



WP1 -

DIGIT B1 - EP Pilot Project 645

D01.01: Initial Selection and Analysis of Projects to Screen as Part of Task 1

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1. Introduction

1.1. Objective of this Document and Intended Audience

This document represents the deliverable 1 included within TASK-01: Analysis of software development methodologies used in the European Institutions.

The objectives of this document are:

- To provide a prioritised list of the most relevant projects in the European Commission and the European Parliament.
- To provide a selection of projects to be analysed in the following tasks, documenting the technical reasons for their selection.

This document is addressed to the DIGIT areas interested in the study of the software development methodologies, related practices and tools used in the European institutions (European Commission and European Parliament)

This approach suggests the application of a step by step method to ensure the gathering of information and the correct identification and selection of the most relevant projects

1.2. Document structure

This document consists of the following sections:

- Section 1: **Introduction**, which describes the objectives of this deliverable and the intended audience
- Section 2: **Methodological Approach**, which describes the steps to be followed in order to guide the identification and selection of the projects to be screened.
- Section 3: **Results** of the selection and analysis of projects (Documented project)

1.3. Key success factors

All the steps described in Section 2 - Methodological approach will ensure the fulfilment of the key success factors related to this deliverable:

- To have a complete stock of methodologies used both in European Institutions and in open source communities.
- The Best practices will include a variety of typologies: technical, organisational and about the governance and quality of open source software (e.g.: synchronisation with OSS; guidelines for

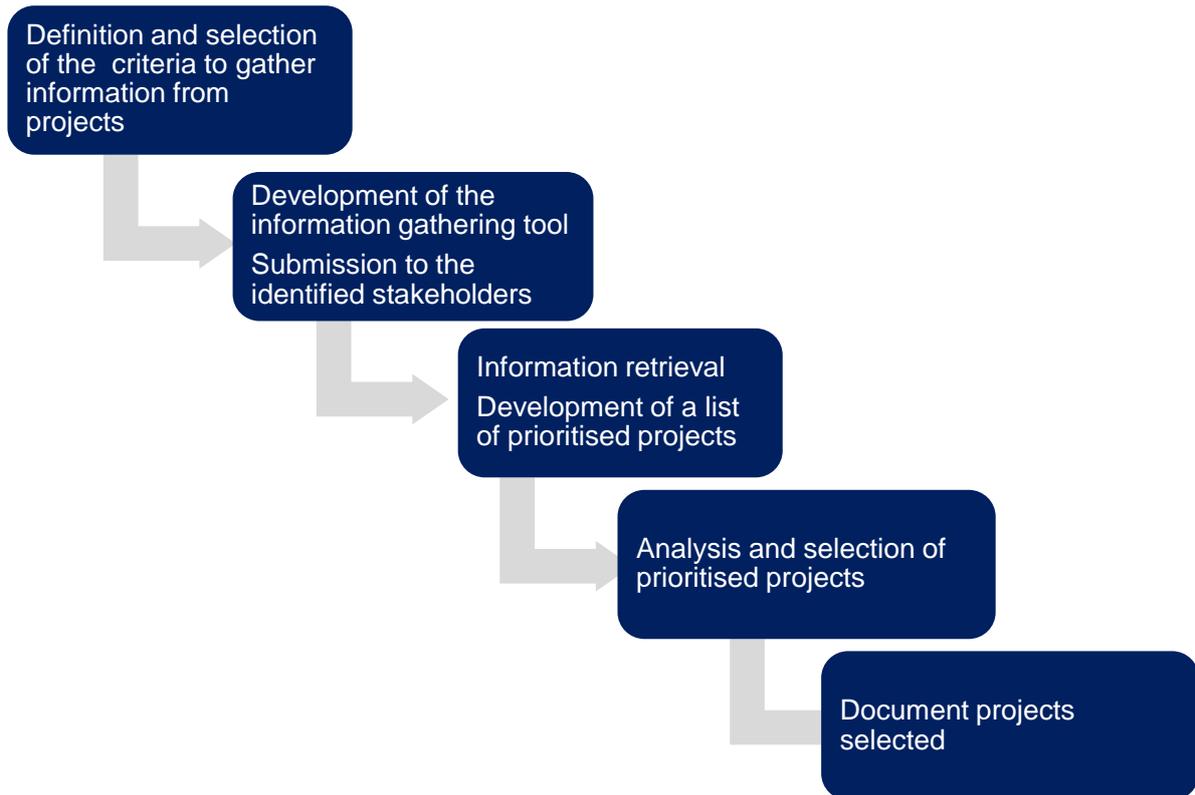
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security software development; secure integration and interoperability of different components; sustainable ways of OSS governance and professional services).

