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

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INTEGRATION OF SUBORBITAL SPACEFLIGHT AT A COMMERCIAL AIRPORT IN FRANCE

Abstract

Airbus' Space Plane, Swiss Space Systems' SOAR, Virgin Galactic's SpaceShipTwo, XCOR's Lynx and many others space projects are the technical solutions currently under development to offer a sub-orbital flight experience in the coming years. But their commercial operation is not ready yet due to the lack of regulations in this field in Europe.

This paper investigates how suborbital operations may be integrated with commercial and military operations at existing airports. This paper will also investigate and propose tools to easily perform preliminary spaceport site evaluation which considers local weather conditions, existing air traffic, and populated area. All of those have consequences on site selection for a spaceport.

Additionally, this paper will present the case study of applying FAA-AST regulations for an American spaceflight operator operating at a hypothetical airport in France according to the regulatory framework for sensational flights (Vols à sensations – arrêté du 8 février 2012).

Safety issues on the ground are discussed in this paper. Due to the presence of commercial operations, the minimum distance between the spacecraft, airport terminals, commercial aircrafts and people working on the ground has to be regulated. Processes to manage a crisis and reduce the commercial impact in case of accident or propellant leak on the ground are detailed in this paper.

The management of sub-orbital flights and commercial ones regarding air and ground operations as priorities for take-off, landing or ATC training are explained. The characteristics of a vertical corridor located above the spaceport and its integration on the existing routes is investigated in this paper. Operations and safety issues have to be regulated by clear rules which some of them does not exist at that time.

This paper shows a case study of an selected airport and a specified sub-orbital spaceship.

Spaceport location must respect operational and technical specifications, regulations issues and the economical purpose.

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