

Certification

Airspace Control and Management

Memorandum of Understanding FAA ENAC

high level objectives

1. Areas of interest to be considered for the development of commercial space transportation:

- **Regulatory approach** (sub-orbital flight regulatory strategy, licensing vs. aviation-like or other ad-hoc approach, legal requirements, liability, insurance, etc.);
- Safety and interoperability (safety policy, safety targets and objectives, safety procedures, etc.);

2. Cooperation methodology

- **Cooperation** should be developed by means of exchanging of documentation on law, regulations, policies, programs and projects, production and dissemination of reports and publications of studies and researches, holding of joint meetings, exchange of experts, **participation to research, experimental and testing activities either in United States and Italy**, hosting joint workshops and conferences.

Regulatory approach

ENAC has under Italian Air Navigation Code the legal regulatory authority for the development of a **national regulatory framework** for civil sub-orbital flights to allow the operations of sub-orbital aircraft in Italy.

It is too early to develop a certification regime for commercial space transportation activities, no operators or manufactures in Italy now

*There is **interest to develop an ad-hoc regime**, starting from FAA regulation, to accommodate the possibility to have sub-orbital operations in Italy in the medium term.*

Cooperation methodology

How and in what format FAA/ENAC will continue cooperation under the auspices of MoC, are now three folds:

- developing ***procedures and standards to support activities*** of commercial sub-orbital flights within Italian National Air Space
- ***promoting research programs.*** CIRA is the national research body supporting the MoC in the specific technological field.
- developing IT future plans in commercial space transportation and a ***proposal for a project of mutual interest;***

***Starting point is
the understanding of FAA regulations
currently
established for commercial space transportation***

A full understanding of FAA licensing and permit process flow is necessary to understand ***the differences between the two national regulatory framework***, in order to conduct a gap analysis and to identify any regulatory need.

FAA Regulatory approach

*The Federal Aviation Administration (FAA) **regulates** the emerging Reusable Launch Vehicle (RLV) industry only to the extent necessary to ensure that industry activities do **not jeopardize public health and safety***

Safety-critical requirements are established for systems and operations that have the potential of impacting public safety.

FAA Regulatory approach

A person must obtain a **license** or an **experimental permit** prior conducting activities.

§ 413.19 Issuing a license or permit.

After the FAA completes *its reviews* and makes the decisions, the FAA issues a license or permit to the applicant.

License

FAA license issued to:

- (1) Launch a launch vehicle from the United States;
- (2) Operate a launch site within the United States;
- (3) Reenter a reentry vehicle in the United States; or
- (4) Operate a reentry site within the United States.

License process

FAA review:

Launch site and reentry site
Launch and reentry operation of RLV
Safety aspects
Production facilities
Hazardous facilities and operations
Policy, payload, environment impact review

Licensee is responsible to comply with the rules

§ 417.7 Public safety responsibility.

A launch operator is ***responsible for ensuring the safe*** conduct of a licensed launch and for ensuring public safety and safety of property at all times during the conduct of a licensed launch.

§ 417.9 Launch site responsibility.

A launch operator must ensure that launch processing at a launch site in the United States satisfies the requirements of this part. ***Launch processing at a launch site outside the United States may be subject to the requirements of the governing jurisdiction.***

§ 415.23 Policy review

Part of the licensing record on which the FAA's licensing determination is based on the policy approval.

The FAA issues a policy approval to a license applicant unless the FAA determines that a proposed launch would jeopardize U.S. national security or foreign policy interests, or international obligations of the United States.

§ 415.35 Acceptable flight risk.

Insertion for an orbital launch vehicle, and through impact for a suborbital launch vehicle, is measured in terms of the **expected average number of casualties** to the collective members of the public exposed to debris hazards from any one launch.

To obtain safety approval, an applicant must demonstrate that the risk level associated with debris from an applicant's proposed launch meets the public **risk criteria** of §417.107(b)(1) of this chapter for impacting inert and impacting explosive debris.

§ 440.9 Insurance requirements for licensed or permitted activities.

As a condition of each license or permit, a licensee or permittee must comply with all insurance requirements

The FAA will prescribe the amount of insurance required to compensate the total of covered third-party claims for bodily injury or property damage resulting from a licensed or permitted activity in connection with any particular launch or reentry

The amount of insurance required is based upon the FAA's determination of maximum probable loss;

Italian Regulatory approach

for the development of an ad-hoc regime, starting from FAA regulation,

Could the FAA authorisation schema fit in IT regulatory framework?

and then requires the development of

Procedures and standards

that can address any specific issues
in order to support cooperation activities in project of mutual interest;

Operations in Italy *under license regime*

A launch operator **license authorizes** a licensee to conduct

- launches **from one launch site, within a range of launch parameters**, of launch vehicles from the same family of vehicles transporting specified classes of payloads.
- *Launch processing at a **launch site outside the United States** may be subject to the requirements of the governing jurisdiction.*

Launch and entree site license is subject to Italy jurisdiction

Italian Launch and reentry site

To be authorized by Italy
How?

On the basis
of FAA license?
of a jointly ENAC FAA process?

Cooperation to assist FAA for the issuance of license?
Or.....

FAA regulations

Permit versus license regime differences:

No hire or compensation activities allowed

No indemnification

No quantified risk requirements

Operations in Italy under FAA Experimental permit regime

Same issues as for the license

And new elements to be considered:

No indemnification requirement

*No quantified risk requirements
the flight risk is a key element
to be assessed prior of operation*

The FAA conducts a safety review to determine whether an applicant is capable of launching a launch vehicle and its payload without jeopardizing public health and safety and safety of property.

In case of permit

No quantified risk requirements

*the acceptability of the flight risk
is a key element
to be assessed prior of operation*

Thank you