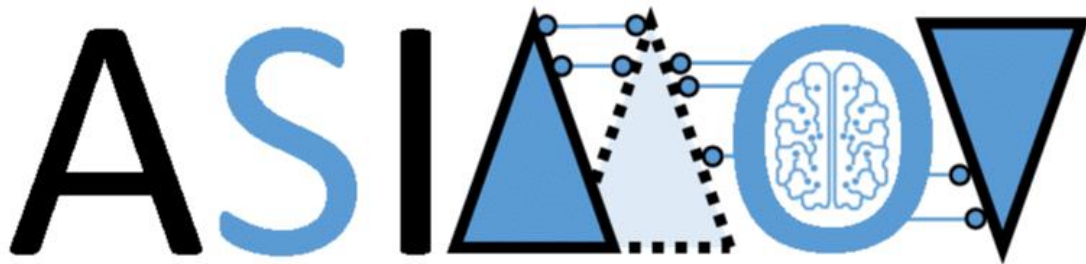


# Dissemination Plan and Report

[WP5; T5.3; Deliverable: D5.3 version 1.0]

**Non-Confidential**



AI training using Simulated Instruments for Machine  
Optimization and Verification

#### PROPRIETARY RIGHTS STATEMENT

THIS DOCUMENT CONTAINS INFORMATION, WHICH IS PROPRIETARY TO THE ASIMOV CONSORTIUM. NEITHER THIS DOCUMENT NOR THE INFORMATION CONTAINED HEREIN SHALL BE USED, DUPLICATED OR COMMUNICATED BY ANY MEANS TO ANY THIRD PARTY, IN WHOLE OR IN PARTS, EXCEPT WITH THE PRIOR WRITTEN CONSENT OF THE ASIMOV CONSORTIUM THIS RESTRICTION LEGEND SHALL NOT BE ALTERED OR OBLITERATED ON OR FROM THIS DOCUMENT. THIS PROJECT HAS RECEIVED FUNDING FROM THE ITEA4 JOINT UNDERTAKING UNDER GRANT AGREEMENT NO 20216. THIS JOINT UNDERTAKING RECEIVES SUPPORT FROM THE EUROPEAN UNION'S EUREKA AI RESEARCH AND INNOVATION PROGRAMME AND FINLAND (DECISION PENDING), GERMANY, THE NETHERLANDS.

Version	Status	Date	Page
version 1.0	public	2022.02.21	1/16

## Document Information

<b>Project</b>	ASIMOV
<b>Grant Agreement No.</b>	20216 ASIMOV - ITEA
<b>Deliverable No.</b>	D5.3
<b>Deliverable No. in WP</b>	WP5; T5.3
<b>Deliverable Title</b>	Dissemination Plan and Report
<b>Dissemination Level</b>	public
<b>Document Version</b>	version 1.0
<b>Date</b>	2022.02.21
<b>Contact</b>	Jacco Wesselius
<b>Organization</b>	TNO (ESI)
<b>E-Mail</b>	jacco.wesselius@tno.nl



The ASIMOV-project was submitted in the Eureka Cluster AI Call 2021  
<https://eureka-clusters-ai.eu/>

