



*AI-augmented automation supporting modelling,
coding, testing, monitoring and continuous
development in Cyber-Physical Systems*

D 6.4 Dissemination Report Intermediate Version

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Abstract:	The deliverable D6.4, dissemination report of the AIDOaRt project intermediate version presents all the activities under the scope of WP6. WP6 includes Task 6.1, regarding the project website, Community Building and Social Media, Task 6.2 standardisation, Task 6.3 of dissemination and T6.5 collaboration with other ICT-related projects. They are intersected and provide mutual support to Deliverable 6.7 of exploitation, as well as to other work packages. Task 6.1, Task 6.2, Task 6.3 and Task 6.5 of WP6 aim to establish, regularly update and implement the dissemination and communication strategies during the project.
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TABLE OF CONTENTS

DOCUMENT REVISION LOG	3
TABLE OF CONTENTS	4
1. Introduction	7
2. Communication Plan Review and Update	8
2.1 The visual identity	8
2.1.1 Project brand colour	9
2.1.2 Templates and others	10
2.1.3 The consistency in all materials	12
2.2 Printed materials portfolio	12
2.3 Project video	18
2.4 Communication and dissemination activity management	20
2.5 KPIs update	23
3. Dissemination Activity Overview (Month 23)	24
3.1 Publications in Journal and Other	25
3.2 Event participation and organisation	29
3.2.1 Event participation	29
3.2.2 AIDOaRt Hackathon	32
3.3 Online Channels	34
3.3.1 Website	34
3.3.2 Social media	38
3.3.2.1 LinkedIn page	39
3.3.2.2 Twitter page	41
4. Standardisation Actions and Future Plans	42
5. Collaboration with other EU Projects	44
5.1 ICT-related workshop	44
5.2 Co-organized STEM workshop	46
6. Conclusions	47
References	49

List of Figures

Figure 1: The visualisation of the communication plan update	8
Figure 2: AIDoArt project brand colour	9
Figure 3: Powerpoint template	10
Figure 4: Word document template	11
Figure 5: Lock-screen and visual meeting background	12
Figure 6: AIDoArt project leaflet	13
Figure 7: AIDoArt project brochure	14
Figure 8: AIDoArt project poster	15
Figure 9: AIDoArt project poster use case	16
Figure 10: AIDoArt project roll-up	17
Figure 11: AIDoArt Second Hackathon Interview	18
Figure 12: AIDoArt Project booth at EFCS 2022	19
Figure 13: AIDoArt dissemination tool	20
Figure 14: dissemination KPI checklist	21
Figure 15: AIDoArt project dissemination report	22
Figure 16: AIDoArt dissemination monitoring and reporting workflow	23
Figure 17: First hackathon	32
Figure 18: Second hackathon website	33
Figure 19: Inside magazine AIDoArt hackathon article	33
Figure 20: Source of our main visited website pages.	35
Figure 21: Monthly impressions	39
Figure 22: Monthly engagement rate	40
Figure 23: AIDoArt community webpage link	42

List of Tables

Table 1: KPIs in D6.2 Communication Plan	24
Table 2: Publications in Journal and others	28
Table 3: Event Participation	31
Table 4 Website KPI	34
Table 5 Audit Results	36
Table 6: SEO implementation	37
Table 7: Social media KPIs	38

1. Introduction

The 3-year duration of the AIDOaRt project with a focus on AI-augmented automation supporting modelling, coding, testing, monitoring and continuous development in Cyber-Physical Systems (CPS). All tasks of WP6 are aimed at maximising the impact of the project in order to disseminate the project results widely, establish scientific collaboration and ensure wide adoption of the AIDOaRt approach through various dissemination and exploitation activities.

This interim version of the dissemination deliverable reports on the work of Task 6.1 “Project website, community building and social media”, Task 6.3 “Dissemination”, Task 6.4 “Standardisation” and Task 6.5 “Collaboration with other EU projects” from M12 to M23.

This deliverable contains 5 main sections. It outlines the scope and structure in Section 1 Introduction, and then it follows in Section 2 from the communication plan review and updates as a response to the reviewers' recommendation 10 of "The communication plan needs to be updated and followed up". Section 3 reports on the dissemination activities implemented during this reporting period, including publications, event organisation and participation, and online channels performance review. In addition, considering that publications are also exploitation assets for academia, more information on AIDOaRt publication impact analysis will be found in the D6.7 Exploitation report which demonstrates the indispensable relationship between dissemination and exploitation. Section 4 presents progress in the standardisation work. Finally, Section 5 reports on the collaboration with other EU-related projects. It highlights the activities carried out in response to the reviewer's recommendation 11 that "the report on dissemination activities should be expanded in the future to include information on the communities addressed". The last section concludes the efforts from all the tasks and future plans.

2. Communication Plan Review and Update

The first version of the communication plan was submitted in Month 3 as an initial guide for communication and dissemination activities. As the project progresses, the communication plan will need to be refined to fully reflect the deepening understanding of the results generated during the project. The Grant Agreement requires that "the communication plan must be updated as a living document". In addition, a clear structure of a communication plan is needed as a reference to check its effectiveness as an action plan.

In the first section of deliverable D6.3, It reorganised the structure to provide an overview of the communication objective and strategy, which is the core of the communication plan.

In this interim version of the dissemination report deliverable, we continue to enrich the content of a communication plan by adding the missing part while avoiding repetition in D6.2 and D6.3. See Figure 1: The visualisation of the communication plan update

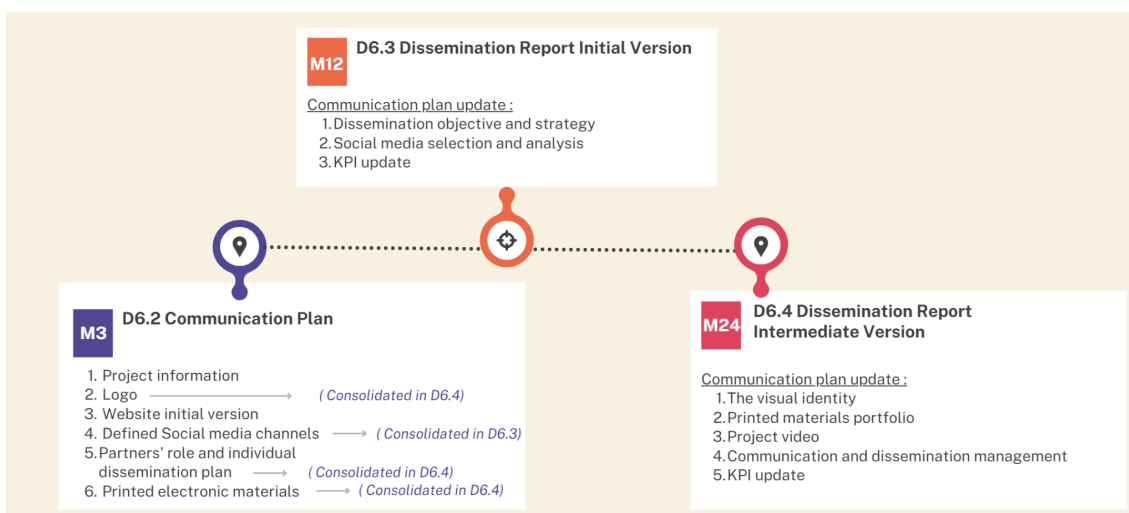


Figure 1: The visualisation of the communication plan update

2.1 The visual identity

The visual identity is all of the imagery and graphical information creating the predominant communication impression of the project. It should consist of a palette,

logos, etc. to convey a consistent visual message to the target audience. The first version of the communication plan solely featured the project logo as a component of the overall project visual identity, followed by the visual identity development rules of appropriate, clear, simple, timeless and functional, a series of templates, fonts, lock screens and marketing materials were integrated into the visual identity in following sections from 2.1.1 to 2.1.3.

2.1.1 Project brand colour

The project's brand identity was briefly introduced in D6.3; in the version of the updated communication plan, the colour palette was extended into three primary and six complementary colours, which set the tone of the visual identity more comprehensively. The AIDoArt project, as a follow-up to the MegaMart project, is conducting research in the field of artificial intelligence, model-driven engineering and cyber-physical systems. The 3 primary colours (red, orange and blue) represent the respective domains and hint at the precedent project MegaMart. The six complementary colours were extracted from previous dissemination materials to harmonise the overall visual impression. The RGB and CMYK of the palette are as follows (Figure 2).

