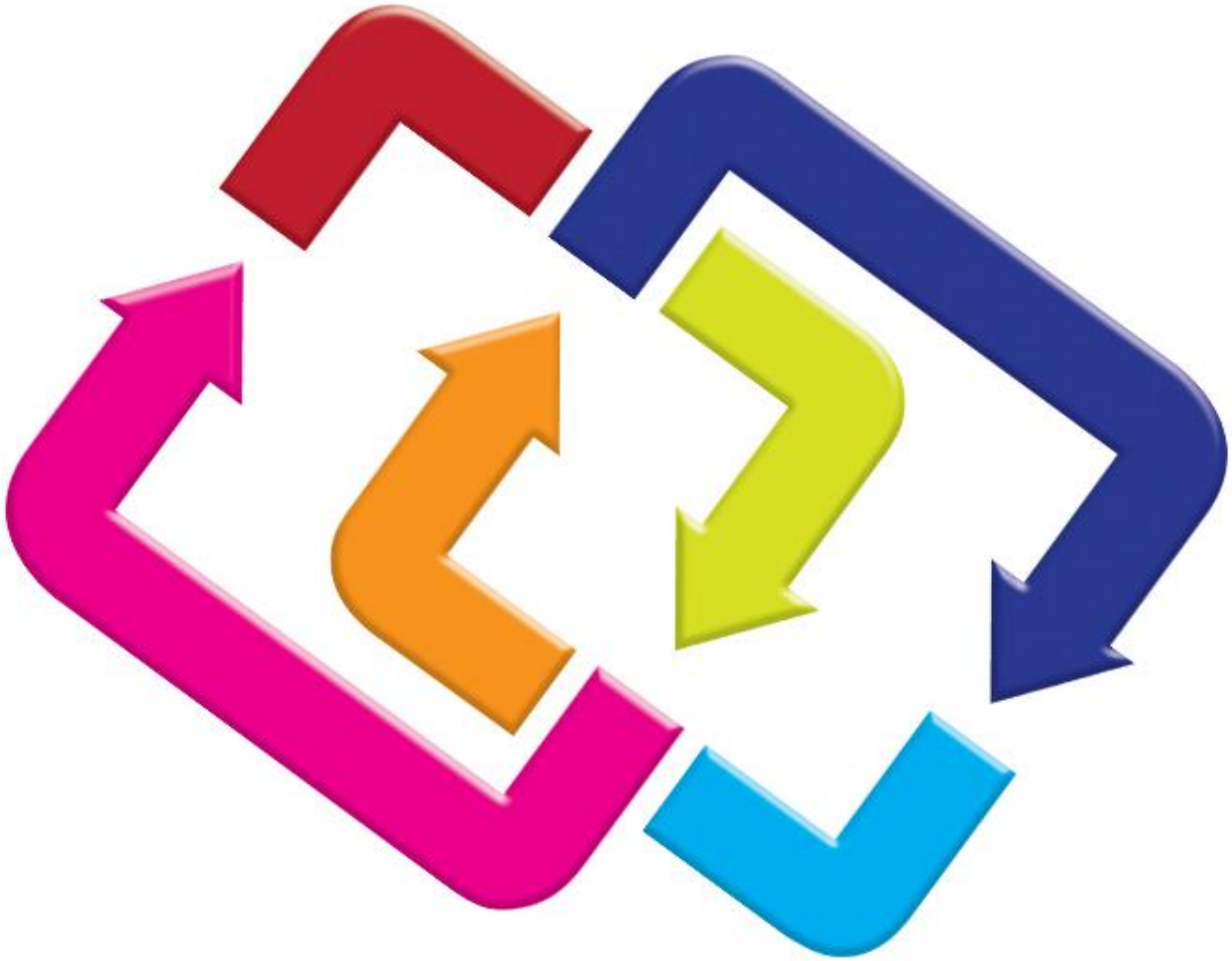

Experimentation environment core (Subtask 352-NKUA) – Current status of demo

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- Functionality of components
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Introduction

