Action full title:

Universal, mobile-centric and opportunistic communications architecture

Action acronym:

UMOBILE

Deliverable:

D6.3 - UMOBILE Dissemination Report (2)

Project Information:

Project Full Title	Universal, mobile-centric and opportunistic communications architecture
Project Acronym	UMOBILE
Grant agreement number	645124
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Programme	EU Framework Programme for Research and Innovation HORIZON 2020
Project Coordinator	Prof. Vassilis Tsaoussidis, Democritus University of Thrace

Deliverable Information:

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Dissemination level:

PU	Public	X
CO	Confidential, only for members of the consortium (including the Commission Services)	
CI	Classified, as referred to in Commission Decision 2001/844/EC	

Contents

Document History

- **Version:** 1.0

    - **Date:** 12/06/2018

    - **Description:** First draft to the consortium for comments and feedback

1 Executive summary

The Dissemination Report (2) is produced as part of the activities of Work Package 6 "Dissemination, exploitation and standardisation". It is a public document which will be made available on the project website, in the "Outcomes" section, for external parties interested in the dissemination of UMOBILE project. It follows the Dissemination Report (1), D6.2, produced on M18 and reported all the dissemination actions from the beginning of the project till July 31st, 2016.

As stated in the DoW (Description of Work), the objectives of the UMOBILE work package 6 "Dissemination, exploitation and standardisation", related to the dissemination activities, are:

- To widely disseminate the project concept, developments and findings to all key actors in the field in an interactive way, integrating their feedback at key points of the specification, design, development and evaluation work.

- To develop a project dissemination and communication strategy.

- To develop an user friendly website to inform the general public and relevant stakeholders about the project.

- To organize and/or publish results in international conferences and workshops to inform the scientific community about the project, its goals and achievements and to gather valuable information on related issues.

Through this dissemination report, WP6 intends to inform about the achievement of the mentioned goals. This report outlines the communication channels utilised throughout the project, the performance of communication activities and the overall impact.

2   List of Definitions

Term	Definition
Application	Computer software design to perform a single or several specific tasks, e.g. a calendar and map services.
DTN	Delay Tolerant Networking (DTN) supports interoperability of other networks by accommodating long disruptions and delays between and within those networks. DTN operates in a store-and-forward fashion where intermediate node can temporarily keep the messages and opportunistically forward them to the next hop. This inherently deals with temporary disruptions and allows connecting nodes that would otherwise be disconnected in space at any point in time by exploiting time-space paths.
GitHub	GitHub Inc. is a web-based hosting service for version control using Git (a version control system for tracking changes in computer files and coordinating work on those files among multiple people). It is mostly used for computer code. It offers all of the distributed version control and source code management (SCM) functionality of Git as well as adding its own features. It provides access control and several collaboration features such as bug tracking, feature requests, task management, and wikis for every project.
ICN	Information-Centric Networking (ICN) supports efficient delivery of both content and services by identifying information by name rather than the actual location. This decoupling of the information from its actual location breaks the need for end to end connectivity thus enabling much wider flexibility for efficient content and service retrieval. ICN also inherently supports caching thus enabling much better localised communications.
Information	Information is about understanding what the data is telling us. It provides an understanding about what is happening to users so we can make it easier for them to get the content they need when they need it.
NDN	Named Data Networking (NDN) is a Future Internet architecture that aims to transition today's host-centric network architecture into a data-centric network architecture. In particular, users will no longer need to retrieve data from a specific physical location; instead, users will be able to search for content, independent of the location where the content is stored.
UAV	Unmanned Aerial Vehicle (UAV), commonly known as a drone, is an aircraft without a human pilot aboard.

3 Stakeholders

This section describes the main stakeholder groups, and the methods that have been used to access each one of them and to circulate announcements and ongoing results:

- **Academia/research institutions**: This includes organisations whose primary focus is higher education and research, such as universities and other academic institutes. The topics of interests are: Delay Tolerant Networking (DTN), Information Centric Networking (ICN), Opportunistic communications architecture. This group has been targeted through numerous publications in prestigious international conferences and journals;

- **Industry**: This includes private companies providing end-users solutions through research and development as well as manufacturers, suppliers, distributors, service providers, vendors, system integrators, at the frontline of addressing the need for a ubiquitous internet. This group has been informed about UMOBILE project through newsletter and workshops;

- **Government**: This includes representatives from different levels of governmental organisations such as the European Commission, inter-governmental organisations, Member State governments or local governments. This group has been targeted through newsletter;

- **Research project managers**: This includes project managers which have the responsibility of the planning, execution and closing of any project, related to Delay Tolerant Networking (DTN), Information Centric Networking (ICN), Opportunistic communications architecture. This group has been targeted through numerous publications in prestigious international conferences and journals, newsletter, international meetings;

- **Civil protection authorities and first responders**: This group includes any entity or association whose goal is to protect the citizens of a state. The outcomes of UMOBILE would be a valuable help during: prevention, mitigation, preparation, response, or emergency evacuation and recovery. They have been informed through newsletter, workshops and fairs about emergency division.

- **Policy makers**: This includes individuals and members of the board of directors who have the authority to set the policy framework of an organisation (government or business). They have been informed through newsletter.

- **Media**: Includes all kinds of communications platforms like television, radio, newspapers, magazines, journals, blogs, and websites, which are interested in new technology to make Internet universal and supporting diverse set of services. This group has been targeted through publications in prestigious international journals and press releases;

- **Public**: Refers to the ordinary people in society which are most of all interested in the usage of new services on handheld devices (mainly smartphones). They have been informed through social networks.

This Dissemination Report outlines the work that was carried out to communicate with these audiences and it follows the structure of the communication strategy planned on Dissemination Plan, D6.1, written on M6.

4 Branding strategy

4.1 Project logo

In order to create a visual identity for the project to facilitate communication, a branding strategy was set out within the communication strategy. A logo is the first distinctive graphic design for identifying a project, so it was developed at the first stadium of the project. It was chosen by the partners among a series of possibilities. It represents the project (Universal, mobile-centric and opportunistic communications architecture) through the idea of a stylised vehicle carrying and spreading the connection and disseminating our goal to make the Future Internet universally pervasive supporting a diverse set of services.

