

GAIA - Green Awareness In Action



## D5.3 – Second year report on Network of Stakeholders & Dissemination Activities

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## Abbreviations

Abbreviation	Expression
DoW	Description of Work
EC	European Commission
IPR	Intellectual Properties Rights
PM	Person Months
SC	Steering Committee
TC	Technical Committee
WP	Work Package
PhC	Phone Conference
TCB	Trials Coordination Board
EPB	Ethics and Privacy Board
Ga	General Assembly

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## Executive Summary

During the first two years of the project lifecycle, GAIA has delivered a service and application ecosystem that consists of a set of infrastructure deployments on buildings within the educational community, a set of data processing/mining/ visualization services, and end-user applications/games targeting the efficient use of energy. The produced ecosystem will on the one hand facilitate monitoring and profiling energy use in buildings and on the other hand will provide guidelines and recommendations for better energy management by users. With the deployed applications, GAIA is working to increase the self-awareness of users regarding their energy use profile and by proper and continual recommendations will stimulate their behavior change toward more energy economical activities and habits. By engaging the educational community, GAIA will increase energy efficiency literacy that will produce a multiplier effect on how our behavior affects energy consumption by a significant part of society. The fundamental principles envisioned in the project: *green awareness through engagement, education, competition and innovation*.

Within this general context for the project, dissemination plays a crucial role in getting the attention of the general public, and also interacting with the educational and research community as a whole. WP5 acts as a gateway between the project partners and several diverse audiences, therefore the utilization of a mixture of communication channels is necessary. To reach audiences such as experts, industry and policy makers, the communication and publication of (preliminary) research and project results will require the exploitation of the usual, well-accepted channels known to the scientific community. A broader general public as well as the target audiences of students, parents, teachers and school officials can be reached with an ordinary PR strategy and media such as a portal web site, widely dispersed social network presence, physical presentations, etc.

In this document, we provide an update on the related activities of the consortium during the second year of the project. As stated in the DoW, WP5 receives input from all other work packages in as much as its task is to constantly and consistently disseminate the project results. Additionally, it supports all of the other work packages by maintaining the website for the sharing of public contents, coordinating the social networking activities, providing outreach materials, promoting public inclusion activities (games / visualization) and organizing events.

# 1. Introduction

During the second year of the project, building off the first year of the project, the consortium has been working with the dissemination strategy of GAIA to continue maximizing the impact of the project along the following dimensions:

- *Building a broad community* of students, teachers and citizens around the GAIA applications by augmenting and reinforcing the existing communities within the pilot schools.
- Maximizing the outreach activities targeting the educational community through the network of affiliated schools and via social media.
- *Promoting the use of the GAIA IT service ecosystem facility* by promoting it in the European context and beyond as a best practice example for user-centric design by creating ICT services facilitating efficient energy management.
- *Targeting dissemination efforts of the GAIA facility* toward specific stakeholder groups: citizens, municipalities, SMEs, standards groups and the research community.
- *Clarifying our strategy* for maximizing the sustained availability of GAIA platform.

GAIA dissemination and exploitation are indispensable to adding value to the project, strengthening its impact on the greater consumer market. Efforts are being made to add continuity to GAIA, especially after its lifespan. In particular, the dissemination plan has established rules and guidelines on how GAIA will share outcomes with stakeholders, relevant institutions and organizations. The aim of GAIA is to put special emphasis on the dissemination of tangible results, targeting the interested audience, selecting the results and dissemination channels based on the audience interests. Moreover, GAIA has been actively communicating project activities and will share results with the broader, non-specialized audience, to achieve wider citizens' acceptance.

All members of the consortium are participating in dissemination activities and the WP leaders and partners affiliated with the pilot schools/university have been acting as the primary dissemination managers. They include competences in journalism, graphic design and web design, and are managing and executing, together with the consortium members, the dissemination activities in the pilot trial sites located in Greece, Italy, and Sweden, in addition to contributing to the overall educational community dissemination plan coordinated by WP5.

In this deliverable, we report on the status of WP5 for the second year, along with the basic steps that have been taken already, or will be taken during the third year of the project:

- Chapter 2 goes into details in terms of the project's strategy and goals.
- Chapters 3 and 4 include some of the updated dissemination materials and social network activity.
- Chapter 5 shares our next steps in planning for year three.
- Chapters 6 and 7 discuss dissemination activities in academia, research and educational communities.
- Chapter 8 provides an overview of all consortium partners' activities.
- Chapter 9 concludes this document.



## 2. Dissemination Goals

In this chapter, we define the goals established during the first year and carried through the second year with respect to dissemination of the project, in terms of the targeted audience. The dissemination strategy of GAIA is designed to contribute to maximize the impact of the project along the following dimensions:

- Creating a broad community of students, teachers and citizens around the GAIA applications by augmenting and reinforcing the existing communities within the pilot schools.
- Maximizing the outreach activities targeting the educational community through the network of affiliated schools and via social media.
- Stimulating the use of the GAIA IT service ecosystem facility by promoting it in the European context and beyond as a best practice example for user-centric design by creating ICT services facilitating efficient energy management.
- Targeting dissemination efforts of the GAIA facility toward specific stakeholder groups: citizens, municipalities, SMEs, standards groups and the research community.
- Applying a clear strategy for maximizing the sustained availability of GAIA platform.

The table below briefly illustrates the dissemination goals of engaging with each of the different stakeholders.

Targeted stakeholders	Dissemination goals
Students	<ul style="list-style-type: none"> <li>- Raise awareness regarding the benefits of using GAIA applications.</li> <li>- Understand the socio-economic impact of user activities relating to energy efficiency and savings.</li> <li>- Encourage students to participate in GAIA workshops and school competitions as well as share this information with their friends and family.</li> <li>- Embolden students to participate and provide feedback on their behavior that affects energy consumption.</li> <li>- Maximize the effectiveness, usability and applicability of the proposed technological solutions through direct user feedback and early validation.</li> </ul>
Teachers	<ul style="list-style-type: none"> <li>- Raise awareness regarding the benefits of using GAIA applications &amp; services.</li> <li>- Understand the socio-economic impact of user activities relating to energy efficiency and savings.</li> <li>- Encourage teachers to participate in GAIA workshops and school competitions as well as share this information.</li> <li>- Support teachers with documentation and guidelines to teach energy awareness through GAIA in their respective lesson plans (science, physics, ecology, economics, etc.).</li> </ul>

Staff & Building Administrators of Schools & Universities	<ul style="list-style-type: none"> <li>- Raise awareness regarding the benefits of using GAIA applications &amp; services.</li> <li>- Understand the socio-economic impact of user activities relating to energy efficiency and savings in the context of school buildings.</li> <li>- Encourage users to participate in GAIA activities and follow recommendations and guidelines.</li> <li>- Maximize the effectiveness, usability and applicability of the proposed technological solutions through direct user feedback and early validation.</li> </ul>
Parents	<ul style="list-style-type: none"> <li>- Raise awareness regarding the benefits of using GAIA applications &amp; services.</li> <li>- Understand the socio-economic impact of user activities relating to energy efficiency and savings.</li> <li>- Encourage parents to participate in GAIA activities together with their children.</li> <li>- Strengthen and galvanize public support for efficient energy use.</li> </ul>

## Plan of Dissemination Activities

The dissemination principles include the description of the project's aims and objectives, an explanation of how to attain them and the envisaged results and expected benefits. Further aspects include providing updates regarding the progress of the project or adaptations to its original objectives. The use of the following dissemination instruments has been used:

- *Project brochures and posters*: they provide an overview of the objectives, approach, consortium and targeted results with particular emphasis placed on the scale of breakthroughs and innovations that have been achieved and are expected.
- *The project website*: it provides a project description, project vision and objectives, the relationship between the project, the programme, and the make-up of consortium with partner profiles and respective areas of expertise. The site will continue to be regularly updated by consortium members over the lifetime of the project with relevant publications and public materials that highlights all relevant progress in the projects implementation.
- *Press releases and press notes*: have been, will continue to be provided for use in public newspapers/agencies, and specialized journals as well as highlight press coverage the project has received.
- *Workshops*: Have been and will continue to be arranged with schools and universities in cooperation with stakeholder associations.
- *Presentations*: Have taken place at meetings and workshops organized by the European Commission/EASME, IoT Forum, Energy Efficiency Initiatives, Sustainable Energy Week, etc.
- *Social networks*: The project will maintain and enhance its presence on social media such as ResearchGate, LinkedIn (SlideShare), Facebook and Twitter, amongst others. The first

two, for example, will be used for interaction with a more professional community (researchers, SMEs, large industry), while the latter two mentioned above will be used for directly interacting with the general public.

