



ARCADIA

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

Deliverable D6.5

Communication Activities Report V1

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Abstract:	This document applies as a report setting out the activity concerning the presentation and communication of the work and relative results of all the work packages achieved during the first year of the ARCADIA implementation.
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Executive Summary

Efficient communication is considered a fundamental activity of the project, since communication activities are one of the major contributors to the final success of a project in both: short and long term. This report sets out the activity concerning the presentation and communication of the work and relative results of all the work packages achieved during the first year of the ARCADIA implementation.

This document, the Communication Activities Report, is designed to report ARCADIA communication achievements since the start of the project in January 2015 up to December 2015. This Deliverable is the first version of the Communication Activities Reports, followed by D6.6 and D6.7 at M24 and M36 of the project.

The deliverable is part of the work carried out within WP6 Communication, Dissemination & Exploitation, addressing and reporting the activities of WP6 task 6.2 Communication Activities. No direct interdependencies are envisaged between this deliverable and other specific tasks of the work plan, because the communication process is a horizontal activity of the project and receives inputs from other WPs and supports mostly all the work of the project, especially those related to technical developments. The aim of this document is also to support the project consortium in organising and conducting successful communication by providing the necessary tools and plans.

During the first year, the ARCADIA communication activities were focused, on one hand, on defining and deploying collaboration and communication tools in order to help ARCADIA consortium partners to work collectively and efficiently and on the other hand to communicate ARCADIA efforts through its official website and social media.

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1 Introduction

Nowadays there is a plethora of information available to ARCADIA stakeholders making it difficult to highlight efficiently and attract their interest on new developments. The main objective of the planned communication activities is to increase ARCADIA visibility to the identified target groups, to communicate the project objectives, acknowledge its progress and relative future plans and share information regarding the results achieved to the relevant project stakeholders. The progress against the set objective will be evaluated against a number of KPIs. Several means and media are used by the consortium for disseminating and promoting ARCADIA, through online, face to face and written communication channels.

This deliverable constitutes the first, out of three, annual project communication reports, marked as public, covering activities between January- December of 2015. The activities of the consortium emerge from the combination of each partner's individual dissemination and communication logs. At the beginning of the project, each partner was provided with templates for recording both communication and dissemination activities. This mechanism assists in not only keeping track of performed activities but also in monitoring each partner's effort.

This deliverable takes into account the roadmap defined in D6.1 "Communication Roadmap" that due to the fact that D6.1 is marked as confidential, where appropriate, relevant information from the original document will be clearly enclosed in the current document so as to accommodate new readers.

The deliverable D6.5 is structured in three main sections: i) Introduction and relation to the ARCADIA Communication Roadmap, ii) Review of each individual communication channel including evaluation based on set KPIs, iii) Remarks, outcomes, conclusions and future plan.

1.1 Purpose and Scope

The ARCADIA consortium considers communication activities of crucial importance. The successful completion of the project will only become possible after the successful diffusion of knowledge enabling raising awareness and the engagement of potential supporters, end users and customers. Communication activities within the framework of ARCADIA are accomplished through electronic and printed means as well as through other channels: through the project portal, our presence in social media, delivery of customised (to the audience) presentations etc.

The aim of this report is twofold. First, to provide information concerning the progress in communicating ARCADIA outcomes. Secondly, to assess the effectiveness of the introduced plan (D6.1) against the specified KPI quantitative metrics. Therefore, this report includes all communication activities that have been carried out, during a reporting period, by the consortium as a whole as these emerge from the individual plans.

1.2 Relation with other WPs

The Dissemination, Exploitation and Communication work package (WP6) is active throughout the whole duration of the project. At a first sight, its activities might seem independent of the rest work packages which adds some flexibility to the carried out work. On the other hand, tasks within WP6 are highly dependent and effort within them needs to be effectively communicated. The current deliverable derives from Task 6.2 Communication activities and is in accordance with the relative activities of Task 6.1 Dissemination, Clustering and Standardization Activities.

2 ARCADIA Communication Plan

The ARCADIA communication plan is the key strategy paper for all communication activities within the project. The communication plan has been prepared and released very early in the project life (M3) as it serves the foundation of WP6 by defining a clear strategy in terms of responsibility, timing, tools and communication channels, as well.

The main objectives of the ARCADIA communication plan are to:

- Draw the attention at the local, National and International levels on the project scope and results
- Increase the reputation and visibility of the project partners
- Seek for industrial implementers of the project results
- Generate market demand for the project products
- Attract the interest of potential partners for future collaboration
- Encourage talented scientists to join the consortium institutions and enterprises

Due to the fact that WP2 – ARCADIA Framework Specifications ended on M9 most of the consortium's presence in the social media has been focused on the theoretical aspects and characteristics of the project. Additionally, a number of communication activities were focused mainly on establishing the communication tools which enable communication with interested organisations, projects, communities or even individually.

The main activities which are covered in the current document are the following:

- Project Logo
- Project Website
- Social Media
- Project presentation
- Project Poster
- Project Brochure
- Online Publications
- Press releases
- Newsletter

For each of the aforementioned activities we provide briefly information on their frequency, the communication efforts so far as well as their impact.

3 Project Logo

An interesting story is hidden behind the ARCADIA logo which we aim to promote through our channels.

Arcadia is one of the geographical regions of Greece situated in the central and eastern part of Peloponnese. It takes its name from the composition of the words Ark and Dias. According to ancient Greeks mythology, Dias (Zeus in ancient Greek) was the “father of Gods and men” and in fact *Arcadia* means “The ark of Dias”. In European Renaissance arts, Arcadia was celebrated as an unspoiled, harmonious wilderness due to its mountainous topography and sparse population of pastoralists which later caused the word *Arcadia* to become a poetic synonym for an idyllic vision of unspoiled wilderness.

The official ARCADIA project logo is depicted in Figure 1. It consists of a graphic representing an ark over the sea, the abbreviation ARCADIA and the project’s full title. Metaphorically, the ark is shown to host annotated code (represented by symbols “<>”) in a container and transfer it overseas. The idea behind this graphic is to capture the concept of flexibility and dynamicity of the programmable infrastructure where reconfigurable by design applications are hosted, executed and scale in a pursued optimal way.



Figure 1: Horizontal Version of Logo for use in documents and deliverables

Different versions (see Figure 2 & Figure 3) of the original logo have been prepared to better represent the project both on the official website and on social media accounts.



Figure 2: Horizontal (Bold) Version of Logo, used as a header in the website

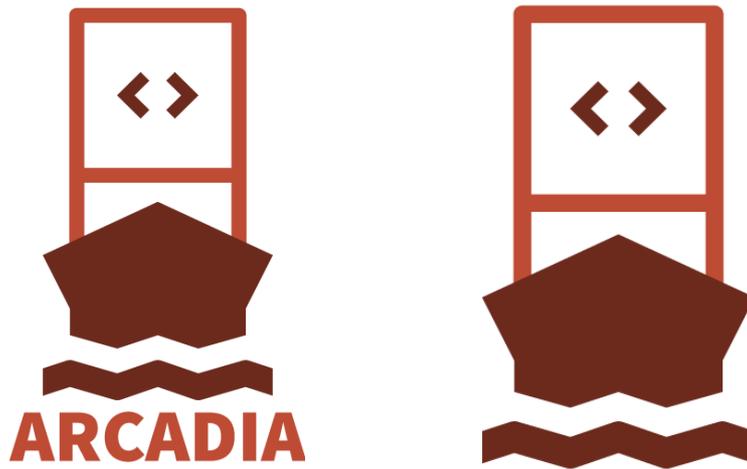


Figure 3 Vertical Versions of ARCADIA Logo used as profile picture in social media or in the front slide in presentations

4 Project Website

Public information about the ARCADIA project, supporting external communication and dissemination purposes and targeted to the public at large, is available at the following URL: <http://www.arcadia-framework.eu> . This site will be kept updated and improved during the project lifetime, presenting new content and functionality, under the responsibility of WP6 leader.

Recalling from D6.1 Section 5.1: The ARCADIA public website is one of the key communication tools. It serves as a public window, in which the project communicates relevant information about its goals, progress, etc. The website also includes features like search and article categorization for improved content discovery. As another means for increasing communication between the consortium and third parties, a blog page is also maintained as a section within the webpage. Blog posts should involve aspects or conventions related to the project, including more extensive descriptions about project achievements and demo versions. Additionally, the blog page may serve as a means of increasing the traffic of the page and a reason for visitors to check back the website at a later stage. A number of available plugins have been deployed for this website and offer the following features: Google Maps, Photo Gallery, Accessibility Tool, Multilingual Support, Web Analytics Service. More information regarding the website can be found in Annex I – ARCADIA Website.

4.1 Communication Activities

The ARCADIA website has been developed as a user friendly communication mean with high usability standards in mind. In March 2015, the first version of the website was launched with a full operative Content Management System (CMS).

In the first couple of months, the main activity was related to the website content management. Content description and documents have been uploaded. During the first year of the project the published news (see Figure 4) were related to the:

1. Arcadia publications
2. 1st technical meeting took place in Oslo, Norway
3. 1st plenary meeting taking place in Berlin, Germany
4. Participation to the Net Futures 2015: born to scale event in Brussels, Belgium
5. Kick-off meeting of ARCADIA in Athens, Greece

PROJECT DETAILS

Start date: 01/01/2015
End date: 31/12/2017
Duration: 36 months
Reference: GA no 645372
Budget: 3,543,864 €
Funding: 3,543,864 €
Call: H2020-ICT-2014-1

ARCADIA Publications

December 19, 2015



Our first research findings are out! Prior to the completion of our 1st year, the ARCADIA consortium is in the front line publishing novel methods that emerged from the project's recent research activities. Make sure to check the list of published content under the menu Documentation > Publications. Make sure to follow us on our... Continue Reading ARCADIA Publications

- > Toggle High Contrast
- > Toggle Grayscale
- > Toggle Font size

Uncategorized

1st technical meeting took place in Oslo, Norway

July 13, 2015



The 1st technical meeting of the ARCADIA project is being organised, during the 7 and 8 of July by SINTEF, in Oslo Norway.

Events

1st Plenary Meeting taking place in Berlin Germany

May 19, 2015



The 1st plenary meeting of the ARCADIA project is being organised, during the 19 and 20 of May, by the Technical University of Berlin (TUB) and takes place in Berlin Germany. Members from each partner participate in the event sharing knowledge and plan their next steps in progressing the project.

Uncategorized

Participation to the Net Futures 2015: born to scale event 25-26 March

March 18, 2015



Members of the ARCADIA consortium have attended the Net Futures 2015 event in Brussels where participants presented very interesting works. The following link links to the outline of the workshop where you may also read through the presented material: <http://netfutures2015.eu/programme/network-applications-how-to-unleash-the-full-innovation-potential-of-sdn-and-nfv/> If you are interested in learning more information about this event. Please visit the following... Continue Reading Participation to the Net Futures 2015: born to scale event 25-26 March

Events, News

Kick off meeting of ARCADIA in Athens (26-27.01.2015)

February 27, 2015



The Kick off meeting of the ARCADIA project held during the 26th and 27th of January in Athens (organised by UBITECH Ltd); ARCADIA officially started on January 1st,

Figure 4 News page

4.2 Progress Against KPIs

Website analytics during the first 6 months of operation are obtained through AWStats¹ provided by the hosting environment, CPanel². AWStats is a free powerful tool that generates advanced web statistics graphically. Some of the available statistics are, number of visits and number of unique visitors, visits duration, domains/countries of hosts' visitors, most viewed pages, etc. The following tables and figures present several statistics from the website for the period from March 2015 to November 2015.