- Currently , greenhouse advice experiment scenario is supported.
- EE-core components participating:
  - ExecutionManagerService
  - Executor
  - ScriptExecutionEngine
  - BackendSimulator
  - ExecutionLogManager
  - ExperimentCRUD
  - Experiment Search
  - Report Manager
  - KPI Manager

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Functionality of components

- ExecutionManagerService
  - Starts a new execution for an experiment, stores it’s info , provides access to all executions done.
- Executor
  - Executes an experiment's step and logs its result
- ScriptExecutionEngine
  - Executes a step's REST call or jar.
- BackendSimulator
  - Listens to CSB queue for sensor values and saves them. Also feeds sensor values to an expert system in order to produce advice.

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Functionality of components(2)

- ExecutionLogManager
  - Logs a step's result and saves it to persistent storage. Also retrieves logs for a specific execution
- ExperimentCRUD
  - Create an experiment to persistent storage, retrieve it ,update it
- Experiment Search
  - Search by name functionality.
- Report Manager
  - Create report , get report by execution or experiment and search report by name,description
- KPI Manager
  - Sample functionality for reading kpi’s and creating a report using them

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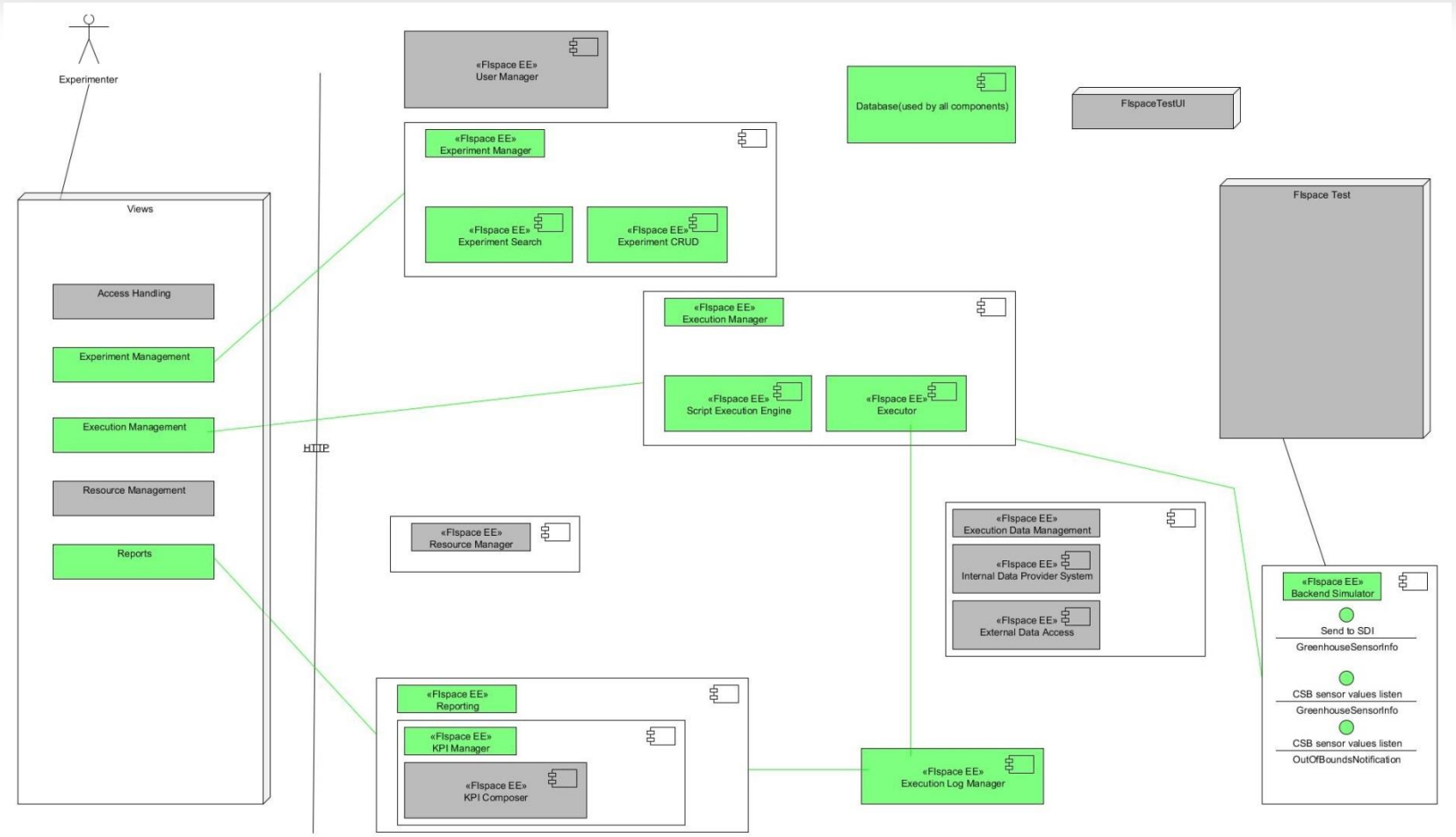
Functionality of components(3)