UMOBILE project logo

This logo was then used to create a series of templates that could be used by partners to communicate the project. This included the creation of presentations, Agenda, Minutes and Business card templates. The branding strategy was also used to create branded lanyards which were used to raise awareness of the project at conferences.

4.2 Presentation template

A presentation template, including all partners logos and EU text, has been prepared to be used in any dissemination opportunities.

UMOBILE presentation template

5 Roll-ups, brochures, posters, white papers, press releases

A leaflet and a roll-up were prepared at the first stadium of the project. They were shared with partners via the intranet site so that they could be printed off locally and distributed at any event attended by a partner of the consortium. The leaflet briefly describes the project and it was addressed for a wide audience including non-specialists.

In a few words…

UMOBILE combines two emerging architectural approaches, namely Information-centric networking and Delay-tolerant networking, to build a novel architecture that allows for new services but also exploits local information better. UMOBILE will deploy scenarios that include free Internet access, micro-blogging at neighborhood level, emergency situations in isolated but also in crowded areas with temporary lack of communication facilities.

The project is a joint effort of SPICE/Democritus University of Thrace (Greece), University College London (UK), University of Cambridge (UK), COPELABS--COFAC (Portugal), TECNALIA (Spain), TEKEVER AU (Portugal), Senception (Portugal), Fon Technology (Spain) and AFA Systems (Italy).

UMOBILE, to be delivered in 2018, is coordinated by SPICE/DUTH and its total budget is 3,010,742 €.

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UMOBILE

Universal, mobile-centric, and opportunistic communications architecture

Extending Internet geographically, functionally, and socially

UMOBILE leaflet

Project Objectives

- To develop a consolidated information-centric and delay-tolerant communication platform
- To extend the boundaries of Future Internet
- To enable a tighter integration of opportunistic communications within the Internet
- To drive new applications and services
- To drive the Internet towards a communication platform for universal coverage
- To create an engagement platform that will bring together stakeholders with interests in universal coverage

Use cases

Micro-blogging

Civil protection

Emergency message dissemination

Social routine improvement

UMOBILE leaflet

As the project developed, additional targeted brochures, roll-ups and posters were developed by the various partners of the consortium. These were designed for specific audiences, e.g. R&D community, civil protections agencies, policy makers, and had a specific purpose. Some of them have been used for complete the existing

dissemination material, diversifying and adapting the contents to the terget they were addressed to.

Roll ups and posters

An overview of the project

The UMOBILE UAVs components

UMOBILE at ExpoEmergenze 2016

COPELABS Openday

Cloudrone: Micro Clouds in the Sky

UMOBILE roll ups and posters on the website

Brochures, white papers and press releases

UMOBILE goes live   UMOBILE in azione (italian)   Leaflet

White Paper   White Paper   Press Release from Regione Umbria
PerSense Mobile Light   The UMOBILE Contextual Manager Service   about the UMOBILE demo

UMOBILE brochures, white papers and press releases on the website

In particular, a UMOBILE brochure was created for the final demo event that took place in Italy on April 18th, 2018. It was produced both in English and in Italian language for the present audience. It provides a more detailed description of the project and of the final demonstration. In addition, it summarises the apps produced within the project and describes the UMOBILE Lab as an important oucome of the project. The brochure was printed and disseminated to key stakeholders and to all attendees at the closing event. The document is also available on the UMOBILE website such as all the others produced materials.

UMOBILE brochure of the final demo

Two white papers were produced by Senception about two important outcomes of the UMOBILE project:

- the **PerSense Mobile Light application** with the purpose to assist the UMOBILE project in gathering contextual information that could be relevant in the context of emergency scenarios;

- the **Contextual Manager module** of the UMOBILE architecture, an agent that seamlessly gathers devices contextual information, relevant to assist in the smooth deployment of the UMOBILE data transfer.

Follow the complete list of brochures, flyers, white papers, press releases and presentation used as dissemination meterial during the events in which the UMOBILE partners took part.

Title	Description	Date	Partner
Leaflet		2015	DUTH, All
Presentation – Bulk Data Transfers through an Airline Delay-Tolerant Network		2015	DUTH
Article in Fon's blog		2015	FON
News on Senception's website		2015	Senception
News in Portuguese Television Website TVI 2015		2015/03/04	TEKEVER
News in Portuguese Newspaper Público		2015/03/04	TEKEVER
Dissemination on TEKEVER's Facebook page		2015/03/03	TEKEVER
News in Telecompaper		2015/03/09	TEKEVER
Presentation at Net Futures 2015 Conference		2015/03/25	DUTH
Presentation at WWIC 2015		2015/05/25	DUTH
Press Release		2015/06/18	DUTH
COPELABS Openday Poster		2015/06/18	Copelabs
Presentation at ICNRG Meeting 2015		2015/07	UCL
Presentation at Open ICN Workshop Oct 2015		2015/10/30	UCL
DUTH Facebook page		2015-2016	DUTH
Presentation at ICNRG on January 2016, Paris		2016/01	UCL
Presentation at WWIC 2016		2016/05/25	DUTH
Introductory UMOBILE Rollup at ExpoEmergenze 2016		2016/06/03	AFA Systems
Poster of Cloudrone at ExpoEmergenze 2016		2016/06/03	UCAM
Presentation at ExpoEmergenze 2016		2016/06/03	AFA Systems
Presentation at ICNRG on July 2016, Berlin		2016/07	UCL
Presentation at Multi-Service Networks Workshop on 7 July 2016, Cosener's House		2016/07/07	UCL

