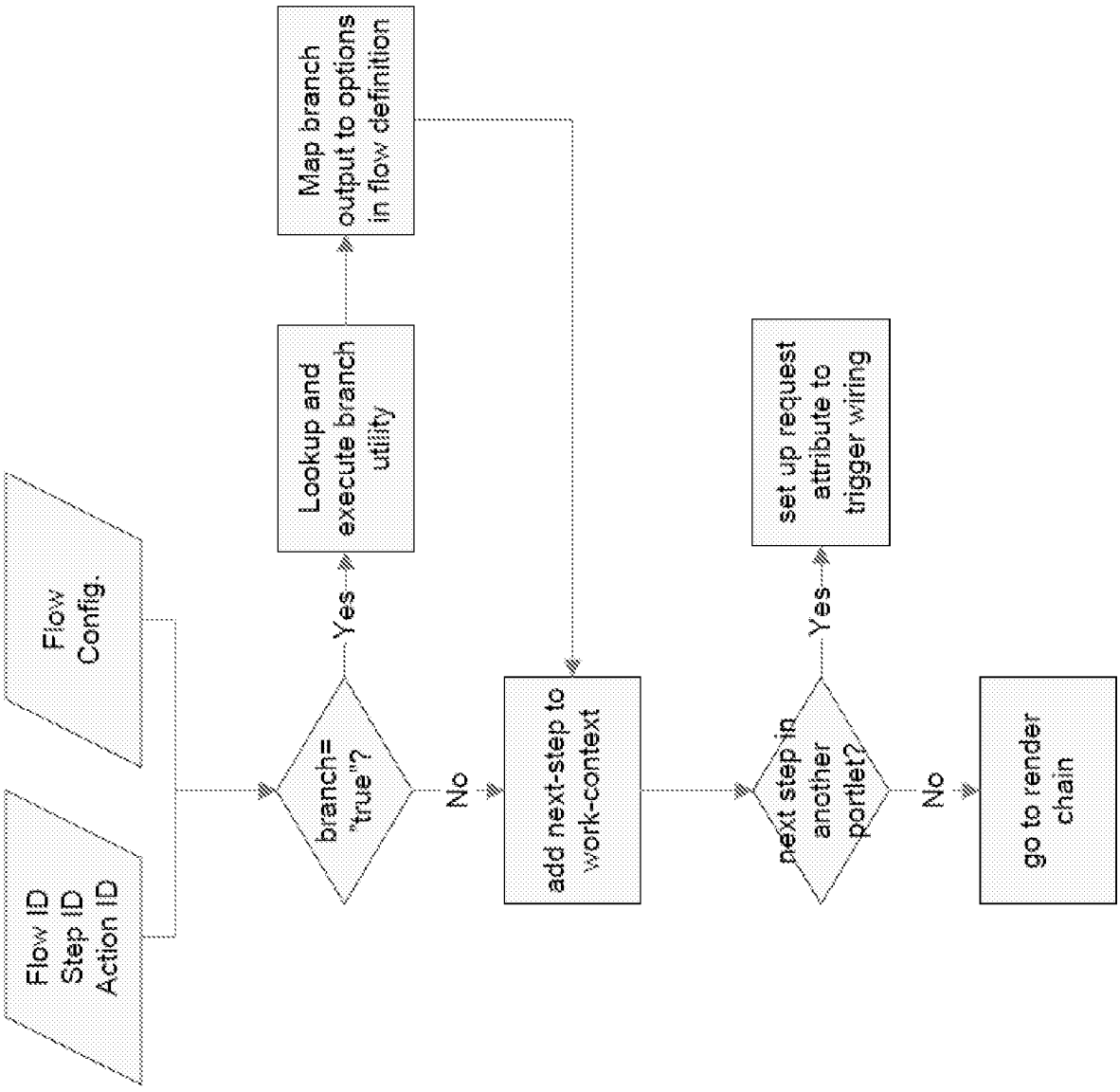

Flow ID
Step ID
Action ID
Flow Config.
branch= "true"?
Yes
No
Lookup and execute branch utility
Map branch output to options in flow definition
add next-step to work-context
next step in another portlet?
Yes
No
set up request attribute to trigger wiring
go to render chain

Figure 10

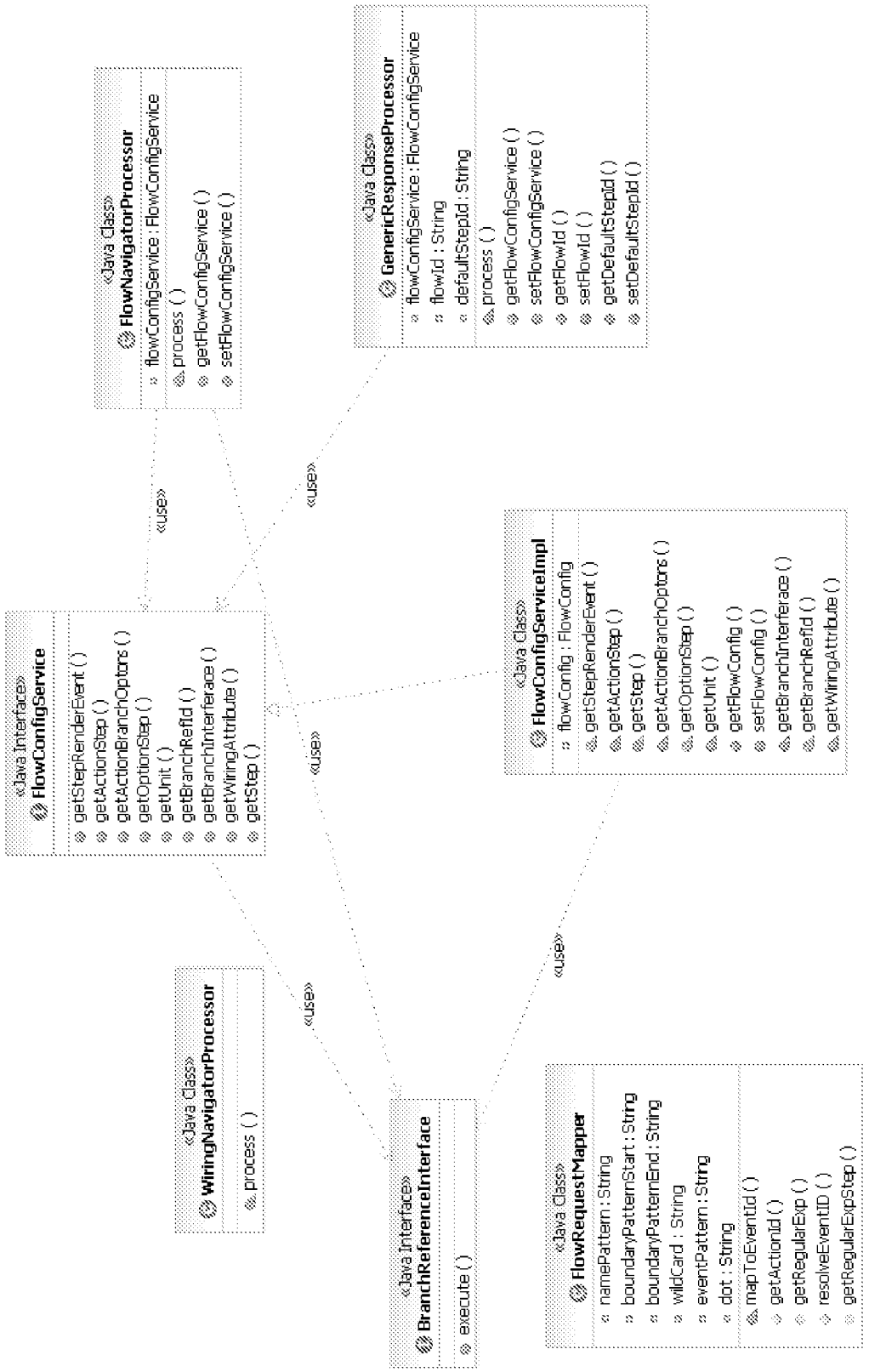

«Java Interface»
FlowConfigService
getStepRenderEvent ( )
getActionStep ( )
getActionBranchOptons ( )
getOptionStep ( )
getUnit ( )
getBranchRefId ( )
getBranchInterferace ( )
getWiringAttribute ( )
getStep ( )
«Java Class»
FlowNavigatorProcessor
flowConfigService : FlowConfigService
process ( )
getFlowConfigService ( )
setFlowConfigService ( )
«Java Class»
GenericResponseProcessor
flowConfigService : FlowConfigService
flowId : String
defaultStepId : String
process ( )
getFlowConfigService ( )
setFlowConfigService ( )
getFlowId ( )
setFlowId ( )
getDefaultStepId ( )
setDefaultStepId ( )
«Java Class»
WiringNavigatorProcessor
process ( )
«Java Class»
FlowConfigServiceImpl
flowConfig : FlowConfig
getStepRenderEvent ( )
getActionStep ( )
getStep ( )
getActionBranchOptons ( )
getOptionStep ( )
getUnit ( )
getFlowConfig ( )
setFlowConfig ( )
getBranchInterferace ( )
getBranchRefId ( )
getWiringAttribute ( )
«Java Interface»
BranchReferenceInterface
execute ( )
«Java Class»
FlowRequestMapper
namePattern : String
boundaryPatternStart : String
boundaryPatternEnd : String
wildCard : String
eventPattern : String
dot : String
mapToEventId ( )
getActionId ( )
getRegularExp ( )
resolveEventID ( )
getRegularExpStep ( )
«use»
«use»
«use»
«use»
«use»

