Digging into the SEALS Platform

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Heraklion, Greece

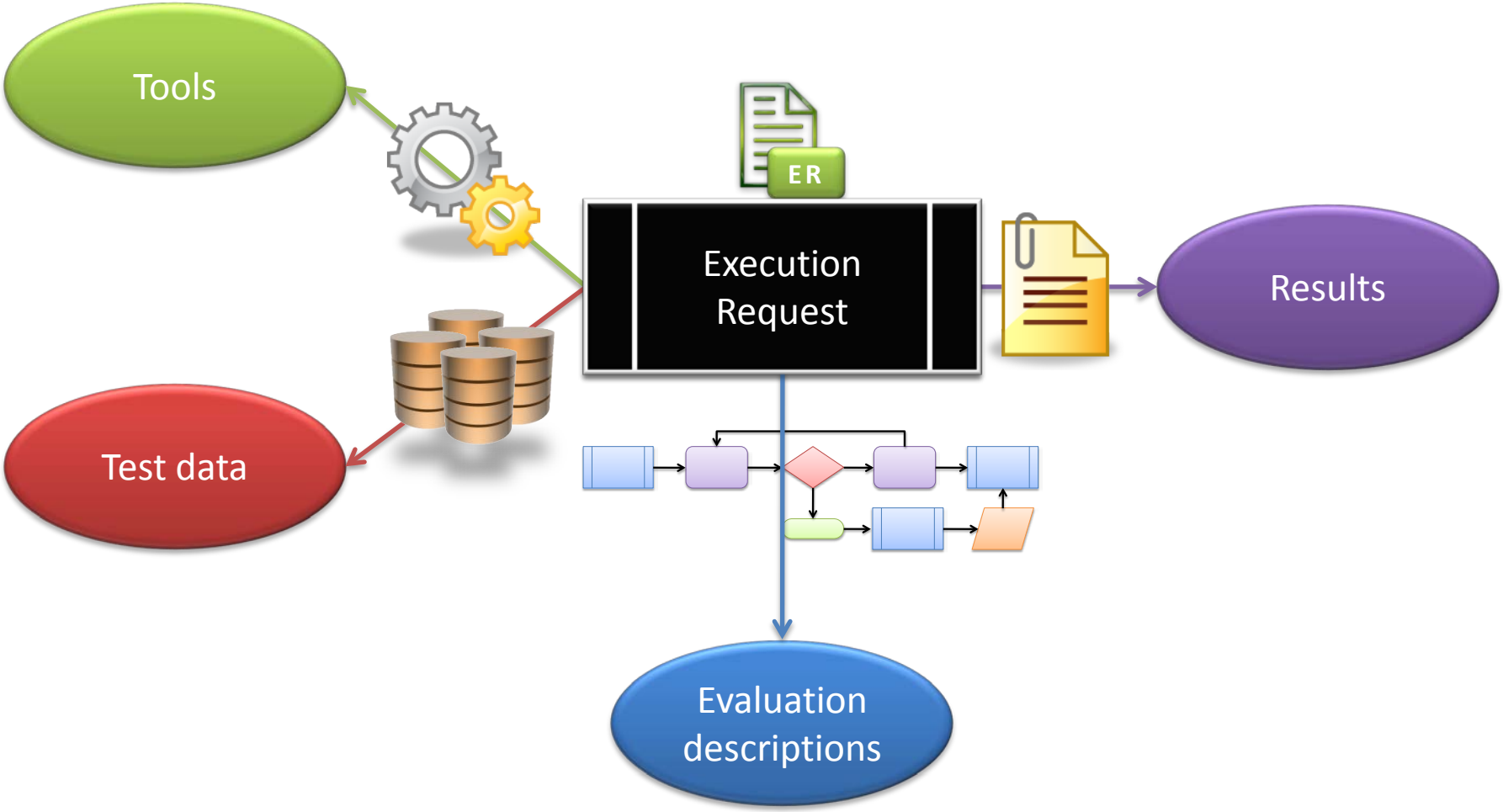
Digging into the SEALS Platform

SEALS PLATFORM OVERVIEW

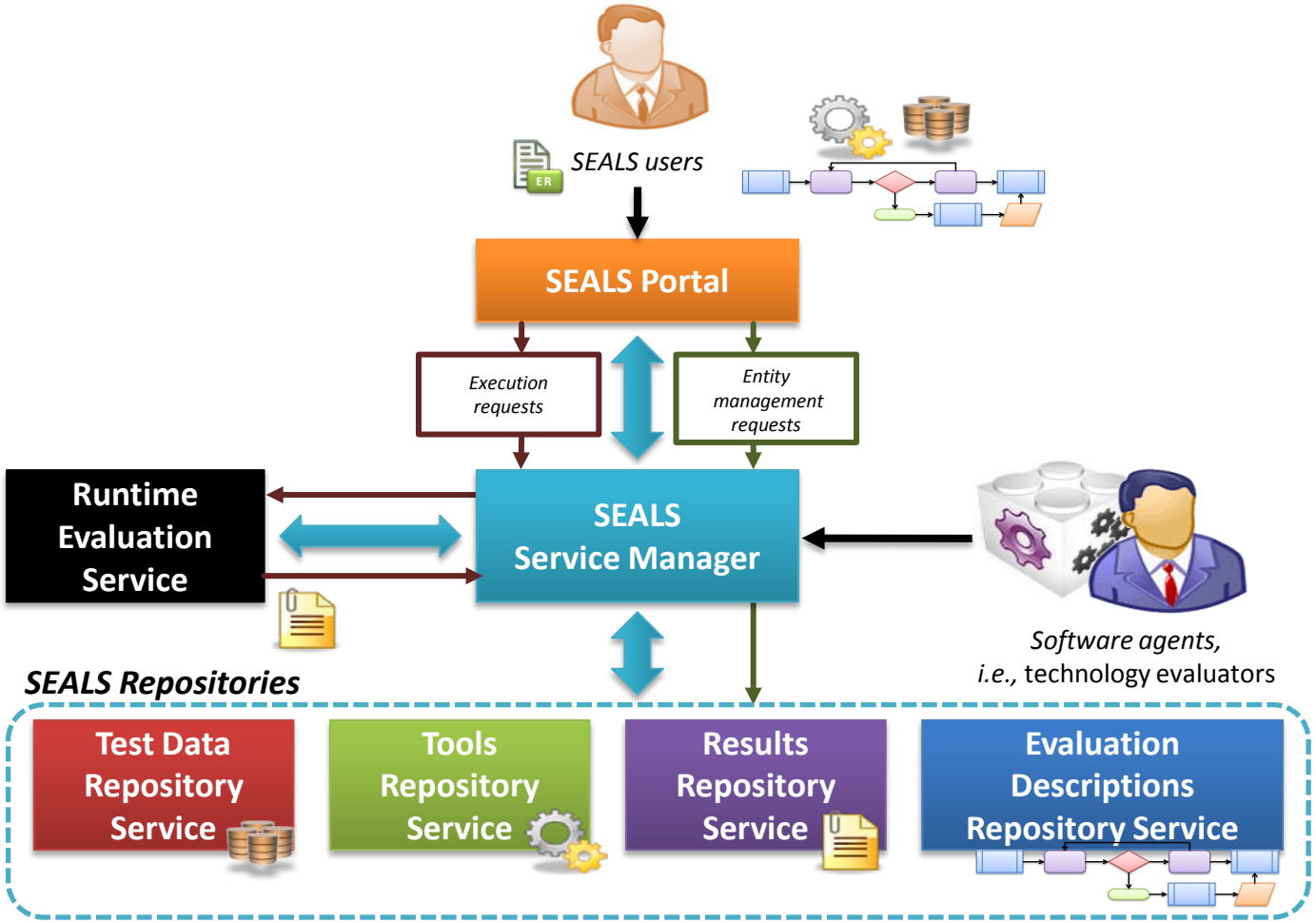
Outline

- *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

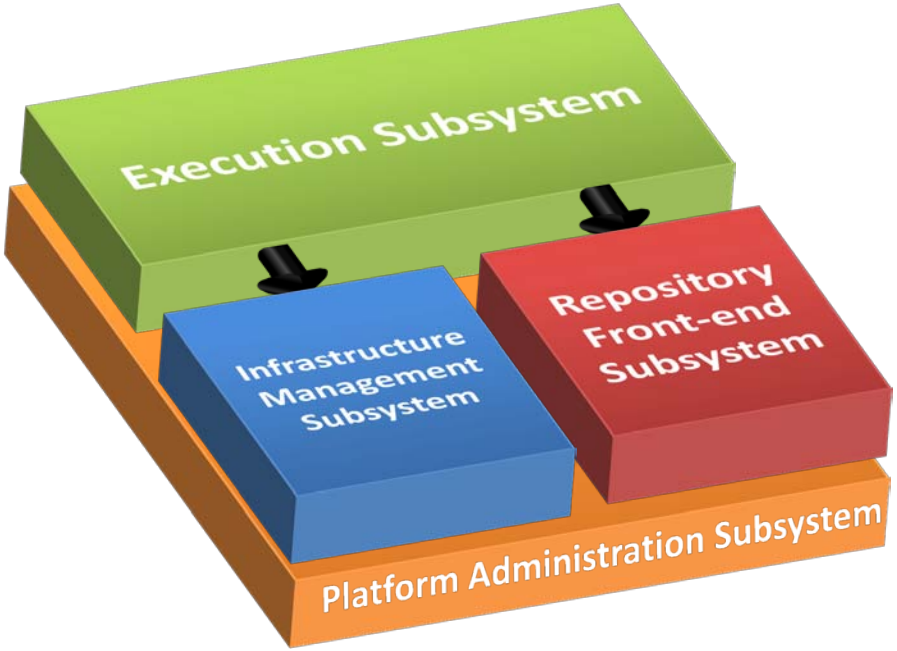


SEALS Platform Organization

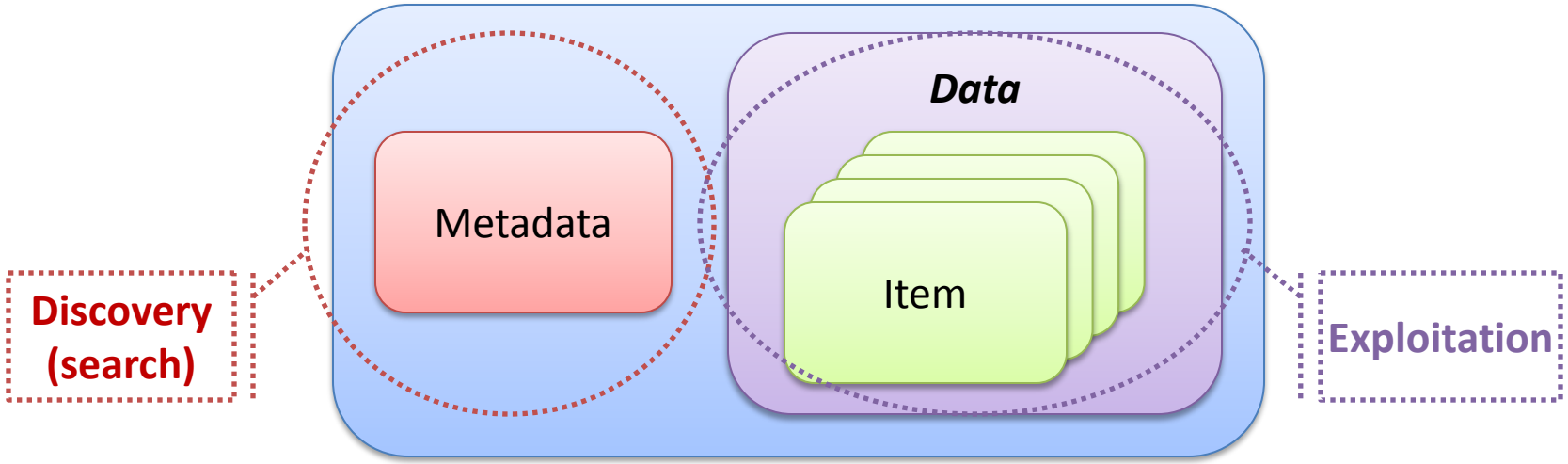


SEALS Platform Organization
SEALS Service Manager

