



Digging into the SEALS Platform

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1st SEALS Tutorial
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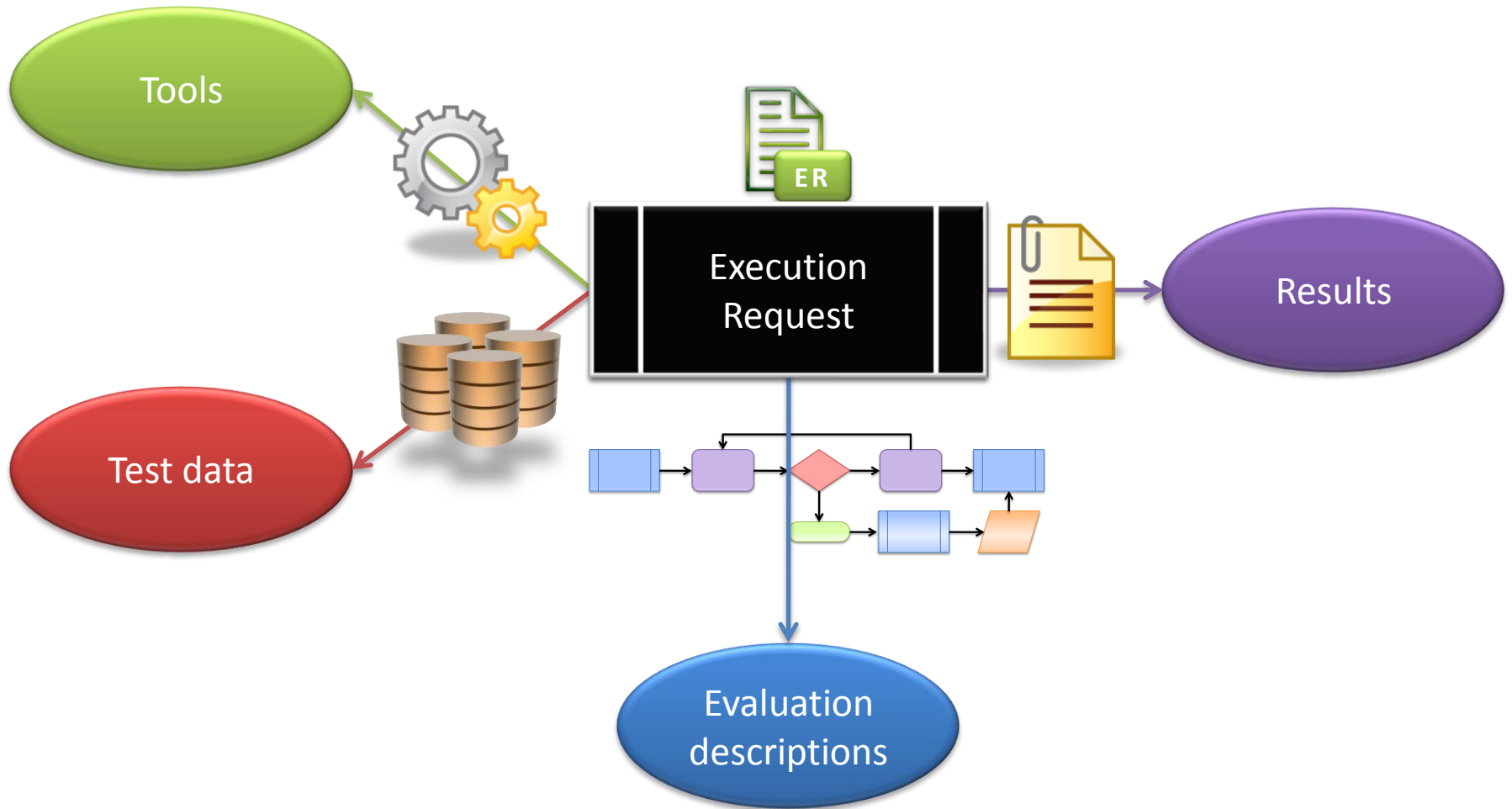
Digging into the SEALS Platform

SEALS PLATFORM OVERVIEW

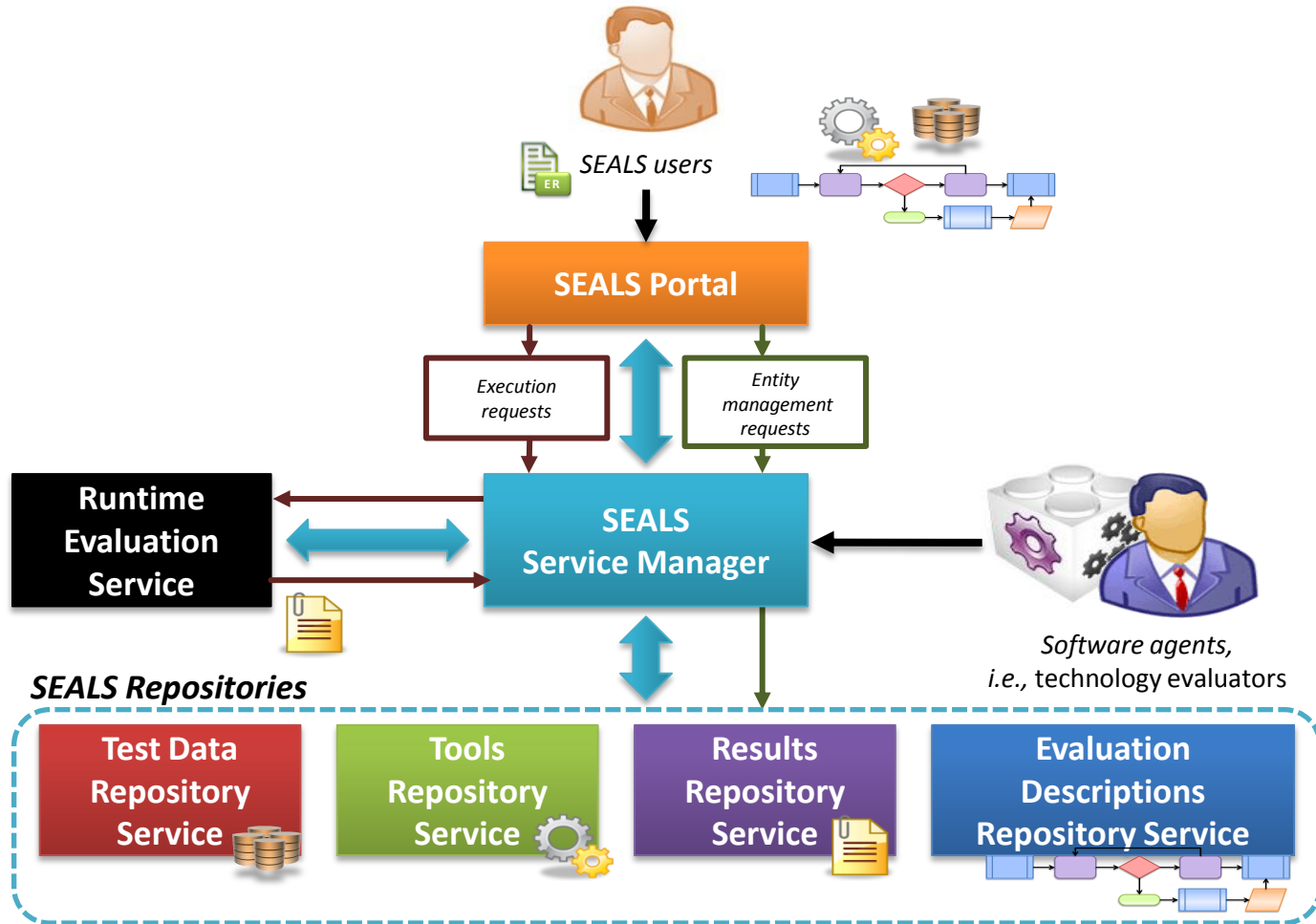
Outline

- *Objective of the SEALS Platform*
- *SEALS Platform Organization*
- *Structure of the SEALS Entities*
- *Evaluation Execution process*
- *Tool Life-cycle*
- *Architecture of the SEALS Platform*
- *SEALS Execution Infrastructure*

Objective of the SEALS Platform



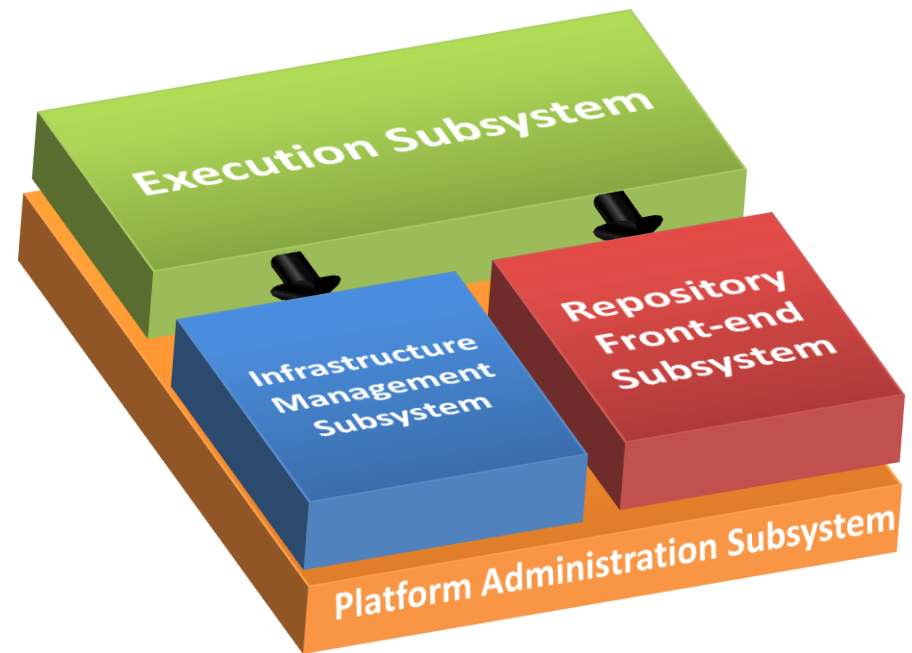
SEALS Platform Organization



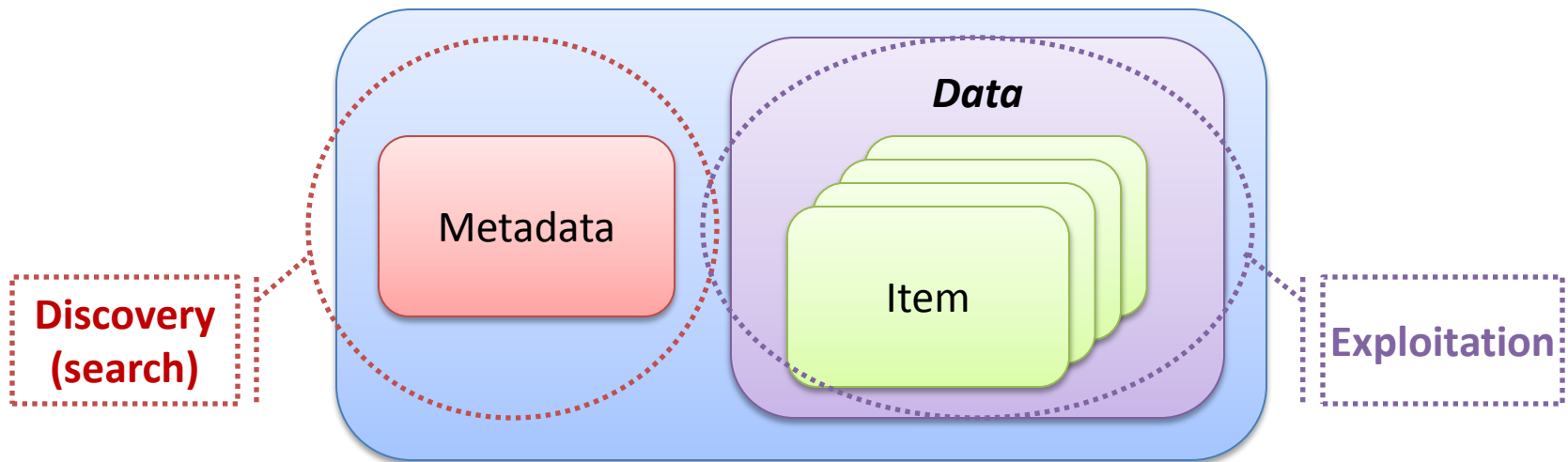
SEALS Platform Organization

SEALS Service Manager

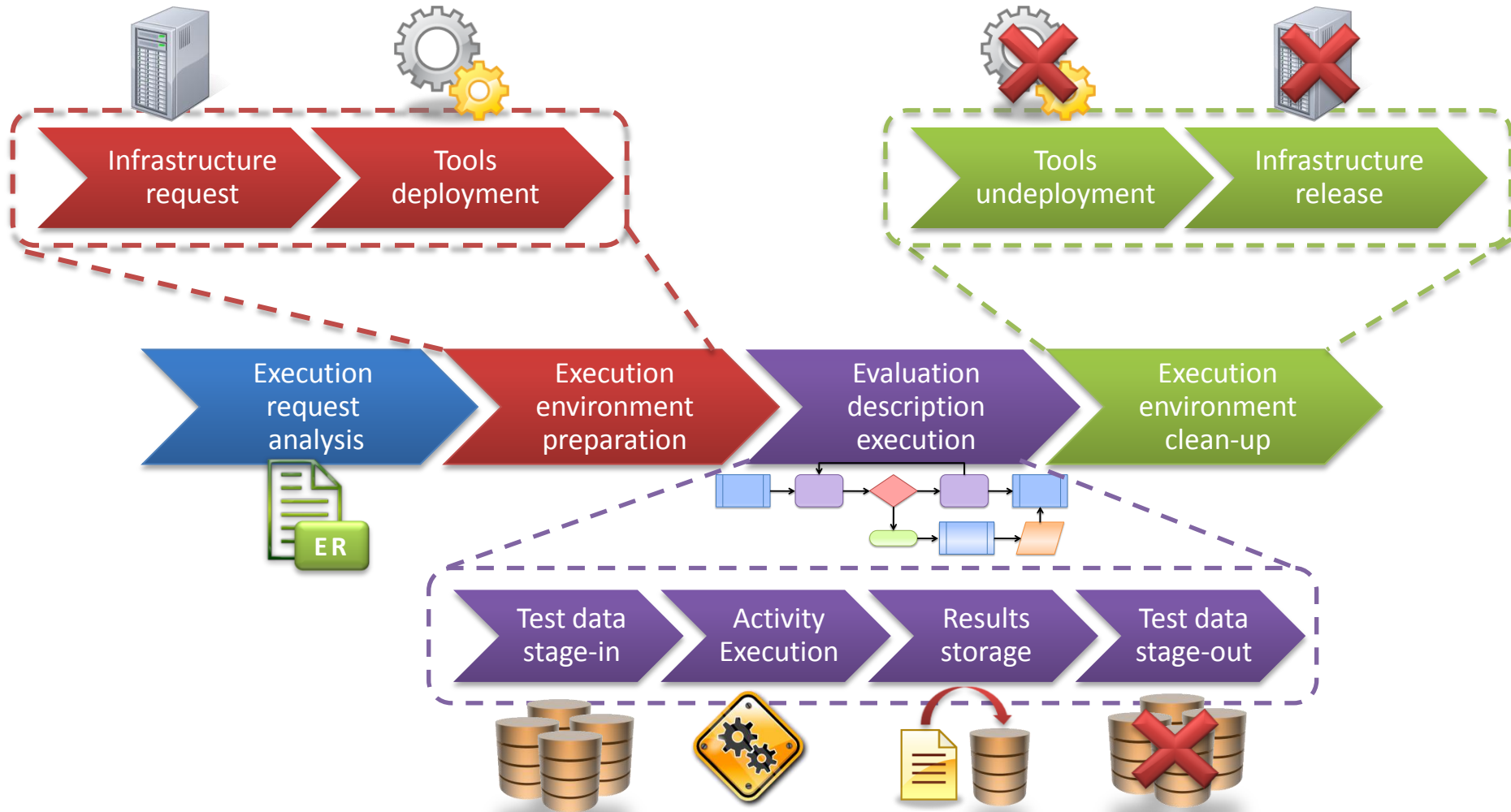
- **Infrastructure Management**
 - Computing resources management
- **Repository Front-end**
 - Repository Services integration
- **Execution**
 - Execution requests management
- **Platform Administration**
 - Security management
 - Monitoring



