SeaClouds Project

D1.5.1 – Dissemination Report

Project Acronym	SeaClouds
Project Title	Seamless adaptive multi-cloud management of service-based applications
Call identifier	FP7-ICT-2012-10
Grant agreement no.	Collaborative Project
Start Date	1st October 2013
Ending Date	31st March 2016

Work Package	WP1 Management and Dissemination
Deliverable code	D1.5.1
Deliverable Title	Dissemination report
Nature	Report
Dissemination Level	Public
Due Date	M12
Submission Date	10th October 2014
Version	1.0
Status	Final
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Dissemination Level

Project co-funded by the European Commission within the Seventh Framework Programme		
PU	Public	X
PP	Restricted to other programme participants (including the Commission)	
RE	Restricted to a group specified by the consortium (including the Commission)	
CO	Confidential, only for members of the consortium (including the Commission)	

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Executive Summary

This deliverable presents the description of the activities carried out during the first year of the SeaClouds project with the aim of promoting the project itself and of disseminating project outcomes.

This deliverable recalls the objectives of SeaClouds project and the dissemination strategy followed to spread the results obtained during the project development, then it describes in detail these results, taking into account the KPIs established at the beginning of this period.

This report highlights the significant results obtained thanks to the dissemination effort made during Year 1. The majority of key achievements have been addressed, raising awareness of the project and encouraging the dialog on its key concepts.

The project website statistics have surpassed first year KPIs and the project is present on three social media channels, namely Twitter, LinkedIn and Facebook. The members of the SeaClouds consortium have attended to several events to present the project as well as to spread the preliminary results obtained so far. To this end, 3 journal papers and 13 conference papers have been published; furthermore, the first scientific SeaClouds workshop has been organized in conjunction with ESOCC 2014. Moreover, additional dissemination resources have been produced, including a factsheet, a poster and an initial press release.

All these dissemination efforts are aligned with expectations and have impacted positively on the project.

1.   Introduction

This deliverable describes in detail the outcomes obtained by the SeaClouds project during its first year as a result of the dissemination strategies planned at the beginning of the project, featured in D1.4 Dissemination Strategy & Plan. The dissemination activities have focused on initializing a dialog on SeaClouds' core concepts with stakeholders in the multi-cloud domain, and establishing the visibility of the project at an international level – representing Year 1 goals outlined in D1.4. Looking ahead, Year 2 will expand further with industry stakeholders and support the open source strategy planned in D7.2 Initial Exploitation Plans.

Section 2 recalls the dissemination strategy followed to promote the spread of project outcomes among the identified target audience. Then, in Section 3, the dissemination activities carried out during the first year of the project are described in detail. Finally, Section 4 presents an overview of the KPIs, by comparing the obtained results with those expected. The report is concluded with key achievements and Year 2 priorities.

1.1   Glossary of Acronyms

Acronym	Definition
SDO	Standard Development Organization
OASIS	Organization for the Advancement of Structured Information Standard
TOSCA	Topology and Orchestration Specification for Cloud Based Application
CAMP	Cloud Application Management for Platforms
SaaS	Software as a Service
PaaS	Platform as a Service
IaaS	Infrastructure as a Service
API	Application Programming Interface
QoS	Quality of Service
KPI	Key Performance Indicator

Table 1 Acronyms

2.   Summary of Dissemination Strategy

In this section the dissemination strategy planned in deliverable D1.4 is briefly recalled, together with the dissemination objectives established at the beginning of the first year.

The strategy presented in D1.4 aims at disseminating development and results to the cloud-inspired market that SeaClouds addresses, focusing on those entities that can directly benefit from the project's outcomes, as well as the scientific communities that are researching similar topics in the multi-cloud domain. To this end, target audiences and stakeholders have been identified, as well as the relevant project results that can apply to them. The resulting dissemination campaign is carefully synchronized with the WP7 Exploitation roadmap, supporting its open source strategy.

2.1   Dissemination Objectives

The following are the main objectives of SeaClouds' dissemination campaign:

- Raise awareness of the project objectives and facilitate a community discussion on common goals and different approaches: the initial phase of the dissemination activities aims at promoting a discussion with industry stakeholders and research communities, focusing on the management of multi-cloud applications during the entire lifecycle.

- Gain interest and participation towards the project's open source development: the benefits of adopting open source solutions, including transparent development, stakeholder feedback and broad uptake potential, provide the basis for its hosting on the public GitHub repository.

- Leverage the integrated prototype for hands-on use and feedback towards project validation, refined development priorities and exploitation plans: the SeaClouds project is adopting an iterative development approach. This approach, combined with the usage of a public repository, aims at obtaining a real-time external feedback from the open source community, to drive the project development priorities.

- Collaborate with standards development organizations (SDO) by participating in both the development and the dissemination of standards: the SeaClouds project is collaborating with two existing industry-led standards, namely OASIS' TOSCA and CAMP, in order to promote their adoption from the cloud community.

- Catalyze early adoption potential in line with SeaClouds' developing sustainability plan: dissemination efforts are focusing on the integrated prototype, in order to stimulate potential stakeholders to provide their evaluation and feedback upon its release in M19, as well as attention towards the project's initial M13 outcomes leading up to that milestone.

