



SeaClouds Project

D1.5.3 – Dissemination Report

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Executive summary

This deliverable describes the activities carried out during the SeaClouds project with the aim of promoting the project itself and of disseminating the project outcomes.

Section 1 reports the dissemination activities performed by the consortium by classifying them into four groups:

- events in which SeaClouds participated and that SeaClouds organized,
- scientific publications that arose from the project,
- Internet-based dissemination activities, and
- other dissemination material (videos, posters, press releases, flyers, newsletters, white papers) produced by the project

Section 2 assesses the level of achievement of the KPIs (Key Performance Indicators) obtained by the SeaClouds project for the dissemination activities, compared to the expected KPIs for dissemination activities that were indicated in Deliverable D1.4 (Dissemination Strategy & Plan, [1]).

The figures show that the project successfully implemented the dissemination plan drafted in [1] and that it also clearly outperformed the expected KPIs for project presentations at events and conferences, as well as for scientific publications.

Overall, the dissemination activities carried over by the SeaClouds consortium for the entire lifespan of the project can be considered definitely successful and one of the achievements of the project itself.

1. Dissemination activities

In this section we describe the dissemination activities carried over by the SeaClouds consortium during the project lifespan¹ by listing:

- the events in which SeaClouds participated as well as the events that SeaClouds organized,
- the scientific publications that arose from the project,
- the Internet-based dissemination activities performed, and
- other dissemination material (videos, posters, press releases, flyers, newsletters, white papers) produced by the project.

1.1 Events

The SeaClouds consortium presented the project results at various events and conferences, organized two scientific workshops, two industrial workshops and one webinar, and it also participates in the clusters of European projects on cloud.

1.1.1 Project presentations at events and conferences

The results of the SeaClouds project have been presented at 15 events and conferences with academic and industrial audience during the 30 month project lifespan.

<i>4th European Conference on Service-Oriented and Cloud Computing (ESOCC), Sept 15 – 17, 2015, Taormina, Italy.</i>	The results of the SeaClouds project were presented by A. Brogi (UPI) in the EU projects track of the conference.
<i>11th Spanish Conference on Services Engineering and Science (JCIS), SISTEDES, Sept 15 – 17, 2015, Santander, Spain.</i>	UMA attended this conference and presented the paper “SeaClouds: An Application Management System over the Clouds”
<i>Software Technologies: Applications and Foundations (STAF), July 20 – 24, 2015, L’Aquila Italy.</i>	This event is a federation of a number of leading conferences on software technologies. Antonio Brogi and Marc Oriol (UPI) attended this event to present the article “Agile management of complex applications across multiple heterogeneous clouds” in the Projects Showcase track.
<i>Mo-Bizz Inter-project meeting. UPI participated for SeaClouds in the inter-project meeting, Jan 28-29, 2015. Lisbon, Portugal.</i>	Event organized by the MoBizz project. Francesco D’Andria (ATOS) and Antonio Brogi (UPI) attended and presented the SeaClouds project.
<i>7th IEEE/ACM International Conference on Utility and Cloud Computing, Dec 08 – 11, 2014, London, United Kingdom.</i>	The SeaClouds project was presented by Javier Cubo (UMA) at the Demonstration interoperability days of the conference.
<i>Software Services & Cloud Computing Concertation Meeting, Sep 10-11, 2014, Brussels, Belgium.</i>	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.
<i>13th International Workshop on Foundations of Coordination Languages and Self-Adaptive Systems (FOCLASA 2014), Sep 6, 2014, Rome, Italy.</i>	This workshop puts together researchers and practitioners focusing on service coordination and self-adaptation in distributed and service-

¹ Two intermediate dissemination reports were described in Deliverable D1.5.1 [2] and in Deliverable D1.5.2 [4].

