



Objective

To build up a National legal and regulatory framework to allow suborbital flights in Italy

ENAC Policy on Commercial Space Transportation

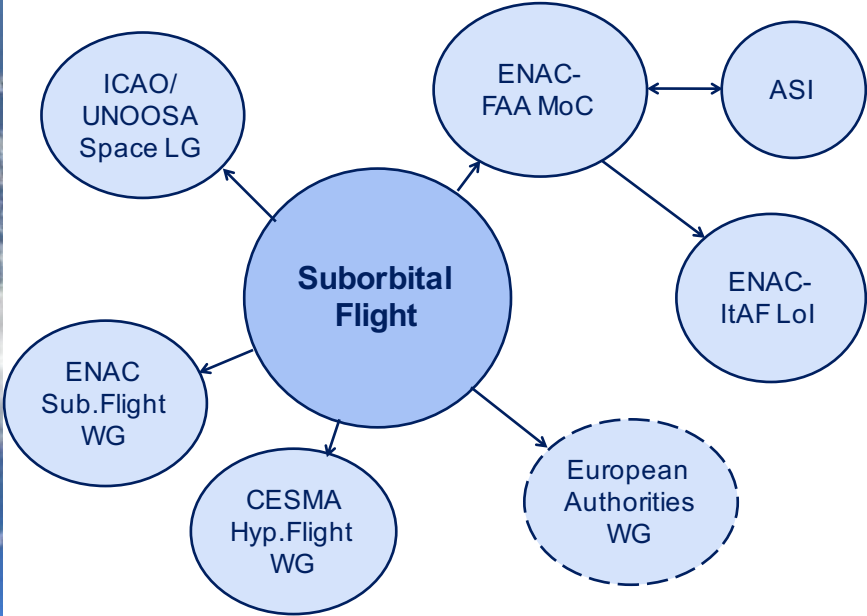
presented at
1st ICAO/UNOOSA
Space Symposium

Montreal, March 2015



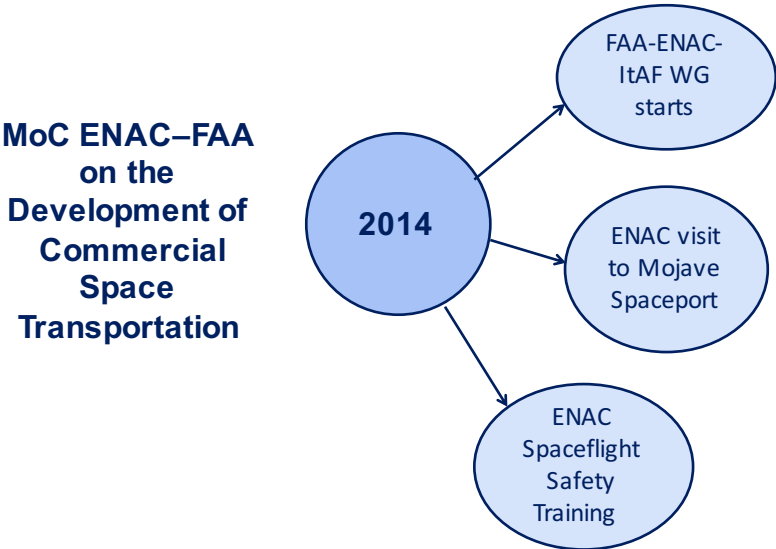
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Initiatives



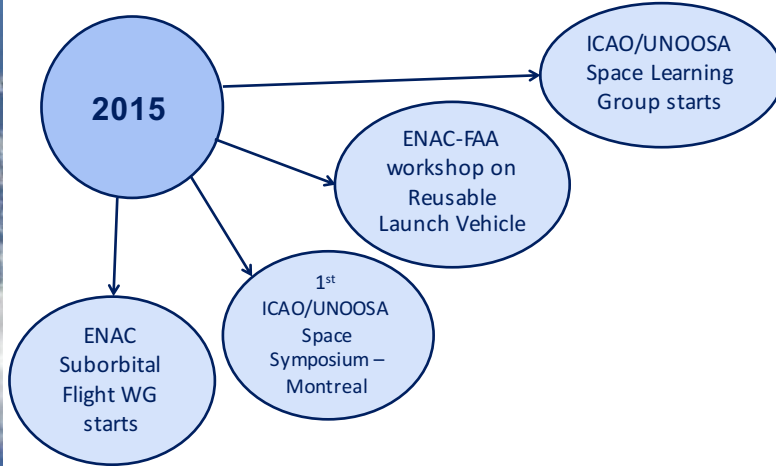
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International Cooperation



