MULTICLOUD APPLICATIONS TOWARDS THE DIGITAL SINGLE MARKET

Deliverable D2.3

Integration and validation strategy

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Abstract:	This document will detail the strategy and the steps to be followed for integrating and validating the DECIDE DevOps framework.
Keyword List:	Development environment, integration, testing, requirements.
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Terms and abbreviations

DoW	Description of Work
EC	European Commission
KR	Key Result
QA	Quality Assurance
SCM	Source Code Management
Sw	Software
WP	Work Package

Executive Summary

This deliverable provides detailed guidelines for the DECIDE development process and integration are provided, including an outline of the technologies to be used in each stage, frameworks and tools that will be explored for potential use in the set-up of the DECIDE development and integration environments.

The project DevOps methodology and the development and integration environments that will be used for managing the development process are presented and discussed in detail, along with the different supporting tools/technologies proposed to be used in each environment. The development conventions and best practices are presented too.

The validation strategy for the functional requirements elicited over the different technical Work Packages is proposed.

1 Introduction

1.1 About this deliverable

This deliverable is provided as a baseline reference for partners during the development, integration and validation processes in DECIDE. It facilitates partner cooperation in the technical work packages by defining the tools, set of rules and guidelines for the management of the development project, code repositories, and the delivery of the project's source code output. It also presents the strategy for the validation and the prioritization of the functional requirements.

1.2 Document structure

The document is organized into five (5) main sections. The first section presents the deliverable's objective and its structure. The second section introduces the different Development environments and procedures that will be used for software implementations in DECIDE, including the setup of the different environments (development, integration and production) and the description of the different tools envisioned for each of the environments. Section 2 also presents the development conventions and best practices with respect to the procedures to be used.

Next, the integration and validation strategy to be followed in DECIDE is described. For this, the strategy and processes for the integration and for the requirements prioritization validation are presented.

The document ends with a conclusion section, followed by the references and the appendixes.

2 DECIDE DevOps development environment and procedures

2.1 DevOps infrastructure set up

In DECIDE, DevOps philosophy and the corresponding approach is used and applied at two levels:

- Internally for the development and the operation (deployment and validation into the use cases' environments) of the software components forming the different KRs in the project.
- Externally for the users of the DECIDE solution, as the different KRs will be integrated into the DECIDE DevOps framework for the development and operation of multi-cloud based applications. Developers and operators of multi-cloud applications will be following the DevOps philosophy when using the DECIDE DevOps framework.

This section presents the DevOps infrastructure and tools planned to be used internally for the development and operation of DECIDE's implementations. The tools and technologies to be integrated in the DECIDE DevOps framework will be described and defined in D2.6 [1].

The different KRs which are the outcomes of DECIDE [2] are composed of several software components that will be implemented by different partners following different technologies. DECIDE will use a DevOps based approach able to fully support the management of these implementations and the planed releases. DevOps integrates development and operations into a single-minded entity [3] with common goals: high-quality software, faster releases and improved users' satisfaction.

DevOps also incorporates a number of agile principles, methods, and practices such as continuous delivery, continuous integration, and collaboration [4].

The DevOps approach requires the set-up of a development and delivery pipeline that consists of the stages an application goes through from development through production, as exemplified in the following figure. It represents the environments that are envisioned in DECIDE covering the different development stages:

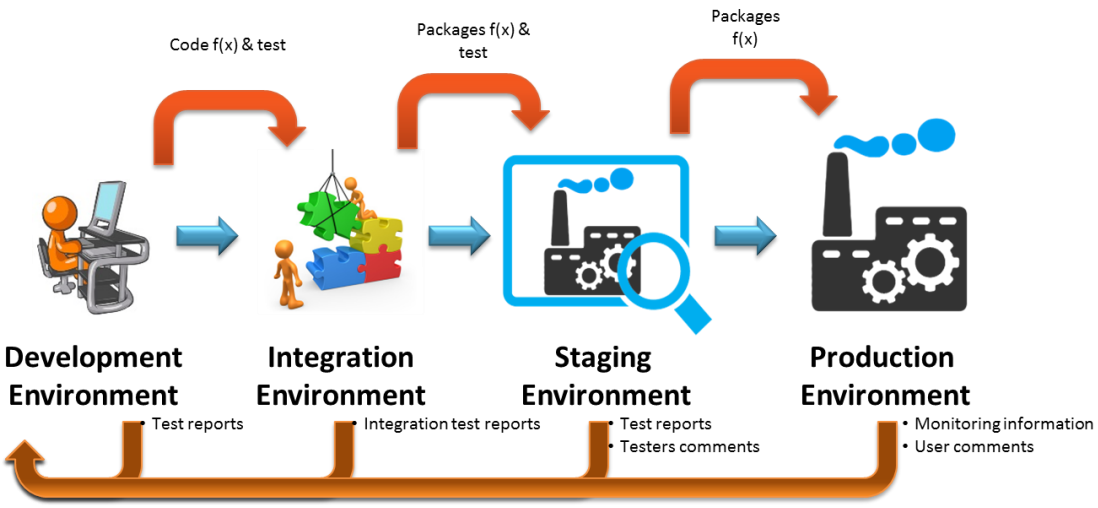

Figure 1. Envisioned stages for the development, integration and validation of the software components to be implemented in DECIDE.

- The *Development* stage envisages the availability of a development environment that provides tools to write and test code, as well as to support collaborative development (e.g., source control management, work-item management, collaboration, unit testing, project planning). Possible tools and development approaches are: *Git* [5] as version control system, *Apache Maven* [6] to

manage project's builds, reporting and documentation, and containerization technology to have applications running in self-contained units that can be moved across platforms (e.g., Docker [7]).

- The *Integration* stage focuses on compiling the code and performing the unit test and integration test reports. This stage also includes the availability of a common storage mechanism for the binaries created, as well as the assets required to deploy the applications (e.g., configuration files, infrastructure-as-code files, deployment scripts). Possible tools to support this stage are *Jenkins* [8] to support continuous integration and *Apache Maven* for building instructions.
- The *Staging* stage is where the QA, user acceptance, and development/testing teams do the actual testing. Possible tools to support this stage are again: *Jenkins*, *Apache Maven* for building and testing instructions, and *xUnit* for unit testing framework; as well as tools like *Chef* [9] (a cloud infrastructure framework that automates the building, deploying, and management of infrastructure); *Docker* or *Puppet* [10] (for data center orchestration by automating configuration and management of machines and software).
- The *Production Environments* envisage tools and features for application environment management and provisioning such as: *Chef*, *Docker*, *Puppet*, as well as tools like: *Logstash* [11] to speed up the feedback loop; *osTicket* [12]or *Trac* [13]**¡Error! No se encuentra el origen de la referencia.**, as ticket or issue tracking system.

In the following sections (2.2, 2.3, 2.4 and 2.5) the different tools (shown in figure 2) and how they are planned to be used in the context of DECIDE are presented

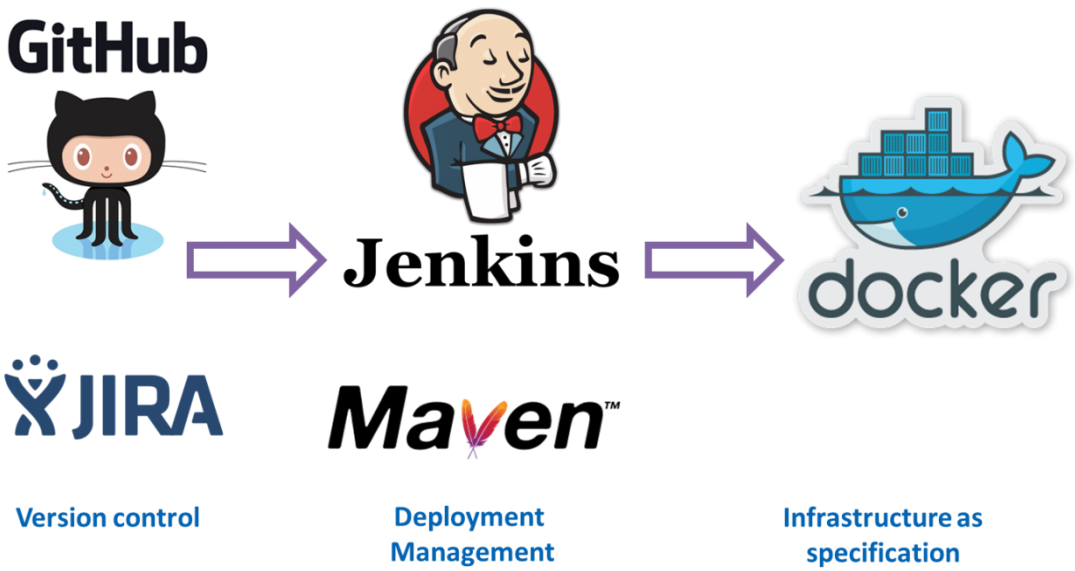

Figure 2. Tools for version controlling, deployment and infrastructure in DECIDE.