Month	Unique visitors	Number of visits	Pages	Hits
March 2015	115	248	3481	16554
April 2015	101	370	2158	10999
May 2015	143	454	3749	17813
June 2015	204	506	2779	15172
July 2015	335	695	5274	27438
August 2015	231	528	2829	14341
September 2015	394	773	3255	15520
October 2015	1001	1547	5057	17409
November 2015	436	999	4769	20661
December 2015	409	780	4463	19614

Table 1: ARCADIA website visitors

¹ <http://www.awstats.org/>

² <http://cpanel.com/>

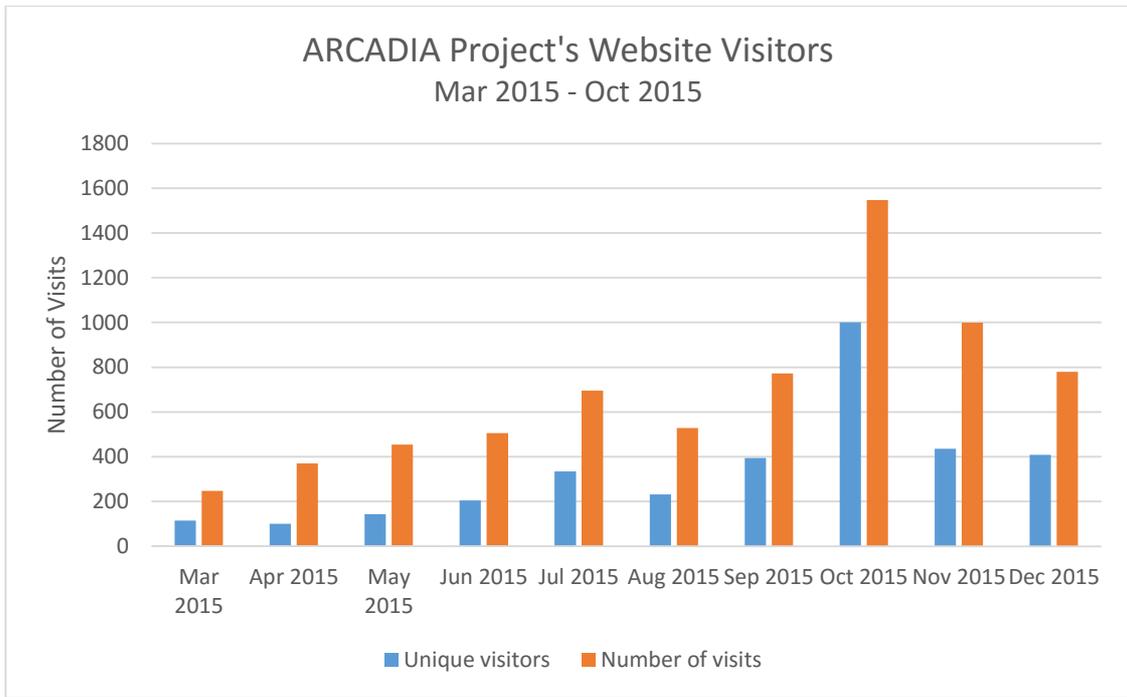


Figure 5 ARCADIA Project's Website Visitors

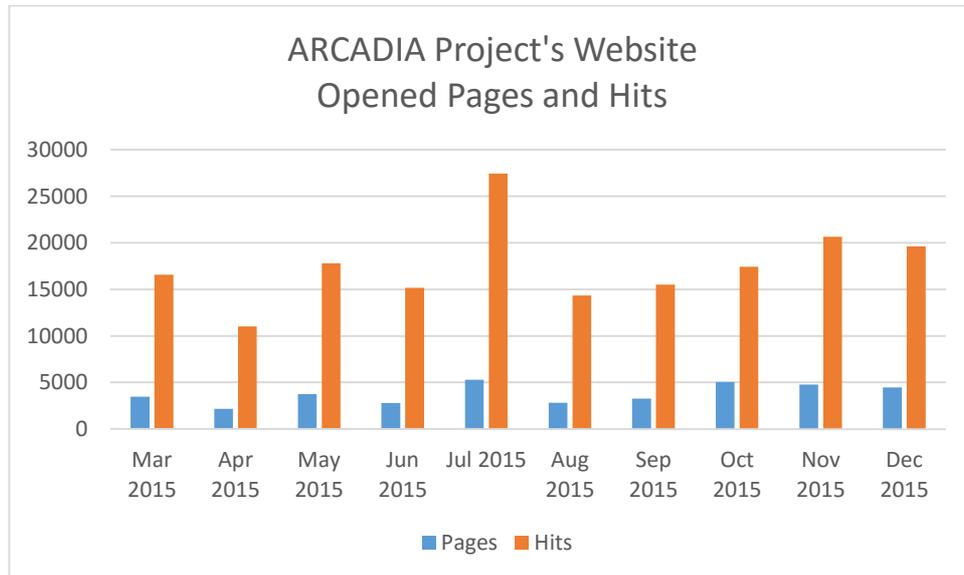


Figure 6 ARCADIA Project's Website Opened Pages and Hits

Table 1 and Figure 5 & Figure 6 present statistics about the number of visits (included unique visits) as well as the number of opened pages and hits for the period from March 2015 where the website was released until the month December 2015.

Country	Pages	Hits
Cyprus	6019	38343
France	357	1877
Germany	2558	17387
Great Britain	608	4261
Greece	2314	16784
Ireland	440	2703
Italy	2241	23331
Netherlands	273	1033
Norway	279	2460
Poland	147	442
Romania	179	1281
Spain	459	3663
United States	12415	17939

Table 2 ARCADIA website visitors per country

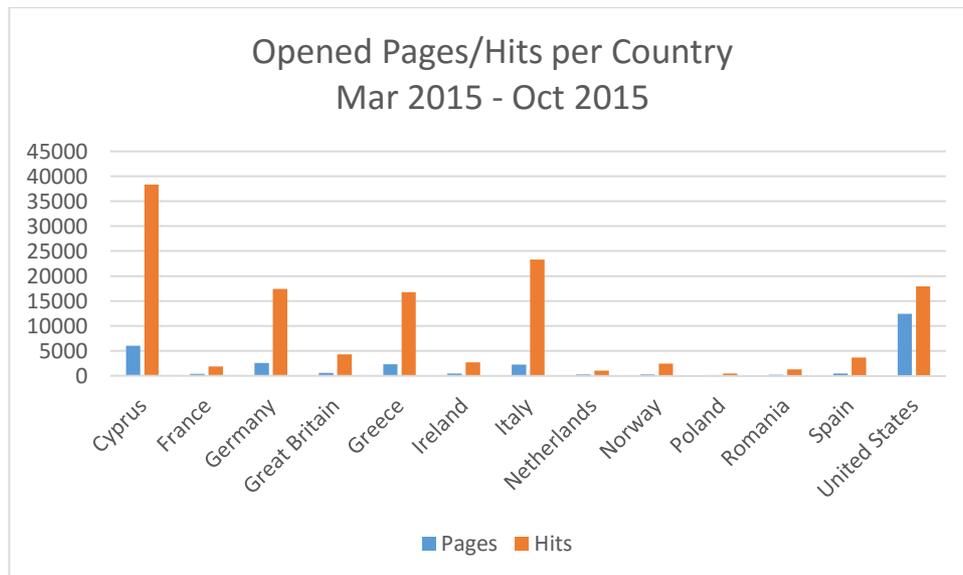


Figure 7 Opened Pages/Hits per Country

Table 2 and Figure 7 present statistics of website traffic including opened pages and number of hits within the considered period for each country. Specifically, we present the top thirteen countries from a total number of 50 countries. Beyond the AWStats tool and as a means of improving the usage of the ARCADIA

website, Google Analytics³ has been deployed since November 2015 which produced the following figures. Using Google Analytics, we are able to capture more detailed statistics about the website. Such statistics are sessions per keyword and how the website is accessed (through google search, using URL), etc.

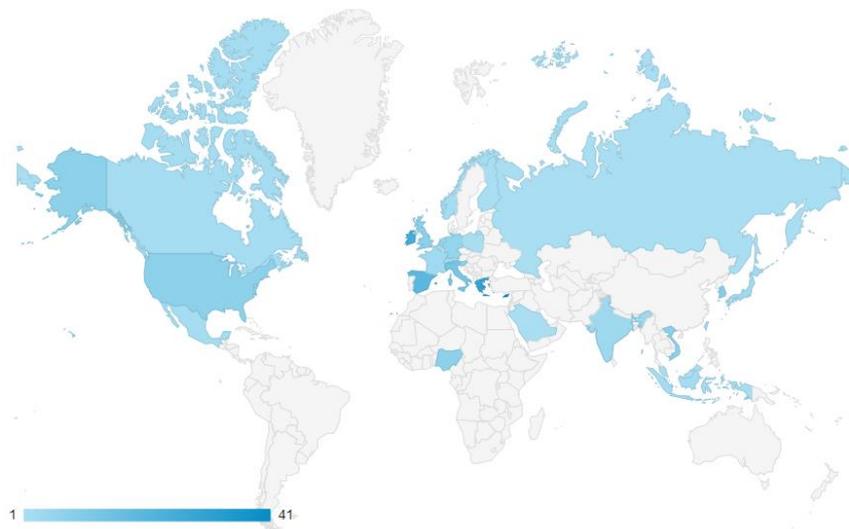


Figure 8 Number of sessions per country

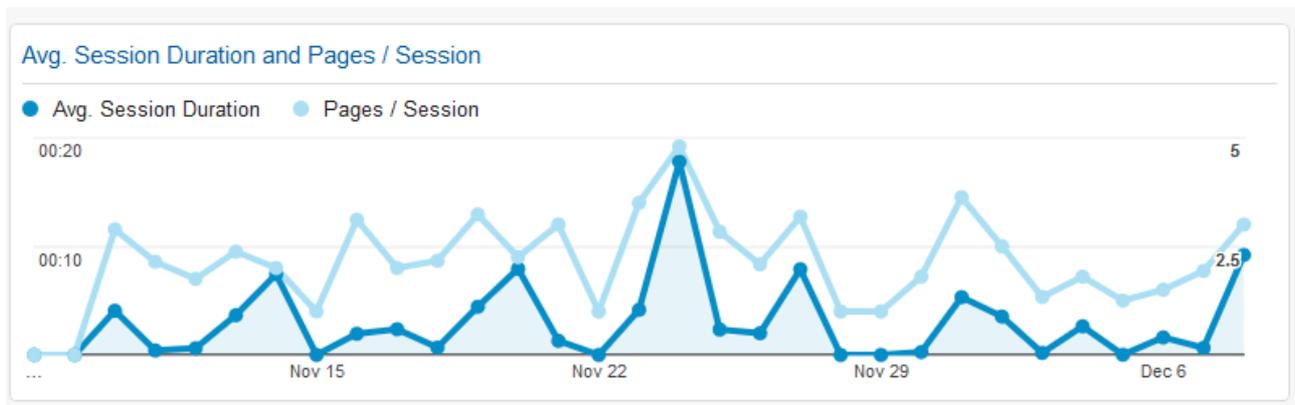


Figure 9 Average session duration and pages per session

Figure 8 presents information about the total opened sessions per country during the considered period. Additionally, Figure 9 presents the average session duration and number of pages opened within each session.

