

PRODUCTION OF AERONAUTICAL COMPONENTS BY ADDITIVE MANUFACTURING IN PORTUGAL

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Summary: As part of the Agenda Aero.Next Portugal, the program Production of Aeronautical Components by 3D Printing (ProAero3D), represents an important opportunity to enhance the national aeronautical industry's capacity in the area of additive manufacturing. The partnership between Lauak Portugal, the Polytechnic Institute of Setúbal, CEIIA, and ISQ, brings together the necessary skills to fully consolidate the proposed objectives, within the scope of research, production and testing, in order to fulfil the requirements for the qualification of additive manufacturing technology. The program pretends to give steps in three dimensions: production of polymeric aeronautical components, production of polymeric aeronautical components and production of devices to support the improvement of production processes. Despite the acceptance that additive manufacturing has demonstrated in the global aeronautical sector, there is no complete standardisation developed as in other traditional technologies. This is a major challenge for the program, but it will be mitigated by the support of international partners who already have a wealth of know-how that will be a real added value, at a stage when we have the required qualifications for the facilities, equipment, materials and finally the process. The opportunity to create innovative complex structural geometries, integrating thermal and aerodynamic energy dissipation functions, with high performance in the stiffness-to-weight ratio, reducing the buy-to-fly index, operating costs and environmental impacts, are, among others, strong motivating elements for the project. The project team involve several specialists in different areas, who constitutes the technological basis for the development of this recent technology, ensuring the capacity of the national aeronautical industry to compete in the international aeronautical market in the future.