

IAF BUSINESS INNOVATION SYMPOSIUM (E6)
Interactive Presentations - IAF BUSINESS INNOVATION SYMPOSIUM (IP)

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UNIVERSITIES AND INDUSTRY COOPERATION: ESA-ENABLED MECHANISMS DRIVING
INNOVATION IN SPACE ACTIVITIES

Abstract

ESA's purpose is "to provide for and promote, for exclusively peaceful purposes, cooperation among the European States in space research and technology and their space applications". In doing so, ESA promotes both world-class scientific excellence and a strong European industry. The EU-ESA Joint Statement states that the two institutions' shared visions and goals are to maximise the integration of space into European society and economy; to foster a globally competitive European space sector; to ensure European autonomy in accessing and using space in a safe and secure environment; and to consolidate and protect its infrastructures.

Within ESA's strategy "Towards Space 4.0 for a United Space in Europe" cross-fertilisation and knowledge transfer between academia and industry is one of the main priorities, as a way to create spin-in and spin-off effects through close, multi-disciplinary collaboration. Indeed, while academia can benefit from industry's insights into current and future market needs, industry can leverage academia's knowledge, know-how and skills in preparing the ground to responding to such future needs.

However, these communities do not always share the same language, they are faced with constraints of different nature, and do not usually participate in the same networks. Therefore, ESA has been acting as an enabler of exchanges, offering both universities and industry the opportunity to extend the range of their activities, to better valorise their respective knowledge and know-how, and to contribute to the collective interest of a strong space sector in Europe.

This paper presents the ways in which ESA facilitates academia-industry interaction in the seamless chain of innovation. They cover different TRLs, from blue-sky research, to system aspects and enabling technologies for new space missions, to initial RD and the final development, i.e. making products and flying them. The paper will conclude on lessons learnt from these activities and it will offer some indications on upcoming avenues for engagement and cooperation between ESA, academia and industry.