- *Network of Stakeholders*: The project will disseminate its activities and results in the network of stakeholders (pan-European network of schools for low-energy consumption and other educational entities at regional or national level) that is going to be organized in Task 5.2 (begins in M24). We have already initiated activities in this field by establishing connections with the Scientix<sup>1</sup> network and by contacting directly with other school networks in Austria and Italy, which have expressed interest with respect to the work conducted in the project.
- Organization of activities focused towards the research community: The consortium has organized 2 research-oriented events in the second year of the project, namely a special issue for the Sensors Journal and a workshop in PerCom 2018 (to take place in March 19<sup>th</sup>, 2018).

## Quantification of GAIA Dissemination Activities for the 2<sup>nd</sup> year

The following table provides a quantification of the projects dissemination activities, via the dissemination KPIs as provided in D1.1, plus an additional column reporting the actual implementation status. This sets a basis for verifying whether the project dissemination objectives are being met. Specifics about activities mentioned in this table are included in the following chapters of this document.

Code	Name	Brief description	Validation Methodology	Gaia target	Status at end of year 2
GB.1	Time spent using Web portal	The time spent by end-users on the GAIA portal and web interfaces, as a measure of end-user engagement	Use server-side system logging components, monitoring all related activity, while also having in mind privacy issues	7 – 10 hours	To be evaluated in detail, after more trial phases take place. The average time for every BMA visit so far is 11 minutes, for GAIACheck it is 18 minutes

<sup>1</sup> The community for science education in Europe, [www.scientix.eu/about](http://www.scientix.eu/about)

					for every visit, both excellent results.
GB.2	Persons using web portal	An estimate of the number of different end-users utilizing the GAIA web portal	server-side system logging (see GB.1)	30-40% of target group	Project website: 2030 views year-round BMA: 82 unique users GAIA Challenge: ~700 registered users
DRA.1	#workshops organized/co-organized	Number of scientific workshops organized /co-organized by GAIA	Organization of workshops	4	3 (1 more to take place on March 2018)
DRA.2	# participants to workshops	Number of participants to scientific workshops organized/co-organized by GAIA	Count of participants	200	60
DRA.3	#papers submitted in conferences	Number of scientific reports submitted to international conferences with review process	Count of paper submissions	8	6 (3 workshop, 3 conferences)
DRA.4	#papers submitted in journals	Number of scientific reports submitted to international journals with review process	Count of paper submissions	3	3
DRA.5	#newsletters	Number of GAIA newsletters produced by the consortium disseminating GAIA news	Release of newsletters	9	3
DRA.6	#press releases	Number of press releases issued by GAIA	Count of releases	4	2
DRA.7	Joint actions with other projects	Actions organized together with other related research projects in order to promote	Organization of actions	3	3

		GAIA and sustainability aspects			
DRA.8	Bringing together schools and other EU actions	Actions for bringing schools in touch with other similar projects and related EU actions in the context of energy savings and sustainability	Organization of actions	2	0 (1 Erasmus activity currently in planning for the Summer)
DRA.9	Attendance at relevant expos, conferences, symposia, etc.	Attendance of GAIA consortium members at topically relevant expos, conferences, symposia, etc.	Gather info from consortium members	15	9 (2 expos, 6 conferences, 1 European-wide event )
DSN.1	#social networking platforms	Number of social platforms where GAIA will have an active and continuous presence	Track and count	6	9
DSN.2	#social networking users	Number of social networking platform users that will be connected to GAIA presence in those platforms	Track follower numbers, while also having in mind privacy issues	300	>625 63% of trials target of 1,000
DSN.3	Articles in local media	Number of articles submitted by GAIA consortium members to local media	Gather info from consortium members and simple count	5	1 (2 more currently in discussion)
DSN.4	Articles in online media	Number of articles referring to GAIA published in online media outlets that have a topical interest in the issues GAIA is addressing	Tracking of hashtags, shares, retweets, comments, likes, etc.	5	3

## Communication Activities

The communication activities within GAIA have been undertaken in order to foster the consciousness of shared responsibility for the environment through energy efficiency cognizance through increased awareness on the project's results and their tangible benefits for the environment and the economy. The communication activities will continue to be as interactive as possible to stimulate interest, focusing on results and targeting also local markets/communities, in order to exploit existing business relationships or brand recognition. Moreover, the communication activities have been focused on advertising the GAIA

platform the same way a company advertises their products and services, with selective slogans and symbols, in a multi-language approach, inspired by people's needs, personalities and picking flavors from local and modern reality.

To evaluate the importance of our website, we have been using the JetPack tool to provide data so that we may assess site visits, visitor activity (e.g., application downloads, views of video material, pages viewed, etc.) and other metrics. This tool was integrated during the first few months of the project after evaluating the available options.

During the final year, GAIA will organize at least 3 free access events: in Greece, in Italy and in Sweden where demonstrations of the GAIA benefits and presentations of the success stories will take place. The table below briefly elaborates the planned dissemination efforts targeting the respective stakeholder groups.

User groups & stakeholders	Dissemination Actions
Students & Teachers	<ul style="list-style-type: none"> <li>Results will be disseminated to the student community in at least 4 languages (Greek, Italian, Swedish, English), using several channels: (1) a public website linked to our numerous social media accounts and distribution, e.g., Twitter and LinkedIn, (2) annual reports, and (3) television and news media in the form of press releases.</li> <li>Students will be primarily engaged in the pilot trial schools/university through local means and with the cooperation of teachers and national/international news outlets. In addition, focus groups have been held with students to better understand the technological and socio-economic barriers of efficient energy use. This effort will be supported by surveys and subsequent interviews.</li> <li>Workshops at each of the pilot schools/university have been organized to capture usability feedback from the students participating in the project and have been complemented by online-surveys.</li> <li>The consortium is reaching out to existing educational networks through participation in European-wide events, such as "Researcher's Night", as well as existing digital platforms, such as Scientix.</li> </ul>
Building Managers, School & University Authorities, Municipalities	<ul style="list-style-type: none"> <li>The project will organize presentations and open call workshops for authorities managing school/university buildings like school principals, municipalities, government organizations and companies in order to describe the main features and benefits of the applications and services.</li> <li>In WP5 GAIA will form a network of stakeholders for disseminating information about the outcomes of the project (M24). Moreover, GAIA will obtain feedback as well as provide an environment that encourages and actively supports buy-in of the project results. Municipality authorities along with school and university administrators will be targeted through existing national and international networks.</li> </ul>
SMEs developing IoT services	<ul style="list-style-type: none"> <li>While the project website along with our GitHub account has a forum section where users within the educational community will be able to provide feedback and interact, something similar will be developed for the</li> </ul>

	SMEs in order for them to be informed about GAIA's activities. This will allow the SMEs to provide feedback about possible new products, for example, services on top of the services of GAIA, or novel services based on data analytics or something we are currently incapable of predicting.
Research community	<ul style="list-style-type: none"> <li>GAIA is targeting the research communities through already well-established channels such as the FIRE, EASME, Energy Community, scientific publications, conferences and workshops.</li> <li>Specifically, with regard to scientific publications, GAIA is disseminating its innovation results in scientific journals and conferences.</li> <li>Contributions, such as white papers and articles, based on the concepts and ideas of the project providing a solid overview of the activities and methodologies. These have been continuously followed by quality result dissemination as well as more detailed conceptual and architecture papers from the different WPs.</li> </ul>

## Current Status

By utilizing content from the table above, we can see a clearer picture of the status of our dissemination activities.

