

Towards an Open, Secure, Decentralized and Coordinated Fog-to-Cloud Management Ecosystem

D6.1 Dissemination Strategy and Plan

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Version History

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Executive Summary

Dissemination and communication activities will last the whole project's lifespan, from January 2017 (M1) to December 2019 (M36). These activities correspond to task T6.1 and will involve all the project partners. The main objective of the dissemination and communication task is to give visibility to all the activities developed during the project, as well as to the achieved goals.

The target of the dissemination will not only be the scientific and research community but also communication activities should help the achievement of exploitation and standardization goals. For this reason, one of the first objectives of this deliverable is to identify the potential target groups and the means of communication for each of them. Related with these different target groups we establish a first differentiation between communication and dissemination activities. Communication has a wider scope and audience, and it is addressed to all type of audience, from general public to industry. While dissemination is focused on a more specialized audience such as academics, researchers, technicians, etc. After identifying these target groups, the methodology and the phases to address the dissemination and communication goals are established. We also detail the specific communication and dissemination actions and planned activities; including in the dissemination list of actions a preliminary analysis of emerging market opportunities.

Finally, we include a figure showing the dissemination roadmap and our current situation in month M6; as well and some annexes with different templates we will use to collect the dissemination activities.

1. Introduction

1.1 Scope

The document outlines the mF2C dissemination (and also communication) strategy and plan, which represent the planned processes of providing information on the project mF2C generally and on its results, as well as the instruments to reach such an important promotion. From a formal point of view, mF2C's Objective #5 includes disseminating the mF2C framework and contributing to standards. To that end mF2C's work plan includes Task 6.1 "Dissemination [M01-M36] and Task 6.2 "Standards [M01-M36]". Task 6.1 is responsible for disseminating and creating awareness of the project and its results to multiple target audiences including scientific audiences and other potential relevant technical stakeholders to which the project could represent potential value, trying to ensure reaching to various audiences at the national, European, and global level. Task 6.1 will take care of disseminating the project's scientific evolution and advances, its value propositions, product definition and benefits for target audiences to foster possible uptake and potential exploitation and sustainability routes. Task 6.2 is responsible for managing mF2C contributions to relevant standards. This task will monitor existing and emerging standards organisations – which may be International, Regional, Industrial or Community focused – and prioritise and coordinate contributions where relevant.

This document also details up to the possible extent specific actions already identified and the plans for identifying future opportunities matching to the time scales at which the main results of the project will be available. The main aim of the strategy depicted in this document is to create awareness around the project in order to support further exploitation of project results.

The document is structured as follow, Section 2 describes the methodology and procedures of the dissemination and communication strategy, Section 3 and Section 4 give the details about the communication and dissemination strategies respectively. Finally, Section 5 concludes this deliverable. Additionally, we include some annexes with interesting information related to the dissemination and communications plans.

Acronym	Definition	
CI	Critical Infrastructure	
loT	Internet of Things	
IT	Information Technology	
КРІ	Key Performance Indicator	
OT	Operational Technology	
PATC	PRACE Advanced Training Centre	
	Spanish technology platform for the adoption and promotion of the	
Planetic	electronic, communication and information technologies	
PM	Project manager	
PMB	Project management Board	
R&I	Research and Innovation	
SSICLOPS	Scalable and Secure Infrastructures for Cloud Operations	
WP	Work package	

1.2 Glossary of Acronyms

Table 1. Acronyms

2. Methodology and procedures

The objective of this deliverable is to establish an accurate, well-defined and customized scientific and technical dissemination (and communication) strategy and plan that serves as a solid ground base to deploy concrete, precise and target oriented project dissemination actions along its lifetime cycle. All of this within the scope of assuring the mF2C sustainability once the project ends.

Dissemination and Communication are considered two different types of activities, since they differ in the objectives, scope, messages and target audience. On the one hand, dissemination aims to stimulate the proper uptake of the project results among scientific and technical community and potential stakeholders such as cloud and fog providers, technology providers, application developers, etc. On the other hand, communication aims to reach and engage public target audiences using marketing communication channels and materials. However, it is clear that some of the actions described in this plan, such as blog, website, etc. can be categorized, at the same time, as communication and dissemination activities, because they are addressed to both, general public and scientific and technical community. Communication and dissemination have to do with WHO to target (the target audiences), WHEN (timing, it will specify the appropriate time of delivery for each message), with WHAT message (the key messages that are trying to be articulated), HOW (how the message will be delivered) and by WHOM (who will deliver the information). Therefore, both types of activities require a specific plan.

The methodology and procedures for the dissemination and communication strategy and plan are considering several actions envisaged by mF2C Consortium dissemination stages for the whole project's duration that are classified in three main areas of action: i) awareness creation during year 1; ii) communication in year 2; and iii) implementation in year 3.



Figure 1 mF2C dissemination and communication strategy

Table 2. Dissemination stages

	Objectives	Methods
	 Promote project 	 Creation of project's website, the information hub for the
Year Awar	visibility and awareness	project dissemination strategy. This web includes the
		latest news about the project development, posted
ene	- Target audience	deliverables already sent to the commission as well as
SS '	identification and set the	connection to the Twitter project account. It will also

	tools to raise awareness	include demonstration videos, links to download the latest
	and branding about mF2C	outcomes, etc.
	- Dissemination in partners' strategic networks.	 Creation of LinkedIn, Twitter and ResearchGate accounts to disseminate in different types of target the outcomes of the project Generation of supporting material: project brochure and poster, to be used on the events and conferences attended by the different partners Engaging the general public through social media and communities: we include description of the use cases in a general audience language to be easily understood by all types of audience. Press releases and liaison with scientific and business
		stakeholders. The plan is that each partner will produce a press release for internal dissemination in the company. Some of them are already done, such as Tiscali, ATOS, Sixsq, etc.; as well as a general press release published at Planetic [1].
		 Organizing different workshops where project outcomes can be tested by interested groups. The first workshop, Fog-to-Cloud Distributed Processing, will be organized co-located with the Euro-Par conference in August 28 [2]
Year 2- Commu	 Communication of ongoing activities, main results and key achievements Special focus on ICT 	 Elaboration of a business whitepaper describing the mF2C solution, its added value and the benefits for its different stakeholders Early development of market-specific material associated with software prototypes to maximize their potential influence on the market Publication of papers/articles on scientific journals Attendance to both scientific and industrial events to promote the project and showcare the latest outcomes
nication	industry and target potential users	 Organizing different workshops where project outcomes can be tested by interested groups. We will plan to organize three workshops, one per year, during the project. Aligning events with similar EU or national projects
		 Intensify attendance to events and conferences where the
	 Implementation of 	project's outcomes will be showcased.
h	project's outcomes	 Generation of workshops or training sessions
Yea	 Generation of 	 Demonstration of mF2C benefits through the three real-
ir 3 ient	marketing material to	world use cases identified.
atio	target industrial	 Analysis of the KPIs and impact of dissemination activities
ň	stakenolders	 Publication of new press releases, generation of a commercial video, a how-to guide about project

	functioning, etc.

On the other hand, all previous dissemination activities will be split into the following actions:

- Creation of a public web portal promoting the project research, giving information about the project evolution, scientific results, standard documents, etc. Moreover, a leaflet, poster and presentation slides with a uniform graphic layout will be created and updated upon major developments in the course of the project including project deliverables, dissemination materials and other project-related material.
- Creation of a project blog (using an open source blogging platform) and a social media strategy (including Twitter, Facebook, LinkedIn and similar) to be used to broadcast announcements of the project participation in public events, key achievements, publications and software releases, short movies or animations production and publishing of project results on YouTube or Vimeo, etc.
- Publication of the mF2C newsletter, highlighting project progress and achievements.
- Publications in major European and Non-European technical conferences as well as in specialised journals and magazines in areas related to the project.
- Workshop organization. mF2C is going to organize three workshops to increase project visibility as well as to near communities interested in the project areas.
- Training courses and Summer Camp organisation. mF2C aims to create educational material in the cloud and fog areas to be used at both undergraduate and graduate courses by academic partners. mF2C also aims to prepare tutorials and online courses (to be uploaded in high-impact repositories, such as SlideShare or ResearchGate) related to project's development. One Summer Camp will be organized in M22.
- Press Releases (especially industrial ones), to guarantee the widest possible take-up.

