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D8.2 ElasTest dissemination plan and activities v1

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Glossary of acronyms

Acronym	Definition
5G	Fifth-Generation Mobile Communications System
API	Application Programming Interface
AWS	Amazon Web Services
CERN	European Organization for Nuclear Research
CET	Central European Time
EC	European Commission
EU	European Union
FOSS	Free Open Source Software
GE	Generic Enabler
IT	Information Technologies
KPI	Key Performance Indicator
OS	Open Source
POE	Paid, Owned and Earned
QA	Quality Assurance.
SaaS	Software as a Service
SE4SA	European Cluster on Software Engineering for Services and Applications
SME	Small and Medium-sized Enterprises
SUT	System Under Test

1 Executive summary

This document contains a description of plan and activities carried out during the first review period, as well as the activities planned for the next period. Specifically, we focus on two different activities:

1. Dissemination activities, consisting on publications on journals and conferences of the research achievements of the project.
2. Communication activities, consisting on activities aimed at raising awareness of the project in the industry, including standardization activities, and build an open source community around the project.

This document describes the core aspects of dissemination, communication, and standardization activities in ElasTest and is written primarily as a guide for ElasTest project partners and as an illustration for the key stakeholders of our intended dissemination and promotion activities.

The document describes the dissemination objectives and reports the results achieved so far. Section 2 introduces the main concepts that will be used in the document. Section 3 describes the objectives regarding dissemination. In Section 4, we depict the main materials and channels used for dissemination. Section 5 presents results for the first revision period based on a set of key performance indicators (KPIs). In Section 6 we depict collaborations with testing associations, open source communities, and other research projects as well as our efforts on contributing to standardization bodies. Finally, in Section 7 we present the conclusions and devise the plans for the next 18 months.

2 Introduction

This deliverable contains the description of the communication, dissemination and standardization activities carried out in the context of ElasTest during the first reporting period as well as the planning for the subsequent period. The plan establishes the general strategy to start creating awareness as soon as possible. It also serves as the main guidelines for all partners to generate visibility and engagement with stakeholders, and it monitors the accomplishment of those objectives by defining a comprehensive set of KPIs around the dissemination activities.

The present plan has been initially created with the intention to become a living document that will incorporate changes as needed. It will evolve and change, as the project progresses and according to results achieved.

It is important to highlight that this document has been created in synchronization with Task 8.1 (Free open source software community) and Task 8.3 (Exploitation

planning) to define the initial vision of target stakeholders, value definition, and impact intentions roadmap, in which the dissemination and communication plan is based.

Before going any further, a set of definitions needs to be put in place. When talking about dissemination we are referring to two different activities: dissemination and communication.

The first one, dissemination, refers to the promotion of research work carried out within the project by means of publications on journals, conferences, or workshops, as articles, demos, posters, and in general any other format for communicating research results. In H2020, the Data Management Plan is optional, and projects can opt out for the plan. However, the ElasTest project opt in for the Data Management Plan, hence special attention has been paid to open publications.

The second one, communication, refers to rising awareness about the project in the industry and open source community. For this, attending industrial events, giving talks, running demos and other activities have been considered. In addition to those, other communication media have been used such as a project website, a blog, a user's mailing list, press releases or videos.

3 Dissemination strategy & plan

The ElasTest dissemination activities provide the means to maximize the uptake, impact, and outreach of the project's awareness, whilst initiating the long-term sustainability of the ElasTest platform and community building. We first analyze the dissemination strategy and plan, then we take a look at the communication plan. For both of them we provide specific KPIs (Key Performance Indicators) that help measuring the performance of the project.

3.1 Dissemination

Dissemination activities included in the plan are divided into the following subcategories:

1. Collaboration with other research projects
2. Publication of results in journals and conferences
3. Organization of events

Table 1 describes the plan set out for collaboration with other research projects.

Initiative	Who	What
FIWARE	URJC, ATOS, NAEVATEC,	ElasTest shall use FIWARE for one of its demonstrators (within Task 7.5) showing the ability of ElasTest to test

	ZHAW	FIWARE GEs
Vision2020	RELATIONAL	Use it to enhance visibility and gain community users
Cloud28+		To present ElasTest in an Cloud annual brokerage event
IC1402 ArVi	IMDEA	EU COST Action IC1402 ArVi "Runtime Verification Beyond Testing". One of the missions of IC1402 is to foster collaboration between researchers and industrial practitioners. We expect to organize an industry/research workshop based on ElasTest
OW2	ATOS	OW2 Technical Board to share the ElasTest results

Table 1. Plan for collaboration with other research projects

Table 2 describes the objectives regarding the publication of research results in journals and conferences.

Partner	Potential Events
URJC	1
FRAUNHOFER	1
TUB	1
CNR	2
IMDEA	1
ZHAW	2
IBM	2
Papers in high impact journals	10 (TOTAL)

Table 2. Plans for publication of research results in journals and conferences

Finally, Table 3 describes the objectives regarding organization of events.

Partner	Conference/workshop
CNR	2

Table 3. Plans for organization of events

Note that we set out specific objectives per partner, rather than overall objectives, with the aim of making all academic and research institutions within the consortium

pursue their own objectives. This does not preclude from partners collaborating and publishing joint works.

These tables depict the plan for dissemination within the project. For specific achievements see Section 5, where results for the first review period are sketched.

3.2 Communication

For software projects, starting the communication strategy once some minimal piece of software is available is a risk. Specifically, it takes some time for the community to be aware of the new project and to start following it. Hence, all partners agreed that we should start communicating the project as soon as possible.

To this aim, we started preparing some communication media from where we could give updates about what was happening in the project, and some communication material that could be used at the different events where we planned to participate.

Specifically, we prepared the following media channels for disseminating the status and activities carried out within the project:

- EU Webpage (<https://elastest.eu/>): this website is intended to be the official website from where all documents (both formal and informal) are reachable. In particular, this website is in interest of stakeholders from the European Commission. Public deliverables are made available from this website.
- Community website (<https://elastest.io/>): this website is intended for the community, and contains all the documentation of the project, references to the GitHub repositories where open source projects are developed, specific instructions to try out the ElasTest platform, and links to other media channels of the project (YouTube, Twitter, and so on). For the community website we chose a .io domain, which is more inclusive than the .eu domain. We still keep in this website the EU emblem and the reference of the funding of the project [9]. However, for a project that seeks to build a community, being as inclusive as possible is a must, and using a domain that identifies a single country or region works against this purpose.
- Twitter channel (<https://twitter.com/elastestio/>): we planned to use Twitter as our main channel for disseminating news around the project. Both the Project Coordinator and the Technical Coordinator have a good and strong profile on Twitter, with many followers in Spain (and abroad). We thought we could be able to attract followers for ElasTest from other partners' Twitter accounts.
- YouTube channel (<https://elastest.io/youtube>): this channel was intended for communicating the outcomes of the project as a set of videos including, for instance, demos of the ElasTest platform. In addition, it could be used as well

to link other videos recorded on the events attended by the partners to have a centric overview of all the video assets around the project.

- SlideShare (<https://www.slideshare.net/elastest>): SlideShare is a social network for knowledge sharing. Under the umbrella of LinkedIn, in this social network many professionals share their knowledge by means of presentations on different events made available for the general public. We thought that making all our presentations generally available would foster knowledge of the project.
- Blog (<http://elastest.io/blog/>): a blog is used by many people to raise awareness of what they do for a living. In ElasTest we believe that hosting a blog to talk about news and events related to the project was key. Other social networks (like Twitter and SlideShare) are good for fast dissemination of short notices or slides. But in a blog, one can go into the deepest details when needed. In addition, for the blog we established a KPI of publishing a blog entry per month. To make this happen, we assigned two months to each partner. So at least it is guaranteed that there will be one blog entry per month. Occasionally, additional entries might be published due to releases, meetings or events related to the project. We hosted the blog in the community website. However, as we move forward in the project, it looks evident that a social network for blogs might be more interesting from the point of view of reaching a potentially bigger number of people interested in the project. Platforms for social blogging like Wordpress.com or Medium.com are good candidates, as they allow readers to follow their favorite authors or give them likes, which might boost knowledge of the project.
- Newsletter: a newsletter is a way to keep in contact with people interested in the project by means of emails sent at specific intervals. In our case, given that our blog is hosted on our own community website, it's difficult for readers to get aware of new blog posts, unless they visit periodically our website. We don't think this will happen often, so we decided to set out a newsletter, sent once a week, containing the blog posts of the given week (if any). Any reader can subscribe to the ElasTest newsletter if he/she doesn't want to miss news related to the project. After some initial discussions we decided to send the newsletter every Friday by 12:00 CET.
- Press releases: we decided to publish a press release just after each of our face to face meeting (to be held every four months) to raise awareness of the project.
- User's mailing list (<https://elastest.io/support-forum>): a user's mailing list allows the project keep in contact with its users, and it's bidirectional: users can post their own questions or concerns, and the community behind the project can give feedback or advice. In addition, through the mailing list important announces are published, like releases.

- GitHub (<https://github.com/elastest/>): we decided to host all our open source code in GitHub, a social coding platform where most open source projects are hosting their codes. Many important open source communities, like the Eclipse project, who traditionally hosted their own source code repositories, are now using GitHub as their main entry point for developers willing to contribute to the project. GitHub has made extremely easy for developers to contribute to their favorite projects, and people from Eclipse and other communities, didn't want to miss this opportunity. Hence, we thought that leveraging GitHub and its contribution possibilities, was the best option at the moment. Furthermore, its usage is free for open source project with no limits in the number of contributors involved. Recently GitHub has been acquired by Microsoft, although it seems to be working as an independent platform for code sharing.
- Issue tracker (<https://github.com/elastest/elastest/>): there's no non-trivial software project free of bugs. Hence, it is key for any project to keep track of defects. In the case of open source projects, sometimes those bugs can be discovered by the community. Instead of seeing this as a drawback, open source embraces this kind of contributions from users and indeed it is much valued. We decided to keep our bugs open to the public in an issue tracker associated to the ElasTest project. We have provided a template for bug filling, to make it easier to reproduce the bug and track progress. Any user can fill in details for a new bug, and the community (including the partners) will do their best to solve it.

Regarding the communication material, we planned early for the following assets:

- Logo: it is mandatory for any project to have some logos available that are carefully designed keeping in mind where are they going to be used. We planned to run a contest for the ElasTest logo, and for the winner, to prepare several logo images suitable for usage on different backgrounds and at different sizes.
- T-Shirts: at some events we planned to do some quiz or contest and give ElasTest t-shirts to the winners. This serves two different purposes: first, contests can be leveraged to promote the project (like being the first to publish some tweet about the event with the #ElasTest hash tag); second, by giving t-shirts, those who win one might on their own promote the project further each time they're wearing the ElasTest branded t-shirt.
- Stickers: we plan to set out booths at some events showcasing ElasTest. In these events, usually people are willing to take stickers and other kind of presents from exhibitors. We plan to have stickers branded with ElasTest ready for those people.

