DIGITAL MANUFACTURING PLATFORMS FOR CONNECTED SMART FACTORIES

D9.3 Dissemination and Communication Activities

Deliverable Id:	**Deliverable 9.3**
Deliverable Name:	**Dissemination and Communication Activities**
Status:	**FINAL**
Dissemination Level:	**Public**
Due date of deliverable:	**31/08/2020**
Actual submission date:	**01/09/2020**
Work Package:	**WP9**
Organization name of lead contractor for this deliverable:	**INNO**
Author(s):	**Silvia de la Maza and Tord Valentinson**
Partner(s) contributing:	AIC, AIT, ATB, ATLAS, ATOS, CONTI, DAN, ENG, EPFL, FAGOR, FHG, IDSA, IKERLAN, JSI, MON, NXT, SINTEF, SQS, TID, TTS, TTT, TUBS, UNIM and VTT

Abstract: In this deliverable the Dissemination and Communication Activities are reported and assessed. In this report activities are reviewed in relation to the established targets and guidelines. The overall impact during Period 2 on relevant stakeholders through different communication channels is assessed in this report.

Co-funded by the Horizon 2020 Programme of the European Union

Contents

HISTORY

Version	Date	Modification reason	Modified by
0.1	06/07/2020	Creation of the index of the document	INNO
0.2	10/07/2020	Input provided by partners	ALL
0.3	25/07/2020	First draft	INNO
0.4	31/07/2020	Further input by partners	ALL
0.5	28/08/2020	Review	MON
1.0	31/08/2020	Final version	INNO

1. Executive summary

This document is the third deliverable in a series of documents related to dissemination and communication activities. The deliverable describes the work carried out in task T9.1 "Dissemination and Communication activities" within Work Package 9 "Dissemination, Exploitation and Standardization".

During Period 2 (M9-M20) the COVID-19 pandemic has severely affected the activities originally planned for dissemination and communication of the Qu4lity project. Since late February 2020, vast majority of live events, industrial fairs and exhibitions have been cancelled. A handful of these events have ben reorganized into online events and others have been postponed. As of M20 there are still uncertainties regarding planification of live events in the near future. The changing pandemic situation results in continuously new information about live events.

As dissemination KPIs have been linked to the participation in live events by Qu4lity partners, the situation has been combated by having a stronger online presence as part of an overall strategy to reverse the effects brought on by the COVID-19 pandemic.

During the second period the Qu4lity Open Call has been launched. The Open Call launch has been accompanied by a set of dissemination and communication activities aimed at maximizing awareness about the Open Call. The Open Call communication strategy has consisted of a social media activity and two informative webinars about the Open Call and the procedure for applying.

Keywords: Communication Actions, Community Building, Dissemination, Industry Demonstrators.

Disclaimer

Acknowledgement

This document is a deliverable of Qu4lity project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement Nº 825030.

2. Introduction

2.1. Purpose and scope

The main purpose of this deliverable is to cover the communication-related results from the second period the Qu4lity project as well as laying a foundation for the planning of communication activities during Period 3.

This deliverable will be distributed to all the partners of the project so that they all know how the project is going to be disseminated. Furthermore, this deliverable will be public, to facilitate that everyone interested in this project can understand how it will be disseminated and how they can follow the project and its results.

Due to the COVID-19 pandemic the dissemination and communication activities have been reorganized. This reorganization is reflected in this deliverable.

Moreover, this document will cover the dissemination and communication activities related to the Qu4lity Open Call.

2.2. Contributions to other WPs and deliverables

This report is the third deliverable in a series of reports starting with D9.1. This deliverable builds on insights from D9.2 and will serve as input for the last deliverable in this series, D9.4.

H2020 reference documents:

- http://ec.europa.eu/research/participants/data/ref/h2020/other/grants_manual/amga/soc-med-guide_en.pdf
- http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/amga/h2020-amga_en.pdf
- https://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html#h2020-grants-manual-amga

3. Project communication outcomes

3.1. Website performance

Recent developments of the website include the creation of a dedicated Open Calls page. The Open Call page has served as a landing page for stakeholders interested in participating in the Open Call. Relevant information about the open call has been published. Moreover, links to video and presentation from the Open Call webinar has been included on the dedicated page.

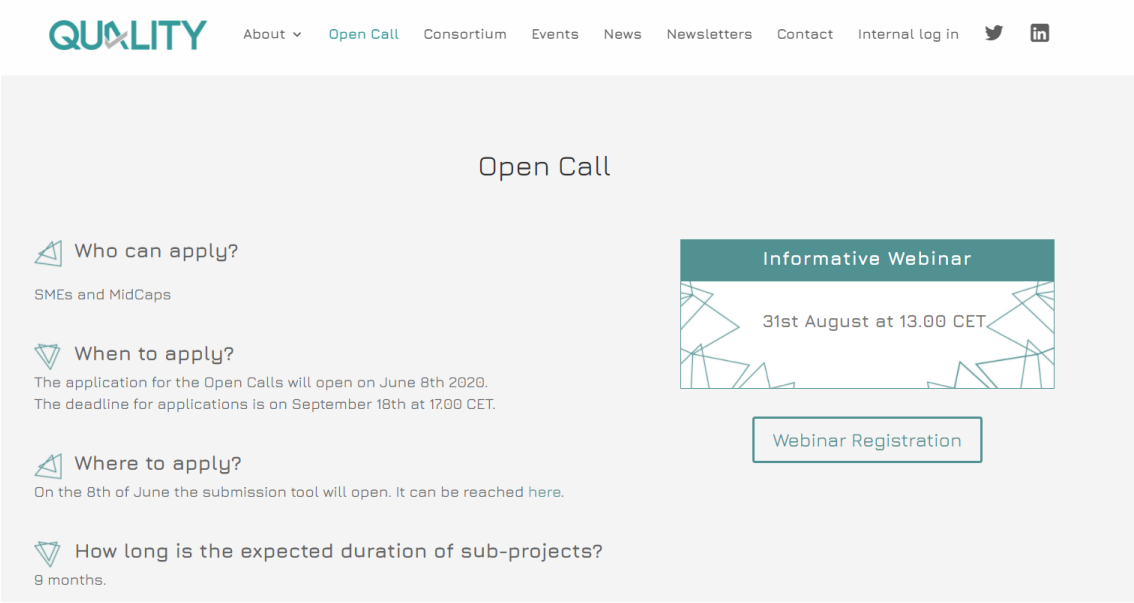


Figure 1 Screenshot of the Open Call page

The news section of the website has been continuously updated, highlighting events and relevant results from the QU4LITY project. Below, a screenshot from the news-section of the webpage is seen.

Figure 2 Website publications

In the following section, relevant data about the website traffic and its visitors is presented over the period of October 2019 – July 2020. This data will serve as foundation for identifying ways to improve the website and generate more visitors to the QU4LITY website.

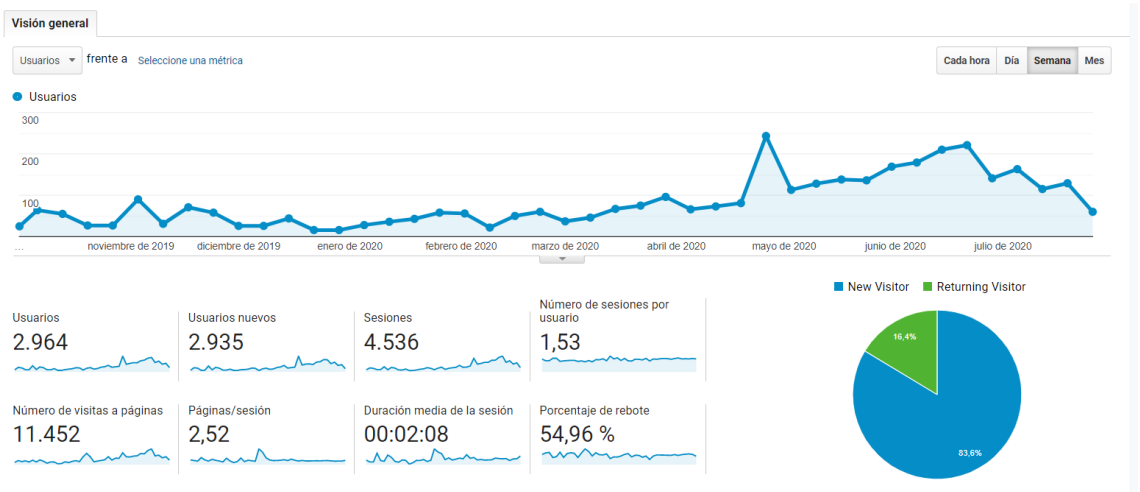


Figure 3 Website performance overview

It can be observed that 2964 unique users have visited the website, registering 11452 page views. A user is defined as someone who has initiated at least one session during the time period. This equals to an average of 1145 page views per month over the 10-month period of October 2019 to end of July 2020. The peak in visitors in late April and the subsequent increase in traffic correspond to the announcement of the

Open Call, with dedicated newsletter and social media publications driving this increase.

In terms of visitor retention, the Qu4lity website enjoys a bounce rate of 54.99% which is below the industry benchmark. The bounce rate measures the percentage of visitors who leave the website directly after entering. The relatively low bounce rate implies that the content of the website attracts and retains visitors. The average duration of a session has been 2 min and 8 seconds and average number of sessions per user is 2.52.