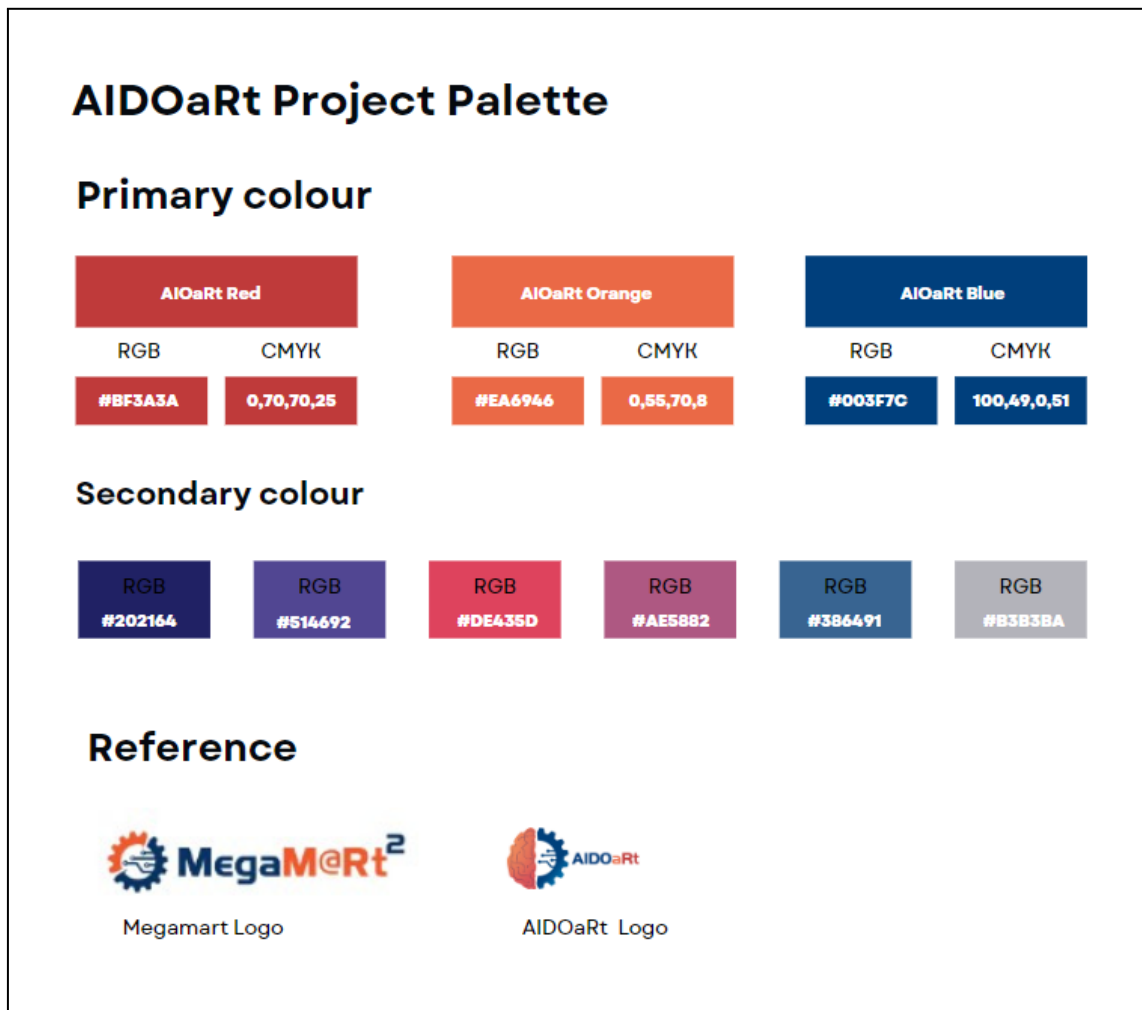


Figure 2: AIDOart project brand colours

2.1.2 Templates and others

The templates of the project are widely used in the project meetings, deliverables, documents and external events, which play a vital role in project communication. The PowerPoint (Figure 3) and Word document (Figure 4) templates have been updated. The lock screen (Figure 5) is used during online meetings and other events. The design follows the visual identity development rules in Section 2.1.

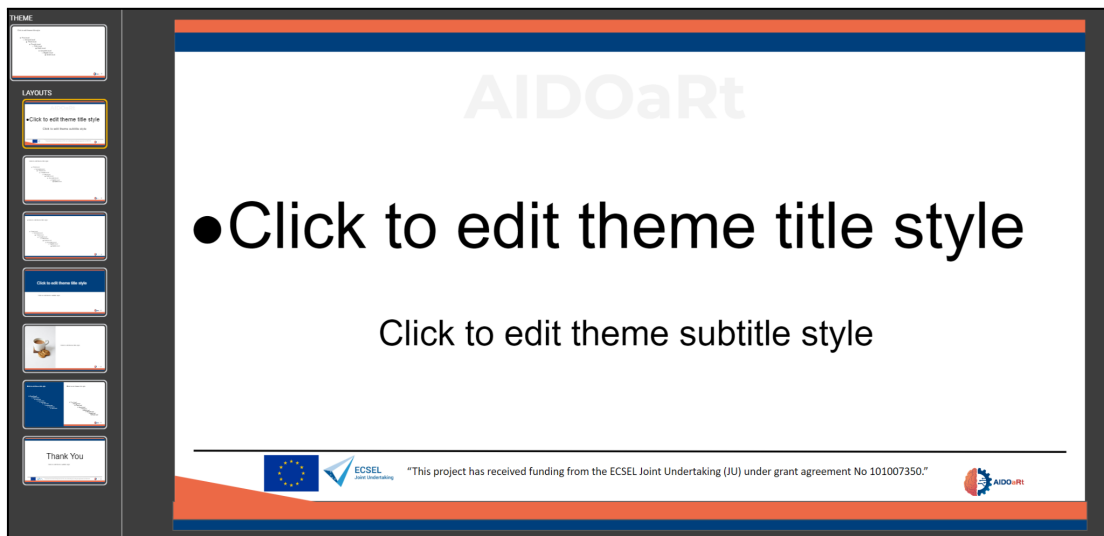


Figure 3: Powerpoint template

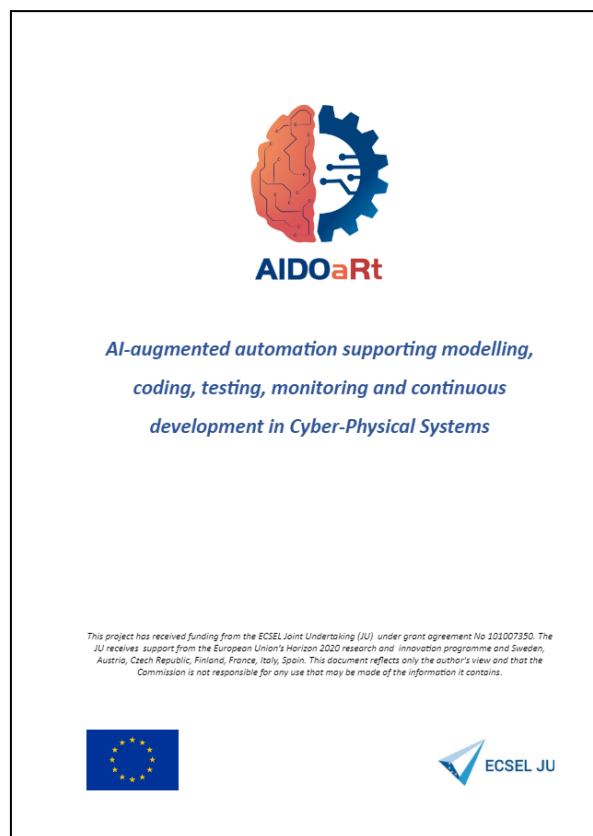


Figure 4: Word document template

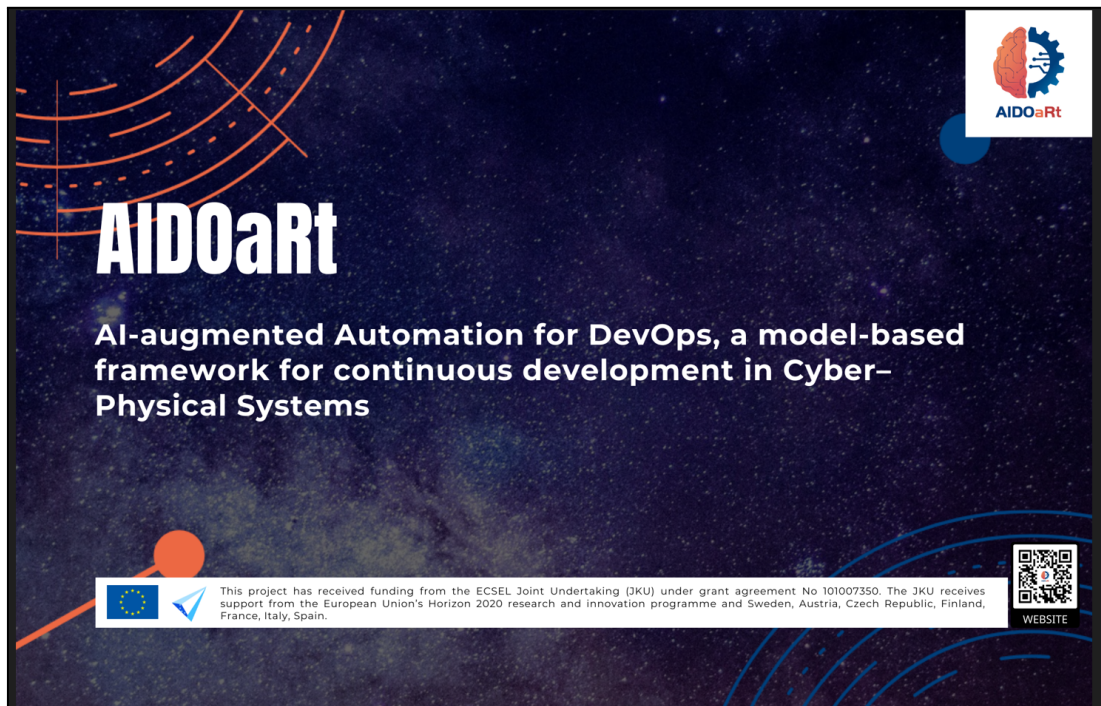


Figure 5: Lock-screen and visual meeting background

2.1.3 The consistency in all materials

Using the same design patterns, styles and elements throughout the life of a project is the best way to deliver consistent visual messages to target audiences. This includes using the same colours, icons and layout across different screens, pages and elements of the visual identity. The following sections of the communication plan show how this rule is applied in other areas such as web design, printed materials, project videos, etc. Consistency in design helps to establish a brand identity and creates a more polished and professional look and feel for the project. We also highlight this rule in the updated communication plan for better execution in the following activities.

2.2 Printed materials portfolio

Promotional material is a powerful tool for spreading the word using consistent visual language and tailoring the content to the target audience. In the first year of the project, we produced the project introduction and the poster. However, the first version of the communication plan did not include planning for the promotional materials. Opportunities to promote the project at industrial events and scientific

conferences require dedicated printed materials to reach the stakeholders and make a lasting impact. Especially as we mentioned in the Dissemination and Communication Strategy Map in Deliverable 6.2, during phase II from Month 13 to Month 23, the aim is to boost the potential impact, which means more exposure by handing out printed materials in the portfolio of printed materials, including the project leaflet and the project brochure. Meanwhile, with increased participation at various events, the project posters and roll-ups are used to promote the project to the general public.

