WEB SERVICE ORCHESTRATION

What is

And

How to do it

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First things first:

Web Services

Web Services

what??

Web Services

Why?

Web Services

Why?

* Interoperability

Web Services

Why?

* Interoperability

* Reusable application-components

Why?

* Interoperability
* Reusable application-components
* Connect existing software

Web Services

How?

Web Services

How?

*XML + HTTP

Web Services

How?

* XML + HTTP
* SOAP

Web Services

How?

* XML + HTTP
* SOAP
* UDDI

Web Services

How?

* XML + HTTP
* SOAP
* UDDI
* WSDL

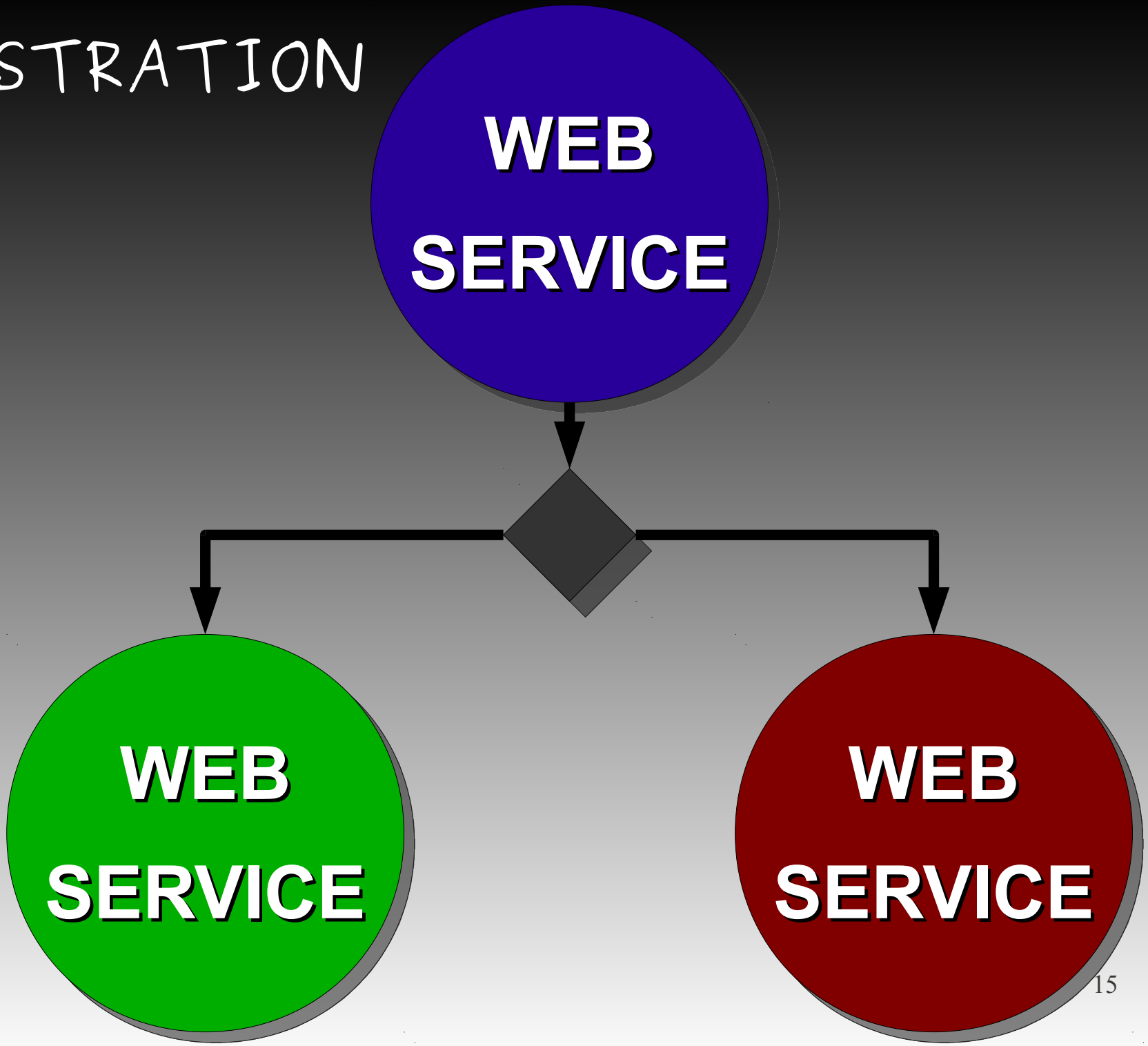
Finally:

Web Services Orchestration

Web Services Orchestration

what??

ORCHESTRATION



Web Services Orchestration

Why?

Web Services Orchestration

How??