Version	Status	Date	Page
version 1.0	public	2022.02.21	2/16

### Task Team (Contributors to this deliverable)

Name	Partner	E-Mail
Jacco Wesselius	TNO	<a href="mailto:jacco.wesselius@tno.nl">jacco.wesselius@tno.nl</a>
Maurice Heemels	TUe	<a href="mailto:w.p.m.h.heemels@tue.nl">w.p.m.h.heemels@tue.nl</a>
Faruk Caglar	TFS	<a href="mailto:faruk.caglar@thermofisher.com">faruk.caglar@thermofisher.com</a>
Remco Schoenmakers	TFS	<a href="mailto:remco.schoenmakers@thermofisher.com">remco.schoenmakers@thermofisher.com</a>
Jan Willem Bikker	CQM	<a href="mailto:janwillem.bikker@cqm.nl">janwillem.bikker@cqm.nl</a>
Jan van Doremalen	CQM	<a href="mailto:jan.vandoremalen@cqm.nl">jan.vandoremalen@cqm.nl</a>
Tabea Henning	OFFIS/DLR	<a href="mailto:tabea.henning@dlr.de">tabea.henning@dlr.de</a>
Eike Möhlmann	OFFIS/DLR	<a href="mailto:eike.moehlmann@dlr.de">eike.moehlmann@dlr.de</a>
Niklas Braun	AVL	<a href="mailto:Niklas.Braun@avl.com">Niklas.Braun@avl.com</a>
Christian Schyr	AVL	<a href="mailto:christian.schyr@avl.com">christian.schyr@avl.com</a>
Lukas Schmidt	NorCom	<a href="mailto:lukas.schmidt@norcom.de">lukas.schmidt@norcom.de</a>
Fabienne Frauendorfer	LiangDao	<a href="mailto:fabienne.frauendorfer@liangdao.de">fabienne.frauendorfer@liangdao.de</a>
Thomas Kotschenreuther	RAC	<a href="mailto:t.kotschenreuther@rac.de">t.kotschenreuther@rac.de</a>
Stephan Kussmaul	TrianGraphics	<a href="mailto:stephan.kussmaul@triangraphics.de">stephan.kussmaul@triangraphics.de</a>
Iftikhar Ahmad	TietoEvry	<a href="mailto:iftikhar.ahmad@tietoevry.com">iftikhar.ahmad@tietoevry.com</a>

### Formal Reviewers

Version	Date	Reviewer
1.0	2022.02.10	Tabea Henning (DLR); Niklas Braun (AVL)

### Change History

Version	Date	Reason for Change
1.0	2022.02.10	First version, based on the plans and reports of the Dutch and German partners, with some contributions from Finnish partners (pending the funding decision in Finland)

Version	Status	Date	Page
version 1.0	public	2022.02.21	3/16

## Abstract

The ASIMOV-project develops technologies to combine Digital Twinning and Machine-Learning (e.g., Reinforcement Learning) to automate the calibration, optimization of Cyber Physical Systems. The project is centred around industry use cases to ensure that the technology developed in the project will meet actual industry needs. To enhance the value of the ASIMOV-project, initiatives will be taken to disseminate these.

This document provides an overview of the dissemination plans of the ASIMOV-consortium as well as report on the actual status.

This document will be updated every 6 months. Version 1.0 reflects the status per January 2022 (month 8 in the project).

Version	Status	Date	Page
version 1.0	public	2022.02.21	4/16

## Contents

<b>1</b>	<b>Introduction</b> .....	<b>7</b>
<b>2</b>	<b>Consortium Overview</b> .....	<b>8</b>
<b>3</b>	<b>Dissemination Plan</b> .....	<b>9</b>
3.1	<i>Industrial Partners</i> .....	9
3.2	<i>Academic and Research Partners</i> .....	10
3.3	<i>Joint Dissemination Plans</i> .....	10
<b>4</b>	<b>Dissemination Results</b> .....	<b>12</b>
4.1	<i>Industrial Partners</i> .....	12
4.2	<i>Academic and Research Partners</i> .....	13
4.3	<i>Joint Dissemination Results</i> .....	13
4.4	<i>Number of External Publications (KPI in PPR – target: 30)</i> .....	13
<b>5</b>	<b>Terms, Abbreviations and Definitions</b> .....	<b>15</b>
<b>6</b>	<b>Bibliography</b> .....	<b>16</b>

Version	Status	Date	Page
version 1.0	public	2022.02.21	5/16

## Table of Figures

Figure 1 - #External Publications Chart.....	14
--	----

## Table of Tables

Table 1 - Consortium Overview .....	8
Table 2 - Dissemination Plans of Industrial Partners .....	10
Table 3 - Dissemination Plans of Academic and Research Partners.....	10
Table 4 - Joint Dissemination Plans .....	10
Table 5 - Dissemination Results of Industrial Partners .....	13
Table 6 - Dissemination Results of Academic and Research Partners.....	13
Table 7 - Joint Dissemination Results .....	13
Table 8 - Number of External Publications.....	13
Table 9 - Terms, Abbreviations and Definitions .....	15

