

## Relevance of the SAM Project for academia

Additive Manufacturing (AM) is one of the fastest-growing sectors, with a compound annual growth rate (CAGR)<sup>1</sup> of more than 20% [1]. In addition, owing to constant technology maturing, materials development, and integration with downstream processes, AM is becoming more industrially relevant.

Manufacturing industry is keen to use AM and explore the exciting new potential. The introduction of new technology has two implications; it creates an additional production step in the production chain, and it also increases the demand for expertise linked to this technology.

As such, industry needs the right kind of professionals, with the appropriate skills to fully utilise the available technology [2]. Generally, manufacturing industries already have a skills gap that could leave two million manufacturing jobs unfilled according to Deloitte [3], with even fewer qualified personnel to support the growth in the AM field [4].

The current skills gap can be traced back to the misalignment of the AM industry with the knowledge and training providers that are further increased with the introduction or advancement of new complementary technologies and materials. For instance, a machine operator for a DED AM process, apart from the generic expertise for robot and AM head operation, is now required to operate in-line monitoring and control equipment. The high growth rate of the AM industry cultivates an equally high demand for skilled AM workers and engineers which combined with the limited in number and capacity training and education institutions specialized in AM, results in the current insufficient status of the AM workforce and expertise.

Academia is very much involved in research linked to most of the developments in the AM field, assisting in maturing the technology and materials involved. Most academic institutions active in engineering fields are involved with research on AM technologies. In addition, most of them have implemented AM training courses in their curricula, in one form or another. However, each institution follows their own approaches and content, which may not follow the actual needs of industry, and does not follow one unified approach in terms of both content and qualifications.

This is where SAM (Sector Skills Strategy in AM) and the greater effort of the International Additive Manufacturing Qualification System (IAMQS) come in. SAM is the blueprint funded through the Erasmus+ programme to develop out industry-specific qualifications and skills and the governance model for the proliferation of said qualifications and skills under the IAMQS. As referred to above in this text the purpose of SAM Project is to create one unified syllabus for AM.

The project is funded through the EU and is actively engaged with industrial and academic partners, with the aim of serving both the existing and upcoming requirements for qualifications and skills for AM training across Europe. This provides an opportunity for academic institutions to remain relevant in creating the right kind of professionals for AM. Through SAM, these institutions can shape and follow a unified framework for training and education, certifying and qualifying their students of AM.

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<sup>1</sup> Compound annual growth rate (CAGR) is the rate of return that would be required for an investment to grow from its beginning balance to its ending balance, assuming the profits were reinvested at the end of each year of the investment's lifespan

## Get involved

If you are interested in learning more or engaging in developing skills in Additive Manufacturing mentioned above, please get in contact with us through the SAM website:

<http://skills4am.eu/contactus.html>

## References

- [1] AM Power: Additive Manufacturing Market 2021, <https://additive-manufacturing-report.com/additive-manufacturing-market-2021/>
- [2] Deloitte: 3D opportunity for the talent gap, [https://www2.deloitte.com/content/dam/insights/us/articles/3d-printing-talent-gap-workforce-development/ER\\_3062-3D-opportunity-workforce\\_MASTER.pdf](https://www2.deloitte.com/content/dam/insights/us/articles/3d-printing-talent-gap-workforce-development/ER_3062-3D-opportunity-workforce_MASTER.pdf)
- [3] Deloitte: 2018 skills gap in manufacturing study, <https://www2.deloitte.com/us/en/pages/manufacturing/articles/future-of-manufacturing-skills-gap-study.html>
- [4] McKinsey & Company: Additive manufacturing: A long-term game changer for manufacturers, <https://www.mckinsey.com/business-functions/operations/our-insights/additive-manufacturing-a-long-term-game-changer-for-manufacturers>

## More information on SAM project:



Follow us on our social media channels for all the latest initiatives related to the SAM project!