Standards

Standards

A little bit of

History

Standards

A little bit of History

* BPEL4WS

Standards

A little bit of History

* BPEL4WS

* WSCI

Standards

A little bit of History

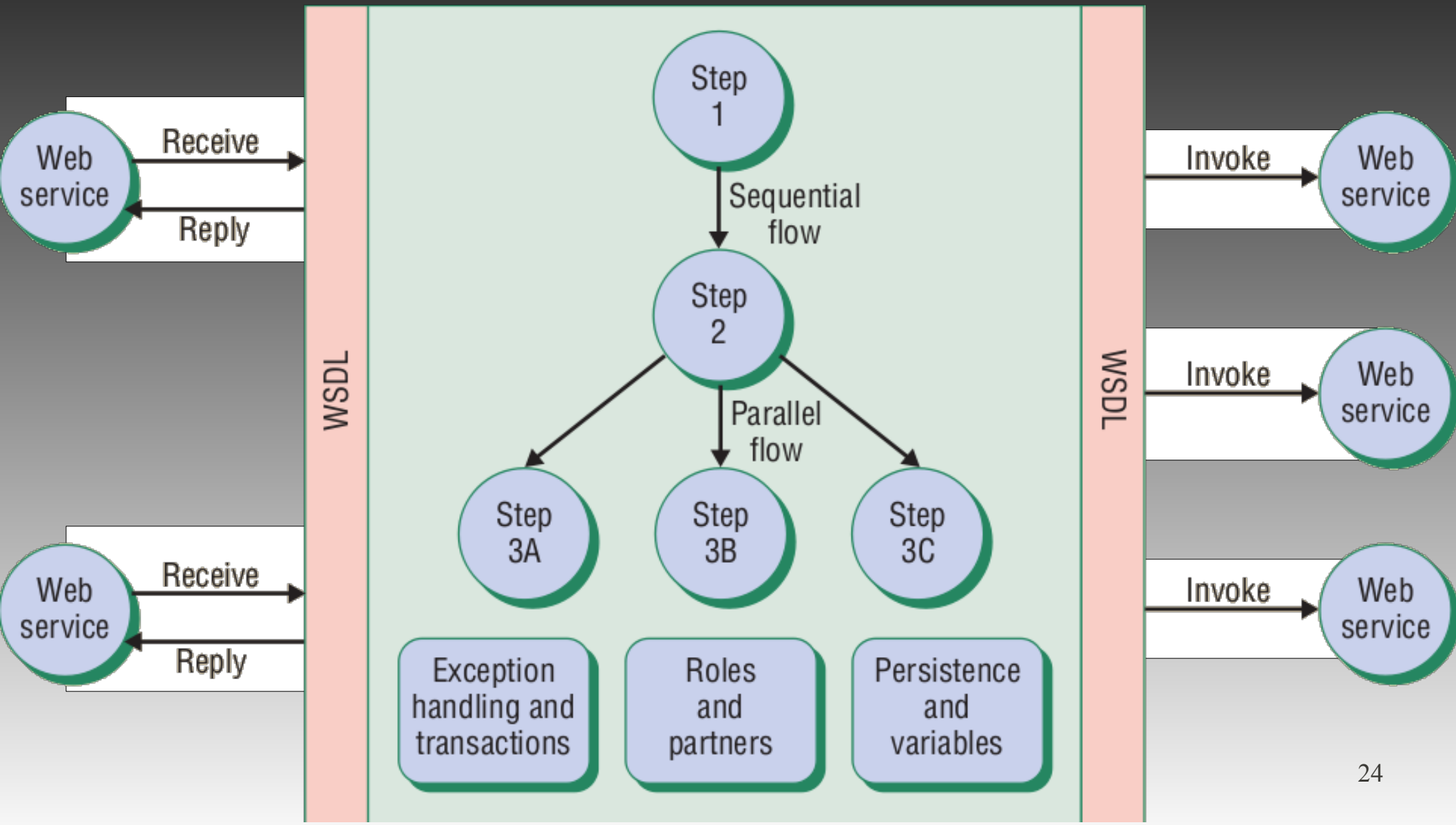
* BPEL4WS
* WSCI
* BPML

Web Services Orchestration

Standard

WS-BPEL

BPEL PROCESS FLOW



Web Services Orchestration

BPEL Concepts

- Basic activity
- Structured Activity
- Variable
- Partner Link
- Scope Tag

```
<receive
   partnerLink="client"
   portType="trv:TravelApprovalPT"
   operation="TravelApproval"
   variable="TravelRequest"/>


 <invoke
   partnerLink="Status"
   portType="emp:StatusPT"
   operation="Status"
   inputVariable="StatusRequest" />
```