2.2 Version control and task management

2.2.1 Software repository

The technical work packages of DECIDE will use GitHub [14] to manage source code and for revision control. GitHub is a Web-based Git repository hosting service. It offers all of the distributed revision control and source code management (SCM) functionality of Git [5] as well as adding additional proprietary features [15].

The DECIDE GitHub will host both *Private* and *Public* repositories. The private repositories will be used to host the initial stages of the different components of the project until they are mature

enough to be deployed into the public domain. Besides, the private repositories will be also used to store repositories required by the pilots to develop their pilot oriented specific source code and resources.

The different components of DECIDE will become public as defined in Open Source strategy and in the exploitation strategy [16]. Private repositories will host the partners' proprietary implementations as established in the different individual and collaborative dissemination strategies.

2.2.2 Tracking development

It is envisioned that DECIDE consortium will use a tool for managing the development project of the DECIDE platform comprising the different software components forming the KRs. It is not decided yet which tool will be used in DECIDE. Several tools are being analysed for that purpose, such as Jira.

Jira [17] is a tool for managing the development. A Jira Project is a collection of Issues, governed by schemes for Issue Types (bug, enhancement, feature request, etc.). It provides feature tracking, bug tracking, and project management functions.

A Jira setup includes also the following configuration parameters:

- **Issue Types:** Each issue has a specific type (Bug, Task, etc.). Each issue type has specific configurations such as workflow and screens.
- **Workflows**: A Workflow defines the transition of an issue through the various statuses during its lifecycle. A project has multiple workflows tailored to each issue type.
- **Screens**: A Screen determines which attributes are visible and when.
- **Permissions**: Allow to define who can do what to an issue.
- **Versions:** Issues can be assigned to versions. These collections of issues can then be tracked and managed as part of a roadmap.

The final selection of the development tracking will be made once the project is more advanced. This selection will become critical in the latest stages of the project during the maintenance and the pilot supporting phase. The initial stages are more subject to be managed by agile methodologies such as the backlog of scrum.

2.2.2.1 Version release

DECIDE project release schedule will be as follows:

- Major version release at each milestone as originally planned in the DECIDE Proposal [2] DoW.
- Minor version release following the alpha/Beta integration strategy proposed in section 3.1.

Versions are denoted using a standard triplet of integers: MAJOR.MINOR.INTERIM BUILD/PATCH (e.g. 1.2.51). In between Major or Minor version, partners can generate any number of interim releases.

In Jira, Major and Minor releases will be created in all projects. For each version, all tasks schedule to be released at that specific version will be assigned to it.

2.3 Deployment management

In the context of DECIDE one of the main objectives of the DevOps philosophy is to enhance the flow between the development stage and the operation stage, in order to decrease the production times. There are several ways of improvement (i.e. Kaizen [18], Lean [19], SixSigma [20]) but when the

objective is to decrease the time of passing from development to production, one of the main resources is the systematic automation of repetitive tasks.

There exist multiple approaches for automating tasks. In DECIDE, it is envisioned to use Jenkins [8]. Jenkins is a quite extended automation server. Other alternatives for automating tasks are Bamboo [21], Travis [22], cruise-control [23], etc. These are the main reasons for selecting Jenkins:

- Open source license
- Support services available if necessary
- DECIDE partners previous experience (TECNALIA/INNOVATI)

The usage of an automation server such as Jenkins, provides a lot of advantages when sharing the information about the status of the continuous integration tasks, both for the developers and for the users.

2.3.1 Main functionality

Jenkins server provides multiple functionalities that are extendable by adding plugins (more than 2000 available). In this section only those functionalities provided by Jenkins which are relevant for DECIDE will be described. We will focus only on some stages of the DevOps cycle like: registering the component, continuous integration, debugging, modifying the component and deleting it.