Version	Status	Date	Page
version 1.0	public	2022.02.21	6/16

## 1 Introduction

High-tech cyber-physical systems (CPSs) play increasingly important roles in our society. They are ubiquitous, and companies, organizations and societies depend on their correct functioning. CPSs need to have high up-times, be user-friendly, and economically to use. CPS suppliers must assure that their systems reliably deliver optimal quality in customers' environments, without bothering their customers with complex system optimisation tasks that require highly skilled staff. Systems need to be optimally tuned before delivery and at installation and re-adjusted during use, which can easily require many hours/days and this total time increases rapidly due to growing project diversity and complexity. To address this major problem, it is ASIMOV's vision that CPSs must be increasingly autonomous and self-optimising, which leads to the following central question:

*How to build complex high-tech systems that select their optimal settings autonomously within minimal time and with minimal external expertise?*

To answer this question, the ASIMOV project will develop innovative technologies to create self-optimising CPSs by combining AI and Digital Twinning. The consortium, consisting of large industrial parties, SME's with strong AI-expertise, and leading universities and research institutes, will deliver the following innovations:

- creating digital twins of systems to simulate realistic system behaviour;
- training an Optimisation-AI based on the digital twin to find optimal system settings;
- verifying the validity of the digital twin for training the AI;
- using the trained AI to perform the tuning and calibration tasks on actual machine configurations.

This will lead to AI-based software that autonomously performs system optimisation tasks during manufacturing, installation, and system usage. Proof of concepts will be provided in three different industrial system domains (electron microscopes, automated driving, process control) for which optimisation is crucial for system performance.

The key objectives of the dissemination are to create public awareness of the ASIMOV methods, tools and results, showing the industrial feasibility and applicability, knowledge sharing and exchange, and actively transfer ASIMOV results to specific industrial and academic target groups. All project partners, especially the applied research partners, will present findings at international conferences and workshops, feed insights into special interest groups, as well as publish research results in peer-reviewed journals and conference proceedings. Industrial partners will complement dissemination of results through the realization of proof-of-concepts, field tests, and in-product-demonstrations showcasing achievements at professional exhibitions. Public dissemination: promote and support (white) papers, articles, conferences contributions, innovation markets, invited talks, industrial exhibitions, etc. Use widely available platforms to make the public reports and papers available, e.g., a public ASIMOV website, an ASIMOV page on Wikipedia, an ASIMOV project entry on ResearchGate, an ASIMOV page on LinkedIn etc.

This document gives an overview of the plans to disseminate the ASIMOV results to create awareness by creating industrial and social added value. In addition to the plan, the document also provides a report of the current exploitation status.

Version	Status	Date	Page
version 1.0	public	2022.02.21	7/16

## 2 Consortium Overview

Company Name (Project coordinator first)	Country	Role *)	Type of organisation **)				
			I	S	U	R	O
FEI Electron BV (TFS)	The Netherlands	C	x				
Netherlands organization for applied scientific research (TNO)	The Netherlands	M				x	
Eindhoven University of Technology (TUE)	The Netherlands	P			x		
CQM B.V. (CQM)	The Netherlands	P		x			
OFFIS e. V. (OFFIS) until December 31, 21	Germany	M				x	
Deutsches Zentrum für Luft- und Raumfahrt (DLR) per January 1, 2022	Germany	M				x	
AVL Deutschland GmbH (AVL)	Germany	P	x				
NorCom Information Technology GmbH & Co. KGaA (NORCOM)	Germany	P		x			
LiangDao GmbH (LIANGDAO)	Germany	P		x			
RA Consulting GmbH (RAC)	Germany	P		x			
TrianGraphics GmbH (TG)	Germany	P		x			
Valmet Automation Inc. (VALMET)	Finland	P	x				
University of Oulu (OULU)	Finland	M			x		
VTT Technical Research Centre of Finland Ltd. (VTT)	Finland	P				x	
Tieto Finland Oy (TIETO)	Finland	P	x				
Helmee Imaging Oy (HELMEE)	Finland	p		x			
Haltian Oy (Haltian)	Finland	P		x			
Symbio	Finland	P		x			
Sensmet	Finland	P		x			

Table 1 - Consortium Overview

\*) C = Coordinator; M = country's Main participant contact; P = Participant

\*\*\*) Type of organisation: I=Industry; S=SME; U=University, R=Research Institutes, O=Other

### NOTE:

At the moment of writing this document (version 1.0), the funding decision has not been taken by Business Finland. Therefore, the input in this version of the plan is incomplete for the Finnish partners.