Web Services Orchestration

BPEL Concepts

- Basic activity
- Structured Activity
- Variable
- Partner Link
- Scope Tag

```
<flow>
   <sequence>
      <invoke … />
      <receive … />
   </sequence>

   <sequence>
      <invoke … />
      <receive … />
   </sequence>
</flow>
```

Web Services Orchestration

BPEL Concepts

Basic activity

Structured Activity

Variable

Partner Link

Scope Tag

```
<variables>
  <variable
    name="TravelRequest"
    messageType="trv:TravelRequestMsg"
</variables>

  <assign>
   <copy>
     <from
       variable="TravelRequest"
       part="employee"/>
     <to
       variable="StatusRequest"
       part="employee"/>
   </copy>
 </assign>
```

Web Services Orchestration

BPEL Concepts

Basic activity

Structured Activity

Variable

Partner Link

Scope Tag

```
<partnerLinks>
   <partnerLink
      name="client"
      partnerLinkType="trv:travelLT"
      myRole="travelService"
      partnerRole="travelService"/>
</partnerLinks>
```

Web Services Orchestration

BPEL Concepts

Basic activity

Structured Activity

Variable

Partner Link

Scope Tag

```
<scope isolated="yes">
   <variables> ... </variables>
   <faultHandlers> ... </>
   <compensationHandler> ... </>

   ...

</scope>
```