Figure 11

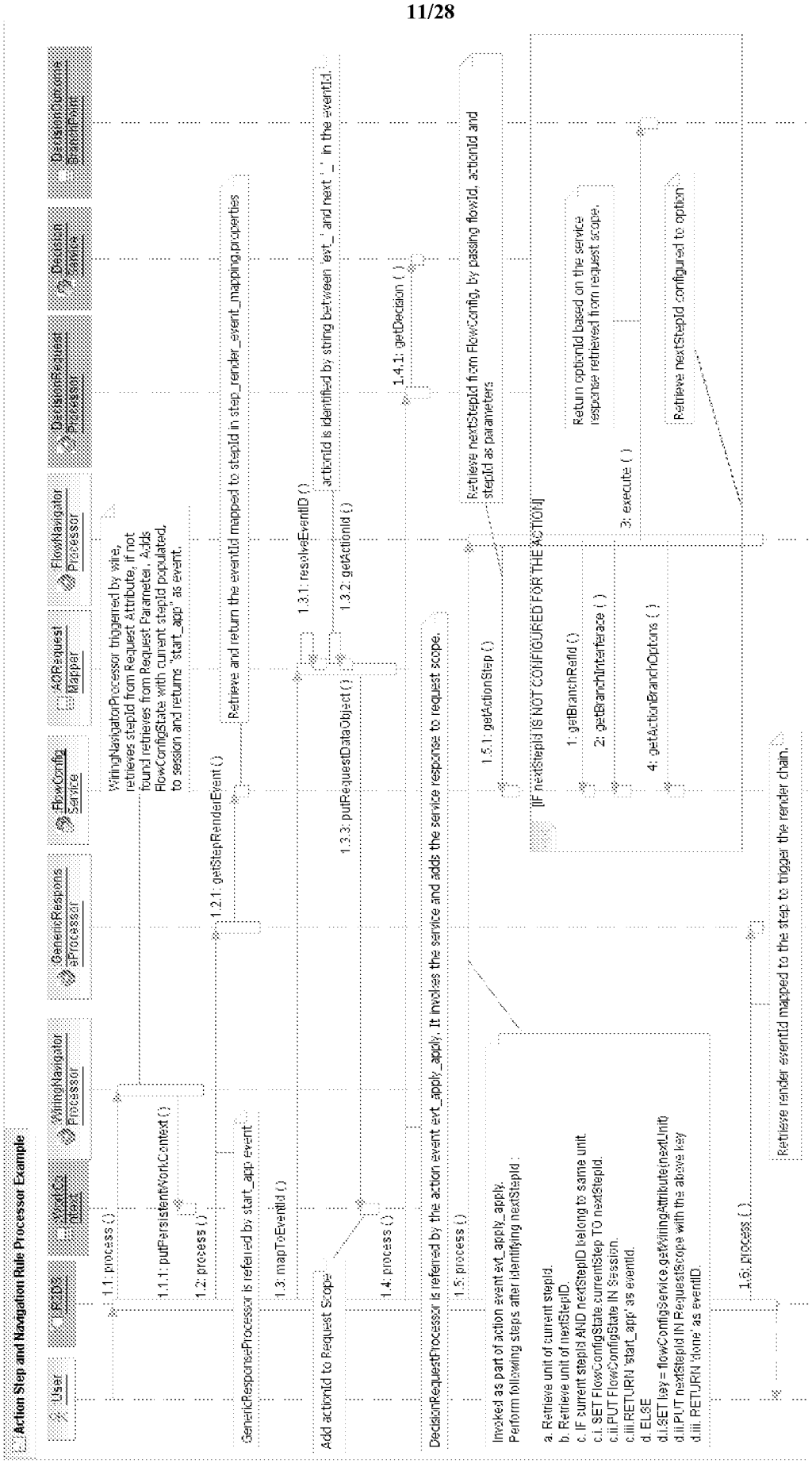

Action Step and Navigation Rule Processor Example
User
FlowConfig Service
AORequest Mapper
FlowNavigator Processor
DecisionRequest Processor
Decision Service
Decision options Branch point
1.1: process ( )
1.1.1: putPersistentWorkContext ( )
WiringNavigatorProcessor triggered by wire, retrieves stepId from Request Attribute, if not found retrieves from Request Parameter. Adds FlowConfigState with current stepId populated, to session and returns 'start_app' as event.
1.2: process ( )
1.2.1: getStepRenderEvent ( )
Retrieve and return the eventId mapped to stepId in step_render_event_mapping.properties
GenericResponseProcessor is referred by start_app event
1.3: mapToEventId ( )
1.3.1: resolveEventID ( )
actionId is identified by string between 'ext_' and next '_' in the eventId.
Add actionId to Request Scope
1.3.2: getActionId ( )
1.3.3: putRequestDataObject ( )
1.4: process ( )
1.4.1: getDecision ( )
DecisionRequestProcessor is referred by the action event ext_apply. apply. It invokes the service and adds the service response to request scope.
1.5: process ( )
1.5.1: getActionStep ( )
Retrieve nextStepId from FlowConfig, by passing flowId, actionId and stepId as parameters
Invoked as part of action event ext_apply. apply.
Perform following steps after identifying nextStepId :
[IF nextStepId IS NOT CONFIGURED FOR THE ACTION]
a. Retrieve unit of current stepId.
b. Retrieve unit of nextStepID.
c. IF current stepId AND nextStepID belong to same unit.
c.i. SET FlowConfigState.currentStep TO nextStepId.
c.ii.PUT FlowConfigState IN Session.
c.iii.RETURN 'start_app' as eventId.
d. ELSE
d.i.SET key = flowConfigService.getWiringAttribute(nextUnit)
d.ii.PUT nextStepId IN RequestScope with the above key
d.iii. RETURN 'done' as eventID.
1: getBranchRefId ( )
2: getBranchInterface ( )
Return optionId based on the service response retrieved from request scope.
3: execute ( )
4: getActionBranchOptions ( )
Retrieve nextStepId configured to option
1.6: process ( )
Retrieve render eventId mapped to the step to trigger the render chain.