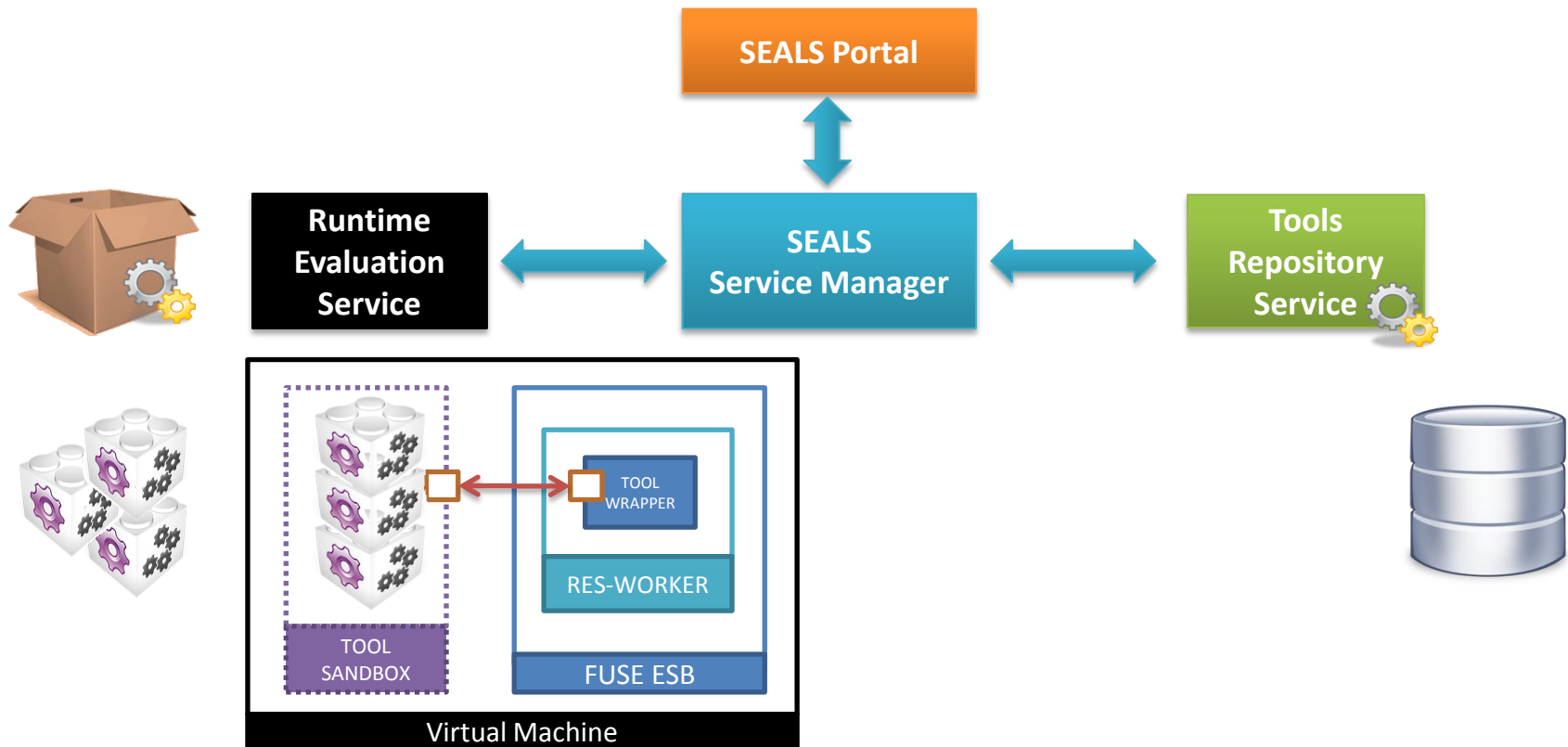
Structure of the SEALS Entities



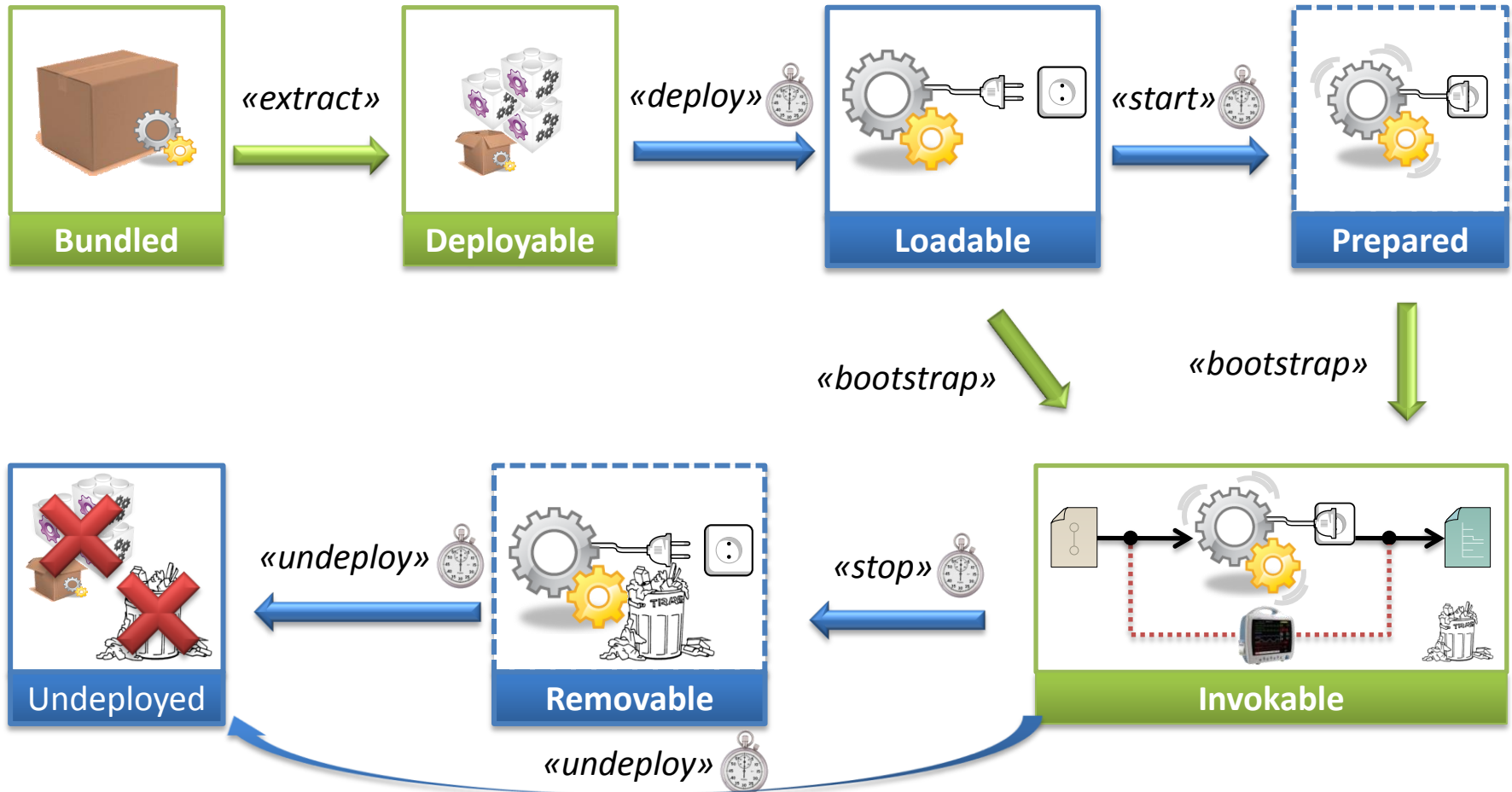
Evaluation Execution Process



Tool Life-cycle (I)

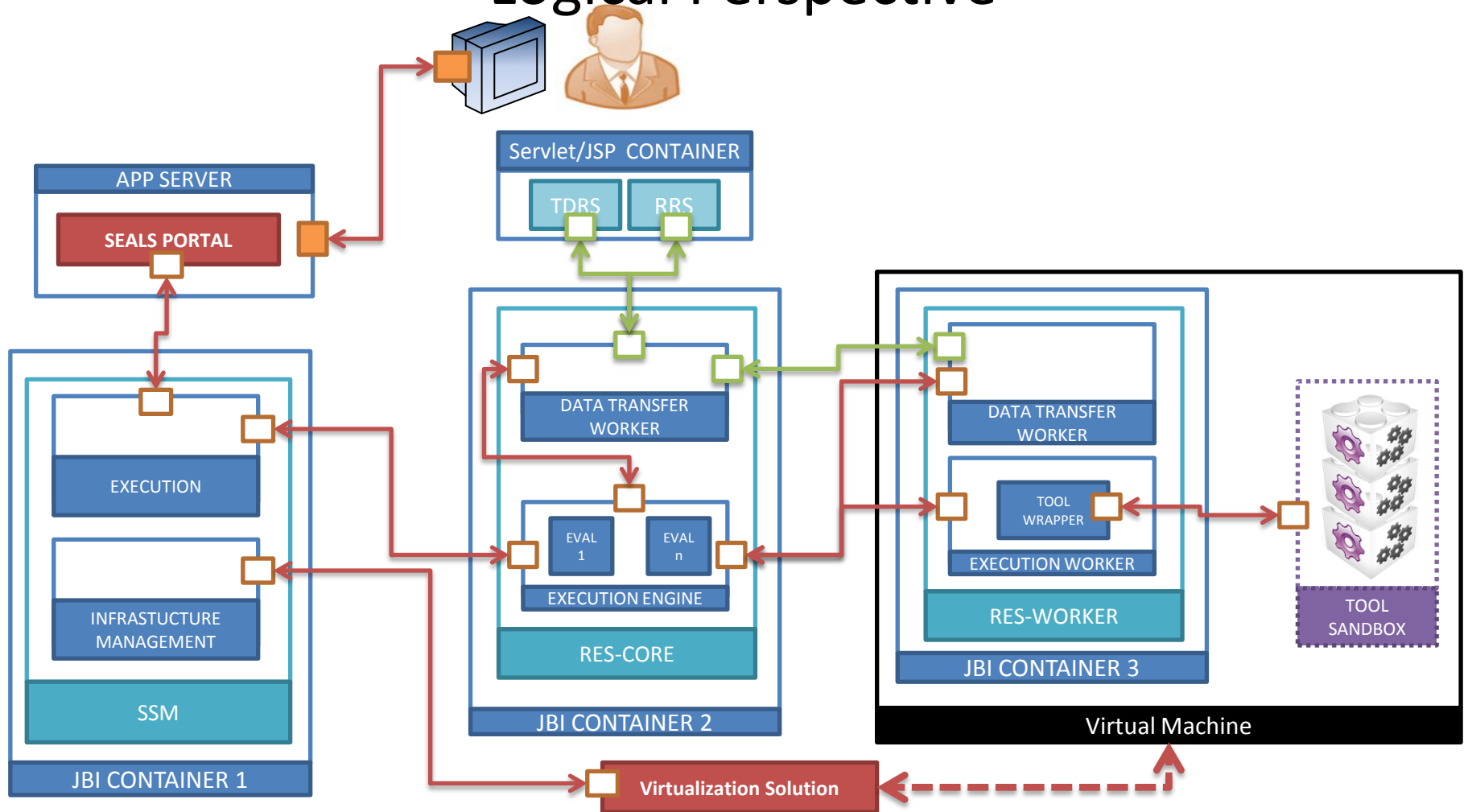


Tool Life-cycle (II)



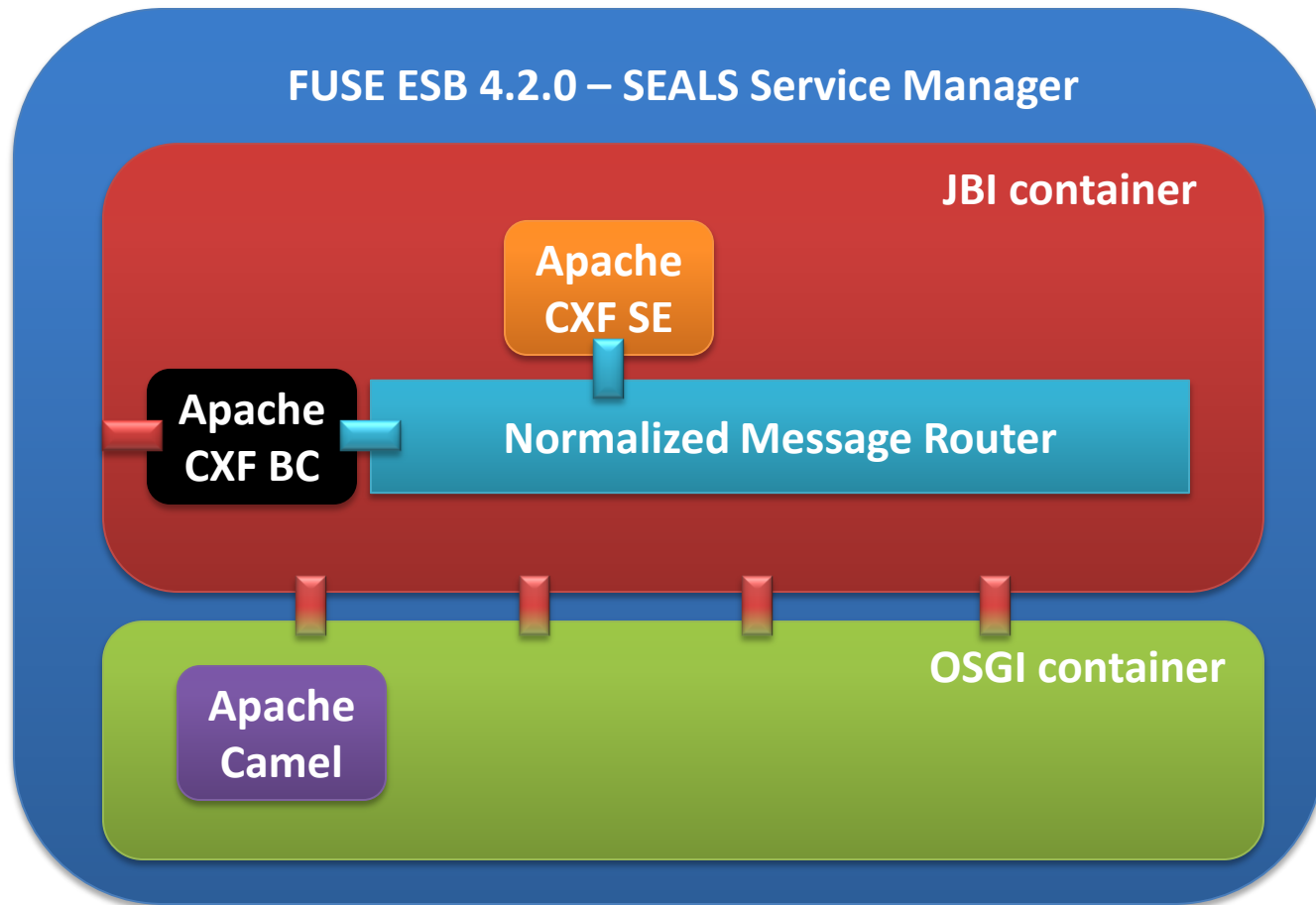
Architecture of the SEALS Platform

Logical Perspective



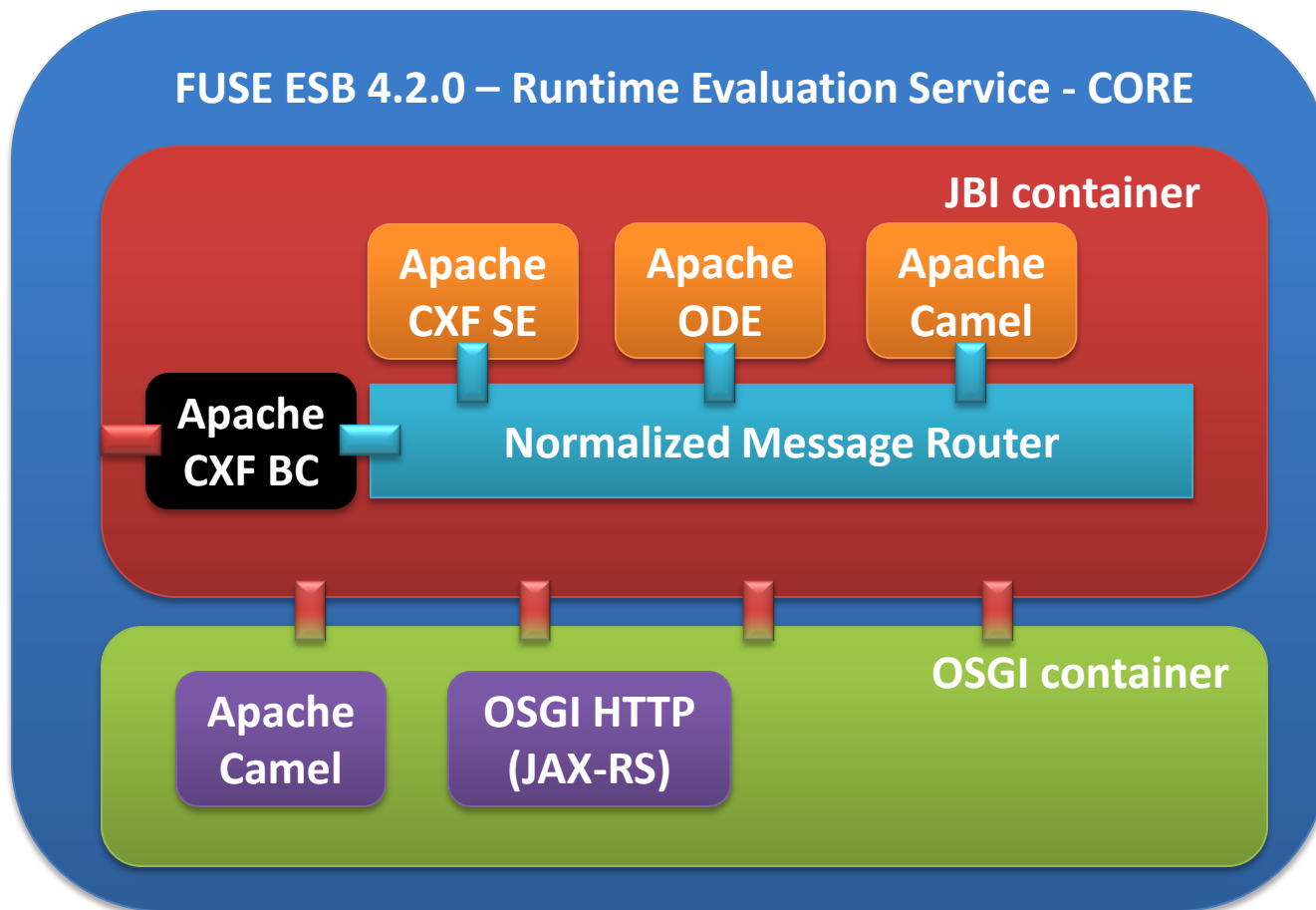
Architecture of the SEALS Platform

Physical perspective (I)



