

IAF SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
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A REVIEW OF EUROPEAN SPACEPORTS

Abstract

There has been a recent increase in space transportation in the United States, mainly due to private businesses entering the fray. According to the FAA, at present there are 9 private US companies in operation, holding 26 active commercial licenses granted by the US Office of Commercial Space Transportation. Their commercial space transportation activities are supported by 11 commercial domestic launch sites (also known as spaceports) and one overseas site in New Zealand. Following the lead set principally by the US, other countries around the world are starting to commercialise their space programmes, in the hope of reducing associated costs and acquiring a larger share of the rapidly expanding space market. The majority of European orbital space transportation activities are carried out by Ariane, Soyuz and Vega launchers from the launch site located in Kourou, French Guiana, on the Atlantic coast of South America, i.e. far away from Europe. On one hand, this launch site's remoteness is advantageous for flight safety and its near equatorial location achieves payload gains from the Earth's rotation. On the other hand, this site is somewhat remote, and thus incapable of providing rapid and affordable access to space for many commercial customers wishing to launch small payloads (below 100kg) or take a tour into space. A spaceport located within Europe or closer to Europe than the Guiana Space Centre, serving small orbital launchers, <1000kg payload capacity to Low Earth Orbit, and/or suborbital human flights, would be a favourable alternative for these customers. Such a spaceport, if it existed, is expected to serve a growing number of commercial customers, bring money to the local economy where it's based and increase local employment. These, and the potential strategic advantages from independent access to space, are reasons why several European countries have been seriously investigating the development of commercial spaceports. Recent analysis by Commercial Space Technologies Ltd. (CST) on European Spaceport developments has shown that there are several spaceport options in nine European countries. Each location has been systematically assessed by scoring over 70 variables in the following categories: Flight and Orbital Capabilities, Launcher Capabilities, Future Plans, National Space and Launch Sector, On Site Infrastructure, Local Facilities and Weather. This paper will review the findings from the abovementioned analysis. The general conclusion drawn is that out of 9 European countries, British, Portuguese and Norwegian vertical launch spaceports have demonstrated the most dynamic development since CST first started this research in 2017.