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Greenhouse Experiment Demo storyline

1)The experimenter defines and creates the Greenhouse experiment which has two steps.
- a)Get the sensor values of a specific farm from the backend simulator.
- b)Feed these values to the expert system and get the advice.

2)The new experiment appears in the experiments list.
- The details of the experiments can be seen
- The experiment can be deleted.

3)The experiment search functionality shows available experiments based on the query in a full text context.

4)The experimenter can see all the details of all experiments .

5)The experimenter executes the experiment.

6)A new execution id is produced.

7)The raw logs for the execution are shown .

8)A report based on these logs can be created with the following kpis
- a)Response time for the whole execution
- b)Step execution time
- c)Validity of response time
- d)Success rate of steps

9)The experimenter can see the reports that are produced.

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Connection with FIspace platform

- Currently the backend simulator uses the CSB for listening to sensor values .
- It uses the same messages that CSB uses in it's communication with other components of FIspace platform.
  - B2BGreenhouseSensorInformation message
  - B2BOutOfBoundariesNotification message
- Backend simulator has to send the values to be checked for boundaries violation to the SDI of FIspace test.

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Experiment definition example

```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<experiment>
    <type>Experiment</type>
    <experimentId>1v2f8gfd</experimentId>
    <experiment_name>Greenhouse advice experiment now</experiment_name>
    <guid>
        <id>a47304b8-feeb-4b0b-9c89-dd2cc3392d1</id>
    </guid>
    <step>
        <type>Step</type>
        <actor>Bill</actor>
        <dataDescription>The data that will be used are data from a sensor and forwarded to expert system</dataDescription>
        <description>REST</description>
        <expectedResult>Result according to data should be ....</expectedResult>
        <link>
            <type>Link</type>
            <additionalData></additionalData>
            <description>GET</description>
            <name>Backend simulator link</name>
            <uri>http://localhost:10008/BackendSimulator/getSensorData/farmid/24</uri>
        </link>
        <VUserScript>/home/user/a/script_a.sh</VUserScript>
    </step>
    <step>
        <type>Step</type>
        <actor>Bill</actor>
        <dataDescription>The data that will be used are data from a sensor and forwarded to expert system</dataDescription>
        <description>JAR</description>
        <expectedResult>Result according to data should be ....</expectedResult>
        <link>
            <type>Link</type>
            <additionalData>""</additionalData>
            <description>GET</description>
            <name>Backend simulator link</name>
            <uri>http://localhost:10008/BackendSimulator/getExpertAdvice/farmid/24</uri>
        </link>
        <VUserScript>/home/potemkin/Desktop/v1.jar</VUserScript>
    </step>
    <version>1.0</version>
</experiment>
```

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Next steps

- Enhance components functionalities
- Add more KPIs choices in alignment with trials
- Integrate 2nd scenario from Fish (?)/washing machine(?) trial
- Integrate User manager component(IDM).
- Initialize Execution Data manager component and integrate it in the current EE.
- Connect the EE with the FIspace test.

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