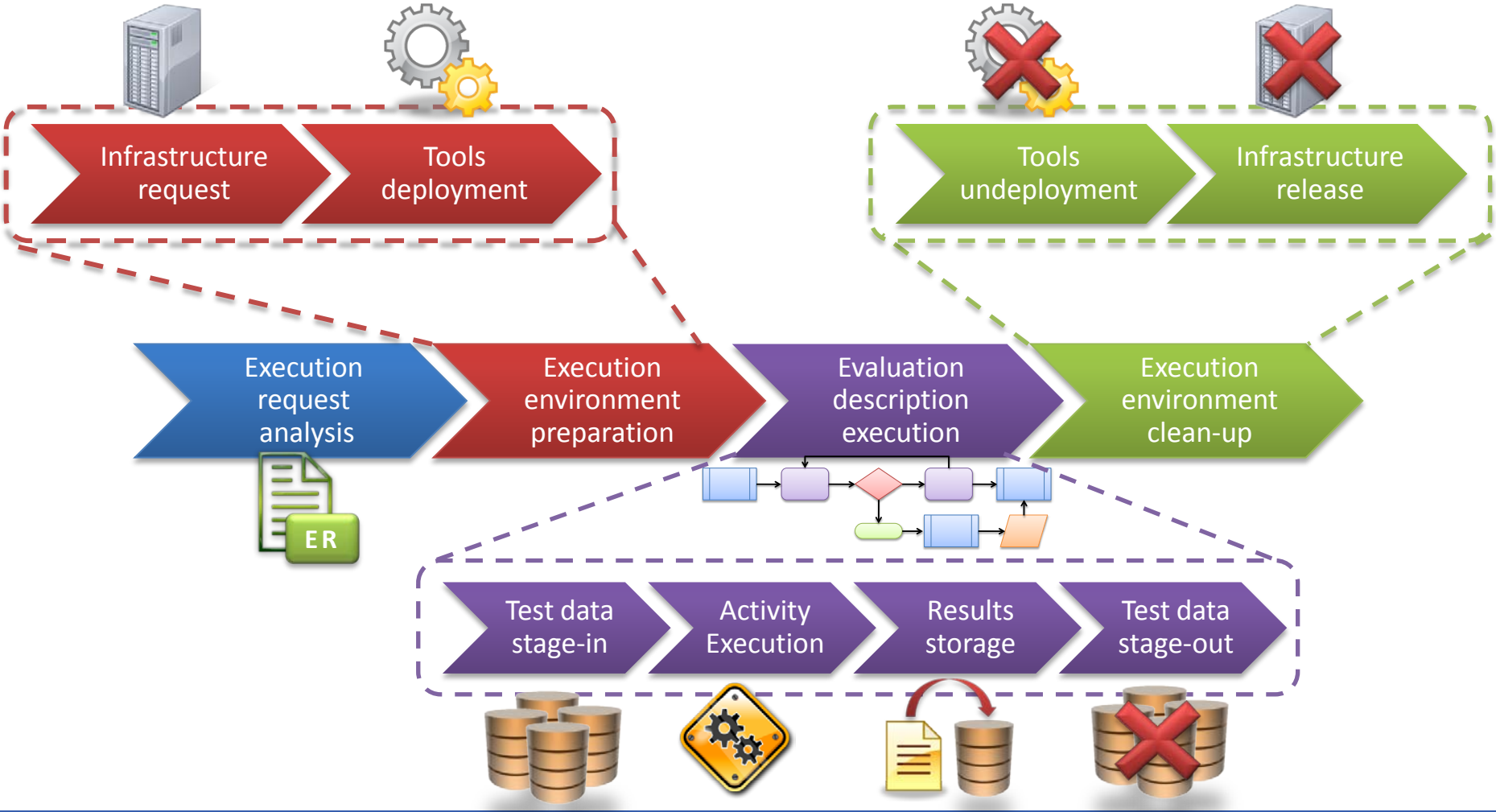
- **Infrastructure Management**
  - Computing resources management
- **Repository Front-end**
  - Repository Services integration
- **Execution**
  - Execution requests management
- **Platform Administration**
  - Security management
  - Monitoring



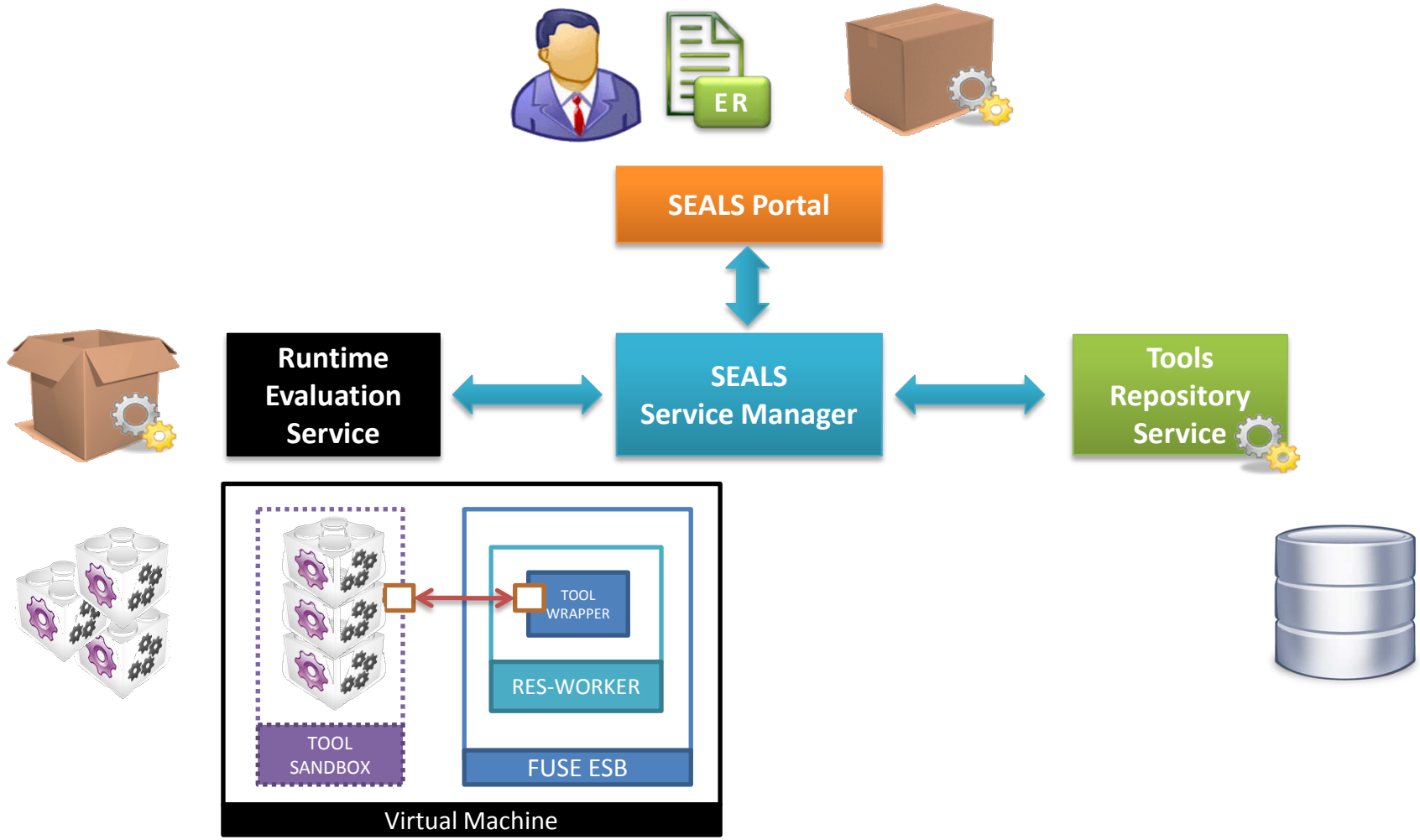
Structure of the SEALS Entities



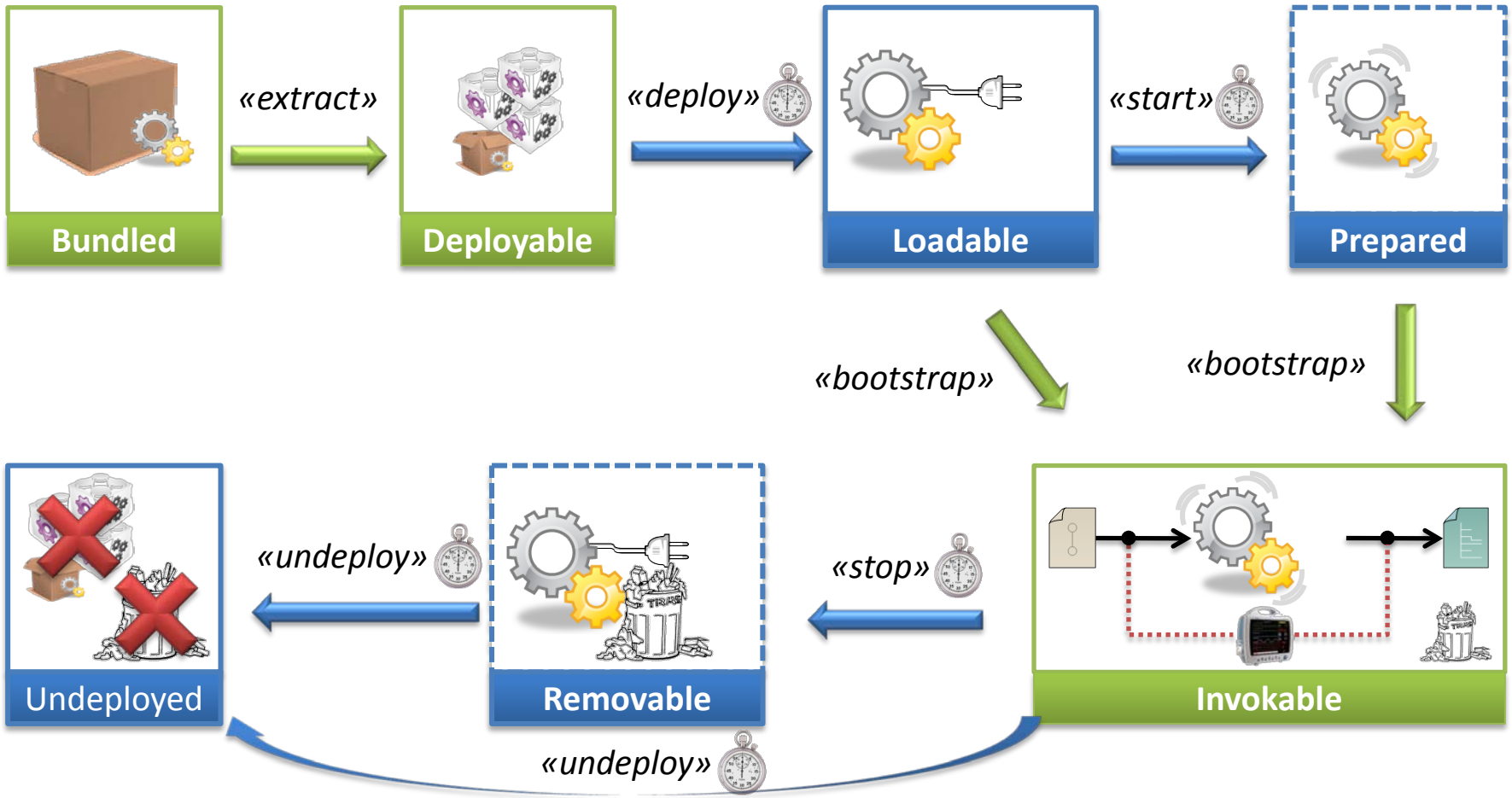
Evaluation Execution Process



Tool Life-cycle (I)

