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# NASA SUBORBITAL RESEARCH PARTNER MARKET ANALYSIS USING INNO360

**Abstract**

This paper summarizes results from a study to identify potential NASA suborbital research partners, using specialized search tool, the inno360 open innovation platform. The results presented focus on the international connections between researchers whose work is applicable to suborbital research platforms. The result of the overall study was the research landscape for two areas of research applicable to suborbital vehicles: biotechnology, and planetary landing technologies.

Connections between researchers covered by the study include locations and the relationships of relevant research. The paper will show which countries are most engaged in relevant types of investigation, based on publications and patent data. It will show the existence and depth of international collaborations, through an analysis of citations in IP data. The paper will also highlight the results on different focus areas among countries and regions. NASA funded the study on which this paper is based. The project originated in the Office of the Chief Technologist at NASA Headquarters.

The purpose of the study was to identify new research communities that may benefit from research opportunities emerging from commercial suborbital vehicles. NASA can then reach out to these communities and communicate the potential benefits of quality microgravity for their investigations. The study methodology begins with a taxonomy of research areas appropriate for these vehicles, and conduct very deep searches of international research personnel. The taxonomy of research areas is based on previous work by The Tauri Group, which developed definitive market segments for the suborbital industry, each containing exhaustive applications within those market segments.

The international research community engaged in this research is then fully landscaped using the inno360 tool. inno360 is a software and search platform originally developed by Proctor Gamble, General Mills, and AFRL, designed to match capability needs to relevant researchers. The tool conducts semantic searches of the entire web, the deep web, journal articles, and social networks. It analyzes results by creating three-dimensional maps of relevant research activities, and connections among related areas. The tool scans over 5 billion connected objects, and can support searches in multiple languages.

The result is a comprehensive assessment of communities outside of NASA whose research may benefit from suborbital opportunities. These results can inform NASA partnership strategy, targeting high value collaborations.