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ASCENSION: AN INNOVATIVE NETWORK TO TRAIN THE SPACE ACCESS LEADERS OF TOMORROW

Abstract

The trend towards smaller satellites and mega-constellations has enormously changed the space sector and its utilisation in the last decades, allowing new players to enter the market and introducing stringent requirements to enable a variety of novel applications. Alongside, also the launcher market is undergoing a transformation epoch: the development, manufacturing, and integration of launcher systems is being shifted from the hands of governmental institutions to commercial industry. Moreover, nations like Unites

States, China, India, and New Zealand are increasing the competition and pressure on Europe, urging the goal to ensure European autonomy in accessing and using space in a safe and secure environment. Europe does not only need innovations, but primarily a new generation of engineers, capable of understanding the full complexity of launcher development and trained to create and realise the necessary innovations.

In this context, ASCenSIon is a multidisciplinary training programme involving 15 Early Stage Researchers (ESRs) from anywhere in the world, focused on several specific areas of cutting-edge space access research, particularly on launcher systems that are (partially) reusable and capable of injecting multiple payloads into multiple orbits. The network aims to identify and advance critical technologies to prove a feasibility of these concepts, and to advance the State of the Art in the field. ASCenSIon, whose acronym stands for "Advancing Space Access Capabilities –Reusability and Multiple Satellite Injection", is a consortium of 11 beneficiaries and 17 partners across Europe, eager to contribute to the establishment of an ecologically and economically sustainable space access for Europe, oriented towards user needs. Unlike other single-aspect research projects, the core objective of ASCenSIon is not only to train 15 PhD students to become excellent specialists in their respective field, but also to provide them a thorough understanding of the complexity, multidisciplinary, and internationality of launcher development, in order to become leaders in the European effort of utilising space. This will be achieved through secondments, events, and lessons from experts, but mostly through strong interconnections among the ESRs, who will work on Individual Research Projects with a multi-disciplinal and multi-sectoral approach.

This paper aims to provide an overview of ASCenSIon programme. Its values and core objectives will be introduced, together with the innovative aspects and content structure. An overview of the research methodology and recruitment strategy will be given, with a particular focus on the contributions and synergies of all participating organisations, core of such a novel training approach.