	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.
<i>1st SeaClouds Workshop at the 3rd European Conference on Service-Oriented and Cloud Computing (ESOCC 2014), Sep 2-4, 2014, Manchester, UK.</i>	Within the context of the 1st SeaClouds Workshop organized by the consortium, the SeaClouds project was presented by Francesco D'Andria (ATOS).
<i>European Open Cloud Collaboration Workshop, organized by the project Open Cloud for Europe, Japan and beyond (OCEAN), May 15, 2014, Brussels, Belgium.</i>	SeaClouds was presented in this workshop, in which 15 European projects participated in the roundtable. 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.
<i>17th Ibero-American Conference on Software Engineering (CIBSE 2014), April 23-25, 2014, Pucon, Chile.</i>	The SeaClouds project was presented to this event by José Carrasco (UMA), who presented the paper "SeaClouds: Seamless adaptive multi-cloud management of service-based applications", which was included in the official proceeding of the conference.
<i>4th International Conference on Cloud Computing and Services Science (CLOSER 2014), Apr 3-5, 2014, Barcelona, Spain.</i>	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.
<i>Future Internet Assembly 2014 (FIA 2014), Mar 18-20, 2014, Athens, Greece.</i>	The FIA in Athens focused 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 was presented by Francesco D'Andria (ATOS).
<i>Concertation meeting of software & services and cloud computing projects, Mar 12-13, 2014, Brussels, Belgium.</i>	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.
<i>Cloudscape VI, Feb 24-25, 2014, Brussels, Belgium</i>	The SeaClouds project participated in Cloudscape VI, an open and community friendly event providing multiple perspectives on the cloud landscape in Europe and globally. Francesco D'Andria (ATOS) attended this event to promote the SeaClouds project, focusing on standards and interoperability issues.
<i>Annual meeting of IFIP Working Group on Services-Oriented System, Oct 10-11, 2013, Amsterdam, The Netherlands</i>	This annual meeting organized and promoted the exchange of information on fundamental and practical aspects of service-oriented systems. The SeaClouds project was presented by Antonio Brogi (UPI).

1.1.2 Scientific workshops organized by SeaClouds

The SeaClouds consortium successfully organized two scientific workshops:

- The 2nd SeaClouds Workshop took place in Taormina, Italy, on September 15, 2015, in conjunction with ESOC 2015. The program included one invited talk on self-aware adaptive clouds, four contributed research papers, a round table and a session devoted to presentations of the development and results of 12 ongoing EU research projects. A detailed description of the workshop outcomes was reported in deliverable D1.7.3 [5].
- The 1st SeaClouds Workshop took place in Manchester, UK, on September 2, 2014, in conjunction with ESOC 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. A detailed description of the workshop outcomes was reported in deliverable D1.7.1 [3].

1.1.3 Industry workshops and webinars organized by SeaClouds

The SeaClouds consortium organized two industry workshops and a webinar:

- The second industry workshop was held at the Cloud Expo Europe event held on November 10-11, 2015, in Frankfurt, Germany, where the SeaClouds project had a stand for both days and organized a round table on the second day of the event.
- The first industry workshop was held at the Cloud World Forum event held on June 24-25, 2015, in London, UK, where the SeaClouds project had a stand for both days.
- The webinar of the SeaClouds project was run on June 22, 2015. Presented by Javi Cubo (UMA) and Andrea Turli (CloudSoft), the webinar got 21 registrants from both academy and industry.

UPI also organized a bi-lateral SeaClouds-Aeolus meeting on December 03, 2014, in Pisa, Italy, with the objective of interchanging results and analyzing possible cross-fertilizations between the SeaClouds project and the French project Aeolus.

1.1.4 Participation in the clusters of European projects on cloud

The SeaClouds project participates in two of the Clusters of European Projects on Cloud (<https://eucloudclusters.wordpress.com>), namely in the “Software Engineering for Services and Applications” cluster and in the “Inter-cloud Challenges, Expectations and Issues” cluster.

Besides participating in the teleconferences periodically held by the clusters, the SeaClouds projects participated in the two physical meetings that were organized in conjunction with:

- ICT 2015, October 20-22, 2015, Lisbon, Portugal, and
- Cloud forward 2015, October 6-8, 2015, Pisa, Italy

SeaClouds is also going to attend to the next physical meeting of the clusters, that will be held in conjunction with Net Futures 2016, April 20-21, 2016, Bruxelles, Belgium.

1.2 Scientific publications

The results of the project were also disseminated by producing a considerable number of scientific publications: 8 publications in international journals, 29 publications in international conferences, and 5 publications in national conferences.

The references to such publications are included below by listing on the left hand-side the publications presenting (the results of) the SeaClouds project –almost all co-authored by various partners of the consortium– and on the right hand-side the publications on research topics of core relevance to the SeaClouds project.

