

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

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ITALIAN APPROACH TO SUBORBITAL COMMERCIAL SPACE TRANSPORTATION: FROM
SETUP OF HARMONIZED FRAMEWORK TO SPACEPORT AND GROUND SEGMENT
EVALUATION FOR ENABLING OPERATIONS IN THE ITALIAN TERRITORY

Abstract

Italy has increasing interest in Commercial Space Transportation and in particular in suborbital flights. A suborbital spaceflight system is an opportunity to involve the Italian industry in the development of new technologies, exploit opportunities of microgravity experimentation and pilots/astronauts training, as well as catalyze the national industry. The central position of Italy in the Mediterranean basin, the generically favorable climate conditions, the touristic vocation resulting in hospitality at the highest level, pretty much allow year round suborbital operations and unique customer experience. Consequently, Italy is particularly suitable to host a Spaceport, even though the density of population has to be factored in as a key aspect, together with a proper environmental assessment. This paper outlines the basic Italian approach that, instead of focusing on development of new Spaceport from scratch, evaluates the capabilities of existing airports and their possible upgrades to achieve the Spaceport license. Advances will be described in the technical activities that are being conducted to assess various Italian sites of interest, including tradeoff methodologies and ranking. Different aspects will be considered including civil and military airports, coastline or inland locations and compliance to the safety requirements. Some specific Spaceport infrastructures will be described, along with their integration with the already existing ones. These include hangars, propellant storage facilities, ground support equipment, high and low airspace surrounding the airport area, ascent and descent corridors, as well as tracking telemetry station to support specific mission profiles in integrated fashion with the existing airport infrastructures. The paper will also describe the approach to the definition of a harmonized cooperative regulatory framework, according to the Aviation Authority, that represents the basis to assess suborbital operations and allows the relevant missions execution. In this activity, basing upon a remarked importance of international partnership in Commercial Space Transportation, the existing FAA/AST regulatory workframe will be considered as reference benchmark and further tailored to the Italian case. Some considerations will also

be developed relevant to initial challenges to be faced by interested stakeholders in starting commercial spaceflight initiatives as a new ground and emerging business opportunity.