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Publishable Executive Summary

This deliverable summarises the most important liaison activities and emphasises synergies with other initiatives during the course of the AIMS5.0 project. Particular highlights concern the close interaction with the Chips JU projects SC4EU and Arrowhead fPVN. Among others through a series of Deep Tech workshops, the collaboration between those projects generated valuable results.

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1. Introduction

Collaboration with other relevant projects was sought out. A project cluster was established with projects dealing with highly relevant objectives. In this way, synergies between projects on R&D and demonstration level could be monitored and achieved; joint dissemination and exploitation activities were also conducted over the project duration.

The project cluster activities include joint workshops to exchange experiences and achievements, joint sessions at conferences, but also Deep Tech workshops leading to hands-on experience in the use of technical results from cluster projects.

Regular meetings (at least once per year) helped to keep track of coordination between projects and allow the individual projects to secure timely and complete availability of deliverables that are to be used in other projects.

To communicate liaison activities, numerous communication channels (e.g. YouTube, LinkedIn and project website) were established and frequently fed with news. Apart from that, certain promotional activities were performed such as attendance at various industrial conferences such as AI Days and Innovation Fair in Munich, TechTalk in Villach, SPS Italy, Hannover Fair, ICAI meeting, Beta symposium, RFID Journal Live. Moreover, several events were organized by the AIMS5.0 partners such as DeepTech Workshops 2023 and 2024, WFCS 2024 industrial panel "TSN/5G in industrial systems" and Decision-Making Techniques for Smart Semiconductor Manufacturing (Dagstuhl Seminar 23362).

Synergies between projects and cooperations were investigated, with projects such as Arrowhead fPVN, AI4CSM, SC^{4}EU and PowerizeD.

Selected liaison activities are described in the following sections.

2. Structure of the deliverable report

This provides an overview on dedicated liaison and cluster activities during the course of the project. The activities are presented in the order in which they occur.

2.1 Joint kickoff meeting All2Gan and AIMS5.0

During the joint kickoff meeting om 23 May 2023, both Chips JU projects were initiated.



Figure 1: Attendees at the All2Gan and AIMS5.0 official kickoff ceremony

2.2 Collaborating projects AIMS5.0, SC³ and SC4EU

Liaison and clustering activities were started very early in the project. On 14.09.2023, AIMS5.0 (WP4) and Chips JU project SC³ met at IFAG in Munich for a detailed exchange regarding ontologies and data models. The SC³ Digital Reference ecosystem represents the basis for AIMS5.0 use cases realization.

Further liaison activities were initiated by AIMS5.0 work package 6 task T6.1 on intelligence for production planning and control, specifically within the frame of subtask on applying the open access platform (i.e., DR) for mitigating the bullwhip and the chip shortage. The overall goal of this subtask was to reduce the bullwhip effect in semiconductor supply chains by connecting supply chains more closely, enabling collaborative development and planning, and improving forecasting using Multi Party Computation (MPC) technology and AI tools. The plan was to develop an Open Access Platform (OAP) that can be used after the project for trading semiconductors and data forecast. By achieving this goal, the OAP benefits all stakeholders by creating a more efficient, collaborative, and resilient semiconductor supply chain. To achieve this goal, firstly, a True Demand Ecosystem in connection with the Open Access Platform was established to provide high-granularity data on true demand with more contextual

information. Secondly, analysis of available resources, including the true demand ecosystem concept and documentation was created, as well as anonymous survey documentation. Lastly, collaborations with other funded projects, including Safe-DEED, GAIA-X 4 PLC and SC4EU were initiated and established. Safe-DEED provided data anonymity, while GAIA-X 4 PLC enabled anonymous surveys. Furthermore, SC4EU project will provide the true demand platform to deliver final results (SC4EU will end in 04/2027). To visualize these steps, following Figure provides an overview of the dataflow.

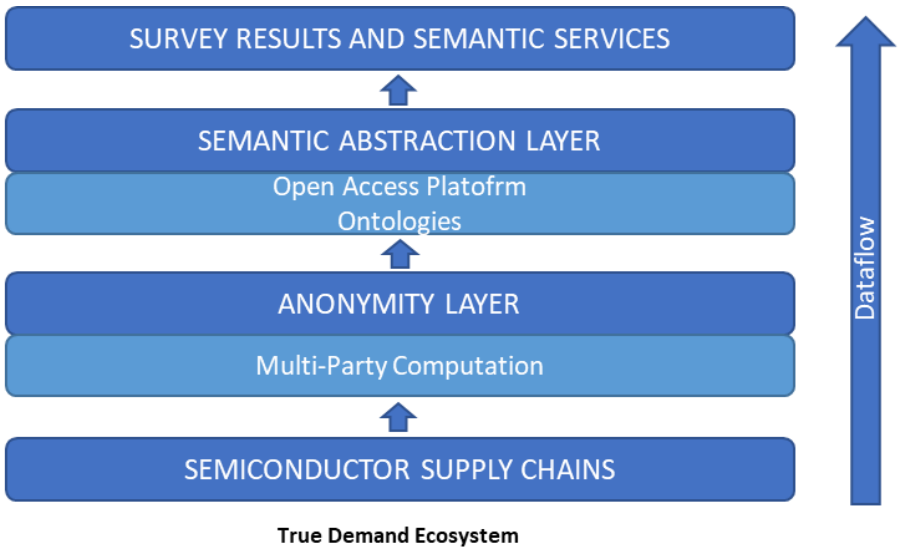

Figure 2: Overview of Dataflow

The new approach of the True Demand Ecosystem Platform together with the OAP was to come to true(r) demand as the need for a tactical forecast is avoided by anonymity and secondly the semantic web gives the ability to propagate it down to the needed granularity of the players involved. The platform uses semiconductor supply chain information's from collaborating partners to generate survey results and semantic services.

