LeArning and robuSt decision SupporT systems for agile mANufacTuring environments

Project Acronym:

ASSISTANT

Grant agreement no: 101000165

Deliverable no. and title	**D8.2– Interim Dissemination and Communication**	
Work package	WP8	Communication, dissemination, and exploitation
Task	T8.1, T8.2, and T8.3	T8.1: Clustering and synergies with European projects and initiatives for community building T8.2: Communication activities T8.3: Dissemination activities
Lead contractor	Institut Mines-Telecom (IMT) Alexandre Dolgui, mailto: alexandre.dolgui@imt-atlantique.fr	
Deliverable responsible	IMT Atlantique Félicien Barhebwa Mushamuka, email: felicien.barhebwa-mushamuka@imt-atlantique.fr	
Version number	v0.1	
Date	30/04/2022	
Status	v1.0	
Dissemination level	Public (PU)	

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Authors

Partici pant no.	Part. short name	Author name	Chapter(s)
1	IMT	Félicien Barhebwa Mushamuka	All
2	UCC	Gabriel Gonzalez-Castañé	Contribution on chapter 2

Document History

Version	Date	Author name	Reason
v0.1	05.01.2022	Félicien Barhebwa-Mushamuka	Initial Template
v0.2	23.03.2022	Gabriel Gonzalez-Castañé	Contribution on chapter 2
v0.3	30.03.2022	Félicien Barhebwa-Mushamuka	All chapters
v0.4	31.03.2022	BROECHLER Raimund	Review and comments (all chapters)
v1.0	26.04.2022	Félicien Barhebwa-Mushamuka	All comments implemented and final editing

Publishable Executive Summary

The communication and dissemination activities of the ASSISTANT project started from the beginning of the project with different interviews of the consortium members explaining the different concepts to the general public on social networks. A first dissemination and communication plan was also provided in month 6 as deliverable D8.1. In order to increase the visibility of the project and visibility of actual achievements, the communication activities of the project increased according to progress made in the development and use cases, Channels that have been used were mainly social networks, workshops and the collaboration with international clusters. Some of the results -published as scientific papers- have been presented at international conferences (Advances in Production Management Systems (APMS 2021), 54th CIRP CMS 2021 - Towards Digitalized Manufacturing 4.0,8th Changeable, Agile, Reconfigurable and Virtual Production Conferencen CARV 2021, MCPC 2021, 17th IFAC Symposium on Information Control Problems in Manufacturing INCOM 2021, Automatisierungskongress 2021) and several others have been submitted for publication.

To this end, this deliverable provides an overview of the dissemination and communication activities conducted during the first 18 months of the ASSISTANT project, from November 2020 to April 2022. In addition to the communication activities conducted and the various Key Performance Indicators (KPIs), possible updates have been planned by the project partners extending the initial plan.

The document is structured by eight chapters. Chapter 1 contains a brief introduction. Chapter 2 presents cluster communication activities during the reporting period. Chapter 3 presents scientific dissemination activities. Chapter 4 provides communication activities conducted. Chapter 5 presents Update of the communication and dissemination KPIs table from the Description of Action (DoA). Chapter 6 updates plans of partners on newletters and press release publication. Chapter 7 provides dissemination opportunities for 2021 and 2022. Finally, Chapter 8 provides the conclusions.

Table of contents

List of tables

1. Introduction

1.1   Objective and scope of the document

The ASSISTANT project is made up of 12 partners from research community and industry covering 7 countries. The project is funded by the European Commission with a total budget of 6M EUR. ASSISTANT is organized in nine work packages. The interim dissemination and communication report is one of the deliverables of work package 8 named Communication, Dissemination and Exploitation.

This deliverable provides an overview of the dissemination and communication activities conducted during the 18 months of the ASSISTANT project (November 2020 to April 2022) as well as the KPIs achieved to date. These activities were initially drafted at M6 in the initial dissemination and communication plan by the consortium following a combined buttom-up and top-down approach.

The main objectives of the dissemination and communication of the ASSISTANT project are the following:

- To raise awareness of the project amongst the industry and the research community and to embody the results of the project in open-source communities and standardization bodies by achieving wide communication and scientific dissemination of the ASSISTANT project outcomes to our key audiences (the Information Technology industry, research communities, European projects, engineers, developers, and open-source communities).
- To establish and grow a community of early adopters around the project's concepts and tools by positioning ASSISTANT as a recognized set of solutions supporting decision-making, optimization and reconfigurable in relevant industry by using media including websites, events, workshops, and conferences.
- To ensure the sustainability of the project's results beyond the actual duration of the project through pragmatic exploitation plans, supported by commercialization strategies and open-source business models.
- To convince target groups how ASSISTANT can disrupt positively manufacturing companies by promoting solutions with humans at the heart of the production systems and its organization, while contributing to the change of manufacturing jobs that will be less labor-intensive and more productive.
- To show how ASSISTANT can contribute tackling the data availability challenge in manufacturing and convince about the substantial socio-economic benefits of Artificial Intelligence (AI) for manufacturing companies.

1.2   Structure of the deliverable report

Chapter 1 contains a brief introduction. Chapter 2 presents cluster communication activities during the reporting period. Chapter 3 presents scientific dissemination activities. Chapter 4 provides communication activities conducted. Chapter 5 presents Update of the communication and dissemination KPIs table from the Description of Action (DoA). Chapter 6 updates plans of

partners on newletters and press release publication. Chapter 7 provides dissemination opportunities for 2021 and 2022. Finally, Chapter 8 provide the conclusions.

2. Clustering and synergies with European projects and initiatives for community building

Successfully developing and exploiting breakthrough AI solutions for the manufacturing industry requires a strong community that can share knowledge, collaborate in solution development, identify, and address challenges in the manufacturing industry and support the adoption of solutions. Building such a community for ASSISTANT implied connecting European projects and initiatives whose goals were aligned with those of ASSISTANT and who would strengthen ASSISTANT with access to various stakeholder groups and AI tools and assets. Clustering activities would also strengthen the European landscape by consolidating AI research for manufacturing on a larger scale. ASSISTANT identified and connected with the following key European projects and initiatives that would bring value to the ASSISTANT community.

2.1 Linked European Projects and Key European Initiatives

Projects from the ICT-48, ICT-49, ICT26 and ICT-38 call, and the four Network of AI Excellence Centres. ASSISTANT engagement goals for different European projects:

- **Special focus on ICT-38**: Collaborating with projects from the ICT-38 call (STAR, COALA, ASSISTANT, Teaming.AI, AI-PROFICIENT, MAS4AI) to integrate trustworthy state-of-the-art AI technologies in the manufacturing domain and support that ethical principles are followed and recommendations for instantiation in the manufacturing domain are fostered. Ensure synchronisation of standardisation activities on AI and related digital technologies in manufacturing.
- **ICT-48, ICT-26, ICT-49**: Build on existing results from AI research and on ethical and trustworthy AI. Clustering meetings to enrich and integrate ASSISTANT solutions into AI-on-demand platform. Industry engagement, access to AI-related knowledge, algorithms, tools, experts and related infrastructures, equipment, and data resources.