Title	Description	Date	Partner
Poster: Cloudrone: Micro Clouds in the Sky	Poster for ACM SIGCOMM 2016 – ACM SIGCOM AINTEC, Bangkok	2016	UCAM
Presentation: Keyword-Based Mobile Application Sharing through Information-Centric Connectivity	UMOBILE presentation during Cisco Symposium on "Exceeding the Limits", 20th March, Paris	2017	UCL
Presentation: NDN-Opp – NDN in Opportunistic Networks	UMOBILE presentation during NDNcomm 2017, Memphis, USA	2017	COPELABS
Presentation: UMOBILE… in a nutshell	UMOBILE presentation during ACM ICN 2017, 26th September, Berlin	2017	Athena
Presentation: DTN tunneling	UMOBILE presentation during ACM ICN 2017, 26th September, Berlin	2017	Athena
Presentation: Opportunistic wireless aspects in NDN	UMOBILE presentation during ACM ICN 2017, 26th September, Berlin	2017	COPELABS
Presentation: Session: Contextualization Aspects Integration Into the Network Operation	UMOBILE presentation during ACM ICN 2017, 26th September, Berlin	2017	COPELABS
Presentation: The UMOBILE Lab	UMOBILE presentation during ACM ICN 2017, 26th September, Berlin	2017	AFA
Roll-up: the UMOBILE UAVs components		2018	TEKEVER
Poster: COPELABS Openday	Poster for Openday event organized in COPELABS	2018	COPELABS
Roll-up: an overview of the project	Roll-up that provides an overview to the project during the final demo	2018	AFA

Title	Description	Date	Partner
Brochure: UMOBILE goes live	Brochure that introduces the project during the final demo	2018	AFA
Brochure: UMOBILE in azione (italian)	Brochure for italian audience that introduces the project during the final demo	2018	AFA
Press release: Connecting the edges: A universal, mobile-centric and opportunistic communications architecture	International Journals/Magazines press release	2018	C. Sarros, S. Diamantopoulos, S. Rene, I. Psaras, A. Lertsinsrubtavee, C. Molina-Jimenez, P. Mendes,R. Sofia, A. Sathiaseelan, G. Pavlou, J. Crowcroft, V. Tsaoussidis
White paper: PerSense Mobile Light	White paper about PerSense Mobile Light application	2018	Senception
White paper: The UMOBILE Contextual Manager Service	White paper about Contextual Manager module of the UMOBILE architecture	2018	Senception

6 Videos

Videos and multimedia will be developed and shared in a Youtube playlist (`https://www.youtube.com/playlist?list=PLBJWz8PrSWWg-iC6iDI933hs2BIvBv7SV`), communicating easily accessible project results for attracting the interest of stakeholders and the general public.

They are present also in the first part of the "outcomes" page of the website (`http://www.umobile-project.eu/download/outcomes`) as a more direct and immediate form of dissemination for a wider public.

Videos

UMOBILEvideos on the website

The video entitled "*Micro-blogging in an intermittent connected Internet*" was produced at the beginning of the project and describes a typical application scenario of the UMOBILE architecture.

The videos entitled "*The architecture of UMOBILE in action*" and "*The architecture of UMOBILE explained*" were produced at the last stadium of the project to disseminate the ideas behind UMOBILE in an emergency scenario and how the UMOBILE components come into action.

"*UMOBILE UAV demo – Proof-of-Concept 1*" shows a UAV demonstration, realised by TEKEVER, that took place in Portugal.

"*UMOBILE demo – Proof-of-Concept 2*" shows the PoC2 demonstration, focused on data transmission in emergency scenarios, with intermittent internet access.

"*UMOBILE achievements reportage*" is a video reportage made during the final demonstration held in Italy. It shows footage taken during the workshop and during the outdoor demonstration and the interviews of the representatives who took part in the project.

Finally, the videos entitled "*TG3 Umbria*" and "*TG3 Molise*" are the news of the final demo disseminated on italian

TV.

Follow the complete list.

Title	Description	Date	Partner
Microblogging Video	Applying UMOBILE components for direct communication	2015	Copelabs
The architecture of UMOBILE in action	Introducing the ideas behind UMOBILE in an emergency scenario	2018	AFA
The architecture of UMOBILE explained	Understanding the UMOBILE components	2018	AFA
UMOBILE achievements reportage	The achievements of the project, as demonstrated during the final demo in Italy	2018	AFA
UMOBILE UAV demo – Proof-of-Concept 1	The UMOBILE UAVs components: a demonstration in Portugal	2018	TEKEVER
UMOBILE demo – Proof-of-Concept 2	Communications in Emergency Scenarios: a demonstration of PoC2	2018	Senception
TG3 Umbria – 1	News of the final demo on italian TV (2018-04-18)	2018	UMOBILE Consortium
TG3 Umbria – 2	News of the final demo on italian TV (2018-04-18)	2018	UMOBILE Consortium
TG3 Molise – 1	News of the final demo on italian TV (2018-05-04)	2018	UMOBILE Consortium
TG3 Molise – 2	News of the final demo on italian TV (2018-05-04)	2018	UMOBILE Consortium

7   The project website

7.1   The public website

To spread information about the project's activities and results has been created a dedicated project website, at the first stadium of the project (www.umobile-project.eu). It represents the primary source of dissemination of news and information about UMOBILE activities and it is also a repository to store the project outcomes as well as public deliverables of the project. It is an immediate and easy-to-access entry point which is open to all relevant stakeholders, and thus able to create awareness and interest about the project by making the most important information publicly available in a concise but exhaustive manner.

The Home page and the "News" section have been used to provide information on the main news and events concerning the project, including announcements and reports on public events which have been organized during

project lifetime.

The "Overview" section provides basic information about the project such as its scope, its main aim and the related works. An "Outcomes" page was set up to collect all materials developed during project. This page shows in the foreground videos, brochures and dissemination materials for a wider audience and it is organised into categories (sub-menus) with downloadable public deliverables and publications for a more specific audience.