	País	Usuarios	Usuarios
		2.966 % del total: 100,00 % (2.966)	2.966 % del total: 100,00 % (2.966)
1.	Spain	505	16,82 %
2.	United States	366	12,19 %
3.	Italy	292	9,72 %
4.	Germany	280	9,32 %
5.	France	168	5,59 %
6.	Greece	168	5,59 %
7.	United Kingdom	129	4,30 %
8.	Netherlands	124	4,13 %
9.	Austria	114	3,80 %
10.	Portugal	110	3,66 %

Figure 4 Geographical distribution of visitors

The figure above shows the geographical distribution of the visitors of the Qu4lity website. As it can be observed, the country with most users is Spain. This is followed by the United States and Italy. The relatively large number of visitors from the United States is thought to be a result of the large number of internet users in the United States, rather than a genuine interest in this European project. A deeper analysis of the geographical origin of the website´s visitors confirms this assumption. Visitors from the United States have a bounce rate of 98% and the average page duration is only 3 seconds. Furthermore, it can be concluded that the website visitors mainly have originated in southern and western Europe. This insight will be used to put extra focus in increasing traffic from eastern and northern Europe.

1.	/	4.194	36,60 %
2.	/open-call/	2.139	18,67 %
3.	/consortium/	1.083	9,45 %
4.	/news/	620	5,41 %
5.	/events2/	583	5,09 %
6.	/objectives/	509	4,44 %
7.	/the-qu4lity-world/	406	3,54 %
8.	/newsletters/	377	3,29 %
9.	/contact/	315	2,75 %
10.	/webinar-registration/	227	1,98 %

Figure 5 Page popularity

The figure above shows the popularity of the different pages within the website. As can be observed, the main page (here displayed with "/") is the most popular page, accounting for 4194 views. This is followed by the open call and consortium page.

As mentioned in this deliverable, dissemination during the first half of 2020 has had a dedicated strategy to promote the QU4LITY Open Call. With almost 20 % of total page visits being channeled to the Open Call page, it can be concluded that there is a relatively large interest in obtaining information about the Open Call and its procedures. Given its importance, the Open Call page will be continuously updated as the Open Call proceeds in different phases.

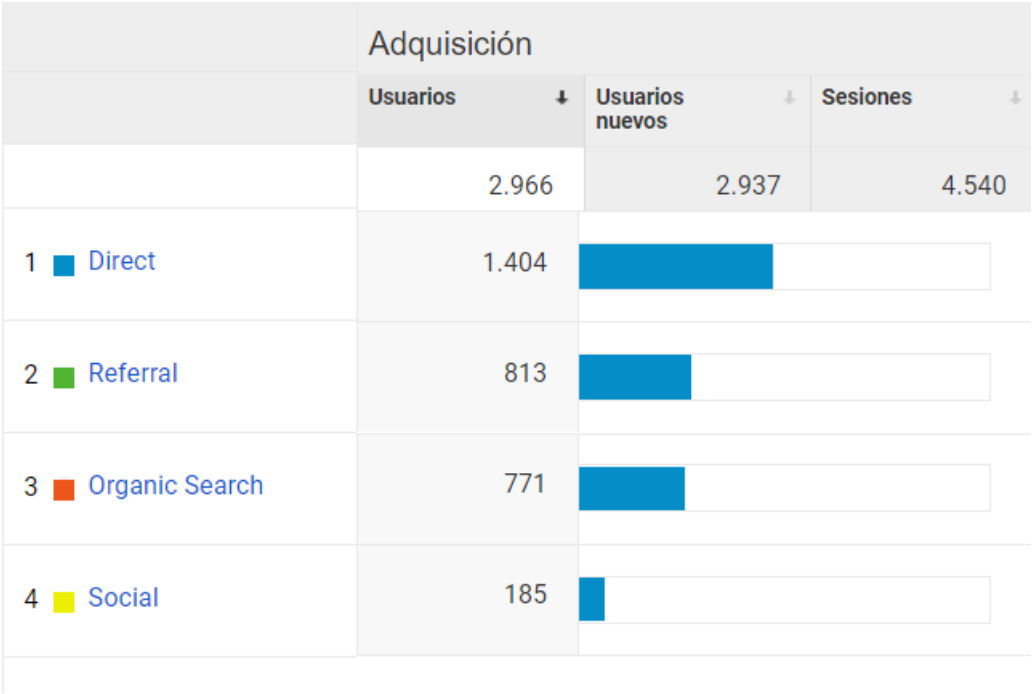


Figure 6 Website traffic channels

In terms of traffic channels, direct search and referral stand out as the two most popular traffic channels. Traffic by direct search is made when the visitor has typed in the page´s URL or uses bookmarks. This type of traffic is enabled by displaying QU4LITY´s full domain name in promotional material such as flyers and presentations.

Traffic from "Referral" originates from a visitor being redirected by a link from another website. A deeper analysis of the referral traffic shows that "ec.europa.eu" and "effra.eu" are among the most popular when it comes to the origin of referral traffic to the Qu4lity website.

Organic search occurs when the visitor accesses the website by using keywords such as "Industry 4.0". Traffic from organic search is enabled by using an SEO-driven approach for the content.

Conclusions of the website performance

The Qu4lity project´s website has a steady stream of visitors with acceptable bounce rate. Since the implementation of the focused Open Call dissemination strategy, the website has seen a positive trend since late April 2020 when it comes to number of

visitors. As the Open Call actions proceeds and the website is updated accordingly, this positive trend is expected to continue. In pandemic times where all physical events are cancelled, maintaining this positive trend is of extra importance. To further strengthen the content and number of visitors on the webpage, following actions are to be carried out in the future:

- SEO-driven approach for publishing content, using relevant keywords such as Industry 4.0, automation, etc. This would increase the number of visits originating from organic search.

- More frequent publishing of content under the news-section. In order to attract more visitors, both quality and quantity of the news publications must increase. Examples include a more extensive description of events and other highlights of the project.

- Encouraging partners to publish content on their websites, referring to the Qu4lity project. As observed earlier, traffic to the website originating from referrals is to be improved. All partners will be encouraged to include a reference to the Qu4lity website when publishing news, events or other type of information related to the Qu4lity eco-system.

3.2. Social Media Performance

Qu4lity is presented in various social media platforms, mainly in Twitter and LinkedIn. Statistics from Twitter is in this report analyzed based on Twitter Analytics. Social media has been a crucial tool for the Qu4lity project when it comes to promoting the Open Call. Twitter and LinkedIn have been used extensively to promote the Open Calls, by various partners. A detailed analysis can be found below.

3.2.1. Twitter Analytics

Twitter performance and highlights are in this section shown on a monthly basis. Impressions, profile visits, mentions and new followers are the key indicators of the monthly QU4LITY Twitter performance. Moreover, beside the official Twitter account of the project, many participants of Qu4ality are active on Twitter in promoting the project. This occurs both through their personal account and company accounts. A summary of twitter activities during the period of October 2019 – August 2020 are here shown on a monthly basis.

October, 2019: during these 31 days the activity resulted in: 1,091 impressions, 12 new followers

Figure 7 Twitter highlights October 2019

November, 2019: during these 30 days the activity resulted in: 548 impressions and 11 new followers

Figure 8 Twitter highlights November 2019

December, 2019: during these 31 days the activity resulted in: 397 impressions and 10 new followers

Figure 9 Twitter highlights December 2019

January, 2020: during these 31 days the activity resulted in: 413 impressions and 7 new followers

Figure 10 Twitter highlights January 2020

February, 2020: during these 28 days the activity resulted in: 370 impressions and 9 new followers

Figure 11 Twitter highlights February 2020

March, 2020: during these 31 days the activity resulted in: 380 impressions and 3 new followers

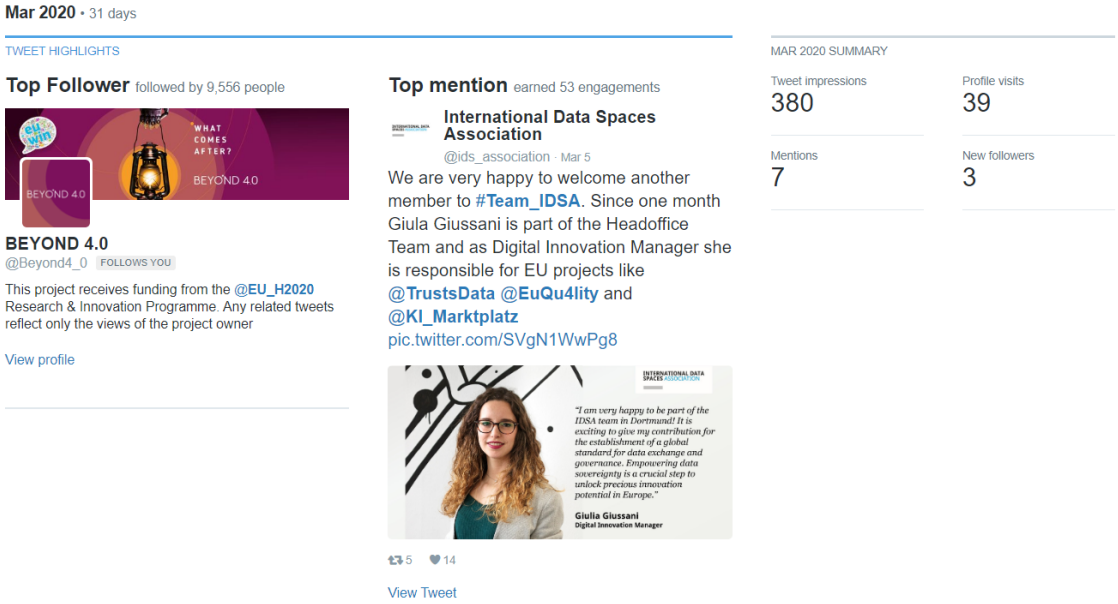


Figure 12 Twitter highlights March 2020

April, 2020: during these 30 days the activity resulted in: 640 impressions and 3 new followers