Figure 12

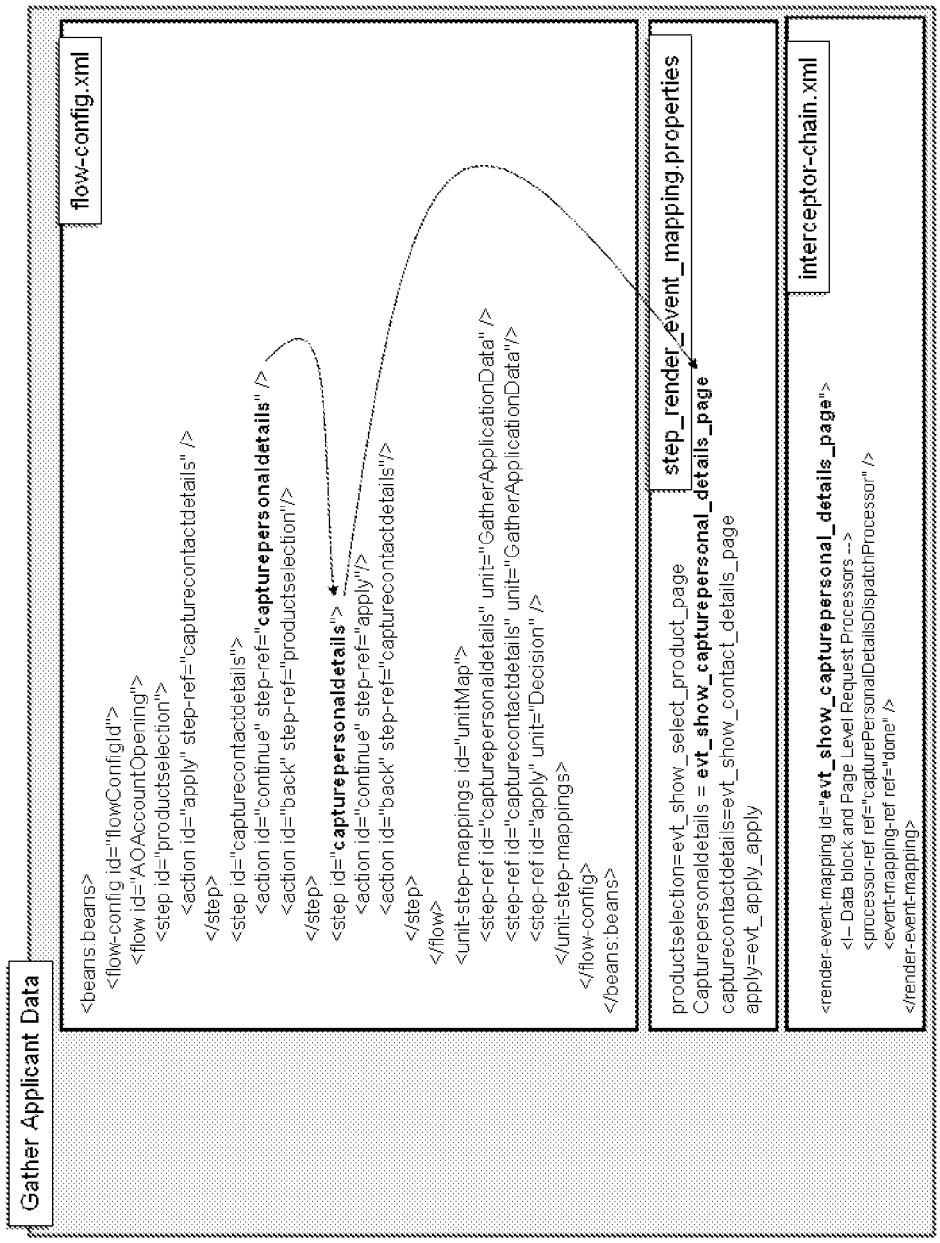

Gather Applicant Data
flow-config.xml
<beans:beans>
<flow-config id="flowConfigId">
<flow id="AOAccountOpening">
<step id="productselection">
<action id="apply" step-ref="capturecontactdetails" />
</step>
<step id="capturecontactdetails">
<action id="continue" step-ref="capturepersonaldetails" />
<action id="back" step-ref="productselection"/>
</step>
<step id="capturepersonaldetails">
<action id="continue" step-ref="apply"/>
<action id="back" step-ref="capturecontactdetails"/>
</step>
</flow>
<unit-step-mappings id="unitMap">
<step-ref id="capturepersonaldetails" unit="GatherApplicationData" />
<step-ref id="capturecontactdetails" unit="GatherApplicationData"/>
<step-ref id="apply" unit="Decision" />
</unit-step-mappings>
</flow-config>
</beans:beans>
step_render_event_mapping.properties
productselection=evt_show_select_product_page
Capturepersonaldetails = evt_show_capturepersonal_details_page
capturecontactdetails=evt_show_contact_details_page
apply=evt_apply_apply
interceptor-chain.xml
<render-event-mapping id="evt_show_capturepersonal_details_page">
<!-- Data block and Page Level Request Processors -->
<processor-ref ref="capturePersonalDetailsDispatchProcessor" />
<event-mapping-ref ref="done" />
</render-event-mapping>

Figure 13


Decision
interceptor-chain.xml
<action-interceptor-chain id="DecisioningPortletActionChain"
xmlns="http://www.hsbc.com/schema/esrpjsfp-1.0.0">
<double-submit-protection-interceptor />
<request-mapper-interceptor>
<parameter-name-value name="$JBK_ACTION" value="ReceiveAction" event="portal_navigation"/>
<bean
class="com.hsbc.group.ao.flowconfig.util.ACRequestMapper"
xmlns="http://www.springframework.org/schema/beans" />
</request-mapper-interceptor>
<process-invoker-interceptor-ref ref="processorInvoker" />
</action-interceptor-chain>
<event-mapping id="portal_navigation">
<processor-ref ref="WiringNavigatorProcessor" />
<event-mapping-ref ref="start_app" />
</event-mapping>
<event-mapping id="start_app">
<processor-ref ref="FlowIdRetrivalGSProcessor" />
<processor-ref ref="GenericResponseProcessor" />
<event-mapping-ref ref="evt_show_account_approval_upsell_offered_page" />
<event-mapping-ref ref="evt_show_account_approval_declined_page" />
<event-mapping-ref ref="evt_show_account_approval_referred_page" />
<event-mapping-ref ref="evt_apply_apply" />
</event-mapping>

Figure 14

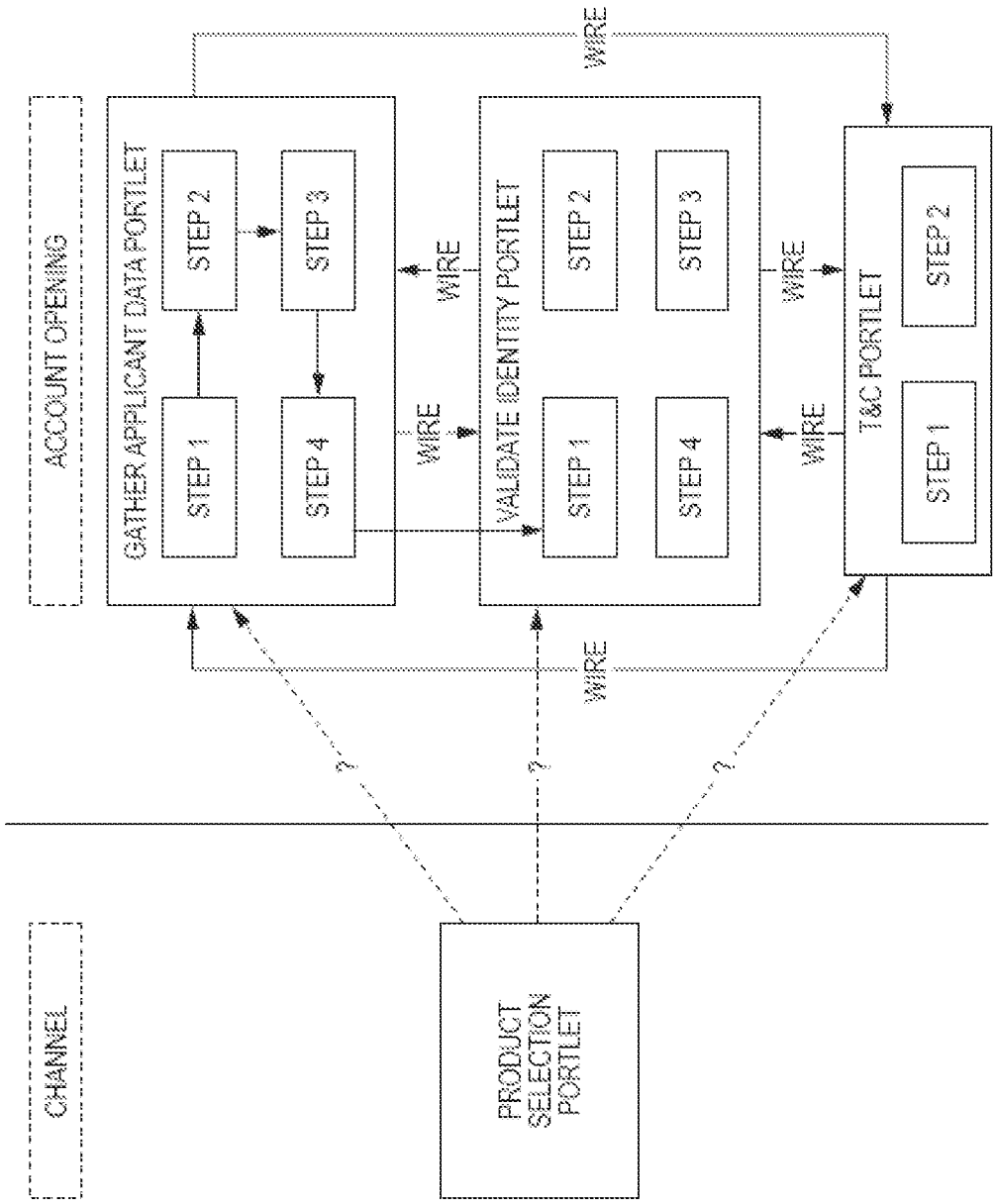

CHANNEL
ACCOUNT OPENING
GATHER APPLICANT DATA PORTLET
STEP 1
STEP 2
STEP 3
STEP 4
VALIDATE IDENTITY PORTLET
STEP 1
STEP 2
STEP 3
STEP 4
T&C PORTLET
STEP 1
STEP 2
WIRE
WIRE
WIRE
WIRE
WIRE
WIRE
PRODUCT SELECTION PORTLET
?
?
?

