

Preface

The market for launchers and launch services has developed rapidly over the last decade. More competitive markets, sectoral reforms, changing policies, and institutional changes are all affecting the playing field that determines our access to space. What is more, recent innovation dynamics, increasing private involvement, and a continuing trend of globalization will be impacting the launch sector and what we launch even more in the future. In the mid-term, it is expected that these changes will lead to significant cost reductions in bringing payloads to the different Earth orbits and even beyond. In order to clarify and shed additional light on these expected impacts of these trends, ESPI has decided to focus on the topic of access to space and the evolution of space activities from a wide variety of angles in its Yearbook on Space Policy 2015.

Traditionally, the first part of the Yearbook sets out a comprehensive overview of the economic, political, technological, and institutional trends that affected space activities in 2015. It is prepared in-house in ESPI and while its perspective is European, it also provides a comparative analysis of space developments around the world.

The second part of the ESPI Yearbook approaches the overall theme from an analytical perspective. This year it includes ten external contributions that bring together the views of eminent professionals and experts coming from different branches of the space sector. The first contributions in this part of the Yearbook offer a panoramic perspective on the elements that ultimately define how other space activities are affected in the long run. This starts with a contribution by CNES Director of Launchers Jean-Marc Astorg, who presents an overview of the state-of-the-art capabilities of the European launching sector and their outlook. Following this, Cristina Chaplain, Director in the U.S. Government Accountability Office, explains how the commercial space sector in the United States is currently affecting governmental space programs. Subsequently, the future potential of new space activities is explored in a contribution by Richard DalBello, Vice President Business Development and Government Affairs at Virgin Galactic. Subsequent contributions take the assumption of declining launch cost in the future

a step further, as they assess the impact of falling launch costs on various aspects of space utilization. In this respect, Eurisy Secretary General Stefaan de Mey explores the future potential of space applications. This is followed by a contribution written by Professor Shuang-Nan Zhang of the Chinese Academy of Sciences on the potential impacts of what he coined “efficient access to space” on space astronomy and scientific progress. Leopold Summerer, Head of the ESA Advanced Concepts Team, offers an outlook on the evolution of other enabling and game-changing space technologies that might fundamentally impact the status quo of human activities in outer space. The final contributions in Part II of the Yearbook address the evolving needs in terms of governance, strategies, and approaches that will arise in the playing field of space anno 2030. Young researchers Nina Witjes (Scientific Researcher at the Munich Center for Technology in Society), Philipp Olbrich (PhD Student at the Rijksuniversiteit Groningen), and Isabella Rebasso (Trainee at the Austrian Institute for International Affairs) write about how future remote sensing capabilities might impact transparency building and create a new landscape for various societal activities. Professors James Schwartz (Department of Philosophy, Wichita State University, USA) and Tony Milligan (Department of Theology and Religious Studies, King’s College London, UK) then present their views on the main ethical constraints on near-Earth resource exploitation in a wide sense. The European options to deal with the prospect of falling cost of utilizing space are explored by Jesse Phaler, Head of the Industrial Return Management Office at ESA. Finally, Staffordshire University professor and Head of Research at the British Royal Aeronautical Society Keith Hayward sheds light on the transition to a new business model in the launcher markets and its economic implications.

The third part of the Yearbook continues the character of the Yearbook as an archive of space activities. Again prepared in-house by ESPI, a bibliography, chronology, and data about institutions are provided where readers of the now nine volumes of the Yearbook can identify statistical developments and evolutions.

In closing, we would like to thank the contributors of the articles in Part Two for their engagement in this publication. Moreover, we are very grateful to Frances Brown, former editor-in-chief of Space Policy and current member of the ESPI Advisory Council, for her support and inspiration as we prepared the ESPI Autumn Conference 2015. The contributions in Part II of the Yearbook reflect the presentations made by the authors at the Autumn Conference.

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