IoTwins
BIG DATA OPTIMIZE INDUSTRY AND SERVICES

Distributed Digital Twins for industrial SMEs: a big-data platform

DELIVERABLE 8.8 – DISSEMINATION PLAN AND REPORT (II)

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Executive summary

The IoTwins Dissemination Plan plays an essential role in involving and informing the research and industrial communities, attracting and engaging SMEs in the manufacturing and service sector. It is a 'living document', enriched and improved as the project unfolds and progresses, answering to the needs of partners and stakeholders, to facilitate the flow of information about the project among all actors involved.

Its main **objectives** are to:
- inform on the objectives and intermediate and final results of the project and disseminate the results towards potential users and beneficiaries
- reach national and international networks and organisations
- build participation and consensus around it.

Dissemination is focused on results and moves around the main **IoTwins assets:**
- the Big Data platform, along with all its technological components (including its Machine Learning based services and Quality of services policies)
- the 12 testbeds, organized in the 3 categories: manufacturing, facility management, replicability.

The IoTwins Dissemination **target groups** include both internal and external ones.
- As for *internal targets*, a great relevance is given to project partners, that are involved in dissemination actions along with the local ecosystems and networks they belong to, and the relations they hold in turn at local, national and European level.
- As for *external ones,* Industries, SMEs and the broader Scientific Communities are identified as crucial for reaching dissemination objectives.

Concerning the **channels and tools** that will be used for dissemination activities, the plan identifies:
- *Partners' own channels and tools*, that will function as amplifier of dissemination actions.
- *Scientific publications* as main tool to share research results, make them available and ready-to-use to others when possible, and to inspire brand new research activities, thus multiplying EU support's impact.
- *Open Science platforms; Project website; Twitter account*, that can be profitably used also during technical and scientific events.
- *Press and Media relations; Events*, that include a special section dedicated to an ad hoc Dissemination events kit for partners, Company guided tours, conferences and technical workshops; Trade Fairs and other Exhibitions to be thought as virtual due to the pandemic.

1 Introduction

According to the EC Research & Innovation Participant Portal Glossary/Reference Terms, **dissemination** can be referred to as "the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including scientific publications in any medium", whose objective is **transferring knowledge and results with the aim to enable others to use and take up results**, stimulating further research activities, thus maximizing the impact of EU-funded research.

Dissemination and communication are tied with each other, and sometimes a communication action can end up with producing a dissemination outcome; in this sense, communication actions can often overlap and cross with dissemination ones.

The Dissemination Plan plays an essential role in involving and informing the research and industrial communities, attracting and engaging SMEs in the manufacturing and service sector.

The IoTwins dissemination plan is a 'living document', enriched and improved as the project unfolds and progresses. It is necessary to review the strategy periodically to see what has worked, and what did not, what we should do more of or less of. The plan should answer to the communication needs of all partners - and stakeholders, too - and facilitate the flow of information about the project among all actors involved.

The Dissemination Plan will include:
1. the overall scope and specific dissemination objectives to achieve
2. the description of the project assets (what to disseminate)
3. the target groups (who will be informed and engaged)
4. the communication tools for different audiences

This Plan will be yearly updated to ensure the alignment with the project timing and results.

Due to the COVID-19 pandemic outbreak, dissemination activities had to be re-shaped so that all foreseen in-presence ones could be run in a virtual mode.

2 Objectives

IoTwins **Dissemination Plan** is conceived to provide due relevance to research results and create pathways towards different target groups all along the project life.

It includes a list of actions and tools, toward all partners involved in the implementation of the activities, designed to:
- inform on the objectives and intermediate and final results of the project and disseminate the results towards potential users and beneficiaries
- reach national and international networks and organisations
- build participation and consensus around it.

The IoTwins project is composed by many groups that are involved at different levels across the project organizational hierarchy, namely:
- **Consortium level:** the 23 IoTwins partners.
- **Network of stakeholders:** organisations that, without being partners in the project, have expressed their deep interest in supporting and being updated on project activities.
- **Interested audience:** relevant audience that IoTwins partners will keep informed during the project lifetime, that will be better detailed throughout the document.

In the next section IoTwins project assets are introduced and they represent the main "objects" we are going to communicate with the specific actions described in section 3 and 4.

3 Description of the project assets

IoTwins is an European project that aims to build a reference architecture for the development of efficient and distributed digital twins for specific manufacturing and facility management domains. 12 dedicated large-scale testbeds will collect large amounts of data to generate and refine the associated digital twins, including optimized models of resources, systems and processes involved. IoTwins digital twins will be used to improve the efficiency of production processes and of facility management, as well as to demonstrate the replicability of the achieved results in similar scenarios and to determine new application areas and business models.

All the IoTwins testbeds share the same methodology, grounded on the concept of distributed IoT-/edge-/cloud-enabled hybrid twins, to replicate complex systems, with the ambition of predicting their dynamics and temporal evolution.

Key technological elements of the IoTwins approach are:
- A full-fledged platform enabling easy and rapid access to heterogeneous cloud HPC-based resources for advanced big data services.
- Intelligent services to simplify and accelerate the integration of advanced Machine Learning algorithms, physical simulation, on-line and off-line optimization into distributed digital twins.
- Advanced edge-oriented mechanisms, tools, and orchestration to support Quality of Service in the runtime execution of the distributed digital twins.

The **12 testbeds** are grouped in **three categories**:

MANUFACTURING TESTBEDS

4 industrial pilots providing predictive maintenance services that exploit sensors data to forecast the time to failure and produce maintenance plans that optimize maintenance costs:
- Wind turbine predictive maintenance - Bonfiglioli Riduttori and KK Wind Solutions
- Machine tool spindle predictive behaviour - FILL and TTTECH COMPUTERTECHNIK AG
- Predictive maintenance for a crankshaft manufacturing system - ETXE-TAR
- Predictive maintenance and production optimization for closure manufacturing - GCL International

FACILITY MANAGEMENT TESTBEDS

3 testbeds for identification of criticalities, optimization techniques to provide efficient facility management plans, operation optimal schedules, and renovation/maintenance plans:
- CAMP NOU - Sport facility management and maintenance - FUTBOL CLUB BARCELONA and BARCELONA SUPERCOMPUTING CENTER
- EXAMON - Holistic supercomputer facility management - CINECA
- Smart Grid facility management for power quality monitoring - SIEMENS

REPLICABILITY TESTBEDS

5 testbeds to demonstrate the replicability and the scalability of the IoTwins platform and of the former manufacturing and facility management testbeds:
- Patterns for smart manufacturing for SMEs - CETIM
- EXAMON replication to other data centre facilities - CINECA, INFN and BARCELONA SUPERCOMPUTING CENTER
- Standardization/homogenization of manufacturing performance - GCL International
- CAMP NOU replicability towards smaller scale sport facilities - FUTBOL CLUB BARCELONA
- Innovative business models for IoTwins PaaS in manufacturing - MARPOSS

4 Target Groups

In general, the main dissemination target can be summarized as follows:

- Scientific community
- Industrial partners
- Policy makers

In the table below the project's specific audience are introduced. Based on this, the appropriate dissemination channels will be identified along with the most suitable tools. Due to the pandemic, the initiatives will be organised mainly through digital technologies, using new dedicated tools, while they will be in presence only if possible.