- Business cards: when getting in contact with people from the industry it is usual to exchange contact details by exchanging business cards. These cards, in the case of ElasTest, will contain some features with pictures representing the four demonstrators on one side, and main features and contact details on the other. The contact chosen was a generic email address linked to the ElasTest domain: info@elastest.io. This account is managed by the team at URJC.
- Flyers: usually, business cards cannot hold all the information related to the project, or big pictures. They're small, and not well suited for exhibition at different events. Hence, we decided to design flyers that could be brought to the different events and made available to the attendants, usually in a specifically designed place.
- Rollup: for booths where we will be showing the project results, it is good to have a rollup that grasps attention. This can be a huge difference, when attracting people to the booth. Hence, we decided to design and print a rollup that could be brought to different events.
- Whitepaper: as it is usual in other projects, we planned to have a White paper that could be used by stakeholders to understand the aims of the project. We planned for two of these whitepapers: one for the first half of the project, one for the last.
- Document and slide templates: in order to make the visibility of the project consistent despite which partner or individual is doing the dissemination, we decided to prepare templates for the different office suites, both for documents and slides. Specifically, we tailored Microsoft Office, LibreOffice, and Google Docs.

We will use the media and material above following the well-known POEM approach: **Paid, Owned and Earned Media** which stands for the main marketing media available [1][2]. This is a strategy that is known from some years in marketing and we adapt the strategy to ElasTest needs and objectives.

Paid Media, refers to the use of “paid advertising” channels to drive traffic and project’s overall messages. We’ll use it to create awareness among our community of stakeholders, use media available and even to reach new audiences. Within this group of paid media, we can find the following actions/strategies:

- Print material.
- Radio.
- Campaigns of pay-per-click.
- Display campaigns.
- Marketing actions like emails.
- Promoted tweets.

- Content generated by influencers.

In short, all those actions that require a direct advertising investment, to get a place available in any media space in order to advertise our project.

Owned Media, refers basically to any contents considered as own. Specifically, it includes all media, content and platforms that are partially or completely owned by ElasTest. We will create them, we can publish information anywhere at any time and where we want. One must not confuse owned media with free. Generating quality content of our own in ElasTest will require a significant economic investment (with our resources). Examples of owned media include:

- ElasTest logos.
- ElasTest web site.
- ElasTest blog by publishing blog posts.
- ElasTest software releases.
- ElasTest social media channels.
- Press releases, whitepapers, case studies, e-books and social media updates.

In sum, all those media channels that are in our hands, under our control, for which we can produce new content for sharing whenever we want, and that will build our reputation somehow.

Earned Media, refers mainly to a reward for the good work done. This is news coverage that arises without ElasTest having to interfere or contribute. This is all mentions and articles on established channels not gained through advertising or participation. Earned media sources typically already have authority, ranking and relevance to a given industry or topic, so getting mentions helps to build our authority and spread our research beyond our community.

Tactics of earned media are:

- Mentions referring to ElasTest.
- Invitations to industrial events.
- Outreach programs to industry influencers (shares).
- Ratings.
- Third party reviews.
- Public relations.
- Bloggers.
- Social networking.

In sum, the earned media is not a method of traffic generation or branding itself, but rather the logical consequence of having done a good job with owned media and paid media. Faced with an increasingly competitive, aggressive and collapsed digital investment scenario, we must ensure that ElasTest gets the most out of everything published, whether it is information, promotional or branding content.

Although presented in this way, the media channels look like silos with no communication with each other but nothing further from reality and our plans. We must acknowledge that the barriers between the different ways of generating traffic and brand awareness are almost invisible.

3.3 The ElasTest strategy

Although we presented the dissemination and communication on separate subsections, they are not completely independent. In particular, we plan to communicate through our owned media, everything related to the dissemination of our research results.

Our dissemination plan focuses primarily on communication with key stakeholders considering ElasTest technologies in order to increase **awareness, information, participation, and promotion**. Thus, the dissemination strategy for ElasTest is based on these four distinct phases:

1. **Awareness:** organizations become aware of the aims, actions and achievements of the ElasTest project and more widely of the available resources and pursued objectives in testing context and related communities.
2. **Information:** providing stakeholders the information they were looking for, being it how to use ElasTest, if it serves their own purposes, etc.
3. **Participation:** engagement of stakeholders in our ElasTest community for guaranteeing its sustainability after the project ends.
4. **Promotion:** giving stakeholders the necessary means so that they can help promote the project. Usually promotion does not require a deep involvement in the project (as participation requires), and many stakeholders might be willing to promote the project if they find it interesting if they are given the necessary tools (like a Tweet that can be re-tweeted, a share link to share some content related to the project, or some marketing material to use like a sticker to be shown at their laptop chase).

In summary, this Dissemination Plan and the foreseen activities are intended to provide our initial approach for key messages, targeted audiences, channels of communication and success indicators to achieve the main goals here defined.

3.4 Steps to consider

The first task is to provide answers to the following questions: **who, why, what, how** and **when**, at least, an initial approach that will evolve during the project. Let's provide our initial approach to these questions.

3.4.1 Who

Broadly speaking, we identify the IT community interested in testing, including web testing, mobile, real-time video communications, and Internet-of-Things which are the target audiences that we want to reach.

The ElasTest project main objective is to improve the efficiency, productivity, code reusability and effectiveness of the testing process of large distributed software systems. In this regard, ElasTest provides to the software industry the tools to instrument the software under test, orchestrate complex tests from simpler ones, and recommends good test practices.

The ElasTest solution is specifically focused on end-to-end and integration testing, where the application is assessed from the end-user point of view. Hence, Quality Assurance departments can benefit from ElasTest capacity for defining and running complex tests from simpler ones. ElasTest provides good visualization of these end-to-end tests, enables the definition of new tests from existing ones, and allows testers to define the conditions to be applied to the software to test it on real conditions.

ElasTest can help IT teams become more efficient and faster by reducing the time since they find a defect in the software until they find what's causing it. It helps them become more secure, because software that has been tested using ElasTest provides higher confidence. It helps teams become cost-effective by reducing the time-to-market for bug fixings, by reducing the efforts in building tests, and by enabling new kind of end-to-end tests. All these benefits led to shipping products with fewer errors.

The ElasTest project is focused on two main outcomes:

- Improving the efficiency, productivity and code reusability of the testing process in large complex distributed applications;
- Improving the effectiveness of the testing process and, with it, the quality of the system under test.

To achieve the objective of reaching a wider audience the ElasTest consortium will gradually build up and mobilize a community committed to adopting and planning to exploit the results beyond the end of the project. To this end ElasTest plans to involve a critical mass of relevant **stakeholders** early on in the project as described in this section.

This requires the setup and implementation of the appropriate mechanisms to promote and engage them in the ElasTest community and beyond which can contribute in embracing a large audience including:

- **Developers** who want to test out ElasTest offering and become part of the community.
- **Testing/QA engineers** that want to learn more about the ElasTest platform, try it out and join the ElasTest community.
- **Software developer companies** who want to increase the efficiency of their testing and bug fixing processes in their projects by means of using the ElasTest platform and joining the ElasTest community.
- **SMEs** who could test their projects and use the ElasTest platform
- Potential **sponsors and/or investors**, who may not be end users themselves, but entities willing to pay for testing services.

Hence, in general, all the different stakeholders involved in IT development and management are key audiences we plan to target. For a more comprehensive list of stakeholders, see Table 5.

3.4.2 Why

As said before, “testing is not a problem, but it is **the** problem for modern software development”. Testing is a key element for successful software validation and there’s a need to have useful tools capable of easing the entire testing software cycle.

In **software engineering the software testing is one of the most complex areas**, and we acknowledge that testing apps requires a bigger budget for tools and resources compared to programming. **Large distributed software** systems are widely used, and no doubt are “the systems” in organizations. This software is promised to be fault-tolerant, elastic and cost-efficient. However, it is difficult to assess that distributed software complies with the **quality demanded by users**, including promises about non-functional properties like those above mentioned.

In this respect, the ElasTest platform will provide a complete solution for testing, providing the resources to run the tests and easily integrating provided support services.

The objective of ElasTest is to provide advance testing capabilities aimed to increase the **scalability, robustness, security and quality of experience** of large distributed systems. All in one, ElasTest will make any software development team capable of delivering software faster and with fewer defects.

3.4.3 What

Since the approach of the project is to create impact and sustainability through the ElasTest community, the dissemination and communication strategy should support

this community, and become an essential pillar as a support mechanism for leveraging its results and impact. The goal of a successful open ElasTest development community will be where everyone is welcome to participate as a user, adopter or contributor. In the ElasTest community, the development teams will truly work in the open. They will use public issue trackers, public code repositories, and public build systems and will not develop behind a firewall and once a month doing a code commit to a public code repository. The development team will have a sense of belonging and will make sure that updated project plans are published, and technical discussions occur in our public forum. The development involved team need to believe they are part of the community, not a traditional vendor-oriented development team. Therefore, setting up a general plan for dissemination to support this community is a must; and this in turn will allow the project to gain visibility and develop our branding creating impact and transferring technology.

In order to be useful for the community, ElasTest will provide a cloud platform designed to help in testing and validating large software systems. This platform will maintain compatibility with current testing practices, while at the same time, enhancing current practices with several types of enablers:

- Test Support Services designed for helping developers and testers define simple tests using capabilities commonly provided by third party services like monitoring of the software, browsers, IoT devices, security checks, or big data analysis.
- Instrumentation capabilities to reproduce custom operational conditions and monitoring for the system under test
- Orchestration of tests, for creating complex tests by composing simpler ones
- Recommendation engine, for re-using knowledge about the testing process to help other testers in designing their own tests
- Cost engine, for estimating the cost of tests on common cloud providers

All in all, the ElasTest platform should be a testing infrastructure that enables advanced end-to-end effective testing attractive enough for outsider's testers to test it. The platform will have Test Support Services which are simply SaaS services designed for increasing tester productivity through off-the-shelf capabilities typically required by testers. Also, the ElasTest Instrumentation Manager shall expose seamless API enabling developers to augment the testing coverage and to validate the SuT in real-world operational conditions.

These aspects should be covered by dissemination activities (e.g. papers, scientific publications, online blog posts, etc.), sharing with the scientific community our experience and transferring knowledge of how standards impact and benefit on ElasTest and how we impact on them as well all explained in (Section 3.8).

In addition, to guarantee ElasTest long-term sustainability, an open source ecosystem and community will be created around it, and all the ElasTest components, except the recommendation engine, will be open-source.

3.4.4 How

A key element of the “how” approach is the creation of a community around ElasTest, for which we have a detailed open source community strategy (see D8.1 ElasTest Open Source Software Community for further details about the community).