During the continuous integration stage, the automation server should support different development strategies, such as the alfa-beta approach for integration and manual testing (see section 3.1). The functionalities that will be needed for such a development strategy are:

- Creation of the automatization tasks to systematize DevOps cycle and accelerate the incorporation of the changes and modifications into the production environment.
- Grouping the tasks into different groups to manage complex development.
- Review the execution log so that we have mechanisms to identify the causes of a failure in the automation task.
- See the status of previous executions to analyze failures.
- Keep the results of past executions to see the detail of the past executions i.e. when a failure occurs.
- Notify the status of the executions for the automatic launching of some tasks.
- Recover the automation code from GIT, in order to include in configuration management the integration tasks.
- Delete projects.

Apart from these functionalities, using Maven or previously installed plugins, Jenkins will be able to manage the infrastructure to execute the different components so that it can perform the integration tests against them.

2.3.2 Integration points

With respect to the integration technologies, in DECIDE it is envisioned to use mainly the REST API provided by Jenkins [24]. This API provides functionalities for:

- Recovering information from Jenkins
- Launching executions
- Creating/ Copying Jobs

2.4 Infrastructure as specification

In complex developments environments with technical incompatibilities or in order to assure the independency of the modules, the different components are allocated in different virtual (or physical) machines. This approach implies:

- Requesting and managing new virtual machines.
- Blocking resources that could be used for other projects.
- Configuring the access to those machines, including opening the corresponding ports etc.
- Configuring the operating system in each machine and the possible ssh access.
- Configuring the platform and the requirements of each of the components manually.

The containers technology allows the definition of separate spaces (both at communication level and at file system level) in the same virtual or physical machine, optimizing the computation resources.

At the same time, containers based technologies (such as Docker [7] or Warden [25]) allows the explicit provision of the configuration of the containers: baseline operating system, packages included, initial content, etc. This allows the instantiation of the same container with exactly the same initial characteristics.

Furthermore, some containers technologies support the usage of the containers registry where developed containers can be uploaded so that other team members can download and use /test them with a small set of instructions.

In DECIDE it is envisioned to use Docker as containerization technology. These are the reasons for this election:

- Open source technology
- Professional support if required
- It provides a public registry for the containers or we can create our own one.
- It has an extensive and growing users' community.

2.4.1 Main functionality

The Docker server provides a lot of functionalities. In this section only those relevant for DECIDE are going to be described. For this, we will focus on the following DevOps stages: continuous integration, publication, distribution and updating.

In DECIDE it is envisioned to use the following capacities from Docker:

- Definition of the platform requirements for the components.
- Containers creation including both the component and the platform requirements for it.
- Configuration of the containers during its instantiation.
- Logs communication
- Containers instantiation
- Containers instances stopping and deleting
- Persistency definition

With respect to communication it is envisioned that DECIDE project will use:

- Containers registration into the registry
- Project level registry creation

With respect to distribution it is envisioned that DECIDE project will use:

- Download containers from the registry

With respect to update it is envisioned that DECIDE project will use:

- Download containers versions from the registry

2.4.2 Integration points

With respect to the integration technologies, it is envisioned that DECIDE will use mainly the Maven plugin for Docker [26]. This will allow us to obtain the actions registry (log) of what is happening in the different actions that supports and that are needed in the DevOps cycle:

- Build
- Run
- Stop
- Pushing into the registry
- Log

This registry integrates perfectly with Jenkins and allows us to analyze what has happened during the execution of the different activities.

The proposed approach may seem complex as it requires knowing the three technologies: Jenkins, Maven and Docker. But this approach provides the project with an editable configuration and adjustable to the needs of every project. All the files are stored with the project and are accessible and modifiable by the team working on it.

2.5 Development conventions and best practices

In DECIDE, there are planned three types of deliverables as presented in [27]. This section introduces the first set of naming conventions for the Software deliverables.

These software deliverables, which are actually a piece of code corresponding to one or part of a Key Result, will be accompanied by a short report explaining the main functionalities, technical design, downloading information, installation manual and licensing schema. The technical report will also have to follow the provided template for software deliverables.