TARGET		HOW TO REACH THEM	
WHO	FIELD OF ACTIVITY	INITIATIVES	OTHER CHANNELS
SMEs keen to implement Industry 4.0 platforms	Manufacturing	- Events - Pilots' (testbeds) visits - Meetings - Conferences and workshops - Open Days - EC specific initiatives, such as [I4MS, ICT Innovation for Manufacturing SMEs](#) and Enterprise Europe Network - Open innovation initiatives - Brokerage events	- Online and traditional media coverage - Social networks - IoTwins website - Partners 'and stakeholders' websites - E-newsletters
All actors along specific value chains, including OEMs and owners/operators of facilities	Value chain within the wind, automotive, sports' events, aeronautic sectors Wind, Automotive, Sports Events, Aeronautic Sectors Value Chains Energy and manufacturing	- Events - Meetings - Conferences and workshops - Testbeds visits organisation - Fairs/exhibitions - Events organized by entrepreneurial associations - Pilots' (testbeds) visits - Ad hoc meetings - Open innovation initiatives - Brokerage events	- Online and traditional media coverage - Social networks - IoTwins website - Partners 'and stakeholders' websites - E-newsletters
SMEs, Research Centres, Universities developing Industry 4.0 initiatives, including IoTwins Partners	Distributed edge/cloud, Big Data and IoT Industry 4.0	- Open Days - Fairs/exhibitions - National/EU level events on ICT - Entrepreneurial associations' events - Scientific Congresses - Open innovations initiatives - Brokerage events	- Publications in scientific journals - LinkedIn threads, discussions

TARGET		HOW TO REACH THEM	
WHO	FIELD OF ACTIVITY	INITIATIVES	OTHER CHANNELS
Broader scientific community (including universities and R&D centres, R&D teams, Ph.D.s, post-doc candidates)		• Seminars and webinars within UNIBO, BSC, FOKUS, TUB, INFN and CINECA • Open innovations initiatives • Brokerage events	• Publications in scientific journals • Post-doc courses that will be started during the project • LinkedIn threads, discussions • Research Gate • OpenAIRE • Other European Platforms and initiatives

IoTwins Partners and stakeholders		• Conferences
		• Brokerage events (e.g. Enterprise Europe Network initiatives)
		• Events related to the following organisations:
		  - Big Data PPP (BDVA), of which CINECA, BSC, ESI, FOKUS, and UNIBO are already members
		  - ETP4HPC: of which CINECA, BSC, FOKUS, INFN and UNIBO are already members
			Communication among partners that are already members of these platforms

Policy Makers and EC directorates, i.e. relevant departments of the EC Standardization bodies	DG ENER DG DIGIT DG CONNECT DG RTD DG MOVE DG CLIMA DG ENV	• Direct contacts and networking initiatives • Workshop organisations with industries and public institutions • Conferences • Events	
Regional, National authorities and general public	i.e. CEN and CENELEC	Approached through national press releases, pilots' visits workshops, summer schools, etc.	

5 Dissemination channels and tools

For information to circulate with ease among partners, a set of tools was prepared. It includes:

5.1 Partners' channels and tools

This plan takes into account that all organizations involved in the IoTwins project are part of bigger innovation ecosystems, at the centre of local, national and international relations and are, in turn, members of different **networks, associations and hubs** active at various levels in the fields of the project. Single organizations can thus act as **amplifiers and multipliers of the project's results** towards these networks and their own local territories as well.

As for their own communication channels, all partners can count on corporate websites and social media pages, that could be profitably exploited as further channels to multiply the impact of project dissemination actions.

The tables that follow include a mapping of all partners' communication channels, through which IoTwins partners can contribute to disseminate project's results:
- The first table maps the network and initiatives where the partners are involved in.
- The second table maps the media channels: websites, social media, IoTwins web pages.

PARTNER	NETWORKS AND INITIATIVES
BSC	- **Partnership for Advanced Computing in Europe (PRACE)** has 26 member countries whose representative organisations create a pan-European supercomputing infrastructure, providing access to computing and data management resources and services for large-scale scientific and engineering applications at the highest performance level. - **Spanish Supercomputing Network (RES)** is a distributed infrastructure that consists of the interconnection of 14 supercomputers with the aim of offering high-performance computing resources to the scientific community, and from now on, the RES also offers data resources. The RES is coordinated by BSC. - **High Performance Embedded Architecture and Compilation (HiPEAC)** is the premier focal point for networking, dissemination, training, and collaboration activities in Europe for researchers, industry, and policy related to computing systems. Today, its network, the biggest of its kind in Europe, numbers over 2,000 specialists.

PARTNER	NETWORKS AND INITIATIVES
FCB	- **Digital Innovation Hubs (DIHs)** though Barcelona Innovation Hub (BIHUB): BIHUB is an ecosystem that drives knowledge and innovation. BIH ecosystem works to boost cutting edge technology and innovation generating relevant impact in the sports industry working closely with key partners, such as brands, universities, research centers, start-ups, entrepreneurs or large enterprises. FCB has a sponsorship networks ecosystem with brings international and leading companies such as Nike, Rakuten, Beko, 1xBET, Estrellla Damm, Konami, CUPRA, OPPO, STANLEY Black& Decker, Gatorade, Chiliz, FBS, Thom Browne, Caixa Bank, Assistència Sanitària, Allianz, Shiseido, SK Lubricants, Scotiabank, Yunnan Balyao, Taiping Life Insurance, Coca Cola, Rakbank, Sebang/Rocket, Maybank, SHB, Banco BMG, H&S, Nichiban Cannon Medical Systems, Serveto, Reno and Naulover - **FCB Universitas:** FCB's centre for the creation and transmission of knowledge and innovation. It promotes an open and collaborative ecosystem with brands, universities and research centres from around the world (MIT, Stanford, Hardvard, Georgetown, ESADE, IESE and University of Beijing) and aims to position FCB as a leading referent in knowledge dissemination in the sports world, through activities such as online streaming of workshops held by the Club, the launch of innovation challenges on a global scale, and online courses, which are all tools for sharing the Club's knowledge - **Sports Tomorrow Congress**: For over 10 years FCB has brought leading experts to inspire coaches, analysts, doctors, nutritionists, physiotherapists, sports scientists, marketers, and business executives to this two-week event to discover, learn and trigger the next innovation in sports industry. IoTwins project had its presence at this congress at the Sports Technology and Sports Business tracks, that put together more than 1,000 attendees and captured the spotlight of the global sports industry for 2 weeks.
MARP	- Ucimu UCIMU-SISTEMI PER PRODURRE is the Italian machine tool, robots, automation systems and ancillary products (NC, tools, components, accessories) manufacturers' association. The value and the long-standing tradition of member companies, characteristic of one of the sectors that best represents the whole manufacturing chain, and the capabilities of the association network, make UCIMU one of the most influential representatives of Sistema Confindustria (General Confederation of Italian industry System). MARP is even a "Confindustria Emilia Romagna Area Centro" Partner. - Er Amiat Emilia-Romagna Advanced Mechanics and Industrial Automation Technology (E.R.-AMIAT) is a non-profit association that operates on the international level to promote the needs of Emilia-Romagna industrial automation cluster and foster its competitive development. - Cluster Fabbrica Intelligente Cluster Fabbrica Intelligente is an association recognized with the aim of implementing a strategy based on research and innovation for the competitiveness of Italian manufacturing. It is the only table at which all the stakeholders involved in the fate of Italian industry sit at the same time: companies, business associations, regions, universities and research bodies, institutions. - Bi-Rex A Competence Center in Bologna for Industry 4.0 - Bi-Rex Competence Center intends to be a strategic and operational player to support companies interested in digitalization of industrial processes, within Industry 4.0 framework: from design to production, from R&D to supply chain, from security to blockchain. - EIT Manufacturing (under registration) EIT Manufacturing is an Innovation Community within the European Institute of Innovation & Technology (EIT) – that connects the leading manufacturing actors in Europe. Fueled by a strong interdisciplinary and trusted community, we will add unique value to European products, processes, services – and inspire the creation of globally competitive and sustainable manufacturing.
UNIBO	- Seminars and Workshops held at the university, both for master and PhD students

PARTNER	NETWORKS AND INITIATIVES
INFN	- High Energy Physics Communities; - Astroparticle Communities; - Europea e-Infrastructures (EOSC); - Italian and European Universities; - European and Worldwide Research Datacenters and Supercomputing Centers; - National and International Research Institutes
CINECA	BDVA ETP4HPC
ART-ER	Data Valley and the whole Emilia-Romagna Innovation Ecosystem: - Big Data Association - Big Data and Artificial Intelligence for Human Development - High Technology Network - Clust-ERs Associations - S3 Platforms "Traceability & Big Data" and "Artificial Intelligence & Human machine interface" - Vanguard Initiative
ETXE	- Industrial Internet Consortium - Digital Twin Consortium
KK Wind Solutions	Wind Denmark
BEWG	Warrant Hub (WG), Linked Third Party of BEWG, has a customer portfolio of more than 6.000 companies, most of them are manufacturing SMEs. The company newsletter illustrating, among alia, the latest achievements and events related to the H2020 projects in which BEWG and/or WG are involved is periodically sent them. Several collaborations are in place with local innovation districts and main associations representing manufacturing and service companies in Italy, as well as with national associations promoting collaborative and industrial research activities.
ENSAM	- Carnot Arts - Digital engineering initiative
SIEMENS (SAG+SA GOE)	EM related fairs, Distributech, European Utility Week MindSphere Application Center (MAC): this is a co-creation platform, along with customers "Industrial IoT@Siemens" conference series in Nuremberg
TTT/TIAG	https://www.iiconsortium.org
THALES	Thales group internal technical seminars, that will occur at least once per year during the project, and probably during one year after project ending.
FILL	EFRA, Social Media (YouTube, Instagram, LinkedIn, Facebook, Twitter), Homepage, CORE Smartwork internal employee communication tool

