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SPACEPLANES OPERATING IN AIRSPACE: IN SEARCH OF A REGULATORY REGIME FOR  
TRAFFIC COORDINATION

**Abstract**

"Spaceplane" as a term describes a "hybrid" aerospace vehicle capable of operating both in airspace (as an aircraft) and in outer space (as spacecraft). Either carried to a certain altitude by a "mother ship" or autonomously powered (by rockets), spaceplanes cross the airspace to travel in outer space and, once there, they can be placed into orbit (orbital) or they reenter the atmosphere and land as normal aircraft (suborbital).

In specific, suborbital vessels can be of great importance in scientific missions; however their integration in the air transport of persons and goods is already under preparation. Such a perspective will amount to a breakthrough since a suborbital flight would significantly speed up and shorten transport routes.

This dual nature of suborbital spaceplanes (aircraft, spacecraft) brings to the fore interesting legal issues. In this sense, it is a typical example of how a NewSpace activity can challenge the adequacy of the current regulatory framework both in airspace and in outer space.

The International Civil Aviation Organization (ICAO) has already shown its concern on the matter, recognizing that "suborbital launches are expected to have an impact on areas of safety and air traffic management for national airspace..." (Doc. LC/36-WP/3-2). Furthermore, it seems that ICAO considers the applicability of its Air Traffic Services (ATS) scheme as self-evident: same document mentions that "should sub-orbital vehicles be considered (primarily) as aircraft, when engaged in international air navigation, consequences will follow under the Chicago Convention...".

On the contrary, in the context of the UN COPUOS Legal Sub-Committee, the topic of suborbital flights is under discussion as part of the more general debate on defining and delimiting outer space, without considerable progress for the time being.

The main issue is how suborbital flights can be adequately coordinated with the other users that share the same portion of airspace (national or international). In this context, the key challenge is whether these flights should be entirely regulated by the existing ICAO air traffic management (ATM) system or, on the contrary, by a new, autonomous regulatory regime. A convincing response to this challenge should take into consideration the debate on the identity of said vehicles (Aircraft? Space object? Other?) in order to properly measure the applicability of the pertinent ICAO regulations in force. This paper is focused on how best to address these issues.