- Disseminate project results via scientific channels in order to share and motivate the research in the field of cloud computing: the topics addressed by the SeaClouds project are hot research areas, therefore a fruitful dialog is to be achieved. Several contributions have been published so far and a scientific workshop has been hosted on the project's technical topics.

2.2   Target Audiences

The SeaClouds project is focused on enhancing the adoption of multi-cloud models. The main issue related to these models is their interoperability, being the possibility to build systems from reusable components offered by different clouds that will work together without the need of any adaptation from the user. Due to this multi-cloud approach, the SeaClouds project involves a heterogeneous audience, which can be interested in the high potential of future multi-cloud models. These stakeholders and their relevance to the project, particularly those of Cloud's "Demand" and "Supply", are further defined in D7.2 Initial Exploitation Plan.

- **Cloud Demand**: those consuming cloud resources, e.g. application service providers, SaaS solutions, system integrators, internal cloud adoption, etc.
  SeaClouds provides direct added-value to these stakeholders via agile, multi-cloud application management tools. (see D7.2's value proposition for more details)
  - Smart IaaS & PaaS Discovery and Planning
    - Better comparisons, facilitating procurement for IaaS and PaaS.
    - Increase performance and cost efficiency with multi-cloud deployment
  - Agile Multi-Cloud Application Management
    - Lower operational costs
    - Intelligent monitoring for better control and automated policies
    - Agility and flexibility across cloud providers
  - Application Portability
    - Mitigate vendor lock-in
    - Complies with leading standards for increased interoperability

- **Cloud Supply**: those that provide cloud resources, e.g. IaaS and PaaS providers. SeaClouds provides the open source tools that could be used for enhanced application management in their platforms, comply with leading standards, help enable interoperability and leverage the benefits of multi-cloud capabilities. (see D7.2's value proposition for more details)
  - Visibility and Competition based on Objective Qualities:
    - Increase sales with better visibility based on a neutral look of your offering's characteristics, and not dictated by the limits of your marketing budget
    - Leverage the niche qualities of your platform or infrastructure, ideal for specific modules of your potential customers' applications
  - Open Source Enabler for Multi-Cloud Management and Monitoring:

- o Standards-compliant open source components provide potential integration opportunities to your cloud offering.
- o Vendor-independent API and adapters connect your cloud with others for tomorrow's multi-cloud scenarios.

- **Standard development organizations (SDOs)**
  The SeaClouds project is promoting the adoption of two emerging cloud standards, OASIS' TOSCA and CAMP, in order to contribute to their adoption and improvement. This audience can be interpreted as an extension of "Cloud Supply", as both standards are vendor-driven, opening an excellent dissemination channel to reach cloud's leading providers.
  - o The TOSCA standard aims at enhancing the portability of cloud applications and services, by offering a way to describe applications and cloud infrastructure in a cloud-agnostic way. In the SeaClouds project, the TOSCA specification is being exploited to drive the design of the model for specifying the description of the application, the relationships between its components, their operational behavior and the description of cloud services.
  - o CAMP aims at defining a harmonized API, models, mechanisms and protocols for the self-service management (provisioning, monitoring and control) of applications in a PaaS, independently of the cloud provider. In the SeaClouds project, the CAMP standard is being adopted for the management aspects of the application.

- **Research Communities**
  The SeaClouds project is targeting the scientific communities related to the key concepts and topics of SeaClouds research in the multi-cloud domain: application and service orchestration, verification, adaption, monitoring, management, etc.

3.   Report on Dissemination Activities

In this section, we provide a detailed description of the results obtained by the dissemination activities performed during the first year and how they are related with the target entities and previously identified objectives.

3.1   Web Strategies

The SeaClouds consortium focused the first year web strategies on creating the SeaClouds website and its social network profiles. The goal was to exploit the power of these online tools to enable more active dissemination towards the creation of SeaClouds online community. At the moment, this community includes the project website, a Twitter feed, a LinkedIn group and a Facebook page.

Project Website

One of the core elements of the dissemination strategy is the project´s official website. Available at www.seaclouds-project.eu, the website provides all the information about the project, its latest news, the released publications (papers, deliverables, etc.), the attended events, the generated dissemination assets, etc. (for more information, see D1.6 Project Website)

In the first month, the partners created the website, later shifting the main focus to post relevant content keep them updated with the latest news of the project. Furthermore, on M3, Google Analytics was added to the code in order to measure website statistics.

An estimation of 1500 visitors had been established as a success factor for the first year. These expectations were well surpassed, reaching 2119 visits from 78 countries on the nine months that were monitored.