Table 1 – Partners' network and initiatives

PARTNER	Website	Social Media	Newsletter	IoTwins Page
BRI	https://www.bonfiglioli.com/en	https://twitter.com/Bonfiglioli_ https://www.linkedin.com/company/bonfiglioli-riduttori-spa https://www.youtube.com/channel/UC8xvq7lt0om0vzFrDl0bRBw https://www.instagram.com/bonfiglioli_group		https://www.bonfiglioli.com/italy/it/news/Horizon2020-IoTwins-news
BSC	www.bsc.es	http://twitter.com/bsc_cns https://www.linkedin.com/company/barcelona-supercomputing-center https://www.facebook.com/BSCCNS http://www.youtube.com/BSCCNS https://www.instagram.com/bsc_cns/	Monthly newsletter Weekly bulletin	https://www.bsc.es/research-and-development/projects/iotwins-distributed-digital-twins-industrial-smes-big-data
ESI	https://www.esi-group.com/	https://twitter.com/ESIgroup https://www.linkedin.com/company/esi-group/ https://www.facebook.com/ESIgroup https://www.youtube.com/user/esigroup		
FOKUS	https://www.fokus.fraunhofer.de/en	https://twitter.com/fraunhoferfokus https://www.linkedin.com/company/fraunhoferfokus https://www.facebook.com/fraunhoferfokus https://www.youtube.com/user/FraunhoferFOKUS		
TUB	https://www.tu.berlin/	https://twitter.com/TUBerlin https://www.linkedin.com/school/technische-universitaet-berlin https://www.facebook.com/TU.Berlin https://www.youtube.com/tuberlintv https://www.instagram.com/tu_berlin/		https://www.av.tu-berlin.de/research_development/projects/iotwins/parameter/en/

PARTNER	Website	Social Media	Newsletter	IoTwins Page
FCB	https://barcainnovationhub.com/ca/ https://www.fcbarcelona.com/en/ https://www.fcbarcelona.es/es/	https://twitter.com/BarcaInnoHub https://www.linkedin.com/company/barca-innovation-hub https://www.facebook.com/fcbuniversitas https://www.youtube.com/channel/UCHfk-pApk5etPPFHCLrD9bw https://www.instagram.com/barcauniversitas/	N/A	N/A
MARP	https://www.marposs.com	https://twitter.com/Marposs/ https://www.linkedin.com/company/marposs/ https://www.facebook.com/Marposs/ https://www.youtube.com/c/MarpossGroup https://www.instagram.com/marpossgram/		https://www.marposs.com/eng/big-data-platform-iotwins
UNIBO	https://www.unibo.it http://informatica.unibo.it	https://twitter.com/UniboMagazine https://www.linkedin.com/school/unibo/ https://www.facebook.com/unibo.it https://www.youtube.com/user/UniBologna https://www.instagram.com/unibo/	Newsletter delivered monthly	
INFN	http://home.infn.it/en	https://twitter.com/INFN_ https://www.facebook.com/pages/INFN-Istituto-Nazionale-di-Fisica-Nucleare/45086217578 https://www.youtube.com/user/comunicazioneINFN https://www.instagram.com/infn_insights/		https://dbprogetti.dsi.infn.it/dbprogetti/modificaProgettoGODiVA/2061

PARTNER	Website	Social Media	Newsletter	IoTwins Page
CINECA	www.cineca.it www.hpc.cineca.it	https://twitter.com/cineca1969 https://it.linkedin.com/company/cineca https://www.facebook.com/Cineca1969/ https://www.youtube.com/user/CINECA1969/		https://www.cineca.it/en/hot-topics/IoTwins
ART-ER	https://www.art-er.it/	https://twitter.com/Arter_ER https://www.linkedin.com/company/art-er/ https://www.facebook.com/arteremiliaromagna https://www.youtube.com/channel/UCMIPaeplFW9G6DXnSRzEaxQ https://www.instagram.com/arteremiliaromagna/	Weekly newsletter on R&D funding opportunities in Europe, Italy and Emilia-Romagna region https://first.aster.it/_aster_/registrazione	
ETXE	https://www.etxetar.com/en www.ainguraiiot.com	https://www.linkedin.com/company/26206399 https://www.youtube.com/channel/UCpSJT737TWF7EqzMJSJuOhQ	Monthly newsletter	
KKWS	www.kkwindsolutions.com	https://www.linkedin.com/company/kk-wind-solutions https://www.youtube.com/channel/UCTA3KnHMfF2YkcsEDKWlElQ	Newsletter Delivered half yearly (250 people reached	
BEWG	https://www.efdbewarrant.eu https://www.warranthub.it	https://www.linkedin.com/company/bewarrant/ https://twitter.com/warranthub?lang=en https://www.linkedin.com/company/warranthub/ https://www.facebook.com/warranthub https://www.youtube.com/channel/UC69dsrdwDWVuEdmBE7ZyuBw https://www.instagram.com/warranthub/?hl=en	https://www.warranthub.it/news/?categoria=newsletter	

PARTNER	Website	Social Media	Newsletter	IoTwins Page
ENSAM	https://artsetm etiers.fr/en	https://www.twitter.com/Artset Metiers https://www.linkedin.com/school /arts-et-m-tiers-paristech/ https://www.facebook.com//AM ParisTech https://www.youtube.com/ARTS ETMETIERSCOM https://www.instagram.com/art setmetiers_ensam		
GCL	https://www.gu alaclosures.com / https://www.ne stgate-gualaclosures.co m/ https://www.gcl technologies.lu/	https://www.linkedin.com/comp any/guala-closures-group/ https://www.youtube.com/user/ Gualaclosuresgroup https://www.instagram.com/gual aclosuresgroup		
SIEMENS (SAG+SA GOE)	https://www.sie mens.com/glob al/en.html https://hitech.at /	https://twitter.com/siemens https://www.linkedin.com/comp any/siemens https://www.facebook.com/Siem ens https://www.youtube.com/user/ Siemens https://www.instagram.com/sie mens/	Quarterly Siemens internal newsletter (Austria + 20 Countries)	
TTT/TIAG	https://www.ttt ech.com/	https://www.linkedin.com/comp any/tttech https://www.youtube.com/user/ TTTechGroup		https://www.tttte ch.com/company /research-projects/eu-h2020/iotwins/
THALES	https://www.th alesgroup.com/ en	https://twitter.com/thalesgroup https://www.linkedin.com/comp any/thales https://www.facebook.com/thale sgroup https://www.youtube.com/user/t hethalesgroup		

PARTNER	Website	Social Media	Newsletter	IoTwins Page
CETIM	https://www.cetim.fr/	http://twitter.com/#!/CetimFrance http://www.facebook.com/pages/Cetim-Centre-Technique-des-Industries-M%C3%A9caniques/229499453776590		
FILL	https://www.fill.co.at/	http://www.twitter.com/fillgurten http://www.linkedin.com/company/fill http://www.facebook.com/fillmaschinenbau http://www.youtube.com/user/fillmaschinenbau https://www.instagram.com/fillmaschinenbau/		https://www.fill.co.at/en/fill/research-/horizon-2020/1455.html

Table 2 – Partners' media channels

5.2 Scientific publications

IoTwins scientific results will be widely disseminated by the research partners through **peer-reviewed journals and other scientific publications**. The addressed journals will cover all the relevant project's topics: AI, IoT, Big Data, Cloud, Edge/Fog Computing, Simulation and Data Management.