User groups & stakeholders	Proposed Dissemination Actions	Current status
Students & Teachers	<ul style="list-style-type: none"> <li>Results will be disseminated to the student community in at least 4 languages (Greek, Italian, Swedish, English), using several channels: <ul style="list-style-type: none"> <li>(1) a public website linked to social media and distribution, e.g., Twitter and LinkedIn,</li> <li>(2) annual reports, and</li> <li>(3) TV and news media in the form of regular press releases.</li> </ul> </li> <li>Students will be primarily engaged in the pilot trial schools/university through local means and with the cooperation of teachers and national/international news outlets.</li> <li>In addition, focus groups will be held with students to better understand the technological and socio-economic barriers of efficient energy use.</li> <li>This effort will be supported by surveys and subsequent interviews.</li> <li>Workshops including an ethnographic component at each of the pilot</li> </ul>	<ul style="list-style-type: none"> <li>Trials are live: <ul style="list-style-type: none"> <li>(1) Website is live and social networks are active.</li> <li>(2) Our reports have been posted and shared.</li> <li>(3) We have issued some press releases.</li> </ul> </li> <li>Our pilots have begun, outreach and info meetings have occurred, we are continuing actively the outreach to our end-user base.</li> <li>Focus groups have been used during the pre-trials.</li> </ul>

	<p>schools/university will be organized to capture usability feedback from the students participating in the project and will be complemented by online-surveys.</p> <ul style="list-style-type: none"> <li>• The project website will also have a wiki application where students, teachers and staff involved in the pilots can upload their own information as well as run forums and dialogs to further expand the online GAIA community.</li> <li>• The consortium is expanding its network with the educational communities in Europe</li> </ul>	<ul style="list-style-type: none"> <li>- Pilots have begun and survey material finalized.</li> <li>• Workshops have been conducted and surveys have started.</li> <li>• A wiki has not yet been added</li> <li>• Forums have been added, and are currently being opened to the educators (accounts, etc.).</li> <li>• We have had links established with the Scientix community and a dedicated placeholder for the project (<a href="http://www.scientix.eu/web/guest/projects/project-detail?articleId=689542">http://www.scientix.eu/web/guest/projects/project-detail?articleId=689542</a> )</li> </ul>
Building Managers, School & University Authorities, Municipalities	<ul style="list-style-type: none"> <li>• The project will organize presentations and open call workshops for authorities managing school/university buildings like school principals, municipalities, government organizations and companies in order to describe the main features and benefits of the applications and services.</li> <li>• In WP5 GAIA will form a network of stakeholders for disseminating information about the outcomes of the project (M24). Moreover, GAIA will obtain feedback as well as provide an environment that encourages and actively supports buy-in of the project results. Municipality authorities along with school and university administrators will be targeted through</li> </ul>	<ul style="list-style-type: none"> <li>• Workshops have occurred and these will continue throughout the course of the project lifetime.</li> <li>• This begins in month 24, but key contacts have already begun to be formed and collected.</li> </ul>



	existing national and international networks.	
SMEs developing IoT services	<ul style="list-style-type: none"> <li>While the project website will have a wiki/forum where users within the educational community will be able to provide feedback and interact, something similar will be developed for the SMEs in order for them to be informed about GAIA's activities. This will allow the SMEs to provide feedback about possible new products, for example, services on top of the services of GAIA, or novel services based on data analytics or something we are currently incapable of predicting.</li> </ul>	<ul style="list-style-type: none"> <li>This also begins in month 24, but some pre-planning and work has already begun.</li> </ul>
Research community	<ul style="list-style-type: none"> <li>GAIA will target the research communities through already well-established channels such as the FIRE, EASME, and Energy Community, scientific publications, conferences and workshops.</li> <li>Specifically with regard to scientific publications, GAIA proposes to disseminate its innovation results in scientific journals and conferences.</li> <li>The initial contribution will be a white paper based on the concepts and ideas of the project providing a solid overview of the activities and methodologies. This will be continuously followed by quality result dissemination as well as more detailed conceptual and architecture papers from the different WPs.</li> </ul>	<ul style="list-style-type: none"> <li>We have so far presented GAIA-related work at 5 workshops (CAiSE 2016, HiSTEM2016, Global IoT Summit 2017, CHI Play 2017) and 1 conference (CSCC 2017), with an additional publication accepted for PerCom 2018 (to be presented in March).</li> <li>We have published 2 journal articles so far, with an additional submission under review currently.</li> <li>We have had an IEEE Newsletter article on GAIA published, a very prestigious publication in the research community.</li> <li>We have not shared any form of white papers, but our journal publications so far are open source and free-of-charge.</li> </ul>

## Additional Communication Activities

There have been other communications that are not specifically covered above, which include outreach material, more in depth information regarding the website and social network developments will be covered in latter sections. However, a brief overview of the status of those are shared below.

### Outreach Material

Outreach material had already been created in year one in a few languages for consortium members to print and share at workshops, meetings and conferences. They were updated and improved during this reporting period and are discussed later in this chapter. These include the following:

- *GAIA Poster* – A poster updated with a new color scheme more in line with our visual identity. It is in English, and additional languages.
- *GAIA Brochure* – Our brochure was updated with a new color scheme more in line with our visual identity. It is available in English, Greek and Italian versions.
- *GAIA Videos* – Eighteen video were created and published over the course of the second year.

### Website

The website has been up and running for a while now and has been continually updated throughout this period. More information provided in later in this chapter.

### Social Networks

Here is a list of our nine currently active social media accounts with a short bit of information about each one (more information provided in Chapter 2):

- *Twitter* - Steadily from at +292 followers with +170 tweets. EDOC maintains.
- *Facebook* - Currently at 238 followers. EDOC is admin and CTI and SYN are editors.
- *YouTube/G+* - We have 18 videos with over 650 total views. EDOC maintains (Google access rules allow only one), but others may send for uploading.
- *Instagram* - Currently 16 posts with 40 followers. EDOC maintains.
- *ResearchGate* – Currently 8 posts with 93 reads and 16 followers. CTI maintains.
- *LinkedIn/SlideShare* - We have shared 8 presentations and have 12 followers. EDOC maintains.
- *Snapchat* - Account has accumulated 311 points through weekly posts. EDOC maintains.
- *Reddit* – Currently 5 posts and 10 comments with 1 Karma. EDOC maintains.
- *GitHub* – Currently has 8 repositories with 45 watches. CTI maintains.

### 3. Communication Material – Year 2

Over the course of the second year we have expanded our outreach and communication activities following on year one. In order to maintain our success we have updated brochures to distribute and posters to share. Both of these are intended to easily and quickly explain what's, who's, why's and how's of the GAIA Project to a diverse group of potential stakeholders as well as the public. Additionally a number of videos were created over the course of the year for demoing our products as well as sharing some of our public activities.

#### Brochures

The brochure was created early in year one of the project (Reported in D5.2) and has been translated to Italian and Greek during year two. Below (Figures 1 & 2) is the version of the Italian version of the brochure.



Figure 1 Front view of the GAIA brochure (Italian)

## Che cos'è GAIA?

GAIA (Green Awareness in Action) è un progetto Europeo H2020 della durata di tre anni partecipato da 9 partners. Questo progetto mira a promuovere cambiamenti comportamentali positivi nelle comunità scolastiche allo scopo di ottenere risparmi energetici.

Il progetto GAIA si focalizza sulla comunità didattica (docenti, personale scolastico, studenti e genitori) a tutti i livelli di istruzione: scuola primaria, scuola secondaria (media e superiore) e università.

Il progetto GAIA educerà direttamente più di 6900 utenti cercando di influenzarne e trasformarne il comportamento mediante una serie di attività e prove sul campo che saranno svolte negli edifici scolastici e in quelli domestici.

Gli studenti saranno resi consapevoli di quanto il loro comportamento possa influenzare l'utilizzo dell'energia mediante giochi educativi riguardanti i consumi energetici real-time in scuole in Italia, Grecia e Svezia.

## GAIA — fatti in breve



**SVEZIA**  
1 SCUOLA SUPERIORE  
1000 STUDENTI  
110 PERSONE DELLO STAFF SCOLASTICO



**ITALIA**  
1 SCUOLA SUPERIORE  
1400 STUDENTI, 110 PERSONE DELLO STAFF SCOLASTICO  
1 UNIVERSITA'  
400 STUDENTI,  
40 UNITA' DI PERSONALE



**GRECIA**  
13 SCUOLE  
4500 STUDENTI,  
860 PERSONE DELLO STAFF SCOLASTICO

PORTALE WEB

GIOCHI

SOCIAL NETWORKS & COMPETIZIONI



## CRONOPROGRAMMA

DA FEBBRAIO 2016 A GENNAIO 2019

FEB 2016 - SET 2017: PROGETTAZIONE, CONFIGURAZIONE E TESTING DELL'INFRASTRUTTURA TECNOLOGICA E PRODUZIONE DI MATERIALE DIDATTICO

OTT 2017 - OTT 2018: PROVE SUL CAMPO

SET 2018 - GEN 2019: VALUTAZIONE DEI RISULTATI

Figure 2 Back view of the GAIA brochure (Italian)

## Posters

In addition, a poster was created early during year one of the project (Reported in D5.2), like the brochure and was improved during the second year (Figure 3). An additional poster was created for explaining the Serious Educational Game, GAIA Challenge (Figure 4).