Other relevant statistics about the website usage are:

- Unique visitors: 1065
- Page views: 6068
- Avg. Session Duration: 3:08
- Bounce rate: 48.5%

Figure 1 represents that info, together with the weekly evolution of the visits and their provenance.
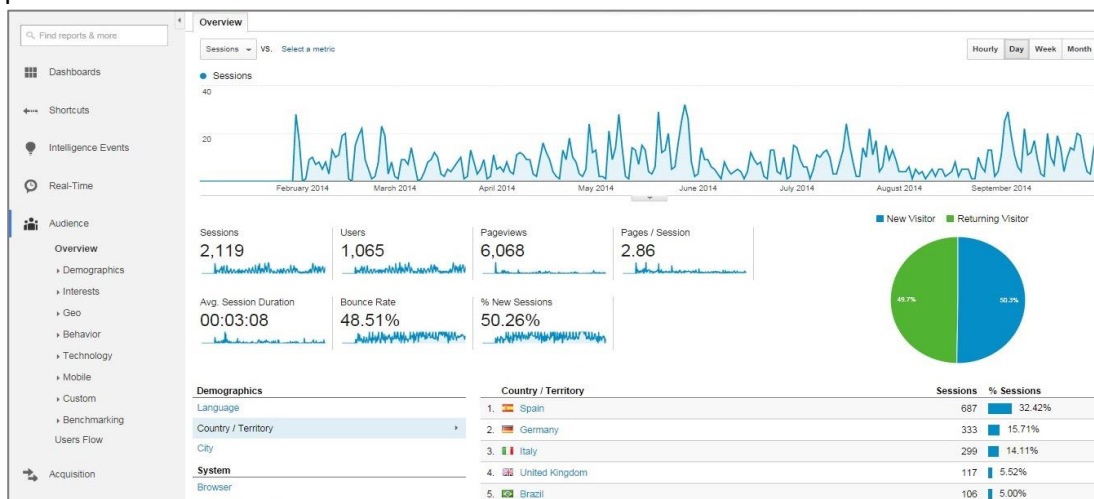

Figure 1 Website statistics

The figures also draw attention to the top ten countries visiting the site. Consortium countries, such as Spain, Germany and Italy, are naturally the highest audiences, given partners' individual dissemination channels. Three countries (Brazil, United States and China) outside the boundaries of the European Union, which shows extended reach for project dissemination.

Deepening a bit more into the analysis of the visitors, Figure 2 shows the distribution of different sources used to reach the project´s website. The main source is the organic search (almost 38% of the visits), followed by direct access (near 27%) and social media (almost 21%). The last of the list is the referrals, with less than a 15% of the total.
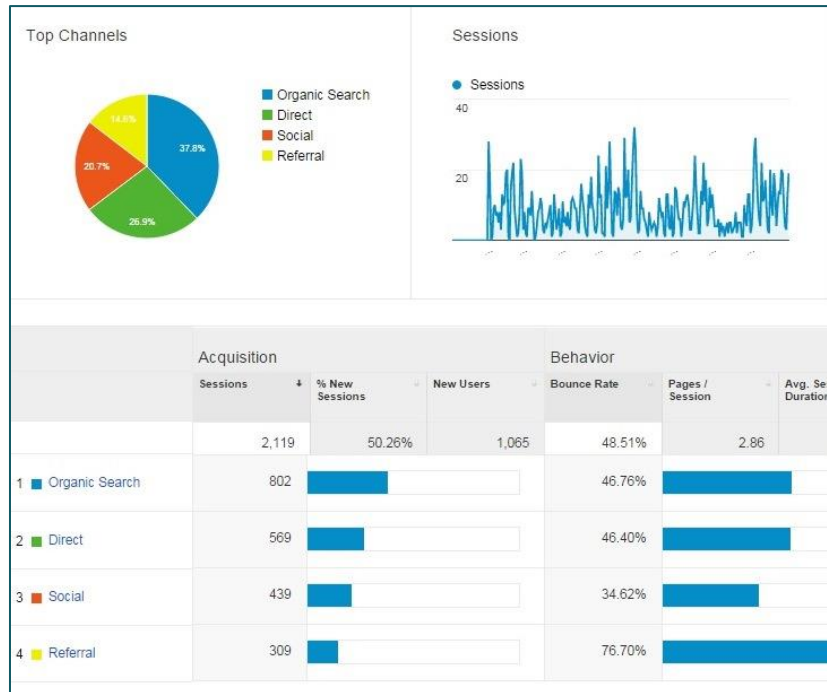
Figure 2 Analysis of the visitors

