SDAM ALLIANCE DAYS
PARTNER CONFERENCE & OPEN SUPPLIERS MEETING

BUILDING SECURE END-TO-END INDUSTRIAL AM SUPPLY CHAINS

JUNE 15-17, 2022 | AMSTERDAM
WWW.SDAMALLIANCE.COM

CONFERENCE 'SECURE ON-DEMAND ADDITIVE MANUFACTURING' | DAY 1

Tuesday 14 June (arrival day)
From 20.00 hrs — Pre-conference Meet & Greet
We'll meet at the Hotel bar to meet colleagues or shake hands with the other attendees. Come and join us. This is probably the best way to warm up for the SDAM Alliance Days!

Wednesday 15 June
08.30 | **Networking Breakfast**

09.30 | **Identifying the challenges and risks associated with Secure Distributed AM**
Interactive workshop based on input from all participants (interviews, questionnaires).
Chair: Tjibbe Veenstra, SDAM Alliance
Working Group: Representatives from partners (to be announced)
Security is a critical issue in additive manufacturing (AM), since AM relies on digital files and network connectivity. In this workshop we first review several major risks and mitigation strategies in AM industry, split into four Phases: I. Screening & Selecting, II. Engineering Services, III. Storage and IV. Production. How to detect threats and assess vulnerabilities in the AM process, what is the weakest link in data transfer in AM and what is critical to get a stronger link. Defining new and inherent risks, identifying examples, what happens when data is commercially misused or abused and what happens when data is intentionally or unintentionally corrupted?

11.00 | **Break**

11.30 | **What levels of secure data transfer in AM ecosystems are we aware of?**
Interactive workshop based on input from all participants (interviews, questionnaires).
Chair: Tjibbe Veenstra, SDAM Alliance
Working group: Representatives from partners (to be announced)
We would like to gauge knowledge and expertise with secure data transfer in AM and what levels are used regarding digital warehouses, standardised data models, end-to-end integration, IP protection, manufacturing repeatability, traceability, encrypting data and integrating machine interfaces, including, but not limited to:
- using OPC UA as a platform independent data-exchange protocol for M2M communication
- the implementation of Asset Administration Shells for monitoring of physical assets
- using AutomationML as a neutral format for data exchange in engineering, as well as for traceability
- making use of neutral formats to extend design data with material properties as well as process parameters and quality data: Collada/STEP for design, PSL as process specification language, QIF as neutral format linked with dimensional verification

13.00 | **Networking Lunch**

14.00 | **The role of the Digital Thread for AM (DTAM)**
A series of sessions, concluded with a panel discussion
Chair: Tjibbe Veenstra, SDAM Alliance
Panel: Representatives from partners (to be announced)
The DTAM is a single, seamless strand of data that stretches from the initial design concept to the finished part, constituting the information that enables the design, modelling, production, use, and monitoring of an individual manufactured part. Alongside data and hardware security, data traceability is important. 'Digital breadcrumbs' are needed to show true digital process compliance.
The DTAM has two functions: 1) the ability to trace a product from inception to production and 2) seamlessly linking together local printers, models, and data into a single, coherent ecosystem. The AM ecosystem does need multiple enablers for a successful implementation and function of a full-scale DTAM.
The panel will address the challenges
- assess the current state of tools and technologies
- consider current approaches to data storage and use and how they might map to a DTAM
- determine focus: product development, supply chain management or both
- understand that there is no one-stop end-to-end solution (yet)
- understand that federation and standardisation are needed to manage and analyse immense data loads while ensuring systems from various DTAM stages can speak to each other.

14.45 | **Digital Warehousing (DW) of AM Spare Parts**
Panel discussion
Chair: Tjibbe Veenstra, SDAM Alliance
Panel: Invited experts and representatives from partners (to be announced)
Each manufacturing sector and its industries will face a unique challenge to build its own version of the digital warehouse. This session will focus on the main building blocks of the DW concept:

A REAL INTERACTIVE NETWORKING EVENT
With the worst of the pandemic behind us now, our 150+ partners would like to engage with people in person again. Within our exciting collection of sessions and workshops, there is a strong focus on collaboration, sharing ideas and coming up with joint solutions. We have tried to avoid one or more aspects of a conventional conference, such as high fees, formal functions or sponsored presentations.

This partner event is meant to be a participant-driven meeting.

