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PUBLIC PRIVATE PARTNERSHIPS AND THE DEVELOPMENT OF SPACE LAUNCH SYSTEMS IN
THE UNITED STATES

Abstract

This paper reviews the dynamic between the governmental space sector and the private commercial space sector in the case of space launch vehicles in the United States. The dynamic entails the development of space systems whereby the government provides risk reduction and capital formation programs, and establishes political and legal regimes that enable space commerce to support both governmental and commercial space activities. There exist two basic public private partnership models relative to case of space launch systems in the United States: (1) contracting by negotiation; and (2) acquisition of commercial items. The first model entails contacting for technology development, and includes various applications of cost-plus contracting, fixed-price block buys (usually for services and not technology), competitive acquisitions, sole-provider acquisitions, and cost-sharing approaches. The second model is one where the government acquires technology and services as commercial items. With this commercial approach to acquisitions, funded and unfunded public-private agreements provide for government capital and expertise to private industry for technology development and operations; operational launch vehicles are then applied for government use under fixed-price arrangements. The intent of both models is to realize the goal of an “acceptable region” of meeting both governmental and commercial interests, and lowering risk and achieving a higher return on investment. The application of the public private partnership models identified herein are analyzed with respect to NASA’s Space Launch System; United Launch Alliance’s Evolved Expendable Launch Vehicles, the Atlas V and Delta IV; and Space Exploration Technologies’ Falcon 9.