³ <https://www.google.com/analytics/>

Website analytics also allow acquisition of information regarding the number of downloads for each uploaded document. For example, the first newsletter has been downloaded 60 times while the public deliverables available on the site have been downloaded more than 200 times.

The following KPIs were defined with regards to the website

- Number of project updates: ≥ 20
- Average number of views per project update: ≥ 500
- Number of distinct visitors: ≥ 2000
- Number of downloads of online material: ≥ 5000

In December 2015, the following figures (Table 3) have been obtained. According to the presented statistics the ARCADIA Website serves its purpose and is capable of attracting readers and maintaining their interest. Considering the fact that the project is now at the phase of implementation, it is expected that by the end of the project we will be able to meet our set objectives, including the number of downloads of online material which seems to be low compared to its goal.

Communication Mean	KPI	Performance	KPI Targets
		M12	M36
ARCADIA Website	Number of project updates	6	≥ 20
	Average number of views per project update	110	≥ 500
	Number of distinct visitors	3369 (375 per month)	≥ 2000
	Number of downloads of online material	287	≥ 5000

Table 3 ARCADIA website KPIs

5 Social Media

To increase project visibility and create room for exchange of experiences and knowledge between professionals and stakeholders we have created a LinkedIn group (ARCADIA EU⁴) where the members of the consortium may exchange ideas and knowledge not only between them but also with the greater scientific and industrial community. Additionally, a Twitter account (eu_arcadia⁵) has also been created. Twitter is an excellent medium for conveying short messages to your followers. The twitter account is considered essential, especially during workshops and conference, where the activity of the consortium is advantageous to be populated instantly; the use of hashtags will also allow our vision to reach more people.

Social media can serve as a great medium through which we may channel our messages and report on the progress of the project. However, messages need to be structured in ways that the deployed social media engine may yield the optimum exposure and popularity. Due to this, recycling of messages from LinkedIn to Twitter and the opposite is not used. Our strategy suggests the use of Twitter for the communication of small messages, images, content on our official webpage or other interesting content. On the other hand, LinkedIn serves as a really good medium for sharing longer posts and initiating discussions. Our experience with social media has proven not only the message needs to be customized but also the way audience is engaged. For instance, the audience of Twitter is a lot more dynamic and active than the audience of LinkedIn. Posting on Twitter requires a greater degree of interaction with your followers and also far more frequent posts. This is to say that it usually takes some time (and great work) until the right audience is engaged through Twitter while it also requires some 'expertise' in using the correct hashtag words.

The primary Point of Contact (PoC) for the management of the ARCADIA Social media is Elisavet Charalambous (ADITESS). The main tasks of the PoC are to maintain the social media accounts of ARCADIA by providing updates on project events and responding to any posts/questions directed to ARCADIA. However, it is the responsibility of all consortium parties to invite people potentially interested in the objectives and targets of the project and suggest valuable sources of information.

5.1.1 LinkedIn

As of the end of December 2015, the ARCADIA EU LinkedIn group has got 48 members (Figure 10). We see the best potential in promoting milestone achievements in the lifetime of the project which will become available during the second year of ARCADIA. So far, the LinkedIn group has been used for announcing plenary and technical meetings as well as press releases/newsletters and updates on the architectural

⁴ <https://www.linkedin.com/groups/6949809>

⁵ https://twitter.com/eu_arcadia

framework. Followers are expected to increase in the next year of the project as more interesting results are expected to emerge during the implementation phase of the project.

During the second year of ARCADIA we shall devote more efforts in enhancing the engagement of users in the LinkedIn group and generating discussions and sharing of knowledge which was the intended purpose of its creation.

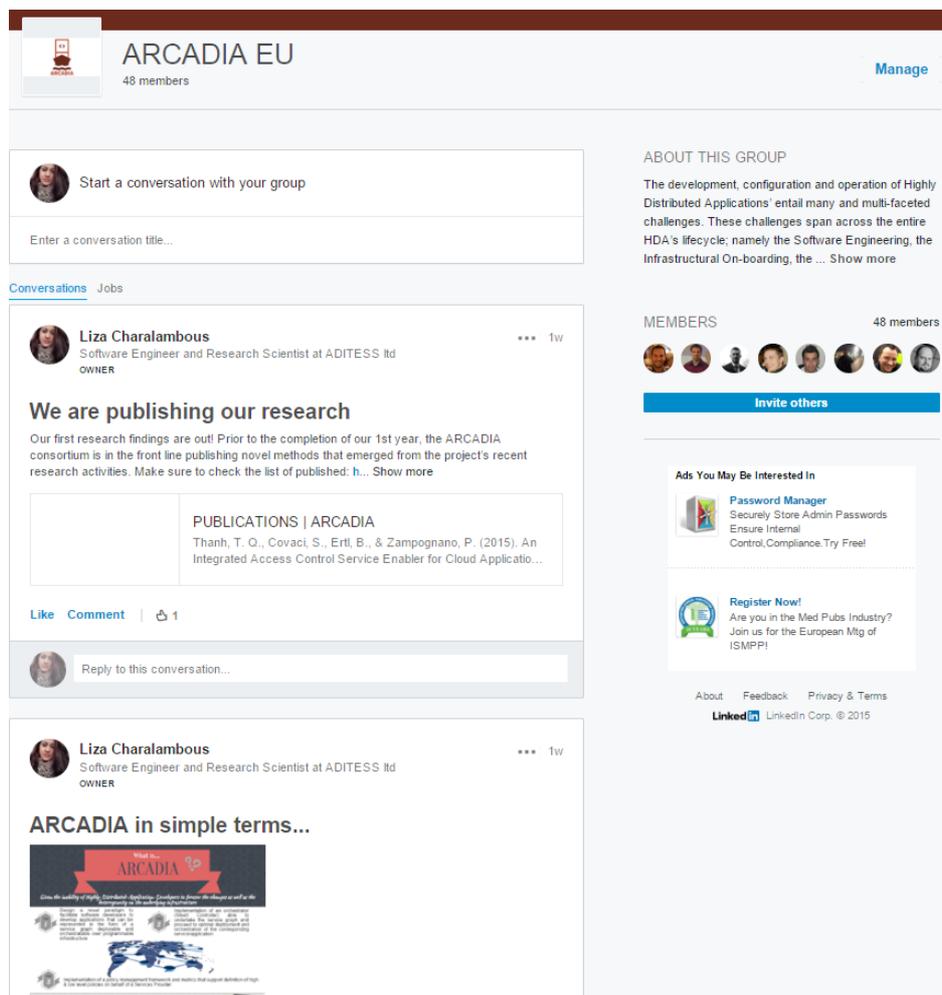


Figure 10 ARCADIA LinkedIn group page

5.1.2 Twitter

ARCADIA twitter (Figure 11) account has 33 followers as of late December 2015. Through the twitter account we aim to inform our followers with real-time information about the progress of ARCADIA project and activities. Also, through the twitter account ARCADIA is able to follow other related projects and initiatives. Currently, ARCADIA follows 54 related Twitter accounts, these constitute either related projects, journals, magazines, open source communities and highly innovative companies. For the rest of this section, statistics

and analytics will be prepared based on data obtained by Twitter Analytics⁶, the official Twitter site for the provision of statistics and audience concentrations. As a disclaimer, it is worth noting that the calculation of these statistics is not calculated in real time and therefore some figures may not be perfectly aligned.

Figure 11 shows the current status of the ARCADIA profile on twitter.



Figure 11: Current view of ARCADIA profile

Throughout the duration of this first year, updates on project meetings were posted on Twitter, however as this type of content is perceived as “boring” for twitter (90% of the followers at that stage were coming from consortium members) we opted by spotting pages dedicated to IoT matters, cloud computing and big data and share updates from the field almost every day. Even though this approach has indicated positive result we did not perceive this as enough. Therefore, during the late half of December 2015 the presence of ARCADIA on Twitter became more apparent as multiple, however selected, tweets were posted each day. This was perceived to be necessary as it was proven to be hard to retain new followers if no regular posts occur; Twitter is known to be a slow start social media channel where credibility of an account by third parties is measured, by some extent, through its audience. Despite the fact that our account is being followed by 33 other accounts, over the last 28 days, of which just 10 days met high traffic, our Tweets managed to reach more than 2600 people from which 480 visited our profile page (see Figure 12). Figure 13 shows the response of the general Twitter audience against the efforts to boost our fingerprint suggesting that on average we gain 320 impressions per day. The significance of this result is tremendous and it demonstrates that once a medium is used appropriately it produces results even if the subject of ARCADIA is not targeted to the casual Twitter user.

⁶ <http://analytics.twitter.com>

28 day summary with change over previous period



Figure 12: Twitter Statistics for the last 28 days

Your Tweets earned **2.6K impressions** over this 10 day period

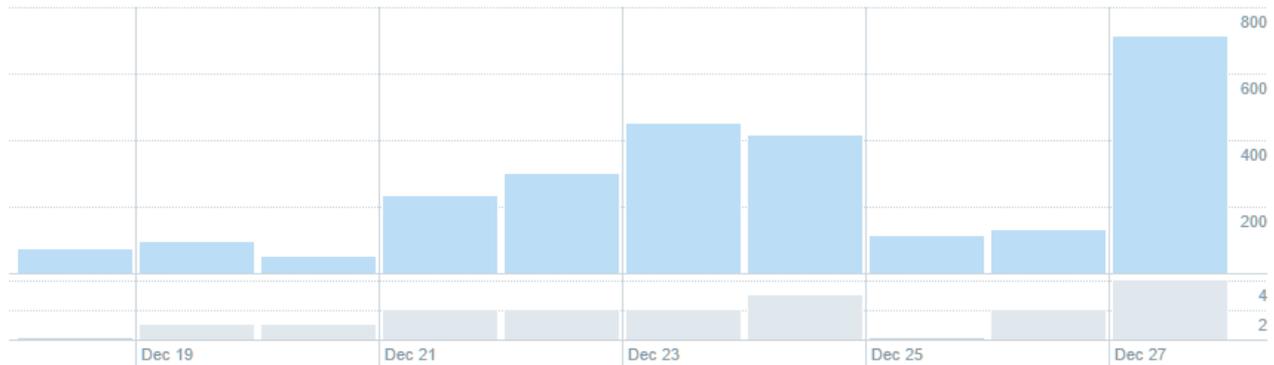


Figure 13: Twitter Impressions over a period of 10 days



Figure 14: Twitter Likes & Tweets over a 10-day range

Analysis of the most recent data, also illustrated in Figure 14 -Figure 16, shows that the ARCADIA account successfully engages its followers who show their actual interest by retweeting and liking our posts. In an effort to study further the traffic of the account and gain an insight on occurred patterns that will lead to increasing further our number, Figure 15 shows the relation of number of impressions against the number of engagements, retweets and likes for each of our posts in the past 10 days. The column plots (i.e. engagements, retweets and likes) are represented by the concentrations on the y-axis on the left while the impressions are represented by the numeric figures on the right y-axis. On the x-axis are the posted tweets sorted by time; the accordance between the numbers on the x-axis and the actual tweets is presented Table 4. The presented data suggests that the rate of engagements is not directly proportional to the number of impressions, in other words, a tweet with many impressions will not necessarily engage many people, further

strengthening the idea that Twitter users have very specific interests one may not guarantee a post's success. However, many impressions indicate that many people have been reached, increasing the likelihood of gaining more followers. Figure 16 goes a step further and explains the engagements of each tweet in retweets and likes. Engagements are measured as any type of interaction one may have with a post including link clicks, picture clicks, profile clicks etc., therefore the number of retweets and likes do not add up to the number of engagements. The positive outcome is that tweets containing pictorial information regarding the project return the highest engagement rates and profile views. Finally, Figure 17, shows the number of followers for the period of October- December.