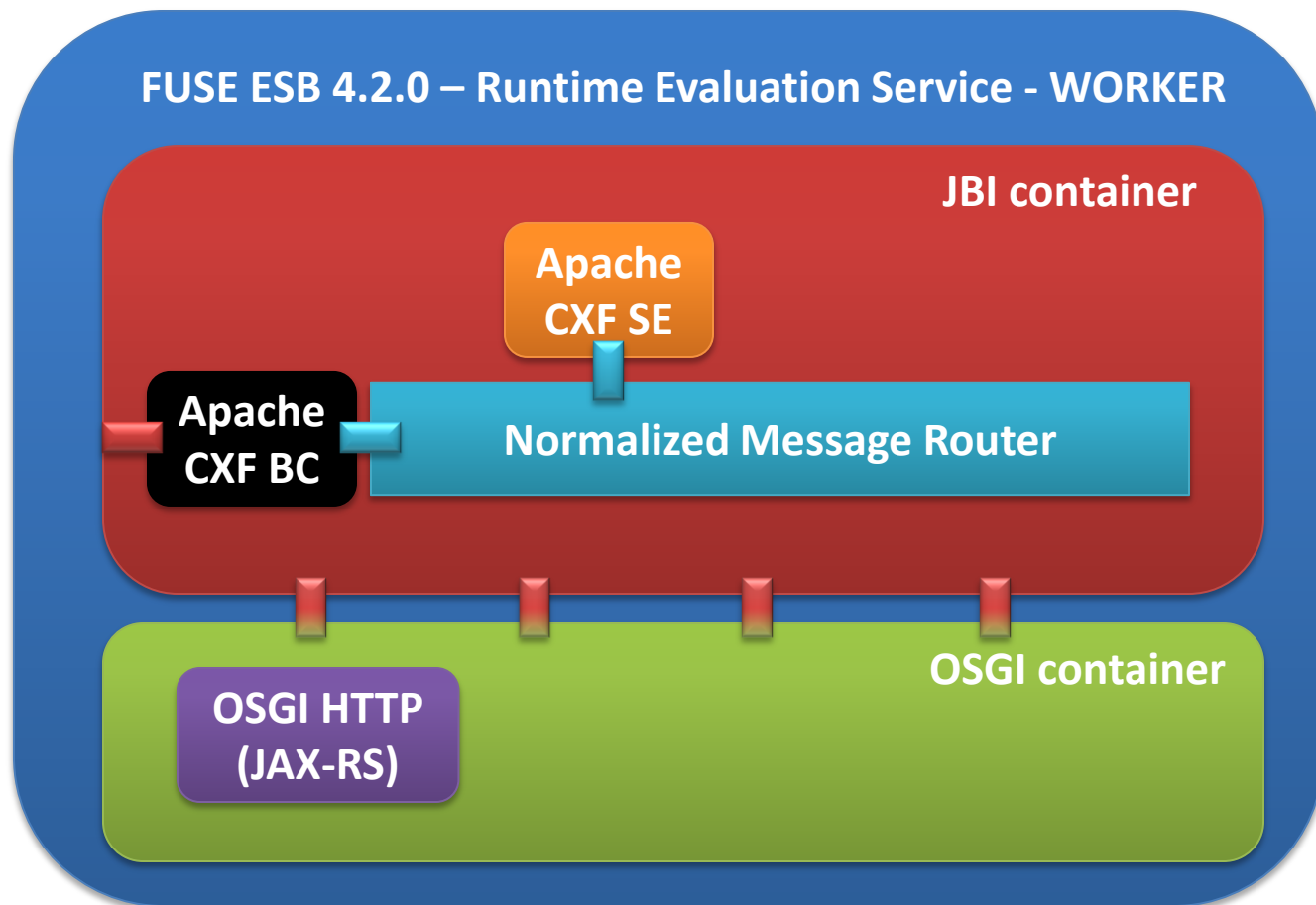
Architecture of the SEALS Platform

Physical perspective (II)



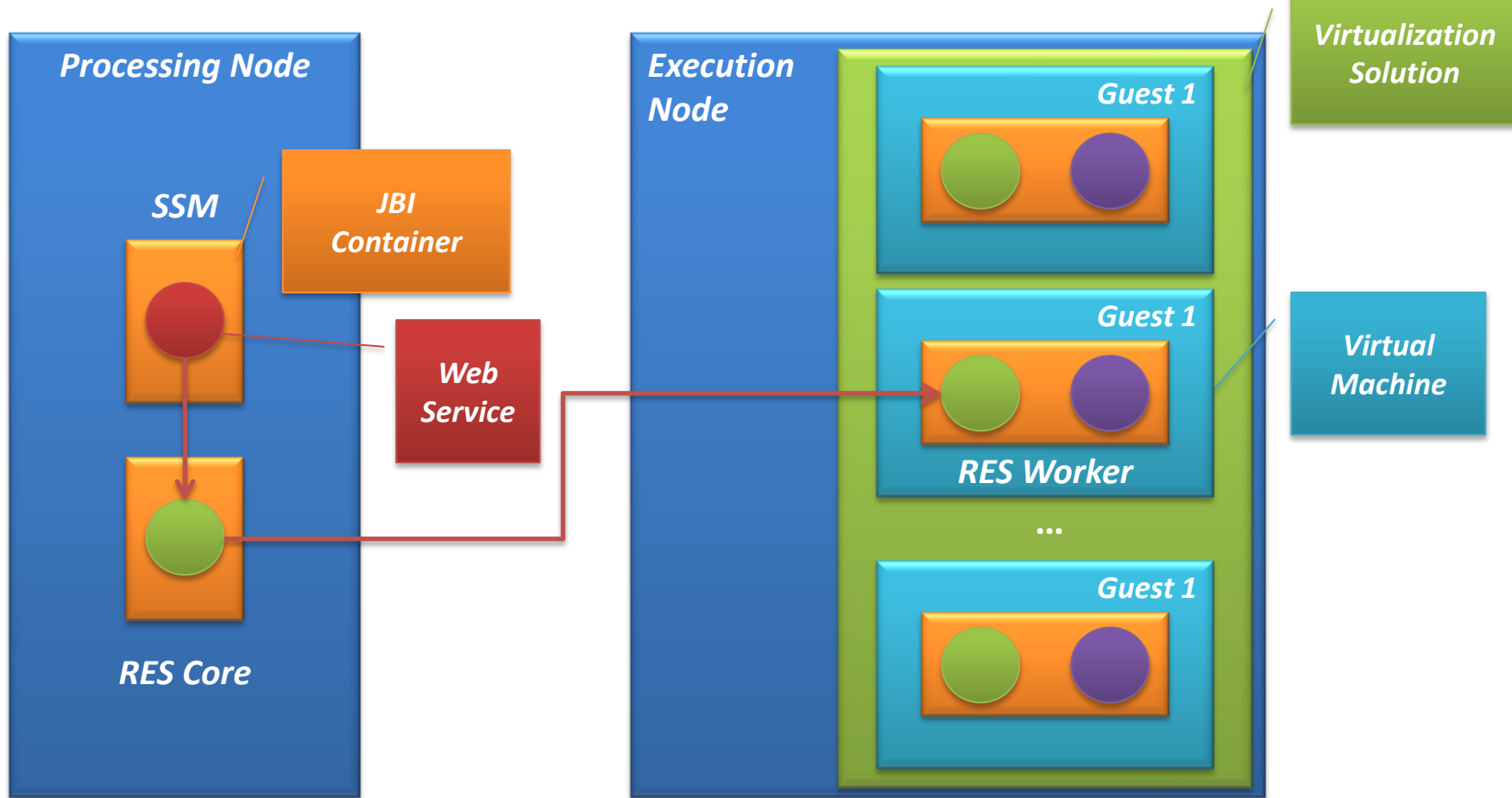
Architecture of the SEALS Platform

Physical perspective (I)



SEALS Execution Infrastructure

Dealing with heterogeneity and reproducibility



**Doubts, comments,
questions??**

Digging into the SEALS Platform

HANDS-ON

Outline

- *Introduction*
- *Setting up the local infrastructure*
- *Preparing the evaluation scenario*
- *Running the evaluation scenario*

Introduction

Outline

- *Goals of the session*
- *Evaluation scenario*
- *Infrastructure set-up*

Introduction

Goals

- Show how to use current SEALS Platform components for running evaluation descriptions locally (@home)

Introduction

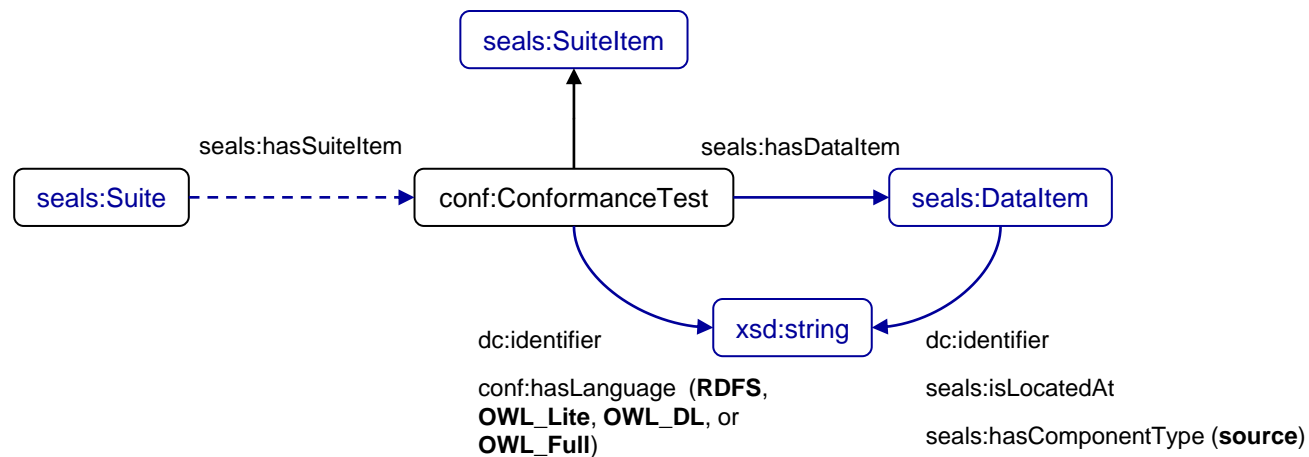
Evaluation scenario (I)

- **Evaluation description:**
 - *Purpose:* exercise an ontology engineering tool with “conformance-alike” test data
 - *Contract:*
 - Parameters:
 - conformanceTestSuite
 - conformanceTestSuiteVersion
 - tool
 - toolVersion
 - Outputs:
 - rawResult
 - numberToolBridgeFaults
 - numberToolFaults

Introduction

Evaluation scenario (II)

- **Evaluation description, continued:**
 - *Structure of the test data consumed:*



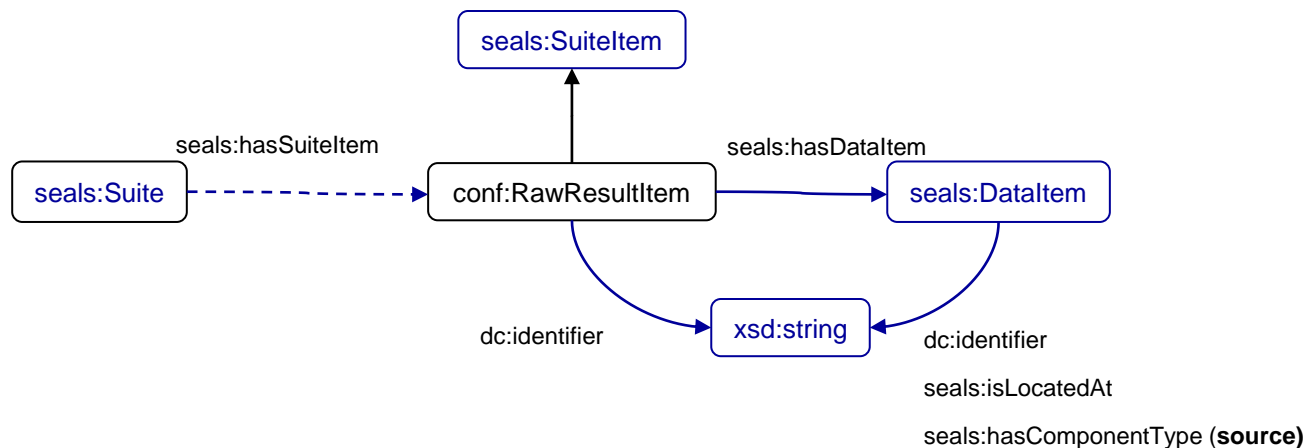
NOTE:

- The **conf** namespace prefix maps to <http://www.seals-project.eu/ontologies/ConformanceTestSuite.owl#>
- The individuals (tests and items) are defined in the namespace <http://www.seals-project.eu/Conformance/metadata.rdf#>
 - Conformance tests individuals are named with the **dc:identifier** value

Introduction

Evaluation scenario (III)

- **Evaluation description, continued:**
 - *Structure of the generated raw results:*