For European Initiatives we have: EurAI, EU-Robotics, AI Digital Innovation Hubs (AI DIHs), BDVA, EFFRA, the European Data Infrastructure (EDI), Big Data & Robotics PPP, euRobotics, 5G and other representative networks of experts in AI. The ASSISTANT goals for key European initiatives are the Industry engagement, identifying gaps for potential breakthrough solutions for the manufacturing industry, identify challenges in production lines, production planning , and machine settings.

2.2 Activities for linked European Projects

ASSISTANT has been working closely with other projects grouped under the **H2020-ICT-38-2020 call: ARTIFICIAL INTELLIGENCE FOR MANUFACTURING** with the goal of building synergies. These synergies aim at not only sharing AI-related knowledge between projects, but also at transmitting this knowledge to the general public. The cooperation with the ICT-38 projects has brought together several academic and industrial experts from the different projects to discuss digital twin driven methodologies, knowledge graphs in digital twins for AI in production and more. Moreover, the ICT-38 projects participate in regular clustering meetings (March 27, 2021 and July 13, 2021) and workshops (see, Table 2 in chapter 4) and organize special sessions at scientific conferences (September 5, 2021 to September 9, 2021). Together with the other

ICT-38 projects ASSISTANT has launched the series of AI4MAN (AI4Manufacturing) workshops on how AI is reshaping the industry and other related topics. So far there have been three AI4MAN workshops. The aim of these ICT-38 activities is to collaborate with projects from the ICT-38 call on the development of state-of-the-art AI technologies in the manufacturing domain and to synchronise activities. An overview of these clustering meetings, workshops and sessions may be found below (**AI-MAN Workshops**):

- **October 11th 2021**: AI-MAN workshop "Explainable Artificial Intelligence In Manufacturing" organized by the AI-MAN cluster of EU projects on AI in Manufacturing (online with 50-100+ participants)
- **November 25th 2021:** AI-MAN workshop "Ethical and Legal Issues of Artificial Intelligence In Manufacturing" organised by AI4manufacturing, the community of EU ICT-38 projects on AI and Manufacturing. The event was organised by COALA, AI-PROFICIENT, EU-Japan AI Project, MAS4AI, STAR, ASSISTANT (online with 70 – 80 participants).
- **March 14th 2022:** AI-MAN workshop "Human-Centered Manufacturing in the Industry 5.0 Era" This workshop presented novel approaches to human-centred manufacturing and human-robot collaboration with an Industry 5.0 outlook (online with 70 – 80 participants)

As for **ICT-48**, **ICT-26** and **ICT-49** projects, ASSISTANT has been in close contact with the Technical Governance Board (TGB) and community team of AI4EU, the Networks of Excellence and the chairs of ICT-49 and ICT-48 working groups. These connections have enabled ASSISTANT to gain access to existing results from AI research, ethical and trustworthy AI, to AI-related knowledge, algorithms, tools, experts, and other assets.

2.2.1 Ecosystem Building Activities Targeting EU Projects, EU Initiatives, Researchers, and Industry

To ensure that ASSISTANT is successful in reaching industry and key European Initiatives, the project has engaged key players of European Initiatives with the ASSISSTANT community through various outreach activities :

- **EU Projects, EU Initiatives & Industry**

  → 18th February 2021: European Factories of the Future Research Association (**EFFRA**) & Connected Factories Event focusing on key results, use cases and demonstrators from projects that show the path towards the digital transformation of manufacturing. Presented updates on the activities of the ICT-38 projects cluster (STAR, COALA, ASSISTANT, Teaming.AI, AI-PROFICIENT, MAS4AI)
  → Strategic: ASSISTANT logo and activities were included in all presentations where the ecosystem map developed by UCC was presented (AI4EU Events, Bonsapps event, AI4Copernicus Event, DIH4AI event, Digital SME Alliance, DIH Experts working group, BDVA event in 2020)

- **EU Projects & EU Initiatives**

  → 29th March 2021: All ICT-38-2020 projects with representatives of European Factories of the Future Research Association (EFFRA) and AI4EU gathered for the first coordination call to discuss different collaboration strategies.
  → AI-on-demand integration, technical perspective: WP7 leaders Flanders Make were included in the Ontologies Working Group, UCC and IMT were included in the Technical Governance Board (TGB).

- → EurAI – ECAI 2020 – ASSISTANT was represented by AI4EU in multiple ecosystem discussions.
- → EU-Robotics, AI DIHs - ASSISTANT is positioned through the ecosystem map – As a part of the AI4EU project the DIH expert group was launched. This expert groups works on defining AI DIH needs and determining how to best integrate the offerings of the European AI ecosystem (including ASSISTANT) as AI on-demand assets. A recommendation document was produced by this group which also positions ASSISTANT
- → BDVA – coordinator of ASSISTANT Prof. Dr. Alexandre Dolgui (IMT) gave a talk at a session delivered by AI4EU at the BDVA Forum 2020 on Wed 4th November 2020 presenting the project ASSISTANT

- ▪ **EU Initiatives & Researchers**
  - → September 5th, 2021 to September 9th, 2021: A special session on the ASSISTANT project is organized as part of the Advances in Production Management Systems 2021 (APMS 2021) conference
  - → June 22nd to June 24th, 2022: ASSISTANT is organizing a special session on data driven manufacturing decision making at the MIM 2022 conference on the new challenges for management and control in the Industry 4.0 era.
  - → Researchers: ICT 38 was represented at VISION CSA meetings through ASSISTANT

For communication and dissemination purpose related to European clusters, ASSISTANT project is already presents on the **AI-MAN cluster** website , (https://ai4manufacturing.com/) and on **EFFRA** website (https://portal.effra.eu/project/1997)
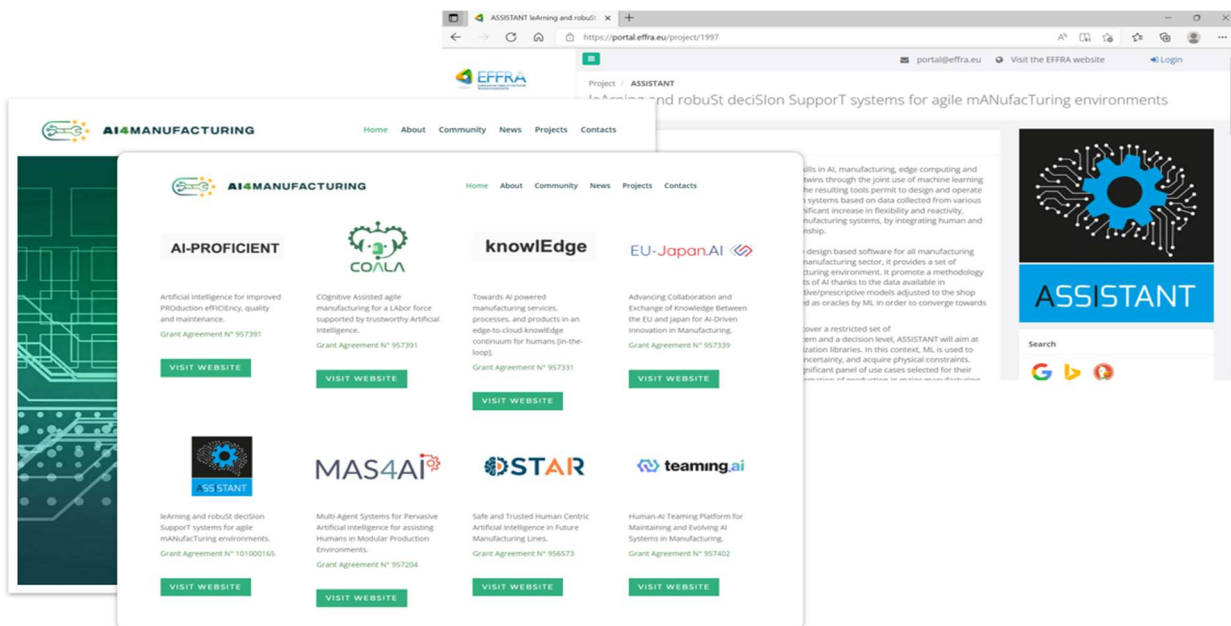
Figure 1: ASSISTANT project on AI-MAN cluster website and EFFRA