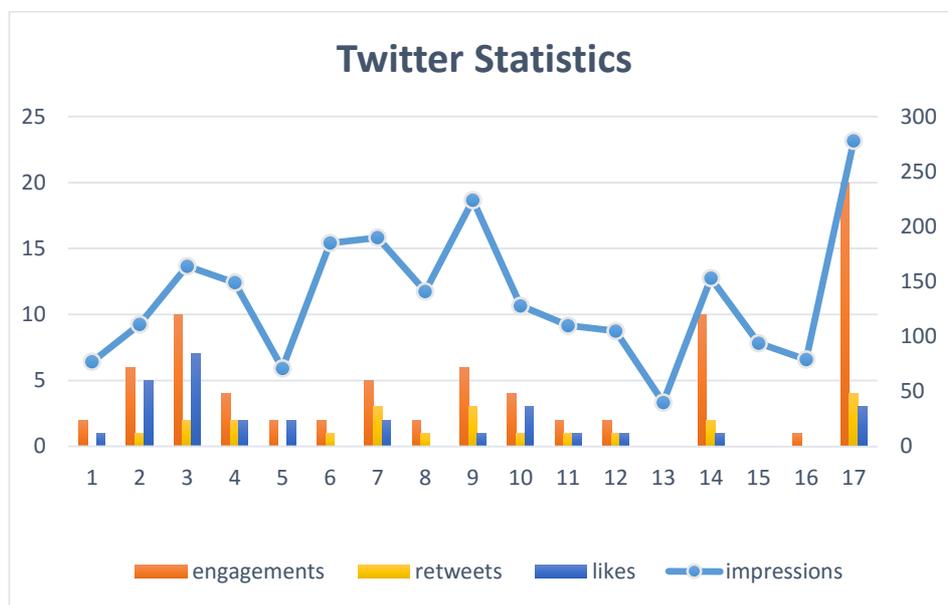


Figure 15: Impressions versus number of engagements, retweets and likes over occurring tweets

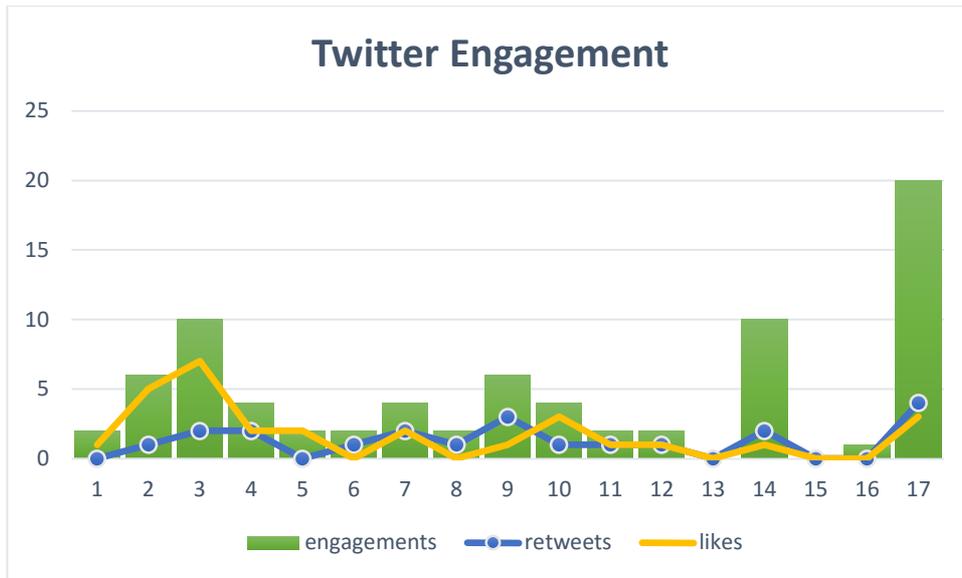


Figure 16: Engagements explained in retweets and likes for posted tweets

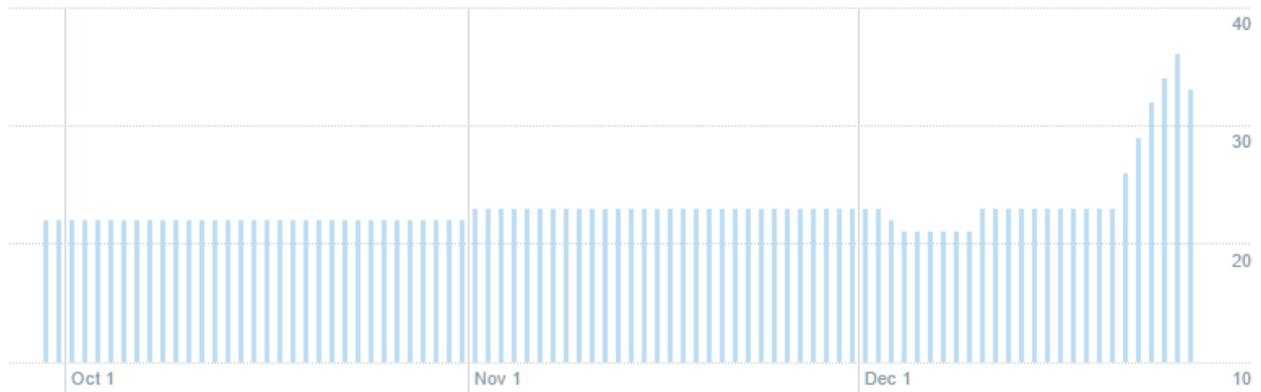


Figure 17: Graph of number of followers

	TWEET TEXT	IMPRESSIONS	TIME
1	Get ready for the 'Internet of Energy' https://t.co/iwx8m6a0BM #BigData #EnergyEfficiency #cloud #analytics	77	2015-12-27
2	Why DevOps Drives Cloud Success https://t.co/sfFNeRcEtn via @talkin_cloud #devops #cloud #IoT #growth TWEET PERMALINK: https://twitter.com/eu_arcadia/status/681089916348968961	111	2015-12-27
3	Cloud Computing Expo https://t.co/UjufZ0mI5C #Cloud #Internet of #Things #IoT #BigData #Analytics #NewYork TWEET PERMALINK: https://twitter.com/eu_arcadia/status/681089916348968961	164	2015-12-27
4	DevOps: Disruptive but Essential in a Cloud Computing Universe https://t.co/5aRQsamPCo #devops #summit #NewYork	149	2015-12-27

	TWEET PERMALINK: https://twitter.com/eu_arcadia/status/681086592061063170		
5	Top Microsoft Azure cloud updates of 2015 https://t.co/uolhotu54u #CloudComputing. #services #azure TWEET PERMALINK: https://twitter.com/eu_arcadia/status/680642919452168193	71	2015-12-26
6	Managing DevOps in the hybrid cloud https://t.co/ZwG70iVxGt via @theregister #devops #cloud #computing TWEET PERMALINK: https://twitter.com/eu_arcadia/status/680096619316908032	185	2015-12-24
7	Beyond REST https://t.co/Rm2PxZK7I1 via @DZone #REST #HDA #Hadoop TWEET PERMALINK: https://twitter.com/eu_arcadia/status/680090322244878336	190	2015-12-24
8	A Big Data Bang, or a Fizzle? https://t.co/QP4nwBYn00 via @ITBusinessEdge #bigdata #hadoop #HDA #machinelearning TWEET PERMALINK: https://twitter.com/eu_arcadia/status/680089199622541314	141	2015-12-24
9	Big Data Performance Tuning https://t.co/sEZbYJ126d #HDA #BigData #performance TWEET PERMALINK: https://twitter.com/eu_arcadia/status/679665729839366144	224	2015-12-23
10	Google #cloud features grow up in 2015, but work remains https://t.co/XscREAyAmL via @ttinthecloud #bigdata #HDA TWEET PERMALINK: https://twitter.com/eu_arcadia/status/679588608496386048	128	2015-12-23
11	#DevOps in five: The new requirements for agile app delivery https://t.co/MjCQGAh8Wb via @itproportal TWEET PERMALINK: https://twitter.com/eu_arcadia/status/679334473050157060	110	2015-12-22
12	ARCADIA enables #app #devs to take advantage of the programmability of the underlying infrastructure aiding at increase productivity #H2020 TWEET PERMALINK: https://twitter.com/eu_arcadia/status/679329845180928000	105	2015-12-22
13	@eu_arcadia @aditesscy @SINTEF @insight_centre @cnit @Gruppo_Maggioli @TUBerlin @wings_ict TWEET PERMALINK: https://twitter.com/eu_arcadia/status/678960715454005248	40	2015-12-21
14	The #ARCADIA Consortium wishes you #Happy #Holidays #Christmas #blessedholiday https://t.co/sgs9wqZrfY TWEET PERMALINK: https://twitter.com/eu_arcadia/status/678845167185477633	153	2015-12-21
15	ARCADIA is an #innovative #framework addressing the challenges of #future #computing #H2020 (https://t.co/yDPu9BtII0) TWEET PERMALINK: https://twitter.com/eu_arcadia/status/678647150264193024	94	2015-12-20

16	We have updated our list of publications. visit our website for more information https://t.co/GXUSaXg5UR TWEET PERMALINK: https://twitter.com/eu_arcadia/status/678244407586381824	79	2015-12-19
17	What is #ARCADIA ? #HDA #programmable #infrastructure #H2020 https://t.co/f1xcU1ZFu1 TWEET PERMALINK: https://twitter.com/eu_arcadia/status/677851806316158976	278	2015-12-18

Table 4: Tweets posted in last 10-day range

5.1.3 Progress Against KPIs

Table 5 shows the project’s progress against the KPIs suggested in D6.1. At this stage and having evaluated the mechanics of LinkedIn and Twitter, we believe that the targets of “Average number of likes per share” and “Average number of comments per share” do not fit realistic figures of neither LinkedIn nor Twitter. We will therefore focus in meeting the rest KPIs and focus on increasing the project’s visibility mainly to ARCADIA end-users and secondly to the wider community raising awareness on the innovation of the technology.