Figure 15

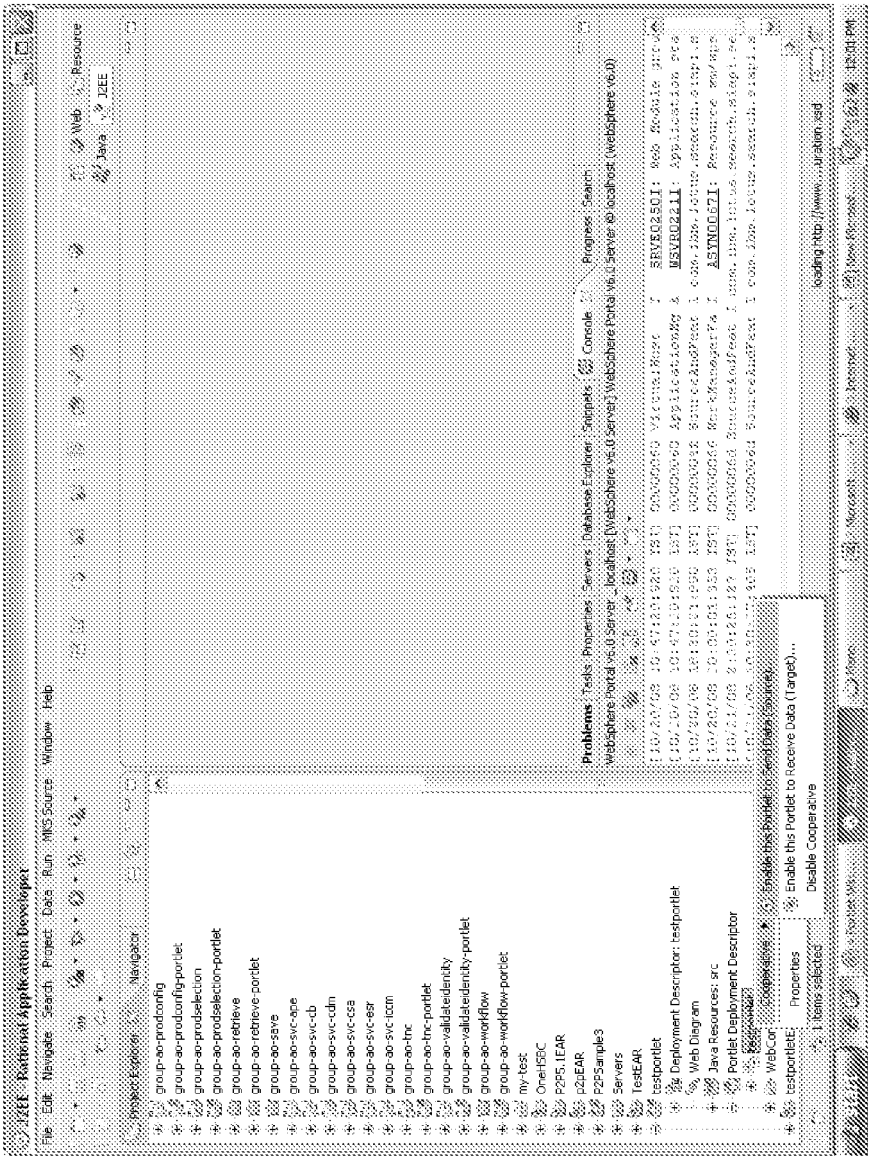

IBM Rational Application Developer
File Edit Navigate Search Project Data Run WMS Source Window Help
Project Explorer
Navigator
group-ao-prodconfig
group-ao-prodconfig-portlet
group-ao-prodselection
group-ao-prodselection-portlet
group-ao-retrieve
group-ao-retrieve-portlet
group-ao-save
group-ao-svc-ape
group-ao-svc-cb
group-ao-svc-cdm
group-ao-svc-csa
group-ao-svc-esr
group-ao-svc-iccm
group-ao-svc-tnc
group-ao-tnc-portlet
group-ao-validateidentity
group-ao-validateidentity-portlet
group-ao-workflow
group-ao-workflow-portlet
my-test
OneHSC
P2P5.1EAR
p2pEAR
P2PSample3
Servers
testEAR
testportlet
Deployment Descriptor: testportlet
Web Diagram
Java Resources: src
Portlet Deployment Descriptor
testportlet
WebCon
testportlet
Properties
Enable this Portlet to Receive Data (Target)...
Disable Cooperative
Problems Tasks Properties Servers Database Explorer Snippets Console Progress Search
WebSphere Portal v6.0 Server - localhost [WebSphere v6.0 Server] WebSphere Portal v6.1 Server @ localhost (WebSphere v6.0)
SRVE0250I
SRVE0242I
ASYNC0021
Web
Resource
Java
J2EE

Figure 16

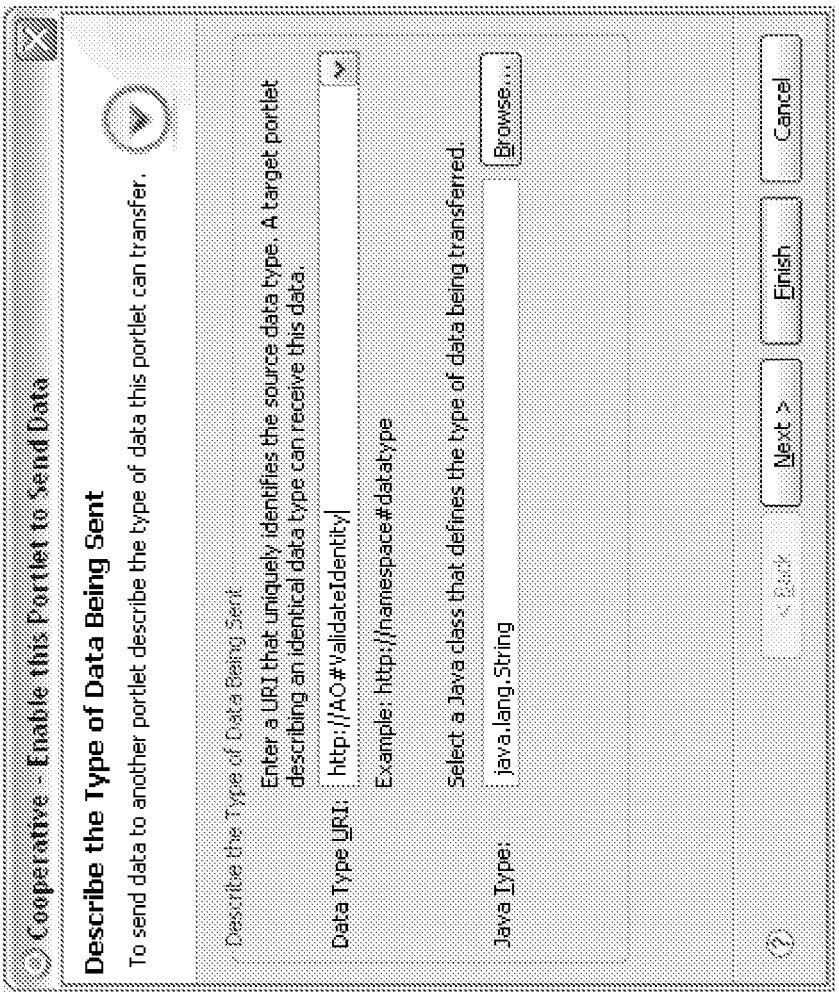
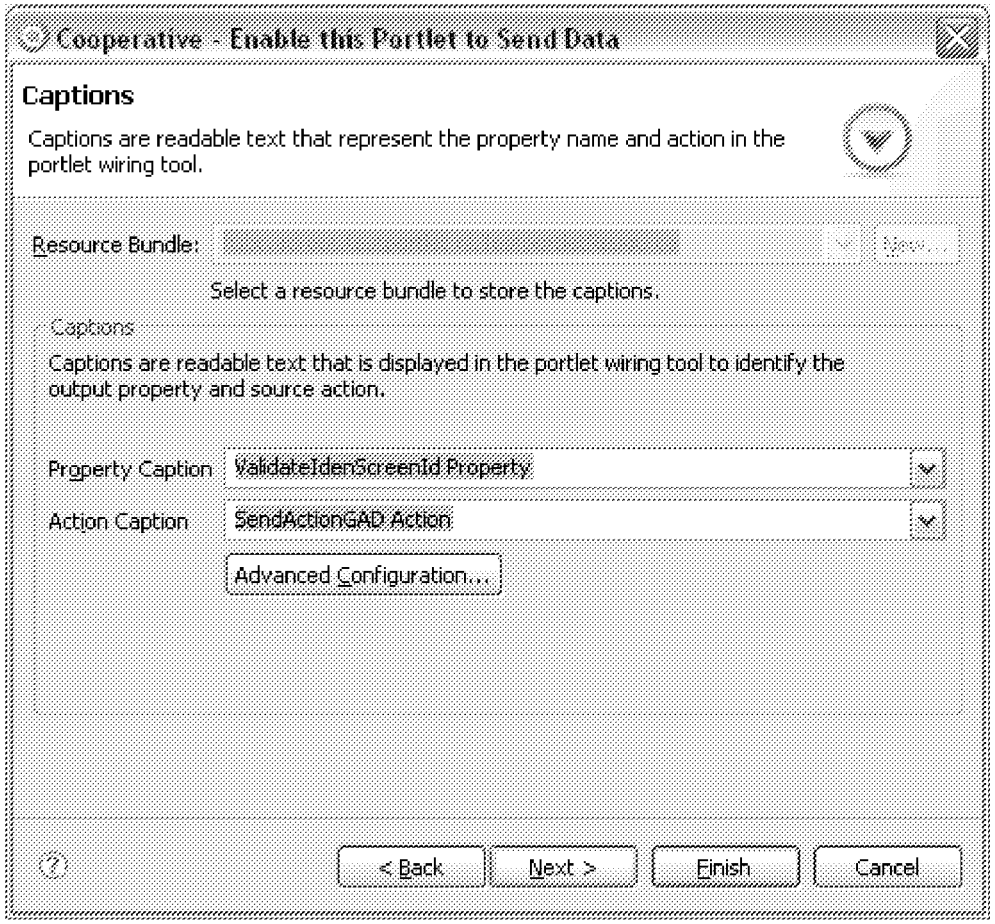