The social media channels are important not only as dissemination tools, but also as visitor´s source for the website (reaching 20% of the total). The statistics in Figure 3 show that relevance, Twitter being the most important source with 63% of the visitors. This data has helped prioritize the project's social media channels for Year 2.
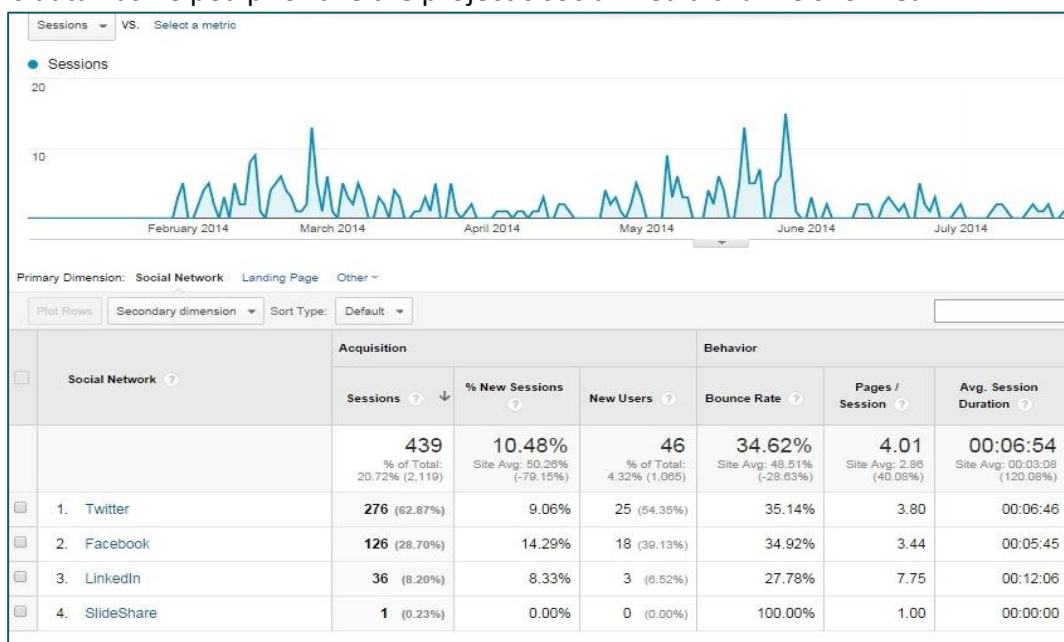
Figure 3 Social media channels statistics

SeaClouds website is updated on regular basis, including all the info of the new publications, attended conferences, organized events, etc. The goal is to engage the maximum number of users by updating its content as the project evolves, reshaping the initial messages and creating new sections as necessary.

In Year 2, as the project prepares the next phase of its dissemination campaign around its preliminary prototypes and demos, the website will be upgraded to support it, creating an easy linking between project information and the open source project on GitHub.

GitHub & Apache Brooklyn

Since the SeaClouds consortium has decided to follow an open source approach, the use of well-established open source communities like GitHub is a key factor to ensure a larger community awareness and acceptance of the final solution.

GitHub, the largest code host in the world with over 3.4 million developers, will be the connection hub between the project and the market, allowing us to reach a large number of developers that could help to improve the quality of SeaClouds, as well as to disseminate the project. Cloud developers, open source incubators, service providers, standards development organizations and researchers, are some of the communities targeted with this approach.

Apache Brooklyn, the application management that enables the SeaClouds Deployer, is an open source project in the Apache Foundation that will also be used for this community building strategy.

Social Media

Another important part of SeaClouds dissemination is the presence in social media. The use of these powerful tools provides SeaClouds a channel not only to increase the exposure of the project but also to reach out and communicate on a personal level with a wider audience. At the moment, three different channels have been used: Twitter, LinkedIn and Facebook.

The most active of the three channels is **Twitter**, which can be followed in https://twitter.com/SeaClouds_EU. This social network has more than 500 million total users worldwide and over 288 million monthly active users. These numbers turn Twitter into the perfect showcase for posting news about SeaClouds, promoting events, etc. In just one year, SeaClouds have achieved **145 followers**, published more than **80 tweets**, and uploaded **26 pictures or videos**.

Figure 4 Twitter screenshot for the workshop event

This tool has been also useful for establishing connections with other European projects that afterwards have contributed to the success experienced in the first scientific workshop organized at ESOCC (Figure 4).

The second social media tool used for dissemination is **LinkedIn**. This professional business-oriented social network has over 238 million users, of which 3 millions are company pages. The advantage offered by LinkedIn over other social networks is that it is specially oriented towards professional profiles, allowing SeaClouds to reach niche communities of interest. The goal of this group is both to bring together professionals involved in the project and outsiders interested on it.

The SeaClouds group in LinkedIn can be found in the following link www.linkedin.com/groups/SEACLOUDS-PROJECT-7449431, having **23 active users** and several opened discussions. However, it will be necessary to increase the participation to ensure the proper exploitation of the advantages offered by this tool. This is a prioritized goal as the project launches additional workshops and approaches its initial prototype release.

The third element of this triad is Facebook (Figure 5). Although the previous channels are more professional-oriented, the magnitude of this tool is such (more than 1 billion users worldwide) that cannot be disregarded. With **58 likes** from **8 different countries** and more than **450 reached posts**, Facebook becomes the perfect tool to complement the other dissemination channels used.

Figure 5 Screenshot of the facebook page of the project

Social media constitute a free and very fast way to communicate with others on just a mouse click. The importance they are achieving in the last years, turn them into a reliable way to connect and stay updated about the most recent developments on a specific industry. Therefore, SeaClouds will reinforce its social media strategy, trying to foster relationships and collaborations with other professionals and companies of the cloud environment.

3.2   Events

The SeaClouds consortium recognizes that face-to-face dissemination has the largest impact. Several scientific conferences have been attended by partners of the consortium, in order to present the concepts and development of the project and publish papers in the scientific community, reported in Section 3.3. In its first year, the **SeaClouds project has been presented in 11 international events.**

Project Presentations in Community Events

SeaClouds has presented in a number events addressed to an academic and industry audience, mainly revolving around cloud computing technologies and innovations. On the other hand, the International Workshop on Foundations of Coordination Languages and Self-Adaptive Systems (FOCLASA) was directed only to the research community.