Dissemination is seen to be effective when multiple communication channels are considered, thus in ElasTest we can consider:

- Creating two **websites**:
 - <http://elastest.io> gain community users/interested in ElasTest (and contributors)
 - <http://elastest.eu> updated as the projects evolves.
- **Press releases**: targeting media channels to share our achievements and news.
- **Social Networks**: Twitter, YouTube channel, SlideShare and StackOverflow.
- **Project marketing presentation**: creating a marketing presentation available for all partners that can be used to present ElasTest in events.
- **Project technical presentations**: available for all partners that can be used to present ElasTest in technical /ad hoc events.
- **Project logo and branding package**: Definition of common dissemination “image”, such as the project logo and the project presentation, ensuring uniformity of ElasTest appearance to third parties.
- **Promotional material: Flyers, posters, t-shirts and rollups**: to be sent to all partners for further distribution through their communication channels and networks.
- **Promotion of ElasTest (software) releases**: will share all software releases so people can download and test it, also create an OS community of users/developers/contributors.
- **Developed success stories**: helping sharing the lesson learned from the project and share key findings, some videos including and presenting ElasTest objectives, findings, positive aspects etc. These videos can be distributed to the varying targeted groups and on both websites.
- **Press releases, white papers or case studies**: to provide quick communication of technical achievements to a broad audience.
- **Participation in thematic conferences/events**: events to present or networking related to open source software and, DevOps, testing, QA, or to the specific vertical domains associated to ElasTest demonstrators.

- **Articles in various media and blogs** interested in new technologies and media.
- **Publications in scientific and industrial journals:** to disseminate research advances achieved in the project.
- Use of project results for **educational purposes** to be exploited by academic partners (e.g. CNR, TUB, ZHAW in teaching and further research).
- **Participation in competitions and challenges** organized in the research areas of the projects such as OS, DevOps, QA, testing etc.
- **A project Fact Sheet** for relevant EC pages.
- **Collaboration with other projects** active in the same areas as ElasTest or similar. For actions undertaken by the project in this direction see Section 6.1.2.

Table 4 summarizes the main materials and channels used in ElasTest dissemination activities, what are their purposes and why are they chosen.

Means	Purpose	Why?
Logo	Promotion	The logo is representative of ElasTest concept and vision
Web site	Awareness Information Participation Promotion	It has all public information about the project and the community. Channel to share progress and releases with ElasTest stakeholders and potential community joiners.
Social Networks	Awareness Information Participation Promotion	The massive participation in social networks gives this channel a very important role as communication and dissemination tool (Twitter, SlideShare, YouTube, StackOverflow).
ElasTest Marketing pack	Promotion	All the marketing material available for use, these are leaflets, posters, T-shirts, etc. And can be also used in conferences, workshops etc. It will contain basic information about the ElasTest project.
Press releases	Awareness Information Promotion	Exploitation of consortium's substantial relations and open channels to many (news) organizations.

Journal articles	Awareness Participation Promotion	Articles in international and/or specialized journals. In order to share challenges addressed by ElasTest, innovation and progress beyond the state of the art.
Conference presentations	Awareness Participation Promotion	All conferences (EU and international) are opportunities to share findings, project results, engage users for OS community, with other experts in the relevant scientific areas.
Project software releases, showcases, demonstrations	Awareness Information Participation Promotion	The goal of these actions/demonstrations is to present ElasTest software releases to stakeholders, get feedback and gain community engagement.
Workshops	Participation	Small interactive events to showcase and discuss project and/or related topics and build community of users/contributors
Liaison activities	Awareness Information	Coordination and cooperation with other related European projects or other existing networks.

Table 4. Means and purpose for dissemination

For a more effective dissemination, we need first to clearly identify the ElasTest target/interest groups. In fact, each group has different needs and thus requires that we approach them with a different engagement strategy. Therefore, Table 5 lists and matches the identified target groups and the respective means of dissemination. For a description of the specific implementations, see Section 4.

Target Group	Relevant stakeholders	Motivation	Disseminate results/Offering	Means of dissemination
Industrial community	SMEs	Seek to effortlessly test their projects and detect and fix problems fast	ElaTest Platform	Web site, showcases, videos, demonstrations, workshops, press releases, social networks
	Large enterprises, Software companies	Reduction in complexity and time, shipping products with better quality. Interested in increase their overall software quality of their products. Understanding how to reduce complexity of software testing on large distributed systems in the Cloud		
	Service providers	As more software is offered as a service in cloud providers, more testing tools for cloud software will be needed	ElaTest Platform	Showcases, demonstrations, cloud-provider awareness (AWS, Azure, OpenStack)
	Consultants	Help with QA challenges, advice on how to improve the efficiency and effectiveness of the testing process, advice on the impact testing/QA strategies	ElaTest Platform	Showcases, demonstrations
Scientific community	Researchers	Interested in testing areas, cloud-based testing, security, new test approaches, and having a platform where ideas can be tested	New methods and tools	Journal articles, conference presentations, workshops, web site, workshops, social networks
	Standardization bodies		ElaTest Platform	Journal articles, white papers
Open source community	Developers who become part of the community	Interested in pushing the project forward for their own needs	ElaTest Platform, software releases	Roadmap, releases, bug tracker
EC-ICT	European	Responsible for funding and evaluating the project	ElaTest Platform,	Press releases

community	Commission		announce software research & outcomes	
	International Conference Events	Interest in showcasing the project		Showcases, demonstrations, promotional dossier
	European projects	Share the knowledge acquired Trigger collaborations with other co-funded projects Exploit synergies and cooperation.		Liaison activities, web site, social networks, workshops, videos, showcases, demonstrations
Testers	People interested in Quality Assurance	Decrease testing costs Increase software quality Reuse tests Defining complex test scenarios from simpler ones Reproducing real world conditions for an accurate testing	ElasTest Platform	Press releases, showcases, demonstrations, web site, social networks, white papers
Developers	People interested in developing SaaS solutions or cloud-native applications or applications that run on public, private or hybrid clouds	People interest for innovative cloud platform and technological achievements Being aware of new testing technologies around cloud market Stuck in debugging complex cloud applications with several running services	ElasTest Platform	Press releases, showcases, demonstrations, web site, social networks
Public Administration	EC / National Public Administration / Eurocloud	Create a label that ensures the quality of an application in terms of financial issues, process and application Avoid closed-source solutions	ElasTest Platform	Promotional dossier, press releases, showcases, demonstrations, web site, social networks

Table 5. Matching disseminate-able results to target groups and means of dissemination

3.4.5 When

The ElasTest consortium must be capable of having tangible results releases every 4 months, as set out in the Grant Agreement for the project. Hence, these release cycles need to be taken into account when planning for dissemination, as we can consider that each 4 month there will be an opportunity to share new achievements within the project.

The strategy has been phased to establish the right timing in order to prioritize actions performed according to ElasTest goals: first to increase visibility, work on social networks, develop contact list, and build a strong audience.

The planning for the dissemination of the project started off at a fairly high level and was refined and updated during the project lifecycle as new opportunities for dissemination arose. Table 6 outlines the ElasTest planned activities and those done during M1-M18. The table shows the delivery date, the activity that was planned and some comment; the institution leading the activity and the current status. The dissemination table report shows that all the planned activities for the first period have been successfully achieved with the help and active participation of all partners.

Delivery Date	Activity	Remark	Lead/ Contributors	Status
M03	Branding & material	Logo, factsheet and poster	URJC	Done
M03	Marketing material	Microsoft / LibreOffice / GoogleDocs presentation, templates, etc.	URJC	Done
M03	Web sites (both .io and .eu)	Initial version online	URJC	Done
M02	Twitter Feed	Creation	URJC, ATOS	Done
On-going (>M02)	Twitter feed	Maintenance	URJC, ATOS	On-going
M03	Press Release compilation	Several were released	URJC	On-going
M05	ElasTest problem statement presentation at URJC (Gallego, 2017)	Professionals from the industry were invited No platform was available at the time	URJC	Done
M06	Dissemination strategy defined	Means of dissemination Disseminate-able results Stakeholders Monitoring (KPIs)	ATOS, URJC (this present document)	Done

On-going (>M05)	Dissemination strategy monitoring	Monthly checking dissemination strategy – evaluating KPIs	ATOS, URJC	On-going
M06	Publication planning	Relevant conferences have been identified	ATOS, URJC	Done
M05	OS community	Definition	URJC, ALL	Done
On-going (>M05)	OS community	Maintenance	URJC, ALL	On-going
M08	Web site	Updated	URJC	Done
M06	Press Release distribution	All partners involved	ATOS	Done
M05	Flyer	Designed and printed. Has been left at different events	URJC	Done
On-going (>M05)	Events	Participation in relevant events	ALL	On-going
On-going (>M05)	Writing papers	Events/conferences	ALL	On-going
M06	t-shirt	Production and distribution	URJC, ALL	Done
M06	Liaison activities	Contact ICT6 projects	URJC, ALL	On-going
M07	Roll-up	Creation	URJC	Done
M09	Web site	Updated version to be released	URJC	Done
M10	Blog post planning	All to commit to write a blog post per month	ALL	Done
M10	Events	Participation in relevant events	ALL	Done
M11	Liaison activities	Plan joint activities	URJC, ATOS, ALL	Done
M12	Standardization	Reporting	ALL	Done
M18	Dissemination report	Update and submission	ATOS, ALL	Done

Table 6. Dissemination timetable

4 Material, channels and tools

In this section we describe the material, channels and tools to be used in dissemination and promotion activities.

4.1 Media channels

The consortium has set up several media channels to reach the different stakeholders.

4.1.1 Blog

There is a blog [7] where news about the project are published. The blog is also a way to let developers, testers, companies and citizens what to expect from the project.

Participation in events, new releases, roadmaps, and in general whatever happens within the project that can be disseminated, is written in blog posts. We have an aim of writing at least two entries per month. Currently, there are 20 entries, and all the partners have actively contributed to posting information, and cool stories in the blog. Figure 1 shows a screenshot of the project's blog entries.