Cooperative - Enable this Portlet to Send Data
Describe the Type of Data Being Sent
To send data to another portlet describe the type of data this portlet can transfer.
Describe the Type of Data Being Sent
Enter a URI that uniquely identifies the source data type. A target portlet describing an identical data type can receive this data.
Data Type URI:
http://AO#ValidateIdentity
Example: http://namespace#datatype
Select a Java class that defines the type of data being transferred.
Java Type:
java.lang.String
Browse...
< Back
Next >
Finish
Cancel

Figure 17


Cooperative - Enable this Portlet to Send Data
Property Transfer
Declare the Source Action and how the property is transferred to the Property Broker.
Source Action
In JSR 168 portlets, the property transfer is triggered when the action request contains the "Action Parameter" set to the "Action Value".
Action Parameter: WIRE_ACTION
Action Value: SendActionGAD
Property Transfer
Specify the property name and location where the output property will be stored so that it can be retrieved by the Property Broker.
Location: Request attribute
Property Name: ValidateIdenScreenId
< Back
Next >
Finish
Cancel

Figure 18

(a)


Cooperative - Enable this Portlet to Send Data
Captions
Captions are readable text that represent the property name and action in the portlet wiring tool.
Resource Bundle:
New...
Select a resource bundle to store the captions.
Captions
Captions are readable text that is displayed in the portlet wiring tool to identify the output property and source action.
Property Caption
ValidateIdenScreenId Property
Action Caption
SendActionGAD Action
Advanced Configuration...
< Back
Next >
Finish
Cancel

(b)

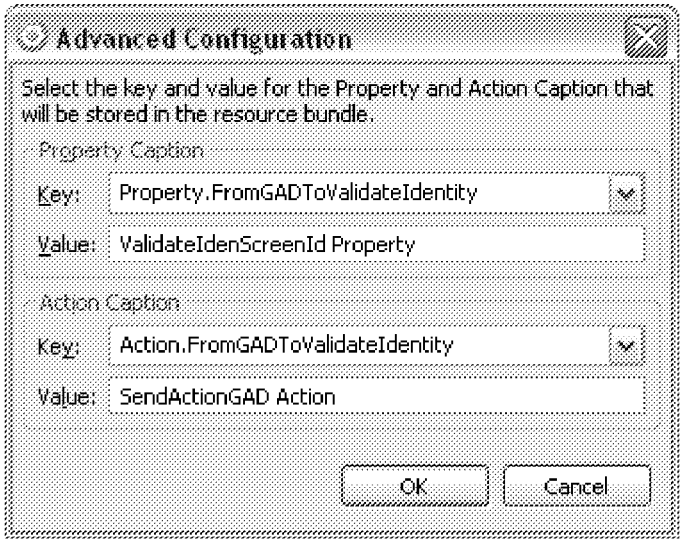

Advanced Configuration
Select the key and value for the Property and Action Caption that will be stored in the resource bundle.
Property Caption
Key:
Property.FromGADToValidateIdentity
Value:
ValidateIdenScreenId Property
Action Caption
Key:
Action.FromGADToValidateIdentity
Value:
SendActionGAD Action
OK
Cancel

Figure 19

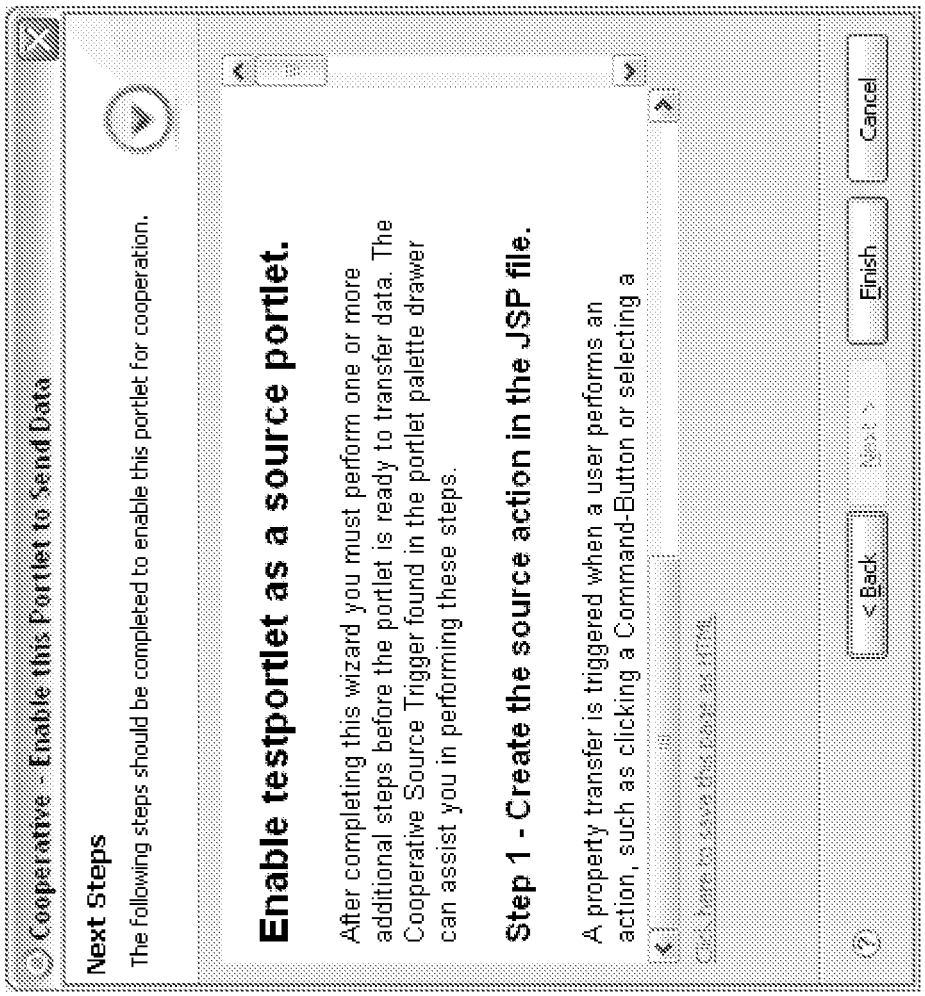

Cooperative - Enable this Portlet to Send Data
Next Steps
The following steps should be completed to enable this portlet for cooperation.
Enable testportlet as a source portlet.
After completing this wizard you must perform one or more additional steps before the portlet is ready to transfer data. The Cooperative Source Trigger found in the portlet palette drawer can assist you in performing these steps.
Step 1 - Create the source action in the JSP file.
A property transfer is triggered when a user performs an action, such as clicking a Command-Button or selecting a
< Back
Next >
Finish
Cancel