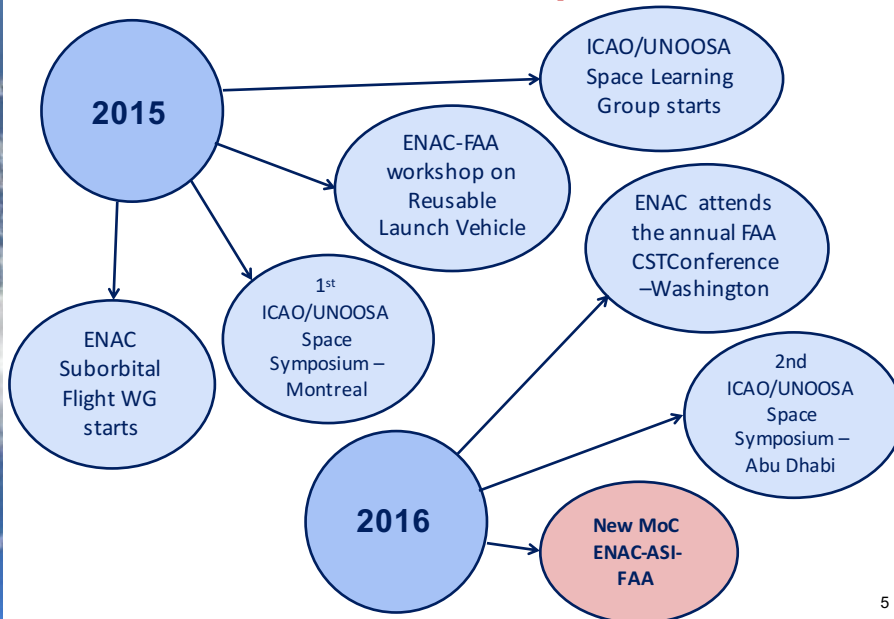
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International Cooperation



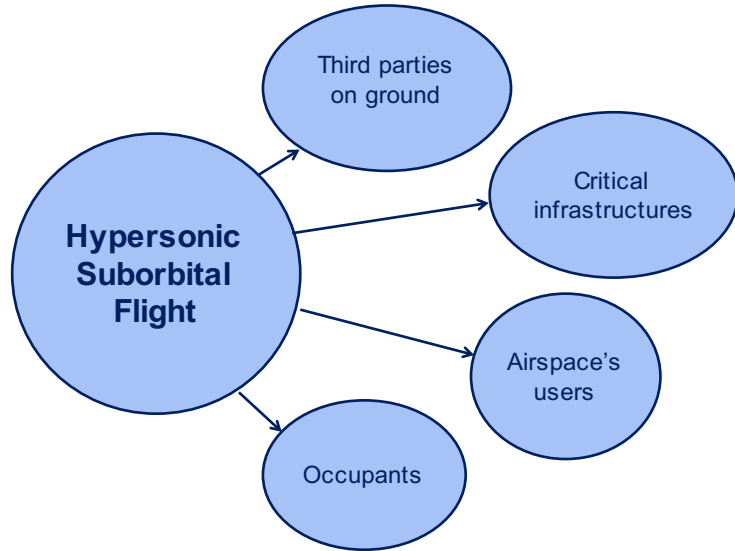
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International Cooperation



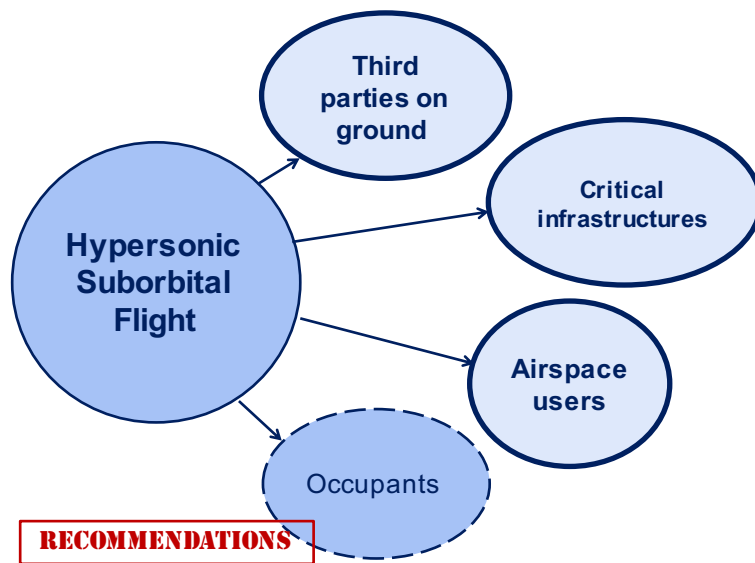
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What/Who is expected to be protected?