UMOBILE pubic website: Home Page

7.1.1 Website audience

Detailed statistics about UMOBILE website's traffic and traffic sources have been generated using Google Analytics. The website was created in February 2015 and since its establishment, it has been viewed from about 9,000 visitors with almost 34,000 pages viewed recorded from throughout Europe and the world such as showed by the following figures.
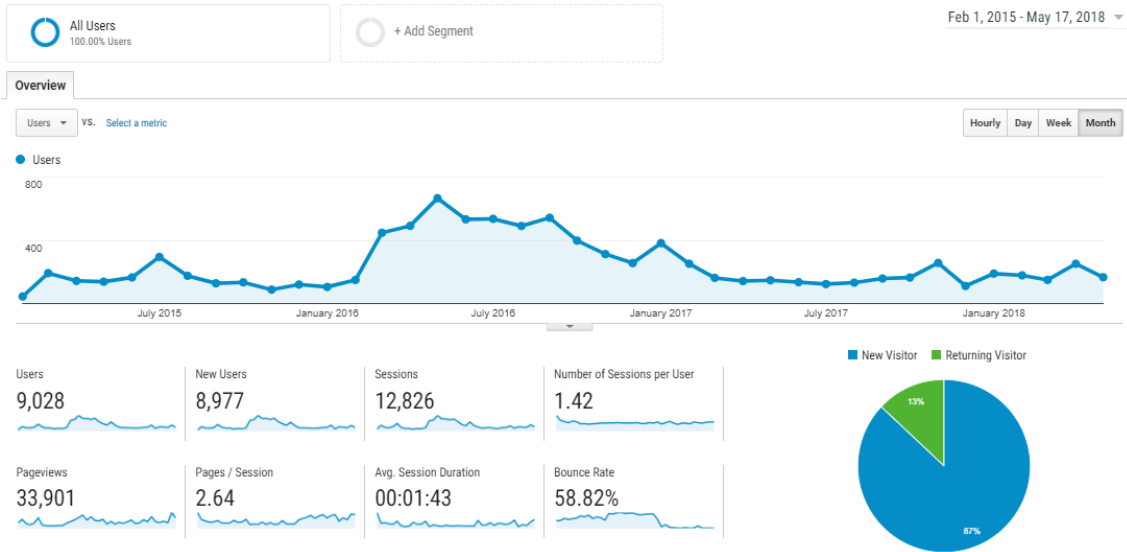
UMOBILE Google Analytics statistics
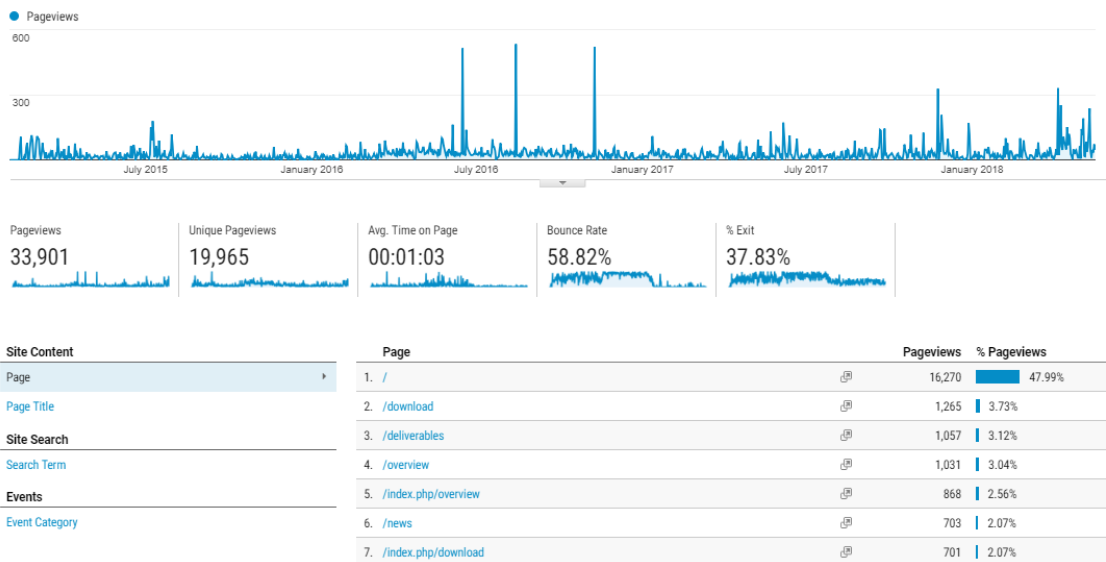
UMOBILE Google Analytics statistics

7.2   The internal website for the Consortium members

The web site also contains a private area, accessible only through a login process and primarily reserved to Consortium members. It is a documentation portal, based on MediaWiki, that has been set up in order to:

- foster collaboration among the partners of the consortium;

- enable collaborative input;

- enable the collection of information about dissemination activities.

It represents the internal document repository of the project, in which all relevant documents and information have been stored. It is also an helpful tool to prepare materials and set up a dissemination strategy of UMOBILE

work and results. It was used to:

- write periodically teleconference and meeting agendas and minutes;

- write deliverables and convert them directly in pdf format in order to be submitted to EC portal;

- store presentations and other files;

- share architectural and general informations with the members of Consortium;

- identify a wide stakeholders audience;

- compile a contacts list to whom we sent the first newsletter about UMOBILE and its findings.

8 The social media

The UMOBILE Facebook fun page (`https://www.facebook.com/UMOBILEproject/`) is used to promote the project news and related activities as well as reach a wide range of communities such as establish connection and communication with other related projects, Governmental Association groups, policy-makers and advisors, academia and civil society, industry, media. The UMOBILE Facebook fun page is also the perfect place to portrait project results, increase awareness and educate stakeholders about UMOBILE architecture. It's and it will be a supplement to the website, helps drive traffic to the site and offers a way out to promote project outcomes.
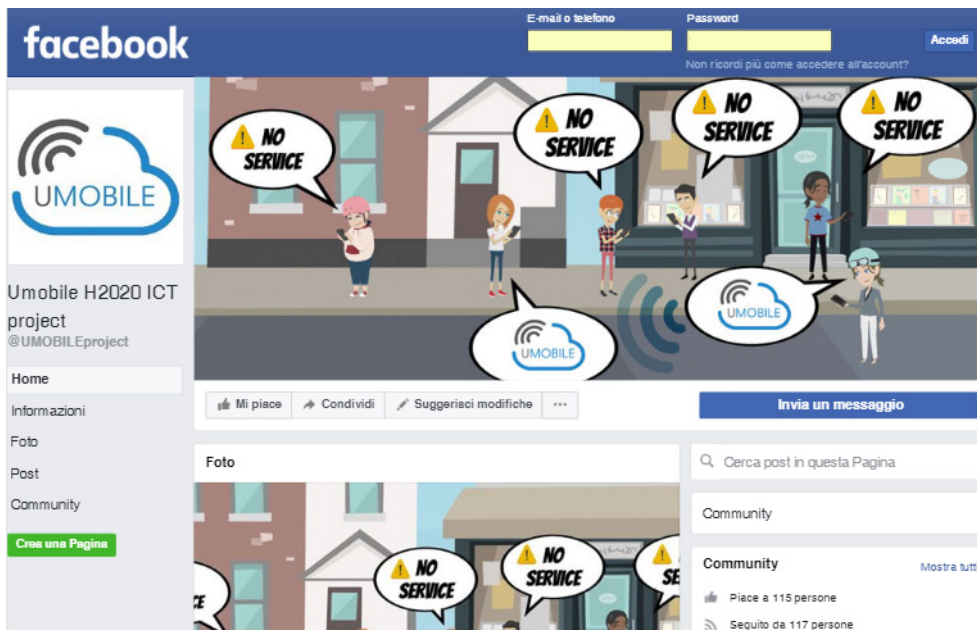
UMOBILE Facebook page