Figure 3 Second version of the GAIA poster



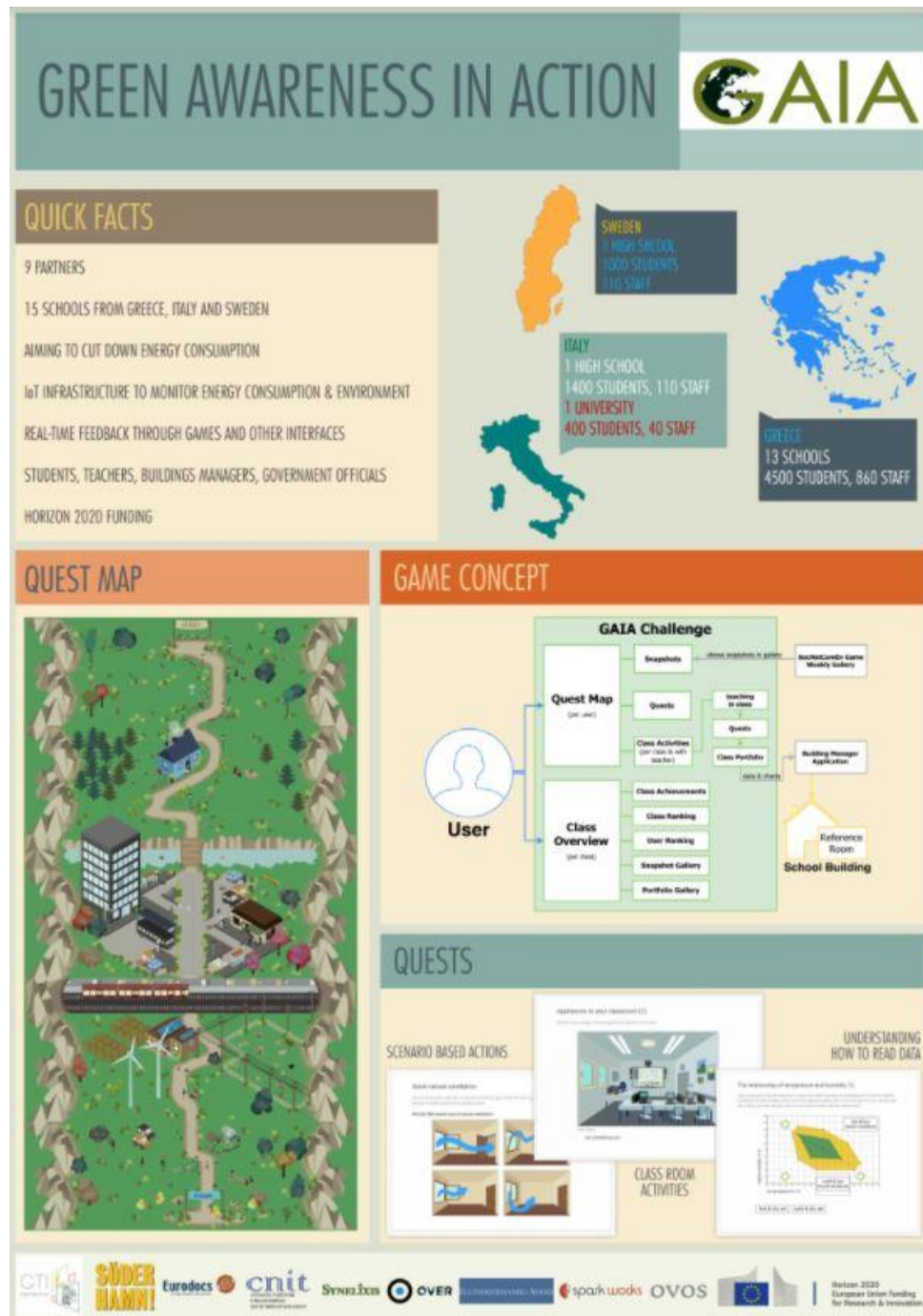


Figure 4 GAIA Challenge poster

## Videos

Several videos were created over the course of the second year via our YouTube channel (Figure 5), with 18 videos made public so far. These included the first introductory videos of our prototype applications from WP3, which were then followed upon, by introductory videos for these completed applications. In addition, videos relating to activities undertaken with students were made and published. We expect that as the trial activities in schools unfold, students together with teachers will also produce a number of videos to showcase their activity within the project. Additional activity-related videos, as well as consortium introductory videos, are in planning for year 3 of the project.



Figure 5 GAIA's YouTube channel

## Public Project Website

The project website was created during the first year and is fully documented in D5.2. The public website is publicly available at the following URL: <http://gaia-project.eu/>. Regarding project website statistics, the following table gives an overview of views and visits through the past year. In general, the website has been visited frequently by a number of visitors, and the overall activity has increased in comparison to the previous year. We expect that in the following months such activity will be even higher.

Month	Views	Visitors	Views per visitor
January 2017	336	98	3.43
February 2017	339	80	4.24
March 2017	393	104	3.78
April 2017	623	125	4.98
May 2017	984	129	7.63
June 2017	1208	186	6.49
July 2017	531	142	3.74
August 2017	823	116	7.09
September 2017	1022	266	3.84
October 2017	923	260	3.55
November 2017	957	260	3.68
December 2017	923	178	5.19
January 2018	547	184	2.97

A second table shows the origin of the visitors of the website.

Country	Views
Greece	6174
Italy	1145
Sweden	489
United States	387
Belgium	321
Cyprus	226
Spain	188
United Kingdom	161
Germany	160
Austria	144
France	127
Poland	105



## 4. Activity in Social Networks – Year 2

The project has maintained its presence on social media such as LinkedIn, Facebook and Twitter, amongst others with a good degree of success. Such activities have been used for interaction with a more professional community (researchers, SMEs, large industry), as well as for directly interacting with the trial participants and the general public, to provide information about the progress of the project and allowing for a means of a directly communicated feedback and information sharing mechanism.

### Overview

The following table represents the social media activities and progress, where applicable, since D5.2 was submitted at the end of the first year.

Social Network	End of Year 1	End of Year 2	Increase over Year
<b>Twitter</b>	85 followers 80 tweets 2 lists	292 followers 170 tweets 24 lists	+207 followers +90 tweets +22 lists
<b>Facebook</b>	16 followers 27 posts	238 followers 78 posts	+222 followers +51 posts
<b>YouTube</b>	Placeholder	18 videos 17 subscribers +650 views	N/A
<b>Instagram</b>	2 followers 1 post	40 followers 16 posts	+38 followers 15 posts
<b>LinkedIn/SlideShare</b>	1 presentation 3 followers	8 presentations 12 followers	+7 presentations +9 followers
<b>Snapchat</b>	15 points	311 points	+296 points
<b>ResearchGate</b>	9 collaborators 1 post 2 followers 5 reads	12 collaborators 8 posts 16 followers 93 reads	+3 collaborators +7 posts +14 followers +88 reads
<b>Reddit</b>	Placeholder	5 posts 10 comments 1 Karma	N/A
<b>GitHub</b>	3 repositories 7 watches	8 repositories 45 watches	5 repositories 38 watches

Below is a brief explanation of how we are utilizing these respective social networks and links for accessing them.

## Twitter



In order to advance our communication activities, the consortium has an account on Twitter, @eu\_gaia, whose feed is available at the following URL: [https://twitter.com/eu\\_gaia](https://twitter.com/eu_gaia).

This account is meant to provide information regarding the progress of the project in a more frequent manner, e.g., by reposting updates in the website, pieces of information related to GAIA, or events happening organized by the consortium, among a number of potential subjects. Additionally, our Twitter account also actively promotes topics of general interest relating to issues that are related to our goals and those of accounts promoting the work by our fellow H2020EE projects. This has helped us in gaining a respectable number of followers in a short time as well as promote a sense of community around the common causes of energy efficiency, behavioural change and gamification. The GAIA Twitter account is currently administered by EDOC, who is responsible for posting and updating this communication channel. The GAIA Twitter account is administered by EDOC, who is responsible for posting and updating this communication channel.

## Facebook



Another key social network is, of course, Facebook. Our account may be found at @EUGAIAProject or by direct link at: <https://www.facebook.com/EUGAIAProject/>.

