

Ukrainian Space Research on Commercial Suborbital Platforms - Opportunities for International Cooperation

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Summary

Ukraine as a space power has considerable experience in space research on orbital platforms including the Space Shuttle. Today Ukrainian research community has much less opportunity to implement their ideas onboard orbital vehicles. At the same time, new opportunities represented by emerging commercial suborbital spaceflight sector may help Ukrainian space research community to continue their work. This report outlines the project aimed at helping researchers from Ukraine to bring their experimental ideas to actual implementation onboard suborbital platforms.

Background

Since the beginning of space era Ukraine was deeply involved with almost every aspect of space race and that included research in various areas of space-related sciences. One of the most recent projects was Collaborative Ukrainian Experiment (CUE), that was implemented onboard Space Shuttle Columbia during STS-87 mission in 1997. A set of several individual experiments in plant biology plus an educational program, CUE was devised and conducted in close collaboration between Ukrainian research institutes and US universities, and also involved participation of numerous school students from both countries.

With Space Shuttle program closure, and taking into account the fact that Ukraine is not a part of the International Space Station program, the perspective for Ukrainian scientists to send their experiments to orbital destination is at best uncertain.

On the other hand, new developments in commercial spaceflight industry promise brand new opportunities for all international community, including Ukrainian researchers. At the same time, these new opportunities are not readily accessible for the researchers due to several factors, directly related to the novelty of the new platforms - researchers from Ukraine are mostly unaware of the new opportunities, and even if they have heard of suborbital research in general, they would likely not consider them because there is no government program to fund commercial suborbital experiments etc.

Therefore, additional efforts are needed to help Ukrainian researchers to overcome mentioned

above difficulties, and the project presented in this report is mainly aimed at that objective.

Project outline

The idea of the project is to help implementing specific research projects all the way until their realization onboard commercial suborbital vehicles. That task will include identification of potential experiments that can have scientific merit if being flown on suborbital platform.

The project will help the researchers in establishing contacts with their international counterparts so they can plan the experiment as a joint venture.

It will also help the scientists in their search for funding opportunities, including domestic or internationally available grants and sponsorship.

And finally, the project will connect the researchers with a suborbital spaceflight provider and help with integration of their experimental payload.

Research Examples

The author presents several examples of Ukrainian space research ideas that are suitable for suborbital implementation.