ARCADIA

A novel reconfigurable by design highly distributed applications development paradigm over programmable infrastructure

Deliverable D6.2

Dissemination Activities Report V1

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Abstract:	This document describes the activities that have taken place with regards to dissemination of the work and relative results of all the work packages achieved during the first year of the ARCADIA project.
Keyword(s):	*Dissemination activities report, publications, presentations.*

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Executive Summary

This dissemination report describes the activities that have taken place with regards to dissemination in the first year of the project towards (i) the scientific community, (ii) industry and (iii) general public. Initially, an overview of the dissemination strategy is given. The dissemination tools and channels are ranging from the project web site to social media tools. The project's dissemination results in this first year are presented and a list of publications, talks and presentations is provided. Selected events and planned activities are also listed, as well as an outlook to future work related to dissemination.

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1 Introduction

1.1 Purpose and Scope

This deliverable provides an outline of the dissemination strategy and contains facts on the performed dissemination activities. More specifically, it refers to events and activities that took place in the first year of the project, namely 2015.

The dissemination report is updated on an annual basis in order to depict the current status and it is related to the deliverable D6.8 Business Plan and Innovation Management, which highlights various activities undertaken aiming at creating a positive impact to the software development community and a further uptake of the ARCADIA project results in other exploitation activities.

1.2 Relation with other WPs

All the work packages have provided input to this deliverable, as all the aspects of the work done so far in the project have been included in the several dissemination activities that are mentioned in more detail in section 4. Since the main objective of all dissemination and exploitation activities in ARCADIA is to maximize the visibility and sustainability of the project outcomes, a coordinated approach in diverse dissemination and exploitation activities is necessary and all partners are actively contributing.

2 Dissemination Methodology

Dissemination has two main objectives. The first is to make the industrial and scientific community aware of the project developments and results, by presenting the ARCADIA framework, its innovative concepts and the multiple deriving benefits.

The second objective is to promote and advertise the platform to interested stakeholders and to network with third parties that can add value to ARCADIA outcomes and support the ARCADIA development paradigm. The ultimate goal in this case is the adoption of ARCADIA by a wide number of final users.

2.1 Dissemination approach

The main idea behind the dissemination approach is to link the market analysis with dissemination actions, so as to perform more focused dissemination activities and in this way to facilitate exploitation. Moreover, it will be possible to provide feedback to the other work packages in order to fine tune their activities.

The basic interactions will involve the following:

- Market analysis and Exploitation Plan (requirements, potential customers, potential competitors)
- ARCADIA platform functionalities (develop something valuable for potential users, describe benefits)
- Dissemination actions (as described also in the next subsection)
- Selling strategies (exploitation plan)
- Customer support (exploitation plan)

Based on the market analysis and the exploitation plan, it is expected that the dissemination strategy will require interactions with IT companies, manufacturers and of course software developers and service providers, who can be seen as the final users or customers of the ARCADIA platform.

The planned dissemination approach comprises an iterative analysis of:

- IT companies in the different areas of technological domains which could distribute the ARCADIA platform or offer compatible products
- Software developers and Service providers that are interested in adopting the ARCADIA development paradigm in order to take advantage of the numerous benefits that is able to offer
- Competitors of the technological solutions, to better position the platform on the market
- Universities and research centers to support the monitoring of the market and the progress beyond the state of the art that it is achieved through the research activities

2.2 Channels of dissemination

At first, the potential business stakeholders have to be identified and then, all of them have to be informed about the results of the project.

It is foreseen that the various dissemination actions will target to direct contacts, as well as indirect contacts, as presented in the following.

Direct contacts by means of:

- The research community
- Industries and companies
- Developer communities (meetings/seminars with groups of users)

Indirect contact (“rain approach”) by means of:

- Publications/Articles on specialized magazines
- Advertising on magazines, internet sites, newsletters etc.
- Leaflet, posters, DVD, etc. (dissemination package)

3 Dissemination plan

The ARCADIA project targets to achieve two main objectives:

- To leverage the re-configurability aspects of highly distributed applications, incorporating technological and business requirements coming from the industry, the research community, the software development enterprises and application users into a flexible and scalable framework for developing and deploying highly distributed applications over programmable and re-configurable infrastructure
- to facilitate the design of highly distributed applications, as well as their development, deployment and dynamic configuration over programmable infrastructure, by designing and incorporating a sophisticated Context Model that will conceptualize dynamic configuration and programmable aspects of underlying resources that are required by HDAs along with the associated IDE plugin that will assist Developers use the Context-Model in a "proper" way