- *Annual meeting of IFIP Working Group on Services-Oriented System, Oct 10-11, 2013, Amsterdam, Netherlands.* This annual meeting organized and promoted the exchange of information on fundamental and practical aspects of service-oriented systems. The SeaClouds project has been introduced for the first time at this event by Antonio Brogi (UPI).

- *Cloudscape VI, Feb 24-25, 2014, Brussels, Belgium.* The SeaClouds project has participated to Cloudscape VI, an open and community friendly event providing multiple perspectives on the cloud landscape in Europe and globally. Francesco D'Andria (ATOS) has attended this event, with the aim of promoting the SeaClouds project, focusing on standards and interoperability issues.

- *Concertation meeting of software & services and cloud computing projects, Mar 12-13, 2014, Brussels, Belgium.* Antonio Brogi (UPI) attended this event by giving a short presentation of the SeaClouds project status and participating in the workshop on identifying topics for the ICT Work Programme 2016-2017.

- *Future Internet Assembly 2014 (FIA 2014), Mar 18-20, 2014, Athens, Greece.* The FIA in Athens has been focusing on the formulation of the new Internet technological landscape based on network/cloud integration and innovative software, services and cloud technologies. Within this context, the first SeaClouds poster has been presented by Francesco D'Andria (ATOS).

- *4th International Conference on Cloud Computing and Services Science (CLOSER 2014), Apr 3-5, 2014, Barcelona, Spain.* The SeaClouds project participated in a session on multi-clouds organized by the MODAClouds project. During this

session, Antonio Brogi (UPI) attended this event by presenting the paper "EU Project SeaClouds: Adaptive Management of Service-Based Applications Across Multiple Clouds", which was then published in the official proceedings of the CLOSER 2014 conference.

- *17th Ibero-American Conference on Software Engineering (CIbSE 2014), April 23-25, 2014, Pucon, Chile.* The SeaClouds project has been presented to this event. In particular, José Carrasco (UMA) has presented the paper "SeaClouds: Seamless adaptive multi-cloud management of service-based applications", which has been also included in the official proceeding of the conference.

- *European Open Cloud Collaboration Workshop, organized by the project Open Cloud for Europe, JApan and beyond (OCEAN), May 15, 2014, Brussels, Belgium.* SeaClouds has been presented in this workshop, in which 15 European projects participated in the roundtable (ARTIST, Ascetic, BigFoot, Cactos, CloudScale, CloudSME, CloudingSMEs, Cumulonimbo, CloudWatch, HARNESS, MODAClouds, Orbit, PaaSage, SeaClouds, Sucre). The core of workshop consisted of a brief presentation of each of these projects with special focus on the different paradigms of cloud application management. In particular, Michele Ciavotta (Polimi) presented the status of the SeaClouds project in terms of architecture, monitoring and SLAs management and interoperability standards.

- *1st SeaClouds Workshop at the 3rd European Conference on Service-Oriented and Cloud Computing (ESOCC 2014), Sep 2-4, 2014, Manchester, UK.* Within the context of the 1st SeaClouds Workshop organized by the consortium, the SeaClouds project was presented by Francesco D'Andria (ATOS).

- *13th International Workshop on Foundations of Coordination Languages and Self-Adaptive Systems (FOCLASA 2014), Sep 6, 2014, Rome, Italy.* This workshop puts together researchers and practitioners focusing on service coordination and self-adaptation in distributed and service-oriented systems. In this context, SeaClouds was presented by Antonio Brogi (UPI), by highlighting its adaptive multi-cloud management capabilities when dealing with service-based applications.

- *Software Services & Cloud Computing Concertation Meeting, Sep 10-11, 2014, Brussels, Belgium.* This meeting was devoted to encourage possible collaborations and clustering of projects, in order to provide important contributions to the preparation of the European programs within Horizon 2020 in the area of cloud computing and software & services. To this end, the SeaClouds project was presented by Antonio Brogi (UPI) during a talk at the kick-off event.

SeaClouds-hosted Activities
The SeaClouds consortium organized the 1st scientific workshop in September 2014. The objective of the workshop was to provide a forum to discuss problems, solutions

and perspectives of ongoing research activities focusing on deploying and managing in efficient and adaptive way complex service-based applications across multiple heterogeneous clouds, to enhance the portability of cloud-based applications across different platforms.

The 1st SeaClouds Workshop took place in Manchester, UK on September 2 and was held in conjunction with ESOCC 2014. The program included two invited talks on the OASIS TOSCA and CAMP initiatives, four contributed research papers, a round table on multi-cloud interoperability, and a session devoted to presentations of the development and initial results of 8 ongoing EU research projects. The detailed program can be found in the associated webpage at http://seaclouds.lcc.uma.es/ and a detailed description of the workshop outcomes have been reported in deliverable D1.7.1.

3.3   Publications: Scientific Papers

A significant scientific production has characterized the first year of the project. **3 journals papers and 13 conference papers** have been published so far.

[J1] A. Brogi, J. Carrasco, J. Cubo, F. D'Andria, A. Ibrahim, E. Pimentel and J. Soldani, "SeaClouds: An European project on seamless management of multi-cloud applications", Software Engineering Notes of the ACM Special Interest Group on Software Engineering (SIGSOFT SEN), 39(1):1-4 (2014). This contribution aims at presenting the SeaClouds project objectives to the research community.