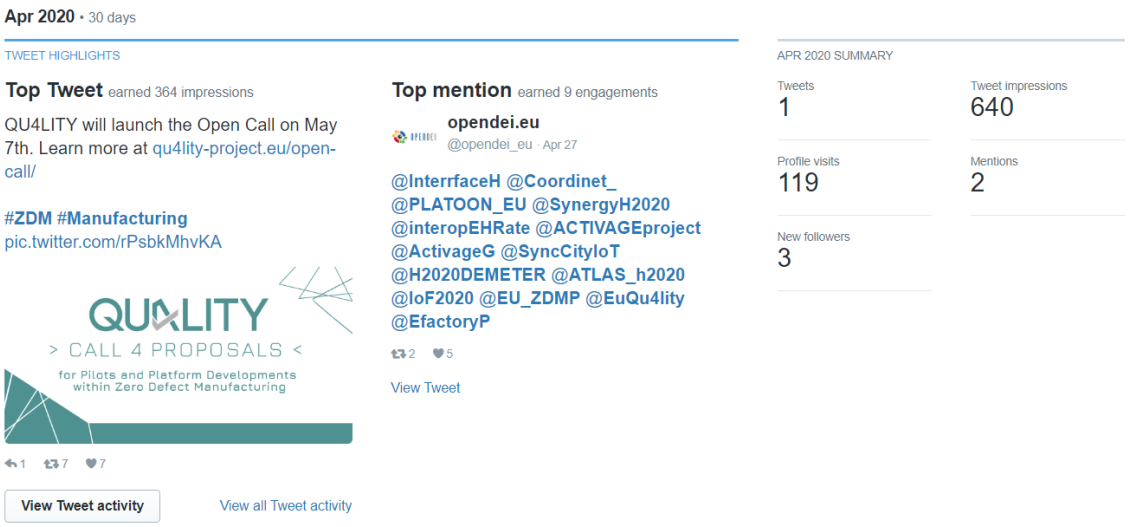


Figure 13 Twitter highlights April 2020

May, 2020: during these 31 days the activity resulted in: 1045 impressions and 11 new followers

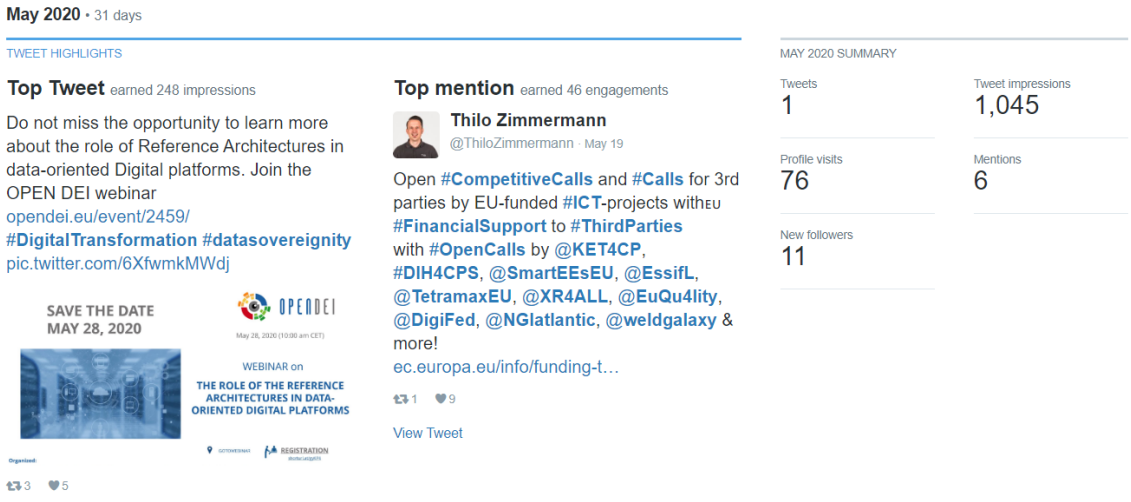


Figure 14 Twitter highlights May 2020

June, 2020: during these 30 days the activity resulted in: 2305 impressions and 14 new followers

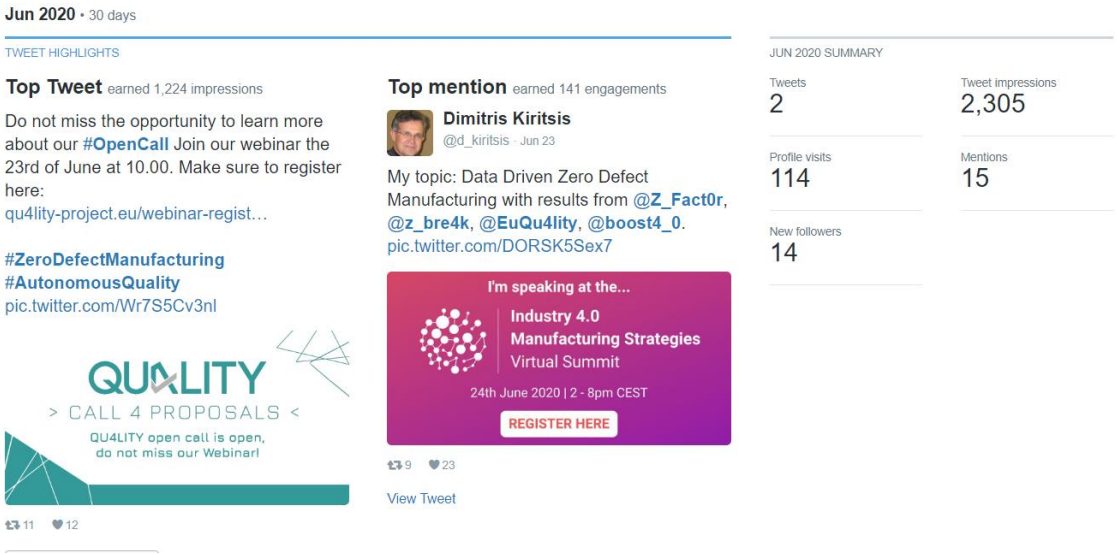


Figure 15 Twitter highlights June 2020

July, 2020: during these 31 days the activity resulted in: 2287 impressions and 12 new followers

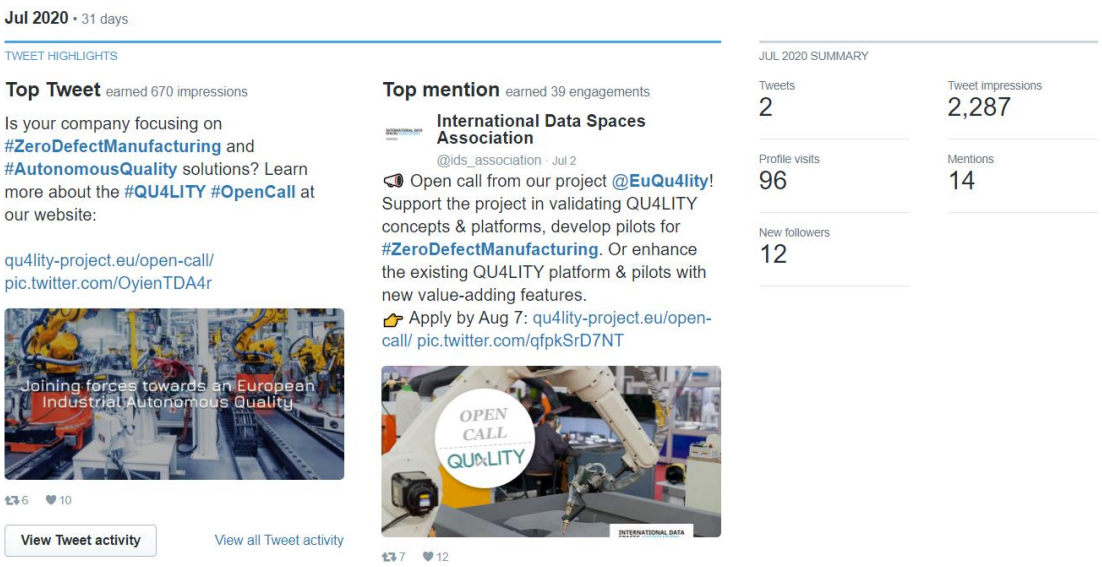


Figure 16 Twitter highlights July 2020

Twitter impressions Oct 2019 – Jul 2020

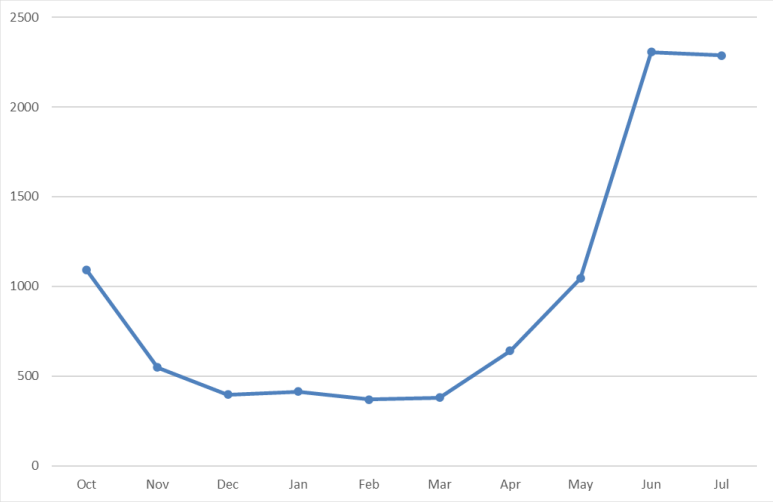


Figure 17 Twitter impressions Oct 2019 – Jul 2020

In the graph above, monthly twitter impressions can be observed during the period of October 2019 until July 2020. Impressions are defined as the total number of times the tweets has been seen. It is therefore an important number to assess visibility and impact of the Qu4lity twitter account.