Communication Mean	KPI	Performance M12 (<i>project lifetime target</i>)
Sharing project news on social channels (e.g. LinkedIn, Twitter, etc.)	Number of shares	44 (≥ 40)
	Average number of likes per share	1-2 (≥ 50)
	Average number of comments per share	0 (≥ 5)
LinkedIn ARCADIA group	Number of group members	48 (≥ 300)
Twitter ARCADIA followers	Number of followers	33 (≥ 200)

Table 5: KPIs suggested in D6.1

6 Project presentation

The ARCADIA presentation is a document with the aim to be used by the project partners in order to provide an overview of the project scope, objectives and expected results in various events (e.g., workshops, conferences, etc.).

A first version of the ARCADIA Presentation was developed by ADITESS in March 2015, including 8 slides that they were mainly focused in providing an overview of the project. The sections included in the presentation were:

- What is ARCADIA
- Partners
- Objectives
- Concept Diagram
- System Architecture
- Use cases
- Contact details

The plan is to create new versions of the presentation based on the planned research activities as well as on new materials available. Therefore, in compliance with the D6.1 Communication Roadmap it was expected to have two versions, which will be released at the start of the project (March 2015) and after the end of the development phase (December 2016).

In this point, ADITESS will create a new version of the ARCADIA presentation on M12-M13 with more information about the project and an audience friendly version. Screen shots of the first version of the ARCADIA presentation can be found in Annex II- ARCADIA Presentation.

7 Project Poster

The poster to be released in after the end of the development phase shall include information regarding the framework's architecture and technical implementation. The poster shall provide information about:

- What is ARCADIA: brief introduction to the ARCADIA project and proposed solutions
- Overview: including expected results of the project
- Partners and project details: including duration, Grant Agreement number, Call, budget, and contact details.
- Benefits: segments of society and foreseen benefits
- Conceptual diagram of the ARCADIA solution

Additionally, after the submission of D2.4 and the definition of the ARCADIA use cases, a poster promoting in a pictorial way the objective of each use case is prepared (see Figure 19); this was disseminated through our social media accounts, while it was also posted under the Blog page on our official website.

Additionally, Aditess has prepared a banner (1m X 2m) (Figure 18), which is self-standing and could serve as a very efficient and portable solution in the various events without the need of any other equipment.



Figure 18 Snapshot of ARCADIA banner

What is....

ARCADIA ??

Given the inability of Highly-Distributed-Application-Developers to foresee the changes as well as the heterogeneity on the underlying infrastructure

Stage 1

Design a novel paradigm to facilitate software developers to develop applications that can be represented in the form of a service graph deployable and orchestratable over programmable infrastructure

Stage 2

Implementation of an orchestrator (Smart Controller) able to undertake the service graph and proceed to optimal deployment and orchestration of the corresponding service/application



Stage 3

Implementation of a policy management framework and metrics that support definition of high & low level policies on behalf of a Services Provider

Energy Efficiency vs Quality of Service

Entail optimal balance between performance and power consumption. That means an application should only be assigned the optimal amount of computing/processing resources to fulfill its quality requirements.

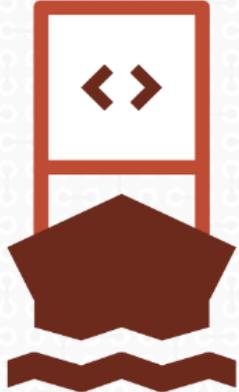
High Performance Survivable Communications in Distributed IoT Deployments

Apply ARCADIA capabilities into an existing heterogeneous communications infrastructure for public protection and disaster relief to support survivable and application-aware usage of infrastructure and network resources

Security and Privacy Support in the FI-WARE Platform

Introduce and validate a security and privacy by design approach that helps software developers implement secure and scalable applications by leveraging emerging software technologies such as Network Functions Virtualization







This project has received funding from the European Union's HORIZON 2020 Programme, (Call H2020-ICT-2014-1), Grant no.645372

Figure 19: Promotional Infographic Poster for use on social media and presentations

8 Project Brochure

To support partners with successful dissemination of ARCADIA ideas and results, the ARCADIA brochure was designed. In Figure 20 and Figure 21 the design of the brochure is presented. The brochure has been designed as a three column brochure in A4 size format.

The ARCADIA brochure was prepared and released by June 2015. The brochure is available in both as a soft copy on the ARCADIA website and as hard copies to be disseminated by the partners in any dissemination event. This brochure provides information about:

- What is ARCADIA project: Aims and Vision
- ARCADIA Architecture
- ARCADIA Objectives
- ARCADIA Use cases
- Contact and project details



The image shows a three-column brochure for the ARCADIA project. The left column contains three text boxes with quotes about technological developments, design approaches, and implementation challenges. The middle column, titled 'The Consortium', lists partner logos: NUI Galway OE Gaillimh (Project Coordinator), UBITECH, cmút, 7U berlin, aditess, WINGS ICT Solutions, SINTEF, Gruppo Maggioli, and Univerza v Ljubljani. The right column features the headline 'A Novel Reconfigurable by design Highly Distributed Applications Development Paradigm over Programmable Infrastructure', the ARCADIA logo, and the website www.arcadia-framework.eu. The bottom section, on a dark red background, provides contact information for Prof. Dr. Adegboyega Ojo and Dr. Panagiotis Gouvas, project details (start date, duration, budget), QR codes, social media icons, and the European Union logo with funding information.

Figure 20 Snapshot of ARCADIA leaflet - side A

ARCADIA aims to provide a novel reconfigurable by design highly distributed applications' development paradigm over programmable infrastructure. The objective is to facilitate application developers to develop software that is able to benefit of the underlying infrastructure, while in parallel support the deployment and dynamic configuration of applications in an optimal and autonomic manner.

"Future Internet" software will be the critical infrastructure on which all other critical infrastructures will depend...

...the technological developments that are realized are changing the dynamics of the software industry and posing new requirements and opportunities for improving Europe's competitive position in software.

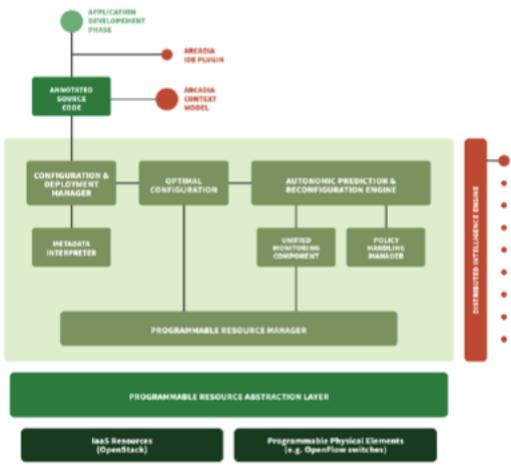
OUR VISION
 ARCADIA project aims to design and validate a paradigm so as to:

- enable the deployment of eco-systems offering a plethora of innovation opportunities for software industry as well as SMEs
- Introduce the use of advanced applications and end-to-end services

While still:

- Maintaining network reliability & security
- Improving network utilization & operational efficiency

ARCHITECTURE
 The proposed framework is going to rely on the design and development of a novel reactive software development paradigm for concurrent and highly distributed applications as well as the design and development of a holistic applications' deployment and management framework over programmable infrastructure.



The diagram illustrates the ARCADIA architecture. At the top, 'APPLICATION DEVELOPMENT PHASE' leads to 'ANNOTATED SOURCE CODE', which is processed by 'ARCADIA USE PLUGINS' and 'ARCADIA CONTEXT MODEL'. This feeds into a central 'PROGRAMMABLE RESOURCE MANAGER' block. This block is supported by 'CONFIGURATION & DEPLOYMENT MANAGER', 'OPTIMAL CONFIGURATION', and 'AUTONOMIC PREDICTION & RECONFIGURATION ENGINE'. Below these are 'METADATA INTERPRETER', 'UNIFIED PROVISIONING COMPONENT', and 'POLICY HANDLING HANDLER'. The entire system sits on a 'PROGRAMMABLE RESOURCE ABSTRACTION LAYER', which is connected to 'IaaS Resources (OpenStack)' and 'Programmable Physical Elements (e.g. OpenFlow switches)'. A vertical bar on the right is labeled 'DISTRIBUTED INTELLIGENCE ENGINE'.

OBJECTIVES

- Leverage the re-configurability aspects of highly distributed applications and facilitate the design over programmable infrastructure based on the conceptualization and instantiation of a Reference Framework
- Prove the applicability, usability, effectiveness and value of the ARCADIA concepts, models and mechanisms in industrial, real-life networking and computational infrastructures, services and applications, demonstrating and stress-testing the developed ARCADIA artifacts under pragmatic conditions against a predefined set of use cases.
- Ensure wide communication and scientific dissemination of the innovative ARCADIA results to the research, academic, and international community as well as efficient exploitation and business planning of the ARCADIA concepts and tools to the market in order to identify end-users and potential customers.

USE CASES
 Validation of the designed and developed solutions will be realized through the following cases:

- Energy Efficiency vs Quality of Service (QoS) trade-off Use Case.
- High Performance Survivable Communications in Distributed Internet of Things (IoT) Deployments Use Case
- Security and Privacy Support in the FI-WARE Platform Use Case

www in

Figure 21 Snapshot of ARCADIA leaflet - side B

1. Initially, 1000 copies of the brochure have been printed and distributed to each partner according to their needs. It was intentionally determined to first print a relatively small number of brochures as there is the intention to prepare another version containing more up-to-date information and go beyond the basic and general information which was available to us in M6 as a means of engaging the targeted groups.

9 Online Publications

Another target of ARCADIA is to raise awareness regarding its objectives through posts in blogs, electronic newspapers and magazines. A blog page is maintained on the ARCADIA website, which currently hosts two posts while a third one is in post-production and is expected to go online very soon. Additionally, the ARCADIA consortium has already published the M6 press release to their local and national media while another two pictorial posts on behalf of ARCADIA were prepared and disseminated (also through Twitter) on behalf of the consortium. It is expected that year 2 of the project will allow the production of more content and higher popularity. Another channel we intent to use is the communication mechanisms and portals created by the European Commission which may allow direct exposure to targeted groups.

Table 6, shows the KPIs related to online publishing activities. The first goal is expected to be surpassed by the end of the project due to the amount of material that will become very soon available. With regards to the second goal we have identified that we may not have statistics on the number of views on a third party website/portal and therefore we have calculated the average based on the numbers we have obtained from linking to the posts through Twitter.

Communication Mean	KPI	Performance M12 <i>(project lifetime target)</i>
Online publishing (online magazines, newspapers, blogs)	Number of online publications	5 (≥ 20)
	Average number of views per publication	209 (≥ 500)

Table 6: KPIs for online publishing

10 Press releases

Local press is another communication channel used in the project. All partners putted additional effort to release the project concept, scope, objectives and expected outcomes in local press in Cyprus, Germany, Greece, Ireland, Italy, Norway and Slovenia. WINGS is the responsible partner for the development of press releases in English. In accordance to the Communication roadmap, the first press release was prepared in collaboration with ADITESS and UBITECH in M6 and the second press release in M12. All partners had interpreted the press releases in their local language and disseminated through their channels to the Local media.

11 Newsletter

Periodic newsletters are produced every six months, providing news, articles, and in-depth information about the project progress and outcomes, and any other relevant information that applies at the time of the publication. The newsletters will present the several activities undertaken by ARCADIA, describing the project developments, the deliverables' findings and the results that will be reached step-by-step, and they will provide suggestions coming from the project's meetings and the partners' collaboration.