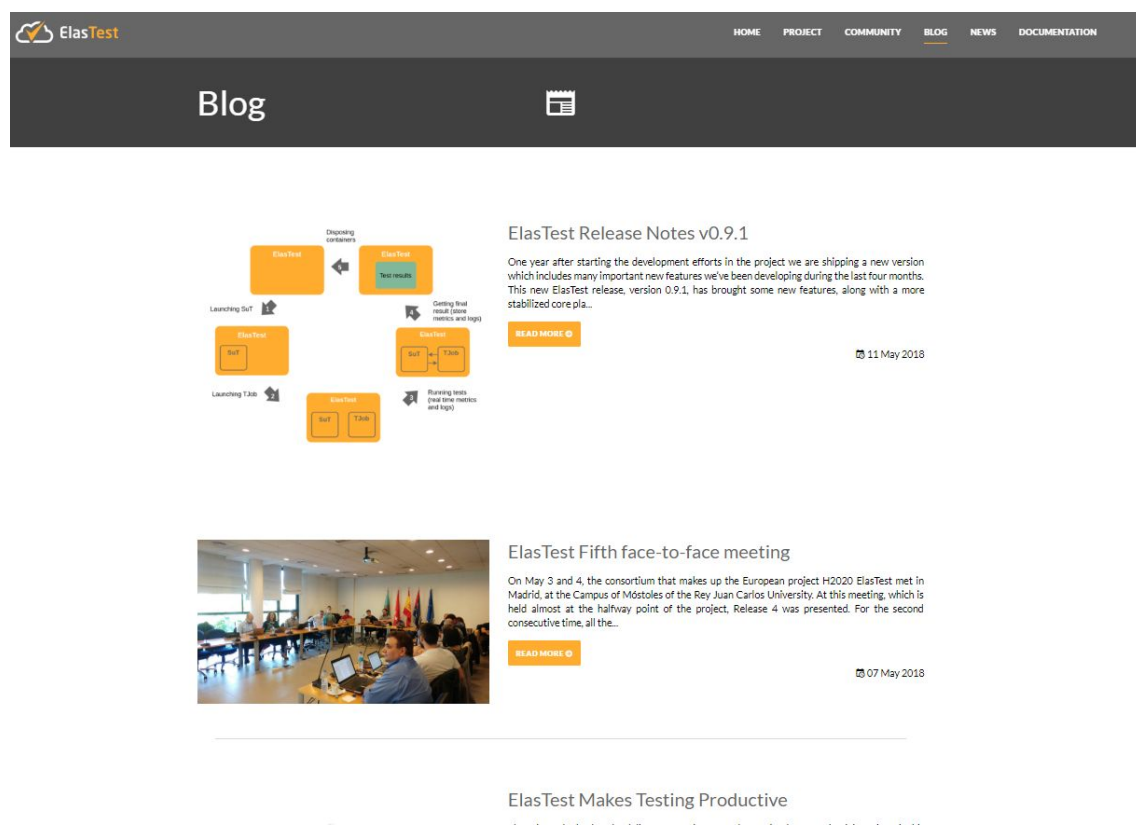


Figure 1. ElasTest Blog entries

4.1.2 Twitter

Current media plans need to have Twitter into account. This social media channel requires immediacy, so we write about important things that happen in the project as

soon as they are known. The Twitter account for the project is @elastestio (see Figure 2).

When participating to a conference, tweets are prepared in advance when possible, and are delivered before, during and after the conference with different contents. All blog posts are also disseminated through the Twitter channel.

The ElasTest Twitter account follows several well-known names in software testing, trying to share their knowledge through our channel. Curating content through the @elastestio Twitter account may position us as a reference account regarding testing.

Project's Twitter account also follows several EU accounts, and other EU funded projects in an aim to find synergies and collaborate with them in sharing their achievements.

- Back in December 2017 @elastestio account had 130 followers, it follows 250 people, it has 188 tweets, and 66 likes.
- Today, during June 2018, @elastestio account had 339 followers, it follows 553 people, it has 482 tweets, and 349 likes.



Figure 2. ElasTest twitter account

4.1.3 YouTube channel

As part of project's media channels, a YouTube channel for ElasTest [6] was opened (see Figure 3). This channel contains videos that demonstrate the project in action. In addition, if the participation of any partner of the project in an event is recorded, the videos are also linked from the project's YouTube channel. This makes easier for anyone to find video recordings related to the project.

ElasTest's YouTube channel currently hosts 22 videos, and three playback lists. Those videos hosted at the ElasTest channel sum up 1,388 watching minutes, with an average view duration of 1:36 minutes, 13 likes, 39 shares, and 21 subscribers (see Figure 4). The most prominent video is the one recorded for the demo submitted to ICSE 2018, with 231 views and 5 likes. This video was linked from the ICSE website, hence the numbers. The second most popular is a demo of the EUS component that provides browsers as a service with 94 views.

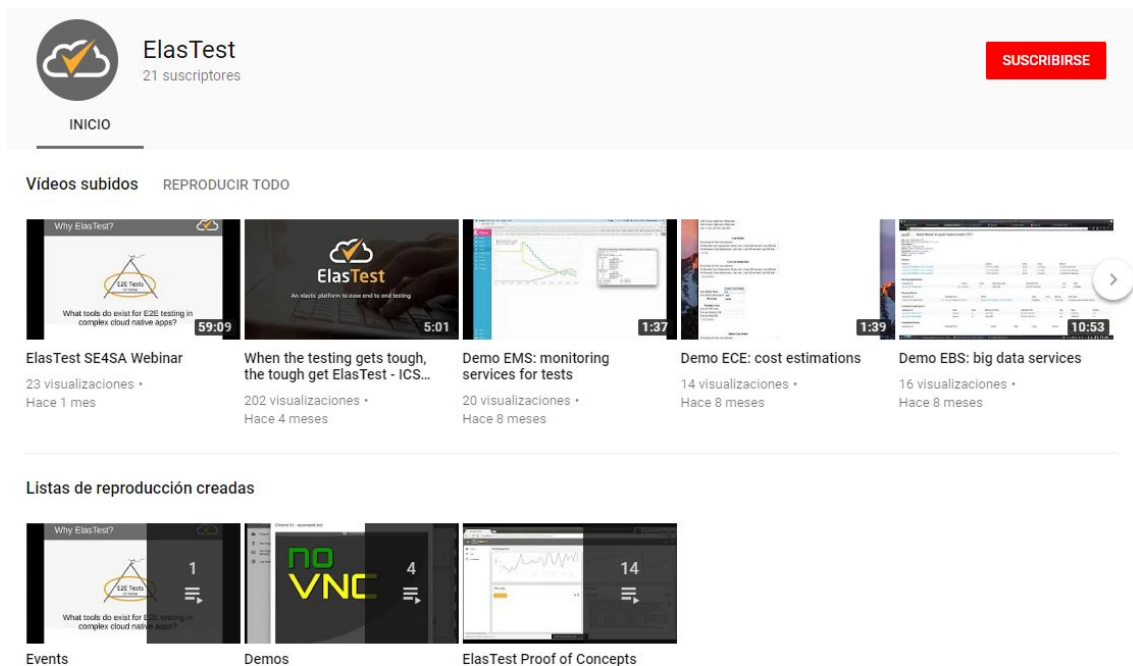


Figure 3. ElasTest YouTube channel

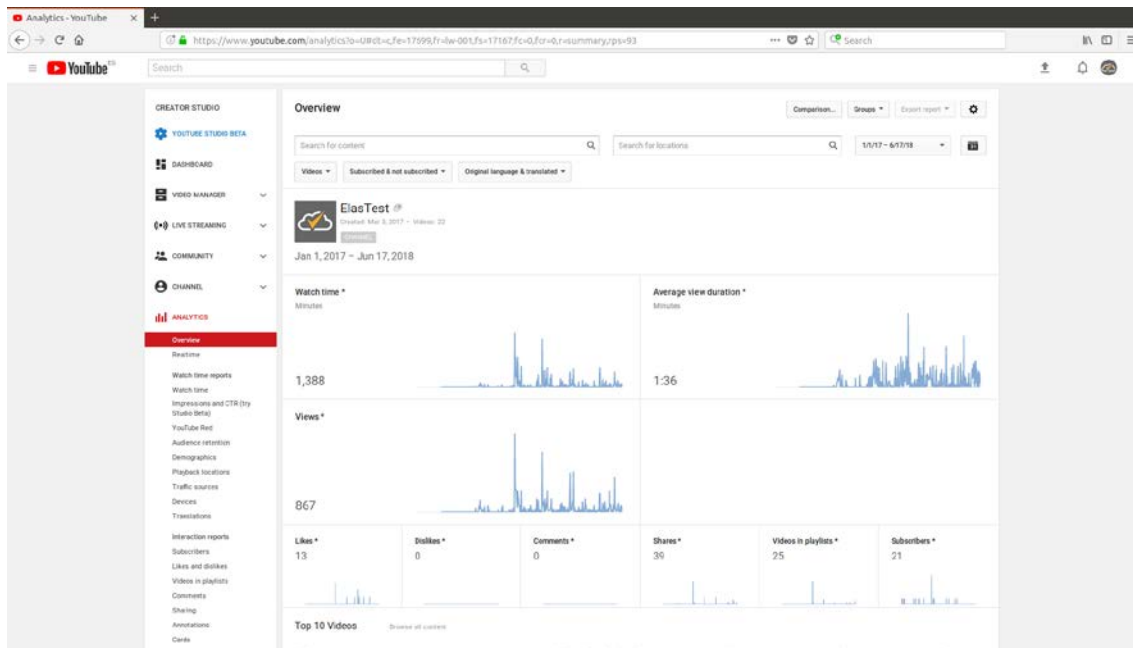


Figure 4. Statistics for the ElasTest YouTube channel

4.1.4 SlideShare

There is a SlideShare account [5] for posting those presentations from the consortium related to ElasTest (see Figure 5). This account currently has ten presentations, including a generic overview of the project covering the objectives so far, and a technical presentation that covers the technologies and architecture of the project. All the presentations sum up a total 1,713 views. The presentation with the most views is the ElasTest technical presentation with 481 views.