Source files will follow the following naming convention:

`eu.DECIDEh2020.modulename.componentname.subcomponentname.`

Endpoints naming convention is as follows:

`/DECIDE/[group]/[componentname]/`

Domain names will be for the development environment: `***.dev.DECIDE-h2020.eu,` while for the production environment this will be the name that it will be used: `****.DECIDE-h2020.eu`

Source code files heading shall follow the following format:

```
/*

* Copyright (c) 201x <<Company_name>>.
* All rights reserved. This program and the accompanying materials
* are made available under the terms of the
* <<licensing_schema_to_be_decided>> which accompanies
* this distribution, and is available at
* <<link of the information of the selected licensing schema>>
*
* Contributors:
```

```
*
* <<Full Name of the contributor(s)>> <<(Organization Name(s))>>
**Initially developed in the context of DECIDE EU project www.DECIDE-
h2020.eu
*/
```

3 DECIDE DevOps integration and validation strategy

3.1 Integration stage: Strategy and process

As explained in previous sections, one of the DevOps stages in DECIDE will be the integration stage. The integration stage will focus on compiling the code, managing the interactions among the different components, and performing the integration tests reports. This stage also includes the availability of a common storage mechanism for the binaries created, as well as the assets required to deploy the applications (e.g., configuration files, infrastructure-as-code files, deployment scripts). The tools envisioned to support the integration stage in DECIDE are Jenkins and Maven.

The Integration stage in DECIDE will have two main environments:

- α (Alpha) environment: In this environment, the source code from the different components (developed by the different partners) as well as the integration tests are collected, built, run, and tested. Once a component has successfully achieved and passed these phases the component will become a candidate to be included in the Beta environment.
- β (Beta) environment: The software components coming from the Alpha environment will be included into the Beta environment, tagged as Beta component and a functional testing will be made by a group of experts. Once the component has successfully passed this functional testing, it will become a candidate for an official release. Once the official release has been created, it will be delivered trespassed to the production environment where the use case can test it.

In the following picture the environments envisioned for the Integration stage in DECIDE are graphically represented:

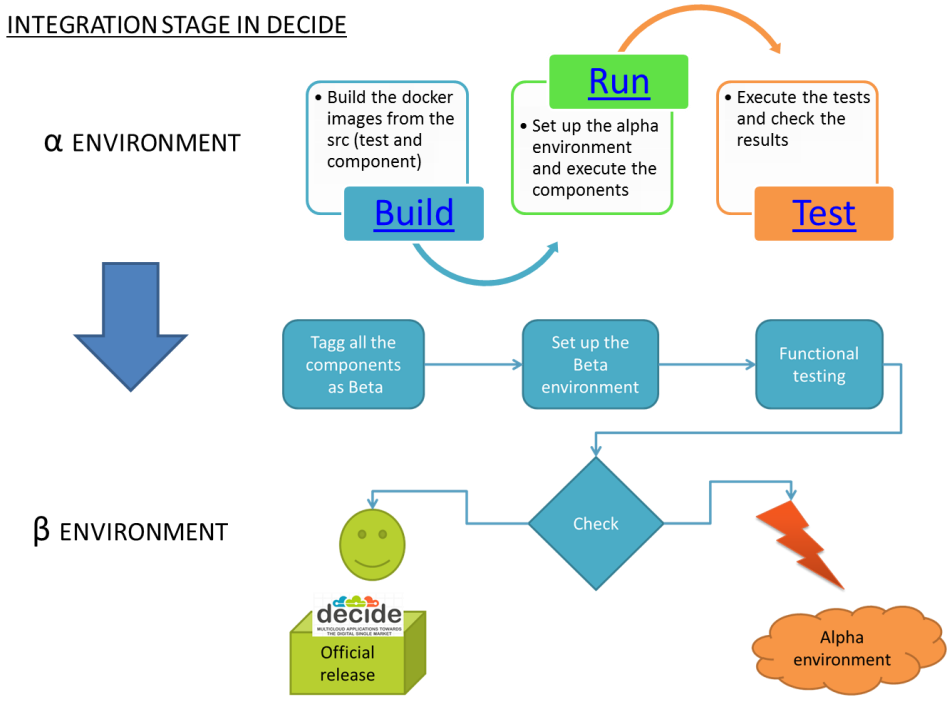

Figure 3. Proposed integration strategy in DECIDE

As shown in Figure 3, the Alpha environment will propose 3 main activities (and the corresponding Jenkins tasks for those activities):

- Phase 1: Build - During this phase the Jenkins tasks (functionality and data) for getting the source code from the software repository and building the Docker image will be created and performed. This phase may also include Jenkins tasks for getting specific pre-requisites needed to build the image, such as dependencies to specific libraries or needed end-points. The result of the activities to be performed in phase 1 is the docker image of the specific component and the related integration tests (which have been developed by each of the components' developers team). The management of the dependencies needed to compile the components will be in charge of the Maven client included in the Jenkins framework.