WP8 will be in charge of the dissemination of such knowledge to mainstream channels, which will also be subject to a reformulation of the main concepts into a widely understandable and suitable language.

All papers published by partners in the framework of IoTwins project will include the following sentence:

ACKNOWLEDGEMENT
This research was partly (or fully) supported by the H2020 IoTwins project (Distributed Digital Twins for industrial SMEs: a big-data platform) funded by the EU under the call ICT-11-2018-2019, Grant Agreement № 857191.

Moreover, any dissemination of results must indicate that it reflects only the author's view and that the European Commission is not responsible for any use that may be made of the information it contains.

In section 5.2 the list of IoTwins related scientific publication delivered by project partners is reported.

5.3 Open Science platforms

Each beneficiary must ensure open access (free of charge, online access for any user) to all peer-reviewed scientific publications relating to its results.

Rather than keeping data and materials (and ideas) within the confines of academic research labs, open science invites anyone to observe, contribute, and create. Researchers are part of a society composed mostly of nonscientists who fund, participate in, benefit from, and in some cases are the subjects of their research.

At the heart of the open-science movement is the conviction that research in all fields must be performed in dialogue with society - a responsibility that predicates "openness" as the core organizing principle for scientific practices. In order to make research results more accessible and transparent, platforms such as Research Gate and OpenAIRE could be used to submit scientific articles and disseminate project's results towards the scientific community.

5.4 Project website

IoTwins website (www.iotwins.eu) is one of the dissemination tools. In particular, the **News and events** sections (the whole project website structure is described in the Deliverable 8.5 - Communication tools) is used as an online tool to inform the audience concerning new achievements or dissemination events.

Also, IoTwins website has a section dedicated to **the project main goals and activities**, a space where all important reports concerning project achievements will be published.

This page can represent an agile tool to tell about the project when no leaflet or other paper material is available.

5.5 Twitter account

Project has a Twitter account, **@iotwins_EU**. It is managed by ART-ER - as WP8 leader - with contributions from all partners. Tweets are used:

- As a hook to the project website
- To tell in real time about very important events
- To promote dissemination initiatives

Social media is an invaluable tool when it comes to connecting with people and staying updated on events, including conferences. Twitter represents an opportunity to interact with the conference's targeted audience.

GUIDELINES FOR USING TWITTER DURING EVENTS AND CONFERENCES:
- Follow the conference hashtag to see what people are talking about and to join the conversation. Partners can also use it to find out about sessions, social events, and anything else they may have missed.
- Inform people that IoTwins partners are attending by using the conference hashtag. This will give the opportunity to connect with people prior to the conference.
- Share photos, videos, and quotes from the conference. According to Twitters Media Blog, posts with photos get a 35% boost in retweets, videos get a 28% boost, and quotes get a 19% boost compared to regular tweets.
- Twitter is a very good channel for sharing experiences from the conference, but before posting anything, be clear on the policy of sharing information. Some speakers don't want their unpublished work to be tweeted or shared.
- Partners should use LinkedIn as well. After meeting new people at the conference, adding them on LinkedIn is a great way to connect and stay in touch. The function "Find Nearby" on LinkedIn is an easy way to connect with people at conferences.

5.6 Press and Media relations

All important achievements and project's milestones will also be announced through press releases during the lifetime of the project. In this period, press releases will include information on specific deliverable accomplishments, events, key results and important announcements. A press release can act as a hook to stimulate companies and researchers to go more in depth through the project activities, that means that also the press can be an effective dissemination tool.

Press releases will be sent not only to common media, but also to specialized business, innovation and research themes magazines. It is important to inform media about the newsworthy events and results. Special attention should be directed towards raising media awareness of the project activities and results, engaging their interest in the subject. Press releases will also be published on the project website and promoted through project social media accounts. Press releases should always include a link to the project website.

5.7 Events

The term "event" refers to private or public events, scientific conferences and congresses, meetings, technical workshops, open days, political level events, events organized by the European Commission or its Directorates, trade fairs and exhibitions, in digital or in presence.

Due to Covid-19 pandemic, all necessary means are put in place by ART-ER, in order to implement the activities according to a proactive approach, through the use of digital tools. Since 2020, all necessary preparations to switch from in-presence to online seminars/events/fairs B2B (using Microsoft Teams, Zoom, Google Meet, Lifesize, Brella platforms) have been put in place. Although online seminars do not allow the same kind of benefits (i.e. team-building, social networking, live experiences, etc.) to partners and stakeholders as in-presence meetings do, on the other hand they make it possible to enlarge the number of participants from all over the world.

Events represent an effective channel of communication and dissemination, since the possibility to meet in person with the targeted audience allows for a more proper presentation and explanation of project results, and to go more in-depth on details. They can be the perfect way to arrange also digital one-to-one meetings with other attendants or speakers, or to open up to new networks that are relevant for project activities. Preparing a 30-seconds speech on the object of project's activities can be a good way to introduce themselves during this kind of initiatives.

When talking about events, it should always be considered that their lifetime also includes an amount of time **before** and one **after**.

Before an event, whether a technical workshop or a scientific conference, a promotion activity should be started: partners should work on selecting the proper audience, the message to be conveyed, the timing for sending invitations, and all other activities needed for the specific case, according with WP8 coordinator and Outreach team.

After the event, some **follow-up** actions should be undertaken, so as to keep the audience attention alive and to schedule any further contacts or meeting with people who showed interest in the project's activities.

Events can be both virtual and in presence, public and private, and can be organized by:

- IoTwins Consortium
- Single IoTwins partners
- Third parties

There can be different levels of participation. A full description is included in D8.4- Communication Plan and report (I) in the related Events section.

In case of Scientific Conferences or other types of events, partners will evaluate on a case-by-case basis the actions to be put in place to participate; it can be a speech during a panel session, a poster: these depends on the goals to attain.

5.7.1 Dissemination events kit

TOOL	TO BE USED DURING
Project logo + EU flag	Fairs/exhibition catalogues
	Website pages and other events' promotion materials
Project presentation official template	Speeches
	Meetings
Project rollup	Workshops and other events
	Video-interviews
Project leaflet	Workshops and other events
Project poster	Workshops and other events
	Video-interviews
Project videos	Workshops and other events
Project Twitter account	Events

All the materials are available and in the WP8 folder of the Microsoft Teams platform activated for the project.

5.7.2 Company guided tours and technical workshops

IoTwins can count on a rich consortium composed by renowned and important manufacturing industries, companies in the service and ICT sectors, excellent research centres, universities, and large data centres highly visible in big data research.

This represents a great chance to reach a specific audience and disseminate research achievements in a particular way, as it is actually a strong communication and marketing factor.

Due to the uncertainty given by the COVID-19 pandemic the guided tour has to be planned as virtual ones as well, also taking into account the opportunity of capitalizing upon the experience of some partners in this field. A dedicate format will be thought and shared for this action.

Virtual guided tours of the companies and research centre sites will be completed by virtual demonstrations of the specific testbeds. Technical workshops will also be organized and delivered by IoTwins partners in charge of the vertical development of project's distributed digital twins.

One Virtual Open Day event per each company that implemented an industrial testbed will be organized. That means that BRI, FCB, CINECA, ETXE, GCL, SAGOE, FILL, CETIM and BSC will be directly involved.

3 Technical online workshops will be organized by UNIBO, FOKUS and ESI. The workshop of ESI will be organized with the support of BEWG. These events are addressed to ICT SMEs, highlighting the possibility for SMEs to open up new opportunities for the creation of new intelligent services based on IoTwins distributed digital twins and platform.

ART-ER will provide the guidelines for activities; each partner will be responsible for the organization. The events will also be supported by the communication material developed in the project, with specific tools and press release.

5.7.3 Conferences and workshops

Due to COVID-19 pandemic, participation to relevant conferences will be scouted and, also depending on the organizers' proposals, an online participation will be evaluated case by case.