[J2] J. Cubo, A. Nieto, E. Pimentel, "A Cloud-Based Internet of Things Platform for Ambient Assisted Living", in Journal Sensors 2014, 14(8), 14070-14105. This paper proposes a platform to manage the integration and behavior-aware orchestration of heterogeneous devices as services, stored and accessed via the cloud.

[J3] A. Brogi, J. Cubo, L. González, E. Pimentel, R. Ruggia, "Dynamic Verification of Mashups of Service-Oriented Things through a Mediation Platform", accepted in Journal of Universal Computer Science (2014). In this paper, a mechanism for checking and detecting dynamically possible invalid invocations in mashups of service-oriented applications and devices provoked by the behavior's changes is presented.

[C1] A. Brogi, J. Soldani, "Matching Cloud Services with TOSCA", in "Advances in Service-Oriented and Cloud Computing" (eds. C. Canal and M. Villari), Communications in Computer and Information Science, 393, 218-232 (2013). The matching procedure described in this paper presents some similarities with the matching process used by the SeaClouds platform.

[C2] R. Mirandola, D.Perez-Palacin, "Uncertainties in the Modeling of Self-adaptive Systems: a taxonomy and an example of availability evaluation", in Proceedings of the 5th ACM/SPEC International Conference on Performance Engineering (ICPE 2014), March 22-16, 2014, Dublin, Ireland. This paper describes the different types of models uncertainties that can affect the QoS assessment for adaptive applications like the ones targeted by SeaClouds.

[C3] A. Brogi, J. Carrasco, J. Cubo, F. D'Andria, A. Ibrahim, E. Pimentel and J. Soldani, "EU Project SeaClouds: Adaptive Management of Service-Based Applications Across Multiple Clouds" in Proceedings of the 4th International Conference on Cloud Computing and Services Science (CLOSER 2014), April 3-5, 2014, Barcelona, Spain. In this paper the context, motivations and objectives of SeaClouds, its relation with other cloud initiatives, and its initial architecture are presented.

[C4] A. Brogi, J. Carrasco, J. Cubo, F. D'Andria, A. Ibrahim, E. Pimentel and J. Soldani, "SeaClouds: Seamless adaptive multi-cloud management of service-based applications" in Proceedings of the 17th Ibero-American Conference on Software Engineering (CIbSE 2014), April 23-25, 2014, Pucon, Chile. This paper has been nominated to the best paper on the CIbSE 2014. Its purpose is to give an overview of the initial architecture of the SeaClouds platform.

[C5] F. Durán and G. Salaün, "Robust reconfiguration of cloud applications", in Proceedings of the 17th international ACM Sigsoft symposium on Component-based software engineering (CBSE 2014), June 30-July 4, 2014, Lille, France. This paper proposes an algorithm for the reconfiguration of cloud systems at runtime so that given a target configuration it can find the sequence of atomic operations to get the system from its current state to the desired one satisfying structural invariants.

[C6] D.Perez-Palacin, R. Mirandola, "Dealing with uncertainties in the performance modelling of software systems", in Proceedings of the 10th International ACM Sigsoft conference on Quality of Software Architecture (QoSA 2014), June 30-July 4, 2014, Lille, France. This contribution presents a methodology for the discovery and the management of uncertainties that affect the QoS evaluation performed by SeaClouds.

[C7] D.Perez-Palacin, R. Mirandola, "Synthesis of Adaptation Plans for Cloud Infrastructure with Hybrid Cost Models", in Proceedings of the 40th Euromicro Conference on Software Engineering and Advanced Applications (SEAA 2014), August 27-29, 2014, Verona, Italy. The paper formalizes a first approach for synthesizing adaptation plans that exploit cloud elasticity and guarantee the QoS application as required by SeaClouds.

[C8] J. Carrasco, J. Cubo, E. Pimentel, "Towards a flexible deployment of multi-cloud applications based on TOSCA and CAMP", in Proceedings of the 1st SeaClouds Workshop (SeaClouds2014), September 2, 2014, Manchester, UK. This paper proposes a methodology to describe the topology and distribution of modules of a cloud application and to deploy the interconnected modules over heterogeneous clouds, using mechanisms specified by using both TOSCA and CAMP standards.

[C9] A. Brogi, J. Soldani, P. Wang, "TOSCA in a Nutshell: Promises and Perspectives", in Proceedings of the 3rd European Conference on Service-Oriented and Cloud Computing (ESOCC 2014), September 2-4, 2014, Manchester, UK. This contribution presents an overview of the TOSCA standard and highlights its capability in dealing with multi-cloud applications.

[C10] A. Brogi, J. Soldani, "Reusing cloud-based services with TOSCA", in Proceedings of the CLOUDCYCLE14 Workshop at INFORMATIK 2014, September 22, 2014, Stuttgart, Germany. Since SeaClouds aims at promoting the TOSCA standard adoption, this paper illustrates how it is possible to reuse cloud-based services by exploiting the TOSCA description.