FOCUS ON SOLVING THE RISKS ASSOCIATED WITH A DATA-ENABLED AM SUPPLY CHAIN
The agenda has been created with the focus on further laying the groundwork for solving the risks and challenges associated with a data-enabled AM supply chain. Attendees are asked to join discussions on a topic or to become a member of a specific working group. Groups of participants will also work together to explore a risk, a challenge and come up with solutions. The agenda features not only sessions, workshops, panel discussions, but also single speakers at the front of the room giving a 15-20 minute talk.

Inspired by collaboration, sharing ideas and coming up with joint solutions.

MAKE THE MOST OF NETWORKING
AM demands and thrives on collaboration. This is even more true for building secure end-to-end industrial AM supply chains. To make the most of this SDAM Partner Conference, you have to make the most of your networking time as well.
As a start, the tables in the conference restaurant will have personal seating arrangements for breakfasts, lunches and dinner. Beforehand all participants will be asked to submit a selection of people and organisations they would like to meet, and we will manage the seating arrangements accordingly.

Personal seating arrangements for breakfasts, lunches and dinner.

SDAM PARTNER CONFERENCE AMSTERDAM JUNE 15-16, 2022
The programme of sessions and workshops involves you and other participants working actively together towards the particular objectives set in the agenda in addition to exploring solutions and insights that will be new for the participants. You will engage in discussions and in collaborative activities that enable you to explore specific topics. Participating allows you to reflect on issues and on your own experiences. You contribute to solutions our industry needs to offer secure distributed AM, but at the same time you analyse, share and enhance your knowledge.
Building Secure AM Supply Chains require an integrated approach, taking a system-wide view of the interlinked challenges. We have to learn from one another, to work together, to solve problems by leveraging our collective intelligence.

Leveraging the collaborative nature of Secure Distributed Additive Manufacturing.

- Model to capture, share and analyse existing part inventories (screening, identification)
- Assessment of what parts could be printed and what parts should be printed
- Prioritising a set of variables that can be adjusted, such as cost, time, cost, lead time
- Model for fact-based decisions to optimise the manufacturing footprint (considering history, production & facility costs, transportation costs and profit margins)
- Strategic innovation development of DW relationships between OEM and customer
- Secure printing from stored files in DW (for production on-demand and at scale)

15.30 | Break

16.00 | **USE-CASE SEMINAR MARINE & SHIPPING**
(co-production with DSP World Expo, Essen, September 13-14, 2022)
AM requires an ecosystem approach, in which stakeholders are working in close partnerships. We wil stage some of the most innovative and important initiatives that enable the transition to a digital supply chain for spare parts in the shipping and maritime sector. *(This programme item will be updated regularly)*
WILHELMSEN | THYSSENKRUPP - Hakon Ellekjaer, Head of Additive Manufacturing
Wilhelmsen is a global maritime and energy group with the largest maritime network in the world (50% of global merchant fleet as customers). Thyssenkrupp is a €29.0 billion diversified group of companies covering automotive, industrial components, marine systems and material services. Their AM On-Demand solution is solving the biggest spare part pain points for OEMs and End Users such as long-lead times, poor part performance and obsolete/legacy parts.
This AM venture provides
- the largest printable maritime spare parts catalogue in the world, with a deep knowledge of certification and performance for on-demand production
- a globally integrated delivery supply chain ecosystem the is financially and strategically attractive to manufacturing partners., OEMs and end users
- transactions through a secure digital warehouse and fabricator marketplace

17.30 | Close of Day 1

19.00 | Networking Dinner

CONFERENCE 'SECURE ON-DEMAND ADDITIVE MANUFACTURING' | DAY 2

Thursday 16 June

08.30 | Networking Breakfast

09.30 | Feedback from Day 1
Short presentation of each Working Group, followed by Question & Answer session
Chair: Tjibbe Veenstra, SDAM Alliance
Working groups: Representatives from partners (to be announced)