Figure 20

Figure 21

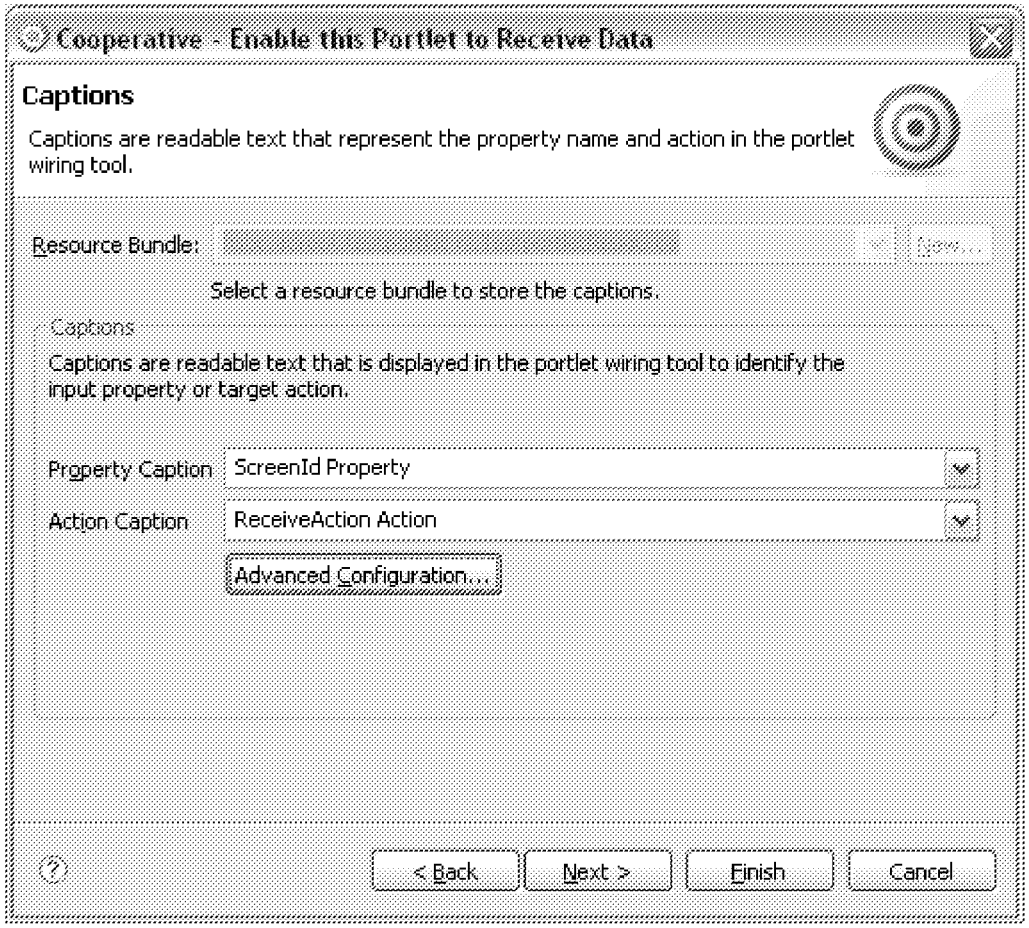

Cooperative - Enable this Portlet to Receive Data
Describe the Type of Data Being Received
To receive data from another portlet describe the type of data this portlet can accept.
Describe the Type of Data Being Received
Enter a URI that uniquely identifies the target data type. This portlet can receive data from a source portlet that describes an identical data type.
Data Type URI:
http://AO.#validateIdentity
Example: http://namespace#datatype
Select a Java class that defines the type of data being transferred.
Java Type:
java.lang.String
Browse...
< Back
Next >
Finish
Cancel

Figure 22


Cooperative - Enable this Portlet to Receive Data
Property Transfer
Declare the Target Action and how the property is transferred to the Target Portlet.
Target Action
In JSR 168 portlets, the Portal invokes an action on the target portlet in order to process the input property. Specify the action parameter and value.
Action Parameter: WIRE_ACTION
Action Value: ReceiveAction
Browse...
Property Transfer
Specify the property name and location where the Property Broker will place the input property during transfer so the target portlet can retrieve it.
Location: Request parameter
Property Name: ScreenId
< Back
Next >
Finish
Cancel

Figure 23

(a)


Cooperative - Enable this Portlet to Receive Data
Captions
Captions are readable text that represent the property name and action in the portlet wiring tool.
Resource Bundle:
New...
Select a resource bundle to store the captions.
Captions
Captions are readable text that is displayed in the portlet wiring tool to identify the input property or target action.
Property Caption
ScreenId Property
Action Caption
ReceiveAction Action
Advanced Configuration...
< Back
Next >
Finish
Cancel

(b)

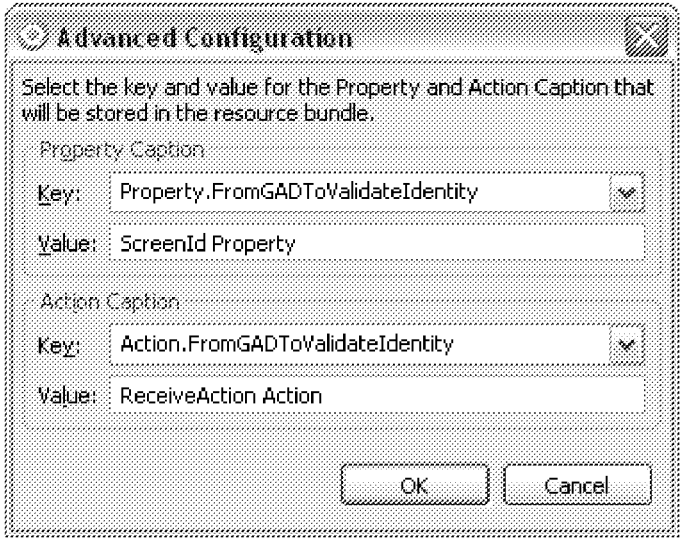

Advanced Configuration
Select the key and value for the Property and Action Caption that will be stored in the resource bundle.
Property Caption
Key:
Property.FromGADToValidateIdentity
Value:
ScreenId Property
Action Caption
Key:
Action.FromGADToValidateIdentity
Value:
ReceiveAction Action
OK
Cancel