It can be concluded that the number of impressions has been increasing strongly since May 2020. This could be linked to the launch of Open Call dissemination activities, spreading awareness about the Open Call among relevant stakeholders. Moreover, the recent increase is also thought to be linked to increased activities from various project partners on social media.

Historically, twitter activities have been linked to the attendance of physical events, industrial fairs and exhibition. With the current pandemic situation, the twitter impressions and the flow of new followers have enjoyed a steady stream of followers rather than the occasional peaks occurring with the industrial fairs and exhibitions.

Dissemination activities related to open call successfully have been carried out on twitter. Twitter has served as a platform for announcing the Open Call, highlighting the open calls web-page and has brought visibility to the Open Call webinar. Tweets highlighting the Open Calls have generated above-average impression numbers.

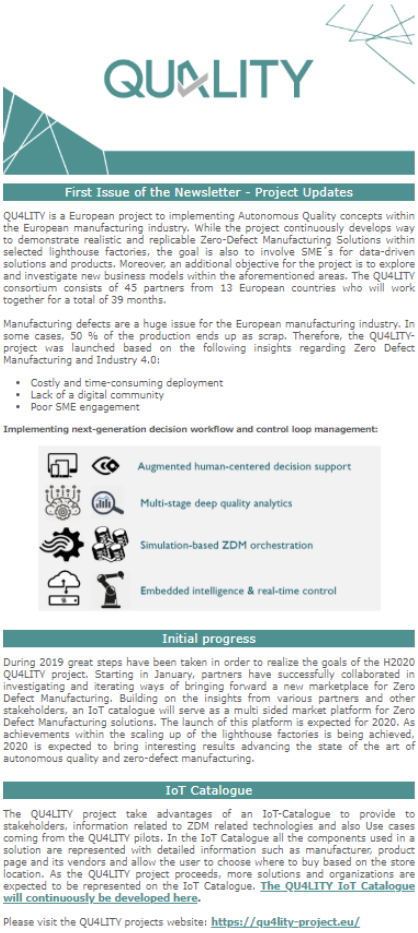
3.2.2. LinkedIn Analytics

LinkedIn functions as an online networking platform for professionals. In contrast to the Twitter activities, the LinkedIn activities does not aim to generate dynamic conversations nor fast-pace updating. During the first half of 2020 the LinkedIn group has served as a platform for bringing visibility to the open call webinar, and other online meetings for professionals interested in Autonomous Quality and Zero-Defect Manufacturing. As of August 2020, the Q4LITY LinkedIn group has 80 members.

3.3. Newsletter

Newsletters are an effective form of communicating the Qu4lity project, both internally and externally. The newsletters aim to update relevant stakeholders and other subscribers about the status of the ongoing project. The subscription function helps maintaining the relationship between the consortium and the target audience.

During the first half of 2020 three newsletters have been created. The first newsletter was focused on information about the project, ongoing activities and highlights from 2019 It also involved a brief overview of important upcoming events for 2020, which of the vast majority unfortunately have been cancelled. The second newsletter, included the announcement of the Qu4lity Open Calls. The third and most recent newsletter focused on the announcement of the Open Call webinar, with possibility for registering.



QU4LITY

First Issue of the Newsletter - Project Updates

QU4LITY is a European project to implementing Autonomous Quality concepts within the European manufacturing industry. While the project continuously develops way to demonstrate realistic and replicable Zero-Defect Manufacturing Solutions within selected lighthouse factories, the goal is also to involve SME's for data-driven solutions and products. Moreover, an additional objective for the project is to explore and investigate new business models within the aforementioned areas. The QU4LITY consortium consists of 45 partners from 13 European countries who will work together for a total of 39 months.

Manufacturing defects are a huge issue for the European manufacturing industry. In some cases, 50 % of the production ends up as scrap. Therefore, the QU4LITY-project was launched based on the following insights regarding Zero Defect Manufacturing and Industry 4.0:

- Costly and time-consuming deployment
- Lack of a digital community
- Poor SME engagement

Implementing next-generation decision workflow and control loop management:

Augmented human-centered decision support

Multi-stage deep quality analytics

Simulation-based ZDM orchestration

Embedded intelligence & real-time control

Initial progress

During 2019 great steps have been taken in order to realize the goals of the H2020 QU4LITY project. Starting in January, partners have successfully collaborated in investigating and iterating ways of bringing forward a new marketplace for Zero Defect Manufacturing. Building on the insights from various partners and other stakeholders, an IoT catalogue will serve as a multi sided market platform for Zero Defect Manufacturing solutions. The launch of this platform is expected for 2020. As achievements within the scaling up of the lighthouse factories is being achieved, 2020 is expected to bring interesting results advancing the state of the art of autonomous quality and zero-defect manufacturing.

IoT Catalogue

The QU4LITY project take advantages of an IoT-Catalogue to provide to stakeholders, information related to ZDM related technologies and also Use cases coming from the QU4LITY pilots. In the IoT Catalogue all the components used in a solution are represented with detailed information such as manufacturer, product page and its vendors and allow the user to choose where to buy based on the store location. As the QU4LITY project proceeds, more solutions and organizations are expected to be represented on the IoT Catalogue. **The QU4LITY IoT Catalogue will continuously be developed here.**

Please visit the QU4LITY projects website: **https://qu4lity-project.eu/**

Figure 18 QU4LITY Newsletter part 1

Figure 19 QU4LITY Newsletter part 2

Figure 20 QU4LITY Newsletter part 3

3.4. Dissemination of the Open Call

In order to ensure successful dissemination of the Qu4lity Open Call, a strategy aimed especially at the dissemination of the Open Call has been created.

As a first step, dissemination was focused on the announcement of the Open Call. This involved the creation of a dedicated Open Calls announcement newsletter. The Open Call announcement newsletter focused on basic information about the Open Call, such as relevant dates, topics and scope of the Open Calls. Another part of the first step of the Open Call dissemination was the creation of a dedicated Open Call page on the project´s website. This page serves as a landing page for all relevant information and links related to the Open Call. For example, links to the submission platform and the relevant Open Call documents are included on the webpage.

The second step on the Open Calls dissemination strategy was focused on the Open Calls webinars. The first webinar gave the opportunity for attendees to receive information about the Qu4lity project, the Open Call topics, submission procedure and other relevant issues. At the end of the webinar the attendees had the opportunity to ask questions related to the Open Call. The webinar was led by Innovalia, and various Qu4lity partners also participated as presenters giving visibility to some specific technological aspect of the Open Call. The Open Call webinar was also disseminated on Twitter and LinkedIn. Around 60 people registered for the webinar. The webinar was recorded, using Cisco Webex. The recorded video was uploaded on Youtube and a link to the video was included on the Qu4lity webpage. Moreover, the presentation slides from the webinar are also uploaded on the project's website. A second webinar with similar format was organized on the 31st of August 2020.

The third and last step in the process of dissemination the QU4LITY open calls is announcing the closure of the Open Calls. The closure will be announced on twitter, LinkedIn and the QU4LITY website.

3.5. Dissemination Webinar

On the 20th November 2019 Innovalia organized a dissemination webinar to strengthen the dissemination and communication capabilities of partners within the Qu4lity project. The webinar, presented by Silvia de la Maza, lasted for around one hour. The aim of the webinar was also to align all partners in terms of methodology when using social media, attending events and posting content on their corresponding websites. The webinar gave insight to participants on which platforms to use for specific situations. Moreover, basic principles about how to identify and building your target audience were addressed.

At the end of the presentation the participants had the opportunities to ask questions and clarify doubts. Below, a screenshot from the webinar can be observed.

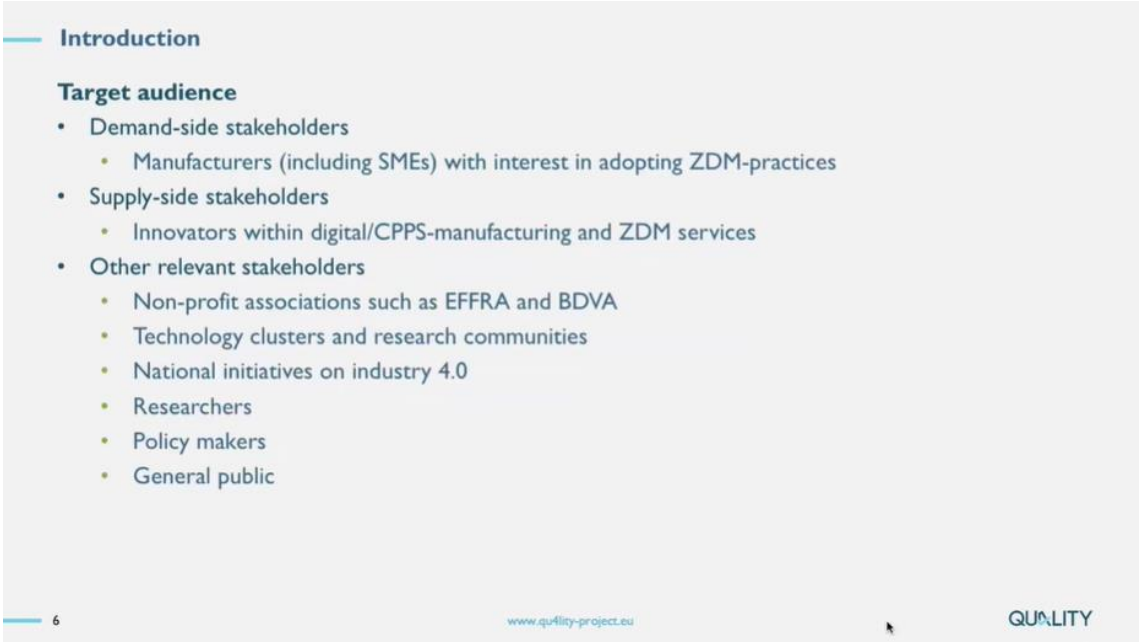


Figure 21 Dissemination Webinar Overview

3.6. Event Participation

With initially over 50 events planned for 2020, the situation has changed drastically due to the COVID-19 pandemic. Since February 2020 all major live events such as industry fairs and exhibitions have been either cancelled, postponed or reorganized into an online event. As a Task leader of T9.1 "Dissemination and Communication activities" Innovalia originally planned to coordinate the presence of QU4LITY partners at the industrial fair Hannover Messe to ensure visibility and proper dissemination of the QU4LITY projects.