3. Scientific dissemination activities

This section briefly summarizes many dissemination activities performed by the ASSISTANT partners during the first half of the project (M1 - M18). A set of conference opportunities that

could be targeted was proposed to the consortium, as shown in Tables 7 and 8, for the years 2021 and 2022 (see section 6.1).

3.1 Publications

Publications during the first half of the project (period M1-M18) will be entered into the Participant Portal . The table below shows the **9** previously **published peer-reviewed conference contributions**. In addition, **16 conference and journal papers** have already been submitted by partners and are under review at the time of this report. In addition to published and submitted papers , the project organized **two scientifics sessions** in two differents and important scientific conferences as described in section 2.2.1.

3.2 Conference contributions

Table 1: List of conference contributions in reporting period

Date	Event	Location	Topic (presentation title)	Authors / Comments
5-9 September 2021	Advances in Production Management Systems (APMS 2021)	Nantes, France	Knowledge Graphs in Digital Twins for AI in Production	Pieter Lietaert, Bart Meyers, Johan Van Noten, Joren Sips, Klaas Gadeyne
5-9 September 2021	Advances in Production Management Systems (APMS 2021)	Nantes, France	Worker in the Loop: A Framework for Enabling Human-Robot Collaborative Assembly	Eleni Tzavara, Panagiotis Angelakis, George Veloudis, Christos Gkournelos and Sotiris Makris
5-9 September 2021	Advances in Production Management Systems (APMS 2021)	Nantes, France	A Digital Twin-Driven Methodology for Material Resource Planning Under Uncertainties	D. Luo, S. Thevenin, A. Dolgui
5-9 September 2021	Advances in Production Management Systems (APMS 2021)	Nantes, France	Decision Support on the Shop Floor Using Digital Twins	Franz Georg Listl, Jan Fischer, Roland Rosen, Annelie Sohr, Jan C. Wehrstedt, Michael Weyrich
22-24 September 2021	54th CIRP CMS 2021 - Towards Digitalized Manufacturing 4.0	virtual conference, Greece	The Digital Twin in Order Processing	Sarah Bernadette Wagner, MichaelMilde, Gunther Reinhart
1-2 November 2021	8th Changeable, Agile, Reconfigurable and Virtual Production Conferencen CARV 2021, MCPC 2021	Aalborg City University, Denmark	Digital Twin Design in Production	Sarah Bernadette Wagner, Michael Milde,Félicien Barhebwa-Mushamuka, Gunther Reinhart

Date	Event	Location	Topic (presentation title)	Authors / Comments
7-9 June 2021	17th IFAC Symposium on Information Control Problems in Manufacturing INCOM 2021	Budapest, Hungary	ASSISTANT: Learning and Robust Decision Support System for Agile Manufacturing Environments	Consortium
29-30 June 2021	Automatisierungskongress 2021	Baden Baden, Germany	Assistenzsysteme der nächsten Generation für Produktionssysteme (Next Generation Assist Systems for Production Systems)	Jan Fischer, Roland Rosen, Franz Georg Listl, Annelie Sohr, Jan Christoph Wehrstedt
29-30 June 2021	Automatisierungskongress 2021	Baden Baden, Germany	Digitale Zwillinge für Shopfloor-Management und -steuerung (Digital Twins for Shopfloor Management and Control)	Annelie Sohr, Roland Rosen, Jan Christoph Wehrstedt, Jan Fischer, Franz Georg Listl, Martin Schellander, Rainer Haar

4. Communication activities

The target groups that ASSISTANT wishes to reach to communicate and disseminate the results of the project are essentially:

- Manufacturing companies and production planners
- Small and Medium Enterprises (SMEs)
- Technology and software providers and automation, IT services companies
- Academic manufacturing community
- Academic AI community
- Policy makers
- General public

Some of these groups like academic manufacturing and AI community, manufacturing companies and production planners, technology and software providers and automation, IT services companies were reached via clustering events and sessions at scientific conferences. This chapter shows that via social media and ASSISTANT website and pages, the project continues to reach it targets audience.

4.1   Participation in different events related to communication and dissemination

The consortium members attended different national and international activities (see table 2) to present the ASSISTANT project, the preliminary results of the project and to strengthen the synergies with other projects working on the same topic as described in chapter 2 linked to the clustering activities.

Table 2: Attendency on communication and dissemination activities.

Partner	Type of event	Location	Type of the audience	Size of the audience	Date
IMT, INTRA, UCC	1st ICT-38 Projects telco	Online	Researcher/industrials from Europe	50-100+	March 27, 2021
IMT	BDVA AI4EU workshop	Online	Industrial/scientist	40-50	November 4,2020
IMT	LS2N workshop	Online	Researchers in computer science and manufacturing	40-50	November 5, 2020

Partner	Type of event	Location	Type of the audience	Size of the audience	Date
IMT	ICT-38 network workshop	Online	Researcher/industrials from Europe	50-100	July 5, 2021
IMT	ICT-48 Community workshop	Online	Researcher/industrials from Europe	50-100	June 30, 2021
IMT	ICT-38 AI-MAN planning Telco	Online	Researcher/industrials from Europe	50-100+	July 13, 2021
IMT	INCOMS: EU Project presentations, and scientific presentation	Online	Researcher/industrials from Europe	50-100+	06/09/2021
UCC	Explainable AI in Manufacturing Workshop	Online	Researcher/industrials	50-100+	October 11, 2021
LMS	STELLANTIS Factory booster day	Paris	Industrial	100+	October 13, 2021
UCC	PTHG-21: The Fifth Workshop on Progress Towards the Holy Grail	Online	Academic/Industrial	40-50	October 25, 2021
UCC	27th International Conference on Principles and Practice of Constraint Programming	online	Academic/Industrial	> 100	October 28, 2021
Consortium	Advances in Production Management Systems 2021 (APMS 2021) conference	Online	Scientific and industrials	>200	September, 5-9, 2021
EUV	AI-MAN: Ethical/Legal Issues Workshop	Online	AI in Manufacturing Cluster ICT38	70-80	November 25, 2021
TUM	CIRP CMS 2022	online	Academic/Industrial	100	September 23, 2021
TUM	CARV 2022	Aalborg	Academic/Industrial	100	November 1, 2021
LMS	AI-MAN: Human centred manufacturing in the Industry 5.0 Era	Online	AI in Manufacturing Cluster ICT38	70-80	March 14, 2022
Consortium	New challenges for management and control in the Industry 4.0 Era	Hybrid	Scientifics and industrials	>200	June 22-24,2022

4.2 Press releases and newsletters

The project published so far from all partners **6 press releases**, **1 press-interview**, **8 newsletters** and **7 internally interviews** during the reporting period. The published press releases, newsletters and interviews are summarized in table 3.