[C11] L. Bartoloni, A. Brogi, A. Ibrahim. "Probabilistic prediction of the QoS of service orchestrations: A truly compositional approach", accepted for the 12th International Conference on Service Oriented Computing (ICSOC 2014), November 3-6, 2014, Paris, France. The paper proposes an algorithm to probabilistically predict the QoS of service compositions. The ability of a priori predicting the QoS of a service composition is of pivotal importance for the definition of the SLOs of SLAs, which is one of the objectives of the SeaClouds project.

[nC1] J. Carrasco, J. Cubo, E. Pimentel, "Propuesta de metodología de despliegue de aplicaciones en nubes heterogéneas con TOSCA", 19th Spanish Conference on Software Engineering and Databases (JISBD), 321-334, September 2014, Cádiz, Spain. In this paper, a methodology is presented to deploy and orchestrate modules of a cloud application over multiple providers, by proposing the extension of the existing TOSCA specification.
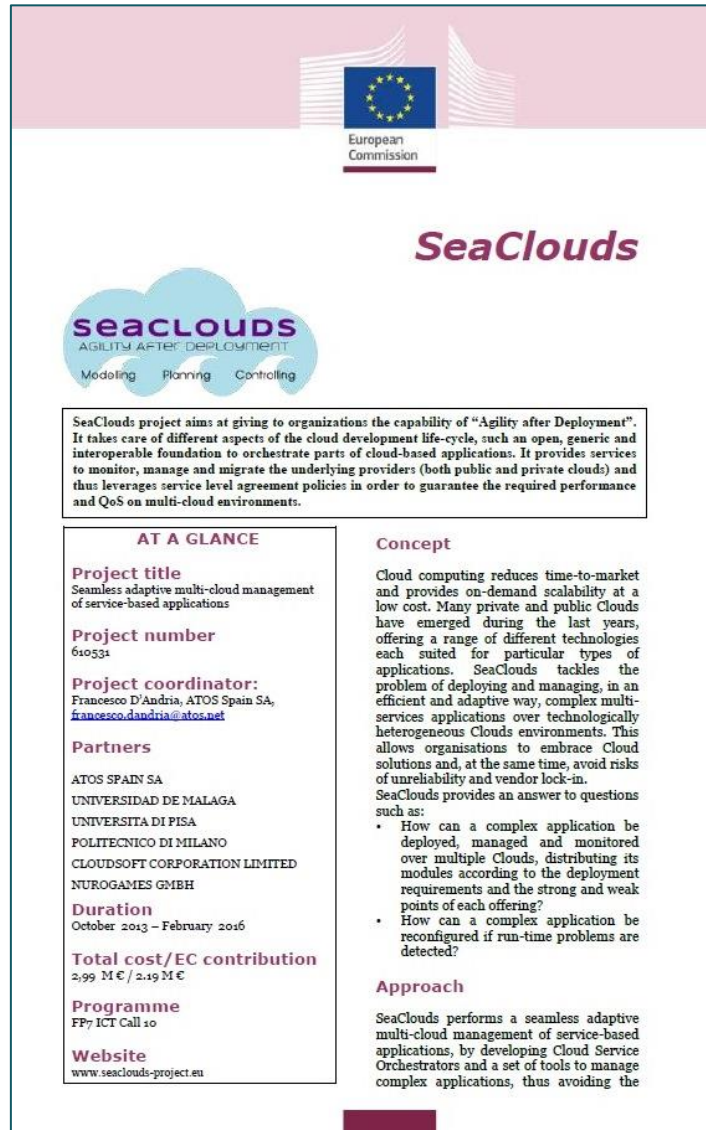
[nC2] A. Nieto, J. Cubo, E. Pimentel, "Una solución para la gestión e integración de Internet de las Cosas en la Nube", 10th Spanish Conference on Services Engineering and Science (JCIS), 137-146, September 2014, Cádiz, Spain. This paper proposes and extension of the Devices Profile for Web Services standard to permit the creation of a repository of smart devices in the cloud, storing, processing and orchestrating wide number of devices composing Future Internet applications.

3.4   Supporting Material

In order to strengthen and support the previous dissemination activities, the following support dissemination materials have been published:

Project Factsheet

At the beginning of the project, a factsheet was created (Figure 6) as a part of the dissemination assets to be developed during the project's lifecycle. This document provided a first overview of SeaClouds with key points of the project.

Figure 6 Project factsheet

Project Poster

A poster has been also created to provide an overview of the reference architecture and the main features of the project (Figure 7). This poster has been used in the different events and meetings where SeaClouds project was presented.

Figure 7 Project poster: archiecture overview

Project Flyer

A flyer/leaflet was also created during the first year (Figure 8). This small but dynamic format was used to promote SeaClouds during the events and conferences attended.

Figure 8 Project flyer (front and back)

Press Release

In addition to the previous assets, and as part of the project's dissemination strategy, the consortium also published the first press release. This general-purpose delivery presented an overview of the project, pointing out the existing problem on the cloud environment that SeaClouds aims to solve, and how development will achieve that goal.

4.   KPIs Overview Results

Table 2 summarizes the main KPIs achieved by the SeaClouds dissemination activities during the first year of the project.