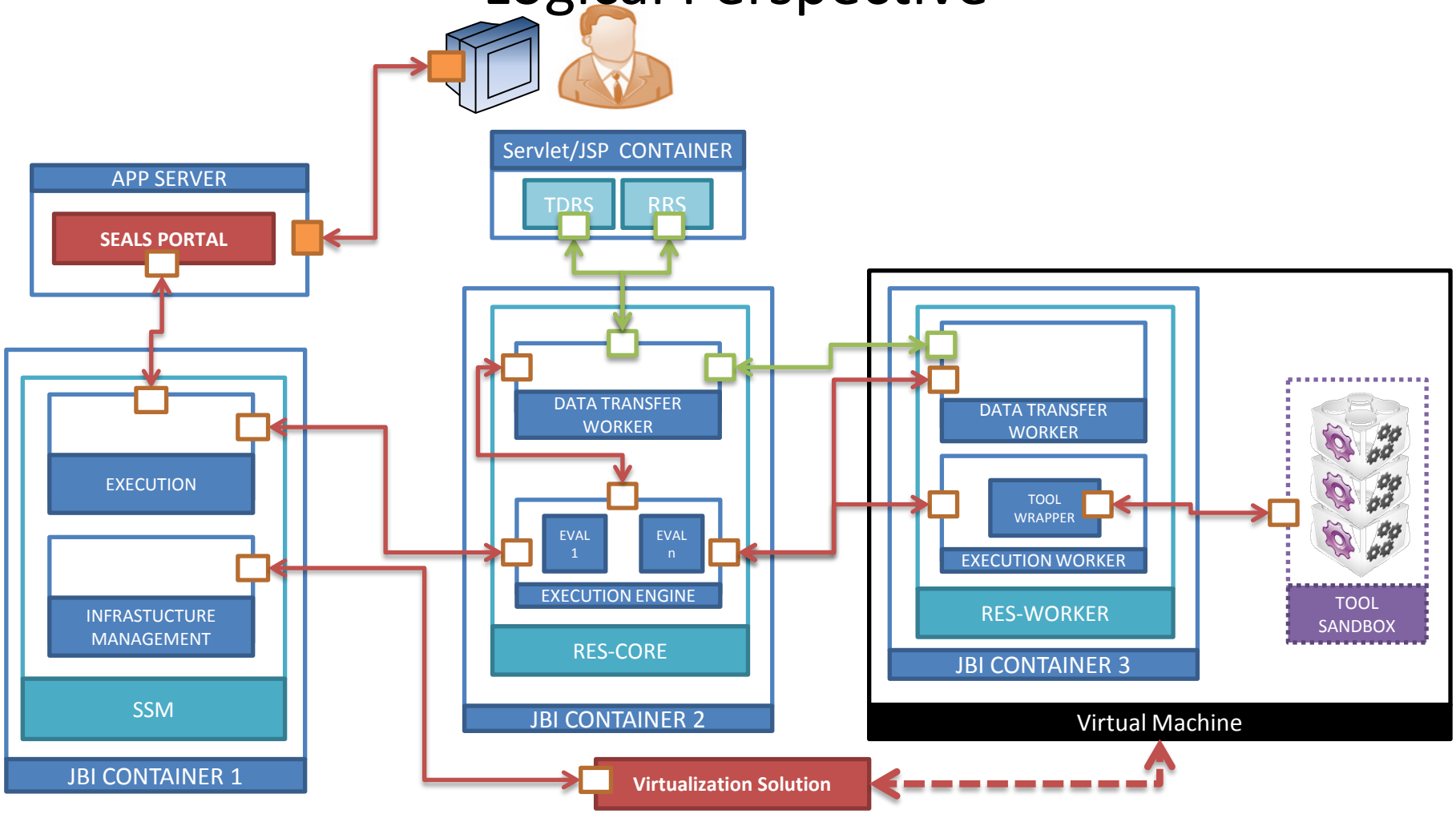


Tool Life-cycle (II)