Here following a list of relevant international conferences of interest for IoTwins:

CONFERENCE	PLACE AND DATE	DESCRIPTION	WEBSITE	REF. PARTNER
EMO metalworking fair	Hannover 16 – 21/11/2019	EMO Hannover is one of the world's premier trade fair for the metalworking industry. It is a key showcase for innovations and an essential driver of global production technology.	http://www.emo-hannover.de/home	ETXE
ML4CPS - Machine Learning for Cyber Physical Systems and Industry 4.0	Berlin, 12-13 March 2020	The event will be dedicated to the topics of machine learning, industrial analytics and the use of machine learning (ML) in production.	https://www.iosb.fraunhofer.de/servlet/is/51152/	
IDTechEx	Berlin, 13-14 May 2020	The IDTechEx Show! presents the latest emerging technologies at one event, with nine concurrent technologies and a single exhibition covering 3D printing, electric vehicles, energy harvesting, energy storage, graphene, internet of things, off grid energy independence, printed electronics, sensors & wearable technology.	https://www.idtechex.com/europe2018/show/en/	
Smart Manufacturing Summit	Indianapolis, 2-4 June 2020	The Only Event for Mid-Market Manufacturers	www.smartmanufacturingsummit.com	

CONFERENCE	PLACE AND DATE	DESCRIPTION	WEBSITE	REF. PARTNER
European social simulation association events	Cracow, 20-24th September 2020	The European Social Simulation Association (ESSA) promotes the development of social simulation research, education and application in Europe. Founded on a manifesto signed by many social simulation researchers in 1993, the basis of the ESSA's Constitution was formed. ESSA has become the most important hub of social simulation worldwide. By collaborating with CSSSA, the Computational Social Science Society of the Americas, and PAAA, the Pacific Asian Association for Agent-based Approach in Economic & Social Complex Systems, ESSA has promoted international initiatives to build a bridge between regional groups and associations.	http://www.essa.eu.org/events/	BSC
III International Triple Helix Summit	Bologna, 24-26 November 2020	The 2020 Summit will focus on the theme "Designing globally connected regional innovation ecosystems: overcoming barriers and opening pathways". New models of cooperation among Government, Industry and Academia steering the opportunities and reducing the hurdles in the right direction for our society at large.	https://www.triplehelixassociation.org/news/bologna-will-host-the-iii-international-triple-helix-summit-on-24-26-november-2020	ART-ER
Big data value association forum	Online+Berlin, 3-5 November 2020	The Big Data Value Association (BDVA) is an industry-driven international not–for-profit organisation with 200 members all over Europe and a well-balanced composition of large, small, and medium-sized industries as well as research and user organizations. BDVA is the private counterpart to the EU Commission to implement the Big Data Value PPP program. BDVA and the Big Data Value PPP pursue a common shared vision of positioning Europe as the world leader in the creation of Big Data Value.	https://www.european-big-data-value-forum.eu/	BSC, CINECA
Sports Tomorrow	Online, 8-20 November 2020	Sports Tomorrow is a new two-week online event, which includes 8 different tracks. For over 10 years FCB has brought leading experts to inspire sports professionals to a two-week event to discover, learn and trigger the next innovation at the sports industry. IoTwins project had its presence at this congress at the Sports Technology and Sports Business tracks, that put together more than 1,000 attendees and captured the spotlight of the global sports industry for 2 weeks.	https://sportstomorrow.fcbarcelona.com/	BSC, FCB

CONFERENCE	PLACE AND DATE	DESCRIPTION	WEBSITE	REF. PARTNER
CAE conference (digital twins)	Online, 30 November - 4 December 2020	This annual conference focuses on the business and technology issues in the Simulation-based Engineering Sciences (SBES) arena and draws delegates from worldwide industry sectors, ranging from aerospace and oil and gas to civil engineering, manufacturing, and automotive. An innovation this year was the launch of an independent exhibition associated to the conference and focusing on all the technologies, service providers and applications that are interconnected with the digital transformation of businesses as they move towards Industry 4.0.	http://www.caeconference.com	CINECA
ICT 2020 (canceled)	Cologne, 1-3 December 2020	The event, co-organized by the European Commission and the German Presidency of the Council of the European Union, will have the following elements: a high-level conference on digital policies, an exhibition of EU-funded research and innovation projects in the field of ICT; a series of networking activities and many more.		ART-ER
HEPiX - High energy physics community conferences	Online, 15-19 March 2021	The HEPiX forum brings together worldwide Information Technology staff, including system administrators, system engineers, and managers from the High Energy Physics and Nuclear Physics laboratories and institutes, to foster a learning and sharing experience between sites facing scientific computing and data challenges. Participating sites include BNL, CERN, DESY, FNAL, IHEP, IN2P3, INFN, JLAB, Nikhef, RAL, SLAC, TRIUMF and many others. The HEPiX organization was formed in 1991, and its semi-annual meetings are an excellent source of information and sharing for IT experts in scientific computing.	https://www.hepix.org/#	
Hannover Messe, Home of Industrial Pioneers	Online, 12-16 April 2021	HANNOVER MESSE is the most important international platform and hot spot for industrial transformation - with excellent innovations or unusual products.	http://www.hannovermesse.de	

CONFERENCE	PLACE AND DATE	DESCRIPTION	WEBSITE	REF. PARTNER
North American Manufacturing Research Conference (NAMRC) 49	Cincinnati, June 21-25, 2021	SME's North American Manufacturing Research Conference (NAMRC) is recognized as North America's preeminent and longest-running international forum for applied research and industrial applications in manufacturing and design with its presentations and publication of original, basic and applied research in advanced manufacturing. An annual event since 1973, NAMRC advances the scientific foundation of discrete-parts manufacturing leading to next-generation applications of emerging and innovative technology in material removal, forming and additive manufacturing processes and machines, and cyber-physical systems. The conference attracts global academicians, government and industry researchers, engineers, students and leaders in manufacturing to interact with each other and advance the field. NAMRC features peer-reviewed papers, keynotes, special opportunities for networking and collaboration, and recognition of research implementation, service and achievements.	http://www.sme.org/namrc/	ETXE
R2B - Research to Business	Bologna, 23-24 June 2021	16th edition of the annual International Exhibition on Industrial Research and Skills for Innovation, organized by Emilia-Romagna Region in collaboration with ART-ER.	https://www.rdueb.it/	ART-ER
Isc High Performance 2021 Digital	Online, 24 June – 2 July 2021	The ISC Exhibition, consisting of over 160 exhibitors, caters to the hardware and software demands of global research centers and businesses in the fields of HPC, artificial intelligence, machine learning and data analytics.	https://www.isc-hpc.com	BSC, CINECA
Mobile world yearly congress	Barcelona, 28 June – 01 July 2021	The GSMA MWC series (formally known as Mobile World Congress) is the world's largest exhibition for the mobile industry, and incorporates a thought-leadership conference featuring prominent executives representing global mobile operators, device manufacturers, technology providers, vendors, and content owners.	https://www.mobileworldcongress.com	BSC

CONFERENCE	PLACE AND DATE	DESCRIPTION	WEBSITE	REF. PARTNER
IMTS, International Manufacturing Technology Show	12-17 September 2021	IMTS 2020 will be the 33rd edition of the Premier Manufacturing Technology show in North America. Industry professionals from all over the world visit IMTS to see and experience more than 15,000 new machine tools, controls, computers, software, components, systems and processes that will solve their manufacturing challenges and improve their efficiency.	https://www.imts.com/	ETXE
IoT Week	Dublin, 31 August – 3 September 2021	IoTWeek is a one of a kind5 day conference where leaders from the worlds of business, tech and science shed light on the future of technology and its impact on business and life.	https://iotweek.org/	
MLDT-CSE	San Diego, 26-29 September 2021	1ST IACM CONFERENCE ON MECHANISTIC MACHINE LEARNING AND DIGITAL TWINS FOR COMPUTATIONAL SCIENCE, ENGINEERING & TECHNOLOGY	https://mmldt.eng.ucsd.edu/	ENSAM
IoT Solutions World congress	Barcelona, 5-7 October 2021	Part of the IoT World Series, the event focuses on providing attendees with the knowledge needed to activate the IoT opportunity and execute IoT enabled transformation. Acting as a global meeting point for 2,000+ enterprises and vendors, IoT World Europe is the go-to event for business leaders to discover investment priorities and implementation strategies.	http://www.iotsworldcongress.com	BSC
NWC 2021	25.-29. October 2021, Salzburg	NAFEMS World Congress, a world of engineering simulation	https://www.nafems.org/congress/	FILL