Table 2 Main KPIs achieved by the dissemination activities during the first year

Dissemination activities	KPI expected (during three years)	KPI achieved (during the first year)	Success indicator
Publications	4 journal 4 conferences	3 journals 13 conferences	For more detailed information on publications, please refer to section 3.3 of this document.
Peer reviewed papers	6	16	More than 6 peer-reviewed papers have already been published by the SeaClouds consortium.
Industry workshops and webinars	2 workshops 1 webinar	0 0	The first industry workshop is planned to be organized at Cloud Expo Europe, 11-12, March 2015, London, when project prototypes are available. The second industry workshop will be organized during the third year. The organization of the webinar is expected during the second year of the project.
Scientific workshops	2	1	The first SeaClouds scientific workshop has been held in Manchester, UK on Sep 2, 2014, in conjunction with ESOCC 2014 (see section 3.2 and deliverable D1.7.1 for more details). The second SeaClouds scientific workshop is expected to be organized in M24, in conjunction with ESOCC 2015.
Whitepapers	4	0	The first whitepaper will be published after the first prototype release.
Project presentations in events or conferences	3	11	The SeaCloud project has been presented in several international events: • Annual meeting of IFIP Working Group on Services-Oriented System, Oct 10-11, 2013, Amsterdam, Netherlands.

			• Cloudscape VI, Feb 24-25, 2014, Brussels, Belgium. • Concertation meeting of software & services and cloud computing projects, Mar, 12-13, 2014, Brussels, Belgium. • FIA 2014, Mar 18-20, 2014, Athens, Greece. • CLOSER 2014, Apr 3-5, 2014, Barcelona, Spain. • CIbSE 2014, Apr 23-25, 2014, Pucon, Chile. • European Open Cloud Collaboration Workshop, May 15, 2014, Brussels, Belgium. • 1st SeaClouds Workshop at the 3rd European Conference on Service-Oriented and Cloud Computing (ESOCC 2014), Sep 2-4, 2014, Manchester, UK. • 13th International Workshop on Foundations of Coordination Languages and Self-Adaptive Systems (FOCLASA 2014), Sep 6, 2014, Rome, Italy. • Software Services & Cloud Computing Concertation Meeting, Sep 10-11, 2014, Brussels, Belgium. • Spanish Conference on Software Engineering and Databases, Sep 17-19, 2014, Cádiz, Spain.
Brochures/flyers	3	1	The first flyer has been published in month M6 to promote the SeaClouds project. The second flyer will be published in the second year with a market-oriented focus to support the prototype.
Posters	3	1	The first poster has been released to promote the SeaClouds project. A second poster will be produced contextually to the first prototype release.
Press releases	3	1	The first press release has been published in month M6. The next press release will be published after

			the first prototype release.
Demonstration videos	2	0	The first demonstration video will be based on the Year 1 demonstration prototype.
Presence in social media	3	3	The SeaClouds project is on LinkedIn, Twitter and Facebook (please see data reported in Sect. 3.1).
Newsletters	6	1	The first newsletter summarizes the project progresses and the preliminary results obtained during Year 1 of the project.
Website visitors	1500 visitors per year 2 minutes/visit	2079 visitors so far 3 minutes/visit	The number of actual visitors has overtaken the expected minimum threshold.

5.   Conclusions and Next Steps

The activities detailed in this document show a substantial dissemination effort made by the SeaClouds project. During the first year, key achievements have been addressed in order to raise awareness of the project and facilitate dialog on its key concepts – representing the Year 1 goals for this phase of its campaign as outlined in D1.4 Dissemination Strategy & Plan.

Analyzing the proposed KPIs for the first year, we can conclude that our dissemination efforts are on track and aligned with expectations.

- A web campaign has begun by launching the project website, with statistics surpassing first year KPIs. Social media channels have also been created for Twitter, LinkedIn and Facebook, with an initial following that will grow during Year 2.

- SeaClouds presented at 11 international events, as well as host its first scientific workshop at the ESOCC 2014 conference. Year 2 will introduce a balance with industry venues as the project's initial releases become available.

- 3 journals entries and 13 conference papers we published, positioning SeaClouds in its first year as a leader in the multi-cloud research domain.

- Various dissemination materials have been published, including a poster, fact sheet, flyer and initial press release, ensuring that project information was available from very early on in the project.

The project's dissemination campaign in its first year focused on the core concepts, naturally gravitating to more scientific and research related events and audience during its initial design and early development.

In the project's second year, as outlined in D1.4 Dissemination Strategy & Plan and D7.2 Initial Exploitation Plan, this will expand to its open source strategy, linking marketing to its initial prototypes for a proactive campaign to industry stakeholders, as well.

Due to the open-source nature of the project, dissemination will play an important role in the SeaClouds' sustainability. Therefore, the additional impact paths such as the relationships with established communities like Apache Brooklyn and GitHub, or vendor-driven standards like CAMP and TOSCA, will be also implemented as an important part of this dissemination campaign. Engaging these communities will be very valuable not only for dissemination purposes, but also to guarantee external evaluation and validation of the project´s initial releases.

A follow-up deliverable will be available in M24 to reflect the forthcoming Year 2 dissemination campaign.