Since the status of the COVID-19 pandemic is constantly changing, the status of the events is updated correspondingly. Therefore, the reported status as of August 2020 could be subject to change.

Due to the current uncertainty in the planification of events, the table below highlights three types of categories due to the pandemic situation. Events highlighted in RED are cancelled, events highlighted in BLUE are reorganized online, events highlighted in YELLOW are postponed and for events highlighted in GREY the action is yet to be determined

Nº	Type of event	Partner	Name of the event	Event description	Date	City/ Country	Target audience	Estimated # of persons reached	Action in the event	Planned Attended
1	Exhibition/Trade Show	RiaStone	360Tech Industry	360 TECH INDUSTRY - International Industry Fair 4.0, Robotics, Automation and Composites	2/04/20 - 3/04/20	Portugal / Oporto	Businessmen; Investors - Researchers - Consulting Professionals - Designers - Production Managers - Other Technical staff	2500	RiaStone will attend as a Exibitor	Cancelled

							- Directors of production, purchasing, provisioning, commercial and quality;			
2	Conference	TUDO	AHFE	International Conference on Applied Human Factors and Ergonomics - Advances in Human Factors and Systems Interaction (e.g. data science, data analytics, machine learning)	July 16-20, 2020	USA	Academics, Researchers, Industry	>200	Submit a paper and give a talk	Attended
3	Conference	EPFL	APMS 2020 - Advances in Production Management Systems	APMS 2020 will bring together leading international experts from academia, industry, and government in the area of production systems to discuss globally pressing issues in smart manufacturing, operations management, supply chain management, and Industry 4.0.	30/08/2020	Novi Sad, Serbia	Academics, Researchers, Industry	400	Paper Presentation + Special Session relevant to QU4LITY	Planned
4	Exhibition/Trade Show	GHI	AUMINIUM 2020	Trade fair for aluminum processing industry	6/10/2020-8/10/2020	Dusseldorf	Industry, SMEs, Entrepreneurs, researches and academics.	23.000visitors	GHI will have a stand.	Postponed to 2021

5	Industrial fair	INNO	Basque Industry 4.0	The reference event in the Basque Country concerning the industry 4.0 revolution and the cybersecurity.	20/11/2019	Bilbao, Spain	Industry, SMEs	200	Innovalia attended.	Attended
6	Other	IK4-IKERLAN	BDVA Activity Group Meeting	The mission of the BDVA is to develop the Innovation Ecosystem that will enable the data and AI-driven digital transformation in Europe delivering maximum economic and societal benefit, and, achieving and sustaining Europe's leadership on Big Data Value creation and Artificial Intelligence. There are regular meetings of the activity group to exchange experiences in such topics.	TBD	TBD	Industry, SMEs and researches.	100	IK4-IKERLAN will give presentation during a timeslot during the meeting	Planned
7	Exhibition/Trade Show	FAGOR ARRASATE, DANOBAT	BIEMH	BIEMH" is the leading manufacturers and suppliers of the machine-tool industry fair.	25/05/2020-29/05/2020	Bilbao/Spain	Industry, SMEs, Entrepreneurs, researches and academics.	< 1000 interested persons	FAGOR ARRASATE will have a stand.	Planned, postponed to November 2020
8	Conference	SINTEF, TUBS	CIRP	CIRP-Conference on Manufacturing Systems	1/07/2020	Chicago, USA	Manufacturing Industries	100	Paper presentation	Attended
9	Conference	EPFL	CIRP GCSM 2020 - 18th Global Conference on	The GCSM serves as a forum for researchers and specialists from universities, research institutes and	29/09/2020-01/10/2020	Berlin, Germany	Academics, Researchers, Industry	200	Paper Presentation	Planned

			Sustainable Manufacturing	industry working on topics related to sustainable manufacturing to share research advances and engage in fruitful dialogue. The conference includes keynote presentations, panel discussions and parallel sessions on current and emerging topics relevant to advancing sustainable manufacturing.						
10	Conference	SINTEF	CIRP ICME	CIRP ICME-Intelligent computation in manufacturing engineering	2020	Naples, Italy	ICT and Manufacturing Industry	100	Paper presentation	Postponed
12	Workshop	ATOS	Connected Factories Webinar	This webinar was around Digitalization and digital platforms in Manufacturing. The main focus was on an update of the status of DT-ICT-07 projects but there was also some information about the new pathways to be implemented in CF-2.	11/03/2020	Remote	Industry, SMEs, Entrepreneurs, researches and academics.	180	QU4LITY presentation	Attended
13	Workshop	ATOS, FHG	Connected Factories Webinar	ConnectedFactories Webinar - Standards for digital manufacturing	20/10/2020	Remote	Industry, experienced practitioners, academics, and standards developers	Unknown		Planned

14	Other	FHG IPA	DIN NA 043-01-41 AA General Meeting	DIN NA 043-01-41 AA is a working committee at DIN, the German Institute for Standardization, that was established to reflect the work of current JTC 1/WG 41 "Internet of Things and related technologies".	25/05/2020	online event (Frankfurt, Germany)	Industry, SMEs, Entrepreneurs, researches and academics.	Around 3,000 companies with over 12,000 subsidiaries are already DIN members	FHG IPA aligned the QU4LITY ZDM scandalization goals with the committee activities and commented on to the relevant current standards in the Industrial IoT area.	Attended
15	Other	FHG IPA	DIN NA 043-01-41 AA General Meeting	DIN NA 043-01-41 AA is a working committee at DIN, the German Institute for Standardization, that was established to reflect the work of current JTC 1/WG 41 "Internet of Things and related technologies".	25/10/2019	Frankfurt, Germany	SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics.	Around 3,000 companies with over 12,000 subsidiaries are already DIN members	FHG IPA presented the latest relevant standardization activities and provided an expert contribution to the currently developed standards regarding Industrial IoT area.	Attended
16	Other	FHG IPA	DKE/AK 931.0.14 General Meeting	DKE/AK 931.0.14 Smart manufacturing and Industry 4.0 is a national committee focusing on the development of the Smart Manufacturing and Industry 4.0 standards, bringing the latest results to the international committee IEC/TC 65/WG 24 Asset Administration Shell for Industrial Applications.	10/03/2020	online event (Frankfurt, Germany)	SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics.	More than 9,000 experts at DKE, ISO outreach is more than ca. 29000 member participants from 164 countries; IEC counts	FHG IPA contributes to the interoperability standards, i.e. actively participates in the standardization work and internationalization of the Asset Administration	Attended

								more than 10,000 electrical and electronics experts	Shell for Industrial Applications.	
17	Other	FHG IPA	DKE/AK 931.0.14 General Meeting	DKE/AK 931.0.14 Smart manufacturing and Industry 4.0 is a national committee focusing on the development of the Smart Manufacturing and Industry 4.0 standards, bringing the latest results to the international committee IEC/TC 65/WG 24 Asset Administration Shell for Industrial Applications.	10/03/2020	online event (Frankfurt, Germany)	SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics.	More than 9,000 experts at DKE, ISO outreach is more than ca. 29000 member participants from 164 countries; IEC counts more than 10,000 electrical and electronics experts	FHG IPA contributes to the development of Smart Manufacturing and Industry 4.0 standards, i.e. actively participates in the standardization work regarding the Asset Administration Shell for Industrial Applications.	Attended
18	Other	FHG IPA	DKE/AK STD_1941.0.1 General	The Standardization Roadmap Industrie 4.0 is one of the central communication media for I4.0 in Germany. It enables the national and international exchange of information between	18/09/2019	Frankfurt, Germany	SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics.	More than 9,000 experts at DKE; and German Industry 4.0 community	FHG IPA actively contributes to the new edition of the German Standardization Roadmap Industry 4.0, which is addressing	Attended

				standardization, industry, associations, research and politics. The document presents the outcomes from current standardization work and discussions at different layers, i.e. national, regional and international, as well as gives an overview of recent standards and specifications relevant to I4.0. The main output of the Roadmap is a list of recommendations for actions, which are then aligned with the experts of the Expert Panel. These recommendations are developed for all actors, including the national and international initiation and coordination of suitable standards as well as industrial stakeholder.					practically all topics which are in focus of QU4LITY work, i.e. reference architectures, vocabulary, interoperability, integration and communication of I4.0 systems and their aspects, artificial intelligence, trustworthiness and other. This work is related to the most of QU4LITY technologies. Among other activities FHG IPA is leading three working groups and coordinating the editorial team regarding such topics as reference architecture models, integration and interoperability, including data models, semantics,	