- Phase 2: Run - During this phase the Jenkins tasks for running the component and setting up the Alpha environment are created and performed.

- Phase 3: Test - During this phase, the Jenkins tasks for running the integration tests of the components will be created and performed. The tests will be defined following a layers approach, from the simplest (and without dependencies) to the most complex ones, with dependencies upon the previous tests:

    - 0.0 Tests for loading data
    - 0.1 Functions that need data to be executed
    - 0.2 Functions that need 0.1 to be executed
    - Etc.

Once all the tests are passed successfully the Beta phase starts. The Beta phase includes the following steps:

1. Tag all the components as Beta
2. Set up the Beta environment
3. Manual functional testing (by a group of experts which is defined in the context of DECIDE)

When the component has successfully passed the functional testing from the Beta environment it will become a DECIDE official release candidate, to be validated in the Use Cases. If the final tests are not successfully passed the component will come back to the alfa environment.

3.2 Requirements validation: Strategy and process

This section introduces how the different functional requirements of the software components to be developed during DECIDE are going to be prioritized in the different software releases. 157 functional requirements for the different software components have been elicited in the context of the different technical WPs. After defining them, the prioritization of the different functional requirements with respect to the different delivery cycles defined in DECIDE has been performed, and documented in a shared table.

The terms included in this table are

- Req id: This is the id of the functional requirement. This id is the one used in the corresponding work package during the elicitation process. The definition of each requirement is included or will be included in the different deliverables for the different KR implementations. D2.1 [28], D3.10 [29] and D3.13 [30] for KR1 requirements, D3.1 [31] for KR2, D3.4 [32] and D3.7 [33] for KR3 requirements, D5.1 [34] for KR4 and D4.1 [35], D4.4 [36],D4.7 [37] and D4.10 [38] for KR5.
- Sw demonstrator: This is the name of the software component/subcomponent part of the specific key result.
- Partner: This is the acronym for the partner responsible for the development of the software component.

- Releases: This term indicates the dates of the different official releases for the software deliverables.
- WP: This is the WP where the software component will be developed.
- No: Number of the functional requirement (considering all the functional requirements form every key result and component)

This table establishes the functionalities that will be developed in each of the development cycles. The information contained in the table will be used to establish the validation of the functionalities in each of the official releases, and will serve as a plan for the software development activities in each WP and for each partner. This table will be updated after every official release is delivered in DECIDE.

The requirements have been gathered through various requirements elicitation techniques, being the most favored ones, document analysis, expert judgment and brainstorming. The consortium has taken as input the text in the Description of Action and has transformed it to a requirement format. Brainstorming sessions have been carried out in remote workshops and teleconferences, while expert judgment has been used to determine the feasibility of the requirements elicited. For the prioritization of the requirements expert judgment has been used based on the experience of the partners and the functionalities identified as core. For this prioritization, the following key aspects have been considered:

- Baseline functionalities will be implemented in the initial versions. Complex functionalities depending on the baseline functionalities will be implemented in the subsequent releases.
- Functionalities with strong dependencies with other tools (i.e. interfaces related functionalities) will be implemented in early stages of the project, so that the integrated framework can be built up and the components can test the dependencies with other components.
- Functionalities which are core for the use cases have been prioritized for the initial releases. This initial prioritization has been done based on D6.1 [28], where the initial description of the use cases is included. It will be updated in parallel to the concretization and detail specific use cases requirements included in the next WP6 deliverables. This table will serve for the use cases to be aware of the functionalities available in each of the releases of the software components. The use cases validation process will be defined in the context of WP6.

The initial prioritization of the functional requirements is shown in Appendix 1. The colours code is as follows:

Table 1. Color code for requirements prioritization

M12
M24
M30
M15
M27
M33

4 Conclusions

DECIDE is a collaborative research and innovation action whose outcomes are mainly software based. These outcomes will be implemented in a collaborative manner by different development teams from different partners. In order to manage the development environments and the integration of the different software components so that the releases can be delivered on time, the proper DevOps strategy and processes have to be defined and set up.