9 Newsletter

The main purpose of the newsletter as mean of dissemination is to provide general information about the project and disseminate up-to-date information to interested parties about the activities performed with in the scope of the

project. Each partner of UMOBILE Consortium listed the email addresses of their contacts and before sending, newsletter content was agreed upon and commonly accepted. Two newsletters were sent to disseminate UMOBILE outcomes coinciding with the completion of the 2 major phases of the project. First one was sent at the end of the first half of the project and was structured as follow:

1. abstract of the UMOBILE project, as the combination of two approaches: Delay/Distruption Tolerant Networking (DTN) and Information Centric Networking (ICN);

2. links to further information, to share the news through Facebook and to forward the newsletter to a friend;

3. footer with the logos of the UMOBILE Consortium partners.

UMOBILE Newsletter n.1

Second one was sent to the UMOBILE stakeholders, at the end of the project, to announce the presentation of the results and as invitation letter to assist at the final demo held in Umbria, Italy on April 17th-18th 2018. It included

the workshop agenda of the two days.

UMOBILE Newsletter n.2

10 Publications and Papers

The following table provides an overview of UMOBILE related publications and papers given by the project partners with the link to the respective open access repository .

Title	Data	Type	Venue	Authors	Open Access Repository
SCANDEX: Service Centric Networking for Challenged Decentralised Networks	2015	Publication in Conference proceedings/Workshop	Proceedings of the 2015 Workshop on Do-it-yourself Networking: an Interdisciplinary Approach – DIYNetworking '15	A. Sathiaseelan, L. Wang, A. Aucinas, G. Tyson, J. Crowcroft	zenodo
Exploiting Communication Opportunities in Disrupted Network Environments	2015	Publication in Conference proceedings/Workshop	Proceedings of the 13th international conference on Wired/Wireless Internet Communication	L. Mamatas, A. Papadopoulou, V. Tsaoussidis	zenodo
DTN routing optimised by human routines: the HURRy protocol	2015	Publication in Conference proceedings/Workshop	Wired/Wireless Internet Communications	S. Perez-Sanchez, J. Cabero, I. Urteaga	research-gate
Pervasive Data Sharing as Enabler for Mobile Citizen Sensing Systems	2015	Article in Journal	Pervasive data sharing as an enabler for mobile citizen sensing systems	W. Moreira, P. Mendes	zenodo
Pro-Diluvian: Understanding Scoped-Flooding for Content Discovery in Information-Centric Networking	2015	Publication in Conference proceedings/Workshop	Proceedings of the 2nd International Conference on Information-Centric Networking – ICN '15	L. Wang, S. Bayhan, J. Ott, J. Kangasharju, A. Sathiaseelan, J. Crowcroft	ACM Digital Library

Title	Data	Type	Venue	Authors	Open Access Repository
Understanding Internet Usage and Network Locality in a Rural Community Wireless Mesh Network	2015	Publication in Conference proceedings/Workshop	Proceedings of the Asian Internet Engineering Conference on – AINTEC '15	A. Lertsinsrubtavee, L. Wang, A. Sathiaseelan, N. Weshsuwan-narugs, A. Tunpan, K. Kanchanasut, J. Crowcroft	ACM Digital Library
Bulk Data Transfers through an Airline Delay-Tolerant Network	2015	Publication in Conference proceedings/Workshop	Proceedings of the 10th International Conference on Systems and Networks Communications, Barcelona	C. M. Malliou, N. Bezirgiannidis, V. Tsaoussidis	zenodo
Oi! – Opportunistic Data Transmission based on Wi-Fi Direct	2016	Publication in Conference proceedings/Workshop	IEEE INFOCOM 2016	L. Lopes, R. Sofia, P. Mendes, W. Moreira	zenodo
Buffering… energy for mobile devices: A 'store and rendezvous' approach	2016	Publication in Conference proceedings/Workshop	Proceedings of the 14th International Conference on Wired & Wireless Internet Communications (WWIC 2016), Thessaloniki, Greece, May 25-27, 2016	D. Vardalis, C. Sarros, V. Tsaoussidis	zenodo
A Characterization Study of Human Wireless Footprints with PerSense Mobile Light	2016	Publication in Conference proceedings/Workshop	MobiArch 2016	R. Sofia, P. Mendes	DOI

Title	Data	Type	Venue	Authors	Open Access Repository
Tube Streaming: Modelling Collaborative Media Streaming in Urban Railway Networks	2016	Publication in Conference proceedings/Workshop	IFIP Networking 2016	A. G. Tasiopoulos, I. Psaras, V. Sourlas, G. Pavlou	UCL Repository
A Collaborative Video Download Application Based on Wi-Fi Direct	2016	Publication in Conference proceedings/Workshop	In: Mamatas, L and Matta, I and Papadimitriou, P and Koucheryavy, Y, (eds.) Wired/Wireless Internet Communications: 14th IFIP WG 6.2 International Conference, WWIC 2016, Thessaloniki, Greece, May 25-27, 2016, Proceedings. (pp. pp. 147-158). Springer International Publishing (2016)	H. Sha, A. G. Tasiopoulos, I. Psaras, G. Pavlou	Springer Link
Opportunistic Off-Path Content Discovery in Information-Centric Networks	2016	Publication in Conference proceedings/Workshop	2016 IEEE International Symposium on Local and Metropolitan Area Networks (LANMAN)	O. Ascigil, V. Sourlas, I. Psaras, G. Pavlou	DOI
Keyword-Based Mobile Application Sharing	2016	Publication in Conference proceedings/Workshop	Proceedings of the Workshop on Mobility in the Evolving Internet Architecture – MobiArch '16	I. Psaras, S. Rene, K. V. Katsaros, N. Bezirgiannidis, V. Sourlas, S. Diamantopoulos, I. Komnios, V. Tsaoussidis, G. Pavlou	ACM Digital Library