To reflect both objectives, dissemination activities will target to:

- Research Community: dissemination of scientific results achieved in ARCADIA through publications at conferences and workshops
- Developers/Technical Community: IT partners who support industrial oriented external dissemination towards technical events, targeted seminars, workshops and conferences

3.1 Event categories

	Event	Description	Target group
1	Participation in international and national IT conferences	Participation in scientific conferences on software development and system configuration topics. Conferences can be international or national. Universities and Research Institutes take part in this activity. Reports are made in conferences and papers are published in conference proceedings	Scientists, researchers, high quality designers and developers, representatives of well known IT companies
2	Submission of articles to scientific journals	Submission articles to scientific journals. The articles in international journals and magazines should be related to ARCADIA topics especially software development and system configuration. Universities and Research Institutes take part in this activity	Scientists, researchers
3	International scientific workshops	International scientific workshops on especially software development and system configuration	Scientists, researchers, high quality designers and developers, representatives of well known IT companies

4	Software developers oriented dissemination workshops	Software developers oriented workshops for bringing project ideas and results to users	Software developers, managers and executives of IT companies
5	Electronic advertising of project results through Internet	Electronic advertising of project results through Internet: distribution of Newsletter and other information through the Web; creation of a project's web site open to the public; electronic mailing of information and announcements, etc.	All interested stakeholders
6	Presentation ideas and results in the mass media	Presentation ideas and results trough public newsletters, magazines as well as radio and TV	All interested stakeholders
7	Presentation of results at the exhibitions and fairs	Presentation results at the national and international exhibitions, fairs and other expositions	All interested stakeholders
8	Presentation of ideas and results via immediate and distance studies	Presentation of ideas, theoretical issues and results by lectures for students	Academic community (students and professors)

Table 1: Event categories

4 Dissemination activities report

4.1 Overview of year 1

In the first year of the project, the partners have already participated in a number of dissemination activities, as it is briefly presented in the following. More specifically, members of the consortium have presented the ARCADIA concepts and ideas at six workshops and two conferences, have attended three cluster meetings and have organized internal meetings in their organizations in order to inform their colleagues on the aims, the ambitions and the research efforts within ARCADIA. Some more details on the workshops and conferences where ARCADIA was promoted are provided below.

The NET FUTURES [7] conference gathers annually over 1.000 attendees and its main objective is to maximize competitiveness of the European technology industry by forming an interconnected community involving companies, organizations and people in various sectors, like e.g. Research & Innovation, Market Validation & Living Lab Research, Business Development, Entrepreneurship & Enterprise Strategy, Policy Making. The core concept is that if the gaps between these communities are bridged, innovations will more easily and effectively find their way to the market.

EuCNC [15] is another successful and well known technical conference in the field of telecommunications, sponsored by the European Commission. It is considered as a cornerstone event for research in advanced networks and associated topics, with multiple exciting sessions, workshops, exhibitions/demonstrations, as well as an outstanding social program that allows useful interactions. In the era of the global challenges of the digital age, Europe has to be ready to create and pursue opportunities focused and centered on digital technologies.

The International Conference on Data Management Technologies and Applications (DATA) [8] aims to bring together researchers, engineers and practitioners interested on databases, data warehousing, data mining, data management, data security and other aspects of information systems and technology involving advanced applications of data. It provides an opportunity for researchers and practitioners involved in ongoing or past European research projects to present the objectives and outcomes of these projects as well as future plans regarding continuation opportunities. The presentation of demos, posters and panels at the same venue and simultaneously with several related conferences allow a large audience among conference participants to get a better insight into the research projects that participate in this initiative.

UCC (Utility and Cloud Computing) [3] is the premier IEEE/ACM conference covering all areas related to Cloud Computing as a Utility and provides an international forum for leading researchers and practitioners in this important and growing field. In the context of this conference, the Sustainable Data Center and Cloud Computing workshop (SD3C) was organized to tackle specific aspects on energy efficiency for computing infrastructure. Data centre energy consumption doubled between 2000 and 2005 and grew by 50% from 2005 to 2010. On average, computing consumes 60% of the total energy, whereas cooling

consumes 35%. Although new technologies can lead to a 40% reduction, computation and cooling typically operate without coordination or optimisation. Server energy management can reduce energy consumption at the CPU, rack, and DC levels, but dynamic computation scheduling is not integrated with sensing and cooling. The objective of this workshop is to bring together researchers and technologists from academia and industry to explore the topic of sustainability of data centre and cloud computing, particularly from an energy perspective.