1.2.1 International journals

Articles presenting SeaClouds	Articles on topics of SeaClouds
<p>A. Brogi, M. Fazzolari, A. Ibrahim, J. Soldani, P. Wang, J. Carrasco, J. Cubo, F. Duran, E. Pimentel, E. Di Nitto, F. D'Andria. Adaptive management of applications across multiple clouds: The SeaClouds Approach. CLEI Electronic Journal 18 (1):1-14. April 2015.</p> <p>A. Brogi, J. Carrasco, J. Cubo, F. D'Andria, A. Ibrahim, E. Pimentel, J. Soldani. SeaClouds: An European project on seamless management of multi-cloud applications. ACM SIGSOFT Software Engineering Notes, 39(1):1-4. 2014.</p>	<p>A. Brogi, A. Canciani, J. Soldani, PengWei Wang. A Petri net-based approach to model and analyze the management of cloud applications. Transactions on Petri Nets and Other Models of Concurrency (ToPNoC). Springer. 2016. (In press.)</p> <p>F. Durán, G. Salaün. Robust and Reliable Reconfiguration of Cloud Applications. Journal of Systems and Software. (In press.)</p> <p>A. Brogi, J. Soldani. Finding available services in TOSCA-compliant clouds. Science of Computer Programming, 115-116, pages 177-198. 2016.</p> <p>J. Soldani, T. Binz, U. Breitenbücher, F. Leymann, A. Brogi. TOSCA-MART: A Method for Adapting and Reusing Cloud Applications. Journal of Systems and Software, Vol. 113, pages 395-406. 2016.</p> <p>A. Brogi, J. Cubo, L. González, E. Pimentel, R. Ruggia. "Dynamic Verification of Mashups of Service-Oriented Things through a Mediation Platform". Journal of Universal Computer Science (JUCS), vol. 20, no. 8, pages 1049-1070. 2014.</p> <p>J. Cubo, A. Nieto, E. Pimentel. A Cloud-Based Internet of Things Platform for Ambient Assisted Living. Journal of Sensors, 14(8), 14070-14105. 2014.</p>

1.2.2 International conferences

Articles presenting SeaClouds	Articles on topics of SeaClouds
<p>M. Barrientos, A. Brogi, M. Buccarella, J. Carrasco, J. Cubo, F. D'Andria, E. Di Nitto, A. Nieto, M. Oriol, D. Perez, E. Pimentel, S. Zenzaro. Adaptive application management over</p>	<p>L. Bartoloni, A. Brogi, A. Ibrahim. Automated prediction of the QoS of service orchestrations: PASO at work. In A. Celesti and P. Leitner (editors), Advances in Service-Oriented and Cloud Computing</p>

<p>multiple clouds. In A. Celesti and P. Leitner (editors), <i>Advances in Service-Oriented and Cloud Computing (ASOCC) - Workshop Post-Proceedings of ESOC 2015, COMMUNICATIONS IN COMPUTER AND INFORMATION SCIENCE</i>, volume 567, Springer. 2016. (In press.)</p>	<p>(ASOCC) - Workshop Post-Proceedings of ESOC 2015, <i>COMMUNICATIONS IN COMPUTER AND INFORMATION SCIENCE</i>, volume 567, Springer. 2016. (In press.)</p> <p>F. Bonchi, A. Brogi, A. Canciani, J. Soldani. Behaviour-aware matching of cloud applications. In M. Bonsangue and Y. Deng (editors), <i>TASE 2016: Tenth international symposium in theoretical aspects of software engineering</i>, July 17-19, 2016, Shanghai (China). 2016. (In press.)</p> <p>J. Carrasco, J. Cubo, F. Durán, E. Pimentel. Deployment over Heterogeneous Clouds with TOSCA and CAMP. In proceedings of 6th International Conference on Cloud Computing and Services Science. <i>CLOSER 2016</i>. (In press.)</p> <p>M. Guerriero, S. Tajfar, D. A. Tamburri, E. Di Nitto. Towards A Model-Driven Design Tool for Big Data Architectures. In Proceedings of the 2nd International Workshop on BIG Data Software Engineering (BIGDSE). 2016. (In press.)</p> <p>M. Scavuzzo, D. A. Tamburri, E. Di Nitto. Providing Big Data Applications with Fault-Tolerant Data Migration Across Heterogeneous NoSQL Databases. In Proceedings of the 2nd International Workshop on BIG Data Software Engineering (BIGDSE). 2016. (In press.)</p> <p>M. Bersani, F. Marconi, D. A. Tamburri, P. Jamshidi, A. Nodari. Continuous Architecting of Stream-Based Systems. In Proceedings of the 13th IFIP - IEEE Working Conference on Software Architectures and the federated conference series bringing together researchers and practitioners from Component-Based Software Engineering and Software Architecture (WICSA & CompArch). 2016. (In press.)</p> <p>D. Perez-Palacin, R. Mirandola, M. Scoppetta. Simulation of techniques to improve the utilization of cloud elasticity in workload-aware adaptive software. In Proceedings of the 2nd Workshop on Challenges in Performance Methods for Software Development. 2016. (In press.)</p>
<p>D. Athanasopoulos, M. Barrientos, L. Bartoloni, A. Brogi, M. Buccarella, J. Carrasco, J. Cubo, F. D'Andria, E. Di Nitto, A. Nieto, M. Oriol, E. Pimentel, S. Zenzaro. SeaClouds: Agile management of complex applications across multiple heterogeneous clouds. In M. Autili, T. Ritter, A. Sadovykh, M. Tivoli (Editors), <i>Proceedings of the Projects Showcase, part of the Software Technologies: Applications and Foundations 2015 Federation of Conferences (STAF 2015)</i>, L'Aquila, Italy, July 22, 2015. <i>CEUR Workshop Proceedings</i>, vol. 1400, pages 54-61.</p>	<p>A. Brogi, A. Canciani, J. Soldani. Modelling and analysing cloud application management. In S. Dustdar, F. Leymann, M. Villari (Editors), <i>Service Oriented and Cloud Computing – Proceedings of 4th European Conference, ESOC 2015, Taormina, Italy, September 15-17, 2015. Lecture Notes in Computer Science 9306</i>, pages 19-33. 2015.</p> <p>A. Brogi, A. Canciani, J. Soldani, P. Wang. Modelling the behaviour of management operations in cloud-based applications. In D. Moldt, H. Rölke, H. Störrle (Editors), <i>Proceedings of the International Workshop on Petri Nets and Software</i></p>