But mF2C will not be only concentrated on the scientific dissemination of project results. For this reason, a communication plan, more commercially-oriented has been also depicted in order to reach a wider audience of stakeholders, including potential end users and early adopters. Main actions of this plan can be summarized as follows:

- Elaboration of marketable material, such as leaflets or summary reports with less technical detail to introduce main results to the general public.
- Promotion of software releases for trial purposes.
- Availability of demos and support material to understand the functionalities of the mF2C platform.
- Elaboration of an elevator pitch to be showcased to different stakeholders.
- Preparation of a set of webinars to show, in real time, the benefits that a platform such the one proposed by mF2C can bring to different businesses.

The dissemination task will be responsible for selecting the best and most effective channels to reach the intended audiences, the best execution and timing, and will differentiate two audiences' types: scientific and technical community and other scientific and technical potential stakeholders to drive towards previous activities on the one hand; and on the other hand, a more general audience, less interested in low level technical details but on the benefits of adopting this kind of solution. Emphasis will be placed on appropriate selection of the information provided, on a clear and to-the-

point presentation and on the protection of specific know-how of the project partners so as not to endanger exploitation of results.

The execution of dissemination and communication activities will be responsibility of all partners according to the plan under the leading of the dissemination, standards and exploitation activities work package leader, Tiscali, and in close cooperation with the mF2C innovation strategy defined in task 1.3.

Nevertheless, based on the consortium experience, it is believed that dissemination will create large impact and critical mass of the project. Therefore, the project partners intend also to give tangible efforts in whole project dissemination.

The dissemination and communication strategy plan is going to serve as a guide throughout the duration of the project and will evolve as the project matures and needs. Therefore, the project will dynamically use different channels; send different messages to different stakeholders to achieve its dissemination objectives for both, scientific and technical oriented dissemination. The dissemination of the mF2C concept, developments and findings to all key actors in the field will be conducted in an interactive way, integrating their feedback at key points of the specification, design, development and evaluation work.

2.1 Initial reference: actions and KPIs

The commitment of the partners towards dissemination and communication was already reflected during the proposal preparation phase, when individual dissemination plans per partner were provided. In turn, Table 3 describes the main KPIs identified in the proposal preparation phase to monitor the ongoing evolution of dissemination and communication activities. Both have been considered as the starting point for the definition of the dissemination and communication plan defined in this document.

KPI	INIEASURE	Contingency plan
Number of publications	20 during the project: at	If during a year the KPI is
(articles, papers, etc.)	least 3 the first year, 7 the	not achieved, next year
in conferences and	second year and 10 the third	the number should be
events	one.	increased to finally
		achieve the global
		number
Number of publications	At least <u>3</u> per year.	If during a year the KPI is
in journals or other		not achieved, next year
peer reviewed		the number should be
publications.		increased to finally
		achieve the global
		number
Number of	At least one business	If this is not achieved in
whitepapers published	oriented whitepaper and <u>one</u>	month 30, WP6 leader
	technical/scientific	will set a working group
	whitepaper	to write the missing
		whitepapers
Number of events	50 during the whole project:	If during a year the KPI is
assisted with a relevant	10, 15, 25 during the first,	not achieved, next year
	Number of publications (articles, papers, etc.) in conferences and events Number of publications in journals or other peer reviewed publications. Number of whitepapers published Number of events assisted with a relevant paper	Number of publications (articles, papers, etc.) in conferences and events20 during the project: at least 3 the first year, 7 the second year and 10 the third one.Number of publications in journals or other peer reviewed publications.At least <u>3</u> per year.Number of whitepapers publishedAt least one business oriented whitepaper and one technical/scientific whitepaperNumber of events assisted with a relevant paper50 during the whole project: 10, 15, 25 during the first, second and third year

Table 3. Actions, KPIs and measures identified during m2FC's preparation and updated after 6 months

			the number should be			
			increased to finally			
			achieve the global			
			number			
Organization	Number or workshops	<u>3</u> workshops organized	Workshops are already			
of workshops	organized with	through the project lifecycle,	scheduled in the set of			
(in	significant present	included co-organized with	planned activities in WP6,			
collaboration		the project will definitely				
or not)		make them				
Organization	Number or summer	<u>1</u> summer camp organized	Summer camp is already			
of summer	camp organized with	jointly with an mF2C	scheduled in the set of			
camp	significant attendance	workshop	planned activities in WP6,			
		the project will definitely				
		make it				
Collaboration	Number of significant	Contact and establish a	If this is not achieved in			
actions	actions in collaboration	significant collaboration with	month 30, WP6 leader			
		at least <u>3</u> projects	(along with the project			
			manager and scientific			
			coordinator) will set a			
			working group to			
			establish the missing			
			collaborations			
Marketing	Number of flyers	3, at least <u>1</u> per year	If during a year the KPI is			
collateral			not achieved, next year			
materials			the number should be			
			increased to finally			
			achieve the global			
			number			
	Number of posters	<u>2</u> (one technical and one	If this is not achieved in			
		business oriented)	month 30. WP6 leader			
		,	month 30, WP6 leader			
		,	month 30, WP6 leader will set a working group			
			month 30, WP6 leader will set a working group to create the posters			
	Number of Project	At least 1 per year	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is			
	Number of Project videos	<u>At least 1 per year</u>	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year			
	Number of Project videos	<u>At least 1 per year</u>	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be			
	Number of Project videos	<u>At least 1 per year</u>	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be increased to finally			
	Number of Project videos	<u>At least 1 per year</u>	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be increased to finally achieve the global			
	Number of Project videos	<u>At least 1 per year</u>	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be increased to finally achieve the global number			
Project	Number of Project videos Number of visitors	<u>At least 1 per year</u> At least <u>1.500</u> visits per year	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be increased to finally achieve the global number If during a year the KPI is			
Project website	Number of Project videos Number of visitors	<u>At least 1 per year</u> At least <u>1.500</u> visits per year	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be increased to finally achieve the global number If during a year the KPI is not achieved, next year			
Project website	Number of Project videos Number of visitors	<u>At least 1 per year</u> At least <u>1.500</u> visits per year	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be increased to finally achieve the global number If during a year the KPI is not achieved, next year the number should be			
Project website	Number of Project videos Number of visitors	<u>At least 1 per year</u> At least <u>1.500</u> visits per year	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be increased to finally achieve the global number If during a year the KPI is not achieved, next year the number should be increased to finally			
Project website	Number of Project videos Number of visitors	<u>At least 1 per year</u> At least <u>1.500</u> visits per year	month 30, WP6 leader will set a working group to create the posters If during a year the KPI is not achieved, next year the number should be increased to finally achieve the global number If during a year the KPI is not achieved, next year the number should be increased to finally achieve the global			

	-	-	
Social Media	Number of followers in	At least 250 from outside the	Every year, if it is
channels	Twitter	project	detected that the number
			of followers is behind
			expectations, WP6 leader
			will create a group to
			increase this number
	Number of tweets	At least 100 tweets per year	Every year, if it is
		(unique and retweeted)	detected that the number
			of tweets is behind
			expectations, WP6 leader
			will create a group to
			increase this number
	Number of YouTube	At least 2 videos per year	If during a year the KPI is
	videos		not achieved, next year
			the number should be
			increased to finally
			achieve the global
			number

2.2 Monitoring of the plan

The methodology to monitor the progress and success of the plan will be as follows:

- Accomplishment. Quantitative target metrics for the dissemination and awareness activity, Key Performance Indicators (KPIs) will be defined for each action. KPIs will be later monitored and update, if needed, during the project lifetime.
- Impact assessment. mF2C will monitor three major metrics in order to quantify and develop its impact and evaluate the development of the mF2C's concepts:
- Consultation and access to the mF2C website. By means of Google analytics we will register the website activity in terms of number of visits, the time spent in each visit and each page, etc.
- More important than number of visitors is the number of usual visitors, that is, visitors that visit more than one time the website. Although, we cannot know directly this number, we can know the addresses where people use to connect to the website. In this sense, we will monitor the usual addresses where people connect to the mF2C website, giving more relevance to addresses outside the partners' web addresses.
- Also, to monitor the website activity we will register the time spent in each visit, the number of pages visited during the visit, and the time spent in each one of them.
- Measurement of references to mF2C through the analysis of search engines in terms of hits of relevant keywords. This analysis shall be systematically performed by a specific appointed team, which will observe the development of mF2C's perspectives.
- Search for citations: A search for citations will be conducted in parallel to search engines analysis. This process involves an analysis that shall be conducted systematically, exploiting documentation centers that provide information on citations. Specifically, dissemination material coming from mF2C that will be used in this process includes publications in journals and conferences.
- Measurement of the social networks activities: In the different social networks of the project we will measure different metrics, such as the number of followers, the number of views of

each post, the number of post sharing (or retweets), the impact of each post, etc. making use of tools such as Twitter Analytics in order to analyse the impact of each publication.