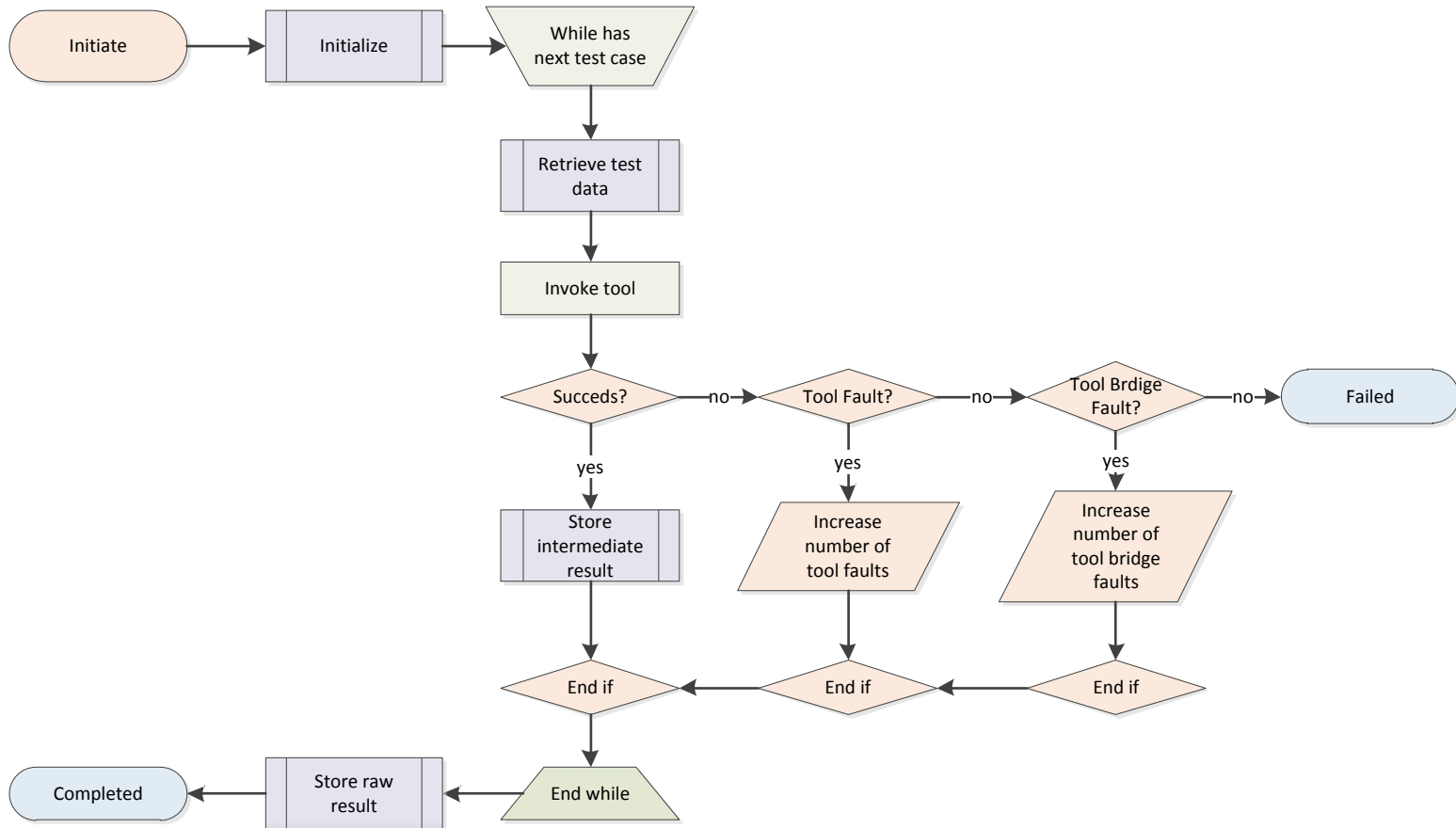


NOTE:

- The **conf** namespace prefix maps to <http://www.seals-project.eu/ontologies/ConformanceResult.owl#>
- The individuals (results and items) are defined in the namespace <http://www.seals-project.eu/Conformance/metadata.rdf#>
 - Raw result item individuals are named using the **dc:identifier** value, which matches the dc:identifier value of the associated conformance test

Introduction

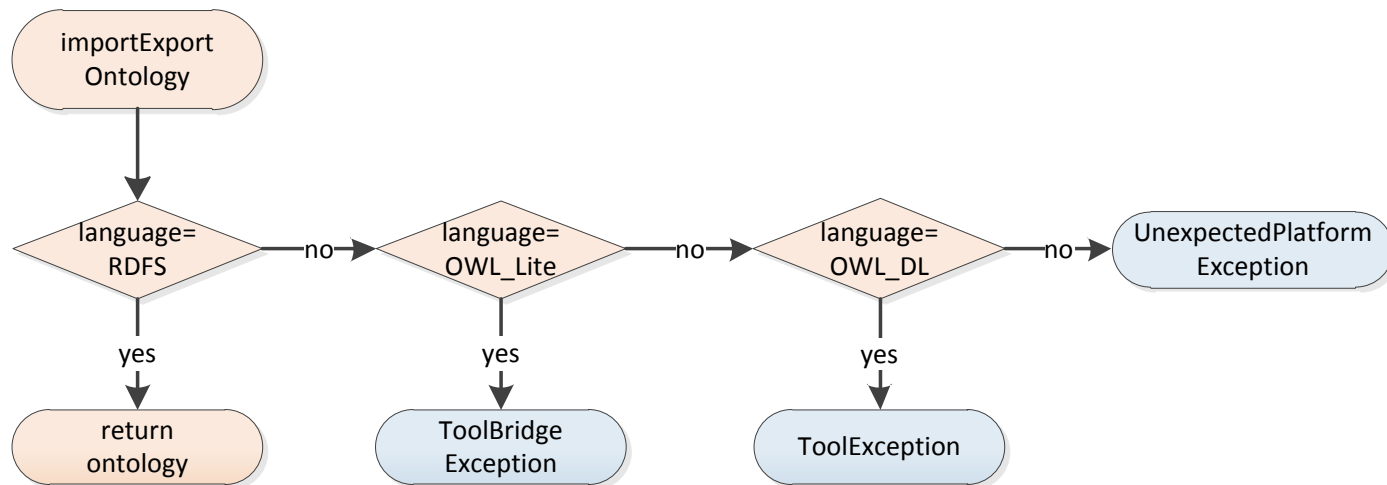
Evaluation scenario (IV)



Introduction

Evaluation scenario (V)

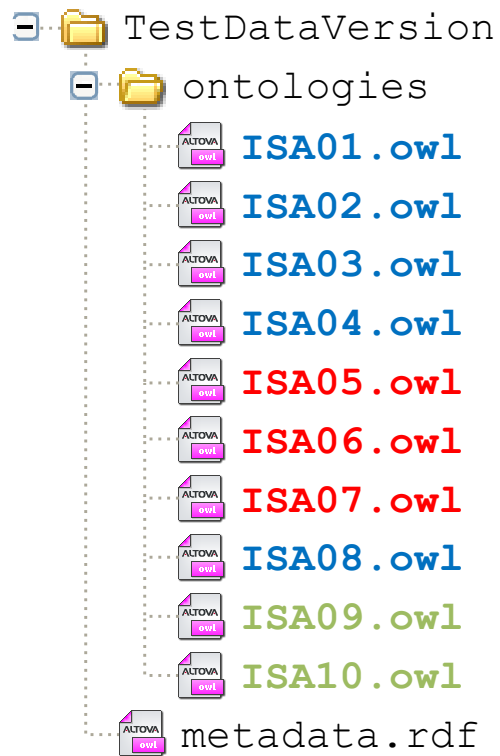
- **Tool under evaluation:**
 - *Business logic*



Introduction

Evaluation scenario (VI)

- **Test data used:**



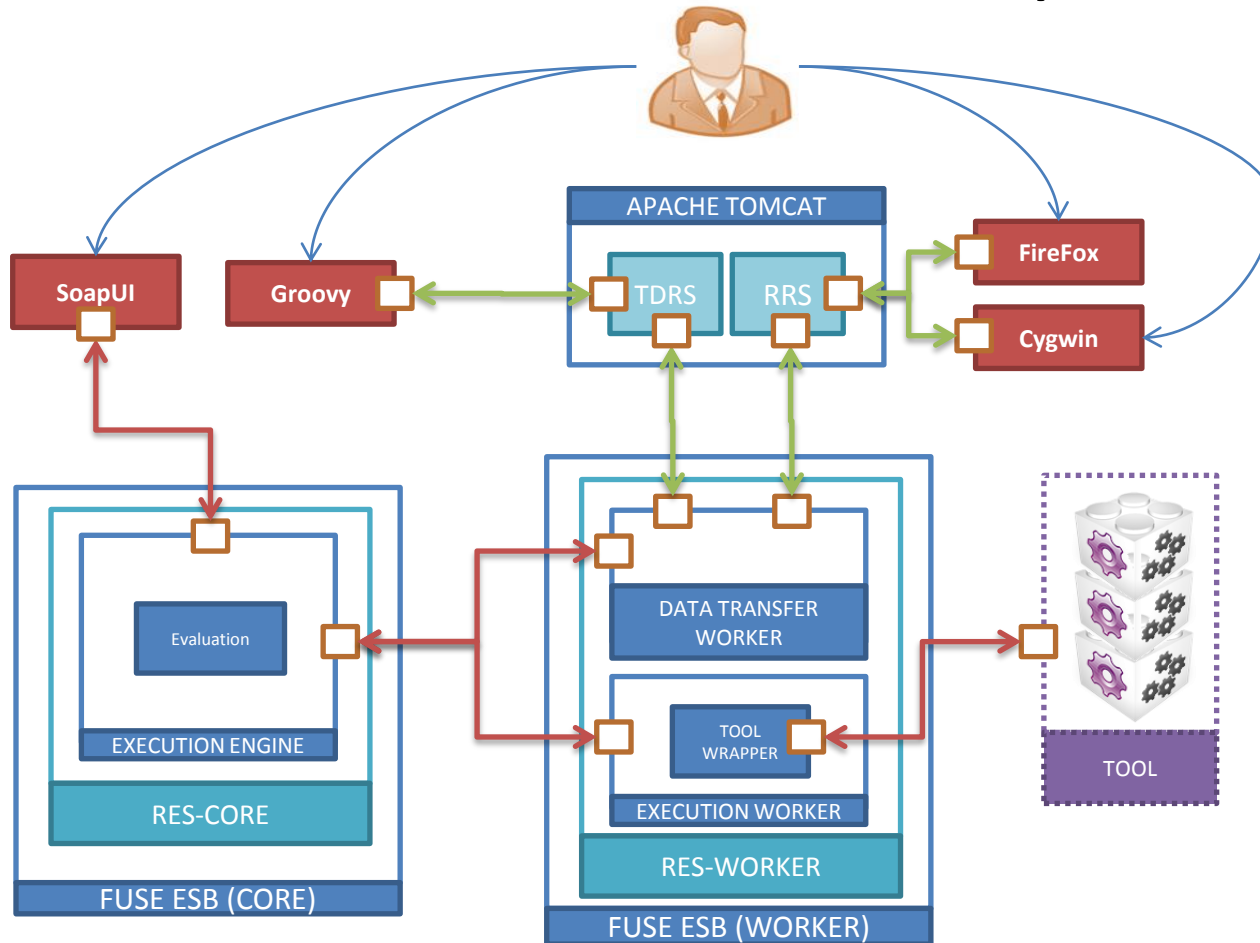
RDFS conformance test

OWL_Lite conformance test

OWL_DL conformance test

Introduction

Infrastructure set-up



Setting up the local infrastructure

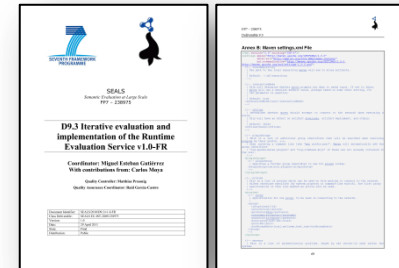
Outline

- *Prerequisites*
- *SEALS Repositories*
 - Test Data Repository Service
 - Results Repository Service
- *Runtime Evaluation Service*

Setting up the local infrastructure

Prerequisites

- Required software :
 - **Java SE Development Kit 6 update 18**¹
 - **SVN client** compatible with the SEALS Subversion Server
 - **Maven 2.2.1**², configured according **Annex B** of **D9.3 v1.0-FR**



NOTE: The binaries of the required software should be included in the path environment variable

- Required middleware:
 - **Fuse ESB 4.2.0-fuse-02-00**³
 - **Apache Tomcat 6.0.26**⁴ (or higher)
 - *OpenRDF Sesame 2.2.4*
 - *OpenRDF Workbench 2.2.4*
- The middleware will be deployed in **D:\SEALS\environment** (from now on **%ENV%**)

¹ <http://www.oracle.com/technetwork/java/archive-139210.html>

² <http://maven.apache.org/download.html>

³ <http://fusesource.com/downloads/>

⁴ <http://archive.apache.org/dist/tomcat/tomcat-6/v6.0.26/bin/>

Setting up the local infrastructure

SEALS Repositories (I)

- Configuration details for the middleware used in the examples:
 - *Apache Tomcat*:
 - Installed in `%ENV%\apache-tomcat-6.0.26` (from now on, `%TOMCAT%`)
 - Listening on port **8080**
 - *OpenRDF Sesame*:
 - Deployed as **openrdf-sesame** application
 - *OpenRDF Workbench*:
 - Deployed as **openrdf-workbench** application

Setting up the local infrastructure

SEALS Repositories (II)

- Deploying the **Test Data Repository Service (version 1.1-b)**:
 - Grab the application war from the SEALS Shared Artifacts Repository:
 - <http://www.development.seals-project.eu/artifactory/global-repo/eu/sealsproject/platform/repos/tdrs-web/1.1-b/tdrs-web-1.1-b.war>
 - Copy application war to Tomcat hot deploy directory (**%TOMCAT%\webapps**)
 - Create repository in OpenRDF Sesame:
 - Id: **testdata**
 - Type: Native Java Store RDF Schema
 - Triple indexes: spoc, posc, cpso
 - Configure the application (**%TOMCAT%\webapps\tdrs-web-1.1-b\WEB-INF\classes\config.properties**):
 - *Sesame repository connection details*:
 - TestDataRepositoryURL=**http://localhost:8080/openrdf-sesame**
 - TestDataRepositoryName=**testdata**
 - *Local file store details*:
 - TestDataSetFileDirectory=**%ENV%/repositories/testdata/testdatasets/**
 - GeneratorFileDirectory=**%ENV%/repositories/testdata/generators/**
 - TempFileDirectory=**%ENV%/repositories/testdata/temp/**

Setting up the local infrastructure

SEALS Repositories (III)

- Deploying the **Results Repository Service (version 1.1-b)**:
 - Grab the application war from the SEALS Shared Artifacts Repository:
 - <http://www.development.seals-project.eu/artifactory/global-repo/eu/sealsproject/platform/repos/rrs-web/1.1-b/rrs-web-1.1-b.war>
 - Copy application war to Tomcat hot deploy directory (**%TOMCAT%\webapps**)
 - Create repository in OpenRDF Sesame:
 - Id: **results**
 - Type: Native Java Store RDF Schema
 - Triple indexes: spoc, posc, cpso
 - Configure the application (**%TOMCAT%\webapps \rrs-web-1.1-b\WEB-INF\classes\config.properties**):
 - *Sesame repository connection details*:
 - ResultsRepositoryURL =**http://localhost:8080/openrdf-sesame**
 - ResultsRepositoryName =**results**
 - *Local file store details*:
 - RawResultFileDirectory=**%ENV%/repositories/results/rawresults/**
 - InterpretationFileDirectory=**%ENV%/repositories/results/results/interpretations/**

Setting up the local infrastructure

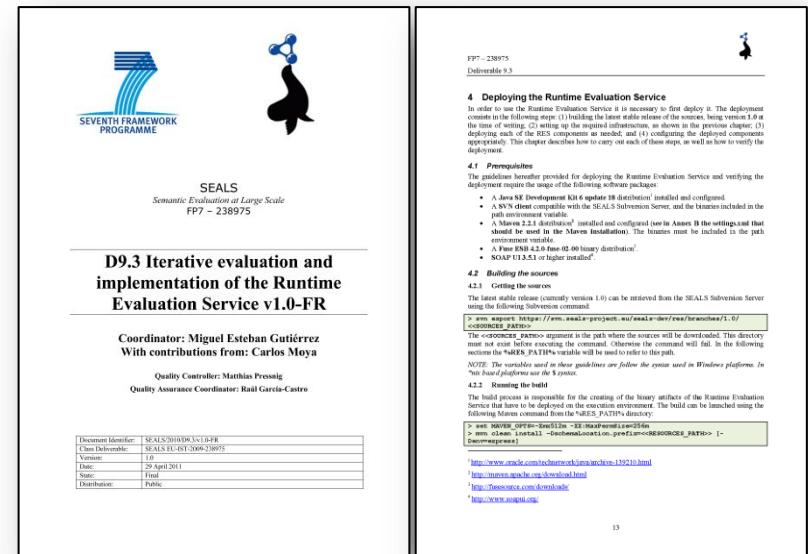
SEALS Repositories (IV)

- **Caveats:**

- Tomcat has to deploy the application wars before in order to expose the configuration files
- Restart Tomcat whenever the configuration is updated
- Regarding the local file store directories:
 - They have to be created manually
 - Their **full** names in the configuration files have to be encoded as valid Java strings:
 - `D:\SEALS\repositories` →
 - » `D:/SEALS/respositories`
 - » `D:\\SEALS\\repositories`

Setting up the local infrastructure Runtime Evaluation Service (I)

- Follow the guidelines provided Chapter 4 of the deliverable **D9.3 Iterative design and implementation of the Evaluation Descriptions Repository Service v1.0-FR**



Setting up the local infrastructure Runtime Evaluation Service (I)

- Configuration details used for the tutorial:
 - Used **source code** from the **trunk**
 - **RES Resources** deployed to **%ENV%\resources**
 - **RES Core:**
 - **FUSE ESB** instance installed in **%ENV%\fuse-esb-4.2.0\core** (from now on **%FUSE_CORE%**)
 - **RES Worker:**
 - **FUSE ESB** instance installed in **%ENV%\fuse-esb-4.2.0\worker** (from now on **%FUSE_WORKER%**)

