

# Development of a Science and Technology Basis for Creation of Advanced Space Engineering Technologies

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**Abstract.** The article offers an analysis of the main approaches to the building of a scientific, technical and technological base in space device engineering organizations. It is noted that presently in the leading corporations of aerospace, the research and development is mainly conducted in the major corporate centers that implement the principles of systems engineering. The main innovation planning documents are the technological roadmaps for critical areas, on the basis of which the advanced space technology development projects, that include the main stages of the product life cycle, are created.

The availability engineering of the technological innovation in the company AIRBUS DEFENCE AND SPACE is considered. It is noted that the costs of research and development correspond to approximately 5% of the company's total funding.

The concept of the corporate center for research and development in the field of space device engineering is suggested.

The main technological trends in the development of advanced service and target devices in the integrated structure of the Joint Stock Company "Russian Space Systems" are discussed. The results are presented in the summary table of critical device (system) engineering technologies.

**Keywords:** scientific and technical basis, space device engineering, systems engineering, critical technologies, technology roadmap