Title	Data	Type	Venue	Authors	Open Access Repository
Information-aware access network selection	2016	Publication in Conference proceedings/Workshop	2017 IEEE Conference on Computer Communications Workshops (INFOCOM WKSHPS)	K. V. Katsaros, V. Sourlas, I. Psaras, S. Reñé, G. Pavlou	IEEE Xplore Digital Library
Named Data Networking Based Smart Home Lighting	2016	Publication in Conference proceedings/Workshop	Proceedings of the 2016 conference on ACM SIGCOMM 2016 Conference – SIGCOMM '16	U.D.Silva, A. Lertsinsrubtavee, A. Sathiaseelan, K. Kanchanasut	ACM Digital Library
Cloudrone: Micro Clouds in the Sky	2016	Publication in Conference proceedings/Workshop	Proceedings of the 2nd Workshop on Micro Aerial Vehicle Networks, Systems, and Applications for Civilian Use – DroNet '16	A. Sathiaseelan, A .Lertsinsrubtavee, A. Jagan, P. Baskaran, J. Crowcroft	ACM Digital Library
NSense: A People-centric, non-intrusive Opportunistic Sensing Tool for Contextualizing Nearness	2016	Publication in Conference proceedings/Workshop	IEEE Healthcom2016	R. Sofia, S. Firdose, L. A. Lopes, W. Moreira, P. Mendes	uluso-fona.pt
Seamless Support of Low Latency Mobile Applications with NFV-Enabled Mobile Edge-Cloud	2016	Publication in Conference proceedings/Workshop	2016 5th IEEE International Conference on Cloud Networking (Cloudnet)	B. Yang, W.i K. Chai, G. Pavlou, K. V. Katsaros	DOI

Title	Data	Type	Venue	Authors	Open Access Repository
On the feasibility of a user-operated mobile content distribution network	2017	Publication in Conference proceedings/Workshop	2017 IEEE 18th International Symposium on A World of Wireless, Mobile and Multimedia Networks (WoWMoM)	I. Psaras, V. Sourlas, D. Shtefan, S. Rene, M. Arumaithurai, D. Kutscher, G. Pavlou	DOI
A keyword-based ICN-IoT platform	2017	Publication in Conference proceedings/Workshop	Proceedings of the 4th ACM Conference on Information-Centric Networking – ICN '17	O. Ascigil, S. Renè, G. Xylomenos, I. Psaras, G. Pavlou	research-gate
A Native Content Discovery Mechanism for the Information-Centric Networks	2017	Publication in Conference proceedings/Workshop	Proceedings of the 4th ACM Conference on Information-Centric Networking – ICN '17	O. Ascigil, V. Sourlas, I. Psaras, G. Pavlou	DOI
Demo: Named-Data Networking in Opportunistic Networks	2017	Publication in Conference proceedings/Workshop	Conference on Information-Centric Networking – ICN '17	S. Dynerowicz, P. Mendes	uluso-fona.pt
Now@ – Content Sharing Application over NDN	2017	Publication in Conference proceedings/Workshop	ACM ICN 2017	O. Aponte, P. Mendes	uluso-fona.pt
NDN operation in Opportunistic Wireless Networks	2017	Publication in Conference proceedings/Workshop	NDNcomm 2017	S. Dynerowicz, O. Aponte, P. Mendes	research-gate

Title	Data	Type	Venue	Authors	Open Access Repository
On Uncoordinated Service Placement in Edge-Clouds	2017	Publication in Conference proceedings/Workshop	2017 IEEE International Conference on Cloud Computing Technology and Science (CloudCom)	O. Ascigil, T. K. Phan, A. G. Tasiopoulos, V. Sourlas, I. Psaras, G. Pavlou	DOI
Oi! – Short Messaging in Opportunistic Wireless Named-Data Networks	2018	Publication in Conference proceedings/Workshop	Technical Report COPE-SITI-TR-18-03	O. Aponte, P. Mendes	uluso-fona.pt
ICN-based Edge Service Deployment in Challenged Networks	2018	Publication in Conference proceedings/Workshop	Proceedings of the 4th ACM Conference on Information-Centric Networking – ICN '17	C. Sarros, A. Lertsinsrubtavee, C. Molina-Jimenez, K. Prasopoulos, S. Diamantopoulos, D. Vardalis, A. Sathiaseelan	DOI
NDN-OPP Named-Data Networking in Opportunistic Networks	2018	Publication in Conference proceedings/Workshop	Technical Report COPE-SITI-TR-18-01	P. Mendes, M. Tavares	research-gate

Title	Data	Type	Venue	Authors	Open Access Repository
Cost-Efficient NFV-Enabled Mobile Edge-Cloud for Low Latency Mobile Applications	2018	Article in Journal	IEEE Transactions on Network and Service Management	B. Yang, W. K. Chai, Z. Xu, K. V. Katsaros, G. Pavlou	DOI
Connecting the Edges: A Universal, Mobile-Centric, and Opportunistic Communications Architecture	2018	Article in Journal	IEEE Communications Magazine	CA Sarros, S. Diamantopoulos, S. Rene, I. Psaras, A. Lertsinsrubtavee, C. Molina-Jimenez, P. Mendes, R. Sofia, A. Sathiaseelan, G. Pavlou, J. Crowcroft, V. Tsaoussidis	DOI

11 Awards

Title	Data	Authors	Event	Open Access Repository
Pro-Diluvian: Understanding Scoped-Flooding for Content Discovery in Information-Centric Networking	2015	L. Wang, S. Bayhan, J. Ott, J. Kangasharju, A. Sathiaseelan, J. Crowcroft	ACM ICN 2015	ACM Digital Library
Opportunistic Off-Path Content Discovery in Information-Centric Networks	2016	O. Ascigil, V. Sourlas, I. Psaras, G. Pavlou	IEEE LANMAN 2016	DOI
Keyword-Based Mobile Application Sharing	2016	I. Psaras, S. Rene, K. V. Katsaros, N. Bezirgiannidis, V. Sourlas, S. Diamantopoulos, I. Komnios, V. Tsaoussidis, G. Pavlou	ACM MobiArch 2016	ACM Digital Library

12 Events: conferences, workshops, exhibitions, fairs

Following table provides an overview of UMOBILE related activities organized or attended by the project partners with respective data, location, target of person reached and number estimated of persons reached.