Setting up the local infrastructure

Runtime Evaluation Service (II)

- Configuration details used for the tutorial, continued:
 - **RES Worker**, continued:
 - *Configuration file (%FUSE_WORKER%\SEALS\configuration.properties):*

```
environment=INTEGRATION TESTING

####
# RES Worker Tools Services specific configuration
####

tool.oet.location.package=SEALS/itest
tool.omt.location.package=SEALS/packages/omt
tool.srst.location.package=SEALS/packages/srst
tool.sst.location.package=SEALS/packages/sst
tool.swst.location.package=SEALS/packages/swst

####
# RES Worker Repository Access Services specific configuration
####

tdrs.url=http://localhost:8080/tdrs-web-1.1-b/
tdrs.tmp_directory=SEALS/tmp/repositories/tdrs

rrs.url=http://localhost:8080/rrs-web-1.1-b/
rrs.tmp_directory=SEALS/tmp/repositories/rrs

####
# RES Worker Utility Services specific configuration
####

rc.connection_timeout=5000
rc.tmp_directory=SEALS/tmp/rc
```

Preparing the evaluation scenario

Outline

- *Populating the test data repository*
- *Deploying the evaluation description*
 - Physical deployment
 - Logical deployment
- *Deploying the tool under evaluation*

Preparing the evaluation scenario

Populating the test data repository (I)

- Registering the test data set:

```
> groovy AddTestData.groovy
      http://localhost:8080/tdrs-web-1.1-b/
      ..\evaluation-scenario\test-data\TestDataSet
```

```
Adding persistent test data set '..\evaluation-scenario\test-data\TestDataSet'.
- Target TDRS.....: 'http://localhost:8080/tdrs-web-1.1-b/'.
- Source metadata file: '..\evaluation-scenario\test-data\TestDataSet.xml'.
SUCCESS [Created (201)]: Creado.
Collection published at 'http://localhost:8080/tdrs-web-1.1-
b/testdata/persistent/Ontology+Engineering+Tools+OWL+Lite+Test+Data+Suite+Collection/'
...
```

NOTE:

- The Groovy scripts used are available in the **groovy-scripts** folder
- A **Groovy 1.7** (or higher) distribution properly installed and configured is required for running the scripts (<http://groovy.codehaus.org/Download>)

Preparing the evaluation scenario

Populating the test data repository (II)

- Registering the test data set, continued:

```
...
Persistent test data set metadata:
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  <PersistentTestData xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#" rdf:about="http://seals.sti2.at/tdrs-
web/testdata/persistent/Ontology+Engineering+Tools+OWL+Li
te+Test+Data+Suite+Collection/">
  <hasName xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#" rdf:datatype="http://www.w3.org/XMLSchema#string">Ontology
Engineering Tools OWL Lite Test Data Su
ite Collection</hasName>
  <hasExternalURL xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#"
rdf:datatype="http://www.w3.org/XMLSchema#string">http://www.seals-project.eu/oet/data/Ontol
ogy+Engineering+Tools+Test+Data+Suite+Collection/</hasExternalURL>
  <identifier xmlns="http://purl.org/dc/terms/" rdf:datatype="http://www.w3.org/XMLSchema#string">OET-OWL-FULL-IMPORT</identifier>
  <description xmlns="http://purl.org/dc/terms/" rdf:datatype="http://www.w3.org/XMLSchema#string">Ontology Engineering Tools OWL Lite
Test Data Suite Collection</description>

  <hasTestDataCategory xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#" rdf:resource="http://www.seals-
project.eu/someTestDataCategory/">
  <created xmlns="http://purl.org/dc/terms/" rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2011-05-
26T08:22:20.798+02:00</created>
</PersistentTestData>
</rdf:RDF>
```

Preparing the evaluation scenario

Populating the test data repository (III)

- Registering the test data set version:

```
> groovy AddTestDataVersion.groovy
      http://localhost:8080/tdrs-web-1.1-b/
      Ontology+Engineering+Tools+OWL+Lite+Test+Data+Suite+Collection
      ..\evaluation-scenario\test-data\TestDataVersion
```

```
Adding persistent test data version '..\evaluation-data\binaries\TestDataVersion' to persistent test data set
'Ontology+Engineering+Tools+OWL+Lite+Test+Data+Suite+Collection'.
- Target TDRS.....: 'http://localhost:8080/tdrs-web-1.1-b/'.
- Source metadata file: '..\evaluation-scenario\test-data\TestDataVersion.xml'.
- Source data file.....: '..\evaluation-scenario\test-data\TestDataVersion.zip'.
SUCCESS [Created (201)]: Creado.
Version published at 'http://localhost:8080/tdrs-web-1.1-
b/testdata/persistent/Ontology+Engineering+Tools+OWL+Lite+Test+Data+Suite+Collection/v1.0/'
```


Preparing the evaluation scenario

Populating the test data repository (IV)

- Registering the test data set version, continued:

```
...
Persistent test data set metadata:
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  <PersistentTestData xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#" rdf:about="http://seals.sti2.at/tdrs-
web/testdata/persistent/Ontology+Engineering+Tools+OWL+Li
te+Test+Data+Suite+Collection/">
  <hasName xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#" rdf:datatype="http://www.w3.org/XMLSchema#string">Ontology
Engineering Tools OWL Lite Test Data Su
ite Collection</hasName>
  <hasExternalURL xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#"
rdf:datatype="http://www.w3.org/XMLSchema#string">http://www.seals-project.eu/oet/data/Ontol
ogy+Engineering+Tools+Test+Data+Suite+Collection/</hasExternalURL>
  <identifier xmlns="http://purl.org/dc/terms/" rdf:datatype="http://www.w3.org/XMLSchema#string">OET-OWL-FULL-IMPORT</identifier>
  <description xmlns="http://purl.org/dc/terms/" rdf:datatype="http://www.w3.org/XMLSchema#string">Ontology Engineering Tools OWL Lite
Test Data Suite Collection</description>

  <hasTestCategory xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#" rdf:resource="http://www.seals-
project.eu/someTestCategory/">
  <created xmlns="http://purl.org/dc/terms/" rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2011-05-
26T08:22:20.798+02:00</created>
</PersistentTestData>

</rdf:RDF>
```

Preparing the evaluation execution

Deploying the evaluation description (I)

- **Physical deployment:** Making the BPEL process that implements the evaluation description available in the same container as the RES Core.
 - Copy evaluation description service assembly (**res-itest-ed-sa-1.1-SNAPSHOT.zip**) to RES Worker hot deploy directory (**%FUSE_CORE%\deploy**)
- **Logical deployment:** Inform the RES Core about the endpoint from which the BPEL process that implements the evaluation description is accessible.
 - Invoke the **DeployEvaluationDescription** of the **Evaluation Description Deployer Service** of the RES Core.

Preparing the evaluation execution

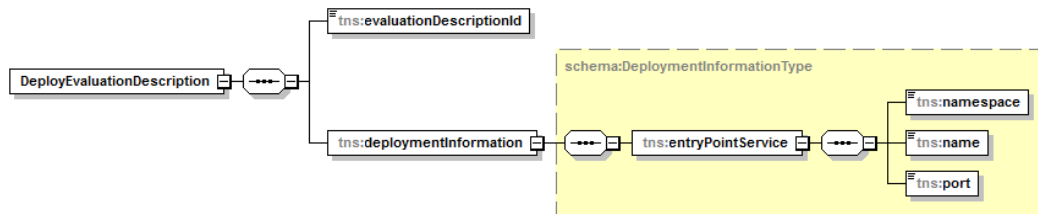
Deploying the evaluation description (II)

```
<?xml version="1.0" encoding="UTF-8"?>
<deploy xmlns="http://www.apache.org/ode/schemas/dd/2007/03"
  xmlns:rrs="http://www.seals-project.eu/resources/res/repositories/rrs/wsd1/v1"
  xmlns:tdrs="http://www.seals-project.eu/resources/res/repositories/tdrs/wsd1/v1"
  xmlns:rcomp="http://www.seals-project.eu/resources/res/utilities/rc/wsd1/v1"
  xmlns:oet="http://www.seals-project.eu/resources/res/tools/oet/wsd1/v2"
  xmlns:eval="http://www.seals-project.eu/resources/res/engine/evaluation/wsd1/v2">
  <process name="eval:integration-testing-evaluation">
    <!-- Contents removed for brevity -->
    <provide partnerLink="client">
      <service name="eval:customEvaluationService" port="customEvaluationPort"/>
    </provide>
    <!-- Contents removed for brevity -->
  </process>
</deploy>
```

Evaluation Description
Deployment
Descriptor

```
<v1:DeployEvaluationDescription
  xmlns:v1="http://www.seals-project.eu/resources/res/engine/deployer/wsd1/v1"
  xmlns:v11="http://www.seals-project.eu/resources/res/engine/deployer/xsd/v1">
  <v1:evaluationDescriptionId>urn:ed:6ba7b810-9dad-11d1-80b4-00c04fd430c7</v1:evaluationDescriptionId>
  <v1:deploymentInformation>
    <v11:entryPointService>
      <v11:namespace>http://www.seals-project.eu/resources/res/engine/evaluation/wsd1/v2</v11:namespace>
      <v11:name>customEvaluationService</v11:name>
      <v11:port>customEvaluationPort</v11:port>
    </v11:entryPointService>
  </v1:deploymentInformation>
</v1:DeployEvaluationDescription>
```

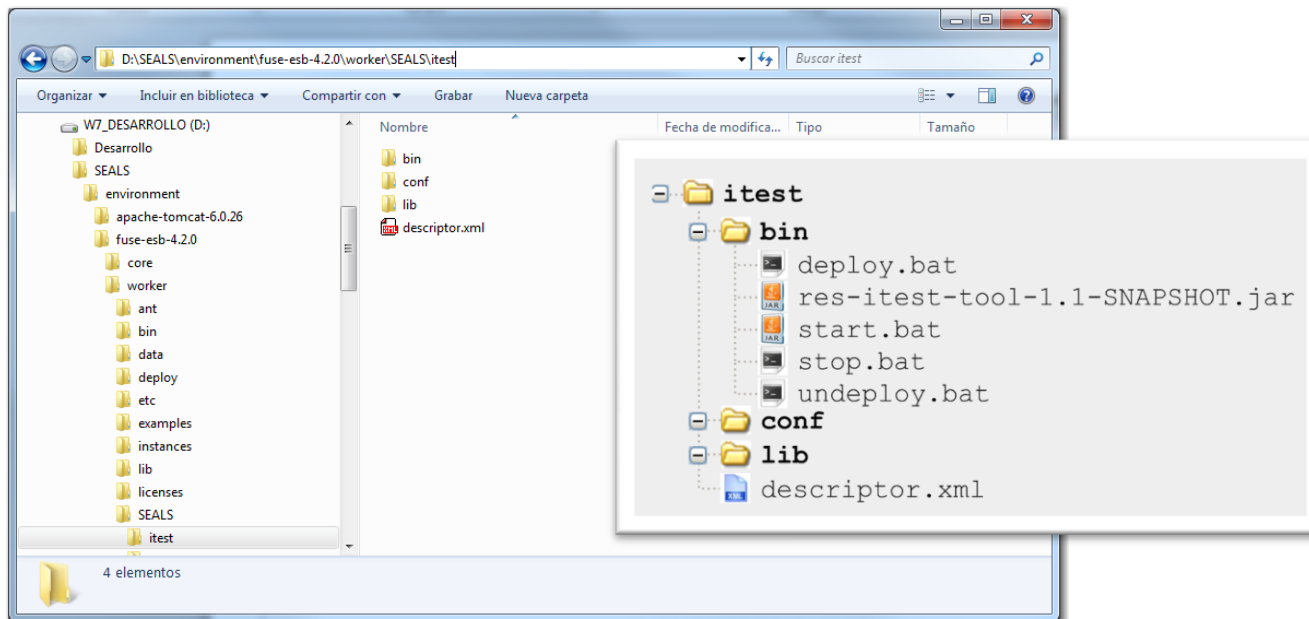
DeployEvaluationDescription
Payload



Preparing the evaluation execution

Deploying the tool under evaluation

- Unzip tool package (**res-itest-tool-1.1-SNAPSHOT-tool-package.zip**) to path specified in the RES Worker configuration file (**%FUSE_WORKER%\SEALS\configuration.properties**)
 - **tool.oet.location.package=SEALS/itest**



Running the evaluation scenario

Outline

- *Preparing the execution request context*
- *Preparing the request message*
- *Triggering the evaluation execution*
- *Analyzing the execution response*
- *Inspecting generated results*
 - From the browser
 - From the shell

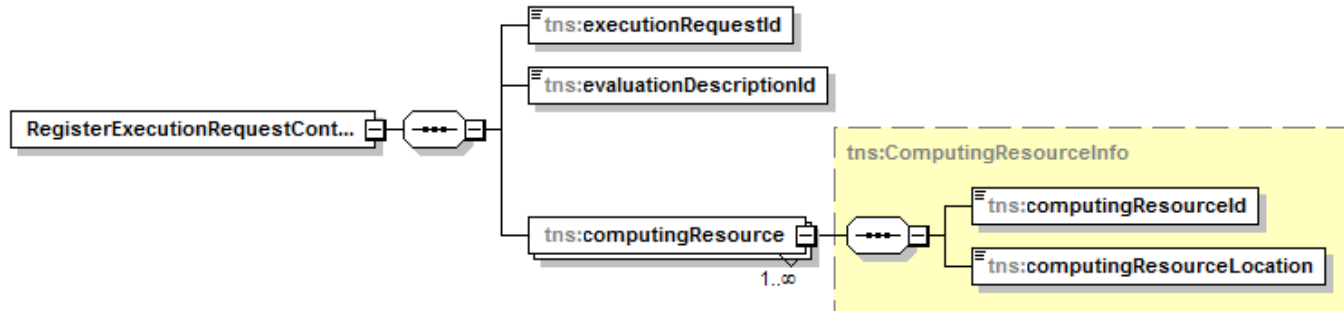
Running the evaluation scenario

Preparing the execution request context (I)

- Inform the Runtime Evaluation Service about the resources that should participate in the enactment of the execution request.
 - Which is the evaluation description associated to the execution request
 - Where are the RES Workers which will expose the tools under evaluation*
- Invoke the **RegisterExecutionRequestContext** of the **Execution Request Context Registry Service** of the RES Core.