2.3 Update of the plan

The methodology to continuously update the plan will be as follows:

- Top-down updates will be triggered from PMB. At every PMB meeting a specific time slot will be devoted to identify what may be the candidate targets for mF2C dissemination and the most appropriate WP that can contribute to it. The opportunities will be analyzed within the PMB and the decisions will be brought by the WP leader to the WP participants, defining the best leadership to undertake the action.
- Bottom-up initiatives contributing to the mF2C dissemination approach includes opportunities from specific WP participants having identified dissemination targets. The opportunities shall be discussed inside the WP (meetings, phone conferences) and WPLs and partners shall provide continuous inputs/up-dates.

Though, the dissemination (and communication) strategy and plan will be continuously updated. A formal (internally documented) revision of the plan and monitoring of results will be conducted every 6 months. Besides, the report of the achievements and the update of plans will be officially provided in the yearly mF2C annual reports on dissemination and standardization (Year 1 -Year 2 -Year 3)

2.4 Stakeholders

The different stakeholders relevant to mF2C are identified, since they constitute the target audiences to which the outcomes of the project will be addressed. In particular, the main target groups of the consortium communication and dissemination activities are:

- Scientific and technical community (academic and researchers).
- Industrial stakeholders
- IT technicians (such as cloud and fog managers, technology designers, application developers).
- IT business (such as infrastructure providers, consultants, etc.)
- Other industrial parties.
- Policy makers
- Peers
- European public authorities
- EU officers
- Local Public authorities
- General public.

When targeting to the audiences from the different groups, it will be important to distinguish between those with specialist understanding of fog and cloud computing systems and those without.

2.5 Open access policy

According to this policy, all scientific papers resulting from the project will be made open access (with any exception need to be approved by the project coordinator and validated by the EU project officer).

Beyond open access as a requirement in H2020, mF2C endorses such a concept to facilitate interaction with other research and deployment projects and solutions, which will not be feasible without open access feature.

Open access can be defined as the practice of providing online access to "Scientific information" that is free of charge to the end user, and provided in a discoverable and (re)usable format (i.e. with appropriate metadata). In the context of research and innovation, "Scientific information" can refer to either peer reviewed scientific research articles (published in scholarly journals) or research data (data underlying publications, curated data and/or raw data). The "Scientific information" generated by mF2C will use open access to the extent possible. Indeed, open access to scientific peer reviewed publications has been anchored as an underlying principle in H2020 and is explained in the Regulation and the Rules of Participation as well as through the relevant provisions in the grant agreement as well as exceptions for confidentiality (article 36), security (article 37), and personal data (article 39) [3].

From the two possible options towards open access to publications, the mF2C project preferably selects self-archiving over "gold" open access, but does not exclude the latter.

Therefore, for other scientific publications appearing in conference proceedings and other peerreviewed books, monographs or other grey literature, will be primarily made available to the general public through open access archives. Thus, repository for self-archiving will follow two strategies. First, a repository which can be managed at UPC [4], TUBS [5] or even ResearchGate [6] (where we already have a project created) will be hosted within the project portal, which also guarantees visibility after the project ends. Second, the consortium will also analyse the case of a centralized repository, tentatively the Zenodo [7] repository set up by the OpenAIRE [8] project. Both options enable third parties to access, exploit, reproduce and disseminate at no cost.

In an effort to maximize the impact with the scientific results and associated data and the software code produced in the project, the consortium will create a code/data repository in a collaborative open source code management tool (e.g., GitHub [9] which also allows an analysis of its impact) for the project to maintain all the mature software releases developed in the project, and will release software whenever possible as open source (or with flexible licenses) in particular those software associated to the implementations produced to assess scientific publications. This will allow the community to access the open source software and the related data and tools that are used for arriving at the scientific results presented in the articles and magazines.

Depending on the specific journal for publication, the content published in the repository will be in the form of either a machine-readable electronic copy of the published version (a PDF), or a final peer reviewed manuscript accepted for publication (including all modifications from the peer-review process, but not yet formatted by the publisher – usually in journals or magazines). It should also be noted that the publications realized by the project consortium are expected to cover all activities defined by the project, so can include designing, developing and validating the mF2C management framework.

2.6 Publication procedure

A copy of any proposed publication, or at least a draft of such contribution that is sufficiently elaborated to allow the other parties for a substantive assessment whether objections should be raised as described below in connection with or relating to the project, shall be sent to the PMB at least 10 days in advance of the intended submission. Any of the parties may object to the publication within 5 days after receipt of a copy of the proposed publication on any of the following grounds: (i) that they consider that the protection of the objecting party's foreground would be adversely affected by the proposed publication, (ii) that the proposed publication includes the confidential information of the objecting party, or (iii) the publication of such information would be contrary to the commercial interests of the objecting party. In the absence of any objection within the above mentioned period, it is deemed that the parties agree to the proposed publication. Following the end of the above mentioned period, the PM shall inform the parties whether or not any objection has been received.

In the event that an objection is raised on any of the above defined grounds, the party proposing the publication and the party objecting shall seek in good faith to agree a solution on a timely basis whereby such objection is resolved. Parties cannot be quoted without prior agreement of the related parties in occasions different from technical-scientific ones and, in any case, with advertising aims.

3. Communication plan

In order to maximize the project's impact and therefore its success, the mF2C consortium has defined a branched strategy, which has widely proven its effectiveness in this kind of collaborative projects, where several organizations with different profiles and nationalities are involved. This strategy combines a strong and well-structured communication plan with a thorough and constant market watch, which ensures that the project will develop in line with ongoing market needs and trends.

The main branch of this strategy is a strong **communication plan**, which strengthens the visibility of the project on a large scale while engaging the different stakeholders identified, with the means and the activities defined to reach them. An important part of this plan involves targeting the open source communities, which will contribute not only to the project's dissemination but also to promote knowledge transfer and to improve the quality of the final solution.

A plan has been drafted at the beginning of the project as tentative, and needs to be updated annually to ensure its alignment with the interests of the involved partners (at both business and research level) and also with the ongoing market needs and trends.

The following table lists the major activities performed in the startup phase (first six months).

Table 4. Initial Communication activities

Progress	Description
 Created Identity and corporate styling Created templates and building blocks for communications purposes Creation of a web portal, with Google Analytics tool for statistics collection and analysis 	 Creation of several logo samples, voting and official logo selection. Creation of official documents templates (Word, PowerPoint) with relevant logo, logotypes, graphics and colour palette, vocabulary, etc. Creation of project's website, the information hub for the project dissemination strategy. This web site includes the last news about the project development, links to download the latest outcomes, etc. Collect first statistics on unique and total visitors, with geographical distribution
 Established personal media contacts Target audience identification and set the tools to raise awareness and branding about mF2C 	 Engaging the public at large through social media and communities
 Produced and published press releases on kick-off and first technical meeting Produced and published a first Newsletter Produced and published posts on relevant events, training 	 Definition and sharing of Posts & Newsletters guidelines Press releases, Newsletters, Posts and liaison with scientific and business stakeholders Aligning events with similar EU or national projects

 Propose initial Communication Plan 	 In this document
--	--------------------------------------

The next table, Table 5, relates the phases in the communication process to the global project phases. Each major achievement of the project will lead to a different communication message for a different audience. As stated in the introduction, communication has a wider audience than dissemination; and from the categories of stakeholders identified in section 2.4, we identify that the communication activities will have higher impact in some of them: General public, Scientific communication and activity plan.

So, during the first phase (M1-M8) activities will be based on project startup and system architecture definition for Iteration 1, so communication will be focused on messages of identity (funding grants), what we claim we will do, oriented to EU Officers, Industrial stakeholders, Peers and General Public, using portal, blog, papers, conferences, etc.

In the second phase (M9-M18) most of the work will be focused on use cases mapping and first implementation, based on defined architecture. Communication will be trimmed on messages on what we are producing, which solution we are going to provide, oriented to more technical IT Industrial stakeholders (IT technicians) and communities, using more source codes when available, videos, presentations and speeches.

