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PATENT ANALYSIS AND DEVELOPMENT STUDY ON AIRFRAME AND ENGINE INTEGRATION
TECHNOLOGY OF THE AEROSPACE PLANE**Abstract**

The aerospace plane with the characteristics of using oxygen in the atmosphere to reduce the take-off weight, reusable, horizontal takeoff and landing, which can reduce transportation costs between atmosphere and exoatmosphere, and therefore became the focus of the development of aerospace technology in the 21st century. Currently, the United States, Russia, Britain, Germany, Japan and other military powers are all developing the aerospace plane flying techniques. One of the key technologies which restrict the development of the aerospace plane is the aircraft airframe and aspirated engine integration technology, which is the geometry of inlet and exhaust nozzle can update with changes in the flight speed, especially for a reusable aerospace vehicle. Through technology decomposition, patents and non-patent literature search, data processing, data indexing and important patents screening of the aerospace airframe and aspirated engine integration technology, this paper studied the technology roadmap, in-depth analyzed the technology efficacy of key problems such as the vehicle inner and outer flow integration design technology, complex shape aerodynamic heat prediction and pneumatic thermal elastic and load calculation, selected important patent to solve various technical problems, predicted the future trends and research priorities of the Lockheed Martin, Boeing and other important patent applicants in technology.