Preparing the evaluation execution

Preparing the execution request context (II)



```

<v1:RegisterExecutionRequestContext
  xmlns:v1="http://www.seals-project.eu/resources/res/engine/registry/wsd1/v1">
  <v1:executionRequestId>urn:erq:6ba7b810-9dad-11d1-80b4-00c04fd430c7</v1:executionRequestId>
  <v1:evaluationDescriptionId>urn:ed:6ba7b810-9dad-11d1-80b4-00c04fd430c7</v1:evaluationDescriptionId>
  <v1:computingResource>
    <v1:computingResourceId>tool</v1:computingResourceId>
    <v1:computingResourceLocation>127.0.0.1</v1:computingResourceLocation>
  </v1:computingResource>
</v1:RegisterExecutionRequestContext>
  
```

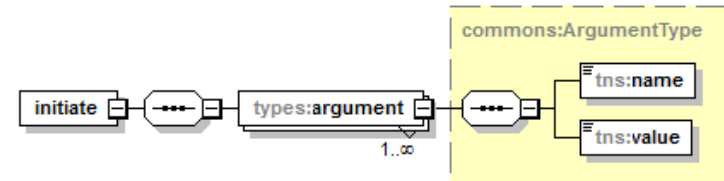
RegisterExecutionRequestContext
Payload

Running the evaluation scenario

Preparing the request message (I)

- The payload:

```
<snap1:initiate
  xmlns:snap1="http://www.seals-project.eu/resources/res/engine/evaluation/wsd1/v2"
  xmlns:snap2="http://www.seals-project.eu/resources/res/common/types/xsd/v1">
  <snap1:argument>
    <snap2:name>conformanceTestSuite</snap2:name>
    <snap2:value>Ontology Engineering Tools OWL Lite Test Data Suite Collection</snap2:value>
  </snap1:argument>
  <snap1:argument>
    <snap2:name>conformanceTestSuiteVersion</snap2:name>
    <snap2:value>v1.0</snap2:value>
  </snap1:argument>
  <snap1:argument>
    <snap2:name>tool</snap2:name>
    <snap2:value>ProtegeOWL</snap2:value>
  </snap1:argument>
  <snap1:argument>
    <snap2:name>toolVersion</snap2:name>
    <snap2:value>ProtegeOWLVersion1</snap2:value>
  </snap1:argument>
</snap1:initiate>
```

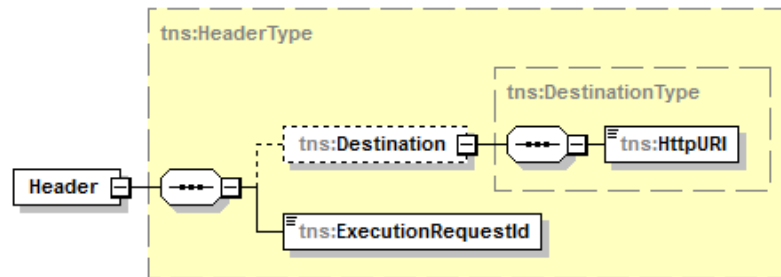


Running the evaluation scenario

Preparing the request message (II)

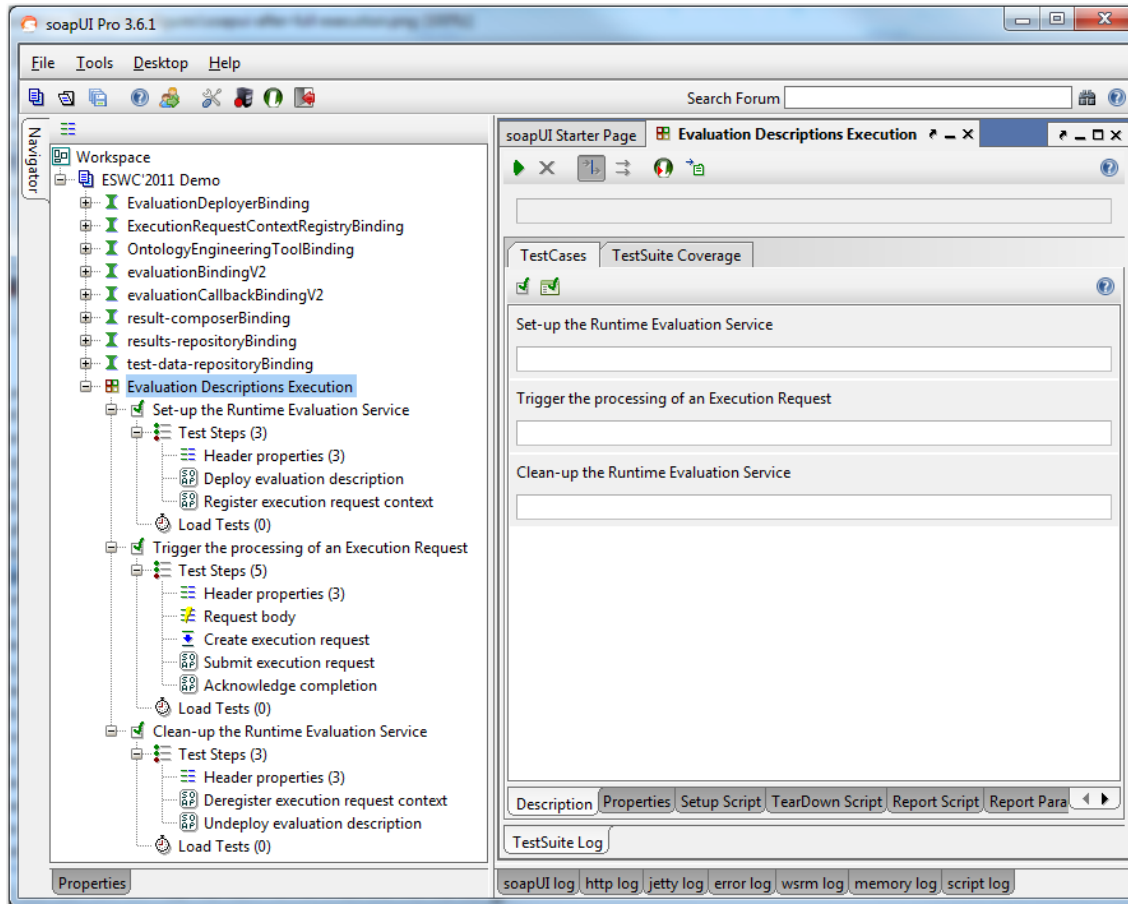
- The header:

```
<header:Header xmlns:header="http://www.seals-project.eu/resources/res/common/header/xsd/v1">  
  <header:Destination>  
    <header:HttpURI>http://localhost</header:HttpURI>  
  </header:Destination>  
  <header:ExecutionRequestId>urn:erq:6ba7b810-9dad-11d1-80b4-00c04fd430c7</header:ExecutionRequestId>  
</header:Header>
```



Running the evaluation scenario

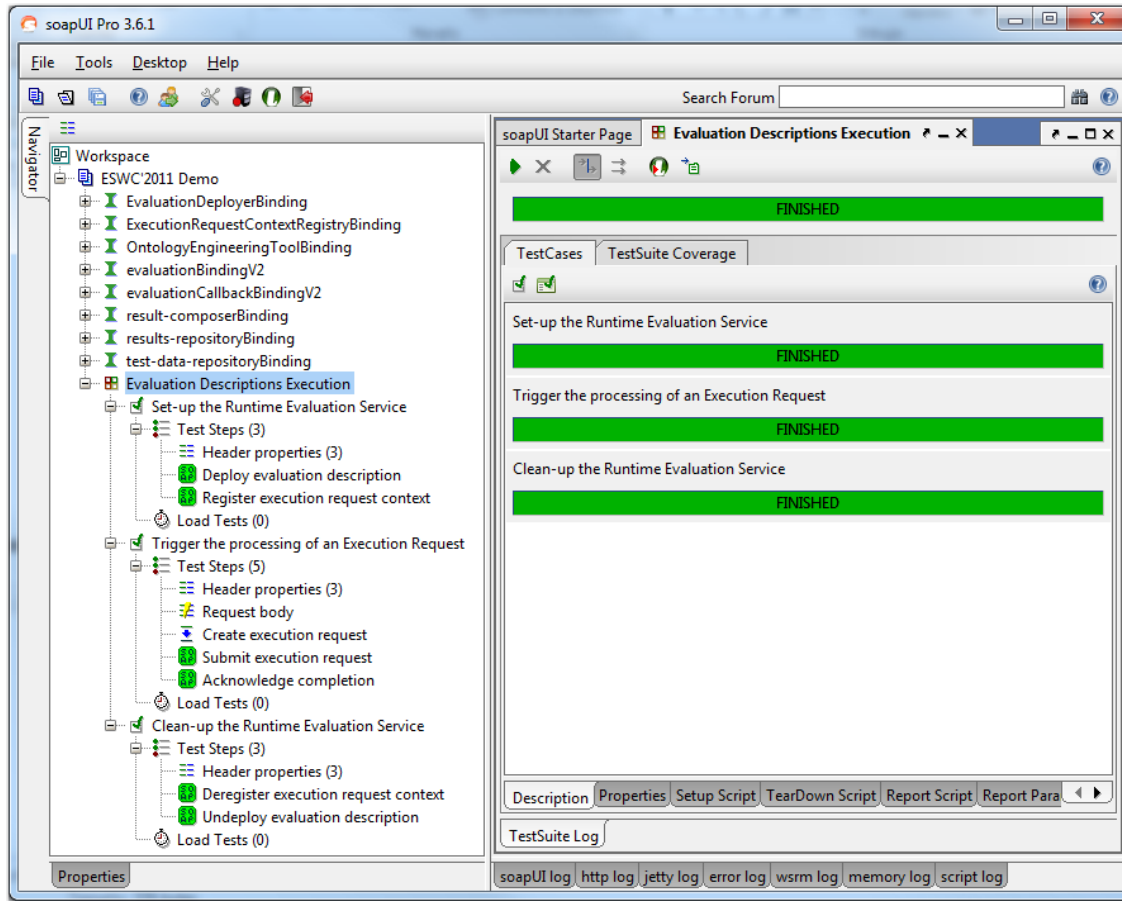
Triggering the evaluation execution (I)



NOTE: SoapUI 3.5.1 (or higher) is required for running the project (<http://www.soapui.org/>)

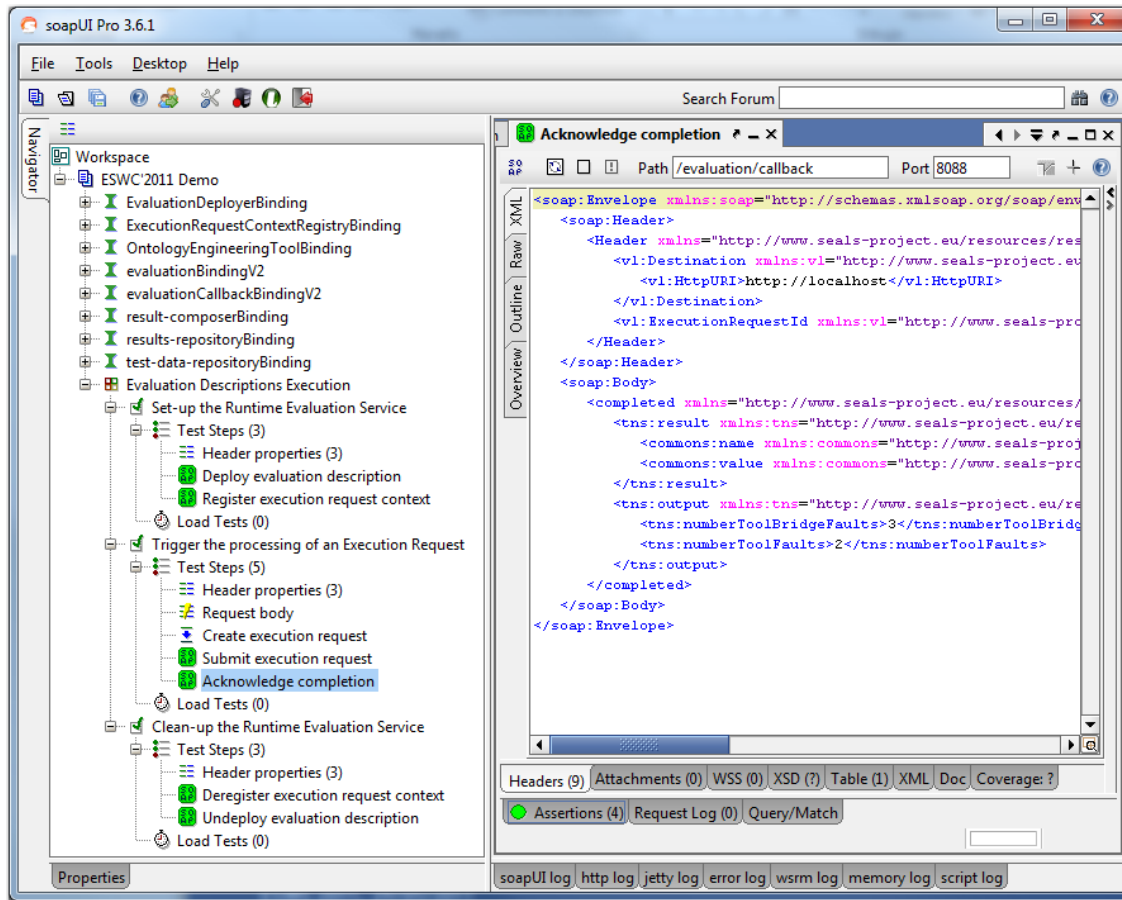
Running the evaluation scenario

Triggering the evaluation execution (II)



Running the evaluation scenario

Analyzing the execution response (I)

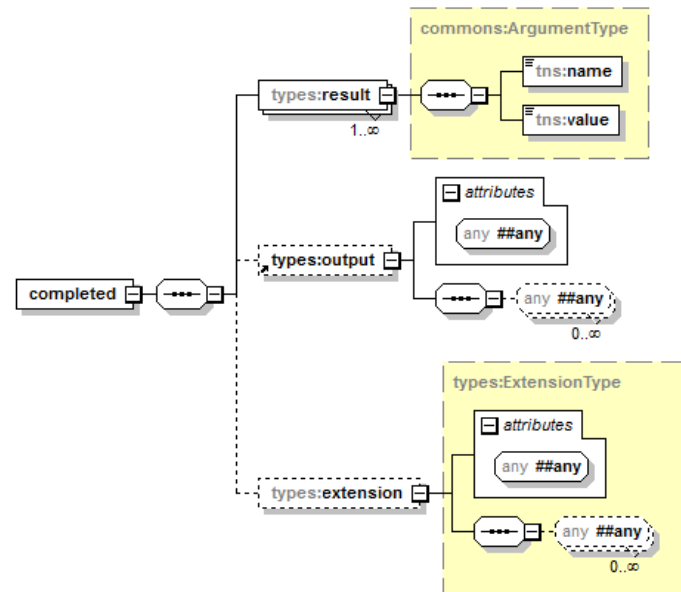


Running the evaluation scenario

Analyzing the execution response (II)

- Payload:

```
<completed xmlns="http://www.seals-  
project.eu/resources/res/engine/evaluation/wsd1/v2">  
  <tns:result xmlns:tns="http://www.seals-  
project.eu/resources/res/engine/evaluation/wsd1/v2">  
    <commons:name xmlns:commons="http://www.seals-  
project.eu/resources/res/common/types/xsd/v1" rawResult</commons:name>  
    <commons:value xmlns:commons="http://www.seals-  
project.eu/resources/res/common/types/xsd/v1" <u>integration-testing-evaluation1</u></commons:value>  
  </tns:result>  
  <tns:output xmlns:tns="http://www.seals-  
project.eu/resources/res/engine/evaluation/wsd1/v2">  
    <tns:numberToolBridgeFaults>3</tns:numberToolBridgeFaults>  
    <tns:numberToolFaults>2</tns:numberToolFaults>  
  </tns:output>  
</completed>
```



Running the evaluation scenario

Inspecting generated results

- **Simple inspection**

- With a *browser*:

- FireFox (3.6.13)
- REST Client add-on (1.3.3)

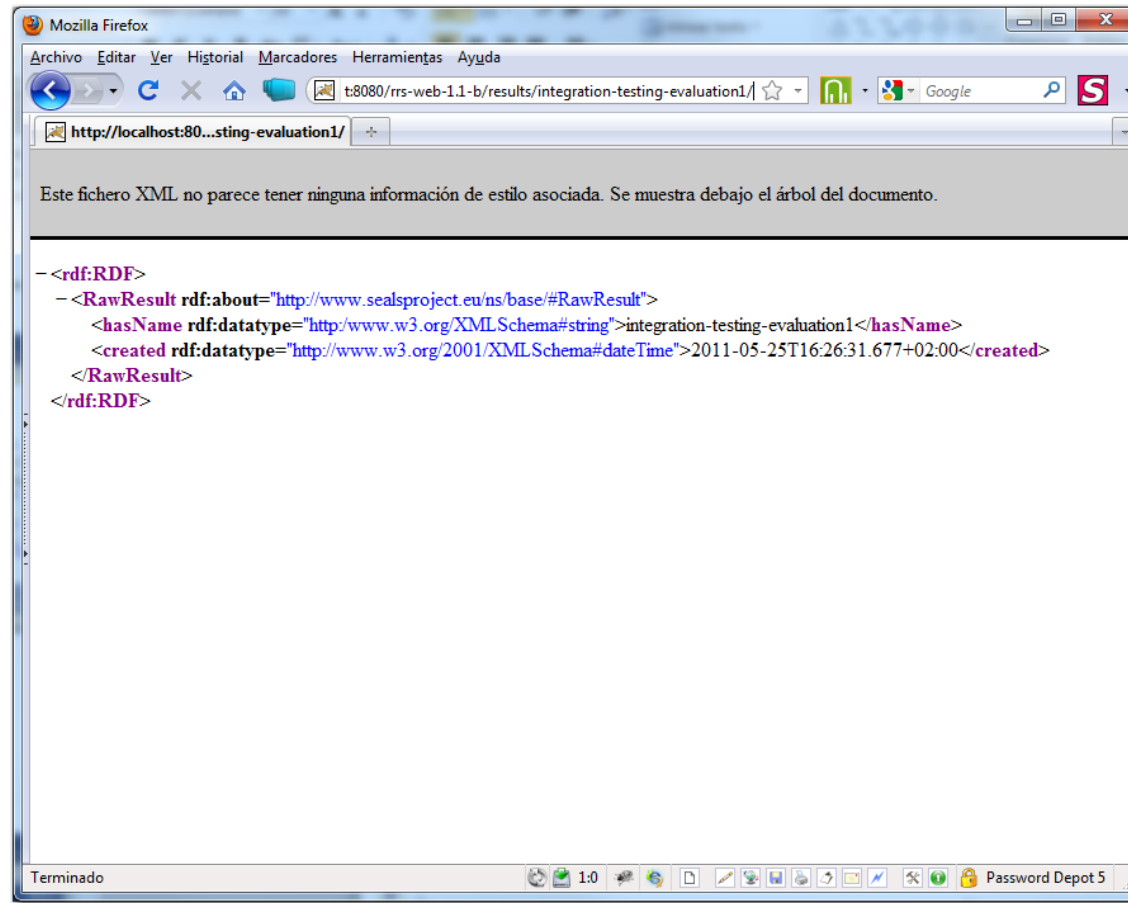
- **Complex inspection**

- With *shell commands* (*nix shell or Cygwin on Windows platforms):