Table 3: List of press releases and newsletters.

Type	Publication date and owner	Details
Press release	May 15, 2020 (IMT)	ASSISTANT, the AI project for the factory of the future led by IMT Atlantique selected in the framework of Horizon 2020 http://www.espacedatapresse.com/fil_datapresse/consultation_cp.jsp?idcp=2865118
Press Release	May 28, 2020 (IMT)	Focus on ASSISTANT, the AI project for the factory of the future carried by IMT Atlantique selected for Horizon 2020 https://www.actuia.com/english/focus-on-assistant-the-ia-project-for-the-factory-of-the-future-carried-by-imt-atlantique-selected-for-horizon-2020/
Press release	April , 2021 (EUV)	ASSISTANT project Link expired (https://www.europa-uni.de/de/struktur/unileitung/pressestelle/medieninformation/94-2021/index.html)
Press-interview	May, 2021 (IMT)	Tomorrow, factories driven by digital twins https://www.lesechos.fr/idees-debats/sciences-prospective/demain-des-usines-pilotees-par-des-jumeaux-numeriques-1317478
Press release	August , 2021 (EUV)	Responsible development of artificial intelligence - ENS professor Jan-Hendrik Passoth publishes paper as part of EU project ASSISTANT. https://www.europa-uni.de/de/struktur/unileitung/pressestelle/viadrina-logbuch/wissenschaft/20210921-assistent-passoth/Beitrag/index.html
Press release	September, 2021 (BITI)	BiTi, vilka är de och hur jobbar de med forskningsprojekt Link expired (https://www.uminovainnovation.se/bolag/bit/pressrelease-2021-09-23)
Press release	October, 2021 (TUM	ASSISTANT - Decision Support https://www.mec.ed.tum.de/fileadmin/w00cbp/iwb/_my_direct_uploads/2.iwb-Newsletter_2021.pdf

Newletter	May, 2020 (IMT)	ASSISTANT, an AI project for the factory of the future led by IMT Atlantique, selected in the framework of Horizon 2020 https://www.imt-atlantique.fr/fr/actualites/assistant-projet-ia-pour-l-usine-du-futur-porte-par-imt-atlantique-retenu-dans-le-cadre-d-horizon
Newsletter	January 2021 (TUM)	ASSISTANT - Learning and robust decision support systems for agile manufacturing environments ASSISTANT - Chair of Machine Tools and Manufacturing Technology (tum.de)
Newletter	June, 2021 (INTRA)	INTRASOFT International participates in the ASSISTANT EU funded project https://www.netcompany-intrasoft.com/news/intrasoft-international-participates-assistant-eu-funded-project
Newsletter	June, 2021 (IMT)	Time for synergy with ICT-38 H2020 Projects https://assistant-project.eu/2021/06/09/newsletter-time-for-synergy-with-ict-38-h2020-projects/
Newsletter	August, 2021 (EUV)	ASSISTANT project European University of Viadrina deliverable contribution Link expired (https://archive.newsletter2go.com/?n2g=im06qgzb-4tt6t6aa-ykp)
Newsletter	September, 2021(IMT)	ASSISTANT 11 months since its launch in November 2020 https://assistant-project.eu/2021/09/13/newsletter-assistant-11-months-since-its-launch-in-november-2020/
Newsletter	November, 2021 (AC)	Research and development on Artificial Intelligence for the smart factory of the future https://www.atlascopco.com/nl-be/news/latest-news/onderzoek-en-ontwikkeling-naar-artificiele-intelligentie-voor-de-slimme-fabriek-van-de-toekomst?utm_source=linkedin&utm_medium=socialseeder&utm_campaign=assistant-project
Newsletter	January, 2022 (IMT)	ASSISTANT special session on data driven manufacturing decision making at MIM2022 scientific conference https://assistant-project.eu/2022/01/28/newsletter-assistant-special-session-on-data-driven-manufacturing-decision-making-at-mim2022-scientific-conference/
Interview	January, 2021 (IMT)	Adaptive manufacturing https://assistant-project.eu/2021/01/13/interview-dr-simon-thevenin/
Interview	February, 2021 (IMT-BITI)	Data fabric https://assistant-project.eu/2021/02/03/interview-dr-p-o-ostberg/

Interview	March, 2021 (IMT-TUM)	Process planning https://assistant-project.eu/2021/03/11/interview-sarah-wagner-m-sc/
Interview	April, 2021 (IMT-UCC)	Ethical and human centric toolbox https://assistant-project.eu/2021/03/31/interview-dr-eduardo-vyhmeister/
Interview	May, 2021 (IMT-LMS)	Human-Robot collaboration https://assistant-project.eu/2021/05/25/interview-christos-gkournelos-m-sc/
Interview	June, 2021 (IMT-FLM)	ASSISTANT Knowledge graph https://assistant-project.eu/2021/06/07/interview-dr-bart-meyers/
Interview	June, 2021(IMT-UCC)	Model acquisition https://assistant-project.eu/2021/06/17/interview-helmut-simonis/

4.3   ASSISTANT website analytics

Main project website: https://assistant-project.eu

The first version of the project website was online almost 1 month after the project start (end of December 2020) . During the following months the website was redesigned and an attractive new version went online in January 2021. This new version is based on three pillars and it is regularly updated with newsletter, press releases, interviews, etc. on the project and events. These three main pillars are:

- Website development with the overall design reflecting the European Commission and H2020 branding and aligned with the visual identity of ASSISTANT.

- Dynamic and engaging content, including sections such as Objectives of the project, Technical contributions and Innovations, News/Events, Publications, etc.

- Google Analytics services enabled since the launch of the website to run an analytics study on the online presence.

4.3.1 ASSISTANT website: progress made on the Key Performance Indicators (KPIs) from Google analytics services

Table 4 shows the progress made on the Key Performance Indicators (KPIs) of the project website. While figure 2 summarizes thoses KPIs.

