

FAA-ENAC cooperation for the development of commercial space transportation

Benedetto Marasa
ENAC Deputy Director General

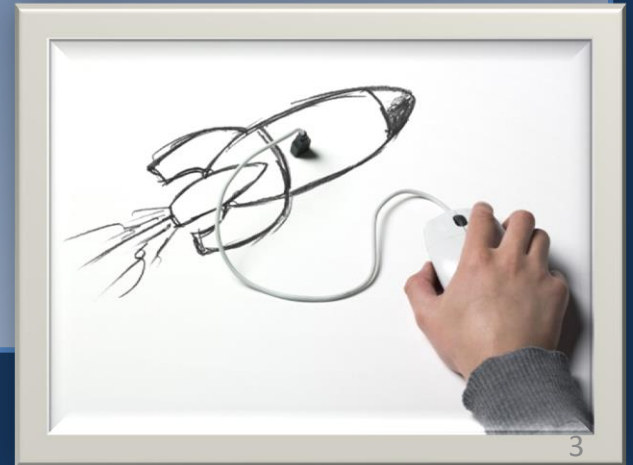
Memorandum of Cooperation FAA-ENAC Washington, DC – 12 March 2014

- Cooperation in the development of:
 - Safety regulations
 - Standards
 - Licensing measures
 - Projects of mutual interest
- To be applied to commercial space transportation



**First Meeting of the Cooperation WG
Washington, DC - 20 May 2014**

*Italian mutual interest project proposal
for the
introduction of
Sub-orbital flights
within Italian National Air Space*



Topics

- Introduction
- Project of mutual interest
- Conclusions



(c) 2009 by Fantastic Plastic Models

Topics

- Introduction
- Project of mutual interest
- Conclusions



Cooperation ITAF-ENAC

- Letter of Intent (LoI) for Sub-orbital Space Transportation - 17 March 2014
- Develop **procedures and standards** to support **flight test activities** of commercial **sub-orbital flights** within Italian National Air Space.

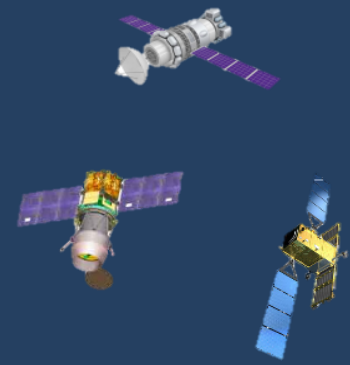


Italy: the PERFECT place in Europe for commercial sub-orbital flights

- Location
- Climate
- Tourist attraction
- Gateway to Europe



Domains



SPACE

NEAR SPACE

AEROSPACE

AIR

S3

X43-A

XCOR/SpaceShipOne



Topics

- Introduction
- Project of mutual interest
- Conclusions



(c) 2009 by Fantastic Plastic Models

Project Goals

- **Develop** *National/EU level certification & regulatory framework to pursue possibility of routine sub-orbital flight operations within Italian National airspace*
- **Introduce** *U.S. sub-orbital vehicles within Italian National Air Space*



Methodology

- Develop national capacity with FAA support using following approach:

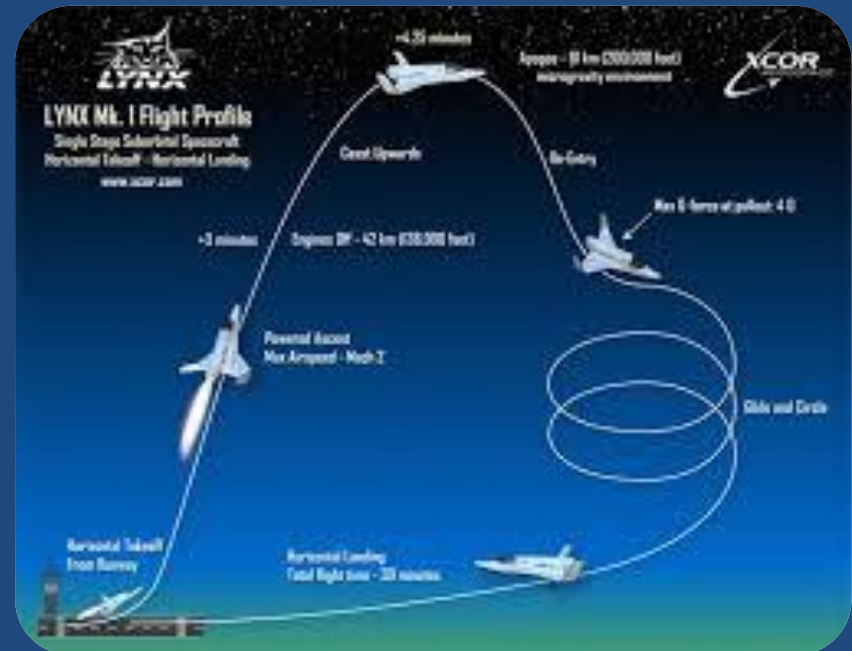
Doctrine, Organization, Training, Material, Leadership and Education, Personnel, Facilities and Policy



Doctrine

- Develop certification & regulatory framework:
 - *Ad hoc regime then....*
 - *....Aviation-like*

- ENAC Long-standing experience in aircraft/organisation certification



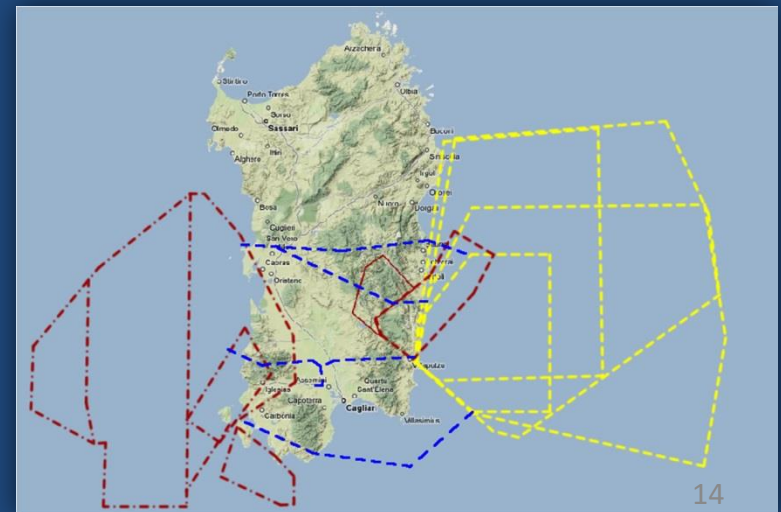
Personnel & Expertise

- ITAF knowledge to manage flight tests/trials with a focus on launch and re-entry:
- Astronauts from Italian Air Force
- Experimental Test Pilots & Engineers
- Flight surgeons
- ENAC Professionals for certification, licensing and oversight