- curl
- unzip

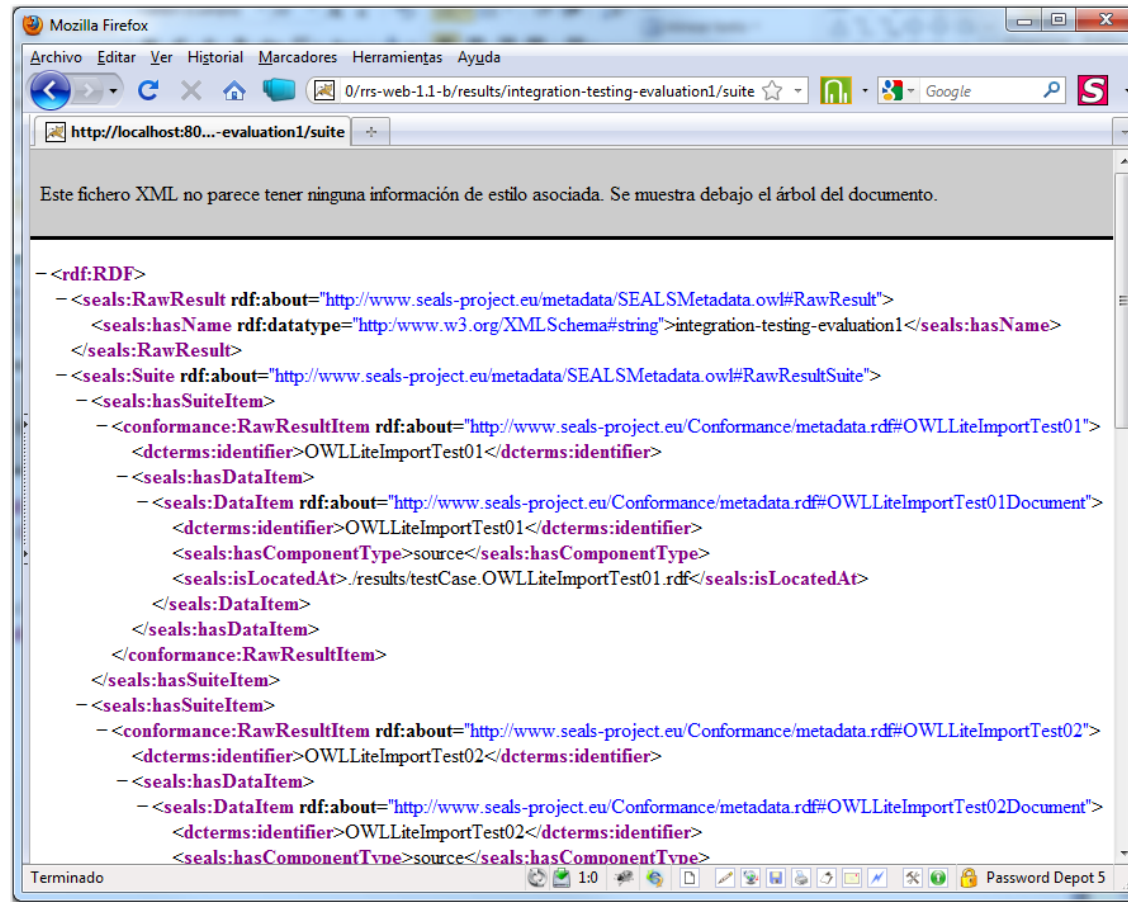
Running the evaluation scenario

Inspecting generated results with a browser (I)



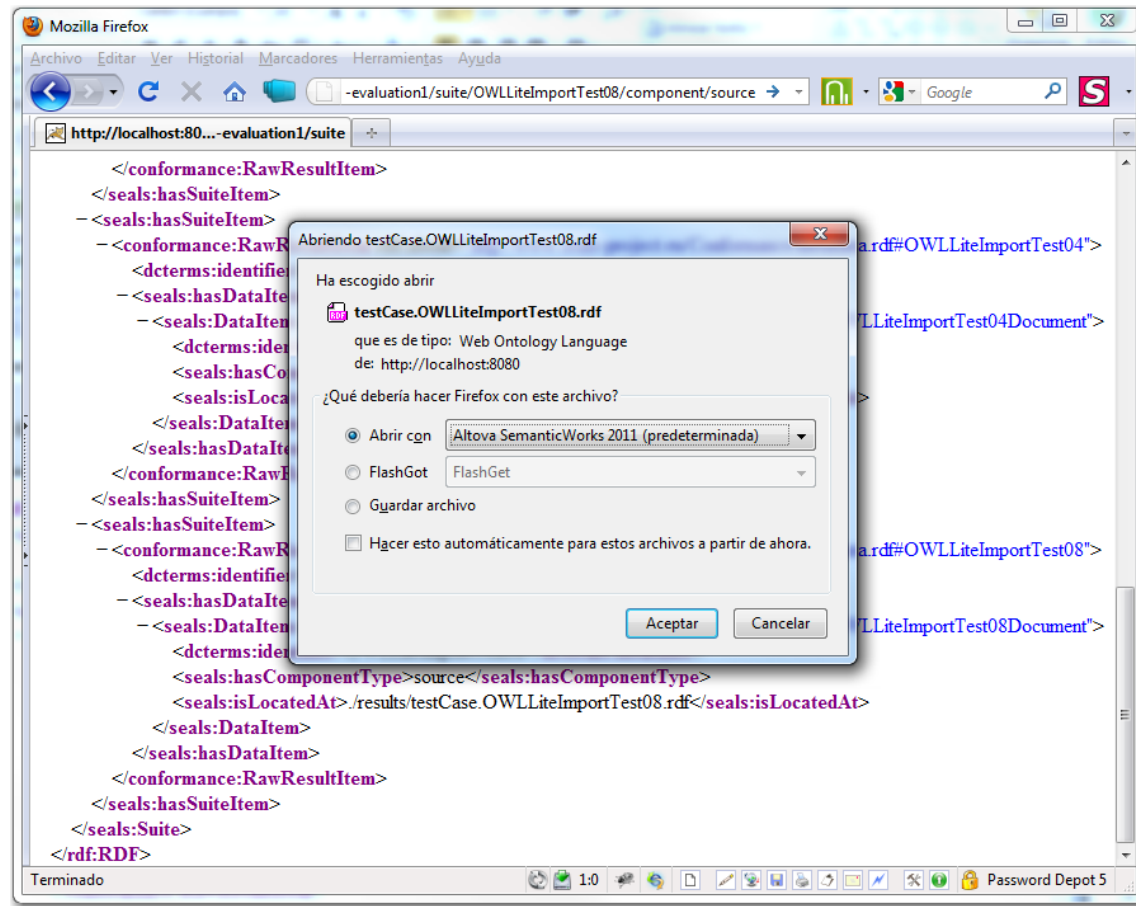
Running the evaluation scenario

Inspecting generated results with a browser (II)



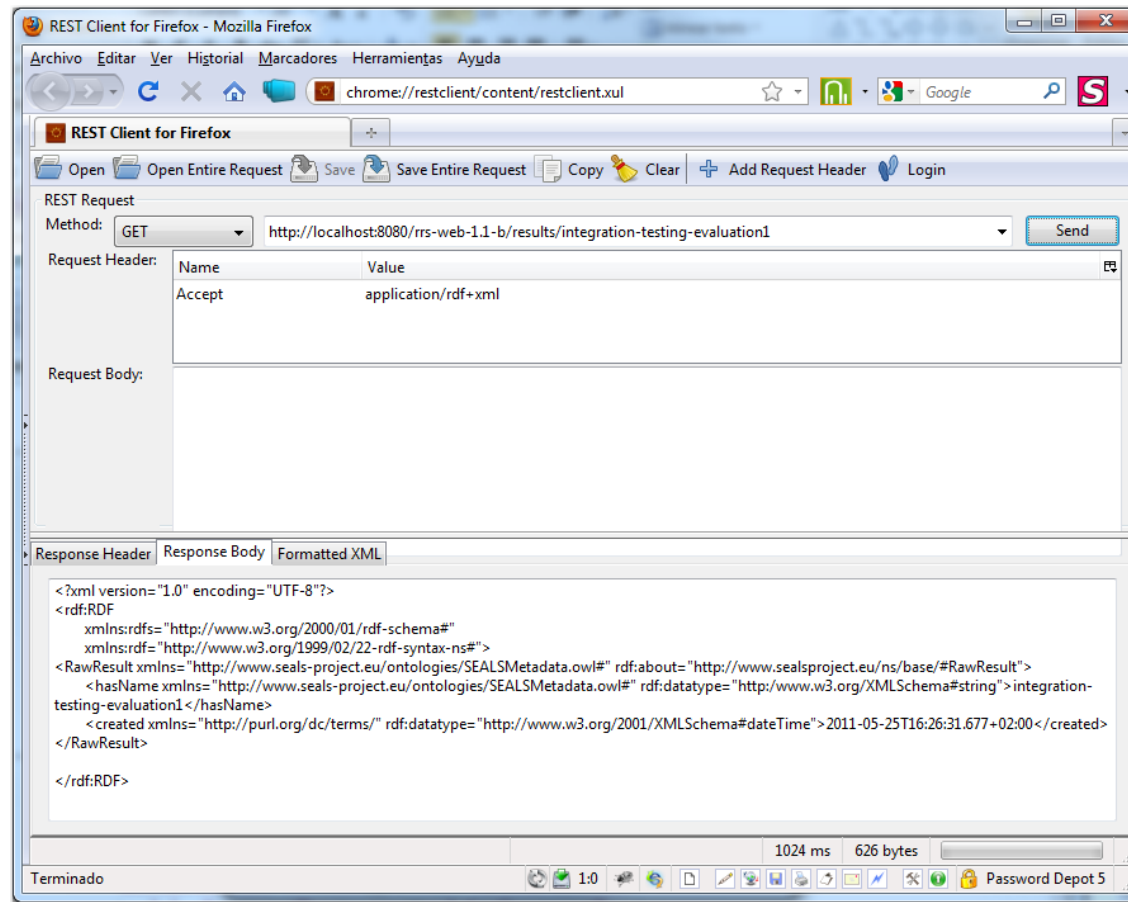
Running the evaluation scenario

Inspecting generated results with a browser (III)



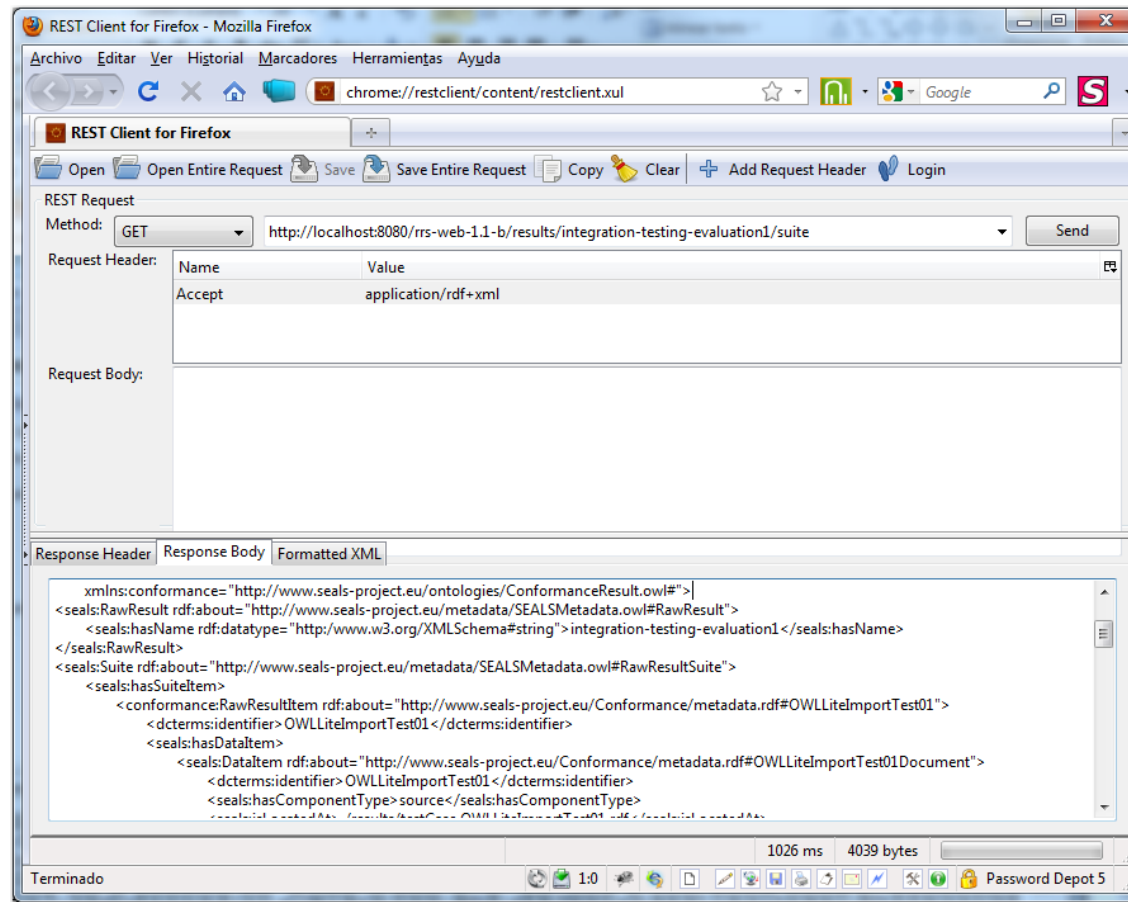
Running the evaluation scenario

Inspecting generated results with a browser (IV)



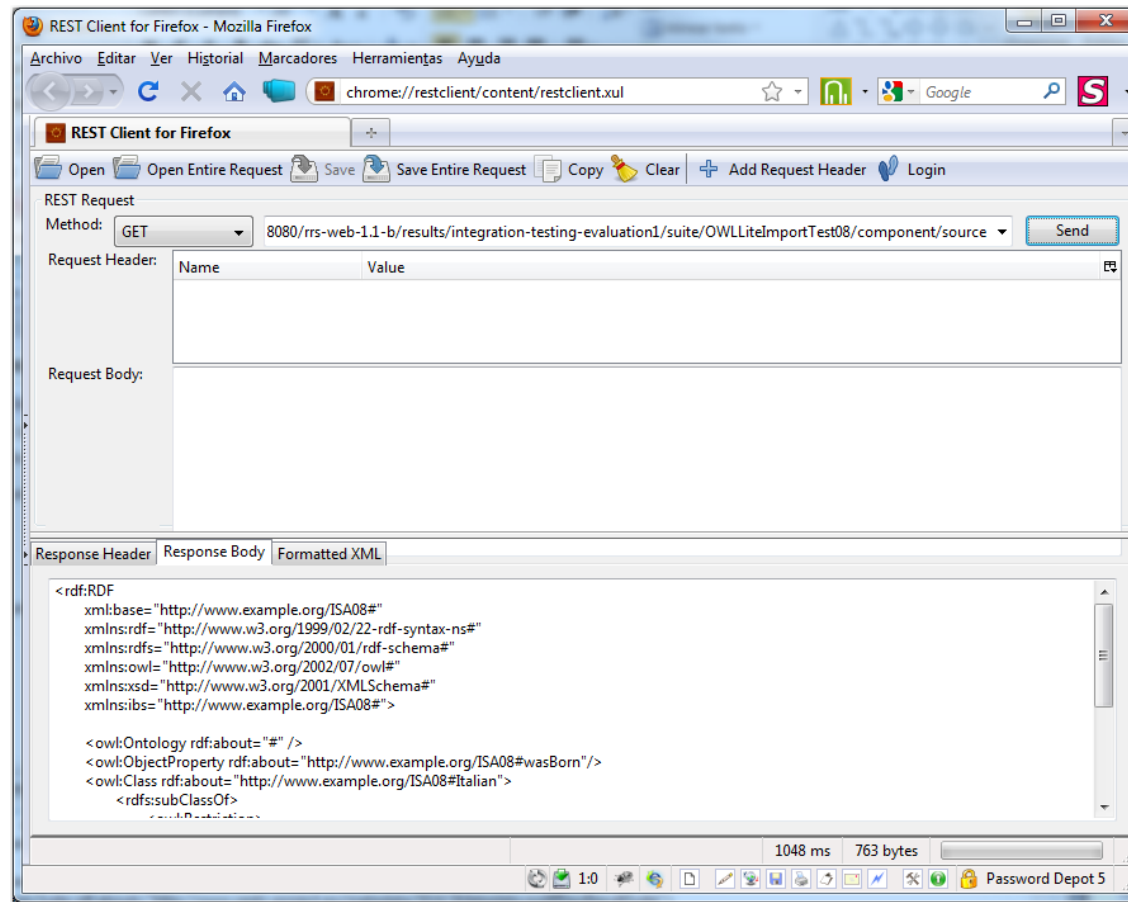
Running the evaluation scenario

Inspecting generated results with a browser (V)