1. Project leaflet: It provides a concise overview of the project's basic information in a casual manner. Leaflets offer a significant advantage of affordability, making it possible to distribute them widely to the public. Size: 99 x 210 mm.Tri-folds. [Download](#)

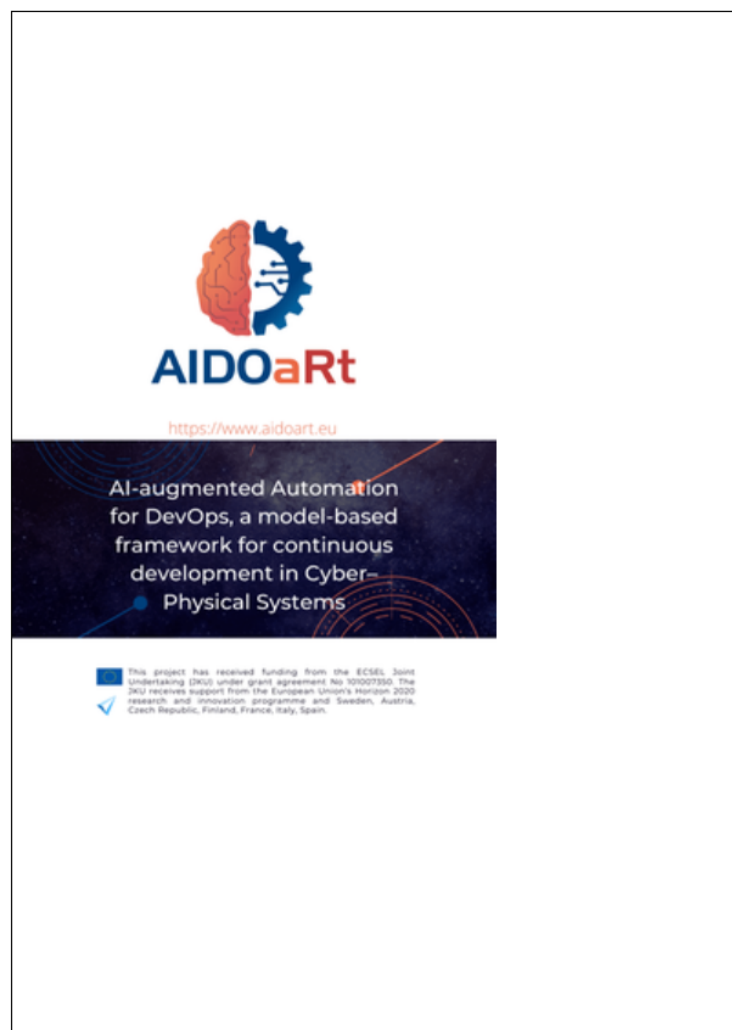


Figure 6: AIDoArt project leaflet

2. Project brochure: The project brochure includes the project and use cases overview. The brochure is a pamphlet that contains more detailed information about the project, compared to the leaflet, the AIDoArt brochure not only presents the general information of the project such as project overview but also project figures, expected impact, objectives, consortiums and more information about use cases, hackathon challenges and results etc. It is printed on high-quality pages and distributed at events to give the audience a deep insight into the project. Size 210 x 297 mm. 23 pages. [Download](#).

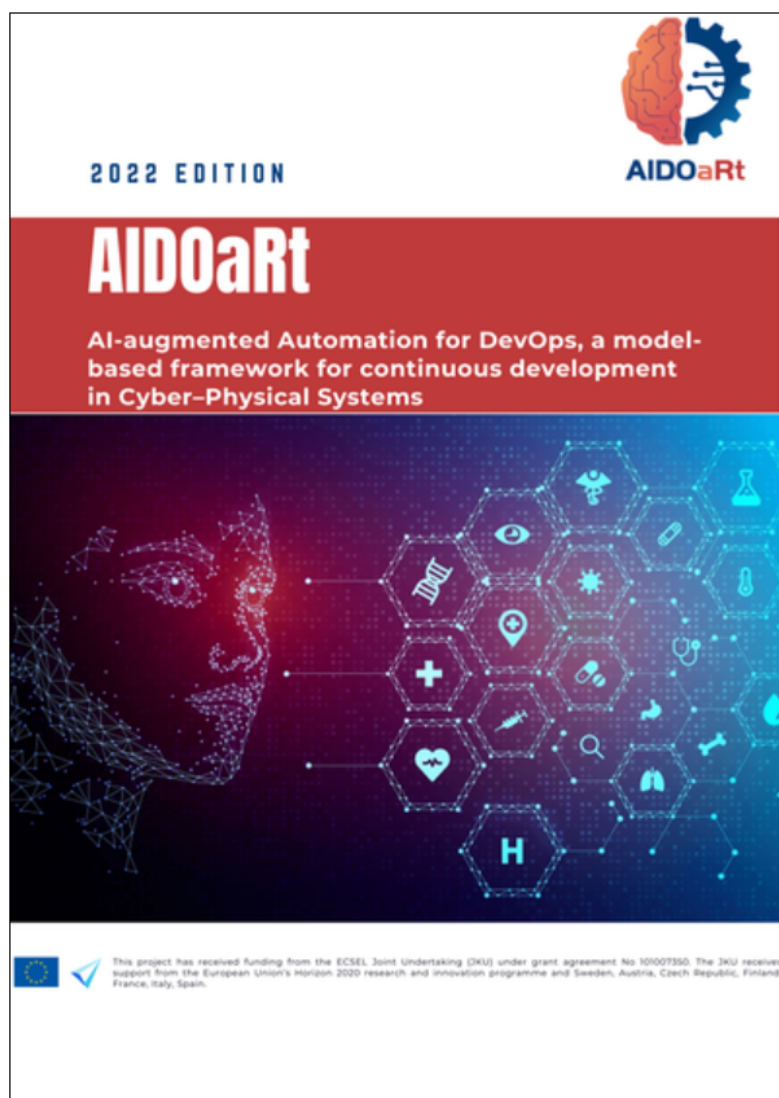



Figure 7: AIDoArt project brochure

3. **Project poster (project introduction):** The AIDOaRt project poster states its objectives and its expected impact. In addition, it provides descriptive information in terms of figures, consortium members, and contact information. Size A0, 841mm x 1189 mm.



AIDOaRt
AI-AUGMENTED AUTOMATION FOR DEVOPS, A MODEL-BASED FRAMEWORK FOR CONTINUOUS DEVELOPMENT IN CYBER-PHYSICAL SYSTEMS

AIDOaRt is a large European collaborative project that aims at providing AI-augmented automation capabilities to better support the modeling, coding, testing, monitoring, and continuous development of CPSs (Cyber-Physical Systems). The project proposes to combine Model Driven Engineering principles and techniques with AI-enhanced methods and tools for engineering more trustable CPSs.

OUR OBJECTIVES

- 1 Providing a model-based framework to support the CPS development process by introducing AI-augmented automation.
- 2 Enhancing the DevOps toolchain by employing AI and Machine Learning (ML) technique in multiple aspects of the system development process (such as modeling, coding, testing, and monitoring).
- 3 Supporting the monitoring of runtime data (such as logs, events, and metrics), software data, and traceability (Observe). Analyzing both data of historical and real-time data (Analyze) and the automation of functionality (Automate).

PROJECT FIGURES			
FUNDING	COUNTRIES	USECASE	PARTNERS
22.5M EURO	7	18	31

EXPECTED IMPACT

AIDOaRt proposes enhancing the engineering process with AI-augmented methods (A IOps), integrating DevOps and Model-Driven Engineering (MDE) principles, and observing and analyzing collected data from both runtime and design time artifacts in rapid CSE cycles.

We expect an industrial uptake of AIDOaRt technologies on the development of complex systems that scales up to real systems demand with relevance for all critical applications.

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Figure 8: AIDOaRt project poster

4. **Project poster (use cases):** This poster contains 2 pages of size A0 with information on the project use cases. Size A0 841mm x 1189 mm. [Download](#).

AIDOaRt USE CASE OVERVIEW 1

AIDOaRt project composes of 31 partners (7 large enterprises, 11 small and medium-sized enterprises, 10 academic partners, and 3 research institutes).

10

10 partners are classified as use case provider

21

21 partners are classified as solution provider

The collaboration between use case providers and solution providers has been boosted in various ways. Getting to know the use cases directly!

AI-supported Digital Twin Synthesis supporting vehicle development and testing for novel propulsion systems

The AVL use case consists of several main tasks along with AI-augmented methods for modeling (vehicle design phase), vehicle development and test (including verifying testing equipment and testing methods) and vehicle operation (including data acquisition). DevOps loops are essential and will be performed with a higher frequency between development/test and operation and a somewhat lower frequency between operation and design.

Use case provider: AVL

SPMP-Smart Part Platform monitoring

ProDevops case study is a smart platform in charge of monitoring the activities of a port in real time through the analysis of data coming from sensors (IoT) and information systems (legacy and external systems). This platform is a data intensive system that receives and analyzes thousands of data per second using big data technologies running in virtual machines of containers on premise or on cloud infrastructures.

Use case provider: ProDevops

Atelier B-Machine learning in interactive proving

Developed by ClearSy, Atelier B is an industrial tool that allows for the operational use of the B Method to develop defect-free proven software (formal software). For this use case, machine learning can help engineers in some aspects of the B development. The goal is to develop a module within the interactive prover that can learn interactive theorem proving from the developer and adapt it to unworked proofs of the system.

Use case provider: ClearSy

Safely-critical systems in the automotive domain using disruption technology

A modern car could be considered a CPS because it is a cybernetic system (as the modern cars) and is equipped with sensors for acquiring inputs from the environment. In this use case, the sensors are going to be the video cameras that can be used instead of the rear-view mirror.

The main goal of this use case is to study an approach for the analysis of the requirements and the verification of functionalities at the requirements and modelling phase.

Use case provider: Abinsula

Agile process and Electric/Electronic Architecture of a vehicle for professional applications

This case study applies DevOps for developing a cloud-enabled Prognostics and Health Management System (PHM). The PHM is in charge of monitoring, diagnostics, and preventive maintenance of the onboard electronics. The system applies to the vehicle, which is an electric minivan prototype built up integrating COTS and in-house components, as well as the payload.

Use case provider: T3NE

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AIDOaRt USE CASE OVERVIEW 2

Data modeling to support product development cost and efficiency

Volvo CE use case involves customizing standards model based frameworks and languages e.g. OMG standards (UAF, SysML, etc) to model system, software, information architectures. Additionally, VCE use case involves integrating AI based data analytics to enhance configuration of software, as well as support overall architecture decision process towards a model based DevOps framework.

Use case provider: Volvo CE

AI for Traffic Monitoring Systems

In CAMEA, the systems of traffic monitoring are video-based (reading license plates), radar-based (detection of objects and measuring their speed). The main goal of this use case is targeting to low-power requirements using some of following proposed techniques suitable (embedded) platform, pre-processing of data, balancing between load and power consumption, and AI guided configuration and setup.

Use case provider: Cameta

AI DevOps in the restaurants business

The starting point of the Case Study is based on Hil Iberia's TAMUS, an application that is used in 100+ restaurants over Spain but relies on much manual work of a dedicated team of developers for development, building, deployment, monitoring of operations and redesigns of the system. The overall goal is to provide automation of many of these processes while at the same time bridging the methodology of the operation to a more consistent DevOps workflow.

Use case provider: Hil Iberia

Railway Propulsion System Design

The potential outcomes of this use case are improved design and development chain resulting in a more effective process, optimized solution customization, simulation and NAW test facilities, standards certification support, reduction of the overall costs, i.e. time to market, maintenance and life-cycle costs, monitored operations, energy efficiency, etc.

Use case provider: Alstom

Embedded systems for data communication

In the AIDOaRt project Westerns desires to improve all aspects of the development and continuous integration and to (i) increase the flow in the development process (e.g. by automating steps in the process), as well as (ii) increase the product quality (e.g. by improving the quality processes). The "user" could be (a) the development teams during development, and (b) project management that inspects if quality is in shape for release.

Use case provider: Westerns

The application of use cases across the area of Automotive, Aerospace, Railway, Maritime, Construction, Digital Life and Manufacturing.