<p>2015.</p>	<p>Engineering (PNSE'15), Brussels, Belgium, June 22–23, 2015, CEUR Workshop Proceedings, vol. 1372, pages 191-205. 2015.</p> <p>C. Canal, G. Salaün. Model-Based Adaptation of Software Communicating via FIFO Buffers. 18th International Conference on Fundamental Approaches to Software Engineering (FASE 2015). Fundamental Approaches to Software Engineering (FASE 2015). Lecture Notes in Computer Science, 9033, pp. 252-266, Springer, April 2015.</p> <p>J. Cubo, N. Gámez, E. Pimentel, L. Fuentes. Reconfiguration of Service Failures in DAMASCo using Dynamic Software Product Lines. In IEEE International Conference on Services Computing (IEEE SCC). IEEE CS, 114-121. June 27-July 2 2015, New York (USA).</p> <p>E. Di Nitto, R. Mirandola, S. Raffa, D. A. Tamburri. Towards GEEZMO: hiGh-frEquEncy Zest and Mood-pOLLing for Proactive Software Development Problem-Solving. In Proceedings of the 7th International Workshop on Social Software Engineering. 2015.</p> <p>M. Di Penta, D. A. Tamburri. Combining Quantitative and Qualitative Methods in Empirical Software Engineering. In Proceedings of the 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software. 2015.</p> <p>R. Mirandola, D. Perez-Palacin, P. Scandurra, M. Brignoli, A. Zonca. Business process adaptability metrics for QoS-based service compositions. In Proceedings of the 4th European Conference on Service-Oriented and Cloud Computing. 2015.</p> <p>D. Perez-Palacin, R. Mirandola, F. Monterisi, A. Montoli. QoS-driven probabilistic runtime evaluations of virtual machine placement on hosts. In Proceedings of the 8th IEEE/ACM International Conference on Utility and Cloud Computing. 2015.</p>
<p>A. Brogi, J. Carrasco, J. Cubo, F. D'Andria, A. Ibrahim, E. Pimentel, J. Soldani. EU Project SeaClouds: Adaptive Management of Service-Based Applications Across Multiple Clouds. In F. Desprez, D. Ferguson, F. Leymann, V. Méndez (Editors), Proceedings of the 4th International Conference on Cloud Computing and Services Science (CLOSER 2014), Barcelona, Spain, April 3-5, 2014, pages 758-763. SciTePress. 2014.</p> <p>A. Brogi, J. Carrasco, J. Cubo, F. D'Andria, A. Ibrahim, E. Pimentel, J. Soldani. SeaClouds:</p>	<p>A. Brogi, J. Soldani. Reusing cloud-based services with TOSCA. In E. Plödereder, L. Grunske, E. Schneider, D. Ull (Editors), Informatik 2014, 22-26 September 2014, Stuttgart, Germany. Lecture Notes in Informatics, vol. 232, pages 235-246. Gesellschaft für Informatik. 2014.</p> <p>A. Brogi, J. Soldani, P. Wang. TOSCA in a nutshell: Promises and perspectives. In M. Villari, W. Zimmermann, K.-K. Lau (Editors), Service Oriented and Cloud Computing – Proceedings of Third European Conference, ESOC 2014, Manchester,</p>