The newsletter format is an A4 sized, in order to be printable in a single leaf, and to be easily folded. The length of the newsletter may exceed the 4-pages limit, depending on the number of news and articles to be published.

The newsletter's issues contain at least the following elements:

- The ARCADIA logo and logos of all the project's partners.
- The project details, i.e., start/end date and project duration, the specific HORIZON call and the Grant Agreement reference, the budget and EU funding.
- The web address of the ARCADIA website
- The contact details of the ARCADIA project.
- The standard disclaimer for the HORIZON Programme.

The first newsletter was prepared in M6 and the second newsletter in M12. The newsletter was released electronically, through the ARCADIA website and social media accounts to a wide audience of all target groups and also via all partners' existing websites. Until the reporting period, there was no need for printing of the newsletters (for potential distribution in occasion of major events e.g., conferences, workshops, etc.). The next newsletter will be prepared on M18, M24, M30 and M36. For analysis purposes, the first newsletter was downloaded 60 times. Screen shots of the first newsletter of the ARCADIA project can be found in Annex III- ARCADIA newsletter.

12 Remarks & Outcomes

The communication activity shall be reinforced during the second year of the project and all the members of the consortium should be involved. Indicative targets for the next periods are presented in **Error! Reference source not found.** As it was mentioned in a previous section, the KPIs for the average number of likes per post and average number of comments per post do not fall within realistic margins compared to the rest KPIs and therefore we consider focusing on reaching the remaining KPIs.

Communication Mean	KPI	Performance M12	KPI's Targets M24 (2nd year)	KPI's Targets M36 (3rd year)
ARCADIA Website	Number of project updates	6	≥ 12	≥ 20
	Average number of views per project update	110	≥ 300	≥ 500
	Number of distinct visitors	3369 (375 per month)	≥ 1500	≥ 2000
	Number of downloads of online material	287	≥ 2500	≥ 5000
Sharing project news on social channels (e.g. LinkedIn, Twitter, etc.)	Number of shares	44 (retweets)	≥ 30	≥ 40
	Average number of likes per post	1-2 (per post)	≥ 25	≥ 50
	Average number of comments per share	0	≥ 2	≥ 5
LinkedIn ARCADIA group	Number of group members	48	≥ 150	≥ 300
Twitter ARCADIA followers	Number of followers	33	≥ 100	≥ 200
Online publishing (online magazines,	Number of online publications	5	≥ 13	≥ 20
	Average number of views per publication	209	≥ 400	≥ 500

newspapers, blogs)				
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Table 7 ARCADIA KPIs targets as presented in D6.1

Our so far experience with the communication mechanisms within the framework of ARCADIA indicated that the KPIs introduced in D6.1 require some modification regarding the way we measure success on social media. The following table, **Table 7**, shows the quantitative *metrics* with which we will measure our performance in subsequent versions of D6.5. As one may observe the main deviation from the original plan is that LinkedIn and Twitter are considered separately and acts on each are accounted due to their significance and this is perceived by the respective social media channel.

Communication Mean	KPI	KPI's Targets M36 (3rd year)
ARCADIA Website	Number of project updates	≥ 20
	Average number of views per project update	≥ 500
	Number of distinct visitors	≥ 2000
	Number of downloads of online material	≥ 5000
LinkedIn ARCADIA group	Number of group members	≥ 300
	Number of likes	≥50
Twitter ARCADIA followers	Number of followers	≥ 200
	Average number of retweets	≥70
	Average engagements per tweet	≥8
	Average number of likes	≥5
	Monthly Impressions	≥3000
Online publishing (online magazines, newspapers, blogs)	Number of online publications	≥ 20
	Average number of views per publication (for posts that we have the ability to retrieve statistics)	≥ 500

Table 7: ARCADIA KPIs targets

13 Conclusions

The communication activity of ARCADIA during the first year of the project implementation was quite satisfactory (3369 website visitors, 81 followers in social media) taking into account that the project has started in the beginning of 2015, having a three-year duration, and therefore no concrete results and deliverables were available for supporting focused communication.

The performance of KPI's showed that the social media and the communication via these channels have to be further extended using more targeted and customized communication actions in order to reach the audience as well as the targets.

Way ahead actions:

1. Continuous update of project web site (Blog and related news)
2. Dissemination of project Brochure in different events
3. Present the project in different events n
4. Disseminate the project press releases in the target groups
5. Prepare and disseminate the ARCADIA Newsletters to the partners
6. Take part on Conferences/events
7. Social media (continuous update of social media, link & share with related news @all partners)

Deliverable by month 24:

- D6.6 - Communication Activities Report (ADITESS, Report, Month M24 PU), Report documenting the communication activities of the project partners

Annex I: ARCADIA Website

The development of the website has been realised with the use of a WordPress⁷ template. WordPress is free and open source content management system (CMS) platform based on PHP, MySQL, JavaScript and CSS3. Web development on WordPress is possible with the deployment of specially designed templates which some are freely available. The platform also allows the deployment of plug-ins allowing the addition of functionality and extra features as needed. A number of available plugins have been deployed for this website and offer the following features:

- Google Maps
- Photo Gallery
- Accessibility Tool
- Multilingual Support
- Web Analytics Service

Google Maps: This plugin allows the developer to represent key addresses in a map. This feature provides a better insight on the location of interest; also increases interactivity between the user and the presented material.

Photo Gallery: The incorporation of images in posts is critical and this plugin adds the dynamic aspect of animated transitioning between images.

Accessibility: This plugin adds a menu on the page and provides an enhanced experience for people who confront issues with the contrast and colour of images as well as the size of text.

Multilingual Support: A plugin for the automatic translation of posts and the provision of content in multiple languages. The main aspects of the project posted in the website will be in the all local partner languages and more specifically in English, Norwegian, German, Italian, Slovenian and Greek. Our effort by using a multilingual inference is to increase the visibility of the project and we believe that this multilingual environment targets to the right direction. The project partners will review the local content and correct accordingly as automatic translation is still not so efficient.

Web Analytics Service for the provision of visitation information. This plugin allows the administrator to track visitors from all referrers, including search engines and social networks, direct visits and referring sites. There is a dedicated page² for the distribution of the ARCADIA newsletters where users can register to receive the

⁷ WordPress: available on-line at <https://wordpress.org/>

periodical newsletter regarding project updates and more. The registration process is very simple and it is completed once the visitor inserts an e-mail address in the form that is located inside this dedicated page. This page also allows the visitor to access a complete archive of all newsletters produced by the project in a downloadable form (PDF).

The ARCADIA website also deploys mechanisms for easily sharing content via email and the social media; easily accomplished with a click of a button located under the main section of each post and page. The presence of the project on key social media websites is considered critical as it allows the engagement of large audiences who consistently check in their social media profiles. Links to the project's social accounts exists on the header of the website and are visible throughout navigation.

The website is split into the following pages:

- Home
- In a Nutshell
 - What is ARCADIA
 - Concept
 - Our Vision
 - Architecture
 - Objectives
 - Use cases
 - Energy Efficiency – QoS
 - High performance survivable communications
 - Security and privacy support
- The Consortium
- Documentation
 - Publications
 - Deliverables
 - Newsletters
- Related projects and initiatives
- Blog
- News
- Contact

The home page of the website is presented in Figure 22.



Figure 22 ARCADIA Home Page

Documentation, Blog and News pages will be updated during project life.

1. Website content – Documentation



Figure 23 Documentation menu structure

As we present at the website structure, under the documentation section (see Figure 23) all the published document will be available. This material includes publications, deliverables and newsletters.

During the first year of the project there no any available publications. This page will be updated when a research outcome of the project will be published.

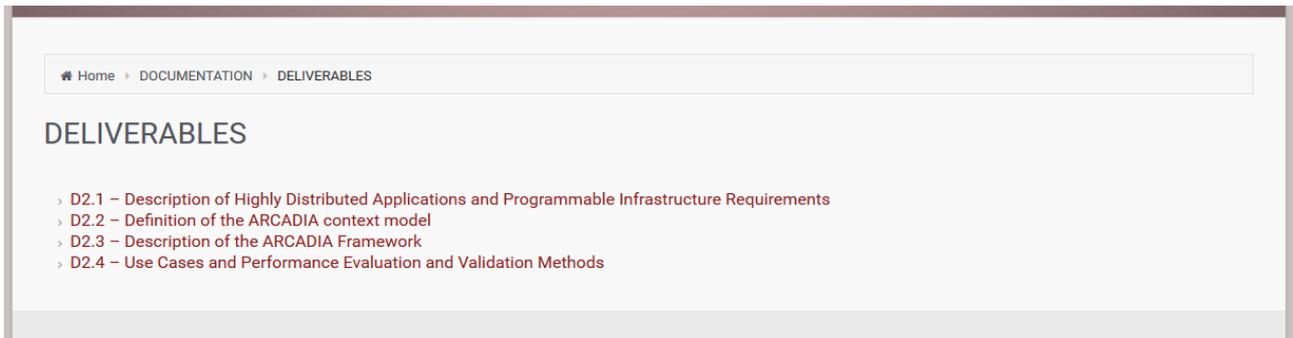


Figure 24 Deliverables page

The second page of this section will be updated with the public deliverables (see Figure 24). A list with the deliverable number and title is provided. Currently, on the website the following deliverables could be found:

- D2.1 – Description of Highly Distributed Applications and Programmable Infrastructure Requirements
- D2.2 – Definition of the ARCADIA context model
- D2.3 – Description of the ARCADIA Framework
- D2.4 – Use Cases and Performance Evaluation and Validation Methods