This account plays an important as progress with our trials and have the opportunity of reaching out directly to and for the trial participants. The focus of our Facebook page has been to not only to communicate information relating to our project, but to share the experiences, activities and outputs of our trial participants with the hope that they will share this content amongst their FB friends to widen our reach. EDOC is admin and CTI and SYN are editors.

## LinkedIn/SlideShare



We have been using LinkedIn to develop additional professional-focused contacts. We have a SlideShare account, through LinkedIn (found at: <http://www.slideshare.net/GAIA Project>) where we have uploaded some presentations/PowerPoints that we think may be useful and interesting for public consumption. EDOC maintains.

## Instagram



Our Instagram account is currently up and running sharing #ScavengerHunt game items and project info. EDOC maintains this account. Content will be enhanced with Snapshots from the GAIA Challenge and Lab Kit activities. It can be found at: [https://www.instagram.com/eu\\_gaia\\_project/](https://www.instagram.com/eu_gaia_project/)

## YouTube



YouTube is an important outlet for the project where we have shared many videos highlighting some of our activities, as well as for sharing prototypes and demos of our product. Our channel may be found at <https://www.youtube.com/channel/UC6BA2B6FMNE83-UFZw34gZA>. EDOC maintains.

## Snapchat



A Snapchat account was made, username: gaia\_project, and Eurodocs is maintaining it. It provides an additional means for making our project known to a wider audience. It has become much more active now that the trials have begun. (QR code link). EDOC maintains.

## ResearchGate



A project page has been setup in ResearchGate <https://www.researchgate.net/project/GAIA-Green-Awareness-In-Action-2> to make it easier for researchers using the platform to track the progress of the project and have access to things like publications and associated research activities. CTI maintains.

## Reddit



A Reddit account has been setup [https://www.reddit.com/user/EU\\_GAIA/](https://www.reddit.com/user/EU_GAIA/) under the [r/Energy Efficiency](https://www.reddit.com/r/Energy_Efficiency) Subreddit in order to share our activities more widely. While this is a relatively low activity subreddit, we will continue our work here. EDOC maintains.

## GitHub



A GitHub account was setup during year one at: <https://github.com/GAIA-project>. We have seen much more activity here due to the outcomes of WP2 and WP3 activities. This will continue to be the place where our open source code, manuals and wikis are located. CTI maintains.

## 5. Next Steps (Dissemination Strategy)

As is apparent, while the consortium has made progress with respect to communicating the goals and progress of the project to interested communities, a solid strategy is needed in place the second year of the project. To achieve this, we have created the following table that highlights the issue/task/activity with what needs to be done and assigned a partner or partners to be responsible for this as we all have PMs in WP5. Additionally, we have included a reference to the relevant KPIs (if any).

Task/Activity	Explanation of the issue	Partner(s) involved	Date for feedback/action to share	KPI Ref
Social network activity	Remain active during the remaining period of the project on Twitter, Facebook, Instagram and Snapchat.	EDOC, All involved consortium partners	Ongoing	DSN.1 DSN.2
Upcoming Conference List	Continue to gather information relating to upcoming conferences or meetings where the attendance of a GAIA partner is possible and feasible.	CTI, EDOC, CNIT	Ongoing	DRA.1 DRA.3 DRA.9
Upcoming Important Dates to Remember	There are numerous days or weeks throughout the year where issues relating to GAIA may be exploited. A continuously updated list of these dates is useful to prepare for attendance, hosting or preparing material.  (Like: EU Energy Week, Earth Hour, Earth Day, etc.)	EDOC, CTI	Ongoing	DRA.9
Project Synergies	Keep communications open with other H2020 projects with similar objectives of energy efficiency, gamification, and behavioral change in order to arrange for future participation in cluster events and cross-promotion of activities.	EDOC, CTI	Ongoing	DRA.1 DRA.2 DRA.3 DRA.7
Research Papers	Explore topics/information that we may already have within our deliverables for editing into what would be suitable to submit for publication	CTI, all partners in their specialization fields	Ongoing	DRA.4

Website update	Continued updating of the project website.	CNIT, CTI, EDOC	Ongoing	GB.1 GB.2
White Papers	Continue exploring topics/information that we already have within our deliverables for editing into what would be suitable to share with the public in a white paper	SYN, OVER, CTI, CNIT, SPARK, ALL partners in their specialization fields (e.g. ICT, pedagogy, etc.)	Ongoing	N/A
GAIA Challenge Video	Record, edit and release a video interview with a student that has played the GAIA Challenge and has a high ranking.	SK, EDOC	Mid-February	DSN.4
Energy Day Application	Submit a proposal to <a href="http://www.eusew.eu/">http://www.eusew.eu/</a> for hosting an Energy Day event in Söderhamn in June.	SK, EDOC	Late February	DRA.1 DRA.7 DRA.8
Prep 4 <sup>th</sup> Newsletter	Decide the content of the newsletter.	EDOC, CNIT, CTI, SPARK, OVER, SYN	Early March	DRA.5
GAIA Video	Decide the content of a 3-4 minute introductory video of high quality for release.	CTI, EA, SK, CNIT, EDOC	Mid-March	DSN.4
Issue 4 <sup>th</sup> Newsletter	Publish and share the newsletter	EDOC, CTI, ALL partners that may be directly needed depending upon the topic.	Late March	DRA.5
Press Releases	Write and issue the press release relating to trial activities (one general for EU distribution and one each localized for participating countries)	EDOC, CTI, CNIT, SK, EA	Early April	DRA.6 DSN.3 DSN.4
GAIA Video	Create a 3-4 minute introductory video of high quality for release.	CTI, EA, SK, CNIT, EDOC	Mid-April	DSN.4
Prep 5 <sup>th</sup> Newsletter	Decide the content of the newsletter.	EDOC, CNIT, CTI, SPARK, OVER, SYN	Early May	DRA.5
Press Release	Issue a local press release (Swedish) highlighting upcoming GAIA activities surrounding our Energy Day event (Breakfast/workshop, booth and hands on activities)	EDOC, SK	Mid-May	DRA.6 DSN.3 DSN.4

Issue 5 <sup>th</sup> Newsletter	Publish and share the newsletter	EDOC, CTI, ALL partners that may be directly needed depending upon the topic.	Late May	DRA.5
Film GAIA/Partner Videos	Film partner videos explaining their activities and relationship to GAIA.	SK, EDOC, CTI, ALL	Summer 2018 (General Meeting in Söderhamn)	N/A
Stakeholder Breakfast seminar	Arrange a small breakfast seminar for locally interested parties (stakeholders) to attend for short presentations. Potentially stream on the web.	Host partner, EDOC, SK, CTI, CNIT	Summer 2018 (General Meeting in Söderhamn)	DRA.8
Host Energy Day Event	Host a workshop along with participating in the School's Out ( <a href="http://www.xn--verkstderna-q8a.se/schoolsout2018.4.7912796f15f3079bda3ec307.html">http://www.xn--verkstderna-q8a.se/schoolsout2018.4.7912796f15f3079bda3ec307.html</a> ) in Söderhamn promoting Project with a display and hands on activities.	SK, EDOC (Any other partners willing to be in attendance)	Early June	DRA.1 DRA.2 DRA.7 DRA.8
Prep 6 <sup>th</sup> Newsletter	Decide the content of the newsletter.	EDOC, CNIT, CTI, SPARK, OVER, SYN	Early July	DRA.5
Media Kit	Assemble an updated media kit for both local, national and European dissemination	EDOC, CNIT	Mid-July	DRA.5 DRA.6 DSN.3 DSN.4
Issue 6 <sup>th</sup> Newsletter	Publish and share the newsletter	EDOC, CTI, ALL partners that may be directly needed depending upon the topic.	Late July	DRA.5
Prep 7 <sup>th</sup> Newsletter	Decide the content of the newsletter.	EDOC, CNIT, CTI, SPARK, OVER, SYN	Early September	DRA.5
Decide Unique Holiday Action	Plan and begin preparations for a unique holiday-oriented energy efficiency, video, advent calendar, small game, long GIF, etc., for the consortium to share across social networks.	EDOC, CTI, ALL	Mid-September	DSN.1 DSN.2