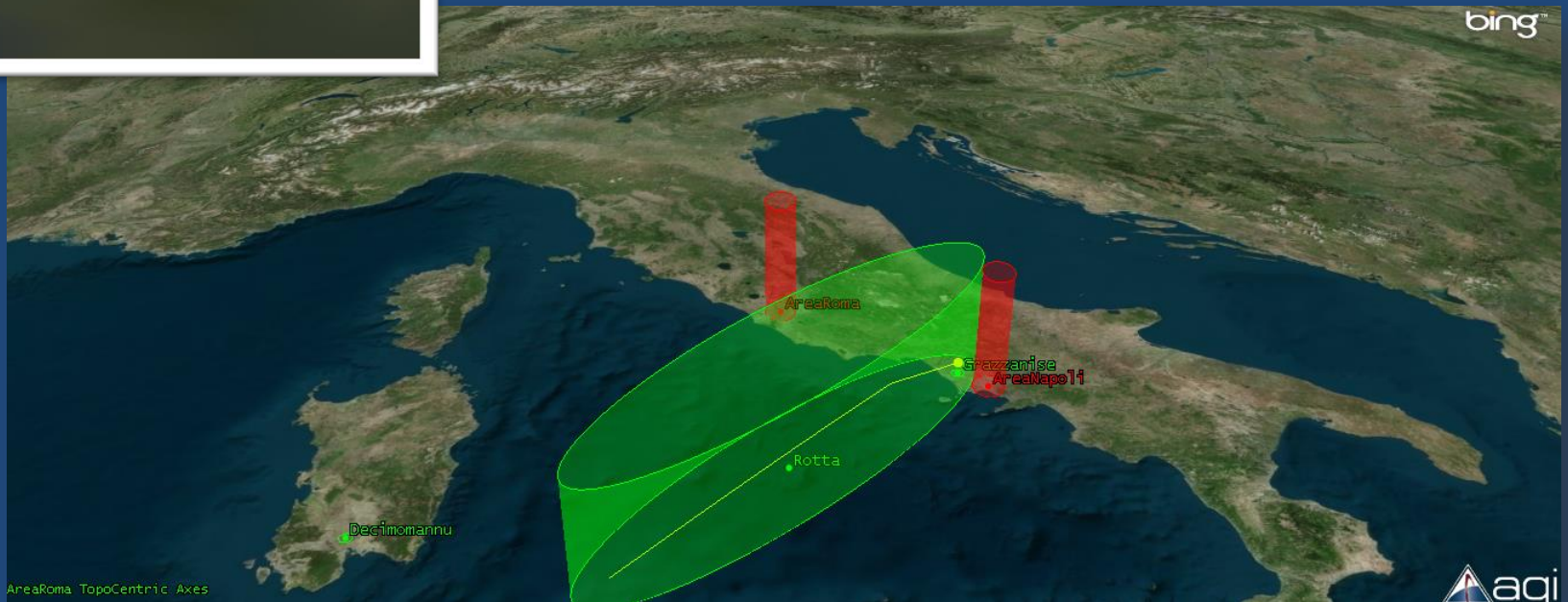
Existing Facilities

- ❑ Existing airports easily tailored to sub-orbital requirements and presented in the fashion of Spaceports
- ❑ Test Ranges and Flight Test Center to manage experimental aerospace campaigns
 - ❑ Modelling & Simulation
 - ❑ Operational Test & Evaluation (OT&E)
 - ❑ Aerospace medicine
- ❑ Center for Italian Aerospace Research (CIRA) for engineering support
 - ❑ **Wind and Plasma tunnel**
- ❑ Ground Systems for surveillance and tracking of airspace and near-space systems used during sub-orbital flights

