The new frontier of sub-orbital flights in transportation: Analysis and Implementation of a licensing process for commercial spaceports in Italy

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Why a Spaceport in Italy
Market opportunities and benefits
Spaceport Requirements
Safety
Existing airports assessment
Tracking system simulation
Approach to regulatory framework in Italy
Conclusions
Italy is potentially very suitable to host a spaceport for suborbital activities:

- Geographic location, Touristic vocation, Climatic conditions
- Different sites both in proximity of coastline and inland
- Potentially licence more than one Spaceport
- Extensive Italian experience in Aerospace
- Potential Markets: Space tourism, astronaut/pilots training, microgravity experimentation, experimental activities
- Italian approach is to enable the Country as a Gateway to Space by not building from scratch, but selecting an already existing site as a potential Spaceport, basing upon requirements issued by the Italian Civil Aviation Authority
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Scaled Composites Model 348 WhiteKnightTwo

Richard Branson

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Virgin Galactic’s WhiteKnightTwo and SpaceShipTwo
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WhiteKnightTwo
Spaceshiptwo
Virgin galactic

Richard Branson

Spaziporto:
Deserto del Mojave (CA)
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Lynx
XCOR aerospace
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Falcon 9
Capsula DRAGON
SpaceX

Elon Musk

Spaziporto:
Cape canaveral (FI)
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Il Ministro delle Infrastrutture e dei Trasporti

ATTO DI INDIRIZZO CONCERNENTE LO SVILUPPO SOSTENIBILE DEL SETTORE DEI VOLI COMMERCIALI SUBORBITALI

1. LA POLITICA EUROPEA E NAZIONALE IN MATERIA DI SPAZIO
Safety

Safety is the first aspect to be considered in the identification of the best candidate spaceport

- **Expected casualty:**
  - Ensure that risks to public safety, derived by launch and reentry operations, is limited to an acceptable level

- **Launch site boundaries:**
  - Evaluate proper areas restrictions to prevent not-intended people from being damaged from any kind of debris

- **Propellant Storage:**
  - The storage capability of each site strictly depends on the type of propellant
  - Define maximum amount of propellant that could be stored within the airport areas, without endangering personnel or flight participants
Italy has a considerable number of existing airport sites that show potentially interesting features to act as spaceport.

**Airports located in the North of the Country:**
- Feature more calm winds
- Are more often affected by fog build up
- Are affected by heavy airways traffic, difficult for airspace segregation

**Airports located in the Center and South of the Country:**
- Offer better year round weather condition
- Winds require closer assessment
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CONCLUSIONS

• Spaceport in Italy for suborbital operations appears to be very promising:
  • Significant market opportunities might be captured ranging from microgravity experimentation, to astronauts and pilots training to technology demonstration
  • Strong impact on education and research
  • Tremendous opportunity to get the Italian industry
  • Catalyst to the regional and national economy

• Spaceport requirements are being generated, which will lead the Italian Civil Aviation Authority to identify the most suitable site

• Spaceport requirements will be integrated within a regulatory framework in the Country
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References

• US Department of Transportation (FAA), 2000, Expected casualty calculations for commercial space launch and reentry missions, Advisory Circular, AC No: 431.35-1, August 30.