



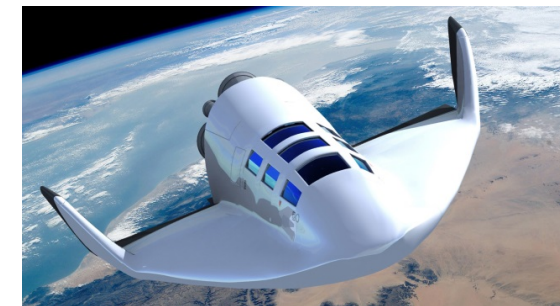
ECHO

European Concept for Higher airspace Operations

Marc Valès



WHY?



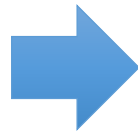
New Demand



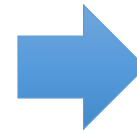
ECHO will include all types of known and planned vehicles and operation



Research analysis



Demand analysis



Concept of Operations

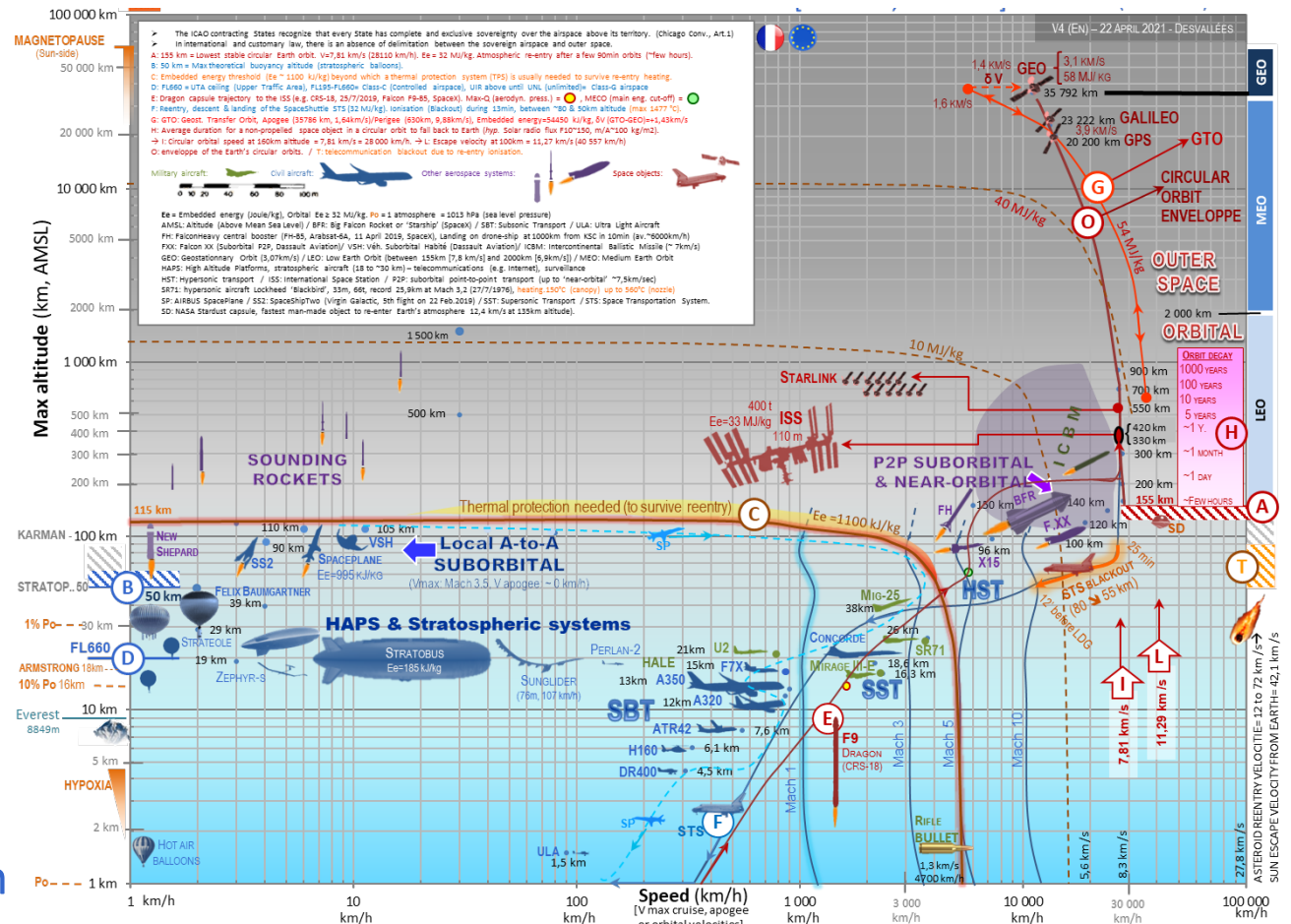
Enabling near term and future operations in a safe and orderly manner
including safe and efficient interaction with Air Traffic Management
and Space Traffic management