Figure 24

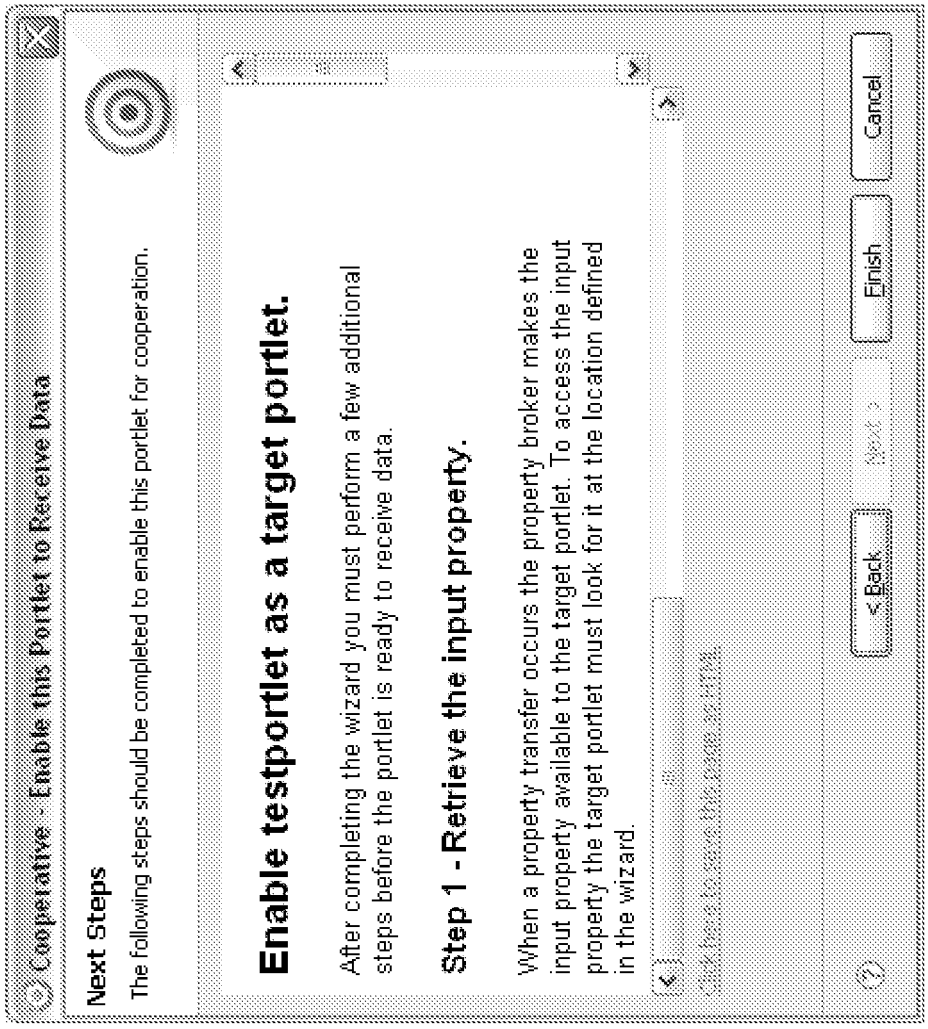

Cooperative - Enable this Portlet to Receive Data
Next Steps
The following steps should be completed to enable this portlet for cooperation.
Enable testportlet as a target portlet.
After completing the wizard you must perform a few additional steps before the portlet is ready to receive data.
Step 1 - Retrieve the input property.
When a property transfer occurs the property broker makes the input property available to the target portlet. To access the input property the target portlet must look for it at the location defined in the wizard.
< Back
Finish
Cancel

Figure 25

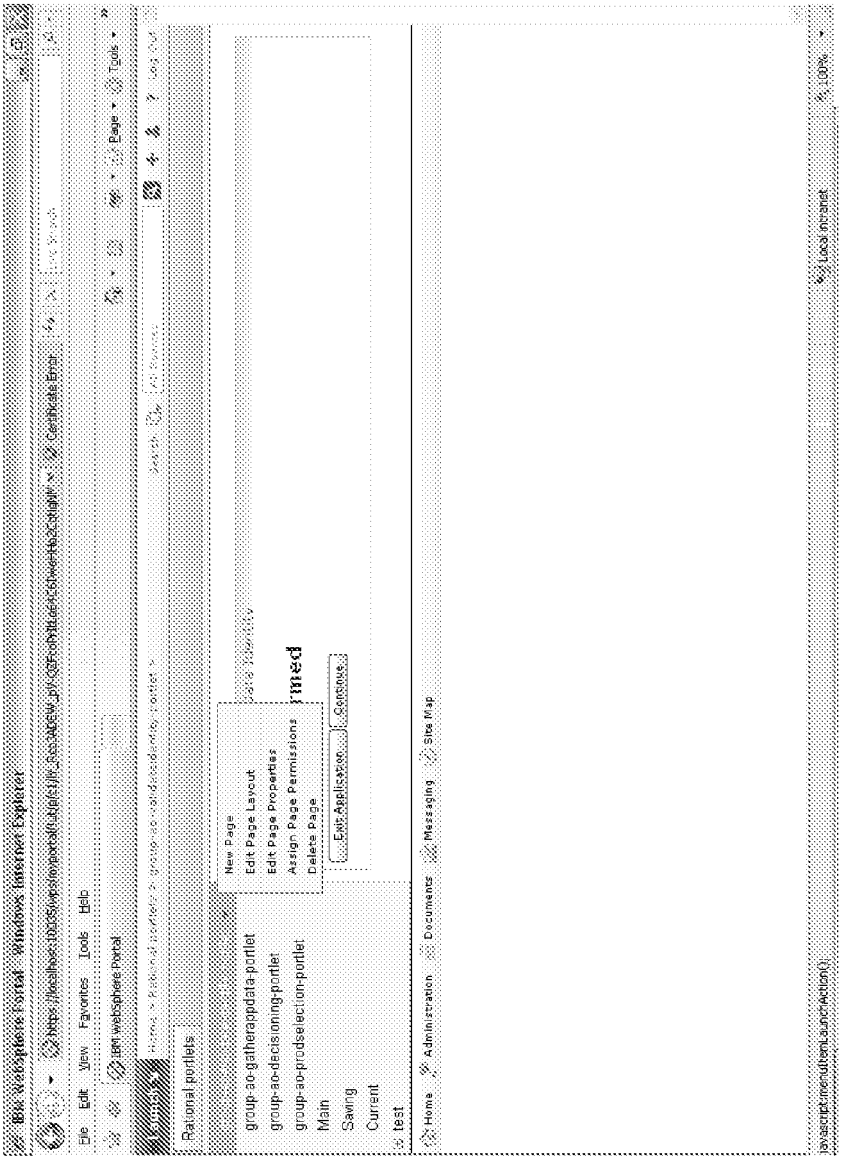

IBM WebSphere Portal - Windows Internet Explorer
File Edit View Favorites Tools Help
IBM websphere Portal
Rational portlets
group-ao-gatheropdata-portlet
group-ao-decisioning-portlet
group-ao-prodselection-portlet
Main
Saving
Current
test
New Page
Edit Page Layout
Edit Page Properties
Assign Page Permissions
Delete Page
Exit Application
Console
Home
Administration
Documents
Messaging
Site Map
Local intranet

Figure 26

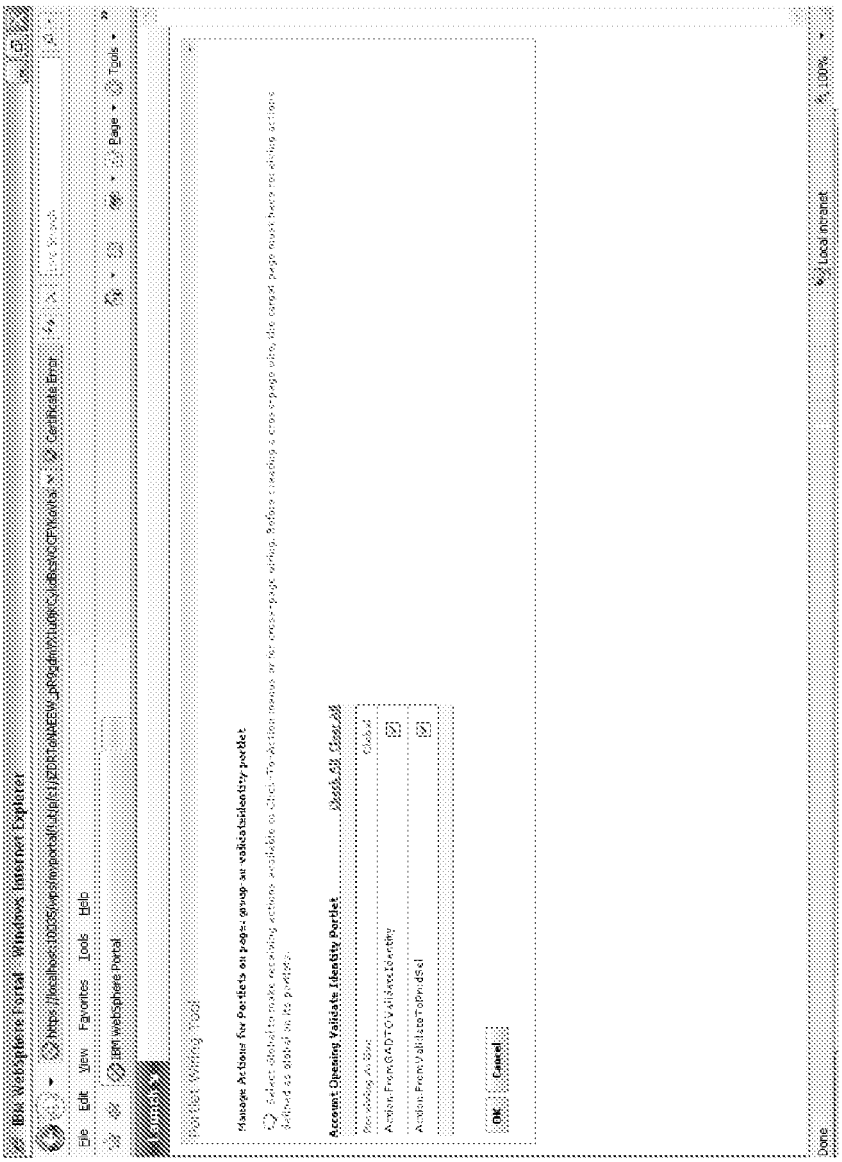

IBM WebSphere Portal - Windows Internet Explorer
File Edit View Favorites Tools Help
IBM WebSphere Portal
Page Tools
Manage Actions for Portlets on page: group as validateIdentity portlet
Account Opening Validate Identity Portlet
Action From GADGV validateIdentity
Action From ValidateTopPortlet
OK
Cancel
Done
Local intranet
100%

