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THE DEVELOPMENT OF A REGULATORY INFRASTRUCTURE TO ENABLE COMMERCIAL
HUMAN SPACEFLIGHT IN EUROPE

Abstract

The emergence in the US of many different suborbital vehicle companies, along with the concurrent development of commercial spaceports to support these vehicles, can be traced directly to enactment of enabling legislation by the US Congress in 2004 and the subsequent adoption of regulations by FAA/AST in 2006. There are now many different vehicles companies in the final stages of development on suborbital vehicles, with flight testing expected in the next year or two and commercial spaceflight commencing within two to three years.

The initial market driver for this industry was human spaceflight – specifically the offering of relatively affordable spaceflight tourism experiences at a two order of magnitude cost reduction over the cost of a flight to the ISS. In the last few years, other markets have also emerged such as intermediate duration microgravity research, astronomy remote sensing, upper atmosphere research, and the launch of small LEO satellites. The overall market for suborbital flight services now appears to be robust and diverse, and as a result several locations outside of the US are now interested in hosting suborbital commercial spaceflight operations using US vehicles licensed to local joint venture companies.

The Catalonia Airport Authority has signed a MOU with Rocketplane Global to operate commercial human spaceflights from the new Lleida Airport outside Barcelona. This location has several advantages, including low traffic, an available military restricted airspace for supersonic flight operations, superb flying weather and visibility, plus numerous benefits of being located at one of the world's greatest tourist destinations. The location is also in the heart of the EU, with the largest concentration of potential customers. Spaceport Barcelona will be able to service both the tourism and research markets for a customer base of 500 million people within a few hours travel.

In order to operate a US vehicle overseas, a unique set of regulations is needed. The FAA/AST enabling legislation permits licensing of spaceflight operations anywhere in the world. For Spaceport Barcelona, a dual jurisdiction licensing regime is planned whereby Spain adopts a parallel set of regulations following the US model, and the flight activity approved under the sovereign authority of both the US and Spain.

This paper will describe the planned spaceflight operations at Spaceport Barcelona and the proposed regulatory system operations, and how safety and environmental issues will be addressed to provide a viable domestic human spaceflight business in the heart of continental Europe.