2. Methodological Approach

In order to achieve the objectives defined in section 1.1, a methodological approach has been defined with five steps, as shown in Figure1.

Figure 1. Methodological Approach - Steps



Each step is described in detail in the sections that follow.

2.1. Definition and selection of the criteria to gather information from projects

In order to gather relevant information from the projects in the European Commission and the European Parliament, we defined the following criteria:

1. **ID:** Reference number
2. **Project Name:** Name of the project as it is recognised inside the EC or the EP.
3. **Institution:** European Commission or European Parliament.
4. **Project Owner:** Name of the project owner.
5. **Project supplier:** : Refers to the name of the office(s) responsible for the project: **DIGIT, OLAF, etc**
6. **Contact email:** The email address of the person to contact for information gathering, interview planning, follow-ups, clarifications, etc. needs to be provided.
7. **Project Technology:** Refers to the main technologies used in the project: Java, PHP, Linux, database, server.
8. **Project Size:** One of the three options needs to be selected. The size of a project will be assessed as per the following criteria:
 1. **Small project:** A project that has less than 30 functional use cases.
 2. **Medium project:** A project that has more than 30 and less than 150 functional use cases.
 3. **Large project:** A project that has more than 150 functional use cases.
9. **Target audience:** Refers to the final user group: General public, Internal to the office, External, etc.
10. **Software Criticality:** One of the three levels needs to be selected. The criticality will be assessed according to as per the following criteria:
 1. Supports mission or critical functions of the organisation that are time sensitive
 2. Supports non mission critical processes of the organisation
 3. Supports Administrative processes that could be done manually
11. **Project Innovation:** Description of why the project is innovative. One of three levels will be selected after analysing the information provided by the project owner, according to the following criteria:
 1. The development is supported by the latest version of technology, it uses a continuous integration, supports a non-automated necessity, contributes to OSS communities, etc.
 2. A combination of 1 and 2, with fewer features
 3. The Project is an updated version of an existing application and technology is conditioned by existing version.
12. **Interesting methodologies, best practices and tools used for development.:** List any methodologies, best practices and tools used for software development.
13. **Other Relevant information:** Any information that could be of interest and/or add some value to the project and therefore will increase the likelihood of being selected, i.e. the project handles sensitive but unclassified information, or it uses software to communicate with third parties.

2.2. Development of the information gathering tool and submission to the identified stakeholders

Following the criteria defined and agreed upon in step 2.1, the following activities were conducted:

1. We developed an Excel sheet, to gather information regarding the relevant projects that will be screened and will provide relevant software development methodologies, related practices and tools.
2. The Excel sheet content was used to create an automated survey with EU Survey, to be completed by the stakeholders
3. DIGIT shared the automated survey with the selected stakeholders.

2.3. Information retrieval and development of a list of prioritised projects

- Once the survey was filled out by each stakeholder, we consolidated all the information to facilitate the analysis to be conducted in step 2.4

This list includes projects from DIGIT B1, CITnet, vulnerability test centre, as well as other stakeholders with a thorough view of the project and its impact.

- We created the list of relevant projects using the criteria and their corresponding scoring as shown on Table 2-1.

Table 2-1 Project Criteria and Scoring

No.	Criteria	Priority	
1	Software Criticality	1	The project will support critical functions of the organisation that are time sensitive
		2	The project will support non-critical processes of the organisation
		3	The project will support administrative processes that could be done manually
2	Project Size	1	Large: A project that has more than 150 functional use cases.
		2	Medium: A project that has more than 30 and less than 150 functional use cases
		3	Small: A project that has less than 30 functional uses cases.
3	Target Audience	1	Public or External users, widely used
		2	External users, limited use
		3	Internal Users
4	Project Innovation	1	The project has one these features: 1. It uses the latest version of technology 2. It uses Agile 3. It uses Continuous Integration 4. It contributes to OSS communities 5. It will support a non-automated necessity
		2	A combination of 1 and 2, with fewer features
		3	The project encompasses the maintenance of an existing application and the technology is conditioned by a previous version.