In AIDOaRt, various domain-independent DevOps phases are the focus of interest, namely AI-augmented Requirement Analysis, AI-augmented Modeling, AI-augmented Coding, AI-augmented Testing and AI-augmented Monitoring and each use case provider participates in one or more of these DevOps phases. This set of phases has been used to structure and deliver the provided Use Case Requirements accordingly.

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Figure 9: AIDOaRt project poster use cases

5. Project roll-up: The project roll-up increases the project's visibility at events, seminars, project meetings etc. It has been strategically placed in high-traffic areas to attract the attention of attendees and promote the project. Together with the project poster (use cases), to provide the information of the project. It creates a professional look for the project and also enhances the ambience of the booth (see Figure 12, the project roll-up in the AIDOaRt Project booth at EFCS 2022).





AIDOaRt

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AIDOaRt proposes enhancing the engineering process with AI-augmented methods (AIOps), integrating DevOps and Model-Driven Engineering (MDE) principles, and observing and analyzing collected data from both runtime and design time artifacts in rapid CSE cycles.

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AIDOaRt

EUROPEAN EXCELLENCE IN CONTINUOUS SYSTEM ENGINEERING AND AIOPS PROJECT

AIDOaRt CONCEPTUAL ARCHITECTURE



EUROPEAN EXCELLENCE IN CONTINUOUS SYSTEM ENGINEERING AND AIOPS

The overall AIDOaRt infrastructure consumes different kinds of data, including notably runtime data (e.g., IT monitoring, log events, etc.) and design data produced during the software development process (e.g., software models, design documentation, traceability information, source code, etc.). All the collected data will be processed, translated into an internal model-based representation, and then collected in a shared repository (cf. the Data Collection & Model-based Representation component). The Model-based Core infrastructure component is intended to support the standard DevOps practices by efficiently combining software development and IT operations.

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Project Manager: Dr. Ingrid Isenhardt, ingrid.isenhardt@univie.ac.at

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Figure 10: AIDOaRt project roll-up

6. Solution brochure: This is the last printed material in planning and its aim is to, at the end of the project, sort out the solution provided by the AIDOaRt project and facilitate the commercialization towards the external customers. This brochure is planned to be launched at M32.

2.3 Project video

A video is a practical approach to representing the project. Videos are catching and informative, but on the other hand, they are time-consuming in planning and implementation. They need to be well planned ahead, with specific skills and devices. There are two types of videos we have launched or planned during the project lifespan.

1. Hackathon Interview

Hackathons have been featured as an effective approach to bridging the gap between use case providers and solution providers. We plan to have at least 2 hackathon interviews with the winners' teams to uncover how the use case providers and solution providers collaborate, the challenges they faced and the final results. The first hackathon interview with the 2 winners' teams was launched after the second AIDOaRt hackathon on the AIDOaRt Youtube channel. [Watch the video.](#) The second hackathon interview is planned for the next hackathon in May or October 2023 in conjunction with the plenary meeting.



Figure 11: AIDOaRt Second Hackathon Interview

2. Project video

This video provides a general understanding of the project, explaining the motivation and vision, project objectives, concept and methodology, use cases and expected impacts of the project. The target audience could be the general public, the research community such as those related to artificial intelligence, model-driven engineering or cyber-physical systems and authorities or public bodies in the field.

The pilot version of the project video has been played at the EFES¹ 2022 event, reaching up to 6000 viewers. Part of the hackathon interview had been included in this pilot version video, however, in order to present a full picture of the project as described at the beginning of this section. The interview with the technical leader, use case providers, and other relevant project members are planned for May in connection with the plenary meeting in Sweden when sufficient resources are available. The final project video will be reported in the next deliverable.



Figure 12: AIDoArT Project booth at EFES 2022

¹ EFES (European Forum for Electronic Components and Systems) is the international forum to create impact through collaborative innovation for an autonomous and sustainable Europe along the Electronic Components and Systems value chain in Europe.

2.4 Communication and dissemination activity management

The initial version of the communication plan did not mention the management and monitoring of the communication and dissemination activities. Mälardalens University (MDU) is appointed as the task leader of dissemination and communication. As the results will come from the efforts of all partners, to effectively monitor the other partners' contribution, a monitoring mechanism with 3 tools has been designed.

The dissemination monitoring tool (Figure 13) is designed to report and manage the dissemination and communication activities that all partners have carried out every 3 months. We are monitoring the publications accepted, submitted and published; participation in dissemination events; press releases; thesis; and social media posts created by partners. At the same time, we are collecting supplementary information such as potential venues, journals and stakeholders from partners to build the AIDoArT communication database to better disseminate the project in general.

AIDoArT - H2020 ECSEL - Project n. 101007350																	
Dissemination Activities monitoring tool - Dissemination Activities																	
Report Period 11 Dissemination Activities Duration: Jan. 1st - Dec. 31 st 2022																	
Added by	Event Name	Type of Events	Event Details							Proof of Dissemination					Related WP		
			Time		Destination	Type of Action	Detailed Action	Organizer	Participants' names	Partner(s)	Event Website link	Agenda	Event Participants	Dissemination Materials		Social Media post	Others
Please write your email in case of any question or clarification about the activity	please provide the full name of this event	please choose from the dropdown	From	To/End	(City, Country or online)	What have you done/doing, poster presentation, paper presentation, video, etc.	The goal of your action, by the name of where presentation, journal, etc.	The names of the organizations and the email of the contact person	This refers to participants from projects	Partners involved	PDF or link	Full list of Participants from organizer	Public release, recording, audio, images, uploaded files, news for the	Post from event organizer, screenshot, partner accounts or individual accounts	Press Release, TV etc		
	Presentation at the Ethics4EU 3rd Workshop - Digital Ethics: Can we do better? - Workshop	workshop	14/06/2021	14/06/2021							http://ethics4eu.eu/3rd-workshop/	NA	https://ethics4eu.eu/3rd-workshop/	https://ethics4eu.eu/3rd-workshop/	https://ethics4eu.eu/3rd-workshop/	WP6	
	2021 IEEE International Conference on Software Testing, Verification and Validation Workshops (ICSTW)	conference	12/04/2021	12/04/2021							https://icst2021.thredd.com/icst2021/	https://icst2021.thredd.com/icst2021/	https://icst2021.thredd.com/icst2021/				
	International Conference on Embedded Computer Systems: Architecture, Modeling and Simulation	conference	05/07/2021	07/06/2021							https://emcs2021.thredd.com/emcs2021/	NA	https://emcs2021.thredd.com/emcs2021/	https://emcs2021.thredd.com/emcs2021/			

Figure 13: AIDoArT dissemination tool

Secondly, a dissemination KPI checklist (Figure 14) is used to facilitate partners to self-check their dissemination activities over the last 3 months. The KPI checklist has three main sections to inspect the relevant information required to complete the dissemination tool. This checklist allows partners to demonstrate their efforts in a traceable way and to avoid omissions.

Section 1 of 6

AIDOaRt - Dissemination KPI Check List (October 1st- December 31st 2022)

Why do I need to mark this checklist?

1. This checklist helps you to self-check the dissemination activities during the past 3 months in your organization.
2. It also makes it easier for us to track which organizations have responded to dissemination activities. Your answer represents the contribution of your organization.

This checklist comprises 5 sections, it takes between 2-3 minutes.

If you don't have any to report in the 3 main sections (Publication and Dissemination Activities/Marketing Activities/ Information Collection, please go directly to the last section" we don't have KPI to report")

Email *

Valid email

Figure 14: dissemination KPI checklist

Last but not least, the dissemination efforts will be summarised in the form of a newsletter and shared with partners and stakeholders. See Figure 15 as an example.

AIDOaRt Project Dissemination Report
(April 1st to June 31st.2022)



Dear Partners,

We hope you enjoy the great summer. The communication team of AIDOaRt project initiates the dissemination report (Activities from April 1st to June 31st.2022) in a new way to demonstrate the efforts of all partners.

We have gained sustainable outcomes in the past 3 months. The number of publications that have been accepted or submitted peaked at 12. Click the link to the social media post of those publications below to interact with us!

PUBLICATION

IMT publication 1, 2	TUG publication1, 2
SOFT publication	JKU publication
UOC publication	ABO publication 1,2,3

THESIS

[1 bachelor's thesis has been supervised by partner Westermo, MDU](#)

[1 Master's thesis has been supervised by partner Westermo,RISE](#)

PRESS RELEASE

[press release](#) from partner UOC, introduced the technological proposal that aims to generate the code that will act as a link between the CMS and the development of new applications funded by the AIDOaRt project.

EVENT PARTICIPATION

Partners SOFT, UOC, UNIVAQE, AST, and TUG have actively participated in different events, please find the event participation on website [here](#).

SOCIAL MEDIA ENGAGEMENT

Partners INT, ABI, UOC, ROTECH also reported [social media posts](#) of the project on their social media channels.

EVENTS AND POTENTIAL VENUES

Last but not least, [the Forum on specification & Design Languages \(FDL'22\)](#) will be held in Linz, Austria, 14-16 Sep. 2022. Hope this information identified by SOFT will benefit your research work as well!

Thanks for your great contribution to the dissemination of AIDOaRt project.

Figure 15: AIDOaRt project dissemination report

The dissemination task leader is in charge of the regular reporting to the EC. The dissemination task leader, along with the project assistant, is checking the regular reporting from the partners and then uploads the data to the portal every three months. In addition, the dissemination task leader is checking the KPIs in the proposal before and after each review meeting with the WP6 leader to ensure proper synchronisation of communication reporting to the EC. The AIDOaRt dissemination monitoring and reporting workflow is shown in Figure 16.