Table 4: Progress on the project website KPIs

M2-M9	M2 -M18
Number of unique visitors: 473	Number of unique visitors: 1105
Number of sessions: 891	Number of sessions: 5976
Average session duration: ~1 min	Average session duration: ~2min

	Totaux	5 976 100 % du total	1 105 100 % du total	1 097 100 % du total	5,41 Égal à la moyenne
1	Assistant project – Learning and robust decision support sytem for agile manufacturing environnements	1 584	858	810	1,85
2	About – Assistant project	737	247	26	2,98
3	Partners – Assistant project	477	277	22	1,72
4	News – Assistant project	380	168	15	2,26
5	LeArning and robuSt decision SupporT systems for agile mANufacTuring environments – Assistant project	341	179	2	1,91
6	(not set)	319	120	115	2,66
7	Publications – Assistant project	261	167	1	1,56
8	About	212	51	0	4,16
9	Press – Assistant project	202	117	5	1,73
10	Contact – Assistant project	147	107	16	1,37

Figure 2: ASSISTANT website pages KPIs summary

The ASSISTANT project website attracts visitors from all over the world (see Figure 3 with countries and their engagement rate).

1	France	35,32 %	12	Canada	25 %	27	Denmark	0 %	43	Indonesia	0 %
2	Germany	31,25 %	13	Belgium	42,42 %	28	Slovenia	0 %	44	Iraq	100 %
3	China	2,5 %	14	India	35,71 %	29	Tunisia	100 %	45	Israel	0 %
4	United States	33,33 %	15	Sweden	47,06 %	30	Algeria	100 %			
5	Greece	42,34 %	16	United Kingdom	16,67 %	31	Congo - Kinshasa	50 %	46	Japan	0 %
6	Netherlands	19,35 %	17	(not set)	7,69 %	32	Egypt	100 %	47	Jordan	100 %
7	Finland	4,44 %	18	Turkey	53,85 %	33	Hungary	100 %	48	Kenya	100 %
8	Austria	13,79 %	19	Switzerland	100 %	34	Luxembourg	66,67 %	49	Nigeria	0 %
9	Italy	42,5 %	20	Australia	100 %	35	Malaysia	50 %	50	North Macedonia	0 %
10	Ireland	29,17 %	21	Norway	66,67 %	36	Morocco	33,33 %	51	Russia	100 %
11	Spain	47,06 %	22	Pakistan	0 %	37	Argentina	0 %	52	Senegal	0 %
			23	Poland	0 %	38	Azerbaijan	0 %	53	Singapore	0 %
			24	Portugal	100 %	39	Cyprus	0 %	54	Slovakia	0 %
			25	Brazil	25 %	40	Ecuador	0 %	55	Somalia	0 %
			26	Colombia	0 %	41	Georgia	0 %	56	Sri Lanka	0 %
						42	Ghana	100 %	57	Taiwan	0 %
									58	United Arab Emirates	50 %
									59	Vietnam	0 %

Figure 3: Countries visiting ASSISTANT website pages

In addition to the ASSISTANT website, the project has special pages on the IMT web site (https://www.imt-atlantique.fr/fr/recherche-innovation/collaborer/projet/assistant). Figure 4 shows the KPIs of ASSISTANT pages on IMT website.

Figure 4: ASSISTANT web pages KPIs summary

Table 5 combines the different key performance indicators of the project website and its pages on the ITM website.

Table 5: Project website and pages KPIs

M2 -M18
Number of unique visitors: 2403
Number of sessions: 7625
Average session duration: ~2.5 min

4.4   Social media

Regarding social media channels, ASSISTANT account was set up in Twitter and LinkedIn:

- Twitter: https://twitter.com/ASSISTANTProje4
- LinkedIn: https://www.linkedin.com/company/assistant-project/
- Youtube channel: https://www.youtube.com/channel/UCs72Zfx40Yyhj62YSu2sR7g

Table 5 shows the progress made on the Key performance indicators (KPIs) of the project social media.

Table 6: Progress on the project social media KPIs

M2-M9				M2 -M18			
	Twitter	Linkdin	Youtube		Twitter	Linkdin	Youtube
Number of posts	15	13	0	Number of posts	21	33	5
Numberof followers	30	239	Not applicable	Number of followers	47	374	-

Number of views	-	-	**0**	Number of views	-	_	180

Since the last review (september 2021), ASSISTANT has **gained additional 135 and 17 new followers on Linkdin and Twitter** respectively. The project published **20 and 6 new posts respectively on Linkdin and Twitter.**
On Youtube channel, the project posted conference presentations and the video documentation of the project. The **total views** on all the posted video on ASSISTANT Youtube channel reached **180**. The ASSISTANT video trailer describes the project idea and what the project expects as achievements. The summary of the KPIs on ASSISTANT video is shown in Table 7.

Table 7: Summary of the KPIs on ASSISTANT video

	Views	**Impression**
ASSISTANT Linkdin	790	372
ASSISTANT Youtube	90	-
IMT Youtube	126	-
ASSISTANT Web page on IMT website	6	_
Atlas copco Linkdin NerLandese	79	394
Atlas copco Linkdin English	200	863
Atlas copco Facebook	1194	1314
Atlas copco Airstar program	10000	-
Total	**12485**	2943

On social media ASSISTANT give more effort on Linkdin where it has a lot of impact with 3200 search appearances in the last 7 days (see Figure 7). The ASSISTANT project reaches its target groups (see Figure 5), from small businesses to large corporations (see Figure 6), which it wishes to reach as described in Chapter 5.
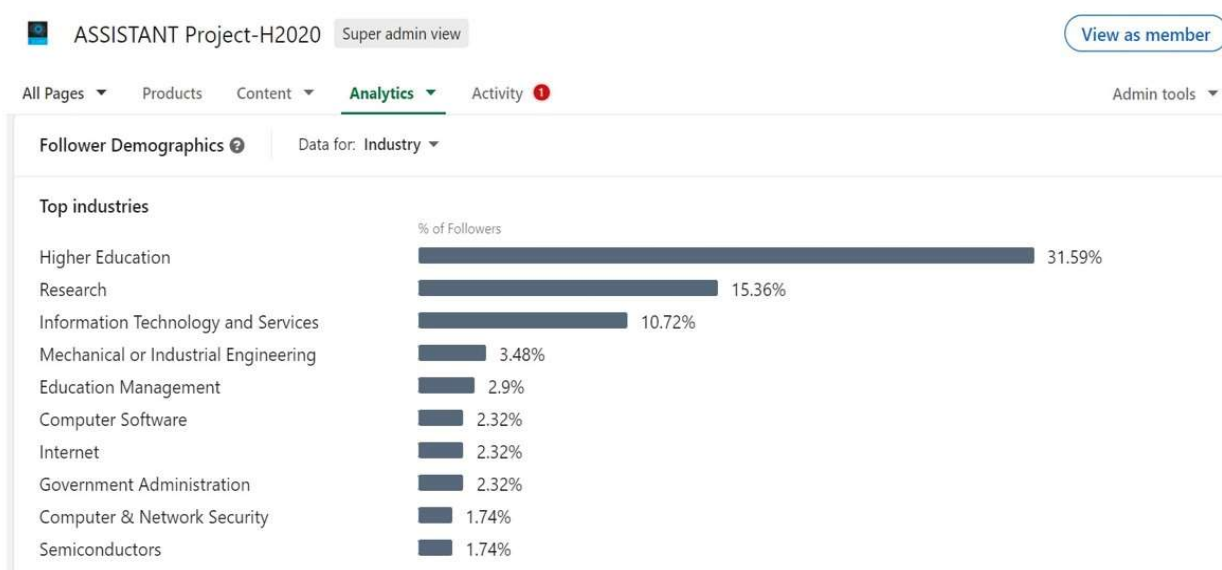
Figure 5: ASSISTANT followers category on Linkdin