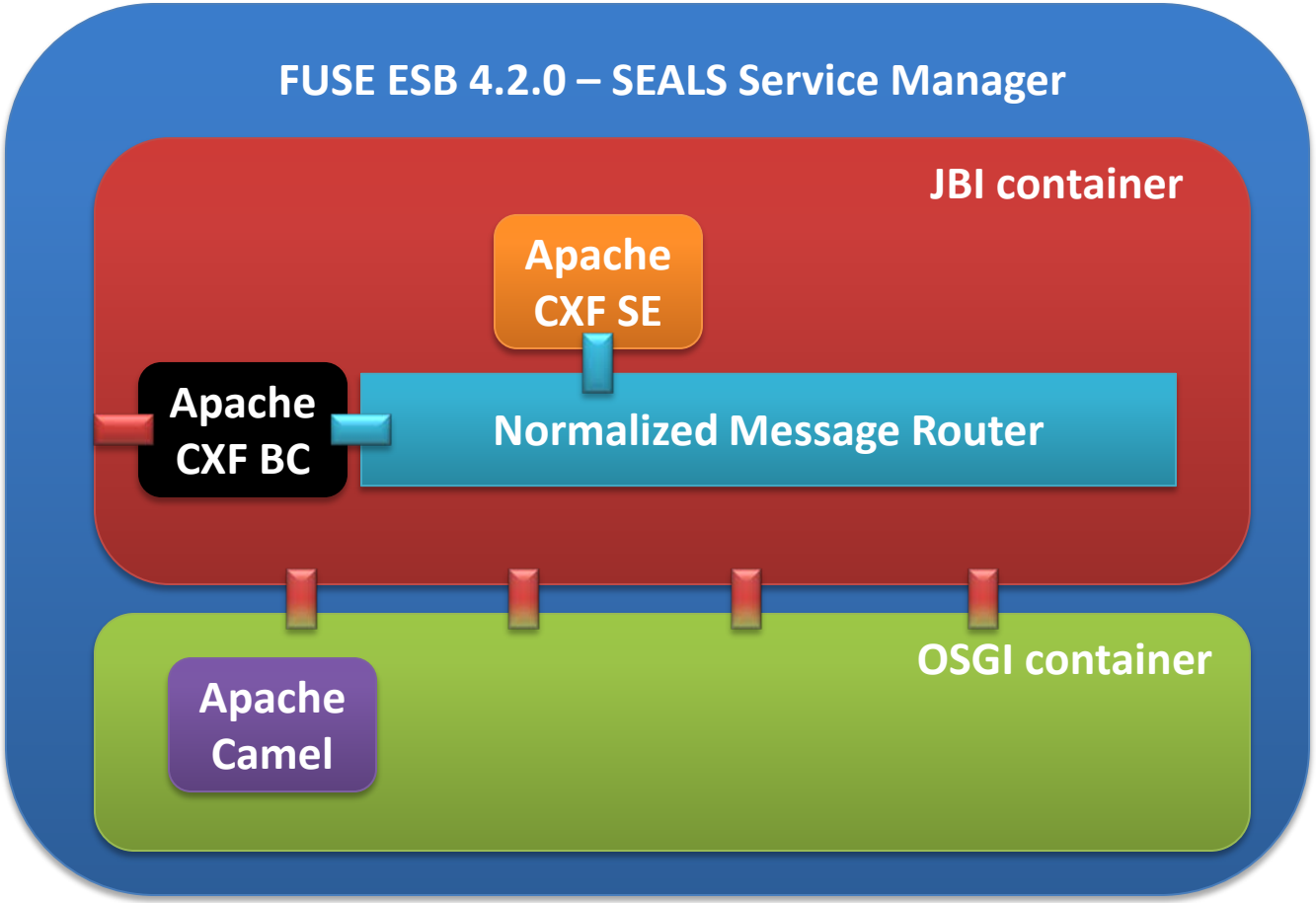


Architecture of the SEALS Platform

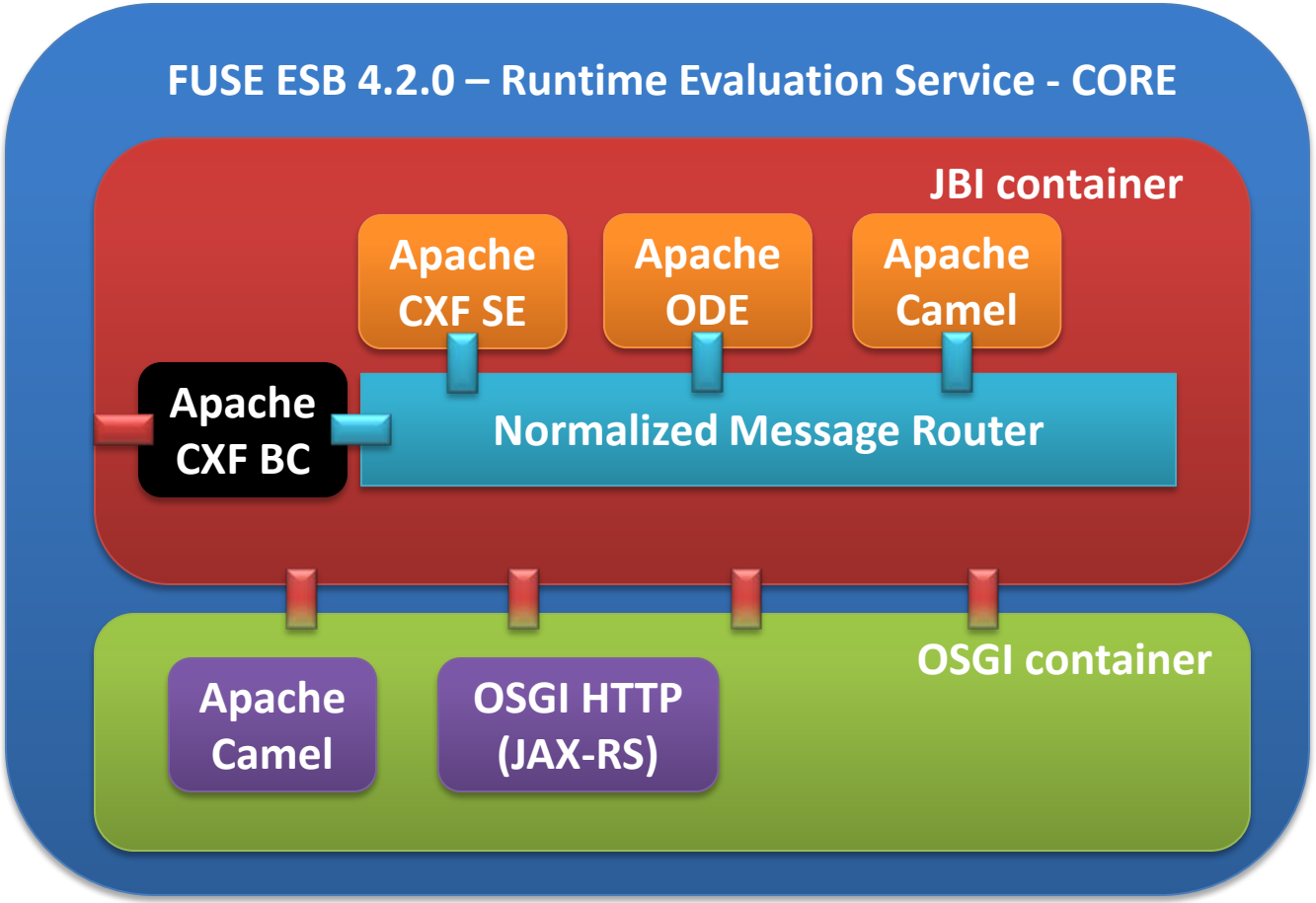
Logical Perspective



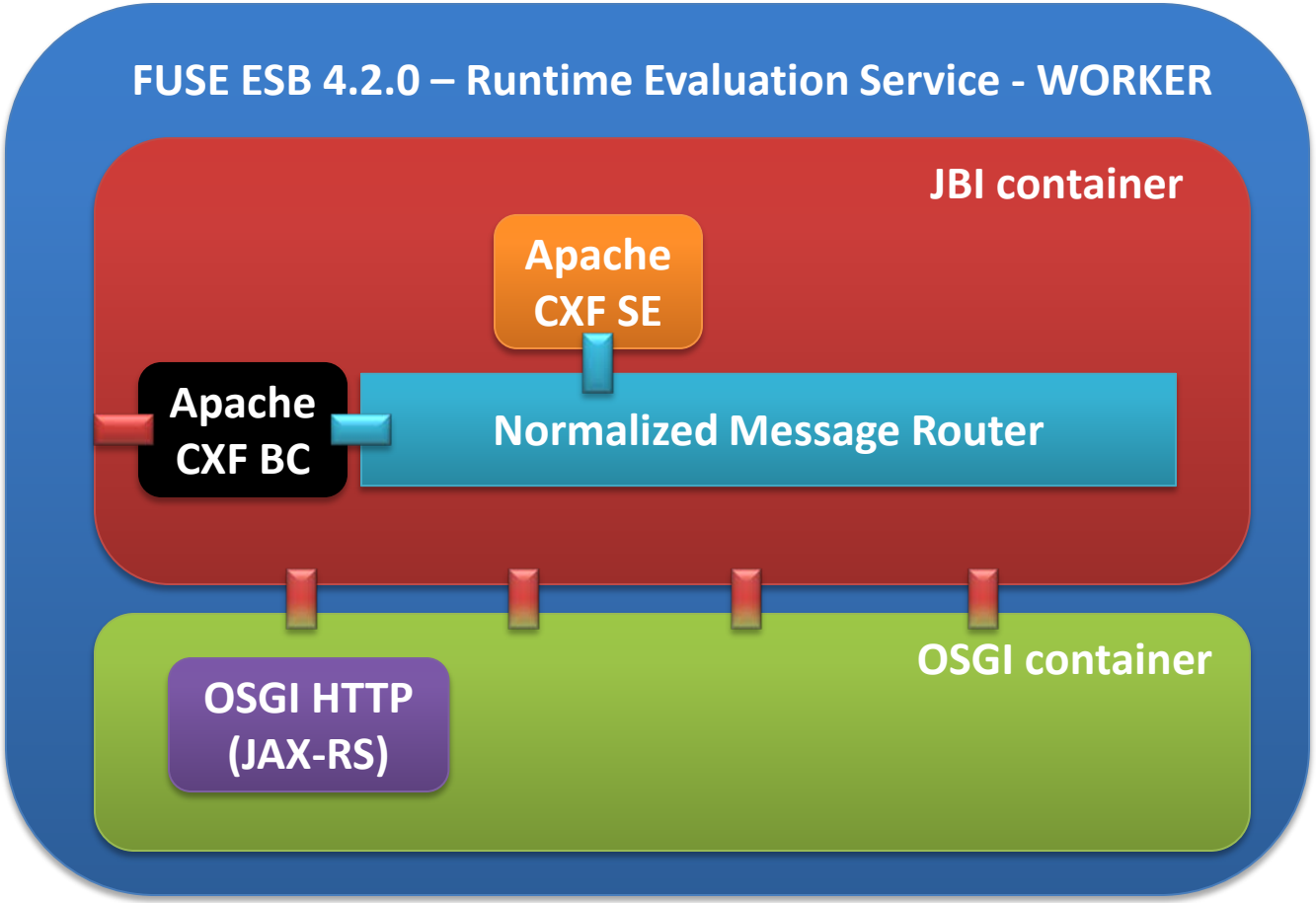
Architecture of the SEALS Platform
Physical perspective (I)



Architecture of the SEALS Platform
Physical perspective (II)

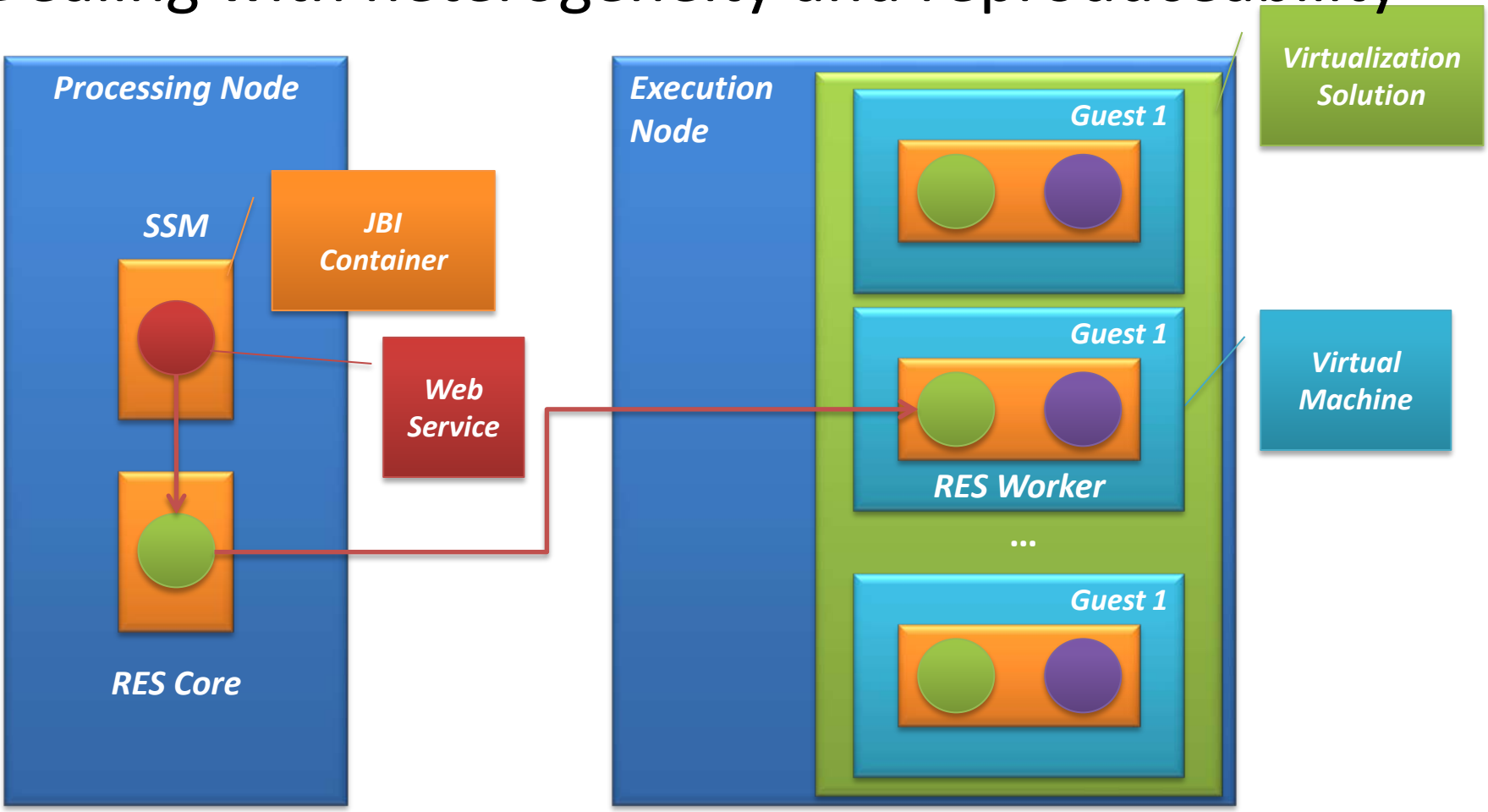


Architecture of the SEALS Platform
Physical perspective (I)



SEALS Execution Infrastructure

Dealing with heterogeneity and reproduceability



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

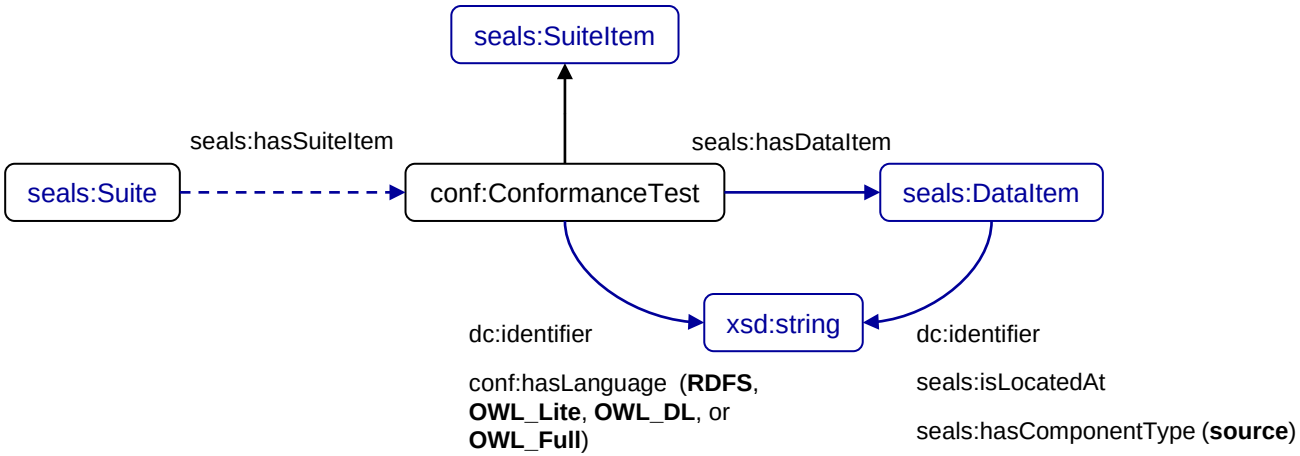
- Show how to use current SEALS Platform components for running evaluation descriptions locally (@home)

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:*

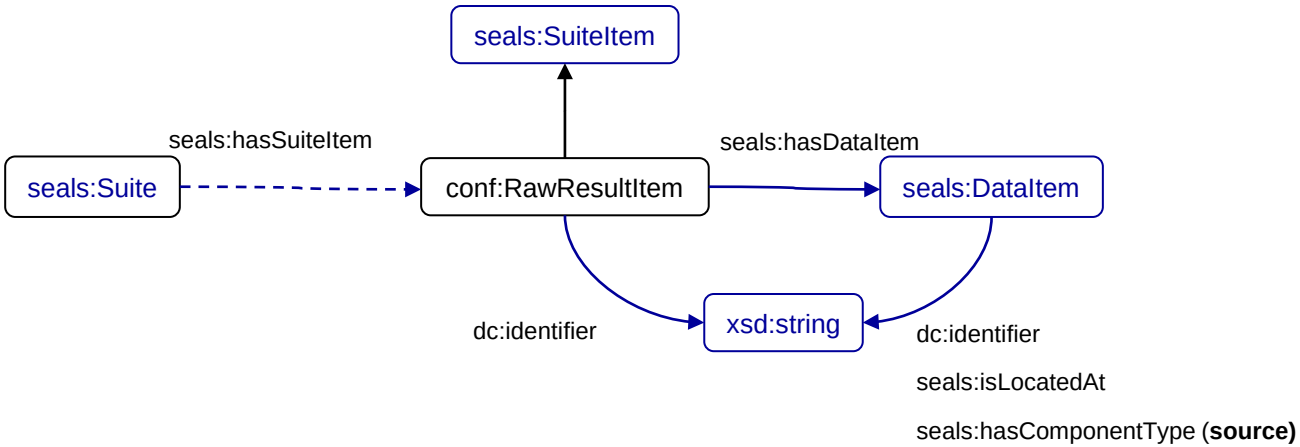


NOTE:

- 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)

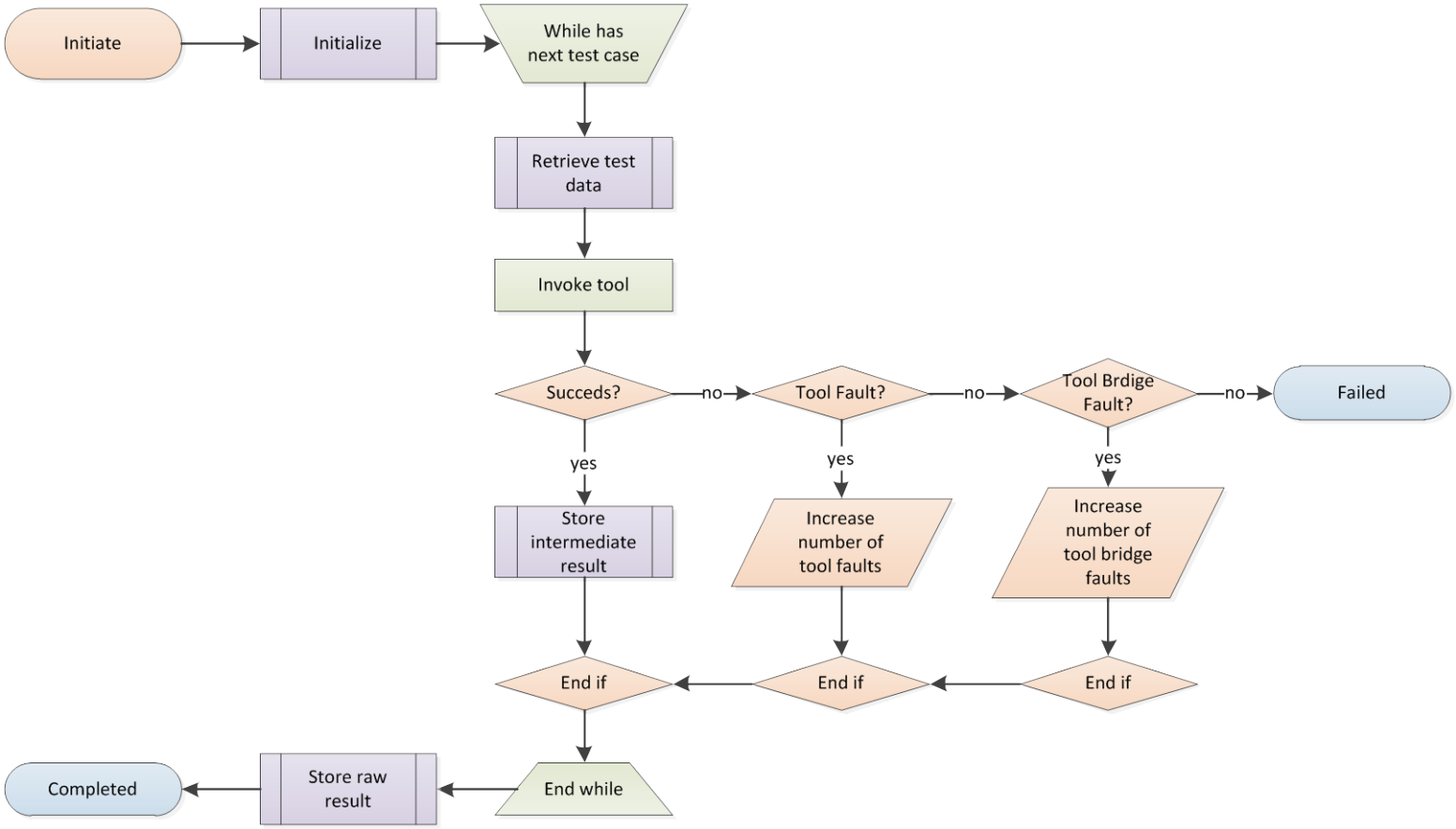
- **Evaluation description**, continued:
  - *Structure of the generated raw results*:



NOTE:

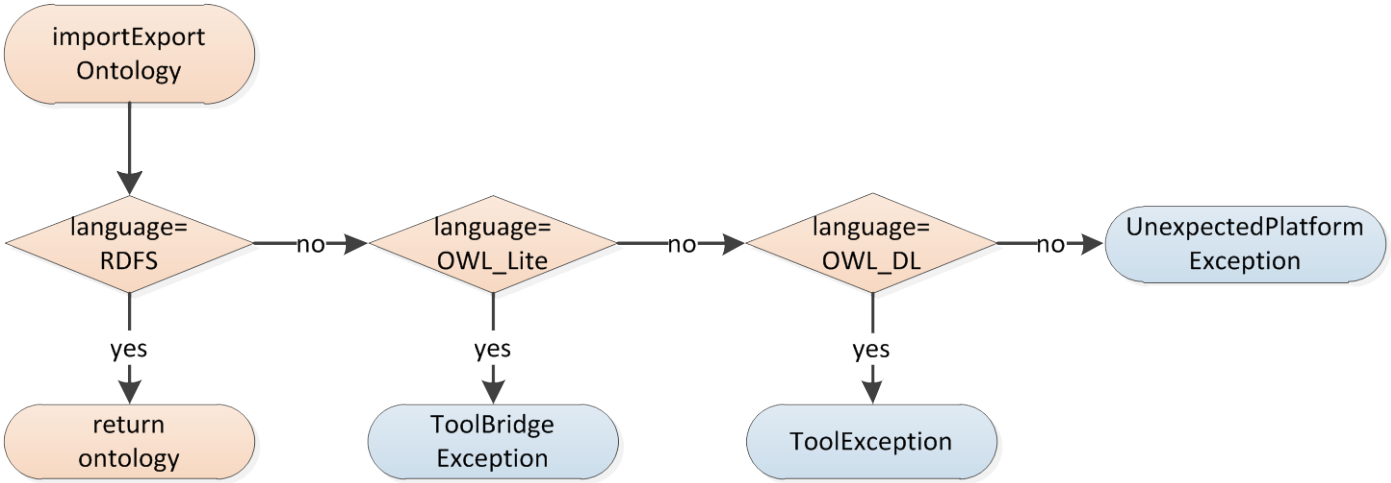
- The **conf** namespace prefix maps to **http://www.seals-project.eu/ontologies/ConformanceResult.owl#**
- The individuals (results and items) are defined in the namespace **http://www.seals-project.eu/Conformance/metadata.rdf#**
  - Raw result item individuals are named using the **dc:identifier**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

Introduction
Evaluation scenario (IV)



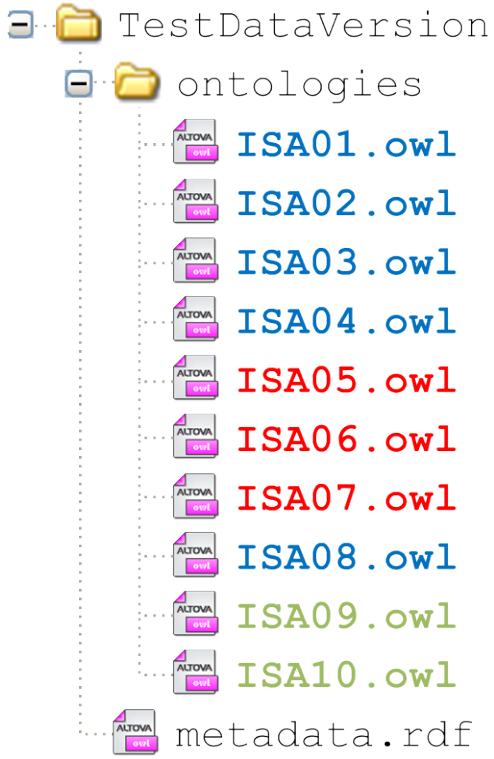
Introduction
Evaluation scenario (V)

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



Introduction
Evaluation scenario (VI)

- **Test data used:**

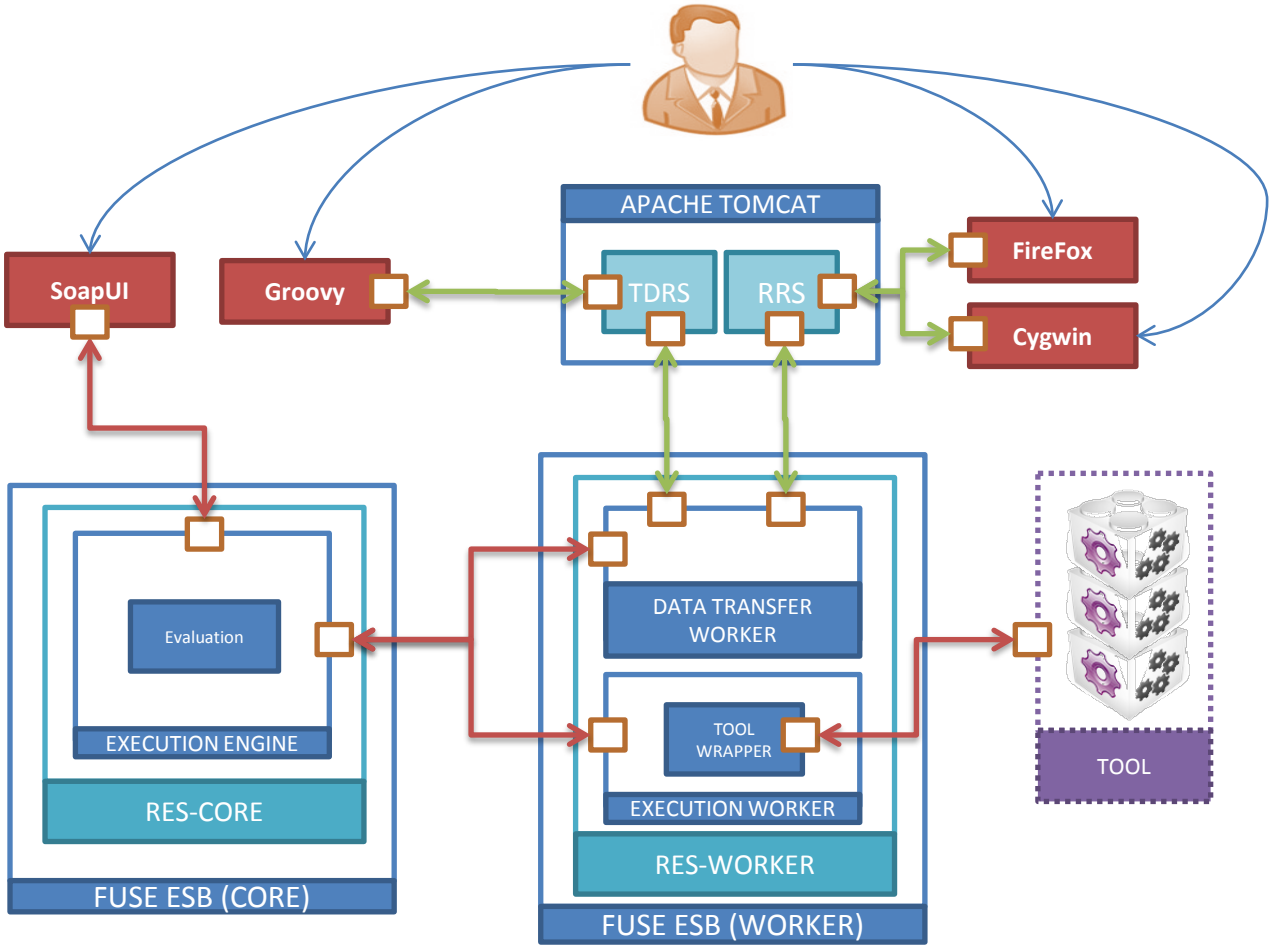


RDFS conformance test

OWL_Lite conformance test

OWL_DL conformance test

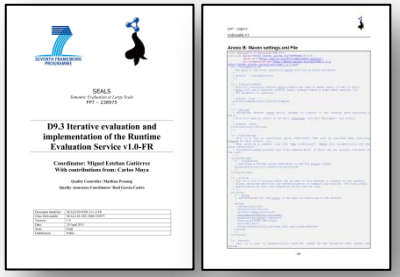
Introduction
Infrastructure set-up



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


SEALS
Semantic Evaluation at Large Scale
FP7 - 238075

D9.3 Iterative evaluation and implementation of the Runtime Evaluation Service v1.0-FR

Coordinator: Miguel Esteban Gutiérrez
With contributions from: Carlos Maya

Quality Controller: Markus Prusang
Quality Assurance Coordinator: Ruben Garcia Castro

- 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)

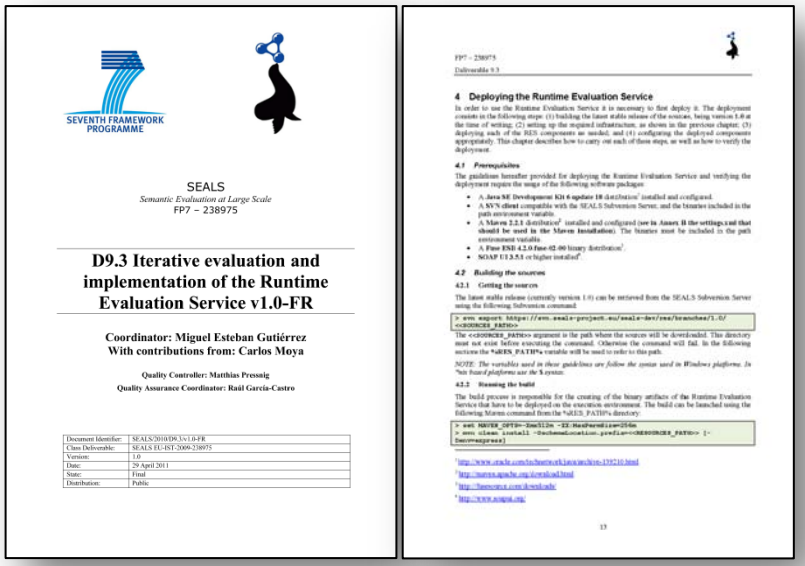
- Deploying the **Results Repository Service** (**version 1.1-b**):
  - Grab the application war from the SEALS Shared Artifacts Repository:
    - http://www.development.seals-project.eu/artifactory/global-repo/eu/sealsproject/platform/repos/rrs-web/1.1-b/rrs-web-1.1-b.war
  - Copy application war to 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**



SEVENTH FRAMEWORK PROGRAMME

SEALS
Semantic Evaluation at Large Scale
FP7 – 238975

D9.3 Iterative evaluation and implementation of the Runtime Evaluation Service v1.0-FR

Coordinator: Miguel Esteban Gutiérrez
With contributions from: Carlos Moya

Quality Controller: Matthias Pressnig
Quality Assurance Coordinator: Raúl García-Castro

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Version:	1.0
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State:	Final
Distribution:	Public

FP7 – 238975
Deliverable 9.3

4 Deploying the Runtime Evaluation Service

In order to use the Runtime Evaluation Service it is necessary to first deploy it. The deployment consists in the following steps: (1) building the latest stable release of the sources, being version 1.0 at the time of writing; (2) setting up the required infrastructure, as shown in the previous chapter; (3) deploying each of the RES components as needed; and (4) configuring the deployed components appropriately. This chapter describes how to carry out each of these steps, as well as how to verify the deployment.