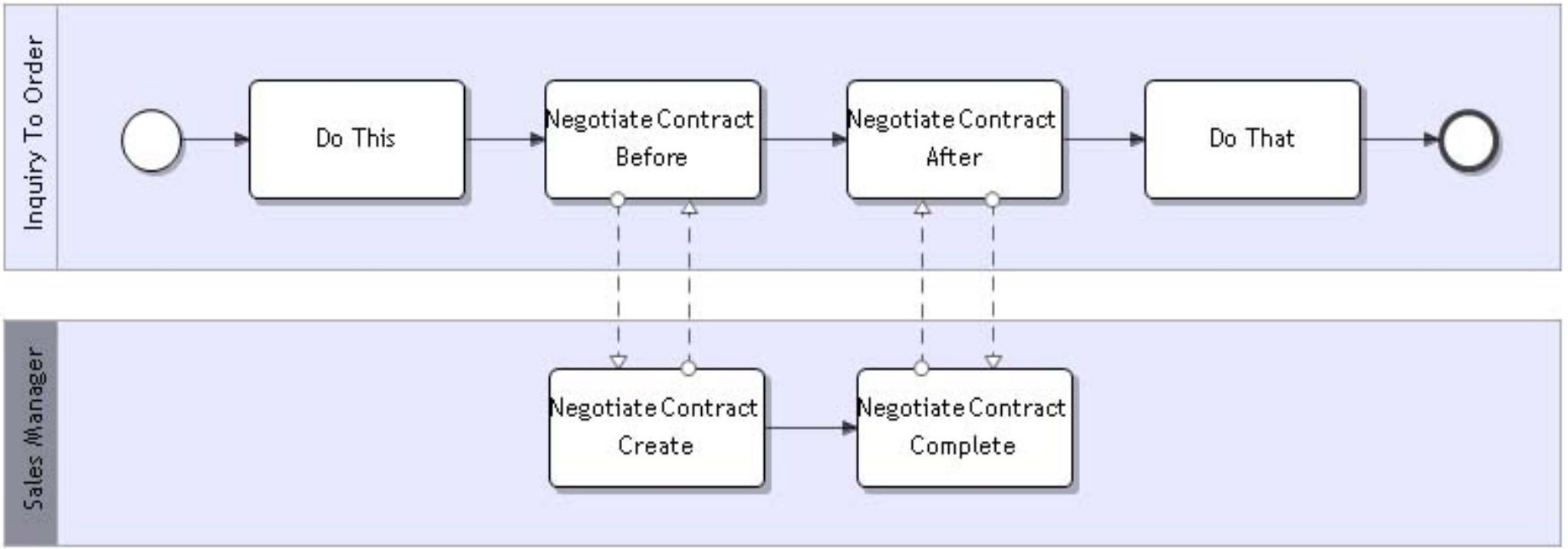
Tools

Tools

Apache ODE

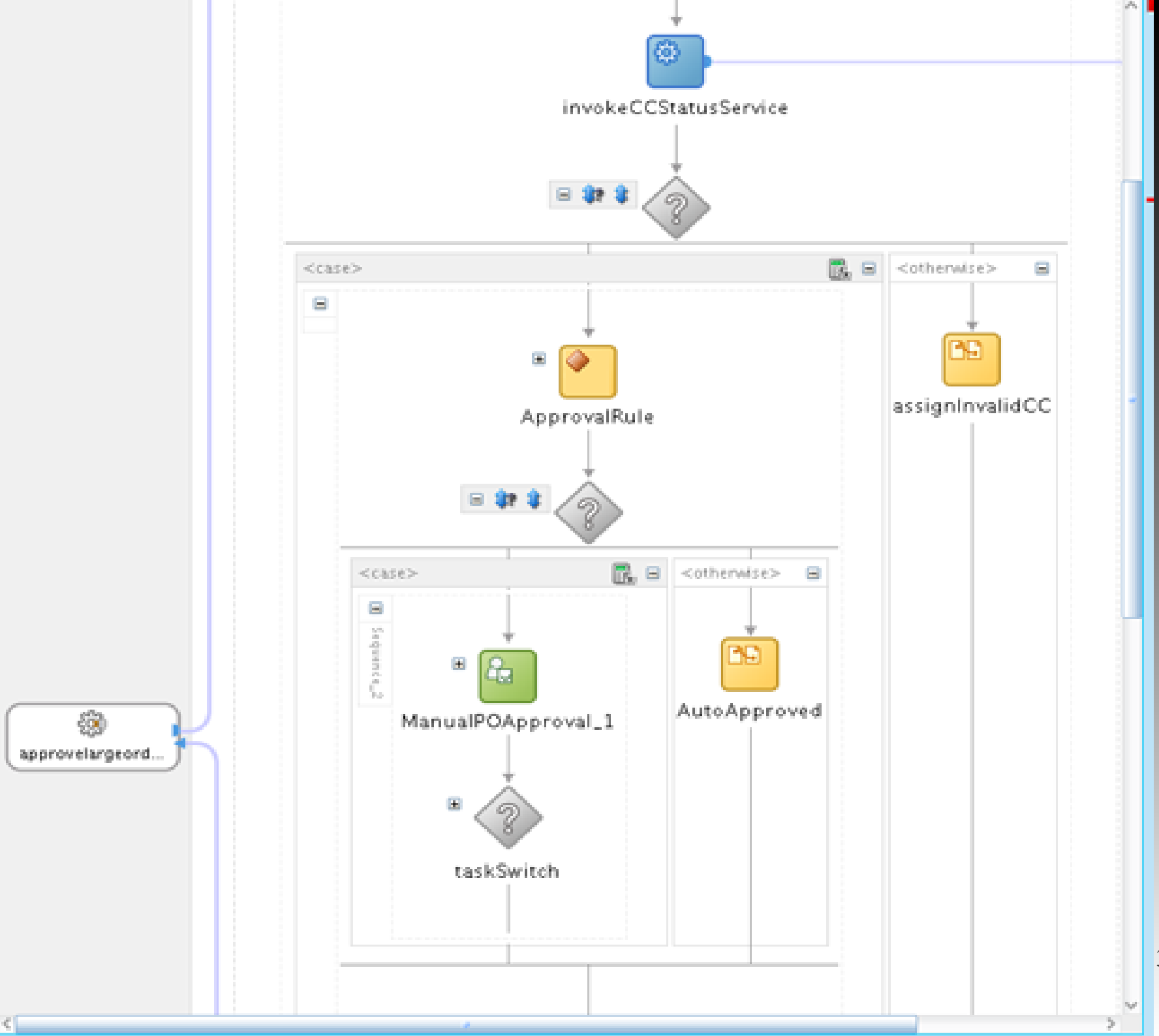
+

Intalio Works


Inquiry To Order
Do This
Negotiate Contract Before
Negotiate Contract After
Do That
Sales Manager
Negotiate Contract Create
Negotiate Contract Complete

Tools

ORACLE BPM


invokeCCStatusService
<case>
<otherwise>
ApprovalRule
assignInvalidCC
<case>
<otherwise>
ManualPOApproval_1
AutoApproved
taskSwitch
approvelargeord...

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- http://www.w3schools.com/webservices/

BPEL
- http://bpel.xml.org

W3C
- http://www.w3.org/TR

Business Process Spec Handed Off to OASIS, Not W3C
- http://www.internetnews.com/d

Interview with Steve Ross-Talbo
- http://searchsoa.techtarget.com/news/interview/

A Hands-on Instruction to BPEL
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- http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=wsbpel0, 2002.

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- http://www-01.ibm.com/software/integration/wid

WebSphere Process Server
- http://www-01.ibm.com/software/integration/wps/

Oracle Process Manager
- http://www.oracle.com/technology/products/ias/bpel/ind

Intalio Works
- http://www.intalioworks.com/products/bpm/opensource-edition/#ov

Apache ODE
- http://ode.apache.org/

Questions