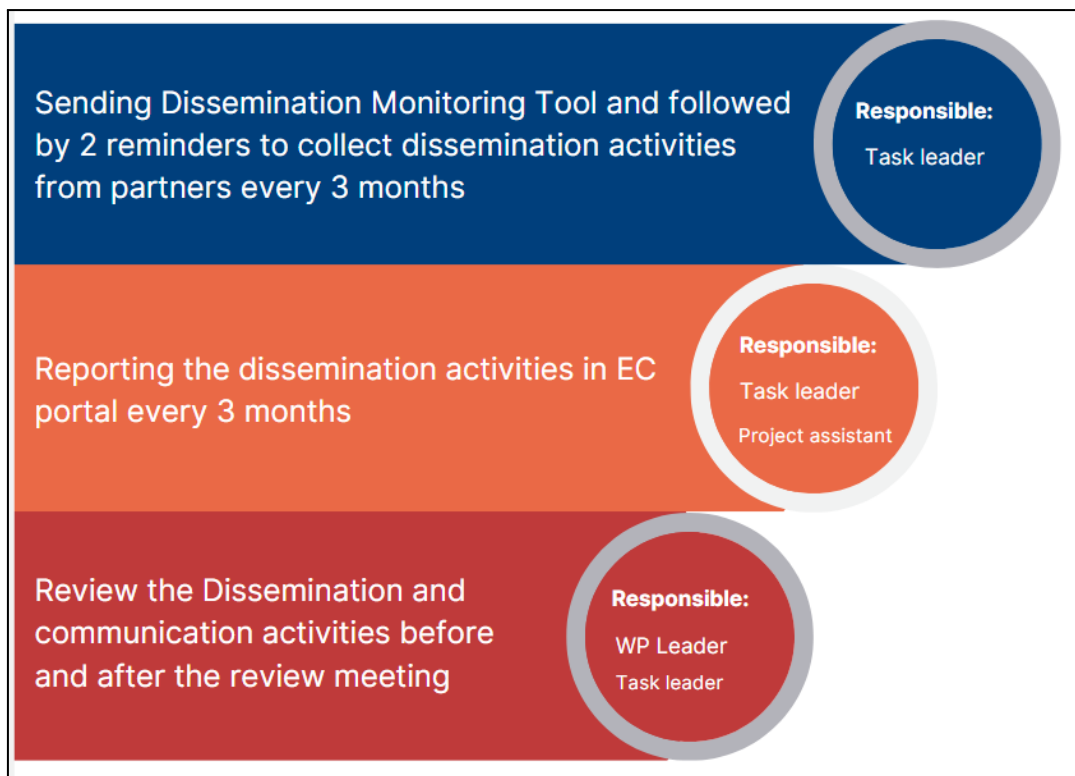


Figure 16: AIDOaRt dissemination monitoring and reporting workflow

2.5 KPIs update

KPI (the key performance index) has been adopted to evaluate the dissemination results in the proposal. As the project unfolds, some of the KPIs can not reflect the performance accurately. After the discussion with reviewers in the last review meeting, we revised the KPIs for social media (See Table 1 and Table 7). The KPIs of M23 have been reported in Table 1.

Measure	Indicators	Target	Timeline	Current Progress
Project website	No. of unique visits per year	≥1k	M24	7497
Trade fairs	No. of regional or international trade fairs where we've participated directly or indirectly as exhibitors	≥25	M36	18
Business meetings	No. of meetings in which AIDOaRt is mentioned for at least 5 minutes.	≥30	M36	18
Technical dissemination	No. of conference presentations, including poster sessions	≥30	M36	19
	No. of journal publications	≥15	M36	6
	No. of organised workshops	≥4	M36	2
Press releases	No. of press releases and interviews	≥25	M36	8
Social media	Size of the community, that is, total no. of Twitter/LinkedIn/YouTube followers and subscribers ²	≥5k	M36	N.A.

Table 1: KPIs in D6.2 Communication Plan

3. Dissemination Activity Overview (Month 23)

In Section 1 Communication Plan Review and Update, we have reported on how the communication and dissemination activities will be managed in terms of the participation of 31 partners. They are required to report individual dissemination

² The social media KPI has been revised in the first review meeting, the KPI of 5k followers and subscribers is not a realistic number according to statistics of previous EU projects. Please refer to the social media KPIs in Table 7.

activities, namely, the publication and event participation every 3 months. The following sections 3.1 and 3.2 provide an overview of all the activities.

3.1 Publications in Journal and other

From April 1st 2022 to February 28th 2023, 23 publications have been reported, 17 of them have been published, one has been accepted, and 5 of them have been submitted. See Table 2.

Publications				
Title	Authors	Title of the Journal/Proceedings /Books/(for book chapters)	Category	Ref.
AIDOaRt: AI-augmented Automation for DevOps, a Model-based Framework for Continuous Development in Cyber-Physical Systems	Hugo Bruneliere Vittoriano Muttillio, Romina Eramo, Luca Berardinelli, Abel Gomez, Alessandra Bagnato, Andrey Sadovykh, Antonio Cicchetti	Microprocessors and Microsystems	Journal	[1]
Enabling Content Management Systems as an Information Source in Model-Driven Projects	Joan Giner-Miguel, Abel Gómez, Jordi Cabot	Research Challenges in Information Science 16th International Conference, RCIS 2022, Barcelona, Spain, May 17–20, 2022, Proceedings	Publication in conference proceedings	[2]
Towards a DSL for AI Engineering Process Modeling	Sergio Morales, Robert Clarisó, Jordi Cabot	International Conference on Product-Focused Software Process Improvement PROFES 2022:	Publication in conference proceedings	[3]

		Product-Focused Software Process Improvement pp 53–60		
DescribeML: a tool for describing machine-learning datasets	Joan Giner, Abel Gómez, Jordi Cabot	MODELS '22	Publication in conference proceedings	[4]
The Westermo test results data set	Per Erik Strandberg	Arxiv	Other (dataset and technical report)	[5]
Towards blended modeling and simulation of DevOps processes: the Keptn case study	Alessandro Colantoni, Luca Berardinelli, Antonio Garmendia, Johannes Bräuer	MODELS '22	Publication in conference proceedings	[6]
Software assistants in software engineering: A systematic mapping study	Maxime Savary-Leblanc, Lola Burgueño, Jordi Cabot, Xavier Le Pallec, Sébastien Gérard	Software: practice and experience	Journal	[7]
Teaching and Training in Formalisation with B	Thierry Lecomte	Formal Methods Teaching Workshop FMTea 2023: Formal Methods Teaching pp 82–95	Publication in conference proceedings	[8]
Falsification of Multiple Requirements for Cyber-Physical Systems Using Online Generative Adversarial	Jarkko Peltomäki, Ivan Porres	2022 IEEE International Conference on Software Testing, Verification and Validation Workshops (ICSTW)	Publication in conference proceedings	[9]

Networks and Multi-Armed Bandits				
WOGAN at the SBST 2022 CPS Tool Competition	Jarkko Peltomäki, Frankie Spencer, Ivan Porres	2022 IEEE/ACM 15th International Workshop on Search-Based Software Testing (SBST)	Publication in conference proceedings	[10]
Wasserstein Generative Adversarial Networks for Online Test Generation for Cyber Physical Systems	Jarkko Peltomäki, Frankie Spencer, Ivan Porres	SBST '22: Proceedings of the 15th Workshop on Search-Based Software Testing	Publication in conference proceedings	[11]
Stateful Black-Box Fuzzing of Bluetooth Devices Using Automata Learning	Andrea Pferscher, Bernhard K. Aichernig	NASA Formal Methods Symposium NFM 2022: NASA Formal Methods pp 373–392	Publication in conference proceedings	[12]
Towards AIDOaRt Objectives via Joint Model-based Architectural Effort	Bilal SAID, Andrey SADOVYKH , Etienne BROSSE and Alessandra BAGNATO	Joint Proceedings of RCIS 2022 Workshops and Research Projects Track co-located with the 16th International Conference on Research Challenges in Information Science (RCIS 2022)	Publication in conference proceedings	[13]
Towards continuous modelling to enable DevOps: a preliminary study with	Johan Bergelin, Antonio Cicchetti	MODELS '22	Publication in conference proceedings	[14]

practitioners				
Industrial Requirements for Supporting AI-Enhanced Model-Driven Engineering	Johan Bergelin, Per Erik Strandberg	MODELS '22	Publication in conference proceedings	[15]
AI-augmented Model-Based Capabilities in the AIDOaRt Project: Continuous Development of Cyber-Physical Systems	Alessandra Bagnato, Antonio Cicchetti, Luca Berardinelli, Hugo Bruneliere, Romina Eramo	26th Ada-Europe International Conference on Reliable Software Technologies (AEIC 2022)	Publication in conference proceedings	[16]
Verification of Neural Networks: Challenges and Perspectives in the AIDOaRt Project	Romina Eramo, Tiziana Fanni, Dario Guidotti, Laura Pandolfo, Luca Pulina, Katuscia Zedda	Proceedings of the 10th Italian workshop on Planning and Scheduling (IPS 2022), RCRA Incontri E Confronti (RiCeRca 2022)	Publication in conference proceedings	[17]
Accepted Articles				
Title	Authors	Title of the Journal/Proceedings /Books/(for book chapters)	Category	Ref.
Application de l'Ingénierie des Exigences basée sur les Modèles dans Trois Grands Projets Collaboratifs Européens: Un Rapport d'Expérience	Andrey Sadovykh, Hugo Bruneliere, Dragos Truscan	INFORSID 2022	Publication in conference proceedings	[18]

Table 2: Publications in journals and others

3.2 Event participation and organisation

3.2.1 Event participation

During period II from April 1st 2022 to February 28th 2023, AIDOaRt partners participated in 25 events (the average rate is twice per month), 6 workshops, 13 conferences, and 6 exhibitions. Compared with the event participation in the last reporting period. (From April 2021 to February 2022), there was more participation in business events which meant that we made significant progress in promoting the project to the industry.

Event name	Type of Event	Time	Actions
Challenges and New Approaches for Dependable and Cyber-Physical System Engineering (DeCPS 2022)	workshop	9/5/2022	Paper presentation (Peltomäki) Publication ref [10] [11]
16th International Conference on Research Challenges in Information Science	workshop	19/5/2022	Paper and Presentation Publication ref.[14]
Challenges and New Approaches for Dependable and Cyber-Physical System Engineering (DeCPS 2022)	workshop	17/06/2022	Paper and Presentation Publication ref.[14]
National Workshop for Technology Transfer and Higher Education - Embedded Systems & Smart Manufacturing (ESSM) Laboratory	workshop	24/05/2022 to 27/05/2022	Tool demo and poster session

NASA Formal Methods - 14th International Symposium	conference	24/05/2022-27to 05/2022	Paper Presentation Publication ref [12]
16th International Conference on Research Challenges in Information Science (RCIS)	conference	17/05/2022 to 20/05/2022	Paper Presentation Publication ref [2]
Software Quality Days	conference	18/05/2022	Project Presentation
Teconomy	exhibition	11/05/2022	Company booth and project promotion
Automatica München	exhibition	24/06/2022	Company booth and project promotion
3rd Symposium on Dependable Internet of Things in Adverse Environments	conference	22/09/2022	Presentation, Poster Session and Demo Publication Ref.
PROFES, the International Conference on Product-Focused Software Process Improvement 2022	conference	21/11/2022 to 24/11/2022	Paper, Presentation Publication Ref.[3]
ACM / IEEE 25th International Conference on Model Driven Engineering Languages and Systems (MODELS)	conference	23/10/2022 to 28/10/2022	Technical Track, Tools and Demonstrations