Title	Data	Partners	Location	Target (category of persons reached)	Number of persons reached (estimated)	O/P*
Net Futures Conference 2015	2015/03/25	DUTH	Brussels, BE	Partners involved in Future Internet projects and EC officials	700	P
ACM MobiSys DIY workshop	2015/05/18	UCAM	Florence, IT	ICN	50	P
WWIC 2015	2015/05/25 – 2015/05/27	Tecnalia, DUTH	Malaga, ES		47	P
COPELABS Open Day	2015/06/18	COPELABS	Lisbon, PT	Academia, industry, government	Workshop: >50 Facebook: 500	O
IETF 93 meeting	2015/07/19 – 2015/07/24	UCL	Prague, CZ			P
ICNRG & ICN workshop						P
ACM ICN 2015 conference	2015/10/01	UCAM	San Francisco, USA			P
21st Interim meeting of the ICRNG	2015/11/01	UCL	Yokohama – Japan			P
ICSNC 2015 (The Tenth International Conference on Systems and Networks Communications)	2015/11/15 – 2015/11/20	DUTH	Barcelona, ES			P

Title	Data	Partners	Location	Target (category of persons reached)	Number of persons reached (estimated)	O/P*
ACM AINTEC	2015/11/18 – 2015/11/20	UCAM	Bangkok, TH	Academia	100	P
IRTF GAIA workshop	2015/11/30	UCAM	London, UK	Academia	80	O
ACM DEV conference	2015/12/01 – 2015/12/02	UCAM	London, UK	Academia		P
Interim meeting of the 23rd ICNRG	2016/01/14	UCL	Paris, FR			P
23rd ICT conference	2016/5/16	UCL	Thessa-loniki, GR			P
EU ITN CleanSky project workshop	2015/09/16	UCAM	Göttingen			P
The sixth annual Symposium on Computing for Development, ACM DEV'15	2015/12/01 – 2015/12/02	UCAM	London, UK	Academia	150	O
The first International Workshop on Future Internet Architecture for Developing Regions (FI4D), in conjunction with IEEE CCNC	2016/01/09	UCAM	Las Vegas, USA	Academia	50	O
Workshop on New Frontiers in Internet of Things, ICTP	2016/03/07 – 2016/03/18	UCAM	Trieste, IT	Academia	50	O

Title	Data	Partners	Location	Target (category of persons reached)	Number of persons reached (estimated)	O/P*
IETF 95 meeting	2016/04/04 – 2016/04/08	DUTH	Buenos Aires, Argentina	Standardisation researchers and officials	1660	P
IEEE INFOCOM conference	2016/04/10 – 2016/04/15	COPELABS	San Francisco, USA			P
COPELABS Scientific Advisory Board meeting	2016/05/05 – 2016/05/06	COPELABS	Lisbon, PT	Scientific advisory board, academia, students	40	O
SENSKIN project meeting	2016/05/17 – 2016/05/18	DUTH	Rome, IT	Partners of SENSKIN project	26	P
IFIP Networking	2016/05/17 – 2016/05/19	UCL	VIENNA, AT			P
WWIC 2016	2016/05/25 – 2016/05/27	DUTH	Thessaloniki, GR		50	P
Bern University	2016/06/02	DUTH	Bern, CH	Professors and researchers from Bern University	10	P
ExpoEmergenze 2016	2016/06/03 – 2016/06/05	AFA Systems	Bastia Umbra, IT	Civil Protection Agencies	Workshop:50 Stand:1.000	P

Title	Data	Partners	Location	Target (category of persons reached)	Number of persons reached (estimated)	O/P*
The Technology for the Bottom Billion Workshop	2016/06/10	UCAM	Cambridge, UK	Academia	50	P
ACM MobiSys Dronet workshop	2016/06/26	UCAM	Singapore	Drone	50	P
Techfugees Cambridge conference	2016/07/02	UCAM	Cambridge, UK	Academia	80	P
Ciencia 2016 (National Science conference)	2016/07/04 – 2016/07/06	COPELABS	Lisbon, PT	Portuguese academia and government	2500. Presence: stand, discussion panel	P
Multi-Service Networks Workshop	2016/07/07	UCL	Cosener's House, UK			P
IETF 96 meeting	2016/07/17 – 2016/07/22	UCL	Berlin, DE			P
IEEE LANMAN 2016	2016/06/13 – 2016/06/15	UCL	Rome, Italy			P
MobiCom 2016 demo contest	2016/10/3-7	Senception	New York, USA	ICN		P
MobiArch 2016	2016/10/3	UCL	New York, USA			P

Title	Data	Partners	Location	Target (category of persons reached)	Number of persons reached (estimated)	O/P*
IEEE Healthcom 2016	2016/09/14-17	Copelabs	Munich, Germany	International Scientific Conference	100 people	P
ACM SIGCOMM AINTEC 2016	2016/11/30-2016/12/02	UCAM	Bangkok, Thailand			P
Networking 2017	2017/06/12-16	UCL	Stockholm, Sweden			P
Mobile Edge Communications (MECOMM) workshop together with ACM Sigcomm 2017	2017/08/21	UCL	Los Angeles, USA			P
Cisco Symposium on "Exceeding the Limits"	2017/03/20-21	UCL	Paris, France			P
NDNComm 2017 workshop	2017/03/22-26	COPELABS	Memphis, Tennessee	International Scientific workshop	200 people	P
IETF	2017/07/16-21	UCL	Prague, Czech Republic			P
Workshop on Information Centric Fog Computing (ICFC) that took place alongside with the IFIP Networking 2017 conference	2017/06/12-15	UCL	Stockholm, Sweden		20 active participants	P

