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## Author: Mr. Brian Stanford NASA, United States

## NASA'S TRANSACTIONAL APPROACH TO COMMERCIAL SPACE SYSTEMS ACTIVITIES: A NOVEL WAY FORWARD

## Abstract

In anticipation of the end of the Space Shuttle era, NASA initiated a series of unusual and highlyinnovative commercial partnerships to ensure its continued access to low earth orbit on U.S. space transportation vehicles. These "game-changing" initiatives and partnerships have significant implications for the future of space transportation systems, both government and commercial, worldwide. The paper will explain the basis for these initiatives under U.S. law and will discuss the challenges NASA had to surmount in order to achieve two crucial objectives: facilitation of the development of a U.S. private commercial spaceflight industry and the eventual acquisition of space systems services from the newly created market of vendors. The commercial services provided by these markets include not only cargo transportation but also, most recently, human transportation systems.

This paper will discuss NASA's novel, hybridized transactional approach to facilitate development of space systems with private sector entities. Specifically, this paper will discuss NASA's strategic alignment and execution of these instruments in order to implement a program which builds upon itself and stimulates the commercialization of space, while also working to improve the competitive environment for the traditional government procurement market. In effect, NASA's transactional approach incentivizes companies to develop commercial solutions for complex space systems. NASA then utilizes a traditional government methodology to purchase services from these commercial vendors by use of systems that have yet to be fully developed and certified. This paper will discuss this innovative procurement design and will also touch upon NASA's success in recent litigation that validated this approach under the United States' bid protest procurement review system.

Finally, this paper will provide international context for this transactional methodology to commercial space activities by examining the current state of the procurement systems of both the European Space Agency and the Japanese Aerospace Exploration Agency.