We gave each project a priority for each of the 4 parameters, depending on the information provided by the project owners. The parameters have the following priority:

- 1 Software Criticality
- 2 Project Size
- 3 Target Audience
- 4 Project Innovation

Once the priority was assigned, we organised the data accordingly, resulting in a list of prioritised projects, as shown in Table 2.2

Table 2-2 List of prioritised projects

No.	Project name	Institution	Project owner	Project supplier	Project technology
1	Project 1	European Commission	-----	-----	Drupal - LAMP - Solr - Piwik - IDOL
2	Project 2	European Commission	-----	-----	JAVA, JEE, PrimeFaces (JSF), CEF PEPS, ECAS, EJBs
3	Project 3	European Commission	-----	-----	Java, Weblogic, LDAP
4	Project 4	European Parliament	-----	-----	ORACLE FORMS, ORACLE DB 11g, PL SQL, J2EE Tomcat, WebServices
5	Project 5	European Commission	-----	-----	JEE, Oracle, Weblogic, Kendo UI, jQuery
6	Project 6	European Commission	-----	-----	java, spring framework, JPA, Hibernate, Vaadin, maven, slf4j,
7	Project 7	European Commission	-----	-----	Oracle, ColdFusion (with fusebox for older parts), Angular JS
8	Project 8	European Commission	-----	-----	HP IDOL, Oracle 11 DB, Java
9	Project 9	European Commission	-----	-----	ColdFusion, oracle, digit data centre
10	Project 10	European Parliament	-----	-----	JAVA (J2EE) - TOMCAT - ORACLE 11g - HTML, CSS, JavaScript, Java Serverfaces, Spring, Hibernate
11	Project 11	European Commission	-----	-----	Java, Oracle, Vaadin
12	Project 12	European Commission	-----	-----	Documentum & xCP
13	Project 13	European Commission	-----	-----	LAMP/MySQL + Piwik
14	Project 14	European Commission	-----	-----	JEE
15	Project 15	European Commission	-----	-----	Alfresco, Java, ElasticSearch

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No.	Project name	Institution	Project owner	Project supplier	Project technology
16	Project 16	European Commission	-----	-----	javascript (leaflet js,..)
17	Project 17	European Commission	-----	-----	JAVA, Python, Bash, Apache, Tomcat, PostgreSQL, grails, maven, Nexus, Kibana, Icinga, Grafana, RunDeck, ElasticSearch/logstash, etc, etc
18	Project 18	European Commission	-----	-----	Drupal, PHP, JS
19	Project 19	European Commission	-----	-----	OS-Geonetwork, LAMP stack from DIGIT
20	Project 20	European Commission	-----	-----	J2EE, WebLogic (now on linux cluster), Oracle (now on linux cluster)
21	Project 21	European Parliament	-----	-----	J2EE, Java, Oracle, Tomcat, Spring MVC, Hibernate
22	Project 22	European Commission	-----	-----	ColdFusion, Oracle
23	Project 23	European Commission	-----	-----	Drupal frontend + Jira backend (LAMP stack)
24	Project 24	European Parliament	-----	-----	Java, Spring, Hibernate, Oracle, Solr

2.4. Analysis and selection of prioritised projects

After the evaluation, we analysed and selected every project that fell into one of the case categories previously defined:

- Case 1: → **Software criticality =1**
- Case 2: → **Software criticality =2 and Project Size = 1**
- Case 3: → **Software criticality =2 and Target audience = 1**
- Case 4: → **Software criticality =2 and Project Innovation = 1**
- Case 5: → **Any combination that might seem relevant**

The number of projects selected for each of the cases is as follows:

- **Case 1:** 5 projects
- **Case 2:** 2 projects
- **Case 3:** 2 projects
- **Case 4:** 2 projects
- **Case 5:** 4 projects (3 of them from the European Parliament)

Once we have applied the case criteria and the number of projects selected, a final list of 15 projects is developed. These projects are documented in Section 3