Midwest Dreaming	conference	20/7/2022	Tool and demonstration
Dreamforce	conference	23/10/2022	Technical Track, Tools and Demonstrations
Sustainable Places 2022	conference	06/09/2022 to 09/09/2022	Presenting the project
Smau Milano	conference	11/10/2022 to 12/10/2022	Presenting the project
R.i.C.e.R.c.A: RCRA Incontri E Confronti	workshop	29/11/2022	Paper, Presentation publication ref. [17]
Women in Tech	conference	12/11/2022	Project Presentation/Booth/demo
European Forum for Electronics Components and Systems (EFECS)	exhibition	24/11/2022 to 25/11/2022	Project booth, project promotion and demos.
HiPEAC 2023	exhibition/broker event	16/01/2023 to 18/01/2023	Project booth, project promotion
AVL Research Networking Day 2022	workshop	17/10/2022	Presented results of AVL's RDE UC from AIDoArt project
ERFA Digital Engineering DigitalTwin	workshop	22/9/2022	Project presentation
AutomationSTAR	conference	17/10/2022 to 18/10/2022	Project promotion
ERFA Software-Qualität	conference	24/11/2022 to 25/11/2022	Project promotion
Forum Maschinenbau	exhibition	26/1/2023	Project promotion

Table 3: Event Participation

3.2.2 AIDOaRt Hackathon

The AIDOaRt Hackathon is a novel method that takes on the role of gathering internal resources to enable the involved collaborators in gaining a deep insight and/or a speed up on the solution of a critical problem. The internal hackathon provides an effective approach to creating positive synergies between UC and solution providers. It helps solution providers to define and develop specific solutions (tools, technical components, methodologies that meet UC needs and facilitates direct collaboration with UC vendors. The AIDOaRt hackathon has been organised three times in conjunction with a plenary meeting. The dissemination was done accordingly.

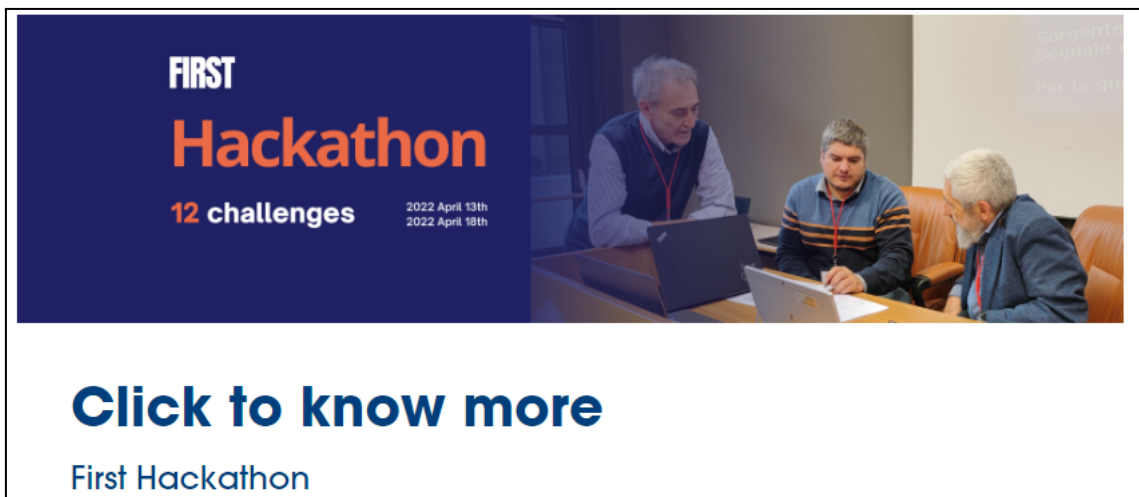


Figure 17: First hackathon [webpage link](#)

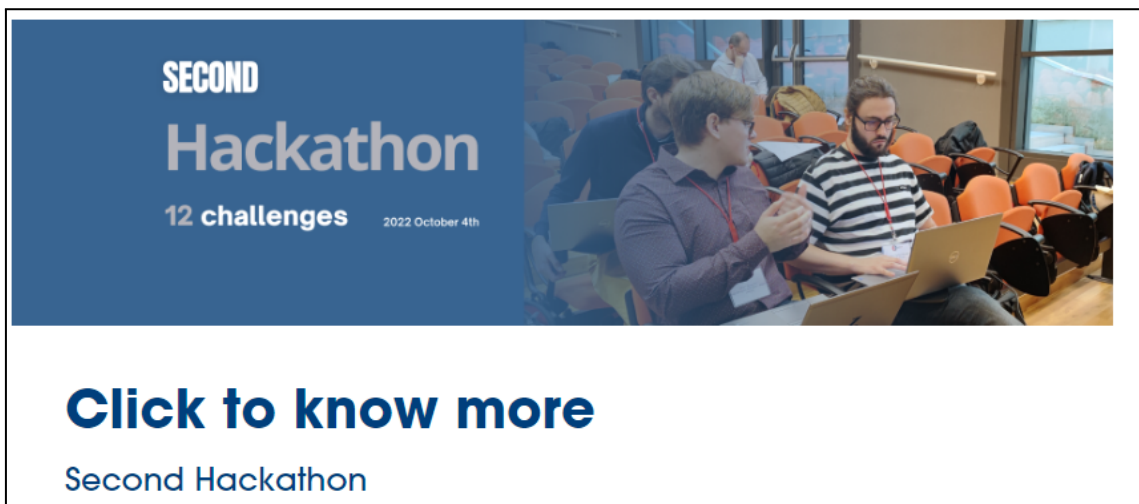


Figure 18: Second hackathon [website link](#)

This self-organised event was reported in the Inside magazine, which was distributed to more than 700 inside association members, and at the EF ECS 2023 brokerage event, reaching more than 7000 participants. [Online link.](#)



Figure 19: Inside magazine AIDOaRt hackathon article cover

For further dissemination activities, please refer to section 3.3.2 Social Media.

3.3 Online Channels

In this section, we will delve into the performance of the AIDOaRt online channels: website and social media platforms. This report introduces the KPIs established for all of these channels. These KPIs are being monitored monthly through the analytics section of the social platforms themselves, through Google Analytics, [PageSpeed Insights](#) and [ahrefs](#). To keep track of the progress and visualise the progress over time an Excel file has been created. These KPIs and their evolution over time are shown in Tables 4, 5 and 6.

3.3.1 Website

The project's website has continued to be used as a communication channel between the consortium and the public, but more emphasis has been placed on social networks. All the KPIs set appear in Table 4. In this deliverable, we include another KPI; the **Linking Sites**, corresponding to the total number of unique domains linking to our website. This is also an excellent indicator to consider since it can help us improve our SEO Off-Page, thus, increasing our organic traffic and visibility.

To summarise, Table 4 below provides a clear overview of all the KPIs related to the website performance to evaluate the progress during the lifetime of the project and to set the goal to be reached by the end of the project.

KPI	Value at M12	KPI for M24	Value at M24	KPI for M36
Unique Page Views	2.998	4.000	7.497	9.000
Page Views	4.770	6.000	9.730	12.000
Bounce rate (%)	83%	75%	98,7%	85%
Average time on Page	59s	65s	92s	95s
Domain Authority	21	30-40	21	25
No of Backlinks	107	120	200	220
Linking Sites	-	-	30	35

Table 4 website KPI

As seen in the table above, **four out of the six KPIs set on the last deliverable have been accomplished**. During this period, we have maintained a good amount of website visits, and interaction time with our website has increased considerably. Moreover, as mentioned in [D6.3](#), work has been done to implement a **link-building strategy** and increase our amount of Backlinks, resulting in almost doubling the KPI set for M24. Even so, we have also worsened the Bounce rate, which is now higher than in the last report. A bounce is a single-page session on our site. Bounce rate is the percentage of all sessions on our site in which users viewed only a single page and triggered only a single request to the Analytics server. A high bounce rate is not a bad indicator, but it does show that the users who visit us do not interact with our website. The reason behind this lack of interaction is that users come mostly from a direct external URL (as see in Figure 19). This means that visitors come to our website from a link they have found on social networks or other websites, find what they were looking for on that same page and do not navigate to other pages on our website.

Page ?	Source ?	Page Views ?	Unique Page Views ?
		9,730 % of Total: 0.07% (14,637,816)	7,497 % of Total: 0.06% (11,572,083)
1. /aidoart	(direct)	1,060 (10.89%)	508 (6.78%)
2. /aidoart/what-we-do	(direct)	1,045 (10.74%)	885 (11.80%)
3. /aidoart/partners	(direct)	595 (6.12%)	493 (6.58%)
4. /aidoart/results	(direct)	479 (4.92%)	479 (6.39%)
5. /aidoart/use-cases	(direct)	450 (4.62%)	450 (6.00%)
6. /aidoart/events	(direct)	363 (3.73%)	363 (4.84%)
7. /aidoart/what-we-do/use-cases	(direct)	363 (3.73%)	131 (1.75%)
8. /aidoart/news	(direct)	290 (2.98%)	261 (3.48%)
9. /aidoart	google	261 (2.68%)	261 (3.48%)
10. /aidoart/what-we-do/partners	(direct)	218 (2.24%)	174 (2.32%)

Figure 20: Source of our main visited website pages

Moreover, we worked on the SEO Off-Page, but we haven't focused enough on the SEO On-Page, which explains the stable Domain Authority (DA).

Regarding the **SEO On-Page**, we have used Google Page Speed Insights, a reliable analysing tool, to get an overview of the current situation and identify areas for improvement. This tool has different utilities; it measures a URL's loading time, reports on the user experience of a page on both mobile and desktop devices, calculates a score, analyses the website for potential improvements and provides suggestions. The score goes from 0 to 100. We have obtained a score above 90 in Accessibility, Recommended practices and SEO, getting our lowest score in Performance. PageSpeed Insights suggested some actions to improve our scores, unfortunately, those actions involve modifications in the Content Management System (CMS) of (SiteVision). In the stated-owned organisation of MDU, the project communication officer has been limited by direct access to the CMS to implement the corresponding actions that cannot be implemented currently.

Table 5 shows the audit results from www.pagespeed.web.dev for www.aidoart.eu in M24.

Item	Mobile Device Results	Desktop Device Results
Performance	17	50
Accessibility	99	98
Recommended practices	92	92
SEO	93	92

Table 5 Audit Results

All in all, for the last year of the project, we aim to improve our SEO On-Page through the creation of quality content and maintain good work on the SEO Off-Page focusing on link-building strategy. In the table below, we describe the actions implemented over the last period, and detail the actions that will be carried out over the coming months.