<p>Seamless adaptive multi-cloud management of service-based applications. In J. Castro, C. Ayala, G. Giachetti, M. Lucena, C. Cares, X. Franch, M. Perini, M. Lencastre, B. Marin, R. Gacitu (editors), Proceedings of the 17th Ibero-American Conference on Software Engineering (CIBSE 2014), pages 95-108. April 23-25, 2014, Pucon, Chile. Curran Associates, Inc.. 2014.</p> <p>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. 2014.</p>	<p>UK, September 2-4, 2014. Lecture Notes in Computer Science 8745, pages 171-186. 2014.</p> <p>L. Bartoloni, A. Brogi, A. Ibrahim. Probabilistic prediction of the QoS of service orchestrations: A truly compositional approach. In X. Franch, A. Ghose, G.A. Lewis, S. Bhiri (Editors), Service-Oriented Computing – Proceedings of 12th International Conference, ICSOC 2014, Paris, France, November 3-6, 2014. Lecture Notes in Computer Science 8831, pages 378-385. 2014.</p> <p>C. Canal, G. Salaün. Adaptation of Asynchronously Communicating Software. 12th International Conference on Service-Oriented Computing (ICSOC 2014). Service Oriented-Computing (ICSOC 2014). Lecture Notes in Computer Science, 8831, pp. 437-444, Springer, November 2014.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
	<p>A. Brogi, J. Soldani. Matching cloud services with TOSCA. In C. Canal and M. Villari (editors), Advances in Service-Oriented and Cloud Computing, Communications in Computer and Information Science, vol. 393, pages 218-232, 2013.</p>

1.2.3 National conferences

Articles presenting SeaClouds	Articles on topics of SeaClouds
<p>M. Barrientos, L. Bartoloni, A. Brogi, M. Buccarella, J. Carrasco, J. Cubo, F. D'Andria, E. Di Nitto, A. Nieto, M. Oriol, E. Pimentel, S. Zenzaro. SeaClouds: An Application Management System over the Clouds. 11th Spanish</p>	<p>J. Boubeta-Puig, J. Cubo, A. Nieto, G. Ortiz, E. Pimentel. Propuesta de una Arquitectura de Dispositivos como Servicios con Procesamiento de Eventos. 11th Spanish Conference on Services</p>

<p>Conference on Services Engineering and Science (JCIS 2015), September 15-17 2015, Santander (Spain).</p> <p>M. Barrientos, J. Carrasco, J. Cubo, E. Pimentel. Propuesta para un acceso homogéneo a servicios PaaS en la Nube. 20th Spanish on Software Engineering and Databases (JISBD),i. September 15-17 2015, Santander (Spain).</p>	<p>Engineering and Science (JCIS 2015), September 15-17 2015, Santander (Spain).</p>
<p>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.</p>	<p>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.</p>

1.3 Internet-based dissemination

The SeaClouds consortium exploited three different strategies to disseminate its activities and results on the Internet: The project Web site, GitHub, and three social media.

1.3.1 Project Web site

One of the core elements for the Internet-based dissemination has been the official Web site of the project www.seaclouds-project.eu (Figure 1), which provides updated and thorough information on the project, including events, deliverables, publications, videos and other dissemination material.

The screenshot shows the SeaClouds project website. At the top, there is a navigation bar with links for Home, Project, Repository, News & events, Sustainability, SOFTWARE, and Contact. The main header features the SeaClouds logo and the tagline 'Seamless adaptive multi-cloud management of service-based applications'. Below this is a large blue banner with the text 'Open source multi-cloud application manager for PaaS' and a description: 'It provides services to monitor, manage and migrate the underlying providers (both public and private clouds) and thus leverages SLA policies in order to guarantee the required performance and QoS on multi-cloud environments.' A 'Learn more' button is present. Below the banner are three feature cards: 'Application Management' (Streamlined multi-cloud management), 'Application Monitoring' (Monitoring of applications), and 'Based on Standards' (Compatible with OASIS CAMP and TOSCA). At the bottom, there is a section titled 'Application Management' with a detailed diagram of the system architecture. The diagram shows an 'App Provider' and 'App Administrator' interacting with a 'Designer' and 'Dashboard' (GUI). The core system includes a 'Planner' (with 'App Metadata' and 'Cost, Resources & Tech Requirements'), a 'Multi-Cloud Orchestrator', a 'Controller', a 'Monitor', and an 'Analyzer'. The system is supported by 'Discovery API', 'Monitoring API', and 'Multi-Cloud Deployment API', all connected to a 'Unified API'.