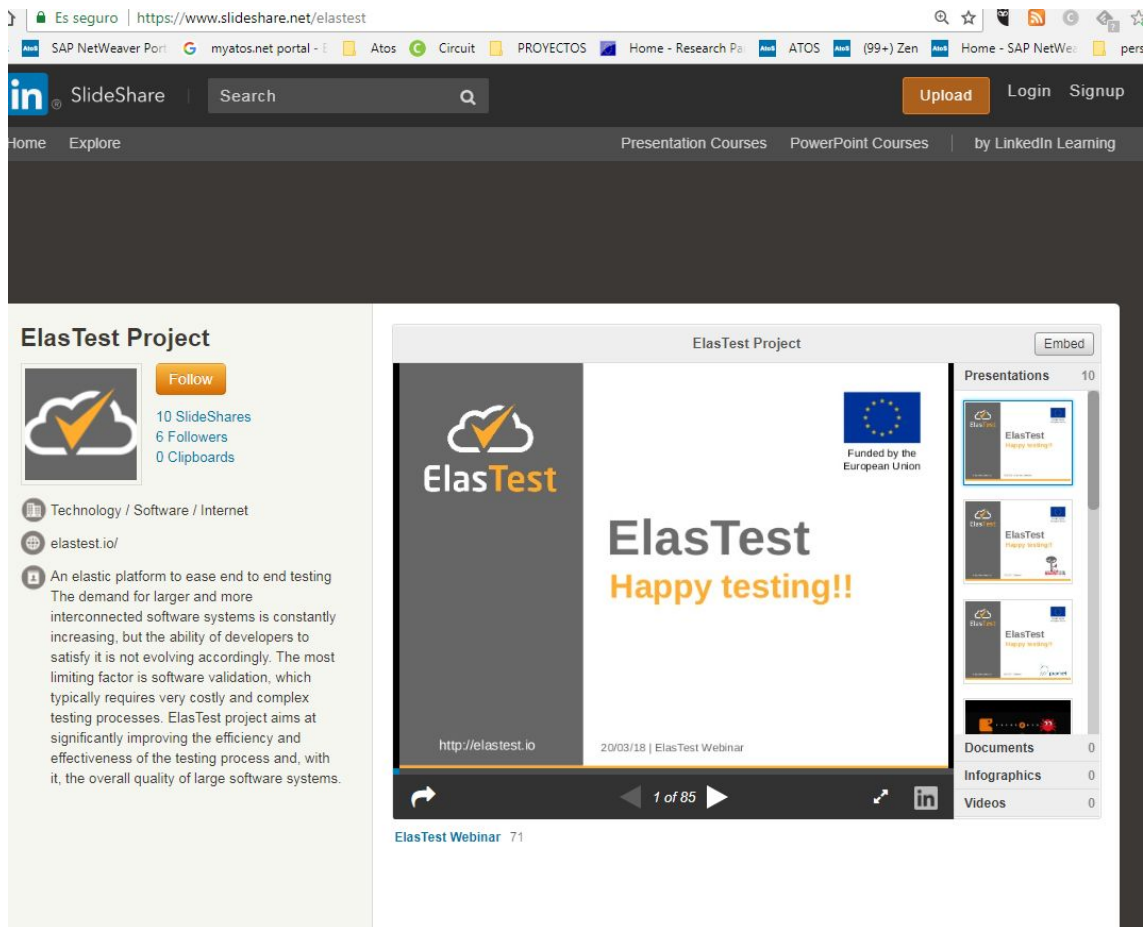


Figure 5. ElasTest SlideShare account

4.1.5 Newsletter

Visitors of the ElasTest website can subscribe to the ElasTest newsletter. This newsletter delivers directly to the inbox of those subscribed the blog posts of the week every Friday at 12pm CET (see Figure 6). Currently, there are 36 subscribers to the newsletter.

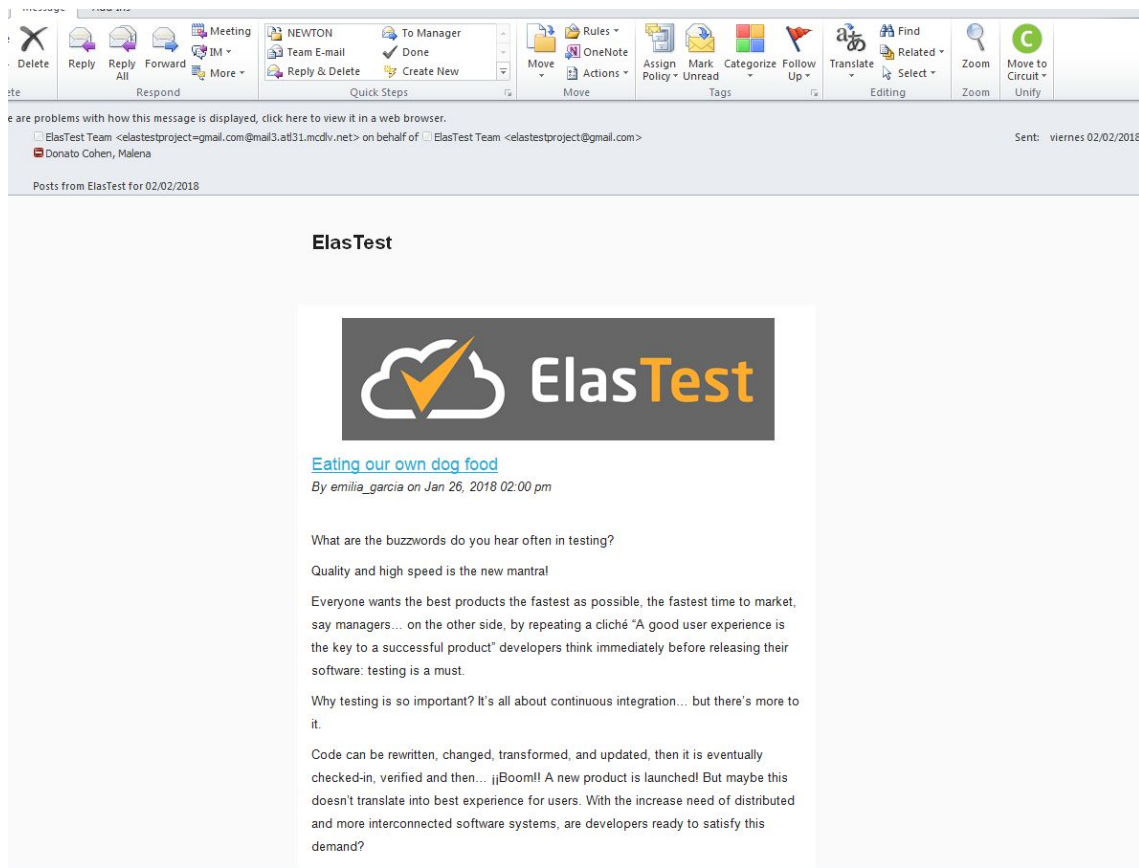


Figure 6. ElasTest newsletter sample

4.2 Marketing materials

The consortium has created a set of media materials that all partners use in their dissemination activities. These media materials are focused on providing a uniform and recognizable view of the project, and on raising interest in the project in different scenarios, like meetings, conferences, web, or social channels.

The Marketing material described below (such as logo, presentations, poster, flyers, videos, etc.) is available for partners inside the “Communication and Marketing Material” folder in the project’s space at Google Drive.

4.2.1 Logo and branding

The ElasTest logo is the result of a competition in the 99 designs website [3]. A brief description of the project was given prior to starting the competition. Then, for four days, designers were proposing designs for the ElasTest logo. During the four days, feedback was given to tailor the designs towards those that were more appealing to the partners. After those 4 days, a winner was chosen (see Figure 7). However, the logo was still modified a little to make it more suitable for use in several colors and backgrounds. The typography was kept, but the Test word in ElasTest was set in bold and the colors were changed to make use of orange, white and green. This job was

carried out by Micael Gallego, from URJC, who has a long and deep experience on design.



Figure 7. The logo winner of the 99 designs contest

Figure 8 shows the logo design for the ElasTest project that is also available on two different orientations and backgrounds [4].



Figure 8. ElasTest logo

4.2.2 Flyer

Figure 9 shows the flyer design available for partners suitable for leaving at events in desks and common areas for people in the event to pick and get with them. On one side, we present the vertical logo with the slogan “Happy testing!” and the main features of the ElasTest platform. On the other side, we include the horizontal logo, the technologies involved (that could attract attention due to their novelty), and the webpage of the project. We also include the EU emblem as it is mandatory for any dissemination material.



Figure 9. Flyer

4.2.3 Business cards

There are generic business cards available for the partners (see Figure 10). The cards show the project logo along with a set of features and the generic email account for contact *info@elastest.io*. This email address is provided by the Internet domain registrar GoDaddy, where the domains *elastest.io* and *elastest.eu* were registered.

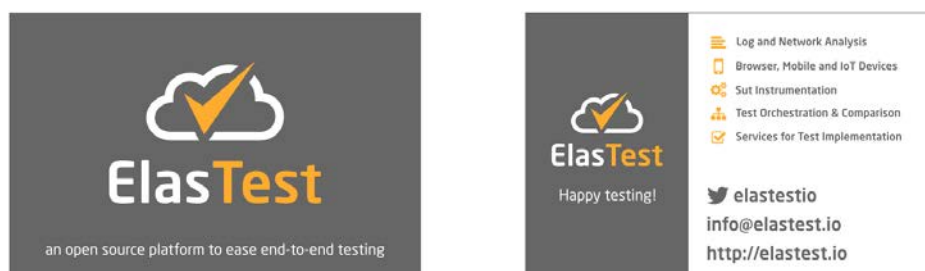


Figure 10. Business cards

4.2.4 T-Shirts

T-shirts on several sizes for women and men have been created, as shown in Figure 11. Those are branded with the ElasTest logo and are distributed with two main objectives. First, some of them are given to the partners to personally fit them when attending events, to help expand the overall knowledge about the project. For instance, Antonia Bertolino, Breno Miranda and Vania de Oliveira were wearing the

ElasTest t-shirt during the ElasTest demo at ICSE, the biggest conference on software engineering worldwide. Second, some additional t-shirts were given to the partners to give to people at events showing interest in the project, or as part of prizes or awards when participating in hands-on workshops or contests during exhibitions.



Figure 11. T-Shirts

4.2.5 Roll-up

There is a roll-up (Figure 12) available for any member of the consortium to print and bring to those events where a booth for ElasTest is available. The roll-up was prepared initially for the ElasTest booth at ICSOFT 2017 (held on July 2017 in Madrid) run by URJC but was used as well at the IEEE NFV-SDN workshop held in Berlin in November 2017, where URJC and TUB were running a booth showcasing ElasTest in the 5G arena.



Figure 12. ElasTest Roll-up

4.2.6 Presentations

There is a technical presentation for the project at the project's SlideShare account [5]. The presentation highlights the main challenges in end-to-end testing of complex distributed systems and presents the ElasTest architecture and components that are being developed to overcome these challenges.

There is also a high-level presentation that starts with the problem statement, and then moves into how the problem is to be tackled within the project.

4.2.7 Videos

Videos are available in the YouTube channel [6] for the project. Videos currently uploaded focus on demonstrating the usage of any and each of the components of the project, along with the ElasTest as a whole. The ElasTest YouTube channel hosts as well the video of the ElasTest demo presented at ICSE 2018.

4.2.8 Blog post & plans

The following table shows all blog posts that have been planned. The table shows the partner responsible for the publishing in the given month, the project month that corresponds to the planned publication, the person responsible within the partner, the deadline, and then the status (whether or not has been published).

Since July 2017 until May 2018 all the post have been written and published on our website and sent out as newsletter. On March 2018 there was no blog entry planned as we were focused on a webinar held within a webinar series run within the H2020 cluster Software Engineering for Services and Applications.