Issue 7 <sup>th</sup> Newsletter	Publish and share the newsletter	EDOC, CTI, ALL partners that may be directly needed depending upon the topic.	Late September	DRA.5
Final Review Activities	Plan/decide if we will hold some form of activity that will coincide with the final review.	ALL	Brussels Final review	N/A
Edit and share GAIA/Partner Videos	Conclude editing and share the videos.	EDOC, CTI	October	N/A
Press Release	Issue a press release relating to the initial results of our trials	EDOC, OVER, CTI	October	DRA.6 DSN.3 DSN.4
Prep 8 <sup>th</sup> Newsletter	Decide the content of the newsletter.	EDOC, CNIT, CTI, SPARK, OVER, SYN	Early November	DRA.5
Media Event	Hold a media roundtable or press conference to share/stream information related to the project	CNIT, CTI, EDOC	October/ November (general meeting)	DSN.3 DSN.4
Stakeholder Breakfast seminar	Arrange a small breakfast seminar for locally interested parties (stakeholders) to attend for short presentations. Stream on web.	Host partner, EDOC, CTI, CNIT	October/ November (general meeting)	DRA.8
Issue 8 <sup>th</sup> Newsletter	Publish and share the newsletter	EDOC, CTI, ALL partners that may be directly needed depending upon the topic.	Late November	DRA.5
Share Holiday Action	Post across our social network platform and share with the pilot schools.	EDOC, OVOS	Early December	DSN.1 DSN.2
Prep 9 <sup>th</sup> Newsletter	Decide the content of the newsletter.	EDOC, CNIT, CTI, SPARK, OVER, SYN	Late December	DRA.5
Issue 9 <sup>th</sup> Newsletter	Publish and share the newsletter	EDOC, CTI, ALL partners that may be directly needed depending upon the topic.	Early January	DRA.5

Press Release	Issue a press release relating to the conclusion of our project	EDOC, CNIT, CTI	Mid-January	DRA.6 DSN.3 DSN.4
Final Review Activities	Conduct what was decided earlier	ALL	Brussels Final review	N/A
Media Event	Consider holding a media roundtable or press conference to share/stream information related to the project	CNIT, CTI, EDOC	Brussels Final review	DSN.3 DSN.4



## Highlights

The list above serves as a tentative map for few proposed ideas for communication and branding. While relatively complete and somewhat fluid, some things should be highlighted:

1. *Media Outreach*: during the third year, our social media plan along with a more aggressive media outreach campaign will allow us to more readily share the outcomes of these activities along with concrete results and educational scenarios to be shared with our stakeholders as well the media at large.
2. *Events*: We will expand our participation in events that taking place nearby (Stockholm, London, Vienna, Athens, Rome, Florence, etc.) and throughout Europe as we now have products to share and will have concrete results to disseminate in order to reach our intended stakeholders. Also, the synergy activities within cluster events with other H2020 projects is exciting and heavily promoted by the EU.
3. *Workshops/Training*: During the third year, many events will be focused on our stakeholder groups and media in order to not just disseminate our results, but to interact and discuss our products and experiences with a wider audience.

### Task 5.2 Network of Stakeholders

While this task has yet to officially begin (M24), some work has already begun so that we may begin with a running start. For example:

- Consortium partners have been asked to compile lists of contacts of those that may be interested in a Pan-European Network of Schools for Low-Energy Consumption. These will be used for outreach activities during the third year.
- Consortium partners have begun identify appropriate local, regional, national and international agencies and groups that will benefit from the establishment of a Pan-European Network of Schools for Low-Energy Consumption. These will also be provided with information relating to this project as well as contacted in order to begin a dialogue.

### Task 5.3 Business Uptake & Innovation Management

Like T5.2, this task has yet to officially begin (M24), however some work has also already begun. The GAIA consortium includes 5 SMEs (OVER, EDOCS, OVOS, SPARKS, SYN) who may benefit from moving aspects from this project into their business cycle. The following activities have already begun during the second year:

- Market research/survey has been ongoing during year two to be compiled and assessed during the third year.
- First business plans have been drafted for joint exploitation of the GAIA platform (SPARKS, OVER, SYN, CTI, CNIT) and will be completed during the third year.
- Targeted markets have been identified for exploitation, buildings and households, in order to release a low cost, highly flexible solution publicly.

## 6. Dissemination in Academia and the Research Community

### Workshops organized

#### Global IoT Summit 2017 – EESIoT Workshop



This workshop aspired to be a forum of discussion between different stakeholders, researchers, industries etc., in order to present the most recent advances in the area of ICT- and IoT-based Energy Efficiency solutions. It promoted the collaboration and mutual exchange of experiences between researchers. The participation of researchers from EU funded projects was promoted, although it was open to all kind of contributions. More information is available on the workshop's website:

<http://globaliotsummit.org/workshop-on-energy-efficient-solutions-based-on-ioteesiot-2017>

## PerCom 2018 - Pervasive Sensing for Sustainable Smart Cities and Smart Buildings

IEEE PerCom<sup>2</sup> (International Conference on Pervasive Computing and Communications) is one of the most prestigious conference in the area of Pervasive Computing. For the 2018 rendition of the conference, it will take place at Athens, Greece, March 19-23, 2018. The coordinator of GAIA (CTI), is organizing a workshop in the context of PerCom, that is closely related to the work conducted in GAIA, and will attract the participation of researchers working in the field. Overall, it will look into ways to design, develop and evaluate systems where IoT devices operate in continuous interaction with their owners to identify energy inefficiencies in buildings and achieve energy gains based on intelligent management.

The aim of this workshop is to collect papers from academic and industrial players, reporting original, previously unpublished research, which addresses this field. It is evident that the creation of an innovative IT ecosystem involves significant developments in a broad range of topics, from foundational topics regarding the organization and analysis of information to papers presenting novel technological platforms for interconnecting smart sensors and intelligent devices to pilots reporting recent developments in real-world deployments. In addition, novel approaches combining advances in IoT, Fog and Cloud technologies, with techniques such as gamification to stimulate engagement and behavior change are also in the scope of this workshop. The workshop will include the presentation of 9 papers, of which 1 is directly related to GAIA, while other works are related to ICT for EE projects.

More information is available on the workshop's website:

<https://sites.google.com/dis.uniroma1.it/perscb17>

## Sensors special issue

The aim of this Special Issue is to collect from academic and industrial players, papers reporting original, previously unpublished research, which addresses this important topic. It is evident that the creation of an innovative IT ecosystem involves significant developments in a broad range of topics, from foundational topics regarding the organization and analysis of information, to papers presenting novel technological platforms for interconnecting smart sensors and intelligent devices, to pilots reporting recent developments in real-world deployments. In addition, novel approaches combining advances in IoT and Cloud technologies, with techniques such as gamification to stimulate engagement and behavior change are also in the scope of this Special Issue. A total number of 18 papers have been published thus far through the special issue, of which 1 is directly related to GAIA, while other works are related to ICT for EE projects.

More information regarding the special issue can be found on the special issue-specific website:

[http://www.mdpi.com/journal/sensors/special\\_issues/ASSSCB](http://www.mdpi.com/journal/sensors/special_issues/ASSSCB)

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<sup>2</sup> <http://www.percom.org/>

## Academic Papers

Throughout the second year of the project, the consortium has dedicated considerable effort towards communicating its results to the research community. This activity has paid off, since there have already been several publications related to GAIA, while there are other submissions under review at the time of writing this report and the consortium is considering submitting additional articles in the coming months. The following table contains the publications authored by the consortium, which are directly related to the project. Of special importance is the IEEE Newsletter article for GAIA, a publication that is disseminated to tens of thousands of researchers on a monthly basis.