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What/Who can be currently protected?

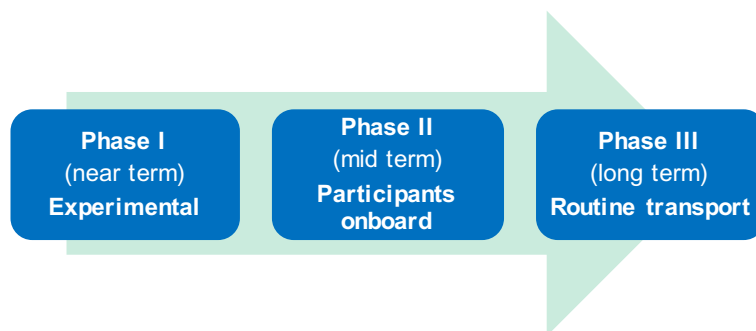


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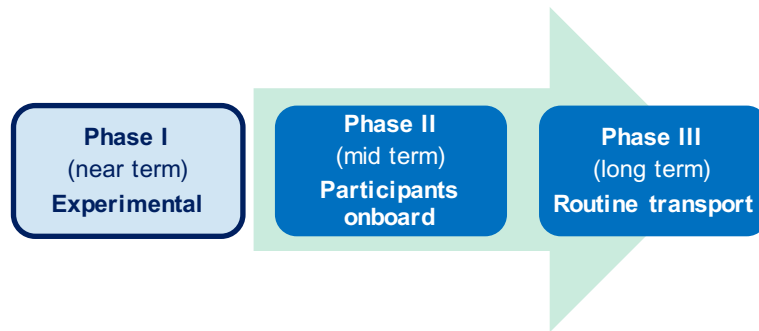
Traditional certification approach



Regulatory path



Regulatory path



Recognition of FAA-AST license/permit of potential US operators (wet lease)

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Phase I – Experimental

ICAO definition of aircraft



EU basic aviation rules
(Reg. EC 216/2008)



National Experimental Permit to Flight

“Any machine that **can derive support** in the atmosphere from the reaction of the air ”



spaceplane = aircraft

10



Phase I – Experimental

ICAO definition of aircraft

“Any machine that **can derive support** in the atmosphere from the reaction of the air ”



EU basic aviation rules
(Reg. EC 216/2008)

“Aircraft specifically designed or modified for **research, experimental or scientific purposes**, and likely to be produced in very limited numbers” (Annex II)



National Experimental Permit to Flight



national responsibility

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Phase I – Experimental

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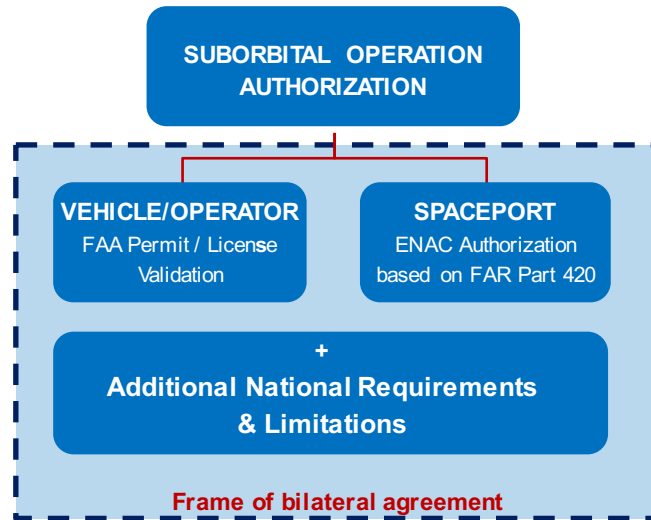


National Experimental Permit to Flight

Safe operations within a specific **conditions and limitations**

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Initial Regulatory Framework



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>> Operation Centric Approach

$$\text{Risk} = \text{Probability} * \text{Consequences}$$



**Total Hazard
and Risk Assessment**

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>> Operation Centric Approach