Figure 6: ASSISTANT followers company size on Linkdin

A brief comparison with other EU funded projects (projects linked to ASSISTANT's Linkdin page) in terms of number of Linkdin followers, ASSISTANT is perfoming very well. Keep in mind that the list is not exhaustive but representative from the cluster ASSISTANT belongs to (Figure 8).
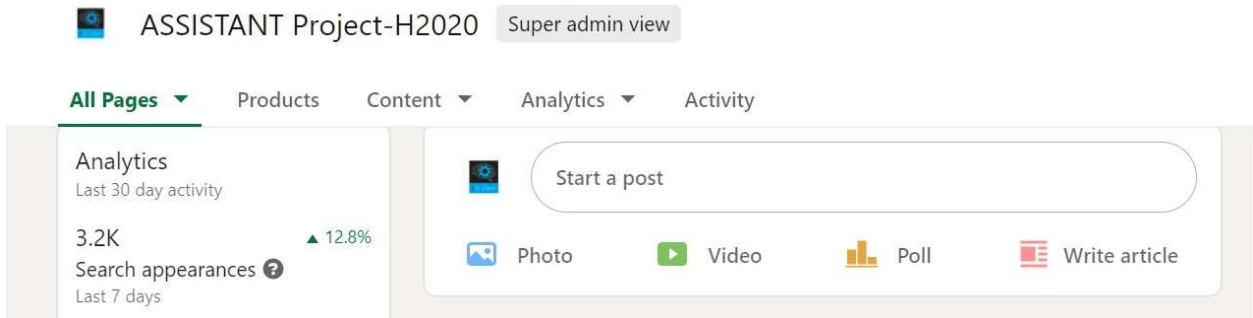
Figure 7: ASSISTANT Linkdin search appearance in the last 7 days

The minimum number of followers is at 9 and the maximum number of followers at 310. While ASSISTANT has 374 followers.
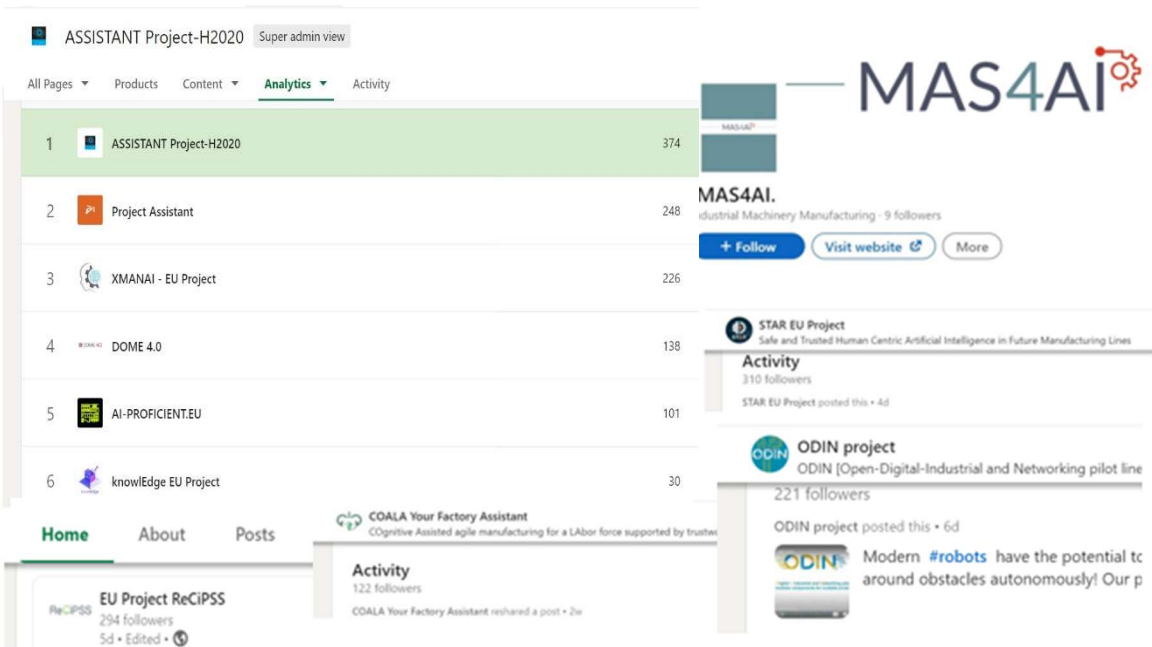
Figure 8: Other EU funded project followers on Linkdin

5. Update of the communication and dissemination KPIs table from the Description of Action (DoA)

5.1   Dissemination KPIs

At this stage of the project, three KPIs related to dissemination have been fully achieved. This concerns clustering activities, academic workshops, and AI events (targeting academic and industrial AI community). The technological workshop will be organized in month M24 while the industrial workshop, which will help fulfilling the KPI related to Public Private Partnerships (PPP) will be organized between months M33 and M36. With regard to the key performance indicators related to scientific conference and journal papers, 9 conference papers have been published to date and 16 journal and conference papers have been submitted. This will initially increase the number of conference papers to reach the target KPIs. Normally, the number of journal articles will increase as the project results increase, as they require extensive research activity. The project will also concentrate effort on the Industry events and fairs (targeting Manufacturing and AI industrial community) to have more than 6 presentations in this community. Those events are general in face to face format and most of them did not take place due to Covid-19 pandemic.