Partner	Project Month	Who?	Date	Status (M18)
URJC	M1-M7	Patxi	Jan-July 2017	Published
CNR	M8	Antonia	Ago 2017	Published
FRAUNHOFER	M9	Daniel	Sep 2017	Published
TUB	M11	Michael	Nov 2017	Published
IMDEA	M12	Cesar	Dec 2017	Published
ATOS	M13	Malena	Jan 2018	Published
NAEVATEC	M14	Guiomar	Feb 2018	Published
ZHAW	M16	Andy	Apr 2018	Published
IBM	M17	Magda	May 2018	Pending
RELATIONAL	M18	Penny	June 2018	Planned
CNR	M19	Antonia	July 2018	Planned
URJC	M20	Patxi	August 2018	Planned

FRAUNHOFER	M21	Daniel	September 2018	Planned
TUB	M22	Michael	Oct 2018	Planned
IMDEA	M23	Juan	Nov 2018	Planned
ATOS	M24	Malena /Enric	Dec 2018	Planned
ZHAW	M25	Andy	Jan 2019	Planned
NAEVATEC	M26	Guiomar	Feb 2019	Planned
ZHAW	M27	Andy	Mar 2019	Planned
IBM	M28	Magda	Apr 2019	Planned
RELATIONAL	M29	Penny	May 2019	Planned
CNR	M30	Antonia	June 2019	Planned
URJC	M31	Patxi	July 2019	Planned
FRAUNHOFER	M32	Daniel	Aug 2019	Planned
TUB	M33	Michael	Sep 2019	Planned
IMDEA	M34	César	Oct 2019	Planned
ATOS	M35	Malena	Nov 2019	Planned
ALL	M36	All	Dec 2019	Planned

Table 7. ElasTest Blog post schedule, responsible and publications

4.3 Publications in papers

The Description of the Action of the project already set specific KPIs for research partners in the form of paper publications, and conferences or events organized (see Table 7). Additionally, at the beginning of the project we prepared a manual setting out the rules for publication in the new open research program of Horizon 2020 [8]. Specifically, this manual (available at the project's Google Drive folder)

- Describes the obligations regarding open access and open data within H2020, and,
- Describes the procedure for publishing open access and open data publications within the ElasTest project.

For this last issue, we decided to publish all open access publications in Zenodo, an Open Aire repository hosted by CERN that is guaranteed to put everything published in Zenodo available in an alternative repository in the improbably case that it is closed. ElasTest has a so-called community of the same name (ElasTest consortium, 2017), where all the publications related to the project are aggregated (see Figure 13).

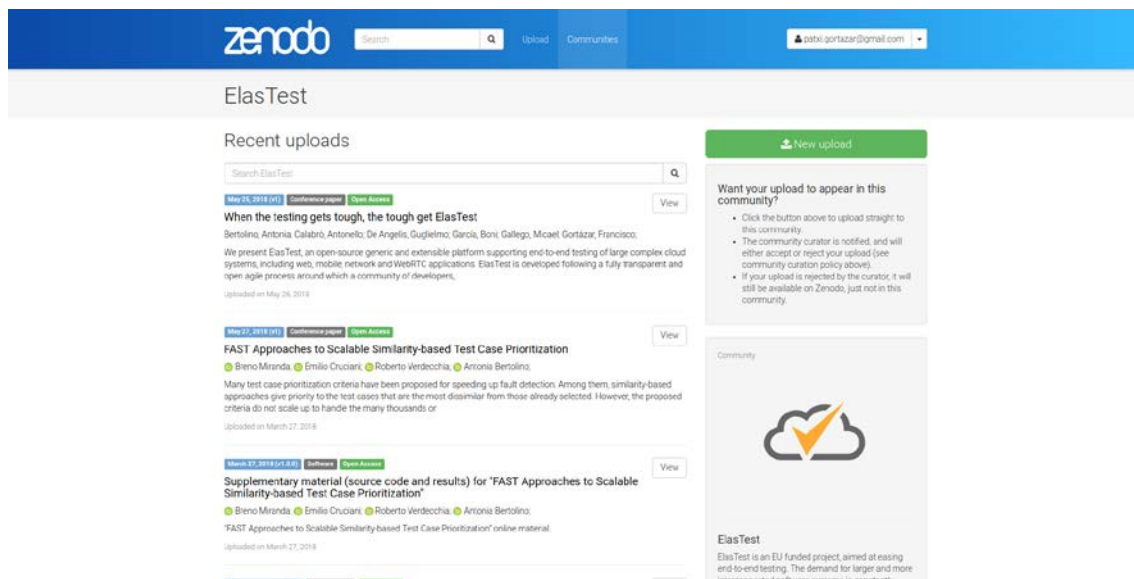


Figure 13. ElasTest's Zenodo community

4.4 Dissemination log

The project maintains a document where each partner will add their own information as regards the paper/article information (author, event, conference/journal URL, main topic of the event/journal, link to the paper/article) and including publishing date and partner. This document works as a dissemination log. Partners are asked to include information on the document in advance, so that communication channels can be used to further communicate the research work.

5 Monitoring

In order to monitor progress of dissemination and communication activities, the ElasTest consortium has defined a number of Key Performance Indicators (KPIs) to help us keep track of the progress of our strategy. This initial set of indicative KPIs is how success of our communication plan can be measured.

5.1 Key Performance Indicators

The KPIs may be subject to modification during execution of the project according to feedback, and opportunities considering maximizing value for money in impact activities. We consider two types of KPIs:

- **Real world and traditional PR Communication:** For our planned communication activities in the real world we will be pursuing the following KPIs. They will be monitored and analyzed using internal management and reporting tools.
- **Online Communication Evaluation Tools:** we include an analytics strategy to collect and analyze data extracted especially from online channels. This data will serve to evaluate performance and progress made on channels, content

and quality, both quantitative and qualitative; visitors and audiences; and traffic sources of all types of online and traditional channels.

5.1.1 Communication Target KPI

Communication KPIs concern those channels owned by the project, and the materials that were described in Section 4.2 (see Table 8). It is worth noting how well the project is performing in communication when it comes to page visits to our community website. The efforts on disseminating project results at different events, both academic and industrial, are paying back as visits to our website.

We still have room for improvement in subscribers to our user's mailing list. In general, it is much more difficult to engage people in a mailing list, which suppose giving their address and receiving notifications from time to time. Not many people want to pay the overburden that sometimes implies a subscription to a mailing list. One of the strategies we plan to apply in the following releases of the project is to reward those subscribers to the mailing list with earlier announcements of new releases, or even access to beta releases (a beta release is a pre-release that is not considered final, in the sense that it might contains bugs, but is close to the final version).

Regarding social media channels, the project is performing well in Twitter, where by month 18 we have reached 50% of our KPIs. Again, this is the result of an intensive campaign in Twitter since the very beginning of the project, even before any software was made available. This helped to raise awareness of the project among the followers of the partners that were re-tweeting all tweets in the account.

In the specific case of our YouTube channel, we have reached more or less as well the 50% of the KPIs set out for this social channel. As specific strategies for the future, we plan to have some online webinars, using the live streaming capabilities of YouTube showcasing the features of the ElasTest platform. In our experience, these live webinars tend to catch the attention of the stakeholders. By leveraging our Twitter followers, we think we can get good attendant numbers.

As we have been communicating about the project at several events, there are many presentations available in our SlideShare account. Specifically, we have 10 presentations, including both a technical and a marketing presentation, which implies the 50% of the overall target for this social channel. Views of those presentations sum up more than 1,700, which is close to the total number set out for the total duration of the project.

Finally, we made an effort at the beginning of the project preparing marketing material and making it available for all the partners in order to help in dissemination activities. Except in the cases where an event provides its own template, all presentations and documents concerning the project have a homogeneous look and are easily identifiable. It is worth noting that we have been publishing a press release after each face to face meeting of the project (held every four months) and major event in the project, hence accounting for 17 unique press releases published in total (4 in Spanish,

and 13 in English). These press releases have been referenced at different media accounting for a total of 33 mentions.

Type of channel / Group	KPIs	Status M18
ElasTest project website	5,000 or more	Pageviews: 16,618 Total Visitors: 5008 Bounce Rate 67.85%
ElasTest community website and tools		
ElasTest community website and tools	Unique visitors: 5,000	Pageviews: 5,066 Total visitors: 1,551 Bounce Rate: 52.36%
Subscribers to mailing lists	500	52
Software repositories in GitHub (with bug-trackers):	5 or more	29 repositories
Training tutorials for common testing activities	5 or more	1 Tutorial 1 SE4SA webinar (March 2018)
ElasTest social media channels		
Twitter	Tweets: 1,000 Followers: 400	Tweets: 443 Following: 490 Followers: 319 Likes: 254
YouTube channel	Videos: 50 Views: 2,000	Videos: 22 Views: 867
SlideShare	Presentations: 20 Views: 2,000	Presentations: 10 Views: 1,713
StackOverflow	Mentions: 100	Views: 154 views Mentions: 1
ElasTest press kit and press results		
Project marketing presentation	1	1
Project logo and branding package	1	1 each
Flyers, posters, t-shirts and	10	1 each

rollups		
Success stories	4	1
Press releases	6	6
White papers	2	1

Table 8. ElasTest communication KPIs

5.1.2 Events attendance targeted KPI

Table 9 shows the KPI for events attendance. Those are industrial events, and as the numbers show, we are close to the 50% of accomplishment on all the specific KPIs. Specifically, we attended a total of ten industrial events in different countries. We have been invited four times to give talks at industrial events and have been showcasing the project results with a booth or a demo at two events.

Participation in industrial conferences and events	KPIs	Status M18
Attendance to industrial events	20	10
Events targeted		
Demos and booths at industrial events	5	2
Invited talks to industrial events	7	4

Table 9. Events attendance KPIs

5.1.3 KPI per partner and events

The Description of the Action for the project established originally (i.e., in the proposal) a set of specific events that some partners with previous experience attending those events could leverage to disseminate the project results. The project has successfully delivered its results in three out of the six events proposed (see Table 10).

Partner	Potential Event	Status M18
URJC	NetFutures or ICT events.	Already participated in NetFutures (May 2017) We've sent a proposal for an exhibit booth at ICT 2018
NAVAETEC	To be decided	Not yet
IBM	IBM InterConnect and IBM Insight conferences	Presented to "Enabling Rapid Testing Through Service

		Delivery and Composition"
ZHAW	OpenStack, Docker and CloudFoundry user groups	Will present in "11th IEEE/ACM International Conference on Utility and Cloud Computing (UCC 2018)" & "Enabling Rapid Testing Through Service Delivery and Composition" and USENIX Workshop on Hot Topics in Edge Computing
FRAUNHOFER	FUSECO Forum Workshops each year and a stand in Mobile World Congress	Presented at FUSECO workshop
RELATIONAL	EuroSTART Software Testing Conference, Fintech Crowd Hackathon / Forum	Not yet. Presented at Agile Days Greece

Table 10. KPIs for potential interesting industrial events

5.1.4 Publications

The project was very specific on KPIs for research partners. Table 11 shows the KPIs for the different partners and the level of accomplishment by month 18. Although the number of high impact journals is still low when compared with the KPI set out by the project, all the partners are ongoing publishing their research results in conferences and is expected that by the end of the project some of those works published in conferences be extended and published in impact journals. It is important to note that many of the publications are joint work between two or more partners. Specifically, URJC and CNR have a joint paper under review, and another one about to be published. URJC, TUB and FOKUS have published jointly a paper on the IEEE NFV-SDN conference held in Berlin in November 2017. The partners of the consortium are finding good synergies that are expected to raise even further the number of publications.