CONFERENCE	PLACE AND DATE	DESCRIPTION	WEBSITE	REF. PARTNER
EOSC -hub - Services for the European Open Science Cloud		EOSC-hub brings together multiple service providers to create the Hub: a single contact point for European researchers and innovators to discover, access, use and reuse a broad spectrum of resources for advanced data-driven research. For researchers, this will mean a broader access to services supporting their scientific discovery and collaboration across disciplinary and geographical boundaries. The project mobilises providers from the EGI Federation, EUDAT CDI, INDIGO-DataCloud and other major European research infrastructures to deliver a common catalogue of research data, services and software for research. EOSC-hub collaborates closely with eInfraCentral, EOSCpilot, GÉANT 4.2, OpenAIRE-Advance and the RDA Europe 4.0 projects to deliver a consistent service offer for research communities across Europe. EOSC-hub is funded by the European Union's Horizon 2020 research and innovation programme under grant agreement 777536. The generous EU funding received by the project is complemented with a contribution from the EGI Foundation and its participants, and in-kind contributions made available by service providers of the EGI Federation.	https://www.eosc-hub.eu/	CINECA

CONFERENCE	PLACE AND DATE	DESCRIPTION	WEBSITE	REF. PARTNER
Complex systems society events		The purpose of the Society is to promote the development of all aspects of complex systems science in the countries of Europe, as well as the whole international scientific community. See CSS Statutes and CSS By-Laws. The Society aims to promote complex systems research pure and applied (What are Complex Systems?), assist and advise on problems of complex systems education, concern itself with the broader relations of complex systems to society, foster the interaction between complex systems scientists of different countries, establish a sense of identity amongst complexity scientists, and represent the complexity community at all international levels. It is regulated by a CSS Council and by a CSS Executive Committee. The Society was first launched at a European level on 7th Dec 2004 during The European Conference on Complex Systems at Foundation ISI in Torino, Italy. It became an international society in 2006 during the ECCS06 Conference in Oxford. Since 2004, the Conference on Complex Systems organized by the CSS, is the most important annual meeting for the complex systems research community.	https://cssociety.org/events	BSC

5.7.4 Trade Fairs and other Exhibitions

Project achievements, included final results, will be showcased during a selected International Exhibitions at the end of the project. The focus will be both on the **IoTwins platform and the 12 testbeds**.

Potentially addressed exhibitions are:

FAIR	PLACE AND DATE	DESCRIPTION	WEBSITE
Hannover Messe	Hannover, April 2022	The GSMA MWC series (formally known as Mobile World Congress) is the world's largest exhibition for the mobile industry, and incorporates a thought-leadership conference featuring prominent executives representing global mobile operators, device manufacturers, technology providers, vendors, and content owners.	http://www.hannovermesse.de
BIMU	Milan, Oct 2022	Metal cutting, metal forming and additive machines, robots, digital manufacturing and automation, enabling technologies, subcontracting	http://www.bimu.it

FAIR	PLACE AND DATE	DESCRIPTION	WEBSITE
MECSPE	Parma, June 2022	MECSPE is the greatest event focused on innovations for the manufacturing industry	https://www.mecspe.com/it/
R2B | Research to Business	Bologna, June 2022	17th edition of the annual International Exhibition on Industrial Research and Skills for Innovation, organized by Emilia-Romagna Region in collaboration with ART-ER.	www.rdueb.it

Actual addressed exhibitions will be selected also taking into account the timing of project activities. Participation to these events will be also **promoted via social media and the website**.

Also, participation to these kinds of events can include hiring a booth (also virtual) or not, as an example project partners can be hosted within other organizations' or projects' booths, or even hiring a booth as organization and take that as an opportunity to disseminate project's results. Let's see how many situations can occur.

PROJECT BOOTH

Having a project booth implies:

- Having a proper graphical layout of the stand with:
    - project logo clearly visible
    - IoTWINS PROJECT as front head
- Including a brief project description in the official event catalogue together with project logo and EU funds contribution acknowledgement
- Distribute project leaflet and any other relevant informative materials
- Project rollup has to be exposed
- If a screen is available, show the project video

In case a virtual booth is bought, given the diversity of online platforms currently available, it could be necessary to get ready with a kit of embeddable materials such as:

- A short presentation
- A video
- A branded background image
- A full package with a brief project description, project logo end EU flag with EU funds acknowledgement

Also, someone representing the project could be asked to attend the online event to answer to possible questions via the platform chatbox.

OTHER ORGANIZATIONS' OR INITIATIVES' SPACES INSIDE EXHIBITIONS OR TRADE FAIR

In such situations, partners should take care of exposing the project rollup or poster, that depends on what is allowed. Project leaflet should also be available, as well as a project description on the initiative catalogue. A short standard presentation of the project is also something to have.

WORKSHOP OR SPEECH DURING A WORKSHOP INSIDE A TRADE FAIR OR EXHIBITION

Partners can also decide or be invited to organize a workshop during the exhibition, or to give a speech during initiatives organized by third parties. Partners should make sure the right visibility is given to the project, as described in the general rules (see section 5.7 Events).

6 Report on dissemination activities performed in M1-M18

In the following pages a list of activities performed by partners in the first 18 months of the project (September 2019 – February 2021) is reported.

Activities are organized in three groups: dissemination activities, scientific publications and official project website and twitter account news and events.