In third phase (M19-M26) feedback and lesson learned from first iteration will drive the activities, with refining of the architecture and use cases, communication will be based on improved awareness and details on solutions we will able to offer, so more engagement with working groups and communities, business associations will be produced, using workshops, events, exhibitions.

Then the fourth phase (M27-M36) will produce the final architecture, use cases and related validation in real scenarios. Communication will be focused on results achieved, promotion and full exploitation of results, resulting impacts in terms of economy and business models, oriented to all interested stakeholders, from industry to working groups and communities, academia, using conferences, publications, market in general.

Project										
	1	2	3	4						
Phase	project startup + system architecture	use cases mapping + first iteration	revision on architecture + foundations for final release	use cases refinement + second iteration						
Project month	M1 - M8	M9 - M18	M19 - M26	M27 - M36						
nature	initiation and startup	design and development	refinement	promote and deliver						

 Table 5. Phases of the communication process

Communication

	General Public,				
	Scientific	General Public,	General Public,	General Public,	
	community,	Scientific community,	Scientific community,	Scientific community,	
Target Groups Primary Message Instruments Channels	Industrial	Industrial	Industrial	Industrial	
•	stakeholders,	stakeholders,	stakeholders,	stakeholders,	
	EU Officers,	EU Officers,	EU Officers,	EU Officers,	
	Peers	Peers	Peers	Peers	
	Existence	Questions	Questions	Solution	
	- EU funding	- identities	- identities	- economy	
During and	- identities	- what we are doing	- what we are doing	- business models	
Primary	- what we will do	- expectations	- expectations	- EU	
wessage	- expectations	- solutions	- users	- benefits	
	- nature of		- solutions		
	collaboration				
			- Portal	- Portal	
	- Portal	- Portal	- Meetings,	- Media (public)	
	- Meetings,	- Meetings,	Incentives,	- Tech journals	
	Incentives,	Incentives,	Conferences, Events,	- social media	
	Conferences,	Conferences, Events,	Expositions	- Meetings,	
Instruments	Events,	Expositions	- Tech media	Incentives,	
mstruments	Expositions	- Tech media	- Print media	Conferences, Events,	
	- Tech and	- Print media	- training	Expositions	
	specialized media	- training	 social media 	- training	
	- Print media	- social media	- scientific	- scientific publication	
	- training	- scientific publication	publication /	/ presentation	
	- social media	/ presentation	presentation	- printing	
	- Partners	- Partners	- Partners	- Partners	
	- Collaborative	- web fora	- web fora	- web fora	
	Working Groups	- Universities	- Universities	- Universities	
		- Open Source	- Open Source	- Open Source	
Channels		Communities	Communities	Communities	
		- Collaborative	- Business	- Business	
		Working Groups	Associations	Associations	
			- Collaborative	- Market in general	
			Working Groups		

In the following sub-sections a comprehensive description of the different channels to be used to foster the communication activities is detailed.

3.1 Logo

A distinct, clear and easily recognizable visual style is arguably important for the achievements of mF2C communication goals, so one of the first activities have been the creation of a mF2C own identity and corporate styling.

The selected logo, voted at the Kick-off meeting, is composed of a styled cloud on top, horizontal lines representing fog in the middle, and a series of points in the bottom representing the IoT elements spread in the environment.

Then high resolution and vectorised version of the logo have been created to guarantee the best resolution and definition of the logo under all various situations, from the iconized version to the biggest ones for printed versions in events, exhibitions and trade shows.



3.2. Leaflet and poster

One of the means to help getting engaged with relevant stakeholders is the preparation of marketing materials, with the purpose of raising awareness about the project and also to support the partners in the different events they may attend.

So, a wide range of marketing materials will be produced, which will be very useful to create awareness of the mF2C brand while providing an overview of the project, its objectives and expected results. This wide list includes, among others, a fact sheet, multiple flyers and brochures, several posters, a technical and a business-oriented whitepaper.

The following is the first flyer published for supporting the first events.



Figure 3 First mF2C flyer (front)

mF2C - Towards an Open, Secure, Decentralized and Coordinated Fog-to-Cloud Management Ecosystem



Figure 4 First mF2C flyer (back)

This is the first poster that has been prepared to support upcoming events:

mF2C - Towards an Open, Secure, Decentralized and Coordinated Fog-to-Cloud Management Ecosystem



Figure 5 First mF2C poster

3.3 Website

Another important part of the communication activities is the online presence, which refers to the different ways to represent your business on the web and their interactions. The key elements of the online presence are:

- Project website
- Social Media

Just after the definition of the Project Logo, the project website [10] has been created to be used as the central information hub.

The project website constitutes the central pillar in our communication and dissemination strategy and the official point of contact for the mF2C Project with all audience, stakeholders and interested users, where to publish all major milestones and breaking news regarding the project. Apart from directly hosting a wealth of content, it also links to relevant information available such as publications, presentations, etc., so it offers stakeholder a one-stop access to information about the project's background, ambition and results.

mF2C - Towards an Open, Secure, Decentralized and Coordinated Fog-to-Cloud Management Ecosystem



Figure 6 mF2C Project official website

The website is built using a well-known, modular web content manager (WordPress), the layout of the website has been carefully selected from the scientific templates proposed within the content manager library, avoiding extreme graphical effects more suitable for commercial or social websites, and integrated with a twitter plugin to track and facilitate social media communication. The colors and graphics have been chosen from Cloud, Fog and Internet of Things palette.

The website is fully responsive, meaning that it can be easily accessed and browsed via all commonly used devices (desktops, laptops, tablets and smartphones), and the menu structure has been kept simple and easy to be read, with the following items:

- Home: shows all latest contributions contained in Press Room, News & Events and Related Projects tabs.
- Project overview: describes the project's objectives, expected results and a description of selected use cases that constitutes the Proof of Concept of this project.
- Press Room: highlights the various artifacts produced within the project, from internal deliverables, to scientific papers, published newsletters and press releases, open code released.
- Consortium: with a page describing the Consortium partners, their role in the project and expected contribution.
- News & Events: with different news and events related to the project, including meetings and workshops.
- Related Projects: with a description of current projects and latest news of these projects we are already collaborating with.
- Contact Us: with a form online to collect remarks and suggestions; a single point of contact for any interested user.

A Google Analytics snippet has been coded into the website, enabling us to generate comprehensive site usage statistics regarding unique visitors, and making the best use of this information to drive wise decisions regarding its content.

The website has been online since month 3 of the project.

The goals for the first 12 months are to gradually expand the contents available online; more news about software development and features will be added as soon as available.

As the project develops over time, we will also regularly publish news stories about the project's progress and its substantial results. One of the proposals to reach a wider audience (including

general public) is the creation of a blog with periodical entries. The blog's content should be understandable by a wider audience, without formalisms or any need of deep technical knowledge in order of divulgating interesting information related to the research developed in the project.

Furthermore, we will continuously extend and adapt the design, structure and functionality of the site in response to feedback and changing requirements.

3.4 Presence in Social Media

The use and importance of social media have reached such a threshold that they have become key elements of the dissemination and communication activities. mF2C takes full advantage of the most used and effective social networks to support its communication and dissemination. We will thereby aim at taking full advantage of the extensive social networks that are already in existence within the consortium.

Even if the number of alternatives is quite large, their purpose and target audience are different, so the Consortium decided to focus on few of them, more oriented to the objectives of the Project and the interested audience.

With more than 320 million active users, and over 300 billion tweets reached in the last 10 years, Twitter has been chosen as the perfect tool to gain the best attention of potential customers, building relationships with possible collaborators and breaking news in a fast and effective way. This statement is supported by Twitter's own statistics, which claim that 2/3 of brands have multiple accounts to maximize their impacts.

For all these reasons mF2C Consortium has created some social feeds with Twitter [11], but also LinkedIn [12] and ResearchGate [6], to get highest attention.

UPC, ATOS and Tiscali will lead managing all social media accounts, and facilitate future blogging sessions in occasion of major events with mF2C participation (participation in conferences, workshops, exhibitions, trade shows, etc.). All partners are encouraged to help widen mF2C social networks by following us on, retweeting, etc.

Over the next 12 months our goal is to significantly expand our social networks, and ensure that our followers receive frequent, interesting and engaging updates from the project.

Given the importance given to the social engagement a plugin with direct access to twitter has been added to the project website, to facilitate the monitoring and use of social media.