Table 8: Update on dissemination KPIs

Journals	Description	Key performance indicators (KPI)	Success indicator	Status

Relevant for design, planning, scheduling and learning (WP3 and WP4)	Artificial Intelligence Journal / Journal of Artificial Intelligence Research / Constraints / Expert Systems With Applications / Software and Systems Modeling / Transactions on Software Engineering / Production and Operations Management / International Journal of Production Research / International Journal of Production Economics / CIRP Journal of Manufacturing Science and Technology / Journal of Manufacturing Systems / Journal of Intelligent Manufacturing / IEEE Transactions on Automation Science and Engineering	Number of Publications	at least 25 publications on such journals	
Relevant for real time and execution tools under robotized environment (WP5)	CIRP Annals of Manufacturing Technologies, Computation Intelligence, IEEE Transactions on Industrial Informatics, IEEE Transactions on Industrial Electronics, Journal of Advanced Computational Intelligence and Intelligent Informatics, Control Engineering Practice, Robotics and Computer-Integrated Manufacturing			
Relevant for Intelligent data fabric (WP6)	Future Generation Computer Systems (FGCS), ACM Computing Surveys (CSUR), Computers in Industry			0
Targeted Conferences				
Relevant for design, planning, scheduling and learning (WP3 and WP4)	AAAI / IJCAI / ICML / CP / CPAIOR / UAI / CIRP ICME / CIRP CMS / IFIP APMS / IFAC MIM / IFAC INCOM / MODELS / ECMFA / SAM / OPTARCH / IEEE International Symposium on Systems Engineering /IEEE CASE	Number of Publications	at least 30 scientific presentations on such conferences	**9**
Relevant for real time and execution tools under robotized environment (WP5)	IEEE CASE / IEEE ETFA / IEEE INDIN / IEEE Workshop on Factory Communication Systems WFCS / IFAC INCOM / IFAC IMS, CIRP General Assembly/ CIRP LCE / CIRP CARV / CIRP CMS / CIRP CATS			
Relevant for Intelligent data fabric (WP6)	EuroSys/ The Annual IEEE/ACM International Symposium on Cluster, Cloud, and Grid Computing CCGrid/ IEEE International Conference on autonomous Computing ICAC			

Industry events and fairs (targeting Manufacturing and AI industrial community	Automatica: The Leading Exhibition for Smart Automation and Robotics, WMF and Manufacture, AMB Stuttgart, Productronica in Munich, AI and Robotics Industry Exhibition, Metromeet (Bilbao), Hannover Messe	Number of Presentations	>6 presentations	0
AI events (targeting academic and industrial AI community	AIForGood Summit/ Annual AI Summit London/ AI for YOU/ Robot Messe / AI for Manufacturing Workshop/ AI World Congress 2020/ AI & Big Data Innovation Summit - K4I/ AI World Summit/ Digitizing European Industry Stakeholder Forum/ AI & Robotic Process Automation World Summit/ European Business AI and Robotics/ AI Paris by Corp/ML Conference – The Conference for Machine Learning Innovation/ AI & Big Data Expo Europe/ International Conference on Distributed Computing and Artificial Intelligence/ Rise of AI Conference	Number of Presentations	>9 presentations	9
Academic workshop	Results to disseminate: Research results leading to the construction of the intelligent twins (integration of Digital Twins into AI systems), Digital Twins communication with the overall System Main target: academics or specific R&D division of Manufacturing companies, EIT Manufacturing partners.	Number of Participants	200 participants	done
Technological Workshop	Results to disseminate: Intelligent digital twin systems (data acquisition and cleaning, model acquisition, prescriptive analytics for robust and flexible manufacturing systems). Main target: Technology providers, Automation and IT Services, Software Editor, EIT Manufacturing partners.	Number of Participants	200 participants	0
Industrial Workshop	Results to disseminate: Use case validation and results obtained by ASSISTANT tools. Main target: Manufacturing companies, EIT Manufacturing partners, technology providers, policymakers, public authorities in the field of labor.	Number of Participants	200 participants	0
Clustering meetings	Clustering activities with ICT 38-2020 laureates organized.	Number of activities	>3 activities	6
Public Private Partnerships (PPP)				0

	Reaching both domain-specific scientific and industrial community. ASSISTANT will leverage on the possibilities offered by the PPP to disseminate results to the different following community.	1 presentation during PPP event 1 release in each PPP newsletter	0

5.2 Communication KPIs

At this stage of the project, two KPIs related to communication have been fully achieved. These concerns project website pageviews and video views. However, on some KPIs, there has not been enough progress due to the lack of events in face-to-face format that can be covered by a journalist for press releases or posters for example, which have been almost suppressed on all conferences in the majority organized online due to covid-19. We hope we will have more press releases, newsletters and posters in the second half of the project as the health situation begins to improve, restrictions are gradually being lifted and projects are beginning to produce their first results. With this, the project will surely attract new subscribers to the newsletter, more news followers on social media to achieve the target KPIs.

Table 9: Update on communication KPIs

Channel / activity	Impact	Target Value	Status
Project website	Project website pageviews (Source: Google Analytics)	6,000 visits	7625
Social networks	Social media followers on LinkedIn, Facebook and Twitter (Source: Accounts' data)	1,000 followers	392
Press releases	Nb. of press releases under the project lifetime (Source: beneficiaries reporting)	50	7
Newsletter and interviews	Nb. of Newletters and interviews under the project lifetime	-	15
Newsletters	Two newsletters per year. Indicators: nb. of subscribers (beneficiaries reporting)	500 subscribers	20
Video/ Motion Design video of ASSISTANT	Large audience video explaining ASSISTANT project objectives and impacts to the manufacturing and society (Source: social media views)	10,000 views	12485
Poster	A poster presented at conferences and events with the project's identity	100 posters	2

6. Updated plans of partners on newletters and press release publication

A couple of disseminations activities for the second project period are already scheduled. The update plans for newletters and press releases are given below.

6.1   University College Cork (UCC)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M18	04-2022	1	1
M24	10-2022		
M36	10-2023	1	1

6.2   University of Patras - Laboratory for Manufacturing Systems and Automation (LMS)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M18	04-2022		1
M33	07-2023		1

6.3   Flanders Make vzw (FLM)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M20	06-2022		1
M26	12-2022		1
M36	10-2023		2
			Total: 4

6.4   Technical University of Munich (TUM)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Homepage Press Releases (number)
M3	01-2021		Done
M19	05-2022		1
M12	10-2021	Done	
M24	10-2022	1	
M36	10-2023	1	

6.5   Biti Innovations AB (BITI)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M12	10-2021		Done
M24	10-2022		1
M36	10-2023		2
			Total: 4

6.6   SIEMENS AG (SAG)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M19	05-2022	1	
M24	11-2022	1	
M36	11-2023	1	

6.7   INTRASOFT International (INTRA)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M7	05-2021	1	Done
M19	05-2022	1	1
M25	12-2022	1	1
M37	12-2023	1	1

6.8   Atlas Copco (AC)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M13	11- 2021	Done	1
M25	11 - 2022		1
M36	10 - 2023		1

6.9   SIEMENS Energy (SE)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
N.A.	N.A.	N.A.	N.A.

6.10   Group PSA (Stellantis)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M14	05-2022		1
M26	12-2022		1
M36	10-2023		2

6.11   European University Viadrina (EUV)

Month (Mx)	Publication date (Month x-Year x)	Newsletters (number)	Press Releases (number)
M6	04-2021	Done	Done
M10	08-2021		Done
M30	05-2023	1	1
M36	11-2023	1	1