									information models and vocabulary. Additionaly, FHG IPA IPA has broadly contributed with common ZDM challenges in various sections.	
19	Other	FHG IPA	DKE/AK STD_1941.0.8 General Meeting	In order to avoid parallel work in the context of standardization of AI for industrial applications and to promote the exchange between these different activities the Standardization Council Industry 4.0 (SCI 4.0) established the Expert Council for Artificial Intelligence in Industrial Applications. The main objective are: (1) national coordination and harmonization of standardization activities, (2) development of a consolidated picture of requirements and standardization needs in the context of AI for Industry 4.0 in Germany , and (3) coordination of relevant standardization activities	18/02/2020	online event (Frankfurt, Germany)	SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics, especially those who are interested in AI for Industrial Appliacations.	More than 9,000 experts at DKE; CEN/CENELEC outreach is more than 90000 expert roles from 43 national standardization organizations ; ISO outreach is more than ca. 29000 member participants from 164 countries; IEC counts	FHG IPA experts want to contribute to the currently developed AI framework and the German AI Standardization Roadmap. FHG IPA wants to establish valuable contacts and take part in discussions with the goal to specify/develop QU4LITY contribution areas. This exchange provides a valuable opportunity to support the development QU4LITY AI-related technologies and to help stakeholders	Attended

								more than 10,000 electrical and electronics experts	to ensure compatibility with international AI norms and standards in the international market.	
20	Other	FHG IPA	DKE/K STD_1941 General Meeting	The Standardization Council Industrie 4.0 is an initiative originating from Bitkom, DIN, DKE/VDE, VDMA and ZVEI, with the aim of initiating standards for digital production and coordinating them nationally and internationally. Within the SCI 4.0 the Expert Panel committee supports all parties involved in standardization policy and strategy and also plays a coordinating role in the implementation of the German Standardization Roadmap Industry 4.0.	12/09/2019-13/09/2019	Berlin, Germany	SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics.	More than 9,000 experts at DKE; CEN/CENELEC outreach is more than 90000 expert roles from 43 national standardization organizations.	FHG IPA actively takes part in the discussions regarding the harmonization of national standardization activities for Industry 4.0 and actively contributes to the gap analysis and recommendations for actions.	Attended
21	Other	FHG IPA	DKE/K STD_1941 General Meeting	The Standardization Council Industrie 4.0 is an initiative originating from Bitkom, DIN, DKE/VDE, VDMA and ZVEI, with the aim of initiating standards for digital production and	20.01.2020 - 21.01.2020	Boeblingen, Germany	SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics.	More than 9,000 experts at DKE; CEN/CENELEC outreach is	FHG IPA actively takes part in the discussions regarding the Rolling Plan for standardization and related national	Attended

				coordinating them nationally and internationally. Within the SCI 4.0 the Expert Panel committee supports all parties involved in standardization policy and strategy and also plays a coordinating role in the implementation of the German Standardization Roadmap industry 4.0.				more than 90000 expert roles from 43 national standardization organizations.	activities and actively contributes to the gap analysis and recommendations for actions.	
22	Other	FHG IPA	DMP Cluster General Meeting	The DMP (Digital Manufacturing Platform) cluster is an H2020 project cluster that was established with the aim of promoting cooperation between the projects of "DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories". It also includes upcoming projects focusing on AI and CSA, which were funded under the 2019 call. The cluster work is strongly supported by EFFRA ConnectedFactories2.	25/09/2019	Cernobbio - CO, Italy	DT-ICT-07-2018-2019 Projects; industrial partners; national and European standardization community	Participants in DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories and more	QU4LITY representatives met with the representatives of the joint projects, presented current goals and plans for its standardization work, and took part in the discussion of the common goals of the cluster.	Attended
23	Other	FHG IPA	DMP Cluster General Meeting / EFFRA	The DMP (Digital Manufacturing Platform) cluster is an H2020 project cluster that was established	04/06/2020	online event (Brussels, Belgium)	DT-ICT-07-2018-2019 Projects; industrial	Participants in DT-ICT-07-2018-	QU4LITY ambassadors and other involved project partners	Attended

			ConnectedFactories2	with the aim of promoting cooperation between the projects of "DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories". It also includes upcoming projects focusing on AI and CSA, which were funded under the 2019 call. The cluster work is strongly supported by EFFRA ConnectedFactories2.			partners; national and European standardization community	2019: Digital Manufacturing Platforms for Connected Smart Factories and more	took part in the general discussions and presentetd the relevant updates in the coordinated working groups, i.e WG 1 Standardization and WG8 Pilots. FHG IPA gave an update on the standardization activities of cluster projects and on ongoing work regarding the joint CWA workshops. CWA proposal details have been discussed and agreed.	
24	Other	FHG IPA	DMP Cluster General Meeting / EFFRA ConnectedFactories2	The DMP (Digital Manufacturing Platform) cluster is an H2020 project cluster that was established with the aim of promoting cooperation between the projects of "DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories". It also includes upcoming	13/05/2020	online event (Brussels, Belgium)	DT-ICT-07-2018-2019 Projects; industrial partners; national and European standardization community	Participants in DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected	QU4LITY ambassadors and other involved project partners took part in the general discussions and presented the relevant updates in the coordinated working groups, i.e. WG 1	Attended

				projects focusing on AI and CSA, which were funded under the 2019 call. The cluster work is strongly supported by EFFRA ConnectedFactories2.				Smart Factories and more	Standardization and WG8 Pilots. Several actions for joint collaboration as e.g. joint CWA workshops have been agreed.	
25	Other	FHG IPA	DMP Cluster General Meeting / EFFRA ConnectedFactories2	The DMP (Digital Manufacturing Platform) cluster is an H2020 project cluster that was established with the aim of promoting cooperation between the projects of "DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories". It also includes upcoming projects focusing on AI and CSA, which were funded under the 2019 call. The cluster work is strongly supported by EFFRA ConnectedFactories2.	12/03/2020	online event (Brussels, Belgium)	DT-ICT-07-2018-2019 Projects; industrial partners; national and European standardization community	Participants in DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories and more	QU4LITY allocated ambassadors for organized working groups of the cluster, took part in the discussions, and submitted the first updates on the accomplished work. FHG IPA presented the common strategy for standardization in the cluster linking the work to the QU4LITY standardization plan.	Attended
26	Workshop	ATOS	DMP Cluster Meeting	The main goal of this Cluster under the umbrella of Connected Factories CSA is to foster collaboration among DT-ICT-07 projects.	12/03/2020	Remote	DT-ICT-07, Connected Factories, Open DEI representatives	30	Update on QU4LITY status in the different working groups	Attended

27	Workshop	ATOS	DMP Cluster Meeting	The main goal of this Cluster under the umbrella of Connected Factories CSA is to foster collaboration among DT-ICT-07 projects.	04/06/2020	Remote	DT-ICT-07, Connected Factories, Open DEI representatives	30	Update on QU4LITY status in the different working groups	Attended
28	Workshop	ATOS	DMP Cluster Meeting	The main goal of this Cluster under the umbrella of Connected Factories CSA is to foster collaboration among DT-ICT-07 projects.	25/09/2020	Remote	DT-ICT-07, Connected Factories, Open DEI representatives		Update on QU4LITY status in the different working groups	Planned
29	Conference	PACE/TXT	EASN 2019	EASN is the International Conference for Innovation in Aviation & Space to the satisfaction of the European Citizens organized with the support of H2020 CleanSky2 JU - https://easnconference.eu	3-6/09/2019	Athens, Greece	Research academics	350 attendees	presentation of a paper in the industry 4.0 session. Paper: Sesana, Michele & Moussa, Abdulrahman. (2019). Collaborative Augmented worker and Artificial Intelligence in Zero defect Manufacturing environment. MATEC Web of Conferences. 304. 04003. 10.1051/matecconf/201930404003.	Attended

30	Exhibition/Trade Show	FAGOR ARRASATE	EUROBLECH, GHI	Trade fair for sheet metal processing industry	27/10/2020-30/10/2020	Hannover, Germany	Industry, SMEs, Entrepreneurs, researches and academics.	1507 exhibitors from 40 countries and 56301 visitors	FAGOR ARRASATE and GHI will have a stand.	Planned
31	Workshop	ATLAS	European Digital Learning Network (DLEARN) Training Day	Remote Training in iterative Cycles	02/12/2020	Milan, Italy	SMEs, researches, academics, associations	50	ATLAS presented the approach of our company for remote deployment and users' training the case of QU4LITY	Attended
32	Workshop	JSI	European Robotics Forum	The European Robotics Forum is the most influential meeting of the robotics community in Europe.	03/03/2020 - 05/03/2020	Malaga, Spain	Industry, Academics, Researchers	600	Participation in discussion at ERF 2020 Workshop on Standardisation	Attended
33	Conference	FHG-ISST	FAIM2020	30th International Conference on Flexible Automation and Intelligent Manufacturing	June 2021	Athens, Greece	Academics, Researchers, Industry	100	Paper presentation	Planned
34	Exhibition/Trade Show	FHG-IGD	HANNOVER MESSE	Hannover Messe is the world's leading fair on Manufacturing Technology. The Hannover fair is an important industry fair where the industry shows the world new technologies and use cases for Machine learning and industry 4.0.	20/04/2020-24/04/2020	Hannover, Germany	All industries	200000	FHG-IGD will participate in the joint Fraunhofer booth	Not Attended