3.5 Newsletter

Another essential tool to keep in touch with relevant stakeholders is the periodic implementation of a project newsletter.

This service becomes a part of the project website and will inform all subscribed stakeholders on a quarterly basis about all latest updates and news about mF2C project since the last issue.

Apart from reports about the project's progress and announcements about forthcoming events, etc., the newsletter will also contain news about important developments in various fields related to the mF2C activities.

The Newsletter submission service is implemented on the project website, a template for this has been designed by Tiscali in accordance with mF2C visual guidelines, and it will contain content contributions related to the project development from all partners and all work packages.

Partner recipient of the newsletter will be encouraged to spread the mF2C Newsletter among their own networks (forwarding of newsletters, spreading the word, etc.), which is expected to gradually result in substantial number of subscribers from outside the consortium.

The first Newsletter has been published in May 2017 [13].

3.6 Press releases

Obtaining good Press coverage and attention is another goal of mF2C to get more sustainable impact for the project. For this reason UPC, ATOS and Tiscali will lead and define coherent guidelines to be followed by all partners when dealing with mF2C press releases.

While the Partner leaders will develop project press release in correspondence of all project's major events and disseminate project results, Partners will be responsible for translations and regional adaptations as well as for spreading the press releases to relevant regional stakeholders and at international level.

According with the described strategy a first Press release has been prepared and published on the ATOS official website [14] and corresponding translation in Spanish has been published in a well-known technology and innovation website [1], and included in their weekly newsletter. The Planetic site includes 247 Spanish organizations (big enterprises, universities, research centers, public and private technology centers) with regular visits of the website, and 344 current subscriptions to the newsletter.

Particular care will be followed to the production of press releases in specialized journals, general media and all other available channels.

3.7 Open Source Communities

Since the beginning the mF2C have chosen to follow an Open Source approach, in order to facilitate the adoption for the potential stakeholders, given the permissive licensing, easy of customization and integration, feedback and support available from several developers communities, reducing overall software costs.

For this reason, the mF2C consortium will target different cloud oriented open source communities (e.g. OpenStack, Docker, Mesos), emerging communities revolving around the standardization bodies, which will contribute to this objective.

The choice of the named Open Source projects fulfills the following mF2C objectives:

- the extension of cloud oriented state-of-the-art software packages for fog processing, thus the interest for OpenStack
- Containers and microservices are encouraged to be used to fulfill computing requests while using limited computing resources, as foreseen at the edge, so the interest in Docker and Mesos.

Moreover, the consortium will try to interact through different channels: contributing project outcomes to relevant OpenStack, Docker and Mesos projects, attending OpenStack events, participating on appropriate mailing lists, interacting with related social networks, publishing articles and scientific papers about corresponding topics.

Additionally, the mF2C code will be available on online repositories like GitHub, thus allowing other non OpenStack-related users to interact with mF2C.

3.8 Video

Another important tool that will be used by mF2C is YouTube, a video-sharing website with over a billion users (almost one third of the internet population) in more than 70 countries worldwide.

The mF2C consortium has created a YouTube channel (mF2C.socialnetwork) where different videos (commercial videos, demonstration videos, Use Cases operational descriptions, how-to records, etc.)

and presentations (participation in specific events, workshop videos, etc.) will be posted, in addition to the project website.

The use of videos represents not only a means to directly reach wider audiences and communities, but also a useful instrument for granting access to online press and specialized TV technical feeds. In this perspective, some interviews to key experts in university and industry will be recorded and made available with the purpose to present the latest outcomes in the relevant research fields and highlight some mF2C specific outcomes and results.

4. Dissemination plan

The dissemination objectives are aiming at spreading the mF2C ideas to the industrial, research and business communities. For this reason, dissemination activities focus on such specialized stakeholders as a subset of those identified in section 2.4 (WHO). We also define more specific key messages (WHAT) for this specialized audience, as well as a more specific strategy (HOW) to approach them. In order to do so, we propose a plan which will include a list of the potential stakeholders to be reached out as well as the means and the activities used to do so.

4.1 Dissemination aims and objectives

4.1.1 Target group - Who

As stated in subsection 1.1, the audience of the mF2C project can be divided into different groups. In Section 3, we have addressed the Communication to a wide and general audience: General Public, Scientific community, Industrial stakeholders, EU Officers and Peers. However, when talking about dissemination, this is more specifically addressed to the scientific and technical community, then from previous audiences we discard the general public, we add some new target audiences: Policy makers and Local Authorities, and expand the category of European public authorities, not only considering EU officers but also officials involved and interested in MF2C project. Moreover, these target groups can be subdivided into two subgroups, based on the involvement the persons and organisations have in the MF2C project. The internal target subgroup for dissemination is the one composed by persons and organisations working in the project in a daily basis such as European public authorities and consortium partners. The external target subgroup for project communications is the one composed by persons and organisations not involved actively in the MF2C project but interested in it, such as, cloud and fog providers, technology providers, application developers, etc.

Internal	Description				
Partners	Consortium members				
European public authorities	European Union officials involved and interested in MF2C project,				
(including EU officers)	fog, cloud and IoT				
External	Description				
IT technicians (Cloud/Fog	Cloud and fog managers, technology designers, application				
and IoT infrastructure)	developers, Smart City app developers				
Local public authorities	Public companies and officials managing Smart Cities				
Policy makers	Officials who make Smart Cities and IoT policies				
Scientific community					
(Researchers and	Experts in fog, cloud, IoT related matters				
academics)					
Peers (Related EC projects)	Consortium members of other related EC projects				
IT Business	At all levels working in Cloud, IoT, fog, including service providers,				
II DUSIIIESS	etc.				

Table 6. Dissemination target groups

4.1.2 Key messages and Strategy – What and How

The following key messages have been and will be continuously developed in line with the project objectives and focused to disseminate the project outcome.

For Cloud/Fog IoT infrastructure providers

 The mF2C architecture can help the interworking between IoT, fogs and clouds because mF2C provides the inter-operation and closes the gap between IoT, fog and clouds.

- The mF2C architecture can help provide resource sharing policies.
- The storage solutions provided by the mF2C architecture can help developing a collaborative storage framework.
- The security solutions developed for the fogs and the edge can help protecting the infrastructures, especially Smart City Infrastructures, thanks to new access control mechanism developed for IoT and fog resources.

For IoT Technology Providers

 The mF2C architecture can help foster the massively use of IoT devices, thanks to the added value services, developed using these devices and adopting the proposed mF2C architecture. In consequence, this will boost the revenues of technology providers and the requests of new and more sophisticated technology.

For National/European policy makers

- The mF2C solutions demonstrate a way that can help Europe to be pioneer on developing the new fog-to-cloud technology.
- The mF2C solutions can improve the infrastructures and services offered to citizens, boosting the development of new services for Smart Cities (e.g. in the area of traffic, health, resilience, etc.).
- The mF2C solutions in the area of security provisioning for edge devices can help improve the security for the whole citizens providing better protection when accessing through fog and edge devices.

For business

- The mF2C solutions may create markets for new fog and cloud services.
- The mF2C solutions pave the way to new opportunities for developing new business models leveraging the resource sharing paradigm. Indeed, infrastructure providers (cloud providers) can find new models of collaboration with fog providers (public and private institutions) and individual users.

For Service Providers

- The mF2C programming model solutions, easing the execution in heterogeneous, volatile and mobile resources, can help service provider develop new services and applications executed in the fog-to-cloud infrastructure.
- The mF2C architecture can provide the opportunity to individual users to become service providers thanks to both the use of an infrastructure different from the usual in cloud, and the adoption of the new programming model developed in the project.

For Research & Academics

- The mF2C architecture demonstrates a solution to integrate cloud, fog and IoT, which will undoubtedly drive new fields of research in this area.
- The mF2C solutions in all involved areas, resource sharing, programming models, etc., could help broaden the opportunities in funding and developing cloud, fog and IoT technologies.

For Standard bodies, similar projects and Open Fog consortium

- The mF2C solutions could match and complement similar proposed architectures.
- The mF2C architecture should be open enough to frame current and future technologies in cloud, fog and IoT.

For media

- The mF2C solutions provide a first-hand example showing the benefits brought in by the collaborative scenarios.
- The mF2C architecture demonstrates a way that can help Europe become leader in Fog-to-Cloud technologies.
- The mF2C solutions can improve the satisfaction for citizens by providing better Smart City services using heterogeneous infrastructures.

