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ADMIRE project will develop a new partnership between Universities, companies and students to drive and extend the qualification of the additive manufacturing workforce

The project includes an innovative Metal Additive Manufacturing Master Degree and the creating of a collaborative hub to store problem-based learning assignments, allowing them to be solved collaboratively as well as providing a unique place to store information relevant to the AM community

Enhancing the collaboration between Universities and the industry at large is of paramount importance, especially at a time when Additive Manufacturing (AM) and other Industry 4.0 technologies are becoming increasingly mainstream and bring new challenges related to the qualification of the workforce to deal with this change. The knowledge Alliance for Additive Manufacturing between Industry and Universities (ADMIRE) project, under Erasmus+ Programme, intends to address this gap by establishing a solid relationship among enterprises working in the AM supply chain, research centres and universities.

Connecting the dots from Education to Industry

Additive Manufacturing (AM) is quickly moving into the mainstream production, given its clear advantages in terms of efficiency, flexibility and even from an environmental perspective.

Due to its novelty and fast growth and magnitude of application, the AM field has a distinctive set of features: it is still quickly evolving and, as such, job positions are very hard-to-fill because of the insufficiency of manpower with the required expertise; similarly, currently available educational offers are unable to provide students with the needed skills that can meet the expected high levels for such high performance, high value products.

Consequently, there are two important hurdles to overcome: i) absence of comprehensive and all-encompassing curricula/education (in universities) and ii) the availability of skilled employees for a wide variety of positions, including engineers with AM proficiency.

The ADMIRE project has one main goal – to address the widely-identified death-valley among academic and industrial world, while at the same time responding to an urgent industrial need: the qualification of AM workforce.

Together partners from 5 countries (UK, DE, FR, BE, and PT) universities (Cranfield University, University of Birmingham, Bremen University and Instituto Superior Técnico from University of Lisbon), companies (Manufacturing Technology Centre, IREPA and Global Robots Ltd) and students will design a Metal AM Master degree according to level 7 of the European Qualification Framework, with a set of innovative features.



This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

These include a multidisciplinary scientific scope, a modular structure promoting hard and soft skills based on the Learning Outcomes described in Knowledge, Skills and Competences; it will also have learning approaches that are learner-centred, self-directed and work-based, enabling flexible learning paths, including problem-based ones.

Another critical component of any project is to ensure that communication flows between relevant partners, and the project also looks at enhancing the flow of knowledge and innovation among the Industry, Universities and Students, through the creation of a collaborative AM platform. This will allow the storage of problem-based learning assignments and to solve them collaboratively; matching students, research institutions and enterprises; uploading research positions, internships and job vacancies; promoting AM knowledge speed-dating and AM world café meetings.

The contribution from the ADMIRE project to fulfil the Knowledge Alliance call and close the gap between industry needs and Universities qualifications is done by the development of a new curriculum, innovative solutions, products and processes, as well as, guidelines on university-enterprise cooperation. In a nutshell, it aims at providing new opportunities for students and matching companies' needs and, as a result, to contribute to reach the European Commission 2020 policy priority: a smart, sustainable and inclusive economic growth.

The ambitious goal and depth of the project can be seen by outcomes and participants from leading European universities and companies, depicted below.

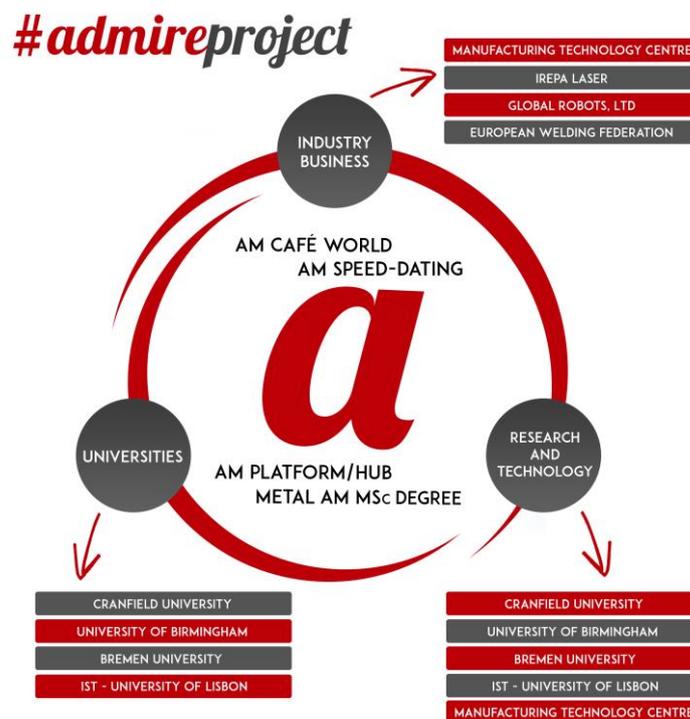


Figure 1 - Flow of knowledge