Table 2-2 List of prioritised projects

No.	Project name	Institution	Project owner	Project supplier	Project technology
1	Project 1	European Commission	-----	-----	Drupal - LAMP - Solr - Piwik - IDOL
2	Project 2	European Commission	-----	-----	JAVA, JEE, PrimeFaces (JSF), CEF PEPS, ECAS, EJBs
3	Project 3	European Commission	-----	-----	Java, Weblogic, LDAP
4	Project 4	European Parliament	-----	-----	ORACLE FORMS, ORACLE DB 11g, PL SQL, J2EE Tomcat, WebServices
5	Project 5	European Commission	-----	-----	JEE, Oracle, Weblogic, Kendo UI, jQuery
6	Project 6	European Commission	-----	-----	Documentum & xCP
7	Project 7	European Commission	-----	-----	LAMP/MySQL + Piwik

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No.	Project name	Institution	Project owner	Project supplier	Project technology
8	Project 8	European Commission	-----	-----	Alfresco, Java, ElasticSearch
9	Project 9	European Commission	-----	-----	javascript (leaflet js,..)
10	Project 10	European Commission	-----	-----	JAVA, Python, Bash, Apache, Tomcat, PostgreSQL, grails, maven, Nexus, Kibana, Icinga, Grafana, RunDeck, ElasticSearch/logstash, etc, etc
11	Project 11	European Commission	-----	-----	Drupal, PHP, JS
12	Project 12	European Parliament	-----	-----	JAVA (J2EE) - TOMCAT - ORACLE 11g - HTML, CSS, JavaScript, Java Serverfaces, Spring, Hibernate
13	Project 13	European Parliament	-----	-----	J2EE, Java, Oracle, Tomcat, Spring MVC, Hibernate
14	Project 14	European Parliament	-----	-----	Java, Spring, Hibernate, Oracle, Solr
15	Project 15	European Commission	-----	-----	J2EE, WebLogic (now on linux cluster), Oracle (now on linux cluster)

The complete list of projects and their corresponding scores can be viewed by clicking on



List of prioritised projects

3. Results – Documented projects

All the information of the selected projects is documented in the following forms

Project ID:	1	Project Name	Project 1	Institution	European Commission
Project Owner Name	Name 1				
Email	email1@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports mission critical functions of the organisation which are time-sensitive				
Project Size	Large: above 150 use cases				
Project Supplier	Supplier 1				
Target Audience	General public				
Project Innovation	The project is contributing to the Drupal open source community. The project uses a combination of agile scrum and RUP and PM ² methodologies. The project uses fully the CITnet EC ALM instance of the Atlassian tools. The project uses cloud continuous integration . The project introduces behavioural driven testing (beehat). The project aims at a total new web presence for EUROPA ... merging 470+ websites into a user centric approach based upon 15 information classes supporting 70+ "user tasks".				
Interesting methodologies, best practices and tools used for	The CITnet toolset (Confluence-Jira-GIT) is used extensively to drive all development. We are improving on continuous integration and would like to move to continuous deployment. We are also using the Open Source Piwik web analytics solution. The internal Drupal administrator search engine is OSS Solr , but we are aligning "externally" with the Enterprise Search approach at EC , i.e. use of the IDOL search engine.				
Other relevant information	For integration of information between different Drupal instances and between the Drupal world and the different back-end information systems ... we do have a proof of concept using Couchdb.				

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Project ID:	2	Project Name	Project 2	Institution	European Commission
Project Owner Name	Name 2				
Email	email2@e-novate.eu				
Phone	Not Provided				
Software Criticality	It supports mission critical functions of the organisation which are time-sensitive				
Project Size	Large: above 150 use cases				
Project Supplier	Supplier 2				
Target Audience	Traders from European Union and will be expended to third countries				
Project Innovation	GIT / STASH / JIRA / TestLink repository / sonarCube / OWASP dependency checker / Jmeter / SoapUI				
Interesting methodologies, best practices and tools used for	TEMPO (not innovative but required by TAXUD :-()) SonarCube TeamCity, Jenkins continue integration				
Other relevant information	Based on CEF and ECAS projects (extended & customised)				

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Project ID:	3	Project Name	Project 3	Institution	European Commission
Project Owner Name	Name 3				
Email	email3@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports mission critical functions of the organisation which are time-sensitive				
Project Size	Large: above 150 use cases				
Project Supplier	Supplier 3				
Target Audience	General public + staff of European institutions and bodies				
Project Innovation	The priority of the project is security, which often implies being conservative rather than being innovative.				
Interesting methodologies, best practices and tools used for	Standard techniques are implemented: code review, occasional vulnerability assessment and penetration testing. Using libraries and frameworks is avoided as much as possible.				
Other relevant information	The system handles personal data and holds security elements.				