This deliverable presents the different environments envisioned for the management of the development, integration and validation stages of the software components to be implemented during the life cycle of the project.

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APPENDIX: Functional requirements prioritization table

Table 2. Functional requirements prioritization table in DECIDE

		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
WP2	1	KR1-REQ1[1]				M15												
WP2	2	KR1-REQ2				M15												

[1] The definition of each requirement is included or will be included in the different deliverables for the different KR implementations. D2.1 [28], D3.10 [29] and D3.13 [30] for KR1 requirements, D3.1 [31] for KR2, D3.4 [32] and D3.7 [33] for KR3 requirements, D5.1 [34] for KR4 and D4.1 [35], D4.4 [36],D4.7 [37] and D4.10 [38] for KR5.

		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
WP2	3	KR1-REQ3				M15												
WP2	4	KR1-REQ4				M15												
WP2	5	KR1-REQ5				M15												
WP2	6	KR1-REQ6				M15												

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP2	7	KR1-REQ7				M27												
WP2	8	KR1-REQ8				M27												
WP2	9	KR1-REQ9				M27												
WP2	10	KR1-REQ10				M27												

		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
WP2	11	KR1-REQ11				M27												
WP2	12	KR1-REQ12				M33												
WP2	13	KR1-REQ13				M33												
WP2	14	KR1-REQ14				M33												

		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
WP2	15	KR1-REQ15				M33												
WP2	16	KR1-REQ16				M33												
WP2	17	KR1-REQ17			M12													
WP2	18	KR1-REQ18			M24													

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP2	19	KR1-REQ19			M30													
WP2	20	DEVOPS-REQ1				M33												
WP2	21	DEVOPS-REQ2				M27												
WP2	22	DEVOPS-REQ3															M24	

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP2	23	DEVOPS-REQ4				M15												
WP2	24	DEVOPS-REQ5				M33												
WP2	25	DEVOPS-REQ6				M33												
WP2	26	DEVOPS-REQ7				M33												

		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
WP2	27	DEVOPS-REQ8							M24									
WP2	30	DEVOPS-REQ11															M24	
WP2	31	DEVOPS-REQ12				M33												
WP2	32	DEVOPS-REQ13				M33												

		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
WP2	33	DEVOPS-REQ14			M24													
WP3	34	WP3-ARCHI-REQ1					M15											
WP3	37	WP3-ARCHI-REQ3					M30											
WP3	42	WP3-ARCHI-REQ6					M27											

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP3	43	WP3-ARCHI-REQ7					M12											
WP3	45	WP3-CONTR-REQ1		M12														
WP3	48	WP3-CONTR-REQ2		M15														
WP3	50	WP3-CONTR-REQ3		M24														

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
WP3	51	WP3-CONTR-REQ4		M27														
WP3	52	WP3-CONTR-REQ5		M30														
WP3	53	WP3-CONTR-REQ6		M30														
WP3	55	WP3-CONTR-REQ7		M30														

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP3	56	WP3-OPTI-REQ1						M12										
WP3	57	WP3-OPTI-REQ2						M12										
WP3	58	WP3-OPTI-REQ3						M12										
WP3	59	WP3-OPTI-REQ4						M24										

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP3	60	WP3-OPTI-REQ5						M24										
WP3	61	WP3-OPTI-REQ6						M30										
WP3	62	WP3-OPTI-REQ7						M24										
WP3	63	WP3-OPTI-REQ8						M12										

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP3	64	WP3-OPTI-REQ9						M30										
WP3	65	WP3-OPTI-REQ10						M24										
WP3	66	WP3-PROFI-REQ1						M12										
WP3	67	WP3-PROFI-REQ2						M24										

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
WP3	68	WP3-PROFI-REQ3						M24										
WP3	69	WP3-PROFI-REQ4						M12										
WP3	70	WP3-PROFI-REQ5						M30										
WP4	71	WP4-REQ1														M24		

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	72	WP4-REQ2														M24	M24	
WP4	73	WP4-REQ3														M24		
WP4	74	WP4-REQ4														M24	M12	
WP4	75	WP4-REQ5														M24		

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	76	WP4-REQ6														M30		
WP4	77	WP4-REQ7														M30		
WP4	78	WP4-REQ8														M30		
WP4	79	WP4-REQ9														M12		