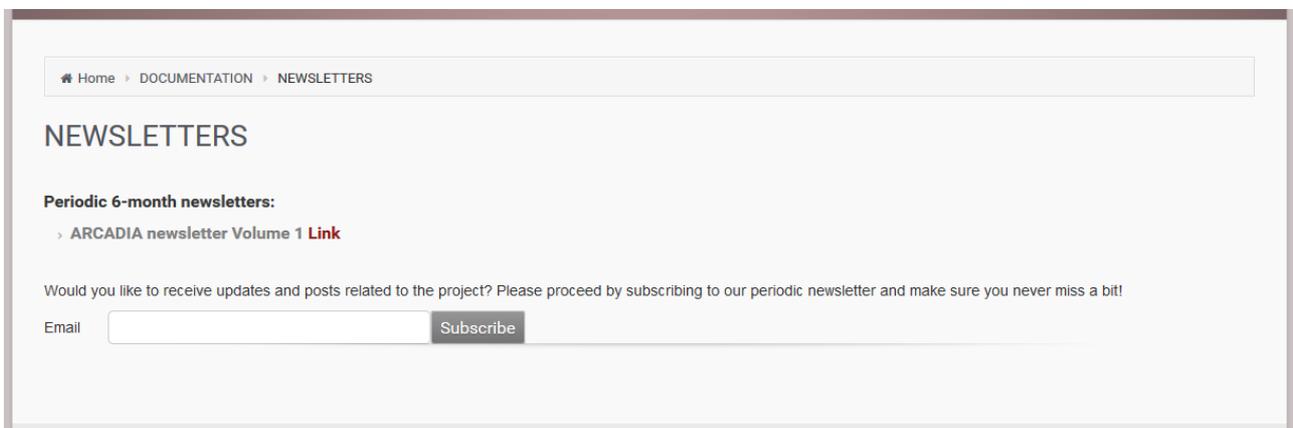


Figure 25 Newsletters page

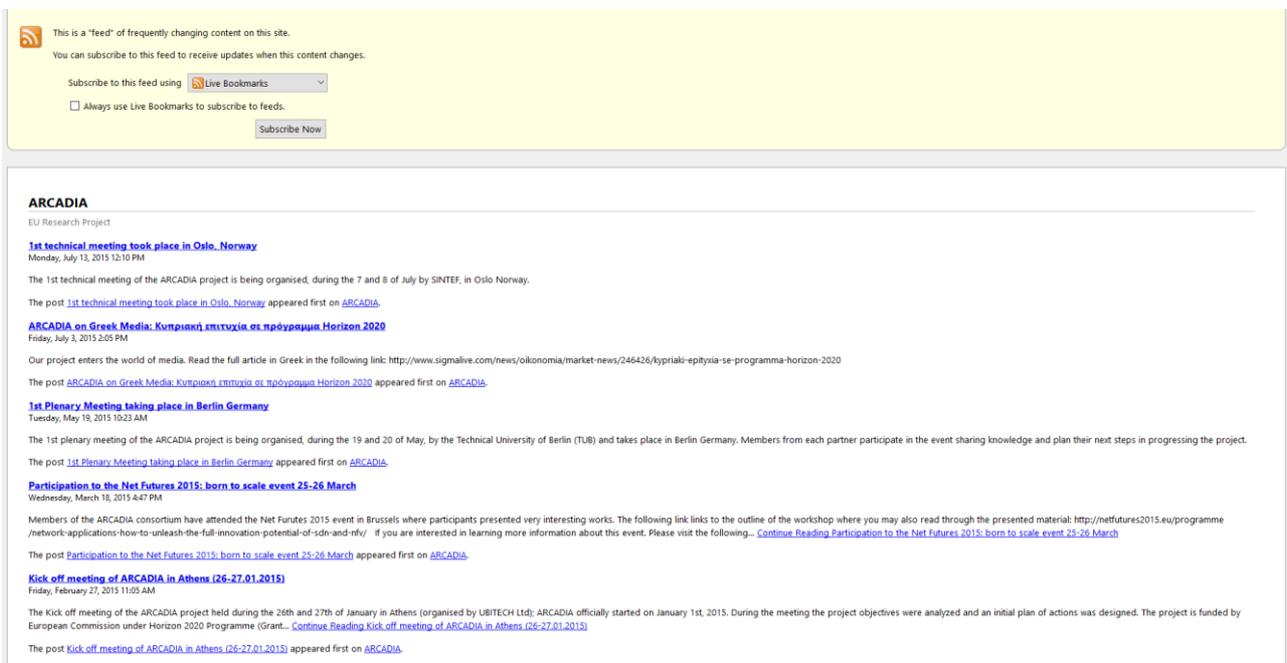
Finally, under the Newsletters page (see Figure 25) all the available newsletters will be found. Newsletters will be issued every six months during the project period. The first issue is available and can be downloaded from the website. Also, in order to increase the list with interested users receiving the newsletter by email a subscription option is provided. Beyond the newsletter, subscribers will be updated with other material and updates about the project.

2. Website content – News

Latest news is visible in the home page of the website, Figure 4. The complete list of news can be found under the menu tab “News”. Scrolling on the news page, visitors can be informed with the recent activity of ARCADIA project. For each post, the title, feature image and part of the content is presented. More detailed information about each post is available under the specific page accessible from the post’s title.

a. RSS system

Beyond the social media, an RSS system was installed to the website aiming to help to the dissemination of the content of website. Through this, subscribers can be informed about the website activity. An example of the RSS page and the capability to subscribe is presented in Figure 26.



The image shows a screenshot of an RSS feed for the ARCADIA project. At the top, there is a yellow box with an RSS icon and the text: "This is a 'feed' of frequently changing content on this site. You can subscribe to this feed to receive updates when this content changes." Below this, there is a subscription form with a dropdown menu set to "Live Bookmarks", a checkbox for "Always use Live Bookmarks to subscribe to feeds.", and a "Subscribe Now" button.

The main content of the RSS feed is titled "ARCADIA" and is identified as an "EU Research Project". It lists several news items:

- 1st technical meeting took place in Oslo, Norway**
Monday, July 13, 2015 12:10 PM
The 1st technical meeting of the ARCADIA project is being organised, during the 7 and 8 of July by SINTEF, in Oslo Norway.
The post [1st technical meeting took place in Oslo, Norway](#) appeared first on [ARCADIA](#).
- ARCADIA on Greek Media: Κυπριακή επιτυχία σε πρόγραμμα Horizon 2020**
Friday, July 3, 2015 2:05 PM
Our project enters the world of media. Read the full article in Greek in the following link: <http://www.sigmalive.com/news/oikonomia/market-news/246426/kypraki-epityxia-se-programma-horizon-2020>
The post [ARCADIA on Greek Media: Κυπριακή επιτυχία σε πρόγραμμα Horizon 2020](#) appeared first on [ARCADIA](#).
- 1st Plenary Meeting taking place in Berlin Germany**
Tuesday, May 19, 2015 10:23 AM
The 1st plenary meeting of the ARCADIA project is being organised, during the 19 and 20 of May, by the Technical University of Berlin (TUB) and takes place in Berlin Germany. Members from each partner participate in the event sharing knowledge and plan their next steps in progressing the project.
The post [1st Plenary Meeting taking place in Berlin Germany](#) appeared first on [ARCADIA](#).
- Participation to the Net Futures 2015: born to scale event 25-26 March**
Wednesday, March 18, 2015 4:47 PM
Members of the ARCADIA consortium have attended the Net Futures 2015 event in Brussels where participants presented very interesting works. The following link links to the outline of the workshop where you may also read through the presented material: <http://netfutures2015.eu/programme/network-applications-how-to-unleash-the-full-innovation-potential-of-sdn-and-nfv/> If you are interested in learning more information about this event. Please visit the following... [Continue Reading Participation to the Net Futures 2015: born to scale event 25-26 March](#)
The post [Participation to the Net Futures 2015: born to scale event 25-26 March](#) appeared first on [ARCADIA](#).
- Kick off meeting of ARCADIA in Athens (26-27.01.2015)**
Friday, February 27, 2015 11:05 AM
The Kick off meeting of the ARCADIA project held during the 26th and 27th of January in Athens (organised by UBITECH Ltd): ARCADIA officially started on January 1st, 2015. During the meeting the project objectives were analyzed and an initial plan of actions was designed. The project is funded by European Commission under Horizon 2020 Programme (Grant... [Continue Reading Kick off meeting of ARCADIA in Athens \(26-27.01.2015\)](#)
The post [Kick off meeting of ARCADIA in Athens \(26-27.01.2015\)](#) appeared first on [ARCADIA](#).

Figure 26 RSS Feed

Annex II: ARCADIA presentation



The slide features a dark brown background. In the top left corner is the European Union flag. In the top right corner is the ARCADIA logo, which consists of a red square with white code symbols (<>) above a red shield with a white crown on top. The shield is above a red wavy line. The main content is a white rectangular box containing the ARCADIA logo and the text: "ARCADIA A novel reconfigurable by design highly distributed applications development paradigm over programmable infrastructure". Below this box, the text "PROJECT OVERVIEW" is written in large, light-colored, sans-serif capital letters. At the bottom left, there is an orange box with the date "07-Jan-16". At the bottom right, there is a blue box with the text: "This project has received funding from the European Union's HORIZON 2020 Programme, (Call H2020-ICT-2014-1), Grant no.645372".

07-Jan-16

This project has received funding from the European Union's HORIZON 2020 Programme, (Call H2020-ICT-2014-1), Grant no.645372

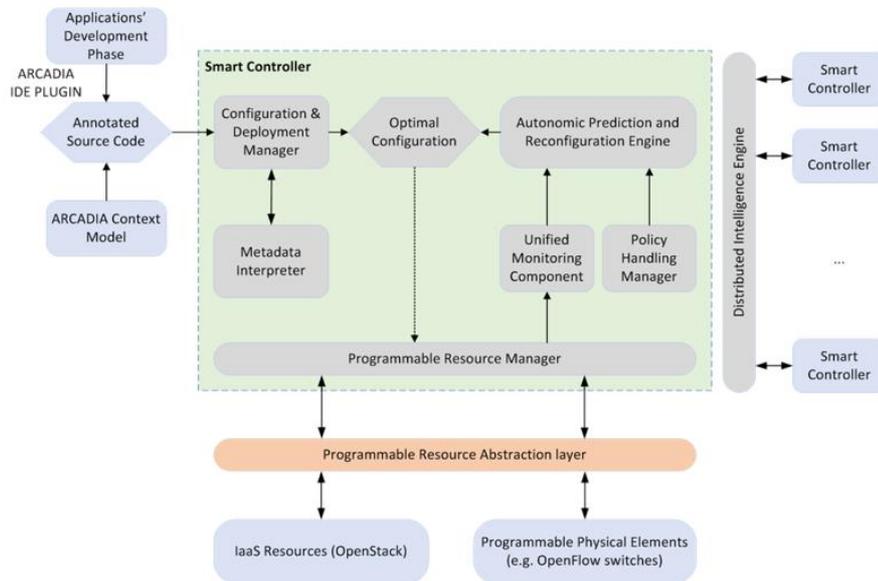
The Project in Numbers

- 9 partners
- 7 countries
- 36 months
- Started in January 2015
- 6 work packages
- 19 deliverables
- 3,543,864 Euros of EU funding
- More information www.arcadia-framework.eu



07-Jan-16

Architecture



07-Jan-16

Objectives

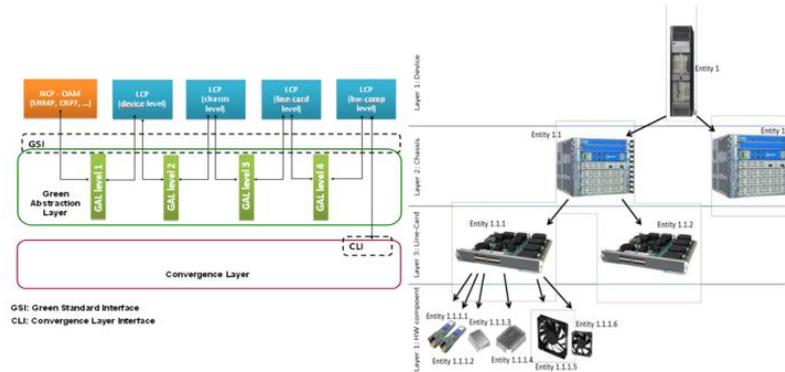
Within in the framework of the project the consortium shall tackle the following objectives:

- **Objective I:** 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.
- **Objective II:** to facilitate the design of highly distributed applications 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.
- **Objective III:** to facilitate the development, deployment and dynamic configuration of highly distributed applications over programmable infrastructure based on the conceptualization and instantiation of a Reference Framework.
- **Objective IV:** to prove the applicability, usability, effectiveness and value of the ARCADIA concepts, models and mechanisms in industrial, real-life networking and computational infrastructures, services and applications, demonstrating and stress-testing the developed ARCADIA [artefacts](#) under pragmatic conditions against a predefined set of use cases.
- **Objective V:** to ensure wide communication and scientific dissemination of the innovative ARCADIA results to the research, academic, and international community as well as efficient exploitation and business planning of the ARCADIA concepts and tools to the market in order to identify end-users and potential customers.