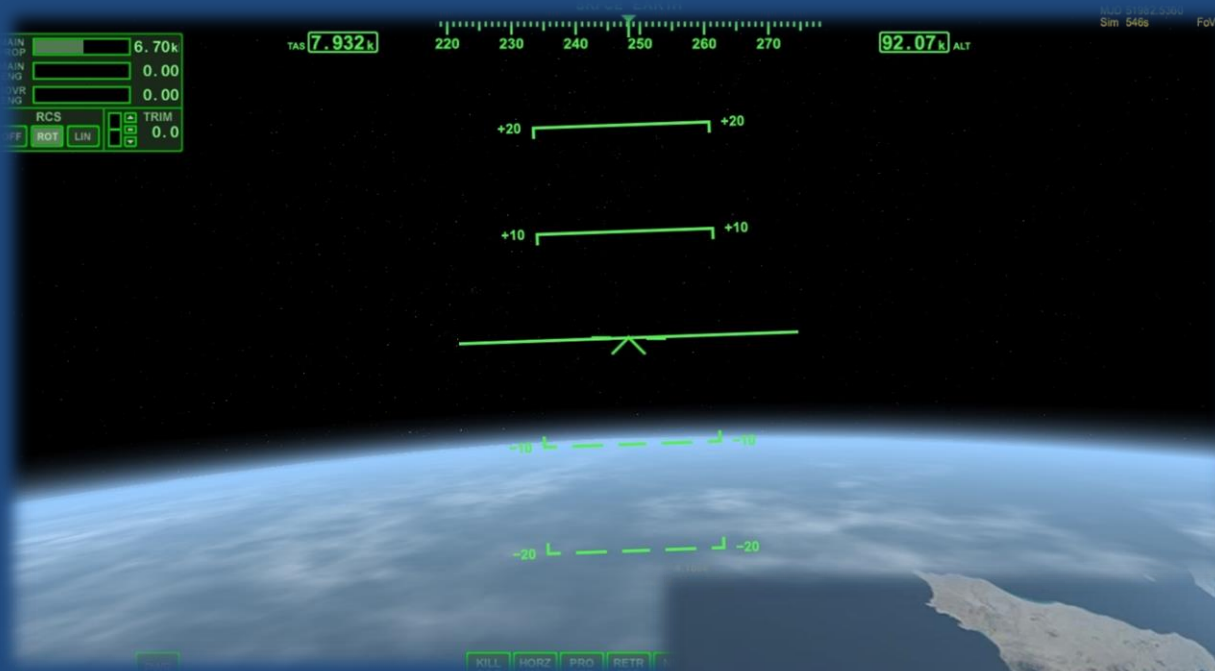


Ongoing studies

- **Simulations** developed by ITAF Flight Test Center in order to redefine the traditional aeronautical layer with Near-Space flight properties



Ongoing studies



XCOR Lynx Head Up Display
@ 100 km altitude

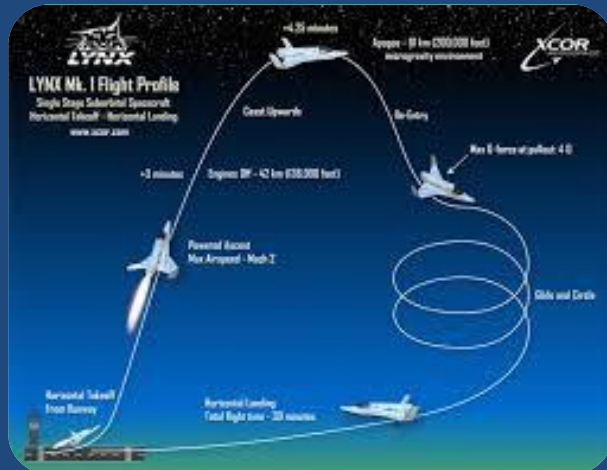
God's view from
XCOR Lynx @ 100 km
altitude