### NOTE:

The German consortium has changed since submission of the FPP. The table above reflects the current composition of the consortium. A CR will be submitted to ITEA to reflect the change. It is pending and will be created after Business Finland has made their funding decision.

Version	Status	Date	Page
version 1.0	public	2022.02.21	8/16



### 3 Dissemination Plan

#### 3.1 Industrial Partners

Dissemination Description	Planned date
<b>AVL</b>	
Presentation of the project in social media channels of AVL	M8
Presentation of project content and intermediate results in internal workshops at AVL	M12, M24
Presentation of final results in internal workshops at AVL	M36
Presentation of project results at international conferences, e.g., Symposium on Development Methodology in 11/2024	M30 - M36
<b>CQM</b>	
Transfer knowledge within customer projects from CQM to customer	ongoing
Transfer knowledge to our (potential) customer base and market by means of blogs, workshops, white papers, seminars.	ongoing
<b>HALTIAN</b>	
<b>HELMEE</b>	
<b>LIANGDAO</b>	
Presentation of LiangDao's contribution at ASIMOV and results at conferences	From 2023 on
Presentation of project content and intermediate results in internal workshops at LiangDao	Q3 2022
Roadshow at customer in case of requirements regarding lidar simulation	Q3 2022
<b>NORCOM</b>	
Presentation of the ASIMOV project to customers	M8 - M36
Presentation of project intermediate results in internal workshops	M8 - M36
<b>RAC</b>	
Yearly multiple roadshows at customer sites	from 2023 on
Once per year presentation on the RA User Day	from 2023 on
Yearly multiple conference and show participations	from 2023 on
Continuously evaluation of possible standardisation activities	from 2023 on
<b>SENSMET</b>	
<b>SYMBIO</b>	
<b>TFS</b>	
Presentation of the ASIMOV project and technical results in Thermo Fisher Scientific Technology Conferences	M36
1-2 publications at International Conferences and in Journals	M18-M36
<b>TG</b>	
Presentation of results as papers and presentations at international conferences (DSC,...)	M24
Announcement of upcoming new features at exhibitions (I/ITSEC, DSC, Autosense,...)	M36
Social media marketing activities	M24
<b>TIETO</b>	

Dissemination Description	Planned date
VALMET	

Table 2 - Dissemination Plans of Industrial Partners

### 3.2 Academic and Research Partners

Dissemination Description	Planned date
OFFIS/DLR	
2 academic publications + presentations on national conferences (e.g., DATE)	M8 – M19
5-6 academic publications + presentations on international conferences (e.g., SAFECOMP, CPS-WEEK)	M20 – M36
Participation and scientific-technical exchange on 2 BMBF/BMWK conferences "Research and technology for automated and connected driving"	M19 – M36
OULU	
TNO	
Article about ASIMOV in ESI – 20 years book	M17
ASIMOV presentation at ESI Symposium 2022 – October 2022	M17
ASIMOV presentation at ESI Symposium 2022 – April 2024	M35
2 or 3 publications (conferences, journals, TNO reports etc.)	M18 – M36
TUE	
2-3 academic publications of the PhD students Jilles van Hulst and Roy van Zuijlen in leading control and CPS conferences such as ECC, ACC, IFAC World Congress, CPS week, IEEE CCTA and smaller dedicated workshops	M18 – M36
Journal publication in leading journals such as IEEE Transactions on Control Systems Technology, IFAC Control Engineering Practice, etc. (due to duration of review process for journals, several journal publications are expected after M36)	M25
2 PhD theses on ASIMOV research perspective	> M36
VTT	