Journals
<ol style="list-style-type: none"> <li>1. Amaxilatis, D.; Akrivopoulos, O.; Mylonas, G.; Chatzigiannakis, I. An IoT-Based Solution for Monitoring a Fleet of Educational Buildings Focusing on Energy Efficiency. <i>Sensors</i> 2017, 17, 2296.</li> <li>2. Lidia Pocero, Dimitrios Amaxilatis, Georgios Mylonas, Ioannis Chatzigiannakis, Open source IoT meter devices for smart and energy-efficient school buildings, <i>HardwareX</i>, Volume 1, 2017, Pages 54-67, ISSN 2468-0672, <a href="http://dx.doi.org/10.1016/j.ohx.2017.02.002">http://dx.doi.org/10.1016/j.ohx.2017.02.002</a>.</li> </ol>
Conferences
<ol style="list-style-type: none"> <li>1. Emmanouil Zacharioudakis, Helen C. Leligou, Aikaterini Papadopoulou, “Energy efficiency tools for residential users”, 21st Int. Conf. on Circuits, Systems, Communications and Computers, Crete Island, Greece, July 14-17, 2017</li> </ol>
Workshops
<ol style="list-style-type: none"> <li>1. Green Awareness via Embedded Sensors and Games in the School Environment: the GAIA case. Mylonas G., Hofstaetter J., Mavrommati I., Tziortzioti Ch., In: <i>Arguing on the Holodeck, CHI Play 2017 Workshop</i>, 14-18 Oct. 2017, Amsterdam, the Netherlands</li> <li>2. G. Mylonas et al., “Addressing Behavioral Change towards Energy Efficiency in European Educational Buildings”, <i>Workshop on Energy Efficient Solutions based on IoT, IoT Global Summit 2017</i>, DOI: 10.1109/GIOTS.2017.8016258</li> <li>3. G. Cuffaro, F. Paganelli, G. Mylonas, “A Resource-based Rule Engine for energy savings recommendations in Educational Buildings”, <i>Workshop on Energy Efficient Solutions based on IoT, IoT Global Summit 2017</i>, DOI: 10.1109/GIOTS.2017.8016275</li> </ol>
Newletters
<ol style="list-style-type: none"> <li>1. Georgios Mylonas, Dimitrios Amaxilatis, Irene Mavrommati and Joerg Hofstaetter, “Green Awareness via IoT Infrastructure, Educational Labs and Games in Schools: The GAIA Case. In <i>IEEE Newsletter</i>”, <i>IEEE Internet of Things</i>, November 2017</li> </ol>

## Keynote in ECGBL Conference



Ovos gave a keynote talk on the ECGBL<sup>3</sup> conference, the European Conference on Game-Based Learning, which took place in Graz last year. The keynote included aspects of the work conducted in GAIA, mainly related to the gamification components, i.e., the GAIA Challenge. While GAIA was not the sole focus of the presentation, it initiated a set of contacts with the educational communities in other European countries, namely Germany and Austria, which may lead to additional GAIA activities in said countries.

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<sup>3</sup> <http://www.academic-conferences.org/conferences/ecgbl/>



## Participation in Research Exhibitions

### Patras IQ 2017



The 4<sup>th</sup> PatrasIQ exhibition was held at the Pampeloponisiakon stadium, Patras, between Friday, April 7th and Sunday, April 9th, 2017. With 100 exhibiting teams in 88 kiosks, the exhibition presented to the general public research being conducted in academic/research institutions, SMEs and startups in Western Greece. With over 7000 visitors, PatrasIQ is one of the largest science exhibitions of its kind in Greece. In the kiosk of CTI, visitors had a chance to learn more about GAIA and see the application prototypes being developed.

### Researcher's Night 2017, Athens

GAIA participated at the Researcher's Night 2017 event held in Athens. Fifteen students from the 1<sup>st</sup> Junior High School of N. Philadelphia, Athens, together with the CTI team participated in the "Researcher's Night" on September 29th, 2017. Researcher's Night is a big European event dedicated to science and research. The GAIA team had a hands-on session of GAIA applications and GAIA laboratory exercises, along with an overall presentation of the GAIA project.



## Cooperation with other H2020 research projects

### CDB activities

GAIA has participated in the submission of 2 proposals at the Common Dissemination Booster Service of H2020. The first proposal was a “ICT for Energy Efficiency” projects based (lead by the PEAKApp project consortium), while the second explored synergies between other types of H2020 projects (lead by the INLIFE project). Unfortunately, both proposals were not funded; however, the resubmission of both proposals will be reevaluated this year.

### E2Data

E2Data<sup>4</sup> is a H2020 research project that has just started (January 2018), in which the coordinator of GAIA (CTI) participates as a member of the consortium. The project will conduct research on heterogeneous execution of big data-related applications on the cloud, while GAIA will provide energy-related as a real-world validation use-case. The project will support the existing infrastructure and further strengthen the sustainability aspects of GAIA.

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<sup>4</sup> E2Data Cordis page, [https://cordis.europa.eu/project/rcn/213122\\_en.html](https://cordis.europa.eu/project/rcn/213122_en.html)

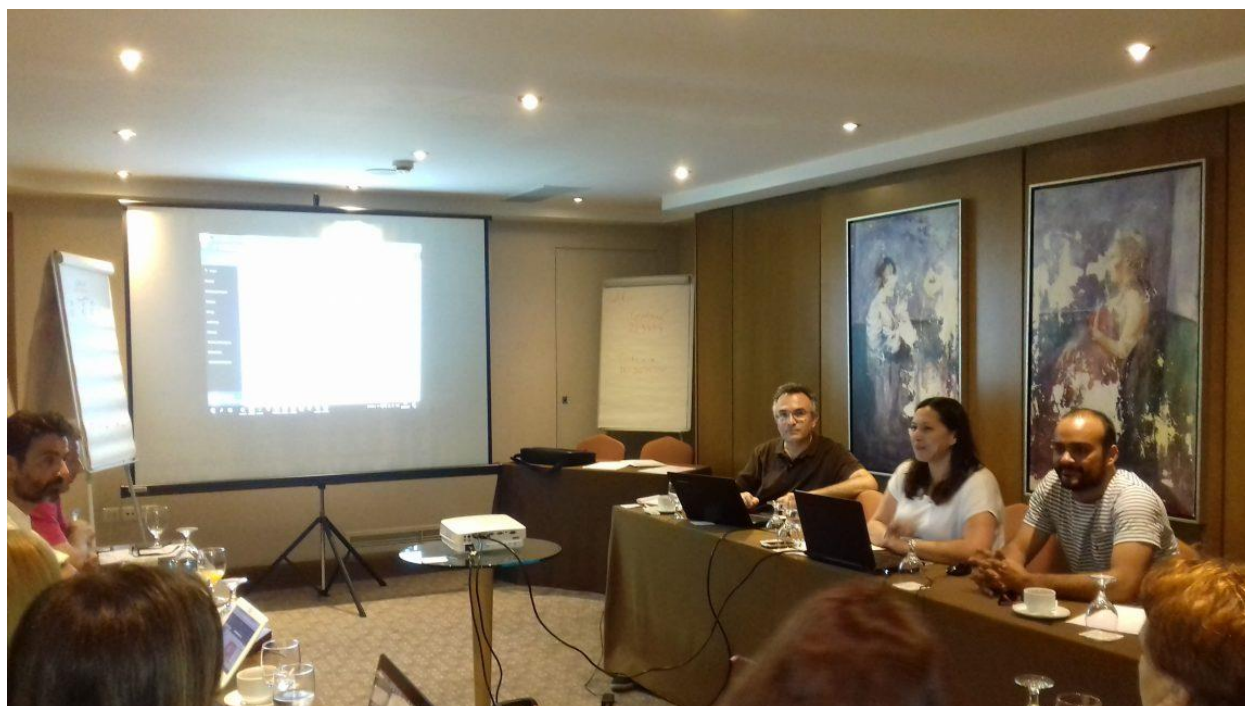
## 7. Activities focused on the educational community

### Scientix

GAIA has initiated a new dissemination channel through Scientix (<http://www.scientix.eu/>), an EU online platform for promoting STEM education initiatives throughout the continent. GAIA has already established close ties with part of the educational communities in Greece, Italy and Sweden. Through Scientix, we aspire to reach additional educators and provide them with material that will enhance their lectures. The consortium's activities related to Scientix will ramp up during the third year of the project.

### GAIA Summer school 2017

The consortium has organized a summer course in 2017, mainly aimed at educators in Greek schools that participate in the project. The “GAIA Summer School 2017” was organized by EA in Athens on July 8-9, 2017. It was the result of a process initiated in May 2017, when EA and CTI addressed all Greek schools participating in GAIA with an invitation to prepare and submit their Initial GAIA Action Plans for the following school year, 2017-2018. The seminar was successful in achieving its objective, which was to facilitate teachers to elaborate and enrich their plans for GAIA activities in their schools further, through intensive discussions and exchange of ideas among them and between them and project staff.





## Etwinning conference



GAIA participated at the 4th eTwinning Conference<sup>5</sup> “Exploitation of Information and Communication Technologies in collaborative school programs in Primary and Secondary Education”, on November 26<sup>th</sup> 2017, in Patras (Greece). The aim of the conference was the reflection and creative dialogue regarding the integration of ICT in the implementation of co-operative programs at a European, international or national level, as well as modern practices for the implementation of such programs, as they are shaped by modern school reality and in the light of the European Erasmus+ Program. In particular, it aimed at motivating teachers from primary and secondary education towards developing cooperative methodologies, by good and innovative practices alongside the exploitation of ICT for the implementation of collaborative programs between schools on an international or national level.