Partner	Potential Event	Status M18
URJC	1	1 high impact journal 1 about to be submitted (with CNR) 1 under review (with CNR) 2 minor impact journals 1 book chapter 2 journal magazines 8 conference papers
FRAUNHOFER	1	1 conference paper

TUB	1	3 conference papers
CNR	2	1 high impact journal 1 journal submitted 3 conference papers
IMDEA	1	4 conference papers
ZHAW	2	2 conference papers
IBM	2	1 conference paper
Papers in high impact journals	10 (TOTAL)	2

Table 11. Publications KPIs for the project

5.1.5 Organized Events

Table 12 shows the specific KPIs for the organization of academic events. In the original plan, CNR, with its huge experience on organizing events in the past, had a specific target of organizing 2 events around the research topics of the project. So far, this partner has organized the QUATIC conference (Antonia Bertolino, 2018), where URJC proposed a track on quality aspects of cloud-based platforms and services (Francisco Gortázar, 2018). Another event in plan is QA3C (Quality Assurance in the context of Cloud Computing), a workshop connected to UCC18 conference, which is coordinated by ZHAW and CNR. In addition, CNR has also contributed to organize the TAROT summer school, where a specific seminar on ElasTest was carried out.

Partner	Conference/workshop	Status M18
CNR	2	1 Quatic conference 1 TAROT conference 1 QA3C workshop with ZHAW
URJC	1	1 Track at QUATIC conference

Table 12. KPIs for the organization of academic events

6 Collaborations & contributions

This section describes collaborations with other research projects and initiatives, collaboration with external organizations and collaboration with external open sources software projects (see Table 13).

Initiative	Who	What	Status M18
FIWARE	URJC, ATOS, NAEVATEC	ElasTest shall use FIWARE for one of its demonstrators (within Task 7.5) showing the ability of ElasTest to test FIWARE GEs 3 ElasTest partners already belong to FIWARE	Yes, ATOS as founder member plans to showcase the testing outcomes to FIWARE. Also, ATOS is responsible for the testing task and plans to invite FIWARE representatives to a workshop in Madrid (Sep 2018)
Vision2020	RELATIONAL	Use it to enhance visibility and gain community users	Exploring options and opportunities and to be confirmed.
Cloud28+		To present ElasTest in an Cloud annual brokerage event	Exploring options and opportunities and to be confirmed.
IC1402 ArVi	IMDEA	EU COST Action IC1402 ArVi "Runtime Verification Beyond Testing". One of the missions of IC1402 is to foster collaboration between researchers and industrial practitioners. We expect to organize an industry/research workshop based on ElasTest	The COST Action ArVi is coming to an end soon and all (large) events have been planned already. One person from IMDEA will go for an invited talk about Elastest in the final meeting in November2018.
OW2	ATOS	OW2 Technical Board to share the ElasTest results	Yes, ATOS will present the results to the OW2 technical board. ATOS has already contacted the OW2 members who are part of the STAMP where ATOS is also involved.

Table 13. Collaborations with research projects, organizations, and open source communities

6.1 Contributions to testing associations

Table 14 shows the contributions of the project to the testing association ITA-STQB (Italian chapter of the International Software Testing Qualification Board). Specifically, on June 13th Antonia Bertolino and Francisco Gortázar gave a talk about ElasTest at the Software Testing Forum in Milan, organized by this association. We expect the interactions with this association to foster new adopters and companies interested in the project.

Partner	Initiative	What	Status M18
CNR	ITA-STQB International Software Testing Qualifications Board	Interactions to adopt/test ElasTest	Ongoing conversations Talk at the Software Testing Forum, Milan, June, 2018

Table 14. Contributions to testing associations

6.1.1 Contributions to FOSS communities

Testers are interested in tools and, very particularly, in open source tools as it can be illustrated by the success of FOSS tools and communities such as the ones of Jenkins, Selenium, JUnit, JMeter etc. ElasTest plans to contribute to FOSS communities and to create synergies with them. For this, a specific set of KPIs was defined at the beginning of the project based on the goals of the project and the experience of the partners. Table 15 summarizes these KPIs and our commitment to them. So far, we have been able to integrate ElasTest with the Jenkins Continuous Integration server, hence opening the door for presenting ElasTest in the Jenkins World Conference to raise awareness of the project in the context of this open source community. It is worth noting that Jenkins shares more than 50% of the market of Continuous Integration tools. Other open source communities worth to be explored are OpenStack, on top of which we want to make ElasTest run, although this integration is not yet ready. There is some progress in FIWARE, as three of the partners are involved (URJC is not present in the current on-going project FINEXT but was involved in FIWARE leading a GE with NAEVATEC). We expect to leverage this strategic position in next FIWARE events. Initially we expected relevant synergies with OpenBaton, but FRAUNHOFER opted for leveraging their Open5GCore solution for the 5G demonstrator, hence we are pivoting towards Open5GCore, and are building relevant integrations with this open source platform for orchestrating 5G technologies.

Through ZHAW we plan to reach the Docker and CloudFoundry communities, which might have common interests at the time of assessing the quality of large applications on top of these. Finally, given URJC and NAEVATEC experience in building WebRTC videoconferencing applications, and the support of WebRTC within ElasTest we expect synergies with the GStreamer community (on which the KMS media server maintained by NAEVATEC is based) and the OpenWebRTC community. Indeed, some people from

the community already noticed there's a new project aimed at testing WebRTC applications (ElasTest), as Dr. Alex Gouaillard pointed out in Stackoverflow¹. So far, the most prominent project (closed-source and offered as a service) was TestRTC. Now we already have ElasTest and KITE (this one promoted by Google).

Partner	Name of project	Contributions	How?	Status M18
URJC	Jenkins	Expected relevant synergies with this community.	Talking about Jenkins integration at several industrial events. Submitting a work and attending Jenkins World Conference	Talk on Panel Sistemas 101 Days where people from CloudBees participated online. Talk on Codemotion 2018 We plan to submit the work to Jenkins World 2019
ZHAW	OpenStack	Expected relevant synergies with this community. ZHAW leads the Swiss Open Stack user group.	Provide talks on how ElasTest uses OpenStack for the delivery of test results	
NAEVATEC	FIWARE	Expected relevant synergies with FIWARE - testing FIWARE technologies	Provide talks how to integrate ElasTest as part of the quality assurance process	Already gave some talks at different FIWARE events: FIWARE SUMMIT 2017 Utrecht, FIWARE TECH SUMMIT 2017 Málaga, FIWARE GLOBAL SUMMIT 2018 Porto
FRAUNHOFER	Open Baton	Expected relevant synergies with this community as one of our demonstrators (Task 7.2) is based on testing it and owns this community.	Leveraging Open Baton as a deployer within ElasTest for 5G infrastructures.	Open Baton has been discarded in favor of Open5GCore, which the set of tools FRAUNHOFER is leading for building 5G enabled infrastructures.

¹ <https://stackoverflow.com/a/47805881>

ZHAW	Docker	Expected relevant synergies with this community as we plan Docket to be our reference container for all activities in WP3.	Provide talks on how ElasTest uses Docker for the delivery of test results	No talks as ZHAW moved away from managing docker group
ZHAW	CloudFoundry	Expected relevant synergies with this community as a mechanism for service orchestration in ElasTest.	Provide talks on how ElasTest could use CloudFoundry for the delivery of test results, how it uses the Open Service Broker API. Provide implementation of that API.	No talks, however the ET implementation of OSBA was communicated to the OSBA group [10]
URJC & NAEVATEC	GStreamer and OpenWebRTC	Expected relevant synergies with these communities as ElasTest may become its reference testing platform.	Provide Kurento/OpenVidu WebRTC tests in ElasTest, make the results publicly available, disseminate it through the Kurento/OpenVidu mailing lists. Provide talks on relevant conferences and meetups.	Working on scheduling a session on WebRTC testing at WebRTC Meetup either for July of after the Summer. Migration of WebRTC tests from Jenkins to ElasTest has just started.

Table 15. Some planned activities in relation to external FOSS projects and communities

6.1.2 Project collaboration

Since the beginning we have been collaborating with other projects. We joined the EU cluster Software Engineering for Services and Applications, led by Elisabetta Di Nitto, and in which context the ElasTest webinar was conducted. Within this cluster, the project coordinator has been working in close collaboration with other projects, the cluster lead and Commissioner Odysseas Pyrovolakis defining the challenges for next work program in the context of Software Engineering.

In addition to this we directly contacted the projects that are from the same call such as COEMS, CROSSMINER, DECIDE, OPENREQ, Q-RAPIDS, and STAMP to find synergies for collaboration.

In fact, we have already attended a workshop organized by STAMP in Madrid on 14th December 2017². The STAMP workshop was a physical meeting organized by ATOS

² https://www.stamp-project.eu/view/main/STAMP_Workshop_Dec2017_Madrid

SPAIN to discover STAMP test amplification approach and to try innovative tools in order to improve the quality of your Java code. The project invited key guests of the software and testing industry and academics. The ElasTest project coordinator attended the event to provide guidance and feedback. At the same time, we had the first exchange of ideas and impressions to set the collaboration between STAMP and ElasTest. As a result, on December 15th 2017 we had a specific ElasTest-STAMP meeting at URJC to start a closer collaboration. Since then, a specific integration of STAMP tools for configuration management were integrated with ElasTest. All in all, given a set of parameters for a given integration test, we leverage STAMP tools to reduce the space of possible configurations to the small set possible, and then run those configurations within ElasTest.

6.2 Standardization

ElasTest is interested in standardization, and we will contribute in standardization bodies in the area of testing or the related technological domains of ElasTest, if possible. In the area of software testing, there have been well-meaning attempts to create different standards. However, these attempts have failed. They never caught the attention of wide developer audiences. On the other hand, they generated significant opposition. This illustrates that software testing is a very complex discipline. This supports the ElasTest vision: software testing is a discipline of human skills and software tools. Testers are interested in tools and, very particularly, in open source tools.

Despite this opposition if the testing community against standards, the ElasTest project have collected a set of bodies that could be targeted. Table 16 shows different bodies where some partners from ElasTest will attempt to contribute and monitor all activities such as RTCWeb WG or NFV.

Partner	Name of body	Working Group	Positioning and contributions	Status M18
URJC & NAEVATEC	IETF	RTCWeb WG	Monitoring of activities and, if appropriate, specific contributions related to testing of WebRTC applications using information generated in the demonstrator for multimedia communication services (Task 7.5).	No contributions yet, monitoring current testing practices of WebRTC applications. Expected synergies once the WebRTC demonstrator is fully working in ElasTest.
TUB &	ETSI	NFV	Monitoring of activities and, if	No contributions yet but internal information model of ElasTest

FRAUNHOFER			appropriate, specific contributions related to testing of NFV systems using information generated in the demonstrator for telco infrastructures and networks (Task 7.2).	Platform Manager got inspired by those specifications.
CNR	OMG	UML Testing profile	Monitoring of activities and, if appropriate, specific contribution in the topic of non-functional testing.	Not central to project scope, should target other standardization groups
ZHAW	OSBA	OSBA	Contribution of an implementation of the service manager. This will include an OpenAPI definition of the specification, which is lacking.	Maintaining a watch on new upcoming standards that are relevant to ElasTest. Tentative Milestone 2

Table 16. Planned activities in relation to standardization

7 Conclusion

We have identified target audiences and provided an overlook of the used dissemination methods for ElasTest. Also, a list of all already created dissemination materials of the project, events, monitoring KPIs and a list of indicators that helps evaluating the success of already undertaken dissemination activities. In general, we have achieved in the first 18 months very good numbers on most of the KPIs established.