Figure 1 – Project Web site.

Some statistics on the Web site, collected with Google Analytics, are reported in Figure 2.

	M12 ²	M24	M30 ³
Visits	2119	8423	10433
Countries of visitors	78	126	131
Unique visitors	1065	6054	7417
Page views	6068	16618	20971
Average session duration	2:08	1:43	1:43
Bounce rate	48.5%	68.1%	68.5%

Figure 2 – Project Web site statistics.

Deepening on the figures provided in Figure 2, we can observe that the scope of the project has widely overstepped the boundaries of the consortium and of the European Union, reaching countries like United States (which actually leads the ranking of visitors), China and Brazil.

Switching the focus of the analysis from the country of origin to the channels used to access the website, we have an interesting result. Figure 3 shows that referrals continue to be on the top of the ranking with a 40.5% of the visits (similarly to the previous report), followed by direct access with 29.6% of the total. The third place is occupied by organic search (23.6%) while the ranking is closed by social media, which provide less than 7% of the website visitors.

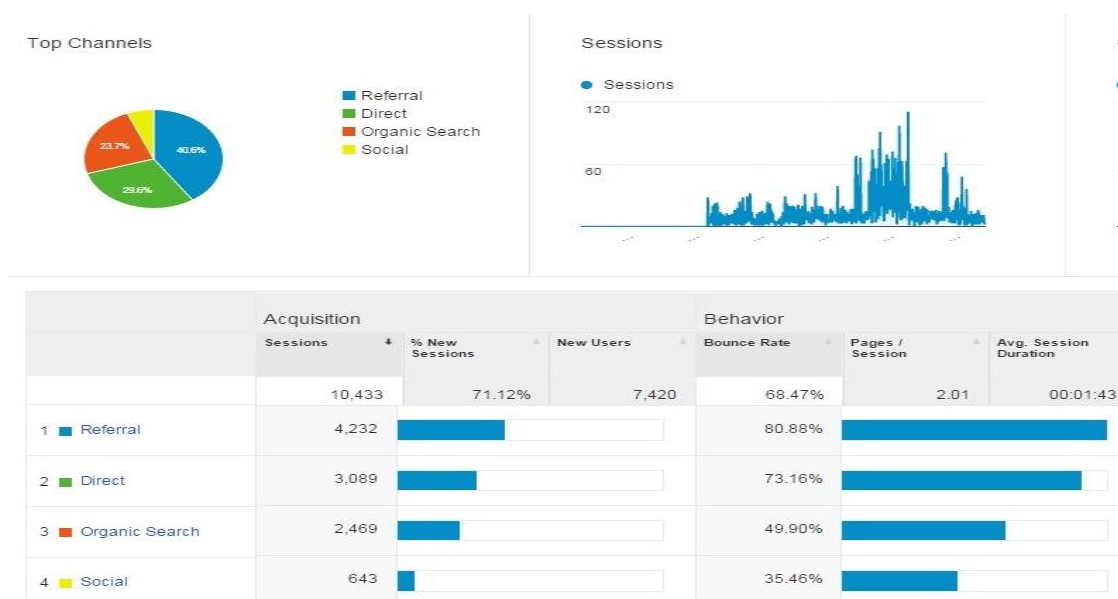


Figure 3 – Project Web site statistics on visitors.

1.3.2 GitHub

In order to gain interest, participation and exploit the benefits of adopting open source solutions, including transparent development, stakeholder feedback and broad uptake potential, the SeaClouds platform is hosted in the well-established open source community GitHub.

² Web site statistics started on M3, when Google Analytics was added to the site.

³ All figures reported in this section 1.3 were taken on March 14th, 2016.

GitHub, the largest code host in the world, is the connection hub between the project and the market, allowing SeaClouds to reach a potentially 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.

Following an agile methodology, the GitHub repository of the SeaClouds platform (<https://github.com/SeaCloudsEU/SeaCloudsPlatform>) has reached since its creation more than **566 commits** and **15 active contributors** within the SeaClouds consortium.

1.3.3 Social media

Another important part of SeaClouds dissemination is its presence in social media, not only to increase the exposure of the project but also to reach and communicate on a personal level with a wider audience. Three different channels have been exploited: Twitter, LinkedIn and Facebook.