7. Dissemination opportunities (2021 – 2022)

Table 10: Dissemination opportunities 2021

Conference Name	Event date	Submission deadline	Relevant to WP	Conference web site link
Winter simulation conference	December 12-15,2021	April 05, 2021	WP3, WP4	http://meetings2.informs.org/wordpress/wsc2021/
International Conference on Machine Learning	July 18-24, 2021	Abstract : January 28,2021 Paper : February 04, 2021	WP3-WP4	https://icml.cc
International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research	July 5-8, 2021	March 03, 2021	WP3-WP4	https://cpaior2021.dbai.tuwien.ac.at
Conference on Uncertainty in Artificial Intelligence (UAI)	July 27-30, 2021	February 19, 2021	WP3-WP4	https://www.auai.org/uai2021/#:~:text=UAI%20is%20supported%20by%20the,Workshops%3A%20July%2030th%2C%202021
Artificial Intelligence for Sustainable and Resilient Production Systems	September 5-9, 2021	March 21, 2021	WP3-WP4	https://www.apms-conference.org
2. International Conference on Model Driven Engineering Languages and Systems (MODELS)	October 10-15, 2021	April 30, 2021	WP3-WP4	http://www.modelsconference.org/#:~:text=MODELS%202021%20is%20a%20forum,model%2Dbased%20software%20and%20systems.
European conference on Modeling foundations and applications	June 21-25, 2021	February 21, 2021	WP3-WP4	https://staf2021.hvl.no/events/ecmfa2021/
International Conference on Automation Science and Engineering	August 23-27, 2021	March 01, 2021	WP3-WP4	https://case2021.sciencesconf.org
International conference on emerging technologies and factory automation	September 07-10, 2021	April 01, 2021	WP5	https://2021.ieee-etfa.org

International conference on industrial informatics, INDIN2021	July 21-23, 2021	March 31, 2021	WP5	https://www.ieee-indin.org
International Conference on Factory Communication Systems	June 09-11, 2021	February 12, 2021	WP5	https://www.guide2research.com/conference/wfcs-2021-ieee-international-conference-on-factory-communication-systems
Changeable, Agile, Reconfigurable and Virtual Production Conference (CIRP CARV) online	November 1-2, 2021	February 01, 2021	WP5	https://carv2020.com
3. International Conference on Autonomic Computing	June 10-11, 2021	January 28, 2021	WP6	https://waset.org/autonomic-computing-conference-in-june-2021-in-copenhagen
International Conference on Industry 4.0 and Smart Manufacturing	November 17-19, 2021	May 31, 2021	WP3-5	ISM 2021 - About (msc-les.org)
International Conference on Innovative Intelligent Industrial Production and Logistics	October 25 - 27, 2021	May 18, 2021	WP3-5	http://www.in4pl.org
14th IFAC Workshop on Intelligent Manufacturing Systems	March 28-30, 2022	September 10, 2021	WP2-WP6	https://ws.eventact.com/IMS2022/Home

Table 11: Dissemination opportunities 2022

Conference Name	Event date	Submission deadline	Relevant to WP	Conference web site link
Winter simulation conference	December 11-14 ,2022	April, 2022	WP3, WP4	https://meetings.informs.org/wordpress/wsc2022/
International Conference on Machine Learning	July 17-23, 2022	January 27, 2022	WP3-WP4	https://icml.cc/Conferences/2022/CallForPapers
International Conference on Machine Learning and computing	February 18-21, 2022	3.1.1.1 November 30,2021		http://www.icmlc.org/
CVPR 2022: IEEE Conference on Computer Vision and Pattern Recognition	June 21 – 24,2022	November 16, 2021	WP3-WP6	http://cvpr2022.thecvf.com

ICAPS 2022: International Conference on Automated Planning and Scheduling	June 19 - 24, 2022	Abstract submission: December 10, 2021 Paper submission: December 15, 2021	WP4	http://icaps22.icaps-conference.org/
2022 7th International Conference on Machine Learning Technologies (ICMLT 2022)	March 11-13, 2022	December 5, 2021	WP3-WP6	http://www.icmlt.org/index.html
19th International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research	June 20-23, 2022	Abstract due for full papers: November 29, 2021 Full (short and long) papers due: December 3, 2021	WP2-WP6	https://sites.google.com/usc.edu/cpaior-2022/dates
4. International Conference on Uncertainty Modeling and Decision Making	March 29-30, 2023	Abstract/Full-Text Paper Submission: July 01, 2022	WP3-WP5	https://waset.org/uncertainty-modeling-and-decision-making-conference-in-march-2023-in-sydney
5. Manufacturing Modelling, Management and Control - 10th MIM 2022	Jun 22 -24, 2022	Full-Text Paper Submission: January 25, 2022	WP3-WP5	https://hub.imt-atlantique.fr/mim2022/
European conference on Modeling foundations and applications	July 4-8, 2022	Feb 20, 2022	WP3-WP4	https://davidediruscio.github.io/ECMFA2022/
International Conference on Automation Science and Engineering	Aug. 20 - 24, 2022	To be updated	WP3-WP4	http://www.case2022.org/
International conference on emerging technologies and factory automation	September 06-09, 2022	April 01, 2022	WP3-6	https://2022.ieee-etfa.org/
International conference on industrial informatics, INDIN2022	Jul. 25 - 28, 2022	March 31, 2022	WP3-6	https://iten.ieee-ies.org/events/2022/2022-indin-20th-ieee-international-conference-on-industrial-informatics/
18th IEEE International Conference on Factory Communication Systems (WFCS 2022)	April 27 - 29, 2022	December 17th, 2021	WP5	https://wfcs22.unipv.it/
6. International Conference on Autonomic Computing	October 07-08, 2023	July 01, 2022	WP6	https://waset.org/autonomic-computing-conference-in-october-2023-in-tokyo

International Conference on Industry 4.0 and Smart Manufacturing	November 2-4, 2022	To be updated	WP3-5	https://www.msc-les.org/ism2022/?fbclid=IwAR2xiVP385SNLzjAA4rEJgctK2KTdb-oH5es69FR4HvZdeHP9mXy6wqO7VI
CPSL 2022 CONFERENCE ON PRODUCTION SYSTEMS AND LOGISTICS	May 17-20, 2022	Abstract: November 30, 2021 Full paper due: January 1, 2022	WP3-WP6	https://cpsl-conference.com/
International Conference on Innovative Intelligent Industrial Production and Logistics	October 24-26, 2022	May 19, 2022	WP3-5	https://in4pl.scitevents.org

8. Conclusions

This deliverable has provided an overview of the communication and dissemination activities that have taken place during the first half of the ASSISTANT project. The project will continue to follow the initial plan to enhance and support partner dissemination activities, increase project visibility, and promote the results of ASSISTANT within the global research community and industry. Updates to the original plan regarding press releases and newsletters were presented in Chapter 7. To achieve the key performance indicators identified in Chapter 6, the project will continue to increase its social media presence to reach the general public and the scientific and industrial community through events, workshops, and publications.

Despite the health situation that did not allow many face-to-face activities, the project was present in all communication and dissemination activities. This was reflected in a strong presence in European clusters and international workshops. A great activity of dissemination of the first results with 9 published and 16 submitted conference and journal papers. It should also be noted that the project has a remarkable activity on social media by attracting more and more followers. Several key performance indicators have been reached during the half of the project. It is also worth noting the dynamic of the whole consortium on the publication of press releases, newsletters and interviews.