The mF2C project and all partners should work on the basis of creating a unified vision to encouraging people to stay in touch during the lifespan of the project.

Tactics/dissemination activities

The tactics supporting the overall strategy are described in detail below. All project partners will contribute to dissemination through their own systems and communication channels. As far as possible, the target groups should be reached out in English language or their own languages.

How these reach out to the target audiences is summarised below:

Table 7 . How to reach target audiences

	Website	Blog	Social Media	Videos	Press	External events	Demos	EU Workshops	Scientific publications	Technical reports	Factsheets	Results brochure
Cloud/Fog IoT infrastructure providers	~	>	>	1	>	>	>	>		>	>	~
Local authorities	√	>	1	1	>	>	~	>		>	>	✓
Policy makers	√	>	1		>	>	~	>	1	>	>	✓
Researchers and academics	1	~	~	1	~	~	~	~	1	1	~	1
Related EC projects	✓	~	1	1	~	~	1	~	1	~	~	✓
Business	√	1	1	1	1	1	1	1				

4.2 mF2C Workshops

The project aims at organizing three workshops and one summer camp, mainly addressed to the industry and academy, to increase project visibility as well as to near communities interested in the project areas

Workshops: The mF2C project proposes the organization of three workshops (both at industrial and academic level) where the project's results will be showcased to relevant audiences. These workshops could be organized either on a dedicated fashion or co-located with some renowned conferences at international level, which would help us to maximize its impact.

Summer Camp: One Summer Camp is proposed in month 22, right after Iteration 1 (IT-1) aiming at training the audience in the relevant research aspects linked to cloud, fog and IoT areas. BSC and STFC together will take the lead in organizing this event, to be hosted by one of them. Both have

extensive relevant experience: BSC is a PRACE Advanced Training Centre (PATC), carrying out and coordinating training and education activities that enable the European research community to utilize the computational infrastructure available through PRACE. STFC has extensive experience organizing summer schools, e.g. the particle physics master class or science outreach events for schools. Other partners will of course also contribute.

Workshop and Summer Camp Planning

- The first technical workshop, *Fog-to-Cloud Distributed Processing*, is planned for month 8 and co-located with Euro-par 2017conference [2], August 28-29, 2017; and it will be organized by BSC:
 - The workshop will deal with the different aspects related to innovative large and distributed computing scenarios that are envisioned as the natural evolution of current cloud scenarios. The workshop will also deal with the different aspects of parallel programming, its applicability to those scenarios and any other software required to suitable manage such a complex scenario.
- The second technical workshop will be organized during the implementation phase of the project and after the first iteration, in month 22. It will be hosted by STFC and will concur with the fifth review meeting and the Summer Camp.
- The third technical workshop will be organized during the final demonstration phase in month 32 and concurring with the penultimate review meeting and it will present a practical demonstration of mF2C project. It will be hosted by XLAB.

4.3 Scientific publications

4.3.1 Conference papers

mF2C project will promote the attendance in national and international seminars, conferences, workshops and training courses to enhance exchange of knowledge between experts, and to disseminate the scientific results of the project.

Although the potential list of these is open-ended, some concrete examples are:

- Cloud Expo Europe [15]
- Cloud World Forum [16]
- Service-Oriented Computing& Applications conference (SOCA) [17]
- European Conference on Service-Oriented and Cloud Computing (ESOCC) [18]
- International Conference on Cloud Computing and Services Science (CLOSER) [19]
- IEEE International Conference on Cloud Networking [20]
- IFIP International Information Security and Privacy Conference [21]
- IEEE International Conference on Internet of Things [22]
- IEEE CloudCom [23]
- IEEE/ACM CCGRID [24]
- IEEE Utility [25]
- IEEE/ACM International Symposium on Quality of Service [26]
- IEEE Future Technologies Conference [27]
- IEEE CAMAD [28]
- IEEE Wireless Communications and Networking Conference [29]
- etc.

4.3.2 Journal papers

Research outcome of the project will be published in the form of scientific peer-reviewed papers. In order to reach a vast audience of researchers in various disciplines, journals will be selected carefully

to include all relevant topics, including: cloud computing, fog computing, Internet of Things, programming models, computing systems, among others. Although, the potential list of journals and magazines is open and will evolve during the project, some examples are:

- IEEE/ACM Transactions on Cloud Computing
- Springer Service Oriented Computing and Applications Journal
- Advances in Internet of things (Scientific Research open access)
- International Journal of Internet of Things
- ACM Transactions on Software Engineering and Methodology
- IEEE Communications Magazine
- IEEE Internet Computing, Future Generation
- Computing Systems
- Concurrency and Computation: Practice and Experience
- Journal of Grid Computing
- etc.

4.4 mF2C White paper

Whitepapers can be considered, by definition, as supporting material for bringing results to the market, as they aim to explain the benefits of the offered solution to potential stakeholders.

mF2C is planning to release a whitepaper, including expected results, that will be made available through the project website. This whitepaper will be considered as a living document, to be updated based on the project evolution.

This whitepaper is also used as a mean of dissemination, where the motivation for the project, identified business goals, features, use cases and benefits of adopting results are presented in an easy-reading manner aiming to give a complete overview of the project in only a few pages.

Furthermore, this whitepaper is also included as part of the exploitation strategy in order to position mF2C in the Fog arena.

The template for the project whitepaper can be found in Annex 3.

4.5 Participation in EC-sponsored events

There are several events organised by the European Commission [30] in order to support the dissemination of EU-funded projects and to bring them near to potential stakeholders. mF2C will carefully follow up any relevant event of interest for the project, especially those linked to the topics addressed by it.

There are three events of interest for the project, to be held before the submission of this deliverable, where the project will participate:

NetFutures [31]

These series of events, usually held in Brussels and yearly organized, are focused in topics of interest for all relevant European stakeholders. This edition will be focus on the Internet, economy and society in 2027.

Concertation meetings

These meetings, organized by CloudWATCH2 [32], are co-located within NetFutures in order to allow research projects to present their most relevant results to a more industry-oriented audience. They are a good opportunity to meet other related projects and relevant stakeholders.

Cluster meetings

Official meetings are usually co-located within an EC-sponsored conference. These meetings are part of the collaboration activities of EU-funded projects, while also allows the dissemination of the activities performed within the cluster, like the identification of future research topics and the interaction with other clusters' members.

4.6 Liaisons with other projects and/or related initiatives

Goals for collaboration in mF2C can be summarized as follows:

- Share information about aims, plans and results with related projects.
- Follow the evolution of other projects and provide feedback (when possible).
- Add value to mF2C results.

These objectives are directly related with the project targets, such as initiatives that can increase mF2C impact and active projects with results that can be incorporated to the project results or even projects with complementary objectives.

There are some actions that can be performed in order to do so, as it has been shown in the previous sections. These actions can be summarized in five key points:

- Participate in EC conferences, workshops, information days, etc. related to Cloud computing topics in general, especially Fog Computing.
- Support dissemination actions coming from other projects.
- Organize meetings and workshops and invite related projects.
- Participate in meetings and workshops organized by related projects.
- Promote standardization work.

There is not a common approach for determining a collaboration path, apart from establishing the first contacts with related projects or initiatives. Each collaboration strategy has to be determined taking into account common points, and may take the shape of organization of workshops, submission of joint papers, reusing research or software results, etc.

4.6.1 European and International Initiatives

In order to ensure the interoperability of project results, it is quite important to be aligned with relevant technical and industry standards and most common practices. For this reason, mF2C will perform a close follow up of different standardization bodies and groups and even contribute when possible. A preliminary mapping of the project with these bodies has resulted in the following list:

- ISO/IEC JTC1 SC38: mF2C will contribute to emerging ISO cloud standards to ensure that any gaps uncovered by the project are already included and addressed.
- ISO/IEC JTC1 WG41: mF2C will observe progress in this newly created Working Group on IoT standards and will influence emerging IoT standards that emerge to ensure learnings from mF2C are taken onboard.
- ISO JTC1 SC32 WG3: mF2C plans to validate and promote this standard in order to broad the adoption of project results.
- OGF's Open Cloud Computing Interface Working Group: In order to ensure the interoperability, mF2C will consider adjusting or extending OCCI to the new scenarios proposed by the project.
- The OpenFog Consortium: mF2C plans to propose enhancements to OpenFog architectures, APIs and standards based on the new scenarios proposed by the project.
- LoRa Alliance: As well as it happens with ISO JTC1 SC32 WG3, mF2C plans to promote and validate the standard to broad the adoption of project results.