The most active of the three channels is **Twitter**, which can be followed at https://twitter.com/SeaClouds_EU (Figure 4). SeaClouds achieved **261 followers**, published **146 tweets**, and uploaded **46 pictures or videos**



Figure 4 – SeaClouds on Twitter.

The second social channel exploited for dissemination is **LinkedIn**. The SeaClouds project is present in this professional business-oriented social network, with **82 active members**, at www.linkedin.com/grps/SEACLOUDS-PROJECT-7449431.

The third social channel exploited for dissemination is **Facebook**.

The project page is available at www.facebook.com/seacloudsproject (Figure 5), with **65 likes** from **8 different countries**

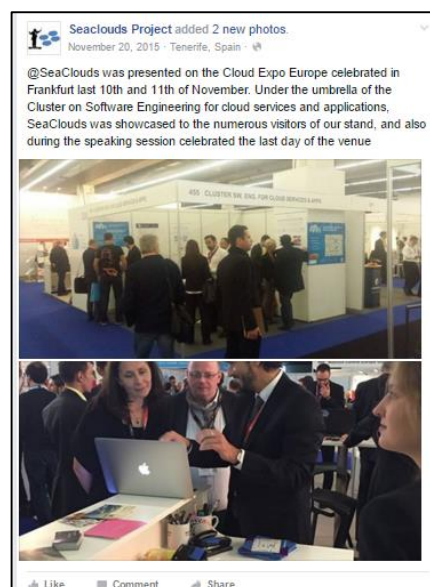


Figure 5 – A SeaClouds post on Facebook.

1.4 Other dissemination material

To support the dissemination of the project results, the SeaClouds consortium produced also videos, posters, press releases, flyers, newsletters, and white papers.

Videos – Five demonstration videos (Figure 6) were produced and made available from the project Web site.

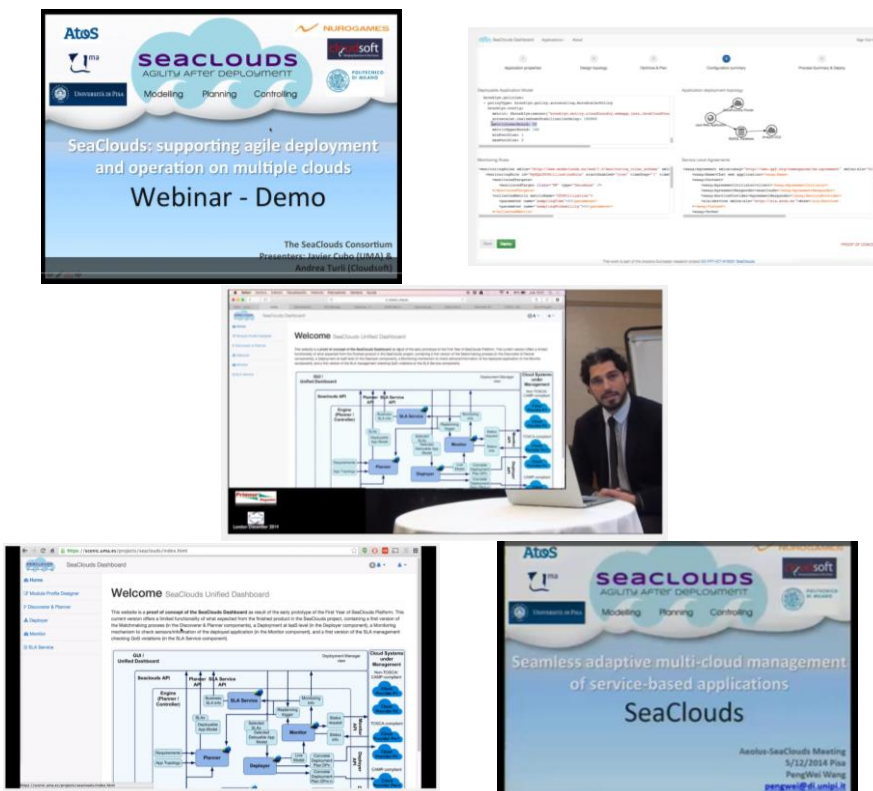


Figure 6 –SeaClouds videos.

Press releases – Three press releases were produced during the lifespan of the project, to illustrate the evolution and results of the project: one in the first year, one in the second year, and one in the third year. The most recent newsletter is available from project Web site.