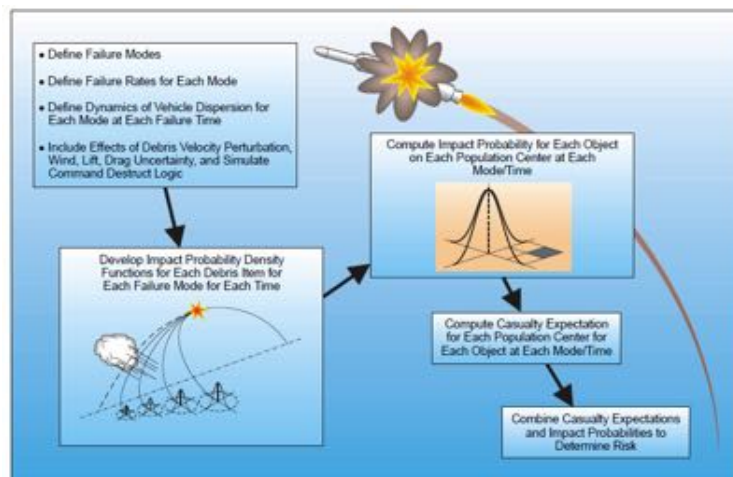
$$R = P * A_c * D$$



**Total Hazard
and Risk Assessment**

12

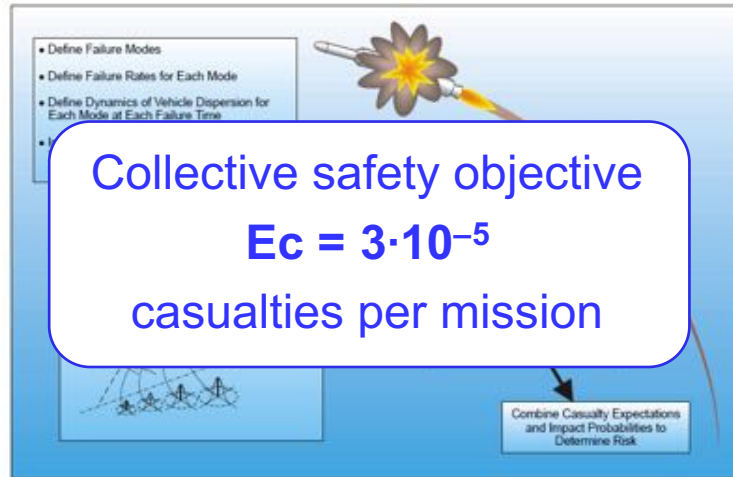
Flight Safety Analysis



Source: FAA – Flight Safety Analysis Handbook

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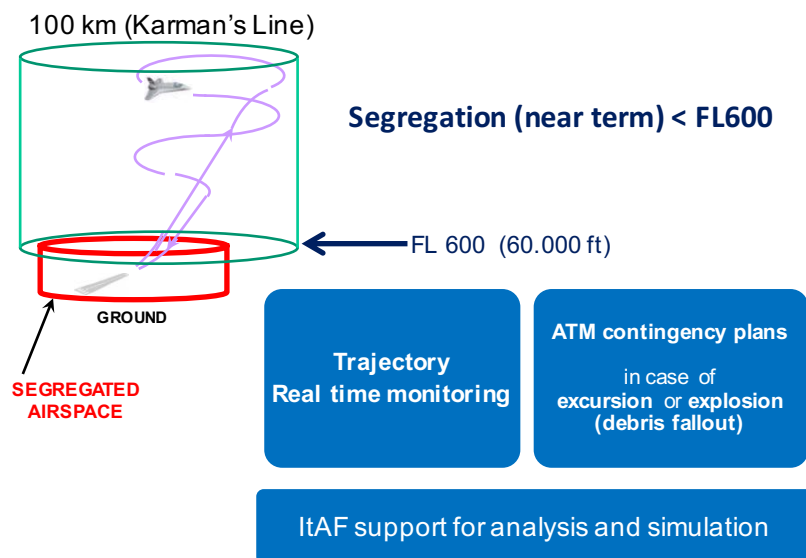
Flight Safety Analysis



Source: FAA –Flight Safety Analysis Handbook

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Airspace scenario



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Priority issues

Bilateral Agreement for recognition/validation of FAA License/Permit and jurisdiction

Type of Spaceport Authorization for Exp. Ops.

Spaceplane Configuration Management and impact on Risk Assessment

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Priority issues

Selection of national spaceport(s)

Sustainable business case for a wet lease arrangement

Oversight, Occurrence Reporting & investigation

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Next steps

- Centres of Excellence for supporting regulation
- Spaceflight participants legal status & informed consent
- Insurance issues
- Medical requirements for crew and participants
- Airspace Management, Tracking & Contingency plans in non segregated airspace below FL600
- Coordination among territorial bodies and operator(s)

.... new EU Basic Regulation ?

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*I learnt that regulation
is one of the most difficult things to balance.
It cannot be too late
cannot be too early
cannot be overprotective
cannot be too vague
cannot be too prescriptive
cannot be too complicated ...*

(Yuri Fattha, ICAO Space Learning Group)

Thank you for your attention.

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