## GAIA Summer school 2018

The consortium, and in particular EA and CTI, have initiated the organization of a summer course during 2018, aimed towards educators from all the countries participating in GAIA. This will be the second summer course organized by the consortium, and will aim for a much larger participation than the first one, since the consortium will have already built a large network of collaborators through the trials phase of the project. More details regarding this summer course can be found at the website for this action (<http://play-create-learn.ea.gr/>)

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<sup>5</sup> <http://www.etwinning.gr/conf2017>

## 8. Consortium Member Communication and Dissemination Activities – Year 2

In this chapter, we outline the activities undertaken by GAIA consortium members active in WP5 thus far, with respect to dissemination.

### CTI

As the project coordinator, CTI has been involved in many activities on a wide variety of levels – from the early planning stages to the execution and follow-up phases. CTI has organized the special issue in Sensor Journal and the PerSCB workshop for the PerCom 2018 conference. It has also established the links to the Scientix educational community and has been continually expanding the network of schools in Greece that participate in the project. CTI has also cooperated with EA to coorganize the upcoming GAIA summer course in 2018. CTI also maintains the project website and has contributed 2 new videos at the project's YouTube channel. Finally, CTI participates in the E2Data research project that began on January 1<sup>st</sup>, 2018, that will cooperate with GAIA with respect to open big datasets for energy efficiency.

CTI has produced/participated in the following publications:

- Amaxilatis, D.; Akrivopoulos, O.; Mylonas, G.; Chatzigiannakis, I. An IoT-Based Solution for Monitoring a Fleet of Educational Buildings Focusing on Energy Efficiency. *Sensors* 2017, 17, 2296.
- Lidia Pocero, Dimitrios Amaxilatis, Georgios Mylonas, Ioannis Chatzigiannakis, Open source IoT meter devices for smart and energy-efficient school buildings, *HardwareX*, Volume 1, 2017, Pages 54-67, ISSN 2468-0672, <http://dx.doi.org/10.1016/j.ohx.2017.02.002>.
- Green Awareness via Embedded Sensors and Games in the School Environment: the GAIA case. Mylonas G., Hofstaetter J., Mavrommati I., Tziortzioti Ch., In: *Arguing on the Holodeck, CHI Play 2017 Workshop*, 14-18 Oct. 2017, Amsterdam, the Netherlands.
- G. Mylonas et al., “Addressing Behavioral Change towards Energy Efficiency in European Educational Buildings”, *Workshop on Energy Efficient Solutions based on IoT, IoT Global Summit 2017*, DOI: 10.1109/GIOTS.2017.8016258.
- G. Cuffaro, F. Paganelli, G. Mylonas, “A Resource-based Rule Engine for energy savings recommendations in Educational Buildings”, *Workshop on Energy Efficient Solutions based on IoT, IoT Global Summit 2017*, DOI: 10.1109/GIOTS.2017.8016275.

### SK

SK has been actively involved with dissemination activities relating to the progress of the project in their educational networks along with regional organizations to which they are involved. SK has also been an active participant with promoting the project's social media activities.

## EDOC

EDOC, as WP5 leader, is a key player in the dissemination activities for the project, also maintaining the majority of the social media aspects related to GAIA and has taken the lead in the preparation of press releases and newsletters. EDOC has also presented the project to business partners and friends of the company. As task leader for T5.2, EDOC has spearheaded the initial assembly of lists of contacts of those targeted stakeholder that may be interested in a Pan-European Network of Schools for Low-Energy Consumption.

EDOC has already begun identifying appropriate local, regional, national and international agencies and groups that will benefit from the Network of Stakeholders and has already begun reaching out to local, regional and national agencies within Sweden to gauge interest.

## CNIT

In the second year CNIT has contributed to the web site management (especially the activation of the multilingual feature), the content production (e.g., posts), and the translation into Italian of the website's user interface and content. CNIT has also co-authored and presented two papers at an international workshop and co-authored a journal paper submitted to an international journal for peer review. A seminar on the GAIA project has been provided to students of the Master Degree in Telecommunication Engineering and Computer Engineering.

A student project has also been carried out related to the GAIA objectives. The GAIA project has been advertised on CNIT's official website. CNIT has also produced some dissemination material to be used inside the Gramsci Keynes School for disseminating project objectives among students. CNIT has also produced dissemination content (brochure) to be sent to additional Italian schools and teachers.

## SYN

SYN has developed a video demonstrating the building manager application and has been a diligent supporter of dissemination GAIA information across SYN's social network channels. Additionally, SYN has prepared and presented the following two conference publications:

1. Emmanouil Zacharioudakis, Helen C. Leligou, Aikaterini Papadopoulou, "Energy efficiency tools for residential users", 21st Int. Conf. on Circuits, Systems, Communications and Computers, Crete Island, Greece, July 14-17, 2017
2. Georgios Mylonas, D. Amaxilatis, H. Leligou, T.Zahariadis, E. Zacharioudakis, J. Hofstaetter, A. Friedl, F. Paganelli, G. Cuffaro, Jimm Lerch, "Addressing Behavioral Change towards Energy Efficiency in European Educational Buildings", Global IoT Summit, 2017, JUNE 6-9 2017, Geneva

With regard to T5.2, SYN has been in communication with the Greek school stakeholders and activities to attract additional schools (like high school in N. Ionia). Finally, as task leader for the upcoming T5.3, SYN has begun the initial steps toward preparing a business plan for the Building manager application and a business plan for the participatory sensing application.

## OVER

OVER has participated in many Public Dissemination events to span project findings and its key concepts. In particular:

- ENGIE startup challenge, a brokerage event on open innovation.
- Venture UP Roma, a pitch event dedicated to the meeting between startups and investors.
- Open Italy 2017, an alliance of large companies, which desire to support innovative startups.
- Italian Tech Tour, where we have been invited by the organizer to attend as “main representative start-ups in Lazio region for energy efficiency”.

Additionally, OVER has participated in dissemination activities through their own social networking accounts and provided private customers and other companies with whom OVER has relationships information regarding the project for T5.2.

## EA

EA has been actively involved mainly with dissemination activities related to the educational community. It has overseen the organization of the GAIA Summer Course in 2017, while it is also the main drive behind the second summer school, which will take place during 2018. EA has also dedicated resources to coordinating Erasmus actions between schools participating in the project, which have not yet been approved.

## SPARK

Spark Works has been involved in the writing and the submission of the following publication during the 2<sup>nd</sup> year of the project:

1. Amaxilatis, D.; Akrivopoulos, O.; Mylonas, G.; Chatzigiannakis, I. An IoT-Based Solution for Monitoring a Fleet of Educational Buildings Focusing on Energy Efficiency. *Sensors* 2017, 17, 2296.

Moreover, Spark Works has been actively involved in the dissemination of project’s activities in social media.

## OVOS

Ovos has dedicated resources to contacting school networks in Austria and Germany, in order to establish connections with them and investigate potential participation by such schools to a certain degree to the project. Ovos has also given a keynote at the European Conference on Games-Based Learning 2017 in Graz, promoting GAIA, among other aspects.

## 9. Conclusions

Concluding this document, GAIA in its second year of operation has managed to:

- Created videos and revamped some of the existing dissemination material in order to reflect our intentions and goals for the final period of the project.
- Steadily increased and improved our online presence across multiple channels to expand our reach and enhance trials taking place in our schools.
- Organized and participated in a number of events and activities with both the educational and research communities, to maintain and enhance our momentum.
- Submitted a number of papers to scientific conferences and journals that have created additional dissemination channels for us to the research community.

In the second year of the project, the consortium has gained significant momentum in terms of dissemination, a fact that is apparent from the multitude of activities organized by the project and the large number of participants into these activities. We have described the abovementioned aspects, along with GAIA's strategy for dissemination for the third year. The consortium has published in the second year 2 journal papers, 1 conference paper and 3 workshop papers. We have also had several hundreds of educators and researchers attending GAIA-focused events, while 28 research papers have been published by researchers working in the field during GAIA co-organized events regarding smart cities and energy efficiency (GloTS 2017 workshop and the Sensors Journal special issue).

For the third year of the project, we expect to ramp up even further our efforts regarding dissemination:

- Having a more focused approach towards the educational community,
- heavily investing in the social networks utilized in the project, additional workshop events,
- a stronger push of the project activities in the research communities through paper submissions, and co-organization of events.

The consortium will also invest into activities that will enable the sustainability of the infrastructure of the project, as well as the application suite produced by GAIA partners, in order to make such aspects available to the community after the project ends.