Figure 27

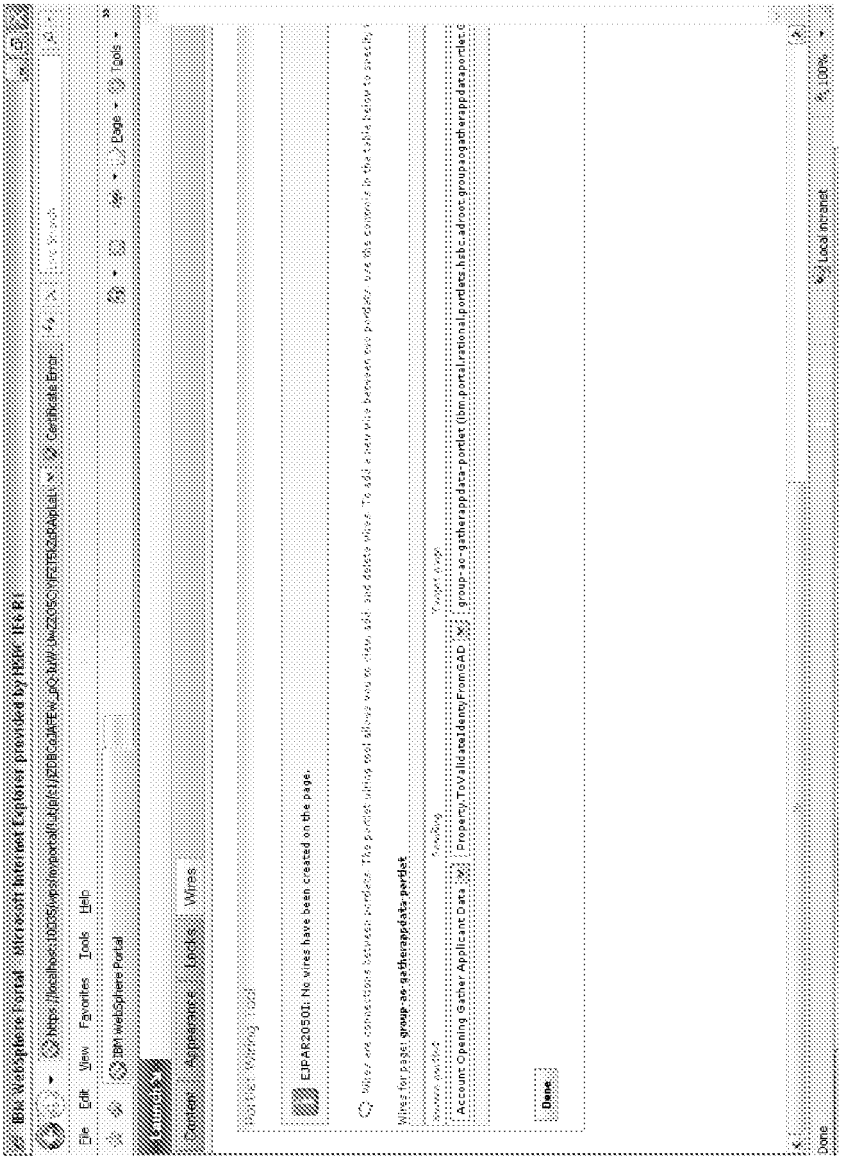
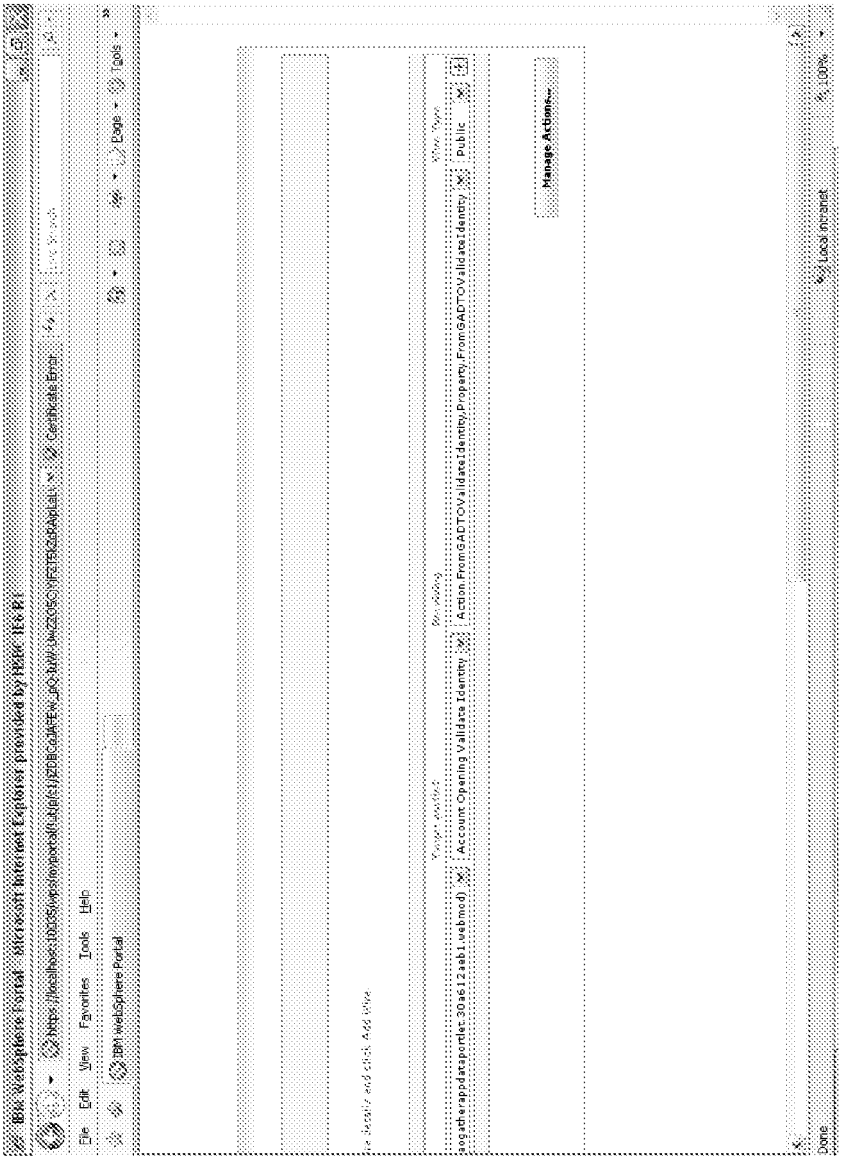

IBM WebSphere Portal - Microsoft Internet Explorer provided by HSBC IT
File Edit View Favorites Tools Help
IBM WebSphere Portal
Portlets
Appraisals
Applets
Wires
EJPAR20501I: No wires have been created on the page.
Wires for page: group-ac-gatherappdata_portlet
Account Opening Gather Applicant Data
Property.ToValidateIdentityFromGAD
group-ac-gatherappdata-portlet (ibm.portalrational.portlets.hsbc.adroot.groupacgatherappdataportlet.G
Done
Done
Local intranet
100%

Figure 28


IBM WebSphere Portal - Microsoft Internet Explorer provided by IBM
File Edit View Favorites Tools Help
IBM WebSphere Portal
Page Tools
Account Opening Validate Identity
Action.From:GADTOValidateIdentity.Property.From:GADTOValidateIdentity
Public
Manage Actions...
Done
Local intranet
100%