		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
WP4	80	WP4-REQ10														M24		
WP4	81	WP4-REQ11														M12		
WP4	82	WP4-REQ12														M12		
WP4	83	WP4-REQ14														M12		

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	84	WP4-REQ15														M12		
WP4	85	WP4-REQ17														M30		
WP4	86	WP4-REQ18														M12	M12	
WP4	87	WP4-REQ19														M24	M24	

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	88	WP4-REQ20														M12	M24	
WP4	89	WP4-REQ21														M24		
WP4	90	WP4-REQ22														M30		
WP4	91	WP4-REQ23														M30		

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	92	WP4-REQ25														M30		
WP4	93	WP4-REQ27														M30		
WP4	94	WP4-REQ28														M12		
WP4	95	WP4-REQ29														M24	M24	

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	96	WP4-REQ30														M24	M30	
WP4	97	WP4-REQ31																M30
WP4	98	WP4-REQ32																M30
WP4	99	WP4-REQ33																M24

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	100	WP4-REQ34														M12	M24	M30
WP4	101	WP4-REQ35														M12		
WP4	102	WP4-REQ36														M12		
WP4	103	WP4-REQ37														M30		

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	104	WP4-REQ39														M30		
WP4	105	WP4-REQ40														M30		
WP4	106	WP4-REQ41														M30	M30	
WP4	107	WP4-REQ42																

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP4	108	WP4-REQ43														M30	M30	
WP4	109	WP4-REQ44														M24		
WP4	110	WP4-REQ45														M30		
WP5	111	DIS01							M12									

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	112	DIS02							M12									
WP5	113	DIS03							M12									
WP5	114	DIS04							M30									
WP5	115	DIS05							M24									

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	116	DIS06							M24									
WP5	117	DIS07							M12									
WP5	118	DIS08											M24					
WP5	119	DIS09							M30									

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	120	MON01								M30								
WP5	121	MON02								M30								
WP5	122	MON03								M12								
WP5	123	MON04								M12								

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	124	MON05								M12								
WP5	125	MON06								M24								
WP5	126	MON07								M24								
WP5	127	MON08								M24								

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	128	MON09								M24								
WP5	129	MON10								M24								
WP5	130	SEC01									M24							
WP5	131	SEC02									M24							

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial managament	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	132	SEC03									M24							
WP5	133	SEC04									M30							
WP5	134	SEC05									M24							
WP5	135	SEC06									M30							

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	136	SEC07									M30							
WP5	137	SEC08									M30							
WP5	138	LEG01												M12				
WP5	139	LEG02												M24				

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	140	LEG03												M24				
WP5	141	LEG04												M24				
WP5	142	BUS01										M24						
WP5	143	BUS02										M24						

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	144	BUS03										M12						
WP5	145	BUS04										M12						
WP5	146	BUS05										M12						
WP5	147	BUS06										M24						

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP5	148	BUS07													M24			
WP5	149	BUS08													M24			
WP5	150	BUS09													M24			
WP3	151	WP3-CSLA-REQ1	M30															

WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP3	152	WP3-CSLA-REQ6	M30															
WP3	153	WP3-CSLA-REQ7	M27															
WP3	154	WP3-CSLA-REQ8	M24															
WP3	155	WP3-CSLA-REQ9	M15															

		Releases	M12/M24/M30	M12/M24/M30	M12/M24/M30	M15/M27/M33	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30	M12/M24/M30
		Partner	FhG	FhG	Tecnalia	Innovati	FhG	Tecnalia	Tecnalia	FhG	Tecnalia	CB	Tecnalia	Tecnalia / Timelex	CB	Innovati	Tecnalia	HPE
WP	no. #	Req id\ Sw demonstrator	KR1-MCSLA Editor	KR1-APP controler	KR1-NFR editor	KR1-DevOps Framework	KR2-ARCHITECT	KR3-OPTIMUS	KR4-ACSml Discovery	KR4-ACSml Monitoring	KR4- ACSml Security	KR4- ACSml Financial management	KR4- ACSml User manag.	KR4- ACSml Legal	KR4-ACSml Contract	KR5-ADAPT	KR5-ADAPT monitoring	KR5-ADAPT helpers
WP3	156	WP3-CSLA-REQ10	M12															
WP3	157	WP3-CSLA-REQ11	M12															