6.1 Dissemination activities performed by partners

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
BRI	IoTwins Presentation		26/11/2020	Presentation at Triple Helix	https://triplehelixsummit2020.triplehelixassociation.org/final-program/thursday-26-11/	Participation to a conference	Online	EU	N/A
BRI	IoTwins Presentation		12/11/2020	Presentation at Sports Tomorrow	https://sportstomorrow.fcbarcelona.com/	Participation to a conference	Online	EU	N/A
BRI	IoTwins Presentation		01/10/2020	BI-REX Competence center workshop: L'ECONOMIA DEI DATI, UNA LEVA PER LA CRESCITA DEI TERRITORI	https://bi-rex.it/evento/evento-1-ottobre/	Participation to a conference	Online	Italy	N/A
BRI	IoTwins on Bonfiglioli website		04/09/2019		https://www.bonfiglioli.com/italy/it/news/Horizon2020-IoTwins-news	News	Online	EU	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
BSC	Press release on project startup	Scientific Community Industry Civil society Policy makers Media General public Investors Customers	10/11/2019	A press release was launched to communicate the start of the project and the collaboration between FCB and BSC regarding the Facility management testbeds		Press release	Online	Spain	N/A
BSC	Barça Sports Technology Symposium 2019	Industry Scientific Community Media Investors Customers	14/11/2019	Presentation of IoTwins at BIHUB Event - Sports Tech Symposium	https://barcainnovationhub.com/event/barca-sports-technology-symposium-2019/	Participation to a conference	Barcelona, Spain	International	N/A
BSC	2019 BSC Annual Meeting	Scientific Community	20/12/2019	IoTwins talk	https://www.bsc.es/AnnualMeeting2019/home	Participation to a conference	Barcelona, Spain	International	N/A
BSC	2019 BSC Annual Meeting	Industry Scientific Community Media Investors Customers	18/03/2020	IoTwins talk	https://youtu.be/5kxomB-UWqc	Video posted on YouTube	Online	International	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
BSC	Sports Tomorrow Conference	Scientific Community Media Investors Customers	12/11/2020	Presentation of the project	https://sportstomorrow.fcbarcelona.com/	Participation to a conference	Online	International	N/A
BSC	Triple Helix Summit 2020	Industry Scientific Community Media Investors Customers	26/11/2020	IoTwins presentation (TB5)	https://triplehelixsummit2020.triplehelixassociation.org/final-program/thursday-26-11/	Participation to a conference	Online	International	N/A
BSC	Training course: Introduction to Big Data Analytics	Industry Scientific Community Media Investors Customers	05/02/2021	IoTwins session: Modelling Mobility with Massive Amounts of Data	https://www.bsc.es/education/training/patc-courses/online-patc-introduction-big-data-analytics https://youtu.be/7bfYBoBjEuE	Training course +video	Online	Spain	N/A
BSC	Video for International Women´s Day	Industry Scientific Community Media Investors Customers	22/04/2020	Carla Divi´s video for International Women´s Day	https://www.youtube.com/watch?v=kq4uvoWgw1M&feature=emb_title	Interview	Online	Spain	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
BSC	Video "IoTwins: Modelling Mobility with Massive Amounts of Data"	Industry Scientific Community Media Investors Customers	05/02/2021	Eduardo Graells´ talk titled "IoTwins: Modelling Mobility with Massive Amounts of Data (A H2020 European Project)" uploaded to BSC YouTube	https://youtu.be/7bfYBoBjEuE	Video	Online	International	N/A
BSC	Social media campaign	Scientific Community Industry Civil society Policy makers Media General public Investors Customers	November 2019-November 2020	Twitter posts about the project	https://twitter.com/BSC_CNS/status/1240212649192968194 https://twitter.com/BSC_CNS/status/1326844787102724096 https://twitter.com/moresimplicis/status/1195001221087715329 https://twitter.com/thefercook/status/1326811345174618112	Social Media	Online	International	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
BSC	Social media campaign	Scientific Community Industry Civil society Policy makers Media General public Investors Customers	November 2019-November 2020	Facebook posts about the project	https://www.facebook.com/BSCCNS/posts/2459406810803169 https://www.facebook.com/BSCCNS/posts/2702620893148425 https://www.facebook.com/BSCCNS/posts/2727500780660436 https://www.facebook.com/BSCCNS/posts/2740684366008744 https://www.facebook.com/BSCCNS/posts/3379424265468081	Social Media	Online	International	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
BSC	Social media campaign	Scientific Community Industry Civil society Policy makers Media General public Investors Customers	November 2019-November 2020	Instagram posts about the project	https://www.instagram.com/p/B93vbVvpBQH/	Social Media	Online	International	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
BSC	Social media campaign	Scientific Community Industry Civil society Policy makers Media General public Investors Customers	November 2019- November 2020	LinkedIn posts about the project	https://www.linkedin.com/posts/barcelona-supercomputing-center_bsc-talks-how-bsc-fc-barcelona-will-use-activity-6648184174534504449-rD1W https://www.linkedin.com/posts/barcelona-supercomputing-center_bsc-talks-how-bsc-fc-barcelona-will-use-activity-6648184174534504449-rD1W	Social Media	Online	International	N/A
ESI	Event "Energy Sector Challenges"				https://www.esi-group.com/entreprise/evenements/2021/serie-de-webinars-les-challenges-du-secteur-nucleaire	Participation to a conference			N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
ESI CETIM	INTERCUT 2020 Fair	Industry		Video presentation of IoTwins Testbed 9	https://www.youtube.com/watch?v=8Ug7ZhCeOcc	Exhibition			N/A
ESI	Project Presentation at BDVA	Scientific Community, Industry,	11/12/2020	IoTwins presented at the BDVA Activity Group meeting 41	https://www.bdva.eu/node/1697	Participation to a workshop			N/A
FOKUS	IoTwins talk		03/2020	Invited Talk: Industrial Internet of Things (IIoT)		Participation to a workshop	Barcelona, Spain	International	N/A
FOKUS	IoTwins talk		03/2020	International Conference on Wirtschaftsinformatik (WI2020)		Participation to a workshop	Potsdam, Germany	International	N/A
TUB	IoTwins webpage			Promoted the project on TUB Website	https://www.av.tu-berlin.de/research_development/projects/iotwins/parameter/en/	IoTwins project page on own website	Online	International	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
FCB	Barça Sports Technology Symposium	Scientific Community, Industry, Media, Investors, Customers, Other	14/11/2019	The project and Testbed N.5 was presented by BSC and FCB	https://www.fcbarcelona.cat/ca/noticies/1495202/el-projecte-entre-el-bihub-i-el-barcelona-supercomputing-center-es-presenta-al-barca-sports-technology-simposium	Organization of a conference	Barcelona, Spain	International	N/A
FCB	Press Release (Start of the project)	Press release	10/11/2019	A press release has been launched to communicate the start of the project and the collaboration between FCB and BSC regarding the Facility management testbeds	https://www.fcbarcelona.com/en/news/1488211/fc-barcelona-and-the-barcelona-supercomputing-center-bsc-will-create-an-intelligent-system-to-manage-the-espai-barca?_ga=2.94626332.1209069779.1573755759-1143385899.1571132913	Press release	Barcelona, Spain	International	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
FCB	Sports Tomorrow Congress	Industry, Media, Investors, Customers Civil society Policy makers, Scientific Community	09-20/11/2020	Two panels related to the IoTwins Project • 'Smarts Stadiums' as part of the Technology Symposium • 'From Stadiums to Smart Facilities' as part of the Business Symposium	https://sportstomorrow.fcbarcelona.com/	Organization of a conference	Online	EU/Spain	N/A
FCB	Press release (First Phase of IoTwins Project)		12/11/2020	Publication of a press release to reveal that FC Barcelona and BSC had reached the First Phase of IoTwins Project	https://www.fcbarcelona.com/en/club/news/1896169/el-bara-i-el-bsc-completen-la-primera-fase-del-projecte-iotwins	Press release	Barcelona, Spain	International	N/A
FCB	IoTwins articles			Articles published by several media outlets		News	Online	Spain	N/A
FCB	Web news		12/11/2020	Announcement of the Project and One Year Recap	https://www.fcbarcelona.com/en/club/news/1896169/barca-and-bsc-complete-first-phase-of-iotwins-project	News	Online	International	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
FCB	Web news		07/12/2020	News on FCB testbed	https://barcainnovationhub.com/an-intelligent-camp-nou-management-system-which-will-help-enhance-other-venues/	News	Online	International	N/A
FCB	Web news		23/12/2020	News on FCB testbed	https://barcainnovationhub.com/technologies-that-will-define-the-stadiums-of-the-future/	News	Online	International	N/A
FCB	How BSC & FC Barcelona will use AI & digital twins for the renovation of the Camp Nou"	Industry, Media, General Public, Customers	04/12/2020	Imanol Eguskiza´s recorded talk for Sports Life	https://spoti.fi/37Re4ER https://lnkd.in/dgDYD8r	Interview for YouTube mass-channel and Podcast	Barcelona, Spain	Spain	N/A
MARP	MARPOSS IS GOING TO START ITS IOTWINS TEST BED	Industry, Media, Investors, Customers	29/10/2020	News on Marposs website	https://www.marposs.com/eng/news/iotwins-test-bed	News	Bologna, Italy	Italy	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
MARP	IoTwins project	Industry, Media, General public, Investors, Customers	29/10/2020	IoTwins project page on Marposs website	https://www.marposs.com/eng/big-data-platform-iotwins	IoTwins project page on own website	Bologna, Italy	Italy	N/A
MARP	Social media campaign			Organized a social media campaign promoting IoTwins on LinkedIn, Facebook, Twitter and Instagram	https://twitter.com/marposs https://www.instagram.com/marpossgram https://www.linkedin.com/company/marposs https://www.facebook.com/Marposs	Social Media	Online	Italy	

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
UNIBO	Presentation of the scientific and technological aspects of the IoTwins project	Scientific Community Industry Policy makers General public	26/11/2020	A presentation of the scientific and technological aspects of the IoTwins project, mainly addressing the platform architectural details, has been delivered by UniBO at the TripleHelix summit 2020 - WORKSHOP 5 "Digital Twins for Industry and Facility Management (IoTwins Project)	https://triplehelixsummit2020.triplehelixassociation.org/final-program/thursday-26-11/	Participation to a conference	Online	EU	N/A
UNIBO	IoTwins webpages			Project web page in two institutional web sites:	https://disi.unibo.it/it/ricerca/progetti-di-ricerca/progetti-europei/iotwins http://lia.disi.unibo.it/IoTwins/	Website	Online	EU	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
UNIBO	Seminary at University Courses, PhD Course	Scientific Community, Students	May-June 2020 (multiple classes)	Classes taught during the Intelligent System course (Master in Computer Engineering, University of Bologna); classes during PhD course of Data Science and Computation (course title: "From embedded devices to the cloud: a vertical perspective on IoT systems")		University course	Online	Italy	Around 50 students
ART-ER	III International Triple Helix Summit 2020	Scientific Community Industry Civil society Policy makers	24-26/11/2020	Organisation of the summit and organization of IoTwins virtual booth	https://triplehelixsummit2020.triplehelixassociation.org/	Organization of a conference	Online	EU	N/A
ART-ER	Social Media Campaign	Industry Civil society Policy makers Media General public	September 2019-February 2021	Share on ART-ER's twitter profile IoTwins posts on twitter	https://twitter.com/Arter_ER	Social Media	Online	Italy	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
ART-ER	Website	Industry Civil society Policy makers Media General public	September 2019-February 2021	IoTwins webpages and news on ART-ER and ASTER website	https://www.aster.it/news/al-via-iotwins-progetto-da-20-milioni-di-euro-per-applicazione-di-big-data-imprese-e https://www.aster.it/iotwins https://www.art-er.it/2020/03/due-progetti-europei-per-affrontare-le-sfide-della-contemporaneita/	News	Online	Italy	N/A
ETXE	Q3 Testbed Report (Testbeds tracks)	Scientific Community, Industry	23/09/2020	Presentation of testbed updates where IoTwins was mentioned as a related project with the use of the testbed.	https://www.iiconsortium.org/member-meetings.htm	Participation to a conference	Online	World	150 participants