4.6.2 Related projects

The project is defining a roadmap for establishing the collaboration with other projects. The main objective of this roadmap is to determine a common approach for contacting other projects and determine the most suitable actions to perform.

The initial list of potential candidates for collaboration is shown below, as well as the common points with mF2C:

—	BigStorage	—	INTER-IOT
_	CIPSEC	_	TIMON
_	CloudWATCH2	_	UNISERVER
_	CYCLONE	_	WITDOM
_	EUBRA BIGSEA	_	WISER

Some of the projects were already identified during the proposal phase, while others once the project has already started. A preliminary analysis of the candidates' scope and the potential points for collaboration has been also performed.

BigStorage

URL: http://bigstorage.oeg-upm.net/index.html

Start Date: 2015 End Date: 2019

BigStorage is a European Training Network (ETN) whose main goal is to train future data scientists in order to enable them and us to apply holistic and interdisciplinary approaches for taking advantage of a data-overwhelmed world, which requires HPC and Cloud infrastructures with a redefinition of storage architectures underpinning them.

BigStorage is focused on the cloud and HPC arenas, new data models to unify the data from different components in order to ease the task of managing data. We will need to follow the progress of this ETN to adapt potential improvements to the data handling and storage runtime.

The part from BigStorage most related to mF2C is the storage platform that is being developed to support big data applications in a homogeneous environment. Within mF2C, we will shift the development of the platform to be able to offer access to data in a very heterogeneous environment.

CIPSEC

URL: http://www.cipsec.eu/

Start Date: 2016 End Date: 2019

CIPSEC is an innovation action which main objective is to create a unified framework that orchestrates state-of-the-art heterogeneous security products to offer high levels of protection in IT (Information Technology) and OT (Operational Technology) departments addressed to Critical Infrastructures (CI).

The expertise acquired in CIPSEC will help to address the security challenges when designing the mF2C architecture; and also, in the opposite way, CIPSEC will benefit from the knowledge, acquired in mF2C by common partners, about hierarchical architectures. One of the consequences of this synergy could be the proposal of hierarchical and distributed security architecture for fog to cloud systems.

CloudWATCH2

URL: http://www.cloudwatchhub.eu/

Start Date: 2015 End Date: 2017

CloudWATCH2 is a support action built on the success and outputs of CloudWATCH. CloudWATCH2 takes a pragmatic approach to market uptake and sustainable competitiveness for the wider update of new cloud services and products from European research and innovation activities. CloudWATCH2 helps R&I initiatives to overcome challenging issues like standards and pricing to maximise the socio-economic impact of this new cloud ecosystem.

With this collaboration, mF2C will increase the widespread of its results with different stakeholders aiming to reduce the time for reaching potential end users or early adopters that can benefit of the proposed novelties.

As part of the activities already performed, mF2C has been included in its Service Offer catalogue [33] so it is available to any potential stakeholder. mF2C will also participate in the next Concertation Meeting, to be held in conjunction with NetFutures 2017 and potentially in CloudWATCH Europe 2017. Next steps are the evaluation of the different standards of interest for the project, in order to contribute to the Cloud Standards Hub.

CYCLONE

URL: http://www.cyclone-project.eu

Start Date: 2015 End Date: 2017

CYCLONE develops a solution for complete dynamic multi-cloud application management from existing production-quality components. The solution will include automated application management, advanced networking, end-to-end security and federated identity management.

mF2C can take advantage of CYCLONE development in SlipStream for its orchestration and brokerage functions, including cloud interoperability, application deployment automation and scaling. Finally, CYCLONE extended the service catalogue work initiated in Helix Nebula, to better categorise service offers.

mF2C could further extend this component to fog and edge computing, such that brokerage functions can reason based on clear service description and capabilities metadata.

EUBRA BIGSEA

URL: http://eubra-bigsea.eu/

Start Date: 2016 End Date: 2017

Europe-BRAzil Collaboration on BIG Data Scientific Research through Cloud-Centric Applications aims at providing services in the cloud for processing of massive data coming from highly connected societies, which impose multiple challenges on resource provision, performance, Quality of Service and privacy.

Although EUBRA BIGSEA is more related to traditional Big Data and clouds, it has in common the integration of intelligent runtimes and new storage technologies with mF2C.

mF2C will innovate with regard EUBRA BIGSEA by including in the platform the devices in the edge and considering an overall coordination of all devices in the edge and in the cloud, and by considering the requirements of all these devices, especially those that require lower latency.

INTER-IOT

URL: http://www.inter-iot-project.eu/

Start Date: 2016 End Date: 2019

INTER-IOT project is aiming at the design, implementation and experimentation of an open crosslayer framework and associated methodology to provide voluntary interoperability among heterogeneous Internet of Things (IoT) platforms. The project will allow developing effectively and efficiently smart IoT applications, atop different heterogeneous IoT platforms, spanning single and/or multiple application domains.

The INTER-IoT project focuses on interoperability of IoT devices and provides the middleware and cross layer compatibility enabling easier development of IoT applications. The edge devices of mF2C architecture rely on the IoT devices and consequently the mF2C platform could reuse the INTER-IoT middleware to ease the interaction with IoT devices.

The key part of the mF2C project is the management optimisation for the huge amount of fog and cloud resources organised by the mF2C stack location, (private, public) ownership and resource capability. The result of the optimisation is improved service performance due to balanced mapping of the service processes to the targeted resources.

TIMON

URL: http://timon-project.eu/

Start Date: 2015 End Date: 2018

TIMON partners believe that the persisting problems related to congestion, traffic safety and environmental challenges could be solved, if people, vehicles, infrastructure and businesses were connected into a cooperative ecosystem. The creation of such an ecosystem is one of the key objectives of the TIMON project.

The TIMON project collects the data from IoT devices integrated in vehicles or road side units. From mF2C perspective, the TIMON's architecture can serve as an example of how the current IoT technology is integrated in the closed proprietary cloud.

TIMON uses proprietary cloud solution focused on multimodal road traffic optimisation and its support is limited to a small amount of IoT devices. mF2C envisions to support a wide selection of different IoT and provides the optimisation of mF2C stack.

UNISERVER

URL: http://www.uniserver2020.eu/

Start Date: 2016 End Date: 2018

The project's principal aim is the development of UniServer: a universal system architecture and software ecosystem for servers. UniServer will facilitate the evolution of the Internet from an infrastructure where data is aggregated to centralized data centres to an infrastructure where data are handled in a distributed and localized manner close to the data sources.

UNISERVER aspires to deliver a unique fully working prototype for Cloud Computing services and resources management that will turn the opportunities in the emerging Big Data and IoT markets into real, smarter products and architecture that can improve the everyday life and lead to a substantial financial and employment growth.

UNISERVER focuses on increasing the power of fog devices while mF2C aims to manage both cloud and fog tools in efficient and decentralized fashion. UNISERVER results will be used as input for mF2C project.

WITDOM

URL: http://witdom.eu/ Start Date: 2015 End Date: 2017 WITDOM aims at protecting the privacy and security of data outsourced to untrusted ICT providers, such as clouds. By protecting sensitive data cryptographically and by applying the privacy-by-design paradigms, WITDOM will provide a holistic framework that addresses end-to-end security for sensitive data.

The security mechanisms developed during the WITDOM project could be exploited in the mF2C project to safely operate with the private data collected from the IoT devices.

mF2C presents a new way of device management and strives for the adoption or reconfiguration of security techniques (like end-to-end encryption) to be sufficient or optimised for the mF2C use cases. The WITDOM results will be used as an input of the mF2C project where appropriate.

WISER

URL: http://cyberwiser.eu/

Start Date: 2015 End Date: 2017

WISER delivers a cyber-risk management framework able to assess, monitor and mitigate the risks in real time, in multiple industries. WISER incorporates socio-economic impact aspects, building on current state of the art technologies and tools, and leveraging best practices from multiple industries and international initiatives.

The security assessment of the mF2C products could be evaluated and tested with the cybersecurity assessment platform developed in WISER. The tests could be performed continuously and provide reports of the possible intrusion and financial damage of the attack on the mF2C management platform.

WISER focuses on the business IT infrastructure assessment in terms of cyber security. mF2C will provide new business models for IT infrastructure management taking into account possible new security risks to be considered in future assessment protocols.