2.3 Liaison in the field of Cyber architecture building on Arrowhead

Towards the early evaluation and the use of a common Cyber architecture for AI supported sustainable production AIMS5.0 work package 3 sought the liaison with Eclipse Arrowhead, Arrowhead tools as well as Arrowhead fPVN.

Concrete contributions addressed the engineering efficiency:

- Contributions to a Domain Specific Language based on SysML1.6 for model-based engineering of SoS application solutions based on the AIMS5.0 cyber architecture building on the Eclipse Arrowhead v4.6. The DSL in open source and available here: https://github.com/eclipse-arrowhead/profile-library-sysml/tree/main/distribution/Papyrus
- Contribution to AI supported auto generation of code based on SysML/UML models.

Concrete contribution to the next version of the Eclipse Arrowhead cyber architecture was based on the requirements from the AIMS5.0 use cases and technology providers experience:

- Contribution to specifications for Eclipse Arrowhead v5.0. Available here: https://github.com/eclipse-arrowhead/roadmap/tree/main/5.0%20Draft

For the monitoring of ongoing technical work, the series "Bi-weekly Arrowhead status meetings" for all Arrowhead enthusiasts (incl. all Arrowhead developers, AIMS5.0 WP3 and

Arrowhead fPVN WP2 stakeholders) was organized. These meetings were about the regular Arrowhead Framework development updates and Eclipse Arrowhead v5.0 roadmap.

In addition, monthly AIMS5.0 WP3 teleconferences were organized where the regular updates concerning the WP3 ongoing activities as well as partner contributions and their managerial updates (e.g., risks, changes) were discussed.

- Online Arrowhead training organized by LTU on 26.06.2023 including an introduction to Microservice architecture (LTU), Eclipse Arrowhead and its Implementation Platform (BME & AITIA), Use Case Example of the AH deployment example of Thingwave AB. All presentations incl. recorded sessions are available on the project cloud: https://cloud.aims50.eu/apps/files/?dir=/AIMS5.0/WP3%20Cyber%20architecture/WORK/Training%20sessions/230626%20Microservice%20paradigm&fileid=44799
- Short survey by AITIA collecting the requirements and competence for Micro-service based AI integration (focus is on the micro-service part).
- LTU organized the Innovation Technology Days Lulea where technical work package break-out sessions, incl. one for WP3, were organized. The WP3 partners together and with UC leaders could exchange about related design and preliminary implementation activities. The advances related the Arrowhead v5.0 Roadmap and AH specifications were presented in this event.
- To stimulate further synergies and cooperation within and outside the WP3, the WP3 partner provided summaries about their involvement and current contributions, contacts, upcoming events, etc. in the work package.

LTU & RSA organized the Deep Tech WS in St.Pölten[1] on 27-28th September 2023, where Eclipse Arrowhead v5.0 specifications and implementations were presented and discussed within the project and with the sister project Arrowhead fPVN; co-organized with AIMS5.0 WP7 and two other Use Cases workshops (UC11 & UC12). The joint AIMS5.0 and Arrowhead fPVN workshop focused on common technologies and the initial use of the Arrowhead framework in AIMS5.0 use cases.



Figure 3: Open Space Visits at the Deep Tech Workshop in St. Pölten, Austria

In the second half of period 1, a highlight regarding liaison consisted in the common AIMS5.0 / Arrowhead fPVN workshop, organized by LTU in Luleå, Sweden (January 23-25, 2024). The three days workshop started with an Arrowhead fPVN day, while the second day was organised as joint AIMS5.0 and Arrowhead fPVN day. The third day was finally dedicated to AIMS5.0. The joint day focused on the Arrowhead hands-on training for AIMS5.0, project management and coordination topics.

[1] https://itwelt.at/news/neuer-forschungs-hotspot-in-st-poelten-studio-smart-digital-industries-services-eroeffnet/



Liaison activities with projects Arrowhead fPVN and SC4EU were continued throughout the second AIMS5.0 project period. Continuous exchange between AIMS5.0 and SC4EU was taking place particularly regarding the content of AIMS5.0 WP4 on ontologies and data models. Similar to 2023, AIMS5.0 contributed to the European Conference on EDGE AI Technologies and Applications – EEAI that took place from 21-23 October 2024, in Cagliari, Sardinia, Italy.

