

IAF SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)  
Satellite Commercial Applications (3)

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EXPLORING THREATS AND OPPORTUNITIES THROUGH MEGA TRENDS IN THE SPACE 4.0  
ERA

**Abstract**

In the recent years every citizen of the planet Earth has experienced fundamental technological, societal and economic transformations. Furthermore, Space has evolved from being the domain of the governments of few spacefaring nations to an entrepreneurial area where we are witnessing the strong emergence of private actors and the increased engagement from emerging countries around the world . How should Space Agencies sense and seize opportunities and threats today? The European Space Agency with the support of Frost Sullivan has launched an initiative based on the analysis of Mega Trends. Mega trends are defined as the large-scale, sustained forces of development – such as urbanisation, connectivity and convergence – set to change the future world. Each mega trend is made up of numerous sub-trends that, in turn, are likely to affect particular economic and social sectors, including space. This initiative has several objectives: sharing global mega trends across the Agency and with stakeholders, identifying and analysing opportunities for and threats to the space ecosystem and focussing on the role of ESA to mitigate / avoid threats and catch opportunities. A dedicated ESA team for future perspectives has been set up, with representatives from everywhere in the Agency included young trainees selected through an internal competition. Furthermore, some representatives of the European aerospace ecosystem have also been invited to participate to the discussions. Trend analysis has been performed with the support of Frost Sullivan, market leader in monitoring the tendencies likely to impact our societies, economies, organisations and private lives. This paper will present the whole initiative in detail and share the findings: 9 Opportunity Areas and 4 Transformation Pillars out of the total 84 ideas collected during the two specific workshops and a dedicated “call for ideas”.