4.6.3 EC Cluster

mF2C is member of the Inter-cloud Challenges, Expectations and Issues [34] cluster of the European Commission. Furthermore, mF2C is currently leading all the activities within this cluster.

This cluster is an effective way for collaborating with projects with the same scope, sharing approaches, results and experiences, as well as to discuss challenges for future research topics.

Projects participating in this cluster are listed below:

- DECIDE [35] DevOps for trusted, portable and interoperable multi-Cloud applications towards the Digital single market
- RECAP [36] Reliable Capacity Provisioning and Enhanced Remediation for Distributed Cloud Applications
- EUBrasilCloudForum [37] Fostering an International dialogue between Europe & Brazil
- DITAS [38] Data-intensive applications Improvement by moving daTA and computation in mixed cloud/fog environments
- CloudSocket [39] Business and IT-Cloud Alignment using a Smart Socket
- BEACON [40] Enabling Federated Cloud Networking
- SSICLOPS [35] Scalable and Secure Infrastructures for Cloud Operations
- ENTICE [36] dEcentralized repositories for transparent and efficient vIrtual machine opErations

- CYCLONE [37] Complete Dynamic Multi-cloud Application Management
- CLOUDLIGHTNING [38] Self-Organising, Self-Managing Heterogeneous Cloud
- AppHub [39] The Enterprise Open Source Market Place
- SWITCH [40] Software Workbench for Interactive, Time Critical and Highly self-adaptive Cloud applications
- BASMATI [41] Cloud Brokerage Across Borders For Mobile Users and Applications
- ASCETiC [42] Adapting Service lifecycle towards EfficienT Clouds
- MODAClouds [43] Model-Driven Approach for design and execution of applications on multiple Clouds
- PaaSage [44] A Model-based Cross-Cloud development and deployment platform
- SeaClouds [45] Seamless adaptive multi-cloud management of service-based applications
- mOSAIC [46] Open-Source API and Platform for Multiple Clouds

Activities performed within this cluster will be further reported in the corresponding deliverables. As a starting point, and as already stated in previous sections, mF2C will be leading the meeting to be held on NetFutures 2017 while presenting its goals in a "1-minute madness" session at the Concertation Meeting.

4.7 Seminars in the academic domain

Internally-oriented activities include internal seminars and presentations to the management groups, and are aimed at promoting the project's benefits to the partners' organizations, fostering the re-use and/or the exploitation of the project's outcomes within each organization. On the other hand, seminars can also be addressed to academic audience, showing the progress and achievement of mF2C, involving students with mF2C related work, as well as open source efforts.

4.8 Emerging market opportunities

One of the main aims of the dissemination, communication and standardization strategy is to support the exploitation of the project results in order to ensure their sustainability once the project has ended.

First step is to perform a close follow up of the current market situation, already performed in the market watch report [53], while, at the same time identify real expectations and needs of the stakeholders already identified in Section 1.2.4.

With the increase in the deployment of edge devices, traditional cloud services must evolve to cover emerging needs. Taking into account the solid cloud market evolution, it is important to notice that there is no integrated solution for coordinated management of fog and cloud solutions, and here is the key gap for mF2C value proposition.

In a preliminary analysis, the project has identified the market impact on different sectors:

- **Cloud providers:** extension of the service chain by adding fog to the service provision while increasing the portfolio offering.
- **Technology providers:** boost on the adoption of new IoT devices and equipment for new emerging application scenarios.
- **Service Providers:** elastic provisioning of resources, increasing the offering with more sophisticated services.

The project must carefully address the innovations brought to the market, as they cut both ways. Being the first entering into a new market means a hard preliminary work to create the need for the mF2C proposed solution, as well as to engage potential end users and customers. The dissemination and communication strategy depicted in this document will set the basis for a successful entrance.

5. Dissemination plan roadmap

Figure 7 shows the dissemination roadmap with the WP6 tasks Gantt and the KPI to be achieved. The figure also shows which the current situation in M6 is.

	1	2	3	4	5	6	7	8	9	10	11	12	24	36
WP6- Dissemination, standards and exploitation activities						-			-					
T6.1 Dissemination						D6.1								
T6.2 Standards												●D6.2	• D6.3	•D6.4
T6.3 Exploitation												•D6.5	• D6.6	•D6.7
												Deadline	Deadline	Deadline
												31/12/17	31/12/18	31/12/19
Dissemination Strategy and Plan						Done D6.1								
Web			Operative											
			operative											
Web- Description of use cases				Done										
Web- visits						472								1500
Twitter		Created				56 Tweets						100	200	300
Twitter-Followers outside the project						23						80	150	250
LinkedIn		Created				45 posts								
LinkedIn- Connections						28								
Researchgate		Created				9 posts								
Press Reelases						1								
Project Flyer					1								2	3
Posters						1								2
Project videos												1	2	3
Newsletters					1					2			4	6
						CIPSEC,								
Established relation with EU projects						CloudWatch2								
								1st						
								worksn						
								op Co-						
								located					2.1	
								in Euro-					Zna	2.1
								Par					worksho	3rd
worksnops								2017					p	worsnop
Business Whitepaper												2	1	2
Scientific publication: journals						2		-			2	3	6	9
Scientific publications: conference papers						2					3	5	10	20
Assistence to events and conferences						2		-				10	25	50
Project presentations					<u> </u>	2								1
Summer camps														
Comporation actions									-					3
TYOUTUDE VIGEOS		1	1	1	1	1	1	1	1 1	1	1	1	1	1 2

Figure 7 Dissemination roadmap

6. Conclusions

This document has presented the main lines of the mF2C strategy for communicating and disseminating the activities and goals of the project. Firstly, we have distinguished between communication (addressed to a general audience) and dissemination (addressed to a more specialized audience) activities, as well as the different stakeholders relevant to mF2C.

We have also outlined the main planned actions for communication, such as creation of logo, leaflet and poster, creation of the website and social media presence (Twitter, LinkedIn and ResearchGate); as well as newsletters and press releases. On the other hand, regarding the dissemination plan, it includes scientific publications, white papers, Participation in EC-sponsored events, liaisons with other projects and/or related initiatives and seminars in the academic domain. The dissemination plan also considers a preliminary study of emerging market opportunities.

With the objective of showing in a visual way the communications and dissemination mF2C objectives, we also have showed a roadmap with the KPIs to be achieved during the project as well as the current situation, in month M6, of these activities.

Finally, we also provided three different templates, about how to report dissemination activities such as assistance to events, conferences, workshops, as well as scientific publications.

The updated of the plan presented in this deliverable will take place in next deliverables in month M12 and M24 where we will report the dissemination and standardization activities; and where we will be able to adjust and improve the plan according to the development of the project.

Annex 1: List of dissemination activities (template)

We have prepared in Annex 1 and Annex 2 two templates to update the participation of consortium members in external events to be reported in dissemination activities, as well as a template for updating the publication with acknowledgement to the mF2C project.

Table 8. Template for dissemination activities-Events

Person or people	Institution of attendant	Event	Type of event: conference, workshop, training, brokerage, pitch, trade fair, collaboration with other H2020 projects, other	Type of presentation:(Invited speaker, attendant, paper presentation, workshop attendant, etc.)	Type of audience (scientific community, industry, civil society, general public, policy makers, media, investors, customers, other)	Countries addressed (National, EU or worldwide)	Size of audience	Title	Date	Place	Link

Annex 2: List of publications (template)

Table 9. Template for dissemination activities-Publications

Authors	Main author	Institution of authors	Title of article	Type of publication: journal, magazine, conference proceedings, press release, other	Name of publication	Title of series (if needed)	Number	Publisher	Place (if needed, for conferences, etc)	Pages	Year	Identifiers	Open access?	Link

Annex 3: mF2C whitepaper template

G⊇mF∂C								
(mF2C Whitepaper)							
-	Use Cases							
Approach 	 Emergency Situation Management in Smart Cities							
Business Goals 	Enriched Navigation Service							
Features	Smart Fog-Hub Service							
Controller Block	Benefits of adopting mF2C							
Gearbox Block Security considerations 	Conclusions and Next steps							
Reference Architecture								
Atos O The project has received funding from the European Union's Hortoon 2020 research and innovation origination of received funding from the European Union's Hortoon 2020 research and innovation only the consortium view. The Basester Receive Agency is not receptual for any use that may be made of the information is contains.								
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Figure 8 White paper template

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