Area	Item	Improvement	Action point	Result
------	------	-------------	--------------	--------

		aspect		
Website structure	Web design	Pages lack interactive or dynamic elements.	Include images, videos, sliders and different dynamic and interactive elements.	Dynamic elements have been introduced through the website.
On-Page SEO	Noindex Tag Test	Our page is using the Noindex Tag which prevents indexing.	We will index the website in the Search Engines.	The website has been indexed.
Social	Twitter Cards	This structured data, that controls the content shared, is not implemented.	Implement Twitter cards.	Twitter Cards have been introduced in the homepage.
Links	Backlinks	The number of backlinks are low.	Improve the diversity and number of backlinks.	The amount of backlinks has been increased.
On-Page SEO	Content	Amount of content is low.	Create more pages to increase text volume.	New pages have been added 1. community page 2. results-open source 3. results-dissemination materials 4. event-first hackathon 5. event-second hackathon 6. event-third hackathon

Table 6: SEO implementation

Over the next period, we will continue to enrich the content of the website, by adding pages for the upcoming hackathon and information about the AIDOaRt community.

3.3.2 Social media

The AIDOaRt project has an online presence on three social media channels: LinkedIn, Twitter, and Facebook. However, in this last period and during the remaining months of the project we will focus on LinkedIn and Twitter and will **no longer use Facebook**, as our target audience is primarily on these two first-mentioned platforms. Our actions on those social platforms target the three research fields of AIDOaRt: artificial intelligence, model-driven engineering and cyber-physical systems, trying to involve and attract related research communities.

In this way, we seek to concentrate our efforts and improve the effectiveness of LinkedIn and Twitter. In this section, we will show the progress and the results obtained in the social media field since we delivered D6.3.

In D6.1 we set as a KPI that post updates should be done bi-weekly, which has been met. In D6.3 we have decided to establish three KPIs for each platform; **the number of followers, the monthly average of post impressions, and the monthly average of the engagement rate in our posts.**

KPI	Value at M12	Value at M24	KPI for M36
LinkedIn followers	133	284	350
Twitter followers	98	149	250
Monthly LinkedIn impressions (average)	1234	4261	5000
Monthly Twitter impressions (average)	4251	2041	3000
Monthly LinkedIn engagement rate (average)	2,9%	5,6%	6%
Monthly Twitter engagement rate (average)	2%	4%	5%

Table 7: Social media KPIs

As seen in the table above, we have implemented successful strategies in the social networks, which will be detailed in the sections below. We have improved the three

KPIs for LinkedIn, with a high percentage of improvement **doubling or tripling our results compared to month 12** of the project. We followed a similar trend on Twitter, with the difference that impressions were reduced by half.

3.3.2.1 LinkedIn page

Currently, the AIDOaRt LinkedIn page counts 284 followers compared to the 133 followers in the previous deliverable, increasing the amount by 114%. The **average impressions have also risen by 245% and the engagement rate has almost doubled.**

We owe these great results to the [Hackathon Newsletter](#) that was launched on LinkedIn between October 10th 2022 and November 29th 2022. We published a total of 8 articles, one for each successful challenge, which brought us 12 new followers. We got 129 subscribers and 188 likes, and the **average engagement rate of all articles was 10.3%, which is considered extremely high.** The goal of the newsletter is to attract the attention of the project stakeholders, showing them the proposed solutions to the various use cases, thus making the tools developed at AIDOaRt known in a more subtle and attractive way. The charts below show a **significant increase during October due to the publications on the Plenary Meeting in L'Aquila and the Newsletter articles.**

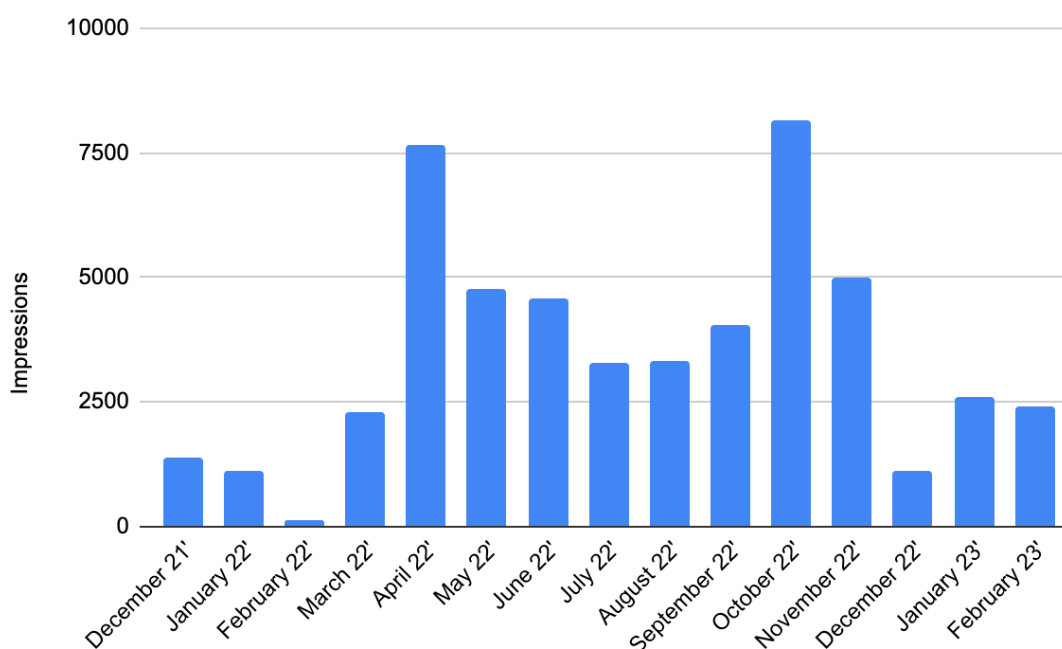


Figure 21: Monthly impressions

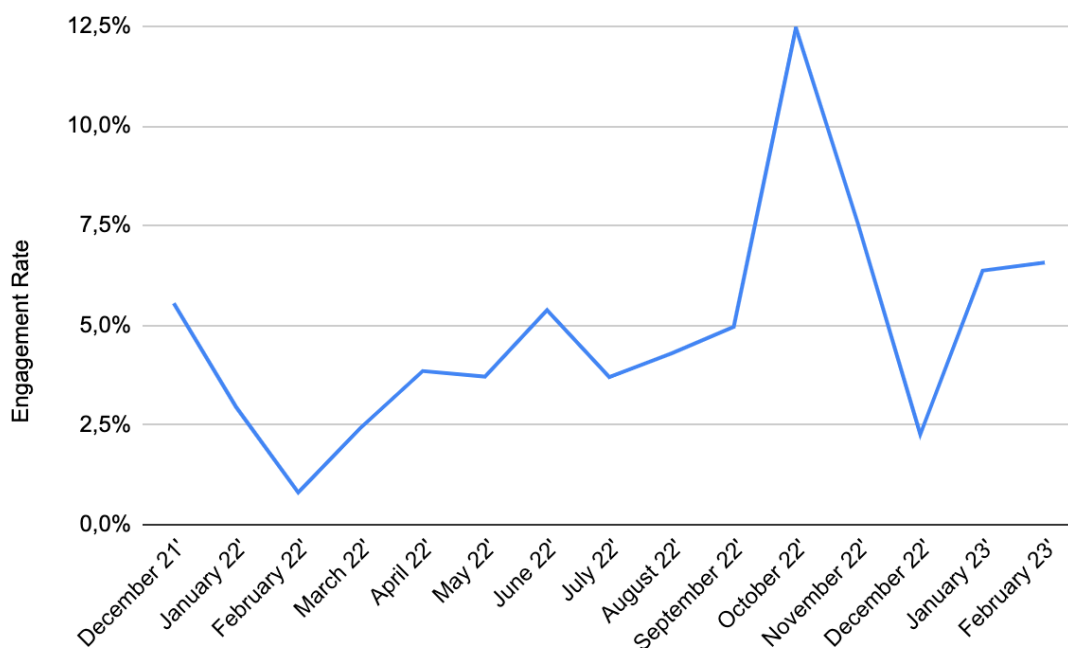


Figure 22: Monthly engagement rate




During this past period, the posts with higher impressions and engagement rates were related to events, like the [AIDOaRt physical meetings](#) and AIDOaRt being disseminated at conferences like [HIPEAC 2023](#) and [EF ECS 2022](#). Also, [publications accepted](#) or published at workshops or conferences, and the [Newsletter articles](#) had high interactions among the LinkedIn community.

For this reason, we have planned for the upcoming months to launch **two new editions of the Newsletter**, one focused on the Hackathon Challenges presented in the Plenary Meeting in Valencia and the other publicising the AIDOaRt Tool Set. In addition, we will focus on **promoting AIDOaRt on social media when participating in events or organising them** and make known which publications were accepted and published by the consortium members. Along with this, we will continue to share the project results through the latest deliverables submitted.

3.3.2.2 Twitter page

Currently, AIDOaRt Twitter counts 149 followers compared to the 98 followers reported in the last deliverable, increasing the amount by 52% and **doubling the engagement rate**. However, the average impressions have decreased by 52%. A reduced amount of tweets could explain the reduction in impressions. Initially, we used to share publications in several *tweets*, but we realised that by posting so many *tweets*, our audience became saturated and interacted less with our content. For this reason, over the past months, we summarised the information to yield fewer *tweets* to increase the engagement rate. It worked as planned. Our audience is showing more engagement towards our posts, which means **the interest in our content has risen**.

The topics of most significant interest to our audience in this channel are related to the **Hackathon Newsletter**, conferences where AIDOaRt participates, **Plenary meetings, publications accepted**, and **tool features** that are developed by our partners. Below, some *Top Tweets* over the past months are shown. Next to the *tweet*, the number of impressions, interactions, and engagement rate is displayed.