University of Ljubljana has prepared ARCADIA press materials, Press release, news article, tweet and Facebook posts about ARCADIA in Slovenian language, targeting ICT audience, LTFE community and the LTFE web site [14].

Additionaly, SINTEF has published the ARCADIA press release on the SINTEF website [18]

Also, MAGGIOLI has translated ARCADIA Press Releases into the Italian language.

4.2 Published scientific papers

R. Bolla, L. Sambolino, D. Tigano, M. Repetto, "Enhancing Energy-Efficient Cloud Management through Code Annotations and the Green Abstraction Layer", First International Workshop on Sustainable Data Centres and Cloud Computing (SD3C), December 2015, Limassol, Cyprus.

Tran Quang Thanh, Stefan Covaci, Benjamin Ertl and Zampognano, "An Integrated Access Control Service Enabler for Cloud Applications", Future Networks Systems and Security conference, June 12-13, 2015, Paris, France.

Janez Sterle, Miha Rugelj, Urban Sedlar, Luka Koršič, Andrej Kos, Peter Zidar, and Mojca Volk, "A Novel Approach to Building a Heterogeneous Emergency Response Communication System", International Journal of Distributed Sensor Networks, Hindawi Publishing, July 2015 [16]

4.3 Attended events

	Event	When and where	Who	Description
1	BdKCSE'2015 – Big Data, Knowledge and Control Systems Engineering [2]	5–6 November 2015, Sofia, Bulgaria	Nikolaos Koutras, ADITESS	presentation, information of audience, lobbying
2	Internal meeting with CYTA (Cyprus Telecommunication Authority)	9 December 2015, Nicosia, Cyprus	Nikolaos Koutras, Michael Skitsas, ADITESS	Presentation targeting future potential ways of collaboration as well as new dissemination channels
3	Sustainable Data Centres and Cloud Computing (SD3C) Workshop, part of 8th	7-10 December 2015, Limassol, Cyprus	Luigi Sambolino, CNIT	Presentation (30min) of the paper has been conducted in the mentioned workshop. Additionally, original ARCADIA brochures have

	IEEE/ACM Intl Conference on Utility & Cloud Computing [4]			been distributed at the conference desk to all interested people.
4	3rd Annual Privacy Workshop Opportunities and Risks in the Era of the Internet of Things [5]	October 30, 2015, Berlin, Germany	Tran Quang Thanh and Stefan Covac, TUB	Invited Presentation. Target audience: privacy and security experts and practitioners from fields such as technology, psychology, sociology and legislation
5	Academic Efforts in Support of Future Internet and 5G Research, UNIFI annual workshop [6]	14 November 2015, Berlin, Germany	Tran Quang Thanh and Stefan Covac, TUB	Presentation to researchers from different Technical Universities
6	Netfutures 2015 conference [7]	25-26 March 2015, Brussels, Belgium	Anastasios Zafeiropoulos, UBITECH	Network Applications – how to unleash the full innovation-potential of SDN and NFV
7	DATA 2015 conference [8]	20-22 July 2015 Brussels, Belgium	Anastasios Zafeiropoulos, UBITECH	Presentation to Business, Research, Academia, Policy Makers
8	GEN6 project workshop [9]	21 April 2015, Athens, Greece	Anastasios Zafeiropoulos, UBITECH	Presentation of ARCADIA concepts
9	PCI 2015 - Critical Infrastructure Protection Workshop [10]	1-3 October 2015, Athens, Greece	Anastasios Zafeiropoulos, UBITECH	Presentation of Software Defined Security Mechanisms for Critical Infrastructure Management
10	Cloud Forward 2015 [11]	6-8 October 2015, Pisa, Italy	Constantinos Vassilakis, UBITECH	Participation in clustering activities for the clusters "Software Engineering for Services and Applications" and "New Approaches for Infrastructure Services" - Presentation for ARCADIA
11	EUCNC 2015 [15]	29 June 2015, Paris, France	Janez Sterle, Mojca Volk, UL	Presentation of ARCADIA-specific use case at a workshop as part of the EUCNC conference
12	Internal to University of Ljubljana SDN/NFV workshop for an industry partner	1 December 2015, Ljubljana, Slovenia	Luka Koršič	An internal workshop organised for an industrial partner (vendor Iskratel) on the topic of SDN/NFV, where the emergency response use

				case from ARCADIA will be presented and used as an example
13	Big Data Meets Cloud seminar [17]	20 October 2015, Oslo, Norway	Alessandro Rossini, SINTEF	An outlook on ARCADIA at the Big Data Meets Cloud seminar
14	The Days of the Local Police [19]	24 – 26 September 2015, Riccione , Italy	Andrea Montefiori, MAGGIOLI	Presentation of ARCADIA project, and in particular, High Performance Survivable Communications in Distributed IoT Deployments Use Case. The audience included Commanders, Officers and agents of the Local Police Department and Directors and Officers of Local Authorities