Posters – Three posters were produced during the lifespan of the project, to illustrate the evolution and results of the project: one in the first year and one in the second year. The posters were used in various of the events listed in section 2.1 and made available from the project Web site.

Flyers – Two flyers were produced during the lifespan of the project, to illustrate the evolution and results of the project: one in the first year, and one in the second year (Figure 7). The flyers were distributed in various of the events listed in section 2.1.



Figure 7 – Second SeaClouds flyer (front and back).

Newsletters – Two newsletters were produced during the lifespan of the project, to illustrate the evolution and results of the project: one in the first year, and one in the second year.

White papers – Two white papers (Figure 8) were produced during the lifespan of the project.

- “SeaClouds Open Reference Architecture”, produced at M13, describes the main features of the SeaClouds architecture,
- “SeaClouds Business Paper”, produced at M20, describes SeaClouds from a business-oriented point of view, including the solution it provides, its business impact, and a detailed description of a use case.

The white papers are available at: www.seaclouds-project.eu/media.html#Whitepapers.



Figure 8 – SeaClouds white papers.

2 KPIs assessment and concluding remarks

In this section we assess the level of achievement of the KPIs (Key Performance Indicators) obtained by the SeaClouds project for the dissemination activities.

Figure 9 summarizes the expected KPIs for dissemination activities that were indicated in Deliverable D1.4 (Dissemination Strategy & Plan, [1]) along with the achieved KPIs.

Activity	Expected KPI	Achieved KPI
<i>Project presentations at events and conferences</i>	3 presentations	15 presentations
<i>Scientific workshops organized by the project</i>	2 workshops	2 workshops
<i>Industry workshops and webinars organized by the project</i>	2 workshops 1 webinar	2 workshops 1 webinar
<i>Scientific publications</i>	4 journals 4 conferences	8 journals 34 conferences
<i>Presence in social media</i>	3 media	3 media
<i>Web site visitors</i>	1500 visitors/year	2967 visitors/year
<i>Other dissemination material</i>	2 videos 3 press releases 3 posters 3 flyers newsletters: 1 each 6 months 3 whitepapers	5 videos 3 press releases 3 posters 2 flyers newsletters: 1 each year 2 whitepapers

Figure 9 - Expected and achieved KPIs for project dissemination.

It is worth observing that the SeaClouds project clearly outperformed the KPIs indicated in [1] for project presentations at events and conferences, and for scientific publications. Indeed, the number (15) of project presentations at events and conferences during the project lifespan was definitely higher than the expected number (3) indicated in [1]. The same holds for scientific publications, where the number (8) of publications in journals and the number (34) of publications in conferences were definitely higher than the expected numbers (4 and 4, respectively) indicated in [1].

As far as event organization is concerned, the project succeeded in organizing two scientific workshops, two industry workshop and one webinar, as planned in [1].

As far as Internet-based dissemination is concerned, the project successfully exploited three social channels (Twitter, LinkedIn and Facebook), as planned in [1], and it also participated in the GitHub community, as mentioned in section 2.3.2. The expected KPIs for the number of visitors of the project Web site were largely satisfied too.

As far as the KPIs for the other dissemination material are concerned, the project produced more videos (5) than the expected number (2) indicated in [1]. The project also produced 3 press releases and 3 posters, as planned in [1].

The only minor deviation from the dissemination plan drafted in [1] concerns the numbers of flyers, newsletters and whitepapers produced, which were two for each category. The reason for that is that the consortium decided to invest a considerable effort in disseminating the project results by means of 15 project presentations at events

and conferences as well as by means of 42 scientific publications, rather than producing one more poster, flyer, newsletter and whitepaper.

Overall, we believe that the dissemination activities carried over by the SeaClouds consortium for the entire lifespan of the project can be considered definitely successful and one of the achievements of the project itself.

3 References

- [1] SeaClouds Project Team. **Deliverable D1.4 Detailed Dissemination Strategy & Plan**. December 2013. Available at: http://www.seaclouds-project.eu/deliverables/SeaClouds-D1.4-Detailed_Dissemination_Strategy_Plan.pdf.
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- [3] SeaClouds Project Team. **Deliverable D1.7.1 1st SeaClouds Scientific Workshop**. September 2014. Available at http://www.seaclouds-project.eu/deliverables/SEACLOUDS-D1.7.1_1st_SeaClouds_Scientific_Workshop.pdf.
- [4] SeaClouds Project Team. **D1.5.2 – Dissemination Report**. September 2015. Available at http://www.seaclouds-project.eu/deliverables/SEACLOUDS-D1.5.2_DisseminationReport.pdf.
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