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Project ID:	4	Project Name	Project 4	Institution	European Parliament
Project Owner Name	Name 4				
Email	email5@ep.europa.eu				
Phone	Not Provided				
Software Criticality	It supports mission critical functions of the organisation which are time-sensitive				
Project Size	Large: above 150 use cases				
Project Supplier	Supplier 4				
Target Audience	All financial actors of the EP (+-600 users)				
Project Innovation	Adoption of the electronic signature for PDF files + integration with corporate platform for electronic signatures (DISP)				
Interesting methodologies, best practices and tools used for	Even though it is old application (20+ years old) using old technology, we managed to create modern WEB front end and web services to support functionalities that are not supported by the technology that the application is built with. We have added electronic signature and web based file storage (internal cloud)				
Other relevant information					

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Project ID:	5	Project Name	Project 5	Institution	European Commission
Project Owner Name	Name 5				
Email	email5@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports mission critical functions of the organisation which are time-sensitive				
Project Size	Large: above 150 use cases				
Project Supplier	Supplier 5				
Target Audience	Internal project				
Project Innovation	Web-based drafting of legislative texts (XML-based, OSS EUPL licence publication)				
Interesting methodologies, best practices and tools used for	EC-wide recommended methodologies and tools				
Other relevant information	Rationalization project: Business re-engineering, IT tool absorption and integration Handling of sensitive info, Communication with 3rd parties (other EU Institutions, national Parliaments, Publications Office)				

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Project ID:	6	Project Name	Project 6	Institution	European Commission
Project Owner Name	Name 6				
Email	email6@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports non-mission critical functions of the organisation				
Project Size	Large: above 150 use cases				
Project Supplier	Supplier 6				
Target Audience	OLAF				
Project Innovation	With this project, eSignature replaces paper in the DG				
Interesting methodologies, best practices and tools used for	Contrary to most of the IT projects, Security Plan was ready before start developing				
Other relevant information	Security (confidentiality) is an important aspect of this project				

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Project ID:	7	Project Name	Project 7	Institution	European Commission
Project Owner Name	Name 7				
Email	email7@ec.europa.eu				
Phone					
Software Criticality	It supports non-mission critical functions of the organisation				
Project Size	Large: above 150 use cases				
Project Supplier	Supplier 7				
Target Audience	internal project - web analytics tool				
Project Innovation	N/A - beside being a rational choice regarding the TCO+ROI+UX, it is also a direct support to EU innovation - part of the internal strategy of FOSS support by fostering the replacement of proprietary SW				
Interesting methodologies, best practices and tools used for	holacracy				
Other relevant information	Not Provided				

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Project ID:	8	Project Name	Project 8	Institution	European Commission
Project Owner Name	Name 8				
Email	email8@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports non-mission critical functions of the organisation				
Project Size	Small: less than 30 use cases				
Project Supplier	Supplier 8				
Target Audience	General public				
Project Innovation	The project is managed following Agile/Scrum methods.				
Interesting methodologies, best practices and tools used for	TDD is used in the implementation of the public interface, ElasticSearch is used a search engine				
Other relevant information	Not Provided				

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Project ID:	9	Project Name	Project 9	Institution	European Commission
Project Owner Name	Name 9				
Email	email9@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports non-mission critical functions of the organisation				
Project Size	Small: less than 30 use cases				
Project Supplier	Supplier 9				
Target Audience	General public				
Project Innovation	Moving from an Flash based application to a mobile ready - responsive design, JIRA, SVN,				
Interesting methodologies, best practices and tools used for	Providing and consuming cooperate level services, agreement with other DGs on using the same library for map developments on an informal basis, code sharing				
Other relevant information	http://ec.europa.eu/eurostat/statistical-atlas/gis/viewer/				