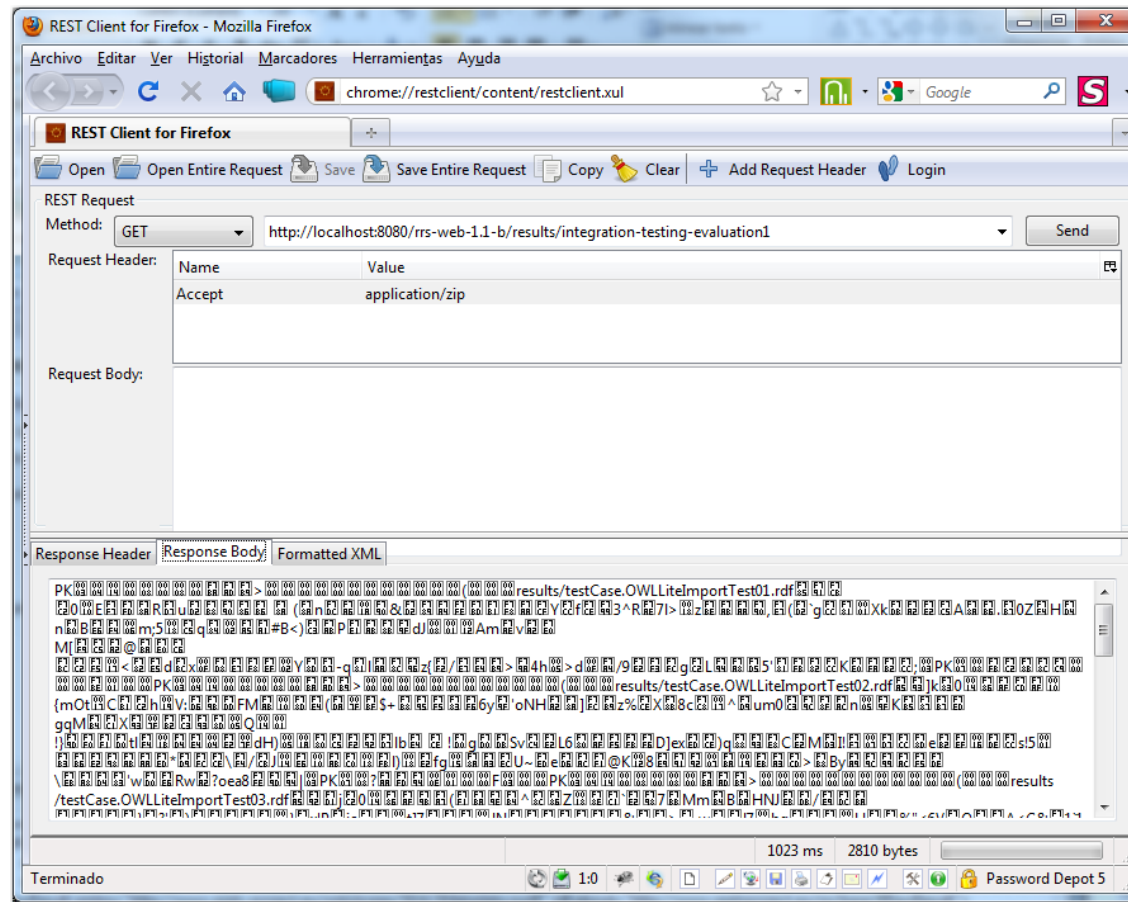
Running the evaluation scenario

Inspecting generated results with a browser (VI)



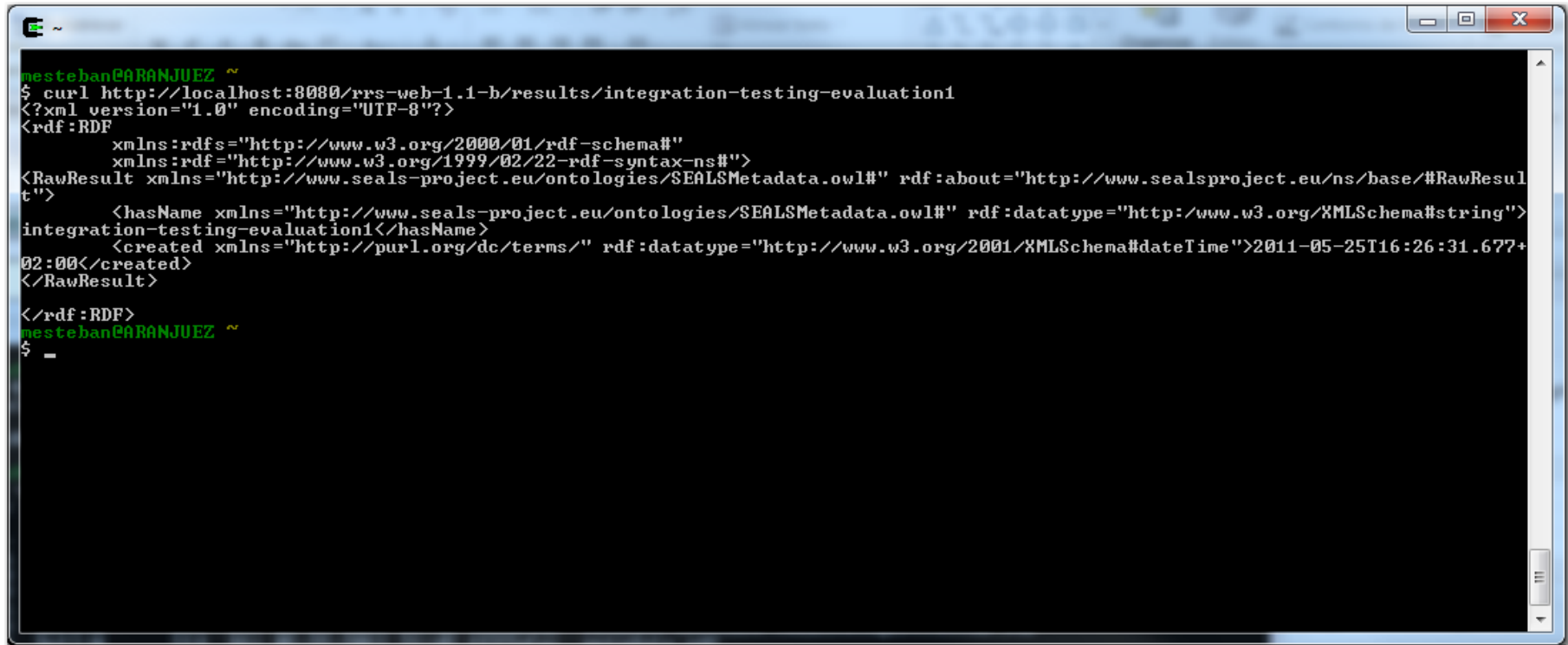
Running the evaluation scenario

Inspecting generated results with a browser (VIII)



Running the evaluation scenario

Inspecting generated results from the shell (I)



```
mesteban@ARANJUEZ ~  
$ curl http://localhost:8080/rrs-web-1.1-b/results/integration-testing-evaluation1  
<?xml version="1.0" encoding="UTF-8"?>  
<rdf:RDF  
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"  
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">  
<RawResult xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#" rdf:about="http://www.sealsproject.eu/ns/base/#RawResult">  
  <hasName xmlns="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#" rdf:datatype="http://www.w3.org/XMLSchema#string">  
integration-testing-evaluation1</hasName>  
  <created xmlns="http://purl.org/dc/terms/" rdf:datatype="http://www.w3.org/2001/XMLSchema#dateTime">2011-05-25T16:26:31.677+  
02:00</created>  
</RawResult>  
</rdf:RDF>  
mesteban@ARANJUEZ ~  
$ _
```

Running the evaluation scenario

Inspecting generated results from the shell (II)

```
mesteban@ARANJUEZ ~  
$ curl -H Accept:application/zip http://localhost:8080/rrs-web-1.1-h/results/integration-testing-evaluation1 > data.zip  
% Total % Received % Xferd Average Speed Time Time Time Current  
Dload Upload Total Spent Left Speed  
100 2810 0 2810 0 0 2725 0 ---:--:-- 0:00:01 ---:--:-- 93666  
  
mesteban@ARANJUEZ ~  
$ unzip -v data.zip  
Archive: data.zip  
Length Method Size Cmpr Date Time CRC-32 Name  
-----  
446 Defl:N 201 55% 05-25-2011 21:45 8c8bc2fb results/testCase.OWLLiteImportTest01.rdf  
838 Defl:N 270 68% 05-25-2011 21:45 94fdaa3f results/testCase.OWLLiteImportTest02.rdf  
679 Defl:N 249 63% 05-25-2011 21:45 be3e8fcd results/testCase.OWLLiteImportTest03.rdf  
695 Defl:N 243 65% 05-25-2011 21:45 1062beb0 results/testCase.OWLLiteImportTest04.rdf  
763 Defl:N 295 61% 05-25-2011 21:45 92256442 results/testCase.OWLLiteImportTest08.rdf  
3966 Defl:N 554 86% 05-25-2011 21:45 ff27afac metadata.rdf  
-----  
7387 1812 76% 6 files  
  
mesteban@ARANJUEZ ~  
$
```

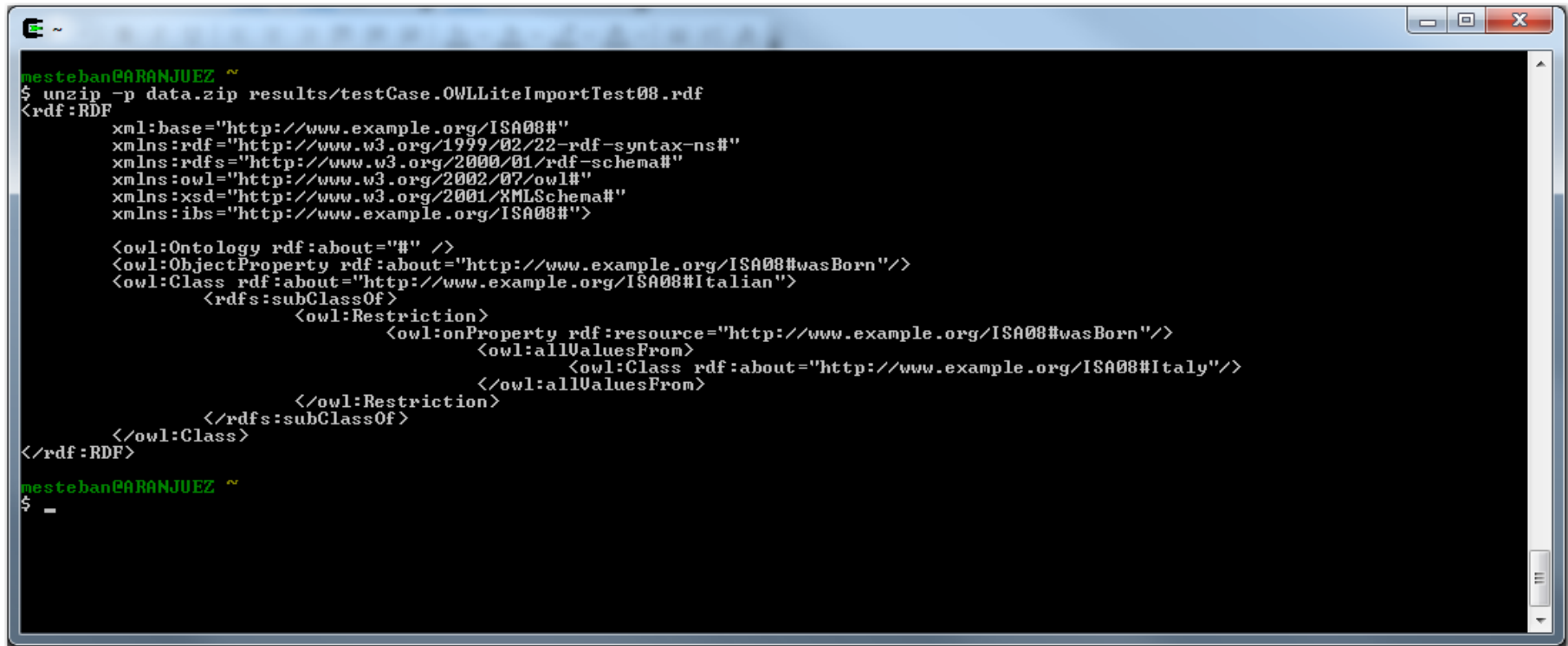
Running the evaluation scenario

Inspecting generated results from the shell (III)

```
mesteban@ARANJUEZ ~  
$ unzip -p data.zip metadata.rdf | more  
<?xml version="1.0" encoding="UTF-8"?>  
<rdf:RDF  
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"  
  xmlns:seals="http://www.seals-project.eu/ontologies/SEALSMetadata.owl#"  
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"  
  xmlns:dcterms="http://purl.org/dc/terms/"  
  xmlns:conformance="http://www.seals-project.eu/ontologies/ConformanceResult.owl#"  
<seals:RawResult rdf:about="http://www.seals-project.eu/metadata/SEALSMetadata.owl#RawResult">  
  <seals:hasName rdf:datatype="http://www.w3.org/XMLSchema#string">integration-testing-evaluation1</seals:hasName>  
</seals:RawResult>  
<seals:Suite rdf:about="http://www.seals-project.eu/metadata/SEALSMetadata.owl#RawResultSuite">  
  <seals:hasSuiteItem>  
    <conformance:RawResultItem rdf:about="http://www.seals-project.eu/Conformance/metadata.rdf#OwLLiteImportTest01">  
      <dcterms:identifier>OwLLiteImportTest01</dcterms:identifier>  
      <seals:hasDataItem>  
        <seals:DataItem rdf:about="http://www.seals-project.eu/Conformance/metadata.rdf#OwLLiteImportTest01D  
document">  
          <dcterms:identifier>OwLLiteImportTest01</dcterms:identifier>  
          <seals:hasComponentType>source</seals:hasComponentType>  
          <seals:isLocatedAt>./results/testCase.OwLLiteImportTest01.rdf</seals:isLocatedAt>  
        </seals:DataItem>  
      </seals:hasDataItem>  
    </conformance:RawResultItem>  
  </seals:hasSuiteItem>  
<seals:hasSuiteItem>  
  <conformance:RawResultItem rdf:about="http://www.seals-project.eu/Conformance/metadata.rdf#OwLLiteImportTest02">  
    <dcterms:identifier>OwLLiteImportTest02</dcterms:identifier>  
    <seals:hasDataItem>  
      <seals:DataItem rdf:about="http://www.seals-project.eu/Conformance/metadata.rdf#OwLLiteImportTest02D  
document">  
        <dcterms:identifier>OwLLiteImportTest02</dcterms:identifier>  
      </seals:DataItem>  
    </conformance:RawResultItem>  
  </seals:hasSuiteItem>  
</seals:Suite>  
</rdf:RDF>
```


Running the evaluation scenario

Inspecting generated results from the shell (IV)



```
mesteban@ARANJUEZ ~  
$ unzip -p data.zip results/testCase.OwLLiteImportTest08.rdf  
<rdf:RDF  
  xml:base="http://www.example.org/ISA08#"   
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"   
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"   
  xmlns:owl="http://www.w3.org/2002/07/owl#"   
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"   
  xmlns:ibs="http://www.example.org/ISA08#"   
   
  <owl:Ontology rdf:about="#" />   
  <owl:ObjectProperty rdf:about="http://www.example.org/ISA08#wasBorn"/>   
  <owl:Class rdf:about="http://www.example.org/ISA08#Italian">   
    <rdfs:subClassOf>   
      <owl:Restriction>   
        <owl:onProperty rdf:resource="http://www.example.org/ISA08#wasBorn"/>   
        <owl:allValuesFrom>   
          <owl:Class rdf:about="http://www.example.org/ISA08#Italy"/>   
        </owl:allValuesFrom>   
      </owl:Restriction>   
    </rdfs:subClassOf>   
  </owl:Class>   
</rdf:RDF>  
mesteban@ARANJUEZ ~  
$ -
```

**Doubts, comments,
questions??**



Digging into the SEALS Platform

Miguel Esteban Gutiérrez, UPM

1st SEALS Tutorial
8th Extended Semantic Web Conference ESWC 2011
Heraklion, Greece