	<p>AIDOaRt @aidoart · Nov 16</p> <p>Don't miss the newest #HackathonChallenge article from @VolvoCEGlobal in collaboration with @malardalen_uni, @Dynatrace, @SofteamGroup, @jkulinz, @IMTFrance and @univaq.</p> <p>Written by @johanbergelin, Anna Reale and @AndreasHametner.</p> <p>linkedin.com/pulse/modeling...</p>	516	35	6.8%
	<p>AIDOaRt @aidoart · Jan 17</p> <p>Great and productive day at the #HIPEAC2023, where part of our time is working hard to present #AIDOaRt, @VeriDevOps and @CircleLabP to the conference participants and establishing good connections that could lead to future collaborations. 🍷</p> <p>@hipeac pic.twitter.com/5eBpTK54aY</p>	606	22	3.6%
	<p>AIDOaRt @aidoart · Apr 29</p> <p>We are thrilled to announce the winners of the AIDOaRt #Hackathon!</p> <p>The first prize went to the challengers to the challenge of Recommendation System for RE. The second prize went to the challengers to the challenge of Architecture and Modeling Patterns.</p>	626	26	4.2%




	AIDOaRt @aidoart · Jul 29 New Publication!	554	22	4.0%
<p>The publication "Enabling Content Management Systems as an Information Source in Model-Driven Projects" written by Joan Giner-Miguel, Abel Gómez, Jordi Cabot from Universitat Oberta de Catalunya has been published.</p> <p>link.springer.com/chapter/10.100... pic.twitter.com/jp94NU9Gi</p>				
	AIDOaRt @aidoart · Oct 27 Some features provided by #AsyncAPI , developed by @UOCuniversitat , are 📺	519	16	3.1%
<ul style="list-style-type: none"> 👉 Importing / Modeling an AsyncAPI specification 👉 Generating code to easily process messages from an #AsyncAPISpecification 👉 Generating a new AsyncAPI from an #Ecoremodel <p>aidoart.eu pic.twitter.com/8jOmKdONY9</p>				
	AIDOaRt @aidoart · Oct 4 🌟 First day of the #AIDOaRt plenary meeting in @univaq! We started with a welcome session from @RominaEramo , Technical Leader, and @gunnarwidforss , Project Coordinator, where we were finally able to meet face to face for the first time. pic.twitter.com/lctxDvl4Qw	887	110	12.4%

Figure 23: Top Tweets over the past months

In the coming months, we will apply a similar strategy to LinkedIn, but also incorporate information related to the **tools developed under the AIDOaRt framework**.

4. Standardisation Actions and Future Plans

The intent of this task is to contribute to standardisation and normalisation bodies to increase interoperability and to boost the adoption of the technology proposed by the project. In this regard, besides the preparation and retrieval of responses from partners in the Innovation and Standardization questionnaire, during this period, the labour has been concentrated in two modelling standard specifications: MARTE and SysML.

Regarding MARTE, the AIDOaRt partners involved in it have heavily worked on finalising version 1.3. In this last period, we have resolved and approved all but one of the issues formally assigned to the task force and the report is on its way. We expect it to be approved in the June technical meeting of the OMG.

Regarding SysML, the AIDoArT partners involved in it have worked on its two ongoing versions, the current SysML 1.7 official version and the response to the Request for Proposals for SysML 2.0. SysML 1.7 will be the last version of SysML v1 (based on the UML metamodel), and it has been already issued by the OMG. In the context of SysML 1.7 AIDoArT partners have worked on discussing the resolution of the last issues it had pending.

For SysML 2.0 we have contributed to being part of the SysML Summitters Team. After receiving the final submission of the response to the Request for proposals for SysML v2, the OMG is now in the process of finalising this beta version into an official SysML2.0 specification. A complete set of documents and assets is already uploaded and can be seen for inspection by all members of the OMG (a copy can be retrieved from here: <https://github.com/Systems-Modeling>). This response has been very recently accepted by the Architecture Board of the OMG and the AIDoArT partners involved are in the process to become part of the first SysML 2.0 Finalisation Task Force.

Regarding compatibility, in the new specification, there will be a semantics mapping guide to get SysML-V2 models from SysML-V1 models, and even a certain form of automate-able transformations will be available as part of the annexes. The ability to automate and understand these transformations results in being much more intuitive for v2 since it encompasses a BNF-described syntax for writing the models in a textual representation that is readable by humans.

But, as with all languages, there will be some details that might not be fully covered by this semantic mapping and the automated transformations. Hence, it strongly depends on the modelling purpose and the actual features used of SysML-1.7 whether the compatibility with v2 would be easy to maintain or not.

In the general case we can argue that even if the supporting modelling framework is no longer MOF-based, transformations can be implemented since there are several mechanisms to support the construction and animation of models, from its textual

modelling notation to rich APIs (there are at least the Java and the REST/HTTP web services available) to construct and query models.

Further information regarding the up-to-date situation of this specification can be obtained by visiting: <https://github.com/Systems-Modeling/SysML-v2-Release>.

As for the plans to carry on in the last stage of the project, we will continue our involvement in the revision task force for MARTE 1.3 until sending its final report and expect to recover the momentum to launch a request for proposals for a MARTE 2.0 version. The goal behind the improvement of MARTE is laying and consolidating the foundations for strengthening the partners' know-how, to foster a wider adoption of AIDOaRt technologies in European industry and to be a driver for industrialisation beyond the scope of the project.

Looking at the responses from partners in the questionnaires some other standards or standardisation efforts appear to be of interest. In concrete, there are references to Unified Architecture Framework (UAF), Open Services for Lifecycle Collaboration (OSLC), FMI/FMU, AutomationML, and UML Testing Profile 2 (UTP2). Efforts done on any of these standards will be included in the final report of labour done in the context of this task.

5. Collaboration with other EU Projects

Exploitation and dissemination also includes collaboration with related projects on national and international levels. To facilitate this collaboration, an interest group of colleagues working on related projects has been built, and joint activities are performed. In the first period, these activities include a workshop to inform the group about ongoing related projects of members of the interest group and a discussion of potential joint work.

5.1 ICT-related workshop

As a first step towards collaboration with related projects, a workshop was prepared where participants could learn about related ongoing projects and identify synergies.

Identification of related projects was based on the current work of AIDODaRt partners and their network as well as desk research of national and international projects from funding agencies (including the EU portal). The workshop took place on the 18th of November 2022 with approximately 40 participants from both academia and industry. In the beginning, the 4 technology topics of AIDoArt (AI, DevOps, Model-driven approaches, Cyber-Physical Systems) were presented by project members. This was followed by presentations of 5 related projects, namely:

- VALU3S (Verification and Validation of Automated Systems' Safety and Security) <https://valu3s.eu/> is an ECSEL project involving partners AIT, CAMEA, BUT, INTECS, ALSTROM, RISE and UNIVAQ
- CDL-MINT (Christian Doppler Laboratory for Model-Integrated Smart Production) <https://cdl-mint.se.jku.at/> is an Austrian project funded by FFG (ICT of the future) involving JKU
- ADEX (Autonomous-Driving Examiner) <https://adex.ait.ac.at/> is an Austrian project funded by FFG (ICT of the future) involving AIT and AVL
- AI4CSM (Automotive Intelligence 4 Connected Shared Mobility) <https://ai4csm.eu/> is an ECSEL project involving AIT, AVL and TUG
- LearnTwins (Learning Digital Twins for the Validation and Verification of Dependable Cyber-Physical Systems) <https://learntwins.ist.tugraz.at/> is an Austrian project funded by FFG (ICT of the future) involving AIT, AVL and TUG

The presentations were followed by discussions among participants and collection of ideas for future joint work.

It is planned to have a follow-up workshop in 2023 to keep the interest group updated about recent activities and foster collaboration. Options to do a physical or at least hybrid workshop are currently evaluated, e.g., in combination with an AIDoArt plenary meeting.

5.2 Co-organized STEM workshop

To enforce collaboration among researchers from different projects, a workshop at ARES conference³ 2023 is planned. A proposal for a workshop on safety & security testing and monitoring (STAM) will be submitted at the end of February 2023. This workshop is organised by members of the projects VeriDevOps (Automated Protection and Prevention to Meet Security Requirements in DevOps Environments, <https://www.veridevops.eu/>, coordinator of the workshop), SANCUS (Analysis Software Scheme of Uniform Statistical Sampling, Audit and Defence Processes, <https://sancus-project.eu>), and AIDoArT. It is planned to take place between the 29th of August and 1st of September 2023 in Benevento, Italy.

The AIDoArT community has been built based on collaboration with other EU projects by organising workshops to exchange knowledge and experience or to co-organize workshops and call for papers in conjunction with other conferences.



AIDoArT COMMUNITY

AIDoArT focuses on AI-augmented automation supporting the continuous development of Cyber-Physical Systems (CPSs) in its phases, such as requirements, monitoring, modelling, coding, and testing. The growing complexity of CPS poses several challenges throughout all software development and analysis phases, but also during their service and maintenance life.

We are constantly looking for inspiration and collaboration with research organisations, SMEs and large companies to enhance research, promote technology applications and network the future project. Here you can find information about collaboration with other EU projects and call for the next proposal as AIDoArT project follow up.

Collaboration With Other EU Projects

Task 6.5 Collaboration with other ICT-related projects aims to establish long-term collaboration with other EU-funded projects in various ways. Currently, 9 EU projects have joined the AIDoArT community and future co-organized workshops are planned.

First workshop with other 5 EU projects

Call for papers/co-organized STAM 2023

AIDoSec

AI-augmented automation for efficient DevOps: a model-based framework for continuous and Secure development of complex systems

- Secure Software Development, CI/CD/SecOps
- Secure DevOps: DevOps, CI/CD/SecOps

The new project proposal of AIDoSec (AI-augmented automation for efficient DevOps: a model-based framework for continuous and Secure development of complex systems) is ongoing. Welcome to join us.

Click here to download the project pitch

Figure 22: AIDoArT community [webpage link](#)

³ <https://www.ares-conference.eu/>

6. Conclusions

The goal of work package 6 is maximising the impact of the project by reaching different target groups in various approaches. This document reports the efforts realised in the context of Task 6.1 “Project website, community building and social media”, Task 6.3 “Dissemination”, Task 6.4 “Standardisation” and Task 6.5 “Collaboration with other EU projects” by all the partners involved in them along the period from M12 to M23.

The endeavour serves the goal of raising awareness of the existence and impact of the project and generating interest. It also contributes to standardisation and normalisation bodies to increase interoperability and boost the adoption of the technology, and promote new potential R&D collaborations.

Following the reviewers' suggestions, the communication plan is reviewed and updated accordingly. The dissemination activities have been highlighted by 17 publications, 25 event participations and 3 self-organised AIDoArt hackathons. Participation in the major brokerage events and the media coverage of the AIDoArt hackathon has facilitated maximising the AIDoArt project profile reaching target audiences of up to 10000. There has also been significant progress on AIDoArt social media channels, such as doubling the followers and average impressions within one year. Those efforts have been measured in KPIs to ensure traceable implementation.

Secondly, two modelling standard specifications MARTE and SysML have been addressed in the task of standardisation. And we also identify other standardisation efforts in which partners may have some additional impact, like the Unified Architecture Framework (UAF), Open Services for Lifecycle Collaboration (OSLC), FMI/FMU, AutomationML, and UML Testing Profile 2 (UTP2).

Last but not least, efforts have been made to strengthen the collaboration with other EU projects. A first workshop with other 5 projects in a similar domain has been held to exchange knowledge and opportunities. Meanwhile, the joint workshop on

safety & security testing and monitoring (STAM) will be held at the ARES conference 2023. There will be follow-up workshops in 2023 and 2024.

For the last year of the project, we will focus on the valorisation of the project outcomes and creating the synergies between academic and industrial sides, and continue to contribute to the standardisation and normalisation bodies to create the project impact at large.

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