From 12-13.11.2024 another Deep Tech conference between Arrowhead fPVN and AIMS5.0 took place at BME in Budapest, followed by a face-to-face AIMS5.0 Steering meeting on 14.11.2024. The Deep Tech conference included poster presentations, e.g. on the "Smart-Sensor-Platform *To-Go*: Applying end-user sensors and sophisticated algorithms to monitor Automated Material Handling Systems (AMHS) components" as well as on "Standardization – Cross-Domain Synergies through Research".



AIMS5.0 strived to strengthen liaison activities further within the frame of the EFECS 2024 conference which will take place from 5-6.12.2024 in Ghent, Belgium. AIMS5.0 was present with a booth.

Also during the final project phase, the close interaction between the three projects Arrowhead fPVN, SC4EU (see also section 2.2 above) and AIMS5.0 was continued. A continuous exchange between AIMS5.0 and SC4EU took place particularly regarding the content of AIMS5.0 WP4 on ontologies and data models. At technical level, the exchange was intensified by so-called Deep Tech workshops between all three mentioned projects. These workshops took place annually. The 2025 Deep Tech workshop was organised by the University of Lisbon (Portugal). It took place from 28-30.11.2025. Highlights of the joint workshop covered AIMS5.0 WP4 details, Detecting Defect-Prone Paths in Manufacturing Processes using Process and Pattern Mining as well as many further Arrowhead applications in AIMS5.0 use cases.



Figure 4: 2025 Deep Tech workshop was organised by the University of Lisbon (Portugal)

Based on this spirit, AIMS5.0 strived to strengthen liaison activities further within the frame of the EFECS 2025 conference which will take place from 3-4.12.2025 in in St Julian's, Malta. AIMS5.0 was present with a booth.

2.4 Liaison with EdgeAI project

Liaison with the Chips JU project EdgeAI was established within the frame of the European Conference on AI Technologies and Applications (https://edge-ai-tech.eu/) – EEAI 2023 on 17-19 October 2023 in Athens, Greece.[2] AIMS5.0 supported this yearly conference with presentations, posters and discussion throughout the entire project duration.



Figure 5: AIMS5.0 WP7 at EEAI 2023 in Athens, Greece

AIMS5.0 project partners participated in numerous professional fairs and exhibitions such as the Hannover Fair 2024, the Innovation Fair in Munich, fully utilizing these events to engage mainstream press and organize interview opportunities with high-profile participants. All activities were aligned with our goal of cost-effective awareness-raising, included collaborations and synergies with projects like AI REDIGO 5.0, PowerizeD, Arrowhead fPVN, AI4CSM, A-IQ Ready, and FORTH-IESL.

The successful exchange with the EdgeAI project was concluded by a detailed key note from the EdgeAI coordinator at the AIMS5.0 final General Assembly meeting and demonstration

[2] https://www.linkedin.com/posts/aims50_aims50-edge-conferenceinathens-activity-7120753974500061186-AfRq?utm_source=share&utm_medium=member_desktop

sessions. This event was organised by the University of Madrid and took place from June 16-17, 2026 at UPM in Madrid, Spain.

3. Conclusions

Deliverable D9.8 presents selected highlights of liaison activities and synergies between the AIMS5.0 project and thematically related other research and innovation projects. More details on the above-mentioned liaison measures were published through the project's website https://www.aims50.eu. Interested readers are kindly asked to refer to the news section of this publicly available website, particularly on the following news on liaison activities:

- Nov. 14, 2023: Collaboration at its best
  https://aims50.eu/index.php/news-stories?view=article&id=28&catid=12
- Feb. 02, 2024: Sharing knowledge in Austria
  https://aims50.eu/index.php/news-stories?view=article&id=205&catid=12
- May 20, 2025: AIMS5.0 at INSIDE Connect 2025: Showcasing AI for Sustainable Manufacturing
  https://aims50.eu/index.php/news-stories?view=article&id=228&catid=12
- Sept. 19, 2025: AIMS5.0 at the European Research & Innovation Days – Reflections from Brussels
  https://aims50.eu/index.php/news-stories?view=article&id=229&catid=12
- Dec. 9, 2025: Deep Tech Collaboration Workshop — Lisbon 2025
  https://aims50.eu/index.php/news-stories?view=article&id=234&catid=12
- Dec. 9, 2025: AIMS5.0 at EFECS Malta 2025
  https://aims50.eu/index.php/news-stories?view=article&id=233&catid=12
- Dec. 18, 2025: Winter Simulation Conference 2025: Key Insights for AIMS5.0
  https://aims50.eu/index.php/news-stories?view=article&id=235&catid=12
- April 2, 2026: SysMLv2 Library for SOA: Arrowhead Work Highlighted in the Context of AIMS5.0 Collaboration
  https://aims50.eu/index.php/news-stories?view=article&id=246&catid=12
- June 16, 2026: AIMS5.0 General Assembly in Madrid: From Project Results to Industrial Impact
  https://aims50.eu/index.php/news-stories?view=article&id=248&catid=12

All in all, we conclude that the liaison activities described in this deliverable proved to be very useful. The open-minded collaboration between relevant projects ("learning from each other") helped a lot to lift the potential of the technological achievements in an efficient manner. In the end, this supports gaining momentum and improving competitiveness of the European industry.