10.30 | Break

11.00 | How to achieve Secure Production
Panel discussion
Chair: Tjibbe Veenstra, SDAM Alliance
Panel: Invited experts and representatives from partners (to be announced)
In all SDAM Alliance Research Interviews we discussed the adopted position 'True security must-be built-in, not plugged-in' as the essential and indispensable link to grow real industrial end-to-end AM supply chains.
With its reliance on digital data files and connectivity to transmit them, the very nature of AM leaves it open to significant security exposures, from product malfunctions to intellectual property theft. Industrial AM supply chains do need confidence that any parts printed comply with IP rights, license agreements and other security concerns. This panel addresses the key security and integrity issues:
- Is Human Interaction in AM production facilities the largest bottleneck for secure end-to-end AM supply chains
- Beyond adding traceable materials during the build process or monitoring quality assurance, what kind of measures can production facilities consider to put in place in order to protect the machines themselves
- As AM printers often do not limit or control who uses them, or what parts are printed, should production facilities adopt change management & control workflows for printers and parts, including reviews, and authorised approvals?
- How to protect networked printers from external threats and how to check vulnerabilities in these networked printers

12.00 | How to develop a framework for IP Protection
Interactive workshop based on input from all participants (interviews, questionnaires).
Chair: Tjibbe Veenstra, SDAM Alliance
Working group: Representatives from partners (to be announced)
The overall aim of this workshop is to support the development of a framework that will support understanding and decision-making strategies at the supply chain level when securing intellectual property associated with additive manufacturing process applications. The workshop will research the perspectives from different actors involved within the additive manufacturing process supply chain from a technical, legal and non-legal angles. The focus is on the engineering services as part of the AM production process, especially related to re-design, optimising and adapting.

13.00 | Networking Lunch

14.00 | Industry-wide Standards and Certification are key to build a strong AM ecosystem
Interactive workshop based on input from presentation by David Hardacre on 7 March (LQRA) and all participants (interviews, questionnaires).
Chair: Tjibbe Veenstra, SDAM Alliance
Working group: Representatives from partners (to be announced)
AM parts destined for end-use must meet strict requirements. Certification and standardisation will be key to building trust and establishing robust certification approaches. It would be highly beneficial to all stakeholders if the AM industry had better standards overall — standards that are universally understood and accepted. Companies do need to make intelligent decisions that can be implemented within a comprehensive ecosystem of suppliers, manufacturers and users. How to achieve a AM Standards Structure split into

- General top-level AM Standards (Common concepts & requirements/Generally applicable)
- Category AM Standards (Specific to material category or process category)
- Specialised AM Standards (Specific to material, process or application)

15.00 | Break

15.30 |USE-CASE SEMINAR AVIATION & AERONAUTICS
(co-production with DSP World Expo, Essen, September 13-14, 2022)
AM requires an ecosystem approach, where stakeholders are working in close partnerships. We wil stage some of the most innovative and important initiatives that enable the transition to a digital supply chain for spare parts in the aviation and aeronautical sector. *(This programme item will be updated regularly)*
KLM|BOEING|INDUSTRIAM

17.00 | Close of Day 2

19.00 | Amsterdam by night
From our conference hotel, downtown Amsterdam is only 4 stops by train (25 minutes). Amsterdam is not only a breathtaking city with architecture steeped in history and a unique culture, it also has lots of interesting things to do at night. See the city light up, soak up its culture, check out some bars or chill out on the water (Amsterdam has more than 100 km of cosy canals and 1500 bridges!). Or just invite some participants for a nice meal together — to discuss business, Industrial AM and more!

'SDAM ALLIANCE OPEN SUPPLIERS MEETING'

Friday 17 June 2022

08.30 | Networking Breakfast

09.30 | Feedback from Day 2
Short presentation of each Working Group, followed by Question & Answer session
Chair: Tjibbe Veenstra, SDAM Alliance
Working groups: Representatives from partners (to be announced)

10.30 | Introduction
Our 160+ participants represent an unprecedented cross-industry collaboration between all segments of the entire AM industry with the goal to resolve the longstanding security issues in the AM industry. The mission is to drive the industrial application of AM in all vertical manufacturing industries and to build vibrant secure industrial AM supply chains — for production at scale as well as on-demand.

10.45 - 13.00 | Pitching for sales and partnering
We have divided the AM Production Process into a number of segments to cluster the potential collaboration of our participants. Each participant will have an adequate opportunity to present their products, portfolio, research, and services to the other partners.

SCREENING | Part Identification, Qualification & Selection

ENGINEERING SERVICES | File design, redesign, optimisation, adaption, workflow

STORAGE | Digital Warehousing, Data Transfer & Tracking

PRODUCTION | Printing, Post-processing

RESEARCH | EU & multi-national projects, Academic research projects

COMMERCIAL PROJECTS | New collaboration opportunities, open for SDAM Alliance partners

13.00 | Closing of SDAM Alliance Days 2022