07-Jan-16

Energy Efficiency vs. Quality of Service (QoS) trade-off Use Case

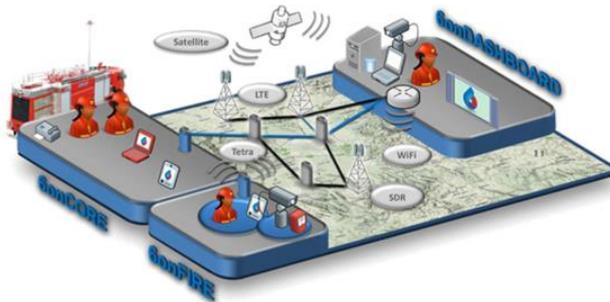
- We will use the DROP distributed software router for the implementation of this use case. DROP is a prototype implementation and it is available by the involved TNT lab (www.tnt-lab.unige.it) from CNIT within the framework of the ECONET project.



07-Jan-16

High Performance Survivable Communications in Distributed IoT Deployments Use Case

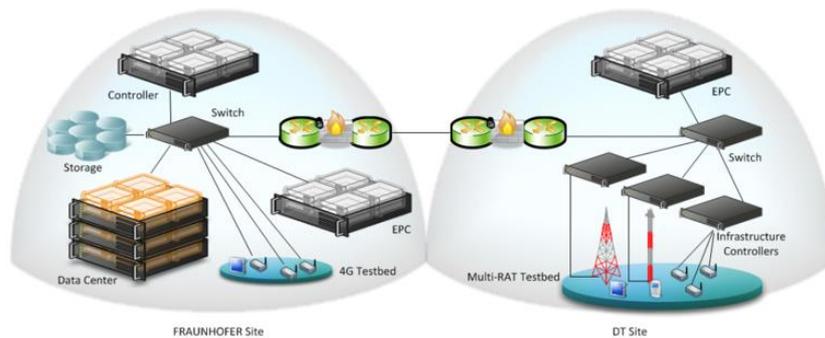
- The High Performance Survivable Communications in Distributed IoT Deployments Use Case is based on the implementation of the 6inACTION PPDR technology (www.6inaction.net) that will be made available to the ARCADIA project by University of L



07-Jan-16

Security and Privacy Support in the FI-WARE Platform Use Case

- FI-WARE (<http://www.fi-ware.org/>) is an innovative, open cloud-based infrastructure for cost-effective creation and delivery of Future Internet applications and services, at a scale not seen before. This data center includes virtualized network resources and network services based on the multi-RAT and on the mobile core (EPC) testbed of Deutsche Telekom



07-Jan-16

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07-Jan-16

Annex III: ARCADIA newsletter



The header features a logo on the left consisting of a square with double arrows and a crown below it. The main title 'ARCADIA' is in large red letters, with the subtitle 'Newsletter Vol. 1— June 2015' below it. To the right, a tagline reads: 'A Novel Reconfigurable By Design Highly Distributed Applications Development Paradigm Over Programmable Infrastructure'.

Editorial

Dear Readers,

Welcome to our first issue of ARCADIA Newsletter that we would like to present to you! With our semi-annual newsletters we will keep you regularly updated with the progress of our project and make you aware of news related to ARCADIA, which we hope will be of interest to you.

In this first issue, we have prepared the following selection of articles in order to introduce you EU-funded project ARCADIA, its objectives and activities:

- ◆ Arcadia scope, details & concept design
- ◆ Objectives
- ◆ Dissemination activities in NET FUTURES 2015
- ◆ Plenary meeting in Berlin
- ◆ Upcoming Plenary meeting in Oslo

We will regularly keep you updated with the most recent news about the status of the project. Additionally, each issue will include the consortium dissemination activities and a recommendation of conferences that might be of interest to you. Moreover, we kindly invite you to also regularly consult our website: <http://www.arcadia-framework.eu>

We are happy to invite you to follow our activities with this newsletter and we are looking forward to your feedback.

Yours sincerely,

The ARCADIA consortium

Project Details
Start date: 2015-01-01
End date: 2017-12-31
Duration: 36 Months
Reference:
GA n° 645372
Budget: 3.543.863,75 €

At the bottom, there are icons for a tower, a globe, and a server. Next to them are QR codes for 'www', 'in', and 'twitter'. To the right, text states: 'This project has received funding from the European Union's HORIZON 2020 Programme, (Call H2020-ICT-2014-1), Grant no.645372'. The European Union flag is on the far right.

ARCADIA scope

A novel, powerful tool will be soon available to software developers, allowing them to take full advantage of the modern network and computer infrastructures. The majority of these infrastructures offer a wide range of configuration options and capabilities that can be programmed using the suitable commands or applications. Nowadays, the behaviour of devices and equipment can be deeply affected programmatically, concerning their energy efficiency, their flexibility in adapting to changing conditions and their functionality in general. But in most cases, this also requires a deep knowledge of vendor specific tools or technology specific parameters, while it is not humanly possible to intervene every time a new situation has arisen.

The ARCADIA platform will introduce an innovative way of tackling such issues. The basis will be a model describing all the characteristics of the infrastructure and the related actions that can be performed. The model will also include a great variety of application features that the developer would like his application to have. By using a well defined annotation language, the developer will be in position to label the application needs and to control its behaviour in a high level way. E.g. if requirement for only local access is set, the platform will automatically make the necessary network security settings and will restrict the incoming and outgoing traffic of the application.

Details & Concept design

The main role in this process belongs to the Smart Controller, the entity that includes functionality for configuring, deploying and reconfiguring if needed a Highly Distributed Application. In particular, it has the ability of interpreting the ARCADIA metadata and translating it into specific actions concerning the underlying resources. There is also the capability to communicate with another Smart Controller in case more resources are needed, without any human intervention. And of course, the platform is monitoring everything so as to guarantee that the optimum configuration has been selected, the application requirements are met and any policies set by the infrastructure provider are respected.

The partners of the project consortium envisage that the final outcome will offer to application developers the desired simplicity in building solutions with enhanced flexibility, availability and security characteristics. It is expected that ARCADIA platform will be warmly adopted by the programmers community, since it can provide independence from vendor specific tools, reduced product development costs and accelerated time to market, as well as access to useful network and service functions in a unified and easy to use way, just by incorporating some relevant annotations into the source code, according to the ARCADIA software

ARCADIA Objectives

- Leverage the re-configurability aspects of highly distributed applications
- Incorporate technological and business requirements coming from the industry, the research community, the software development enterprises and application users
- Build a flexible and scalable framework for developing and deploying highly distributed applications over programmable and re-configurable infrastructure.
- Facilitate the design of highly distributed applications over programmable infrastructure
- Design and develop a sophisticated Context Model that will conceptualize dynamic configuration and programmable aspects of underlying resources that are required by HDAs
- Implement an associated IDE plugin that will assist Developers to use the Context-Model in a "proper" way.
- Facilitate the development, deployment and dynamic configuration of highly distributed applications over programmable infrastructure based on the conceptualization and instantiation of a Reference Framework
- Prove the applicability, usability, effectiveness and value of the ARCADIA concepts, models and mechanisms in industrial, real-life networking and computational infrastructures, services and applications,
- Demonstrate and stress-test the developed ARCADIA artifacts under pragmatic conditions against a pre-defined set of use cases.
- Ensure wide communication and scientific dissemination of the innovative ARCADIA results to the research, academic, and international community
- Achieve the efficient exploitation and business planning of the ARCADIA concepts and tools to the market in order to identify end-users and potential customers.



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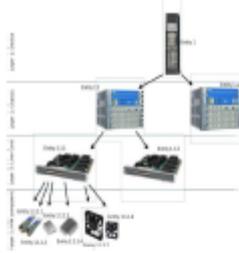


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Use Cases for the Arcadia framework

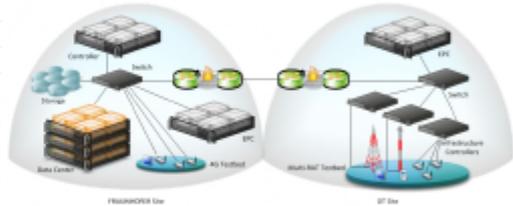
Energy Efficiency vs Quality of Service (QoS) trade-off



Energy efficiency is a top priority of all infrastructure manufacturers and providers, but it can create implications for the Quality of Service (QoS) / Quality of Experience (QoE) of the provided services and applications. Furthermore, the various policies set by the network administrators and service providers have to be taken into account. This is one of the challenges that are going to be addressed during the ARCADIA project. Sophisticated distributed control/management techniques can be realistically deployed to dynamically shape the allocation of resources and relocate applications and network functionalities, trading off QoS/QoE and energy at multiple granularity levels.

Security and Privacy Support in the FI-WARE Platform

FI-WARE is an innovative, open, cloud-based infrastructure for cost-effective creation and delivery of Future Internet applications and services, at a scale not seen before. FI-STAR is an instantiation of the FI-WARE platform providing application modules, re-usable generic and health care sector specific functionality. The Arcadia framework will extend the TUB FI-STAR Service Delivery Platform with Security and Privacy capabilities.



High Performance Survivable Communications in Distributed IoT Deployments

This use case is related to 6inACTION, an advanced system designed to provide public safety agencies with a survivable, scalable and robust communications, as well as professional IoT-supported management services during day-to-day operation and disaster relief missions. The ARCADIA platform will allow the establishment of virtual channels enabling the transparent communication via one or more available networks. Moreover, ARCADIA will allow the (almost) instant fall-back in case of extreme conditions causing failure of an individual network, thus offering a very high availability.



Participation to the Net Futures 2015



Members of the ARCADIA consortium have attended the Net Futures 2015 event in Brussels. The conference was focusing on two concepts that will profoundly affect the network communications market, creating chances for innovators and start-ups and altering revenue streams with a shift from hardware toward software and services, namely Software-defined networking (SDN) and Network Functions Virtualization (NFV).

It is envisaged that SDN and NFV will do for networking gear what app stores did for smart phones. In an SDN-enabled network with NFV capabilities, service providers can create and use any number of applications that can cut their OPEX and CAPEX, improve customer experience, and deliver new monetization opportunities.



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1st plenary meeting and 1st technical meeting



The 1st plenary meeting of the ARCADIA project took place in Berlin from 19 to 20 of May 2015. It was organized by the Technical University of Berlin (TUB). All the partners were represented and the involved people had the chance to share their knowledge and to plan their next steps in progressing the project.

The next meeting is a technical meeting and will be held in Oslo from 6 July to 8 of July 2015. It will be organized by SINTEF. The main issues for discussion will be the

orchestrator's functions and the ARCADIA context model.

Project Coordinator



Technical Coordinator



Consortium



Contact Us

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The ARCADIA project is funded by the European Commission DG-Connect in the Horizon 2020 Framework Programme (Call H2020-ICT-2014-1), Grant no.645372.



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