35	Conference	FHG-IAO	ICPR	International Conference on Production Research	2021	TBD	Industry, SMEs, Entrepreneurs, researches and academics.	700	Submit a paper and give a talk	Planned
36	Other	FHG IPA	IEC TC65 WG23 General Meeting	IEC TC 65/ WG23 Smart Manufacturing (SM) Framework and System Architecture of IEC TC65 has the goal to address the basic concepts regarding Smart Manufacturing, in particular, to compose an SM framework of standards that can be used by TC65 in a harmonized way. Accordingly, the SM framework should cover SM system aspects throughout the whole lifecycle, consider interfaces between resources, products and delivered goods with enterprises, customers, energy providers, and others.	03/12/2019-05/12/2019	Frankfurt, Germany	international, national, European SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics.	ISO outreach is more than ca. 29000 member participants from 164 countries; IEC counts more than 10,000 electrical and electronics experts	FHG IPA took part in the discussions regarding the standardization gaps and presented a short update of the work related to the German Standardization Roadmap industry 4.0. FHG IPA commented on and contributed within the context of QU4LITYY to the work of the following Task Forces as TF SM Markets and Innovation Trend Analysis; TF SM and New Technologies; TF SM Use Cases; TF SM Terms and Definitions; TF SM	Attended

									and Safety; TF SM and Cybersecurity.	
37	Other	FHG IPA	IEC TC65 WG23 General Meeting	IEC TC 65/ WG23 Smart Manufacturing (SM) Framework and System Architecture of IEC TC65 has the goal to address the basic concepts regarding Smart Manufacturing, in particular, to compose an SM framework of standards that can be used by TC65 in a harmonized way. Accordingly, the SM framework should cover SM system aspects throughout the whole lifecycle, consider interfaces between resources, products and delivered goods with enterprises, customers, energy providers, and others.	17/04/2019-18/04/2019	Paris, France	international, national, European SDOs, SSOs, Industry, SMEs, Entrepreneurs, researches and academics.	ISO outreach is more than ca. 29000 member participants from 164 countries; IEC counts more than 10,000 electrical and electronics experts	FHG IPA is an active member of the working group and is currently promoting the QU4LITY standardization results within the working group in the related QU4LITY scope. Based on the identified QU4LITY roadmap objectives, FHG IPA has discussed with Task Force members possible contributions to the planned Technical Repots.	Attended
38	Conference	JSI, KOLEKTOR	IEEE Int. Conf. on Automation Science and Engineering (CASE)	The IEEE CASE is the flagship automation conference of the IEEE Robotics and Automation Society and constitutes the primary forum for cross-industry and	22/08/2019 - 26/08/2019	Vancouver, Canada	Academics, Researchers, Industry	500	Paper presentation	Attended

				multidisciplinary research in automation.						
39	Conference	TUDO	IEEE International Conference on Industrial Engineering & Engineering Management	All topics related to engineering and technology management, including applicable analytical methods and economical/social/human issues to be considered in making engineering decisions.	13/12/2020	Singapore	Academics, Researchers, Industry	Unknown	TUDO will participate	Planned
40	Conference	Airbus	I-ESA 2020 conference	The I-ESA conference connects the world's leading researchers and practitioners of enterprise interoperability and related domain including enterprise systems and applications (https://iesa2020.enit.fr/)	Postponed to Nov 2020	France	Industry and Academia	100	Paper presentation	Planned
41	Conference	TUBS, ATB	INDIN 2020	IEEE International Conference on Industrial Informatics	July 2020	China	Academics, Researchers, Industry	>100	Presentation of a planned paper	Attended
42	Conference	INNO	Innovalia week	Innovalia brings visiblility to technological developments and tools for metrology, industry 4.0 and consultancy.	13/07/2020-17/07/2020	Online	Industry SMEs	500	Innovalia is the organizer	Attended
43	Other	ATLAS	Innovation and Networking Days 2019	The Innovation and Networking Days allow innovators from industry, research and public	06/11/2019-07/11/2019	Bonn, Germany	Industry, SMEs, Entrepreneurs, researches	100	ATLAS participated in the networking and the round table focus groups	Attended

				administrations to meet, share, network and discuss different facets of a broad topic(s). In this edition the main topics were Smart City and Energy as well as Intelligent Processes.			and academics.			
44	Workshop	EPFL	International Industrial Ontologies Workshop	International Industrial Ontologies Workshops bring together leaders responsible for implementing ontologies in their businesses, experienced practitioners, academics, and standards developers to share their experiences. We have scheduled an exciting line-up of a speakers, panels and collaborative workshops!	TBD (2020)	TBD	Industry, experienced practitioners, academics, and standards developers	200	EPFL's research group involved in QU4LITY is one of the co-chairs of the initiative & QU4LITY Ontology will be presented during the workshop	Planned
45	Conference	TUDO	International Joint Conferences on Artificial Intelligence	Scientific and educational purposes, including dissemination of information on Artificial Intelligence at conferences in which cutting-edge scientific results are presented	2020 TBD)	Canada	Academics	Unknown		Planned
46	Other	FHG IPA	ISO/IEC JTC 1/SC 41 General Plenary Meeting	The work of ISO/IEC JTC 1/SC 41 is devoted to standardization in the field of the Internet of Things and related technologies. On the one hand, the committee	25/05/2020-29/05/2020	Online event	international, national, European SDOs, SSOs, Industry, SMEs,	ISO outreach is more than ca. 29000 member participant	Within the ISO/IEC JTC1 SC41 FHG IPA is active participating and contributing with the QU4LITY results	Attended

				serves as a focus and promoter for the JTC 1 standardization 48programme on IoT and related technologies, including sensor networks and wearables technologies. On the other hand, it provides guidance to JTC 1, IEC, ISO, and other bodies developing IoT-related applications.			Entrepreneurs, researches and academics.	s from 164 countries; IEC counts more than 10,000 electrical and electronics experts	to harmonization and standards mapping activities as well as commenting the relevant standards of the following working groups of the committee: WG3 Architecture, WG4 Interoperability, WG5 Applications. The Plenary Meeting gives an excellent opportunity to get an update on the newest standards developments and allocate possible involvements/contributions of QU4LITY regarding such standardization topics as (Industrial) IoT, cloud Computing, Security, Interoperability, etc.	

47	Conference	ATLAS	Maintenance Forum	Annual event of the Hellenic Maintenance Society bringing together stakeholders of the maintenance domain.	October 2020	Greece or Cyprus	Industry, SMEs, researchers.	200	Networking and B2B event. Maybe poster and/or presentation.	Planned
48	Conference	INNO	Metromeet	One of the most influential conferences in the field of Dimensional Metrology	03/03/2020-05/03/2020	Bilbao, Spain	Industry, SMEs	100	Innovalia is the organizer	Attended
49	Conference	Airbus	PLM2020 conference	Since 2003 PLM International Conference (PLM IC) brings together researchers, developers and users of Product Lifecycle Management. It aims to integrate business approaches to the collaborative creation, management and dissemination of product and process data throughout the extended enterprises that create, manufacture and operate engineered products and systems. The conference aims at involving all stakeholders of the wide concept of PLM, hoping to shape the future of this field and advance the science and practice of enterprise	05/07/2020	Switzerland (Done online)	Manufacturers, Digital Automation Experts	100	Paper presentation	Attended

				development.(https://www.plm-conference.org/)						
50	Conference	INNO	QA&Test	International conrerence on testing and quality assurance of embedded software	28/10/2020-30/10/2020	Online	Industry, SME	300	Innovalia will coordinate	Planned
51	Conference	AIT	SmartFactory Conference	Conference with scientists and industrial producers who implement new technologies in the manufacturing industry of Digital production.	First Quarter of 2020	Athens, Greece	Manufacturers, Digital Automation Experts	100		Planned, postponed to late 2020
52	Exhibition/Trade Show	NXT	SPS - Smart production Solutions	SPS is the international exhibition for industrial automation and the annual highlight of the automation industry. With its unique concept, it covers the entire spectrum of smart and digital automation - from simple sensors to intelligent solutions, from what is feasible today to the vision of a fully digitalized industrial world. The exhibition also reflects the technical progress over the last few years as well as the digital transformation of the industry. As an innovation platform and source of	28/11/2019	Nurnberg/ Germany	Industrial automation providers, machines builders, end customers	80		Attended

				ideas, the SPS thus takes account of the convergence of automation and IT in the industry.						
53	Exhibition/Trade Show	RiaStone	Techdays		October 2020 - Date TBD	Portugal / Aveiro	Industry, SMEs, Entrepreneurs, researches and academics.	10000	RiaStone will attend as an Exhibitor	Planned
54	Conference	ATLAS	Technology Forum	ICT oriented event, demonstrating various uses of ICT for different domains, binging together 20 organisations from North Greece	01/10/2020	Thessaloniki, Greece	Industry, SMEs, Entrepreneurs, researches, academics and policy makers.	300	Networking and B2B event	Planned
55	Conference	EPFL	WCEAM 2021 - World Congress on Engineering Asset Management	The objective of WCEAM is to bring together academics, practitioners and scientists from all around the world: (i) to promote research, development and application in the field of Engineering Asset Management; (ii) to strengthen the link between academic researchers and industrial practitioners in the field.	July 2021	Seville, Spain	Academics, Researchers, Industry	300	Paper Presentation	Planned

Table 1 - Event Participation

3.7. Scientific Publications

The strategy for dissemination also includes reaching out to the scientific community. Partners have been encouraged to publish scientific essays regarding the activities and results related to the Qu4lity project

In the table below, information about the publications can be found.