4.1 Prerequisites

The guidelines hereafter provided for deploying the Runtime Evaluation Service and verifying the deployment require the usage of the following software packages:

- A **Java SE Development Kit 6 update 18** distribution[1] installed and configured.
- A **SVN client** compatible with the SEALS Subversion Server, and the binaries included in the path environment variable.
- A **Maven 2.2.1** distribution[2] installed and configured (**see in Annex II the settings.xml that should be used in the Maven installation**). The binaries must be included in the path environment variable.
- A **Fuse ESB 4.2.0 fuse-02-00** binary distribution[3].
- **SOAP UI 2.5.1** or higher installed[4].

4.2 Building the sources

4.2.1 Getting the sources

The latest stable release (currently version 1.0) can be retrieved from the SEALS Subversion Server using the following Subversion command:

```
> svn export https://svn.seals-project.eu/seals-dev/res/branches/1.0/
<<SOURCES_PATH>>
```

The <<SOURCES_PATH>> argument is the path where the sources will be downloaded. This directory must not exist before executing the command. Otherwise the command will fail. In the following sections the %SEES_PATH% variable will be used to refer to this path.

*NOTE: The variables used in these guidelines are follow the syntax used in Windows platforms. In *nix based platforms use the $ syntax.*

4.2.2 Running the build

The build process is responsible for the creating of the binary artifacts of the Runtime Evaluation Service that have to be deployed on the execution environment. The build can be launched using the following Maven command from the %SEES_PATH% directory:

```
> set MAVEN_OPTS=-Xmx512m -XX:MaxPermSize=256m
> mvn clean install -Dschemalocation.prefix=<<RESOURCES_PATH>> [-
Dmvn=nopress]
```

[1] http://www.oracle.com/technetwork/java/javase/jdk-170210.html
[2] http://maven.apache.org/download.html
[3] http://fuseesb.com/download/
[4] http://www.soapui.org/

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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 availabe 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>

        <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 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**)

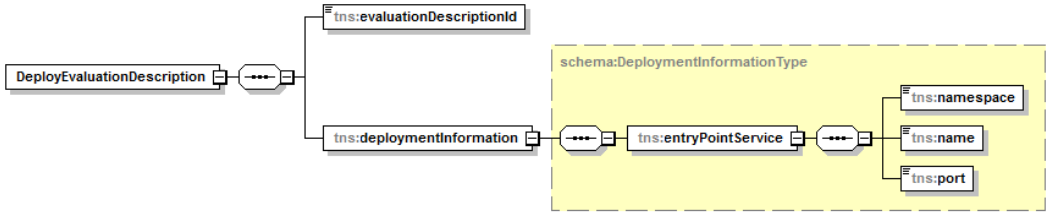
- **Logical deployment:** Inform the RES Core about the endpoint from which the BPEL process that implements the evaluation description is accessible.
  - Invoke the **DeployEvaluationDescription** of the **Evaluation Description Deployer Service** of the RES Core.

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/wsdl/v1"
  xmlns:tdrs="http://www.seals-project.eu/resources/res/repositories/tdrs/wsdl/v1"
  xmlns:rcomp="http://www.seals-project.eu/resources/res/utilities/rc/wsdl/v1"
  xmlns:oet="http://www.seals-project.eu/resources/res/tools/oet/wsdl/v2"
  xmlns:eval="http://www.seals-project.eu/resources/res/engine/evaluation/wsdl/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

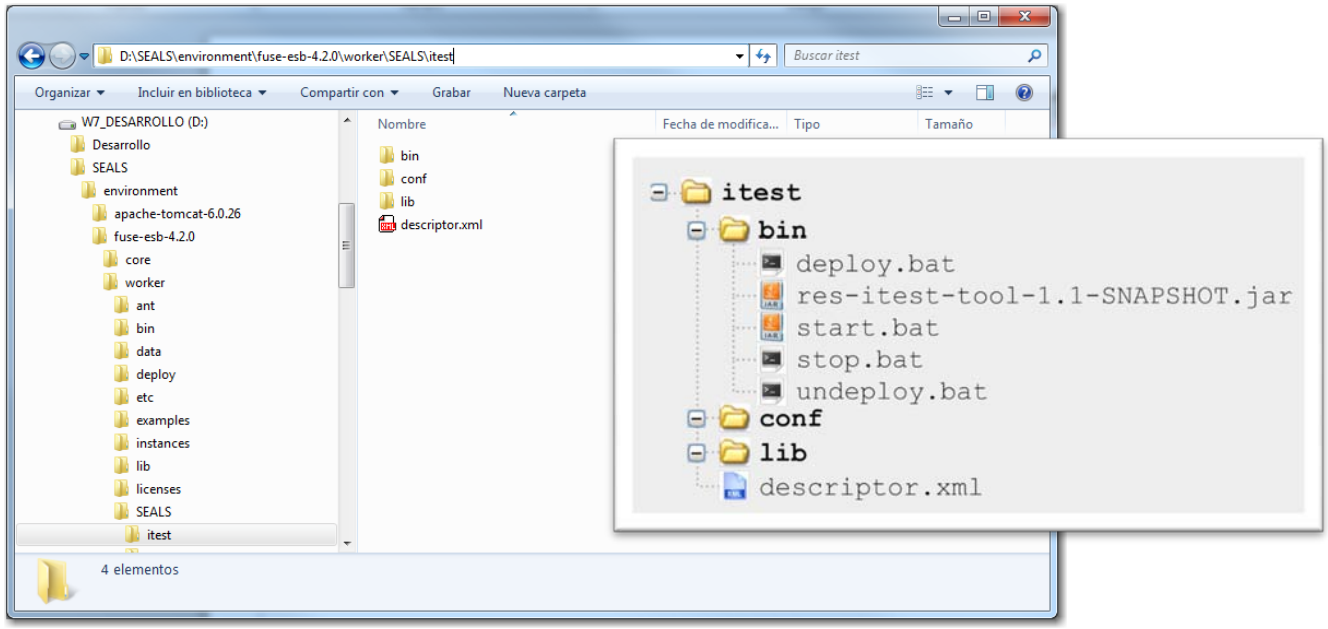
```
<v1:DeployEvaluationDescription
  xmlns:v1="http://www.seals-project.eu/resources/res/engine/deployer/wsdl/v1"
  xmlns:v11="http://www.seals-project.eu/resources/res/engine/deployer/xsd/v1">
  <v1:evaluationDescriptionId>urn:ed:6ba7b810-9dad-11d1-80b4-00c04fd430c7</v1:evaluationDescriptionId>
  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

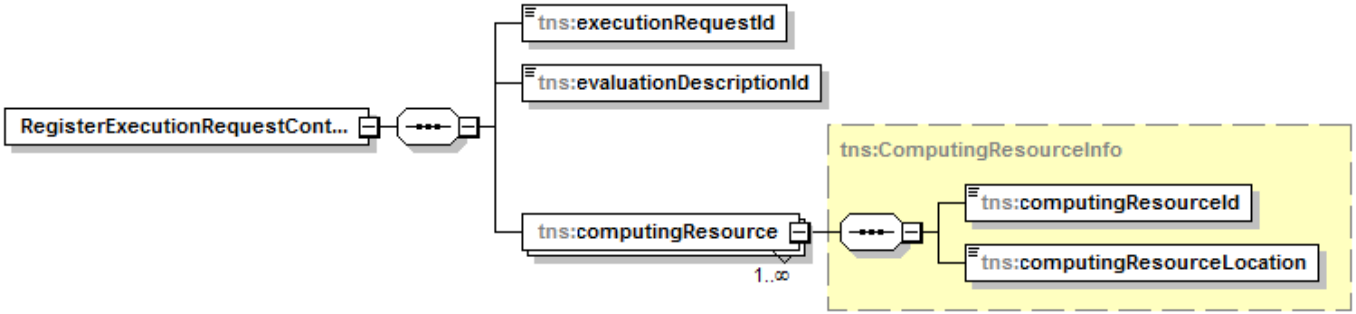
Preparing the execution request context (I)

- Inform the Runtime Evaluation Service about the resources that should participate in the enaction 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)



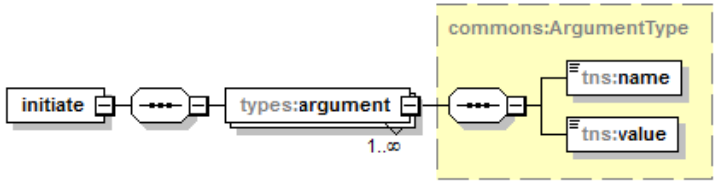

```
<v1:RegisterExecutionRequestContext
   xmlns:v1="http://www.seals-project.eu/resources/res/engine/registry/wsdl/v1">
  <v1:executionRequestId>urn:erq:6ba7b810-9dad-11d1-80b4-00c04fd430c7</v1:executionRequestId>
  <v1:evaluationDescriptionId>urn:ed:6ba7b810-9dad-11d1-80b4-00c04fd430c7</v1:evaluationDescriptionId>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

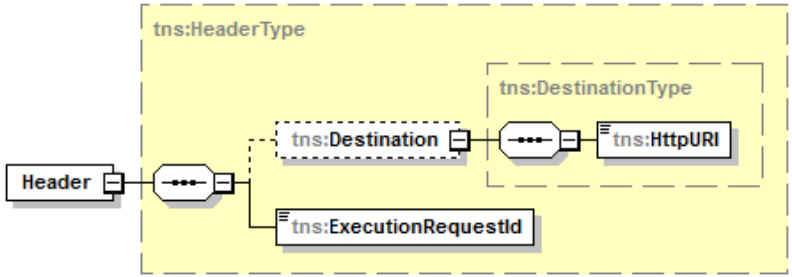
```
<snap1:initiate
  xmlns:snap1="http://www.seals-project.eu/resources/res/engine/evaluation/wsdl/v2"
  xmlns:snap2="http://www.seals-project.eu/resources/res/common/types/xsd/v1">
  <snap1:argument>
    <snap2:name>conformanceTestSuite</snap2:name>
    <snap2:value>Ontology Engineering Tools OWL Lite 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>
```