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Title	Data	Partners	Location	Target (category of persons reached)	Number of persons reached (estimated)	O/P∗
IEEE WoWMoM 2017 conference	2017/06/12-15	UCL	Macau, China			P
CommNet2 &iCore joint workshop on Content Caching and Distributed Storage for Future Communication Networks	2017/06/20	UCL	London, UK			P
IEEE IM 2017	2017/05/8 – 2017/05/12	UCL	Lisbon, Portugal		12-15 people with very positive feedback	P
ACM ICN 2017	2017/09/26 – 2017/0928	Senception, ATHENA, AFA, COPELABS	Berlin, Germany	International Scientific Conference	100 people	P
Organisation of a workshop in the area of ICN and edge-fog-computing alongside with ACM Sigcomm 2017	2017/08/21 – 2017/08/25	UCL	Los Angeles, USA			O
ICNRG Interim Meeting	2017/09/29	UCL	Berlin, Germany			P
IEEE CloudNet 2017	2017/09/25 – 2017/09/27	UCAM	Prague, Czech Republic			P

Title	Data	Partners	Location	Target (category of persons reached)	Number of persons reached (estimated)	O/P*
Night of the researcher	2017/09/29	Athena	Xanthi, Greece	general audience	100 people	P
Meeting in Velti company	2018/02/14	Athena	Athens, Greece	company's executives	10 people	P
Presentations at Mobile Multimedia Laboratory, Department of Informatics, Athens University of Economics and Business	2018/03/06	Athena	Athens, Greece	scientific audience	30 people	P
IETF DINRG Meeting	2018/03/19	COPELABS, Senception	London, UK	Standardisation meeting	200 people	P
IRTF GAIA Meeting, IETF 101	2018/03/22	UCAM, Athena, Senception	London, UK			P

*Organisation / Participation

12.1 Latest activities

Beyond the above, on April 30th 2018, at the UMOBILE activities conclusion, a number of workshops with some Regional Civil Protection Bodies in Italy has been planned, to reproduce the Final Demo and disseminate its outcomes to specific users and organizations". The first of these workshop will be held on June 7th, 2018 in Bologna, with the Protezione Civile of the Emilia Romagna region.

13 The UMOBILE laboratory

The UMOBILE laboratory, developed by AFA under WP5, has become also an important component for the dissemination activities and it is expected to be opened to the research community at the end of the project.

Since June 2017, the UMOBILE Lab, physically located at AFA Systems's premises, has become a part of the Named Data Networking (NDN) project (`https://named-data.net/project/`).

At the moment, in the context of NDN, several experiments can be run in the lab, connecting faraway NDN-wireless networks (e.g. one at AFA – Italy, another at COPELABS – Portugal), being the NDN traffic sent over the

NDN testbed. The experiments allow to test the UMOBILE NDN modules for wireless networks and a set of novel applications (e.g. such as Oi!, KEBAPP, NDN-Opp and Now@ developed on top of NDN during the project).
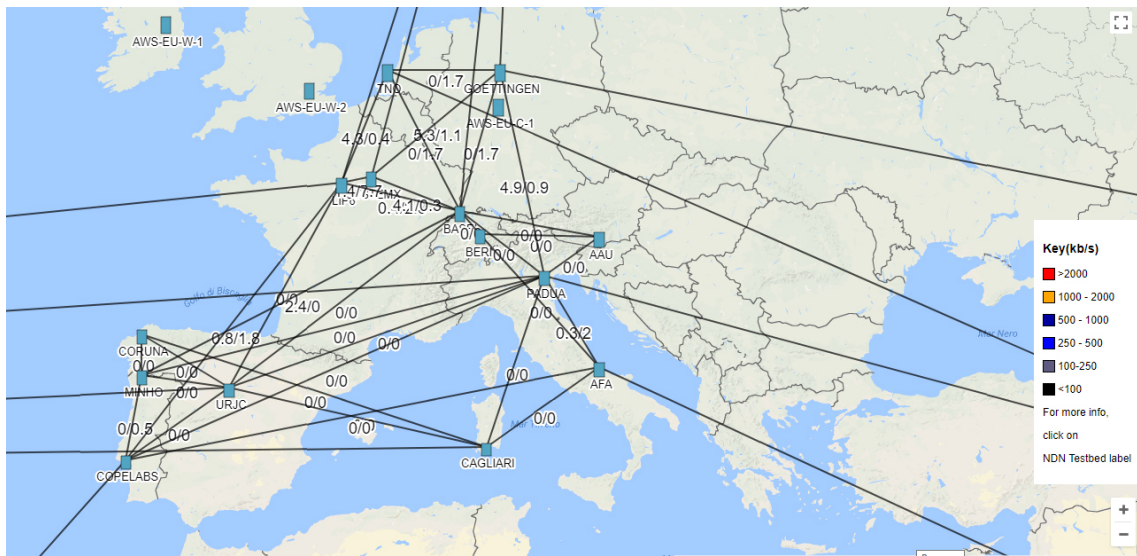
Map of the NDN testbed

14   Conclusions

This Report summarizes the dissemination activities held in the scope of the UMOBILE project, as outlined in the Dissemination Plan issued at the beginning of the project. The relevant audience has been classified in target groups and reached with appropriate dissemination tools. The overall purpose of the dissemination activities has been to spread constantly updated information about project findings and relevant results. The dissemination actions developed during project included:

- the public website (www.umobile-project.eu) opened at the beginning of the project and regularly updated about the project evolution

- a number of academic events and workshops where the academic partners presented the different research topics as addressed in the project

- a significant number of high-level academic papers, some of which best paper award in the conference

- some activities targeted to a general audience (non academic): newsletter, presence on Facebook and the participation to fairs and workshops.

The last group of activities has grown as long as the project entered in a more applicative phase and presented its results in the form of demo trials like the UAV demonstration in Portugal done by TEKEVER and the last one, the final demo, that took place in Italy. This phase was important to meet real UMOBILE users and gather their opinions, in order to move the project outcomes closer to real exploitation opportunities on the market.