Possible Scenarios

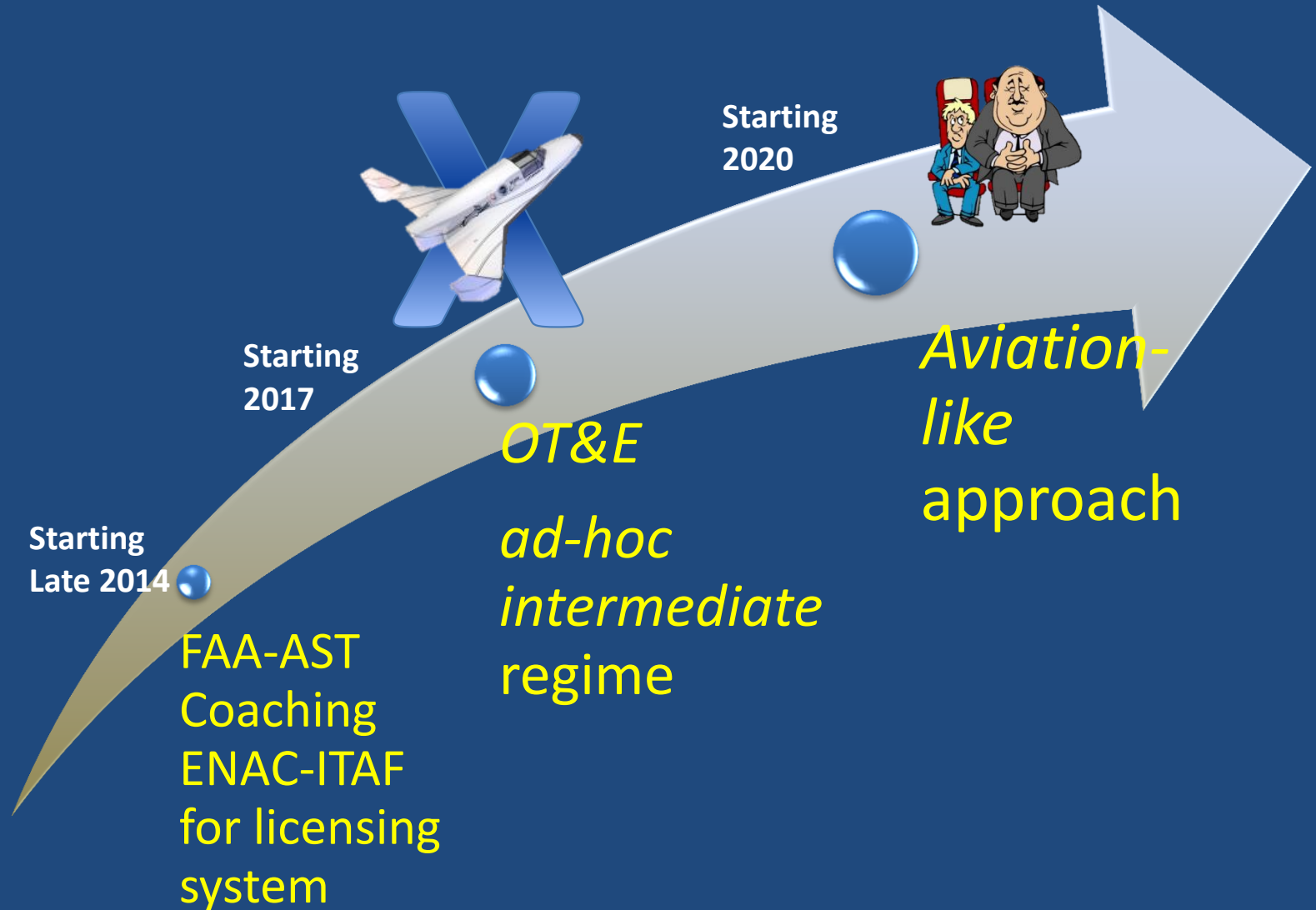
Operate US Space Transportation Systems from Italy

- **Step 1** - Realisation of first Spaceport in Italy, permitting sub-orbital flights with U.S. space transportation systems:
 - Horizontal take off and landing
 - Same take off and landing site
- **Step 2** - Realisation of a sub-orbital flight with a Point-to-Point navigation within two Spaceports:
 - Horizontal take off and landing
 - Common ballistic descent and landing on a Spaceport



(c) 2009 by Fantastic Plastic Models

Possible scenarios



Topics

- Introduction
- Project of mutual interest
- Conclusions



(c) 2009 by Fantastic Plastic Models

Conclusions

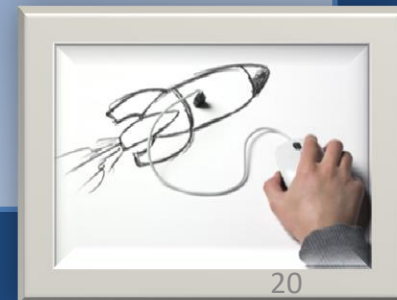
Italy offers the perfect geographic position and climate for accommodating sub-orbital flights

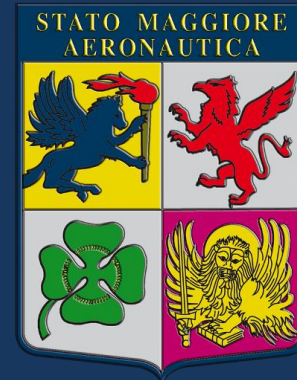
Introduce *United States sub-orbital vehicles within Italian National Air Space*

Benefits for both countries

In accordance with the MoC FAA-ENAC

We need to find the way to do it.





Grazie mille !!