Nº	Authors	Partner	Name of the publication	Publication site	Date	Other information if relevant (pages, city, audience,,...)
1	Deuse et al.	TUDO	TBD	Zeitschrift für Wirtschaftlichen Fabrikbetrieb	2020	
2	Deuse et al.	TUDO	TBD	Journal of Intelligent Manufacturing	2020	
3	Deuse et al.	TUDO	TBD	Werkstattstechnik Online	2021	
4	Deuse et al.	TUDO	TBD	Digital Factory Journal	2021	
5	Deuse et al.	TUDO	TBD	Automatisierungstechnik	2022	
6	Deuse et al.	TUDO	TBD	International Joint Conferences on Artificial Intelligence Organization	2021	
7	Lentes et al.	FHG-IAO	TBD	IJPR - International Journal for Production Research	2022	
8	Lentes et al.	FHG-IAO	TBD	Werkstattstechnik Online	2020	
9	Lentes et al.	FHG-IAO	TBD	Zeitschrift für Wirtschaftlichen Fabrikbetrieb	2021	
10	Knaak et al.	FHG-ILT	TBD	LANE 2020	2020	
11	Knaak et al.	FHG-ILT	TBD	Journal of Intelligent Manufacturing	2021	
12	Kiritsis et al.	EPFL	TBD (will be relevant to Task T2.5 led by EPFL & WP7 pilots EPFL is involved in)	International Journal of Production Research	2020	
13	Zheng et al.	EPFL	TBD	APMS 2020	sep-20	
14	Filz et al.	TUBS	TBD	CIRP CMS	2020	
15	Filz et al.	TUBS	TBD	CIRP CMS	2020	
16	Filz et al.	TUBS	TBD	Journal of Manufacturing System	2021	
17	Nikolaidis et al.	ATLANIS-DANOBAT	Towards ZDM in Danobat, Using Prediction for Equipment RUL	30th International Conference Flexible Automation and Intelligent Manufacturing	2020	Physical conference postponed for 2021, but papers will be published in 2020

18	Gams, A., Rebersek, S., Nemec, B., Skrabar, J., Krhlikar, R., Skvarc, J., & Ude, A.	JSI, KOLEKTOR	Robotic Learning for Increased Productivity: Autonomously Improving Speed of Robotic Visual Quality Inspection (pp. 1275–1281). Presented at the IEEE International Conference on Automation Science and Engineering (CASE), Vancouver, Canada: IEEE. http://doi.org/10.1109/COASE.2019.8842851	IEEE 15th International Conference on Automation Science and Engineering (CASE)	2019	Vancouver, Canada, pp. 1275-1281
19	Pahič, R., Ridge, B., Gams, A., Morimoto, J., & Ude, A. (2020). . Neural Networks, 127, 121–131. http://doi.org/10.1016/j.neunet.2020.04.010	JSI	Training of deep neural networks for the generation of dynamic movement primitives	Neural Networks	2020	vol. 127, pp. 121-131, doi: 10.1016/j.neunet.2020.04.010
20	D. Ströter, J.S. Mueller-Roemer, A. Stork, D.W. Fellner	FHG-IGD	OLBVH: octree linear bounding volume hierarchy for volumetric meshes	The Visual Computer	July 2020	
21	Jinzhi Lu et al.	EPFL	Cognitive Twins for Supporting Decision-Makings of Internet of Things Systems	Proceedings of 5th International Conference on the Industry 4.0 Model for Advanced Manufacturing (AMP2020)	2020	
22	Xiaochen Zheng et al.	EPFL	A Quality-Oriented Digital Twin Modelling Method for Manufacturing Processes Based on A Multi-Agent Architecture	30th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM2021)	2021	15-18 June 2021, Athens, Greece
23	Xiaochen Zheng et al.	EPFL	A Semantic-Driven Digital Twin Model For Machining Processes Towards Zero Defect Manufacturing	50th International Conference on Computers and Industrial Engineering (CIE50)	2020	

24	Xiaochen Zheng et al.	EPFL	Decentralized Industrial IoT Data Management Based on Blockchain and IPFS	Advances in Production Management Systems (APMS 2020)	2020	
25	Foivos Psarommatis et al.	EPFL	Identification of the critical reaction times for re-scheduling flexible job shops for different types of unexpected events	53rd CIRP Conference on Manufacturing Systems 2020	2020	July 1-3, Chicago, IL, U.S.
26	Foivos Psarommatis et al.	EPFL	A computational method for identifying the optimum buffer size in the era of Zero Defect Manufacturing	Advances in Production Management Systems (APMS 2020)	2020	August 30 - September 3, 2020 Novi Sad, Serbia
27	Foivos Psarommatis et al.	EPFL	Improved heuristics algorithms for re-scheduling flexible job shops in the era of Zero Defect manufacturing	30th International Conference on Flexible Automation and Intelligent Manufacturing (FAIM2021)	2020	15-18 June 2021, Athens, Greece
28	Foivos Psarommatis et al.	EPFL	A two-layer criteria evaluation approach for rescheduling efficiently semi-automated assembly lines with high number of rush orders	8th CIRP Conference of Assembly Technology and Systems	2020	29 September - 1 October 2020, Athens, Greece
29	Foivos Psarommatis et al.	EPFL	Product quality improvement policies in Industry 4.0: characteristics, enabling factors, barriers, and evolution toward Zero Defect Manufacturing	Open access journal: Frontiers in Computer Science Mobile and Ubiquitous Computing. Special issue: Data-Driven Cognitive Manufacturing - Applications in Predictive Maintenance and Zero Defect Manufacturing	accepted paper on 22/06/2020	
30	Ioannis Christou, Nikos Kefalakis, Andreas Zalonis, John Soldatos	INTRASOFT	Predictive and Explainable Machine Learning for Industrial Internet of Things Applications	IEEE DCOSS 2020, IoT4 Workshop	2020	Published

Table 2 – Scientific publications

4. Key Performance Indicators

Several of the Key Performance Indicators have been set with a period of M1-M39, Therefore, is still too early to review some of these.in M20. Moreover, historically KPIs have been impacted by the attendance of physical events. For example, when attending trade shows and industrial fairs, partners usually bring visibility to the QU4LITY social media account and webpage. Due to the current COVID-19 pandemic situations the lack of physical events has brought the challenge to avoid negative impact on dissemination-related KPIs.

Type of Dissemination	Action	M20 target	M20 Status
Website content	Identify and publish new content with SEO-driven approach using keywords relevant to the project.	≥ 2 publications per month	10 in total
Online newsletters	Elaboration of a newsletter every six months to announce project outputs (calls, achievements and results).	≥ 2 newsletters	3
Promotional material	Design and produce focused materials for specific audiences	≥ 3 materials	3
Press releases	Produce press releases targeting	≥ 2 for IT audiences	2

	different audiences		
Social media content – Twitter	Publish tweets	≥ 8 tweets per month	7.45 per month
Social media content - LinkedIn	Publish post	≥ 1 post per month	15 Posts in total in the projects LinkedIn Group
Stakeholder database	Develop a database of contact for community development and stakeholder engagement	1.500 profiled and engaged stakeholders	Tis KPI has not yet been measured. Ongoing actions to create a community of stakeholder have being taken in collaboration with the CS OPEN DEI.
Exhibitions and workshops	Develop different exhibitions and workshops in order to show Qu4lity use cases to visitors and non-specialised audiences	≥ 1 exhibition/workshop ≥ 50 non-specialised attendees **During M1-M39**	Not yet measurable
Online and/or F2F training sessions	Provide a service for non-IT savvy to show what the new service	≥ 1 online session ≥ 50 non-specialised attendees **During M1-M39**	Not yet measurable

	means for them		
F2F interactions with local people	Work with use case partners to co-host and open day including media presence	≥ 1 local event ≥ 3 appearance in local media **During M1-M39**	Not yet measurable
Free trials for general public	Organise free trials after having reached a predefined maturity level	≥ 5 "testers" **During M1-M39**	Not yet measurable
Visibility of Qu4lity	Liaise and engage with initiatives with journalists and LinkedIn groups	≥ 20 back-links across major stakeholders ≥ 50 responders identified Qu4lity (questionnaire) **During M1-M39**	Not yet measurable

Table 3 - KPIs

5. Conclusion

Given the current situation brought on by the COVID-19 pandemic, the Qu4lity dissemination team has successfully managed the task of disseminating and communicating the project outcomes. Activities undertaken in the period of October 2019 – August 2020 have set out a solid foundation for a strong online presence. As the pandemic situation is constantly changing, it is difficult to predict how the future of physical industrial fairs and exhibitions will be. In a worst-case scenario, the lack of live events will be a persist in the upcoming future. It is therefore of extra importance that the Qu4lity dissemination activities continue focusing on online and digital dissemination of the project.

The implementation of the focused strategy on disseminating the Qu4lity Open Call has been successful. The strong online presence, on the Qu4lity webpage and on social media have brought great visibility to the open call. The process has been interactive, allowing for organizations to ask their questions and clear any potential doubts at the Open Call webinars. Moreover, those who were not able to participate in the Open Call webinars can watch the recorded video of the session, by link from the website.

The revision of the established dissemination KPIs show a continuously solid performance of dissemination activities even though strong dissemination KPIs historically have been linked to the attendance of physical events. Partners have been successful in adapting their dissemination activities, with a strong focus on online presence.

As the Qu4lity Open Call closes, the selected successful applicants will be able to communicate their activities and achieved results through the project´s set of communication channels.

List of figures

List of tables

List of Abbreviations

CM – Communication Manager.
IEM – Innovation and Exploitation Manager.
PC – Project Coordinator.
PCT – Project Coordination Team.
AQ – Autonomous Quality.
ZDM – Zero-Defect Manufacturing.
CPS – Cyber Physical System.
CPPS – Cyber Physical Production System.
KPI – Key Performance Indicator.
SME – Small and Medium Enterprise.
IPR – Intellectual Property Rights.
DIH – Digital Innovation Hub.
FoF – Factories of the Future.
IoT – Internet of Things.
R&I – Research and Innovation.
IT – Information Technologies.
EU – European Union.
EC – European Commission.
WP – Work Package.
PU – Public.

Partners