The present document is a working document that was used for internal purposes in ElasTest. Thus, all partners followed the plan since we have created a first plan back in M3 (March 2017) to execute the dissemination strategy and a set of guidelines to be followed by all partners. We have updated the version of the document in order to report the progress and key dissemination activities done during this first 18 months of the project.

Obviously, as the platform becomes more mature, and more interesting functionalities are added, we expect that the impact of the project will grow correspondingly. We have been working to raise awareness of the project during the initial stages, now it's time to move forward and demonstrate it in real scenarios to catch the attention of the different stakeholders.

8 Annex – Dissemination activities

The list of accepted **scientific publications** at the time of this writing within the ElasTest project is summarized in the following table.

Partners Involved	Type of publication	Title	Authors	Title of journal or conference	Year	Publisher
URJC	Magazine	WebRTC Testing: Challenges and Practical Solutions	Boni García, Francisco Gortázar, Luis López-Fernández, Micael Gallego, and Miguel París	IEEE Communications Standards	2017	IEEE
URJC	Magazine	Kurento: the Swiss Army Knife of WebRTC Media Servers	Boni García, Luis López-Fernández, Micael Gallego, Francisco Gortázar	IEEE Communications Standards	2017	IEEE
URJC	Conference	WebRTC Testing: State of the Art	Boni García, Micael Gallego, Francisco Gortázar, and Eduardo Jiménez	12th International Conference on Software Technologies (ICSOFT)	2017	SCITEPRESS
CNR	Journal	An assessment of operational coverage as both an adequacy and a selection criterion for operational profile-based testing	Breno Miranda, Antonia Bertolino	Software Quality Journal	2017	Springer
URJC, TUB	Conference	NUBOMEDIA: The First Open Source WebRTC PaaS	Boni García, Luis López, Francisco Gortázar, Micael Gallego and Giuseppe Antonio Carella	2017 ACM on Multimedia Conference	2017	IEEE
URJC, TUB, FOKUS	Conference	ElasTest – An Open Source Project for Testing Distributed Applications with Failure Injection	Francisco Gortázar, Micael Gallego, Boni García, Giuseppe Antonio Carella, Michael Pauls, and Ilie-Daniel Gheorghe-Pop	Conference on Network Function Virtualization and Software Defined Networks	2017	IEEE
URJC	Conference	User Impersonation as a Service in End-to-End Testing	Boni García, Francisco Gortázar, Micael Gallego, and Eduardo Jiménez	6th International Conference on Model-Driven Engineering and Software Development (MODELWARD), Special Session on domain specific Model-based Approaches to verification and validation (AMARETTO)	2018	SCITEPRESS

CNR	Conference	FAST Approaches to Scalable Similarity-based Test Case Prioritization	Breno Miranda, Emilio Cruciani, Roberto Verdecchia, Antonia Bertolino	40th International Conference on Software Engineering, May 27 - 3 June 2018, Gothenburg, Sweden	2018	ACM
CNR, URJC	Conference	When the testing gets tough, the tough get ElasTest	Antonia Bertolino, Antonello Calabrò, Guglielmo De Angelis, Micael Gallego, Boni García, Francisco Gortázar	40th International Conference on Software Engineering, May 27 - 3 June 2018, Gothenburg, Sweden	2018	ACM

The list of **attended events** at the time of this writing within the ElasTest project is summarized in the following table.

Partners Involved	Date	Type of action	Detailed Action	Event, Conference, Workshop	Topic	Audience	Attendees	Venue
TUB 5G	24-28 April 2017	Participate	Networking about ElasTest	<u>OPNFV Plugfest - Danube Release</u>	Software testing	Industry & Academia	Michael Pauls	Paris, France
URJC	13-15 June, 2017	Participation to a conference	One presentation on testing and one workshop on leveraging containers for testing	<u>EXPOQA 2017</u>	Software testing	Testers and business people	Francisco Gortázar and Micael Gallego	Madrid, Spain
CNR	June 28	Summer School (June 2017) - Tarot 2017 in Naples	One lecture on cloud testing	<u>TAROT 2017</u>	Software testing	PhD Students	Antonia Bertolino	Naples, Italy
URJC	24-26 July, 2017	Participation to a conference	One presentation on testing	<u>ICSOF 2017</u>	Software technologies	Professionals and researchers on software development and technologies	Boni García	Madrid, Spain
URJC	24-26 July, 2017	Exhibition and participation on panel	Exhibition with a booth in the European Project Space	<u>ICSOF 2017</u>	Software technologies	Professionals and researchers on software	Boni García	Madrid, Spain

						development and technologies		
Relational	Friday, September 22nd 2017	Sponsorship	Disseminate marketing material	Agile Summit Greece	Software development	Developers and testers	Penny Mania	Athens, Greece
TUB 5G	11-13 Oct, 2017	Presentation	Presentation on "An open playground for prototyping and testing complex 5G software-based networks"	Layer123 SDN NFV World Congress 2017	Software Testing, Telco 5G, Cloud Computing	Industrial	Michael Pauls	The Hague, Netherlands
FOKUS	14 October 2017	Workshop on 5G testbed evaluations	One workshop on testing using Open5GCore	GWS2017	Telco 5G	Both academia and industrial	Ilie Daniel Gheorghe Pop	Cape Town, South Africa
URJC/TUB 5G	6-8 November 2017	ElasTest Demonstration	We demonstrate ElasTest in the context of 5G	IEEE SDN/NVF	Telco 5G	Industrial	Francisco Gortázar	Berlin, Germany
URJC	9-10 November 2017	Participate	Networking about ElasTest	FUSECO	Telco 5G	Industrial	Francisco Gortázar	Berlin, Germany
URJC	24-25 November 2017	Participation to a conference	One workshop on testing using Jenkins pipelines	Codemotion Spain	Software testing	Testers & Developers	Francisco Gortázar	Madrid, Spain
URJC	29-30 November 2017	Participation to a workshop	Talk about leveraging containers in CI and ElasTest advantages when doing so	VLCTesting	Software testing	Testers	Francisco Gortázar and Micael Gallego	Valencia, Spain
URJC	20 March, 2018	Participation to a webinar	Talk about ElasTest	SE4SA Cluster	Testing, adopting and re-using project results	SE4SA Cluster, collaborators and students.	Francisco Gortázar	Online

URJC	22-24 January, 2018	Participation to a conference	Presentation of paper about ElasTest and user impersonation service	<u>AMARETTO 2018</u>	Software testing	Academic	Boni García	Funchal, Portugal
ZHAW	26 April 2018	Meetup	Presentation and demo regarding EMP (Sentinel)		Monitoring framework	Industry & Academia	Piyush Harsh	Zurich, Switzerland
ZHAW	15-17 March 2018	Invited speaker in IEEE Conference	Gave a talk on research trends in cloud computing including a few slides on testing in the cloud	<u>RAIT 2018</u>	Cloud computing	Academia	Piyush Harsh	Dhanbad, India
URJC/CNR	30 may-1 June 2018	Demo	Gave a well-attended demo within the technical program	ICSE 2018	Software Engineering	Academia & Industry	Francisco Gortázar, Guglielmo De Angelis	Gothemburg, Sweden
CNR	30 may-1 June 2018	Research Paper	Presentation of paper on test prioritization technique that is going to be included in ElasTest Orchestrator	ICSE 2018	Software Engineering	Academia & Industry	Antonia Bertolino	Gothemburg, Sweden
URJC/CNR	13 June 2018	Technical paper	Presentation of talk on ElasTest	STF 2018	Software testing	Industry	Francisco Gortázar, Antonia Bertolino	Milano, Italy

The list of **articles or press releases** at the time of this writing within the ElasTest project is summarized in the following table.

Name of article/Press release/White paper	Date	Comment
<u>Investigadores del grupo code de la Universidad Rey Juan Carlos coordinan el proyecto europeo ElasTest</u>	08/02/2017	
<u>ElasTest: an elastic platform for testing complex distributed large software systems</u>		Not a press release, just information on EC website

<u>New EU funded project: Elastest</u>		Project information on IMDEA website
<u>ElasTest is Digital Partnership in Action</u>	26/04/2017	Blog article written by Relational's CEO - Posted on Relational website and disseminated to our international data base via email, announced on Relational LinkedIn page
<u>Introducing ELASTEST</u>	28/04/2017	Blog article written by URJC – Patxi
<u>Face to face meeting in Berlin</u>	08/05/2017	Blog article written by URJC - Patxi
<u>ElasTest will participate in NetFutures event</u>	23/05/2017	Blog article written by URJC – Patxi
<u>El equipo del proyecto europeo ElasTest, coordinado por la URJC, se reúne en Berlín</u>	24/05/2017	Press release
<u>Naevatec participates in EU funded project Elastest</u>	18/05/2017	Project information on NAEVATEC website
<u>Micael Gallego, codirector del grupo CodeURJC, premiado en el congreso internacional ExpoQA</u>	22/06/2017	Micael Gallego, ElasTest Technical Leader, awarded in ExpoQA
<u>ELASTEST - Press release June 2017</u>	29/06/2017	Press release.
<u>ElasTest: a cloud-based test platform for testing large complex distributed software systems</u>	23/06/2017	News about ElasTest in ISTI-CNR web site

<u>ElasTest: A Cloud-based Platform for Testing Large Complex Distributed Software Systems</u>	03/07/2017	News published in the Events page of ERCIM News
<u>ElasTest: a cloud-based test platform for testing large complex distributed software systems</u>	03/07/2017	News about ElasTest in CNR web site
<u>ElasTest news/press release in Spanish</u>	07/08/2017	News about ElasTest and ATOS role in IT user
<u>ElasTest news/press release in Spanish in twitter</u>	01/08/2017	News about ElasTest and ATOS role in twitter ATOS ES account
<u>ElasTest news/press release in Spanish in ATOS website</u>	02/08/2017	News about ElasTest and ATOS role in ATOS website
<u>ElasTest: a cloud-based testing service platform for testing complex distributed large software systems</u>	12/07/2017	Press release international distribution by Relational
<u>El consorcio Europeo ElasTest se reúne en la URJC</u>	9/5/2018	Press release by URJC
<u>Nueva reunión del proyecto Europeo ElasTest en Madrid</u>	07/05/2018	Press release by Naevatec (both ENG and ESP)

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