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
KKWS	Released a newsletter promoting the project	Industry, Media, General public, Press release, Interview, Publication	28/10/2019	Published an interview with Vice President of Global Technology & Innovation in KK Wind Solution about how we are partnering up in IoTwins research and innovation project of Horizon 2020.	https://www.linkedin.com/feed/update/urn:li:activity:6594519513419649024	Social Media	Online/social media	EU	>12K followers on KKWS LinkedIn profile besides posted on webpage and in newsletter
KKWS	Wind Power Big Data and IoT Forum	Scientific Community, Customers, Presentation	04-05/12/2020	Forum held December 2019 where players within the wind industry, openly and informally, are discussing leveraging digital innovation to optimize windfarm performance, enhance efficiency, reduce cost and increase revenue. IoTwins was not presented but was brought to the attention to the forum in workshops and other networking activities.	https://www.kkwindsolutions.com/	Participation to a workshop	London, UK	EU	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
KKWS	Presenting IoTwins project to major wind power utilities	Industry, Customers, Presentation	2020	Presenting IoTwins project to major wind power utilities (wind turbine owners) for finding a customer/partner who will team up and let us install the digital twin in their turbine(s).	https://www.kkwindsolutions.com/	Organization of a workshop	Online	International	~5 major wind power utilities
KKWS	IoTwins on KKWS website		28/10/2019		https://www.kkwindsolutions.com/news-media/partnering-to-develop-digital-twins-?PID=5815	News	Online	International	N/A
BEWG	IoTwins on BEWG Website	Industry, General Public	September 2019	Promoted the project on BEWG Website (IoTwins logo included in the section "Projects" is linked to IoTwins project website)	https://www.efdbewarrant.eu/projects/	Website	Online	EU	523 views
BEWG	IoTwins on BEWG-WG Facebook profiles	Industry, General Public	09/09/2019	Promoted the launch of the project on WG Facebook profile	https://www.facebook.com/warranthub/posts/2295245754050601/	Social Media	Online	Italy and EU	272 views

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
BEWG	IoTwins on BEWG-WG LinkedIn profiles	Industry, General Public	09/09/2019	Promoted the launch of the project on EFD-WG LinkedIn profile	https://www.linkedin.com/posts/european-funding-development_20-million-euros-for-23-partners-from-8-different-activity-6575623467318816768-1fr_	Social Media	Online	Italy and EU	779 views
BEWG	Networking activities at Big Data Value Forum	Industries, Scientific Community	14-16/10/2019	Networking activities at project startup	https://2019.european-big-data-value-forum.eu/	Participation to a conference	Helsinki, Finland	EU	
THALES	Internal seminars			Two internal seminars about the component of detection of abnormal time series in a set of time series coming from WP3					
FILL	Project description on webpage	Industry, Media, General public, Customers	2020	Project description on webpage	https://www.fill.co.at/cn/fill/research-/horizon-2020/1455.html	Website	Austria	Austria, Germany, China, Mexico, EU	N/A

Partner	Title of the activity performed	Type of audience	Date	Description of the activity	Link	Type of activity	Place of the activity	Countries addressed	Audience reached through the activity
FILL	IoTwins activities	Industry, Media, General public, Customers	continuing	IoTwins activities	http://www.linkedin.com/company/fill	Social Media	LinkedIn	Austria, Germany, EU	N/A
FILL	IoTwins presentation	Industry, Media, General public, Customers	February 2021	Posting of the project video on social media	http://www.linkedin.com/company/fill	Social media	LinkedIn	Austria, Germany, EU, international	N/A

Table 3 – Partners' dissemination activities

6.2 Scientific dissemination

6.2.1 Accepted Papers

WP	Date of Publication	Partners Involved	Type of Scientific Publication	Title of the Scientific Publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Num ber	Publisher	Relevant Pages in the Issue	Is available under open access?	Link
WP5	01/04/2020	BSC	Scientific journal publication	Measuring spatial subdivisions in urban mobility with mobile phone data	10.1145 /336642 4.33843 70		Eduardo Graells Garrido, Irene Meta, Feliu Més Serra Burriel, Patricio Alejandro Reyes Valenzuela and Fernando Cucchietti	ACM		ACM	485–494	Yes	https://upcommons.upc.edu/handle/2117/336719
WP5	05/06/2020	UNIBO, CINECA	Journal	Countdown Slack: A Run-Time Library to Reduce Energy Footprint in Large-Scale MPI Applications	10.1109 /TPDS.2 020.300 0418	eSSN: 1558-2183	Daniele Cesarini, Andrea Bartolini, Andrea Borghesi, Carlo Cavazzoni, Mathieu Luisier, Luca Benini	IEEE Transactions on Parallel and Distributed Systems	31	IEEE	2696-2709	Under IEEE publishing guidelines	https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9109637

WP	Date of Publication	Partners Involved	Type of Scientific Publication	Title of the Scientific Publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number	Publisher	Relevant Pages in the Issue	Is available under open access?	Link
WP4	25/10/2021	FILL	abstract/oral presentation	Analyzing the impact of different drive concepts on machine tool dynamics using mechatronic system simulation	N/A	N/A	Roman Binder	NAFEMS World Congress 2021	N/A	NAFEMS World Congress 2021	N/A	N/A	N/A

6.2.2 Submitted papers

WP	Expected Date of Publication	Partners Involved	Type of Scientific Publication	Title of the Scientific Publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number	Publisher	Relevant Pages in the Issue	Is available under open access?	Link
WP4	25/10/2021	FILL	extended paper for peer reviewed publication	Analyzing the impact of different drive concepts on machine tool dynamics using mechatronic system simulation	N/A	N/A	Roman Binder, Michael Wiesauer	NAFEMS World Congress 2021	N/A	NAFEMS World Congress 2021	N/A	N/A	N/A

WP	Expected Date of Publication	Partners Involved	Type of Scientific Publication	Title of the Scientific Publication	DOI	ISSN or eSSN	Authors	Title of the journal or equivalent	Number	Publisher	Relevant Pages in the Issue	Is available under open access?	Link
WP2	TBA	UNIBO, SAG, INFN, FOKUS, ESI	Conference (Workshop)	IoTwins: Design and Implementation of a Platform for the Management of Digital Twins in Industrial Scenarios			Andrea Borghesi, Giuseppe Di Modica, Paolo Bellavista, Varun Gowtham, Alexander Willner, Florian Kintzler, Stephan Cejka, Simone Rossi Tisbeni, Alessandro Constantini, Matteo Galletti, Marica Antonacci, Jean Christian Ahouangonou	CCGRID Conference - Workshop Cloud2Things	N/A	N/A	N/A	N/A	N/A

6.3 News and events on IoTwins Website and Twitter

At the very beginning of the project, an online form aimed at collecting news and events to be promoted was prepared. Whenever a partner fills in the form, ART-ER check it and then publish the content on the website.

In order to assure a constant flow of fresh contents on the website, an editorial calendar was prepared, where news sent by partners were integrated with a series of news related to the project's topics that were found and selected from the web. The selection was made taking into account official and reliable sources. The most important ones were also posted via Twitter.

So far, about 30 news and events items were published on the website.