Table 2: Attended events

4.4 Other activities

	Event	When and where	Who	Description
1	Software Engineering for Services and Applications Cluster [12]	Online collaboration	Anastasios Zafeiropoulos, UBITECH	Presentation of ARCADIA concepts - Contribution on behalf of ARCADIA to various activities
2	New Approaches for Infrastructure Services Cluster [13]	Online collaboration	Anastasios Zafeiropoulos, UBITECH	Presentation of ARCADIA concepts - Contribution on behalf of ARCADIA to various activities

Table 3: Other **dissemination** activities

5 Planned activities

5.1 Scientific Dissemination Planning

Paper and presentation at BdKCSE'2016 – Big Data, Knowledge and Control Systems Engineering, by Nikolaos Koutras, ADITESS.

Organize an internal meeting with the Office of Electronic Communications & Postal Regulations (OCECPR) in Cyprus, by Nikolaos Koutras and Michael Skitsas, ADITESS.

P. Gouvas, C. Vassilakis, E. Fotopoulou, N. Lykousas, A. Zafeiropoulos, "ARCADIA - A Novel Reconfigurable by Design Highly Distributed Applications Development Paradigm over Programmable Infrastructures", Book Chapter, to be submitted

Moreover, CNIT is planning to submit papers and participate at the International Teletraffic Congress (ITC28) that will take place in September 2016 and at the 11th International Conference on Future Internet Technologies (CFI2016) in June 2016.

A workshop on Programmability for Cloud Networks and Applications (PROCON) will be organized in the context of the ITC28 [22] international conference. The workshop will cover the scientific areas around Cloud Networks, Programmability inside Networks, Cloud and Fog Computing principles, Software Defined Networking, Network Function Virtualization, and Software Engineering approaches for Highly Distributed Applications.

Finally it has to be mentioned that an ARCADIA specific workshop will be organized in june 2016 in the context of the 25th European Conference on Networks and Communications (EUCNC) that will be held in Athens.

5.2 Clustering planning

Members of the ARCADIA consortium are participating in clustering activities. They have attended a number of events that focused on clustering and harmonization within the EU. These activities are used to increase awareness for the ARCADIA project and to create synergies with other research projects in the field.

More specifically ARCADIA contributes to the "New Approaches for Infrastructure Services" [20] and to the "Software Engineering for Services and Applications" [21] cluster activities.

The former intends to be a forum for discussing the current research and innovation challenges encountered at infrastructure-as-a-service level generated by the desire to improve the user experiences and the efficient use of the available resources. The current trends are including the integration of special devices from high performance computing ones to mobile devices, the design of decentralised service-

oriented systems, the improvement of the virtualization technologies, the overcome of portability and interoperability issues, or the automation the organisation and management of the beck-end resources. Cloud-based applications from the fields of Internet-of-Things and Big Data are expected to challenge the new services.

The latter aims at facilitating the discussion among the experts in the area to exchange experiences and competences and to identify research directions and challenges as well as common plans to address them. In particular, the specific objectives being pursued by the cluster are:

- identify complementarities and synergies as well as possibilities for collaboration/results adoptions between projects;
- identify new challenges and trends to influence the European research agenda;
- organize common dissemination (publications, training and workshops);
- identify effective go-to-market strategies for the outcomes of research projects.

5.3 Standardization

As the work in ARCADIA is in an initial stage, no contributions to standardization bodies have been provided yet. Nevertheless the consortium is actively monitoring and following relevant standardization activities in several bodies, i.e. ETSI NFV, TOSCA NFV, IETF NFVRG.

5.4 Public dissemination

MAGGIOLI is pursuing the set up of a meeting with the Municipality of Rimini. In this meeting a detailed presentation of the project will be made to the representatives of the Municipality. The date of the meeting will be fixed in the first trimester of 2016. A similar meeting will be arranged with Municipality of Cesena and Municipality of Forlì.

6 Conclusions

This deliverable has provided a detailed view on the dissemination activities that have been performed in the first year of the ARCADIA project. An extensive list of published scientific papers and attended events has been included. Furthermore, the planned activities related to dissemination have been outlined.

Annex I: References

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[8] http://www.dataconference.org/EuropeanProjectSpace.aspx?y=2015

[9] https://www.grnet.gr/el/node/506

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