Table 3 - Dissemination Plans of Academic and Research Partners

### 3.3 Joint Dissemination Plans

Partners	Dissemination Description	Planned date
TFS, TNO, CQM, TUE	Industry reference group: workshops with 6 (at this moment) industries outside the ASIMOV-consortium to align on potential industry value and to share ASIMOV results. [Canon Production Printing, Lely, Philips, Smart Robotics, Ultimaker, Thales]	M12, M24, M30, M36
All	ASIMOV <b>public website</b> – <a href="http://www.ASIMOV-project.eu">www.ASIMOV-project.eu</a> (action: AVL)	M6 shifted to M9
All	ASIMOV <b>Wikipedia</b> Page (action: TNO) Draft ASIMOV Wikipedia page submitted for review by Wikipedia <a href="https://en.Wikipedia.org/wiki/Draft:ITEA4_ASIMOV_Project">https://en.Wikipedia.org/wiki/Draft:ITEA4_ASIMOV_Project</a> Publish future links to public ASIMOV papers and reports on this page.	M9
All	ASIMOV LinkedIn Page	M9
TFS, TNO, CQM, TUE	Article about ASIMOV on Bits&Chips: <a href="https://bits-chips.nl/">https://bits-chips.nl/</a>	M18
All	Publish public papers and reports via <b>ResearchGate</b> . Project has been created on ResearchGate: <a href="https://www.researchgate.net/project/ASIMOV-ITEA">https://www.researchgate.net/project/ASIMOV-ITEA</a>	
All	Publish public papers and reports via <b>LinkedIn</b> . Create a project on LinkedIn	M9

Table 4 - Joint Dissemination Plans

Version	Status	Date	Page
version 1.0	public	2022.02.21	10/16

Regarding the ASIMOV public website: hosting was delayed as a Finnish part volunteered to host (TietoEvry). AVL has volunteered and is able to host [www.ASIMOV-project.eu](http://www.ASIMOV-project.eu).

Regarding the ASIMOV Wikipedia Page: a draft page is available and has been submitted to Wikipedia for review. The duration of the review process is unpredictable, but this is likely to take months.

Version	Status	Date	Page
version 1.0	public	2022.02.21	11/16

## 4 Dissemination Results

### 4.1 Industrial Partners

Dissemination Description	Date
<b>AVL</b>	
The ASIMOV project leads to new publications describing the new AI-based approach for system twinning and system optimization: Schyr, C.; Braun, N.; Oberpeilsteiner, S.: <i>AI-based Optimization of Digital Twins of Unmanned Commercial Vehicles</i> . 7th International Commercial Vehicle Technology Symposium (Kaiserslautern, September 2022)	Sep-2022
<b>CQM</b>	
<b>HALTIAN</b>	
<b>HELMEE</b>	
<b>LIANGDAO</b>	
<b>NORCOM</b>	
Presentation of the Asimov project to international business client in the automotive sector	Oct-2021
<b>RAC</b>	
<b>SENSMET</b>	
<b>SYMBIO</b>	
<b>TFS</b>	
Remco Schoenmakers was interviewed at the Dutch/German Artificial Intelligence Expert Day (organized by Ministry of Economic Affairs) (March 24, 2021) and discussed the proposal for the ASIMOV-project and the potential and challenges of the technology.	Mar-2021
Presentation of Remco Schoenmakers at the Machine Learning conference of Bits&Chips	M1
Interview of Brainport Eindhoven with Remco Schoenmakers about AI, referring to ASIMOV: <a href="https://brainporteindhoven.com/nl/ontdek/de-kracht-van-brainport/cases/ai-is-vak-apart-dat-nog-volvassen-moet-worden">https://brainporteindhoven.com/nl/ontdek/de-kracht-van-brainport/cases/ai-is-vak-apart-dat-nog-volvassen-moet-worden</a> (in Dutch)	
<b>TG</b>	
<b>TIETO</b>	

Version	Status	Date	Page
version 1.0	public	2022.02.21	12/16

Dissemination Description	Date
VALMET	

Table 5 - Dissemination Results of Industrial Partners

#### 4.2 Academic and Research Partners

Dissemination Description	Date
OFFIS/DLR	
Article about ASIMOV in OFFIS in-house public magazine article "Datawork No. 73", available under <a href="https://www.offis.de/en/offis/downloads-and-tools/datawork-offis-journals.html">https://www.offis.de/en/offis/downloads-and-tools/datawork-offis-journals.html</a>	M7
OULU	
TNO	
TUE	
---- (PhD students will start 15/2/2022)	
VTT	