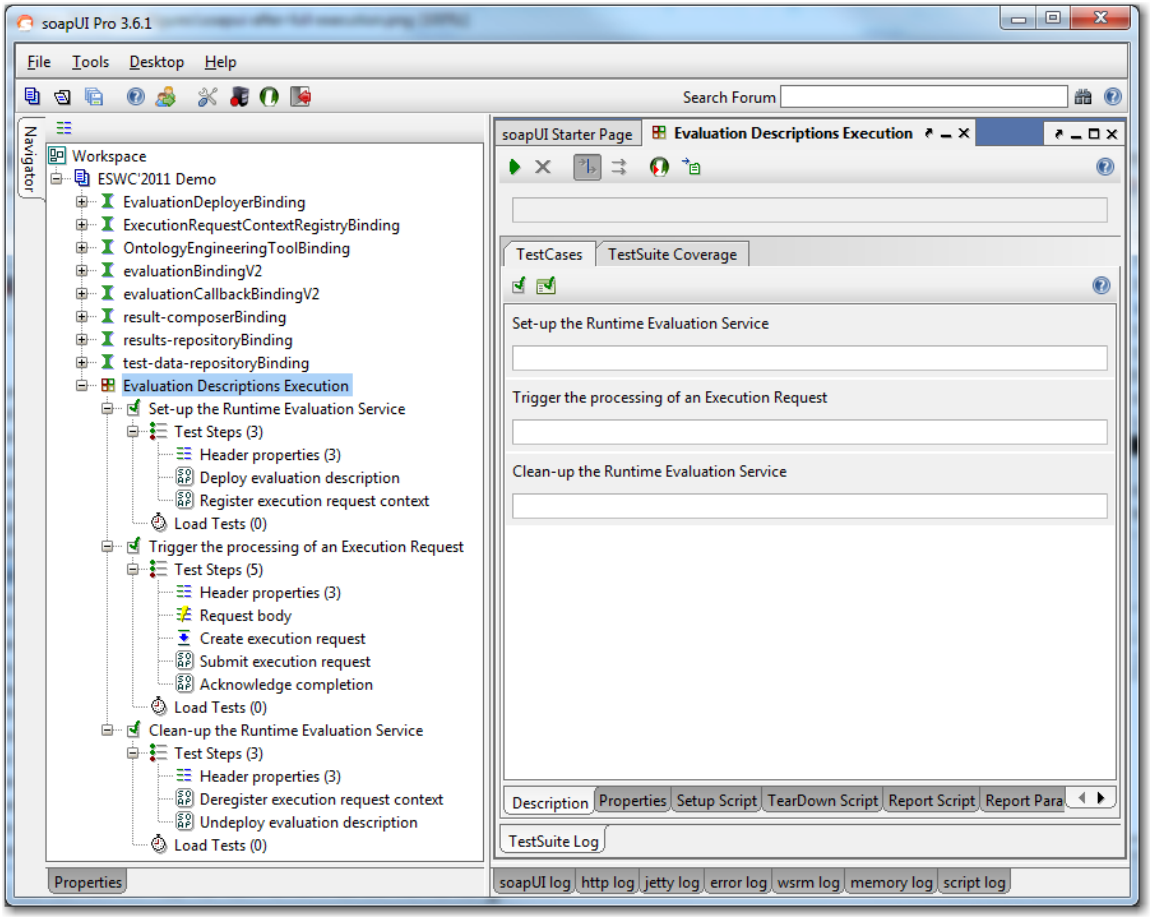
Running the evaluation scenario
Preparing the request message (II)

- 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>
```

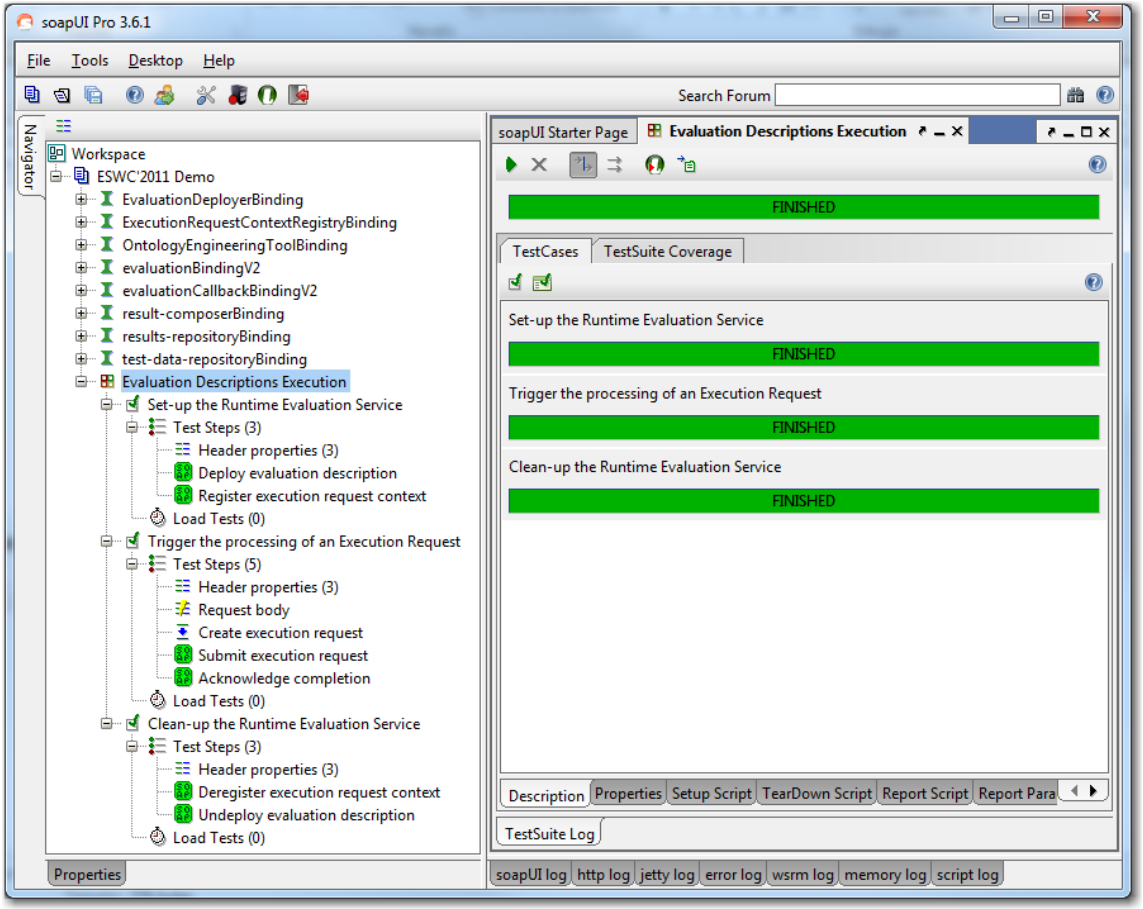


Running the evaluation scenario
Triggering the evaluation execution (I)

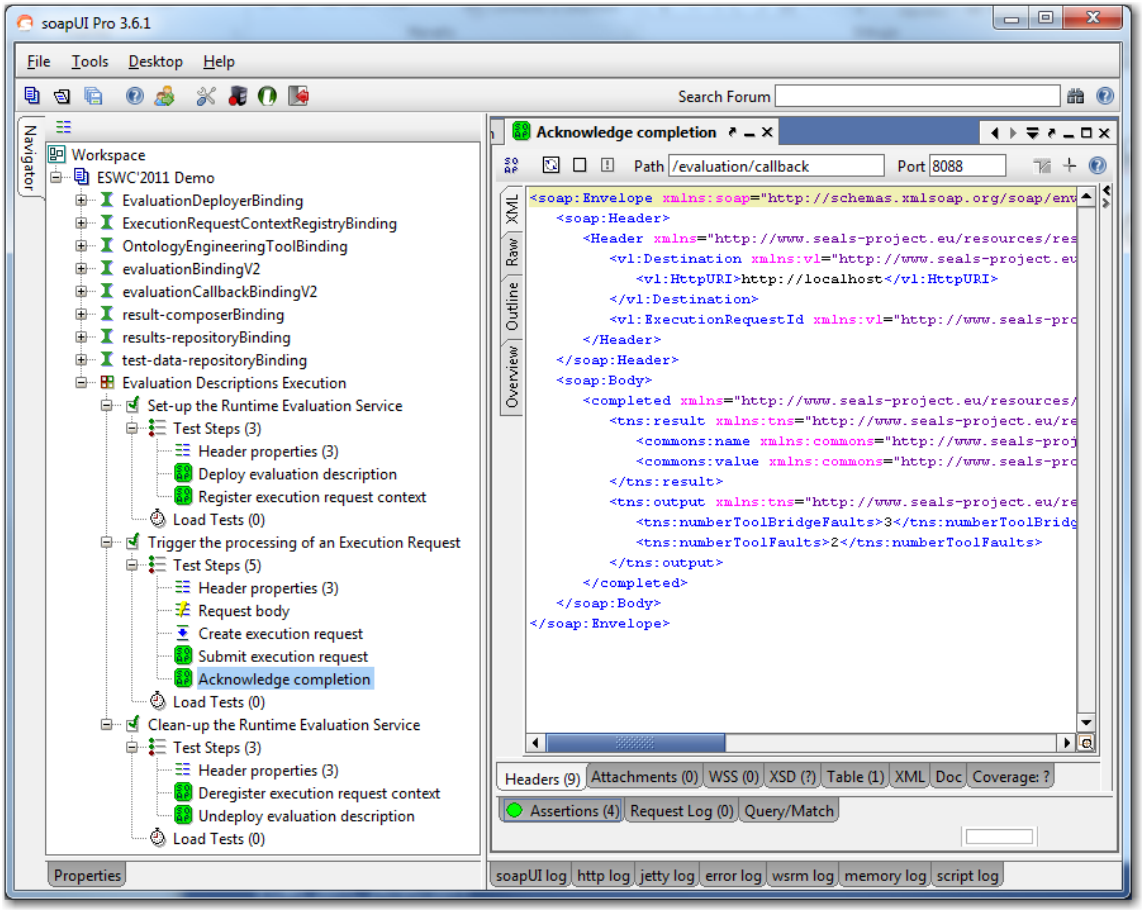


NOTE: SoapUI 3.5.1 (or higher) is required for running the project (http://www.soapui.org/)

Running the evaluation scenario
Triggering the evaluation execution (II)



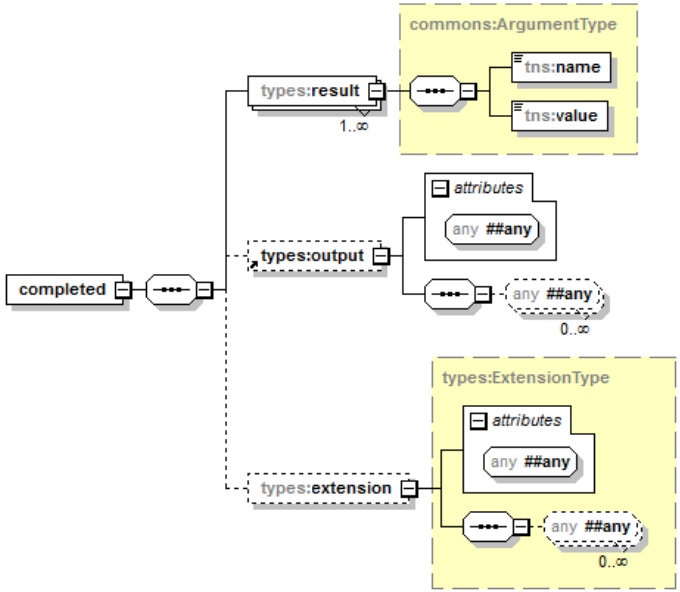
Running the evaluation scenario
Analyzing the execution response (I)



Running the evaluation scenario
Analyzing the execution response (II)

- Payload:

```
<completed xmlns="http://www.seals-
project.eu/resources/res/engine/evaluation/wsdl/v2">
  <tns:result xmlns:tns="http://www.seals-
project.eu/resources/res/engine/evaluation/wsdl/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">
integration-testing-evaluation1</commons:value>
  </tns:result>
  <tns:output xmlns:tns="http://www.seals-
project.eu/resources/res/engine/evaluation/wsdl/v2">
    <tns:numberToolBridgeFaults>3</tns:numberToolBridgeFaults>
    <tns:numberToolFaults>2</tns:numberToolFaults>
  </tns:output>
</completed>
```



Running the evaluation scenario

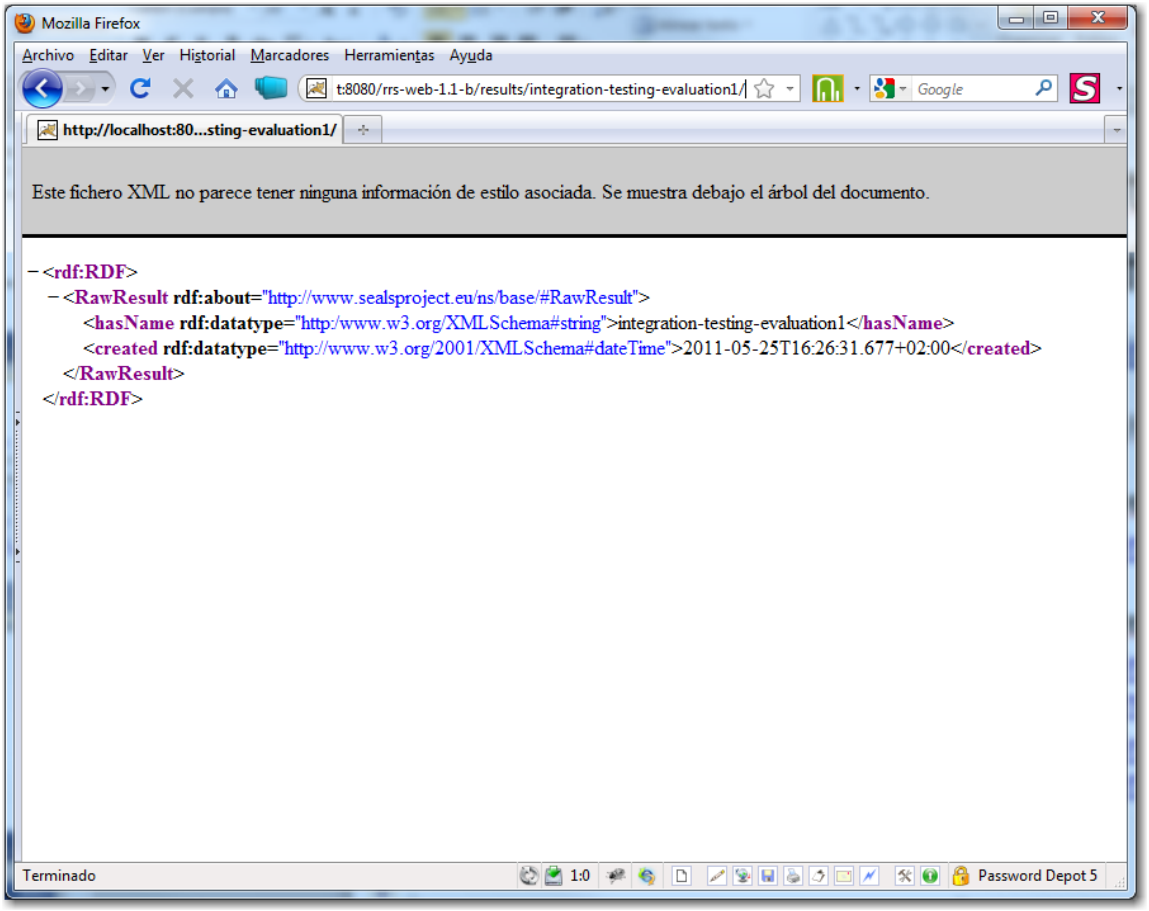
Inspecting generated results

- **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)

Mozilla Firefox

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0/rrs-web-1.1-b/results/integration-testing-evaluation1/suite

http://localhost:80...-evaluation1/suite

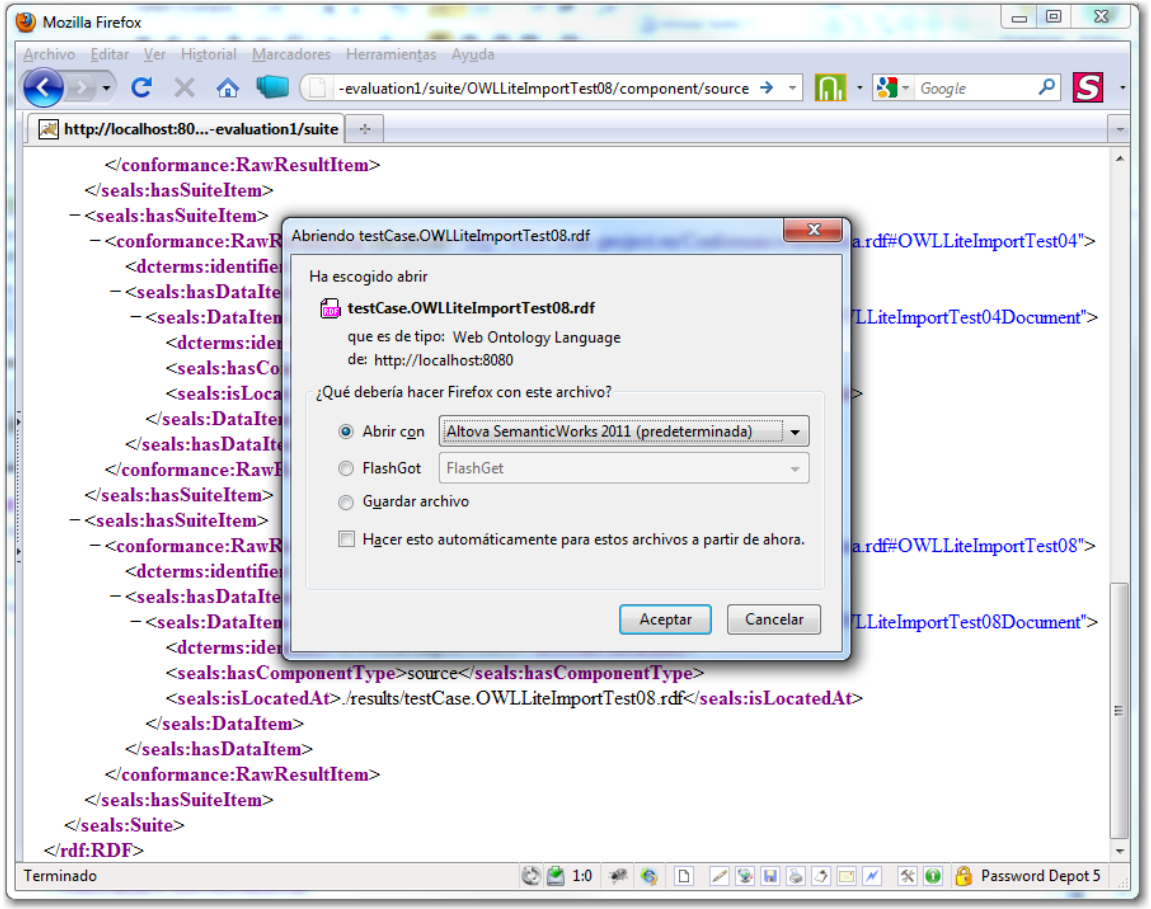
Este fichero XML no parece tener ninguna información de estilo asociada. Se muestra debajo el árbol del documento.


```
- <rdf:RDF>
  - <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#OWLLiteImportTest01Document">
              <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#OWLLiteImportTest02Document">
              <dcterms:identifier>OWLLiteImportTest02</dcterms:identifier>
              <seals:hasComponentType>source</seals:hasComponentType>
```


Terminado 1:0 Password Depot 5

Running the evaluation scenario

Inspecting generated results with a browser (III)



Running the evaluation scenario

Inspecting generated results with a browser (IV)

REST Client for Firefox - Mozilla Firefox

Archivo Editar Ver Historial Marcadores Herramientas Ayuda

chrome://restclient/content/restclient.xul

REST Client for Firefox

Open | Open Entire Request | Save | Save Entire Request | Copy | Clear | Add Request Header | Login

REST Request

Method: GET

http://localhost:8080/rrs-web-1.1-b/results/integration-testing-evaluation1

Send

Request Header:

Name	Value
Accept	application/rdf+xml

Request Body:

Response Header | Response Body | Formatted XML


```
<?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>
```


1024 ms 626 bytes

Terminado 1:0 Password Depot 5

Running the evaluation scenario

Inspecting generated results with a browser (V)

REST Client for Firefox - Mozilla Firefox

Archivo Editar Ver Historial Marcadores Herramientas Ayuda

chrome://restclient/content/restclient.xul

REST Client for Firefox

Open | Open Entire Request | Save | Save Entire Request | Copy | Clear | Add Request Header | Login

REST Request

Method: GET

http://localhost:8080/rrs-web-1.1-b/results/integration-testing-evaluation1/suite

Send

Request Header:

Name	Value
Accept	application/rdf+xml

Request Body:

Response Header | Response Body | Formatted XML

```
    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#OWLLiteImportTest01Document">
                    <dcterms:identifier>OWLLiteImportTest01</dcterms:identifier>
                    <seals:hasComponentType>source</seals:hasComponentType>
```

1026 ms 4039 bytes

Terminado 1:0 Password Depot 5

Running the evaluation scenario

Inspecting generated results with a browser (VI)

REST Client for Firefox - Mozilla Firefox

Archivo Editar Ver Historial Marcadores Herramientas Ayuda

chrome://restclient/content/restclient.xul

REST Client for Firefox

Open | Open Entire Request | Save | Save Entire Request | Copy | Clear | Add Request Header | Login

REST Request

Method: GET

8080/rrs-web-1.1-b/results/integration-testing-evaluation1/suite/OWLLiteImportTest08/component/source

Send

Request Header:

Name	Value

Request Body:

Response Header | Response Body | Formatted XML

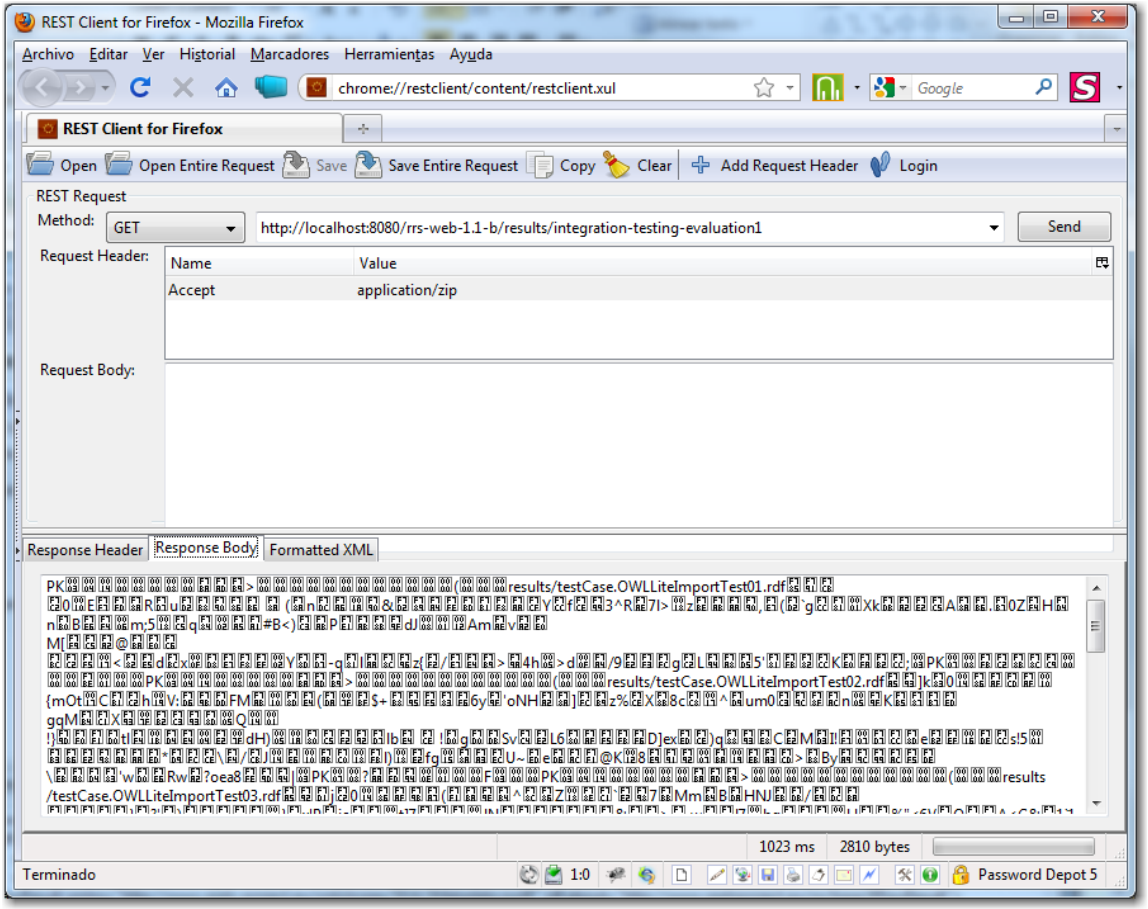
```
<rdf:RDF
    xml:base="http://www.example.org/ISA08#"
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
    xmlns:owl="http://www.w3.org/2002/07/owl#"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
    xmlns:ibs="http://www.example.org/ISA08#">

    <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>
```

1048 ms 763 bytes

1:0 Password Depot 5

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/#RawResul
t">
        <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-b/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
ocument">
                                        <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
ocument">
                                        <dcterms:identifier>OWLLiteImportTest02</dcterms:identifier>
--More--
```

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 Platforn

Miguel Esteban Gutiérrez, UPM

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