

IAF SYMPOSIUM ON COMMERCIAL SPACEFLIGHT SAFETY ISSUES (D6)  
Enabling safe commercial spaceflight: vehicles and spaceports (3)

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ENABLING SAFE COMMERCIAL SPACEFLIGHT: VEHICLES AND SPACEPORTS

**Abstract**

A strong research foundation is required for the developing area of commercial space flight in order to manage the complexities of safety, innovation, and customer-centricity. This work explores several facets of this study, providing an all-encompassing view. It opens by emphasizing the vital role that the Office of Commercial Space Transportation (AST), which is in charge of regulating launch and reentry activities, and the Federal Aviation Administration (FAA) play in guaranteeing safety. The FAA's novel "safety approval" procedure, which expedites licensing and promotes industry growth, is further examined in the text. Turning its attention elsewhere, the book explores the difficulties NASA's Kennedy Space Center (KSC) faces in becoming a multi-user spaceport that can support a variety of uses. It describes the steps taken to guarantee public, worker, and vital asset safety during this operational change. Beyond safety concerns, the article clarifies the idea and purpose of commercial spaceports while elaborating on the complexities of the US government licensing procedure for running such facilities. The text makes a deeper distinction between conventional space research and its commercial equivalent. It highlights the unique emphasis of commercial space research on user demands, as demonstrated by studies on how humans react to suborbital flight circumstances and the creation of economically viable technologies as opposed to just concentrating on functionality and performance. The text describes the FAA's creation of the Center of Excellence for Commercial Space Transportation (COE CST), which is evidence of the growing significance of research in this area. The text delineates the four principal domains of study investigated by the COE CST, namely operations, engineering, human research, and social sciences. This highlights the diverse range of research needs in this always changing field. This article emphasizes the critical role that research plays in advancing the commercial space transportation business through its thorough examination of numerous areas. This research paves the way for a future in which space flight becomes more widely available and routine by promoting safety, encouraging innovation, and meeting the changing needs of customers in this exciting new era.