Table 6 - Dissemination Results of Academic and Research Partners

#### 4.3 Joint Dissemination Results

Partners	Dissemination Description	Date
TNO	Draft Wikipedia page has been created (in review by Wikipedia).	Jan-2022
TietoEvry	Project has been created on ResearchGate: <a href="https://www.researchgate.net/project/ASIMOV-ITEA">https://www.researchgate.net/project/ASIMOV-ITEA</a>	Feb-2022
AVL	The domain for the ASIMOV public website has been registered	Feb-2022

Table 7 - Joint Dissemination Results

In the table above, items are in grey as they are not the final results, but intermediate results.

#### 4.4 Number of External Publications (KPI in PPR – target: 30)

M6	6
M12	
M18	
M24	
M30	
M36	

Table 8 - Number of External Publications

Version	Status	Date	Page
version 1.0	public	2022.02.21	13/16

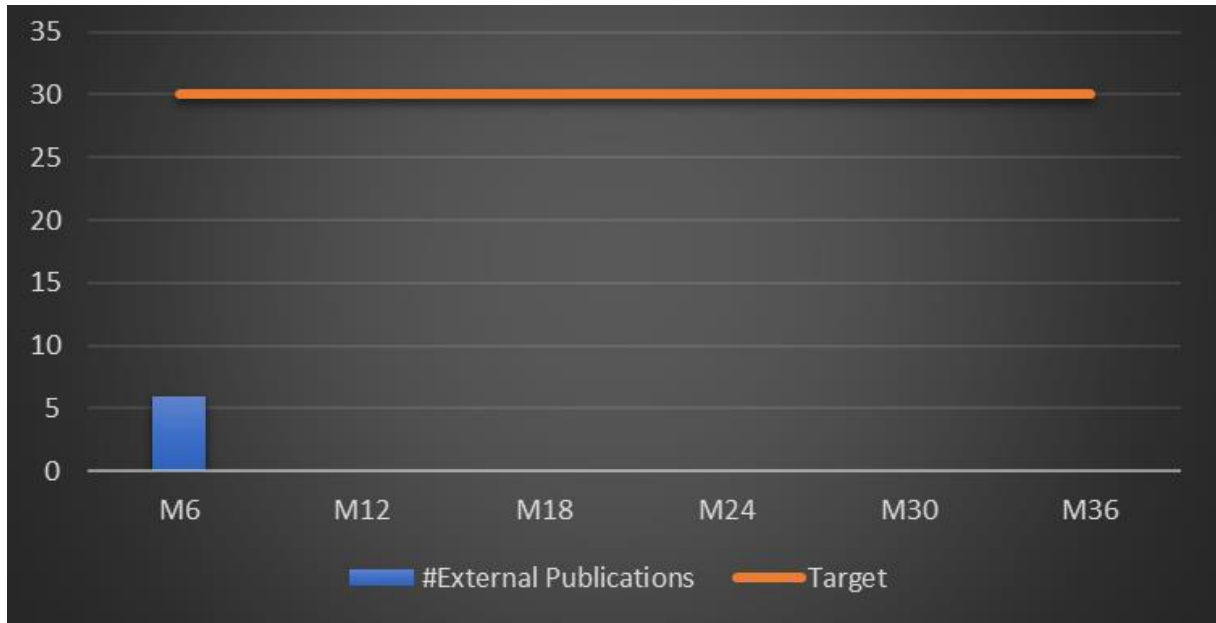


Figure 1 - #External Publications Chart

Version	Status	Date	Page
version 1.0	public	2022.02.21	14/16

## 5 Terms, Abbreviations and Definitions

*Table 9 - Terms, Abbreviations and Definitions*

AI	Artificial Intelligence
ASIMOV	AI training using Simulated Instruments for Machine Optimization and Verification
DT	Digital Twin
ML	Machine Learning
RL	Reinforcement Learning
WP	Work Package

## 6 Bibliography

[1] ASIMOV-consortium, *ASIMOV - Full Project Proposal*, 2020.

Version	Status	Date	Page
version 1.0	public	2022.02.21	16/16