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Project ID:	10	Project Name	Project 10	Institution	European Commission
Project Owner Name	Name 10				
Email	email10@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports non-mission critical functions of the organisation				
Project Size	Small: less than 30 use cases				
Project Supplier	Supplier 10				
Target Audience	IT professionals				
Project Innovation	Collaboration/contribution to OSS projects (Nexus, Apache HTTPD and Open Fire) to integrate their authentication module to Crowd.				
Interesting methodologies, best practices and tools used for	Agile (Kanban) methodology, Atlassian ALM suite, SVN, Git, Nexus				
Other relevant information	Not Provided				

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Project ID:	11	Project Name	Project 11	Institution	European Commission
Project Owner Name	Name 11				
Email	email11@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports non-mission critical functions of the organisation				
Project Size	Small: less than 30 use cases				
Project Supplier	Supplier 11				
Target Audience	Limited external project				
Project Innovation	Agile, GIT, Continuous Integration				
Interesting methodologies, best practices and tools used for	JIRA and Confluence				
Other relevant information	Not Provided				

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Project ID:	12	Project Name	Project 12	Institution	European Parliament
Project Owner Name	Name 12				
Email	email12@ep.europa.eu				
Phone	Not Provided				
Software Criticality	It supports mission critical functions of the organisation which are time-sensitive				
Project Size	Medium: between 31 and 150 use cases				
Project Supplier	Supplier 12				
Target Audience	Internal project				
Project Innovation	Project was made in 2007 - the technology is not high-innovative software				
Interesting methodologies, best practices and tools used for	Maintenance (evolutive and corrective) follow-up is made with JIRA				
Other relevant information	We will soon cut the application in two (separation of the module dedicated to the DG PRES users into a specific application. The new application PETI-Greffe will be the bridge between ePetition2 and the PETI-portal)				

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Project ID:	13	Project Name	Project 13	Institution	European Parliament
Project Owner Name	Name 13				
Email	email13@europarl.europa.eu				
Phone	Not Provided				
Software Criticality	It supports administrative processes which could be done manually				
Project Size	Medium: between 31 and 150 use cases				
Project Supplier	Supplier 13				
Target Audience	European Parliament Members and their Assistants + Gestionnaire DGFINS				
Project Innovation	AGILE, JIRA, Jenkins, maven, Selenium, DISP (digital signature), Token authentication				
Interesting methodologies, best practices and tools used for	AGILE, Pocker Planning				
Other relevant information	Management of the members (deputes europeens) data and forms				

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Project ID:	14	Project Name	Project 14	Institution	European Parliament
Project Owner Name	Name 14				
Email	email t14@europarl.europa.eu				
Phone	Not Provided				
Software Criticality	It supports administrative processes which could be done manually				
Project Size	Small: less than 30 use cases				
Project Supplier	Supplier 14				
Target Audience	Internal				
Project Innovation	Continuous integration				
Interesting methodologies, best practices and tools used for	EP standard technologies				
Other relevant information	Not Provided				

Project ID:	15	Project Name	Project 15	Institution	European Commission
Project Owner Name	Name 15				
Email	email15@ec.europa.eu				
Phone	Not Provided				
Software Criticality	It supports administrative processes which could be done manually				
Project Size	Large: above 150 use cases				
Project Supplier	Supplier 15				
Target Audience	Inter-institutional project				
Project Innovation	It contains a very advanced actor model (who decides what based on various parameters) and data versioning system. It was also the base for Ulysees. We use RTC/jazz for code repository and tracking, JIRA for support (ideally we would use JIRA for both). The part which is more technologically up to date is the new client-sided stack, where we use Typescript, bootstrap, some parts of jscaf and jawr (for bundling), but the mix is still not ideal.				
Interesting methodologies, best practices and tools used for	Project mode (waterfall+prototyping, not PM ²) for new developments, agile methodology for evolutive maintenance (different methods per sub-team). Nothing noteworthy about the tools (they're actually quite dated)				
Other relevant information	Most interestingly, the fact that we are multi-client pushes us in the forefront of inter-institutional collaboration (which HR is slowing down). Communication with third parties is done mostly through database syncing (mostly Comref and NAP) and secondarily through SOAP services. Some first elements of RESTful principles will be used for developments in 2016.				

4. Bibliographical references

Bibliographical references detail