Main categories of aerospace systems

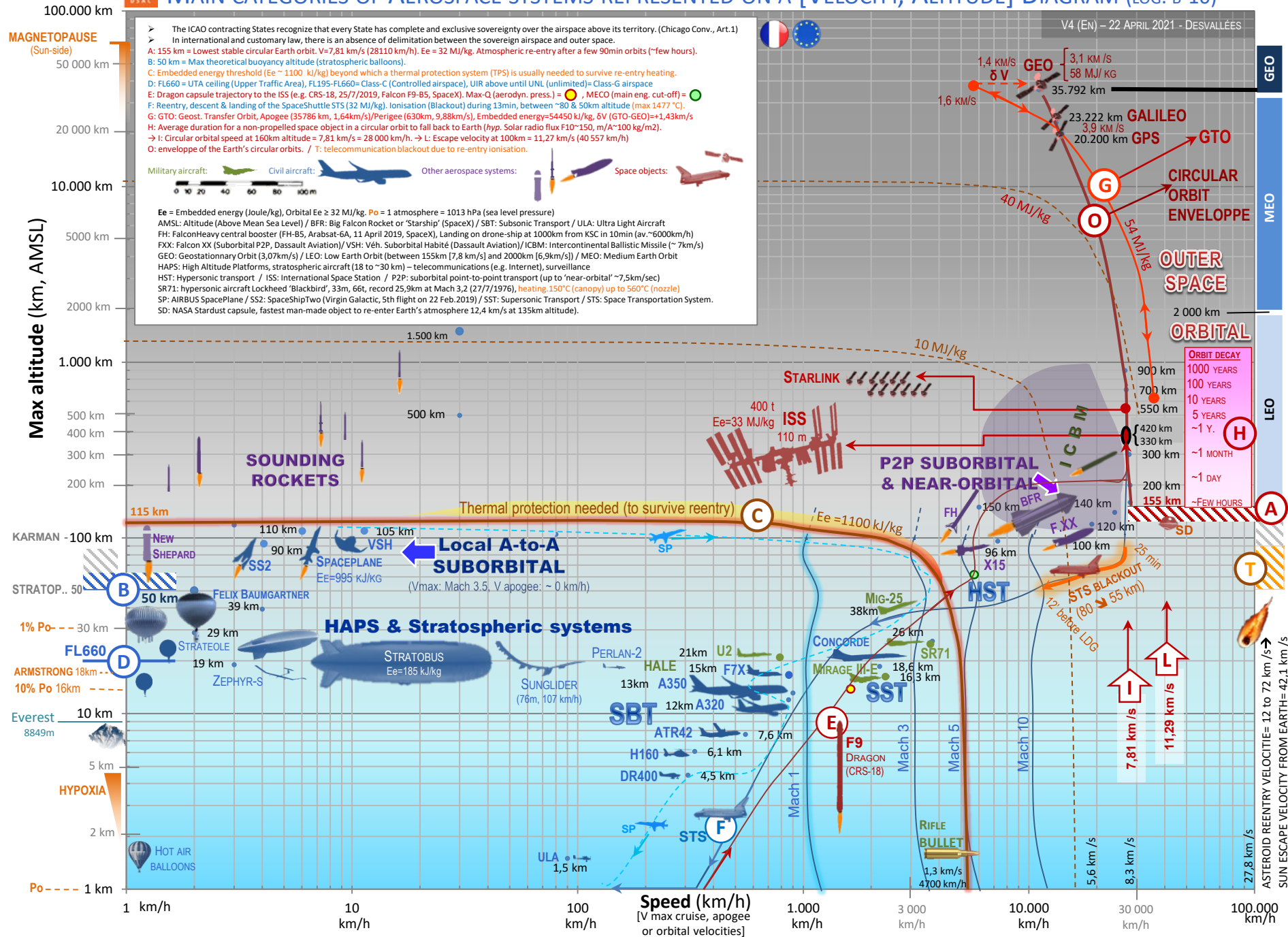
Huge ranges of:

- flight speeds
- flight durations
- maneuverabilities
- atmospheric environment
- traffic conditions

[velocity, altitude] log diagram



MAIN CATEGORIES OF AEROSPACE SYSTEMS REPRESENTED ON A [VELOCITY, ALTITUDE] DIAGRAM (LOG. B-10)



72nd INTERNATIONAL ASTRONAUTICAL CONGRESS

25-29 October 2021 | Dubai

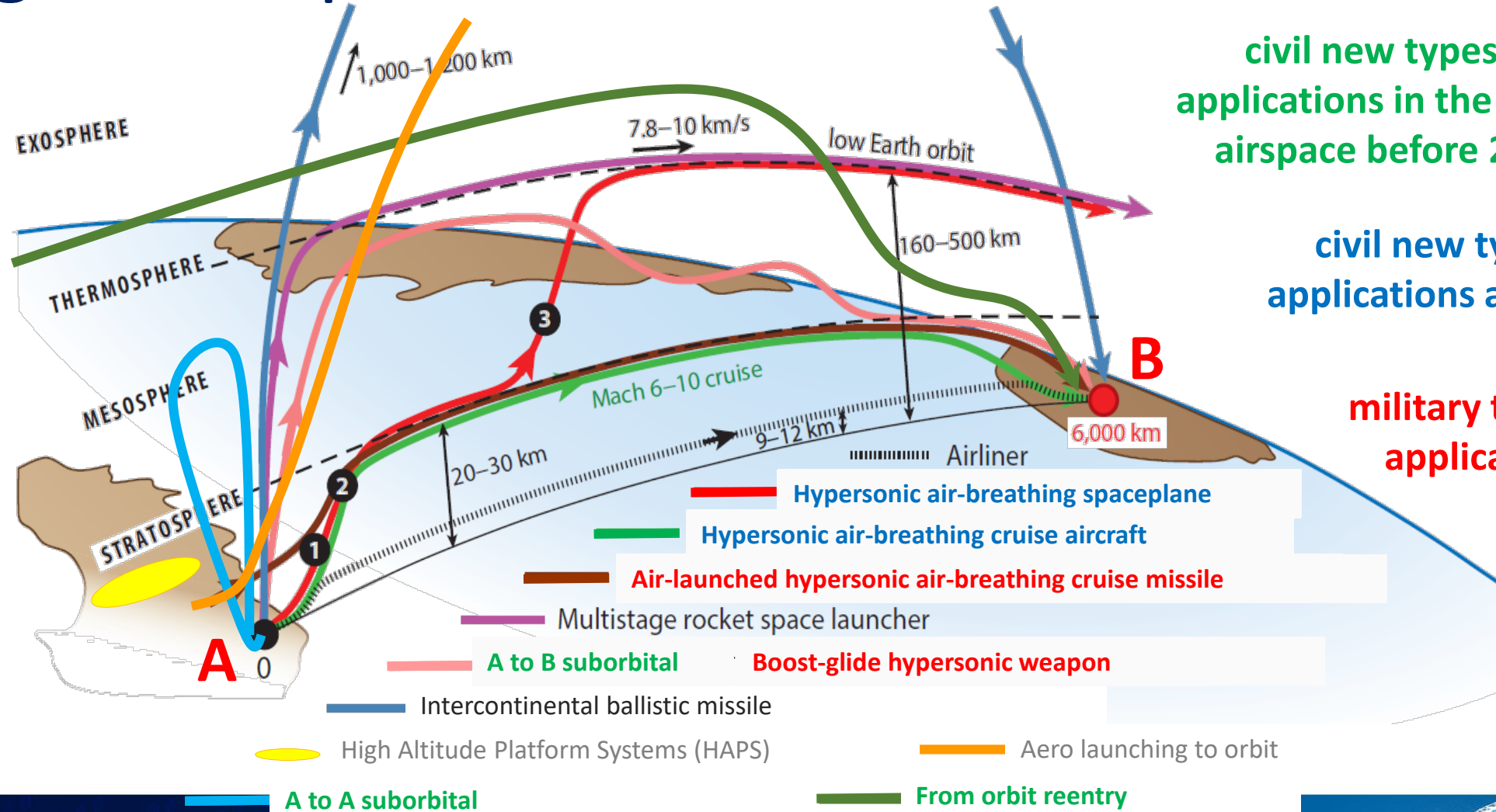
Inspire, Innovate & Discover
for the Benefit of Humankind

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European Concept for Higher airspace
Operations

Higher Airspace users

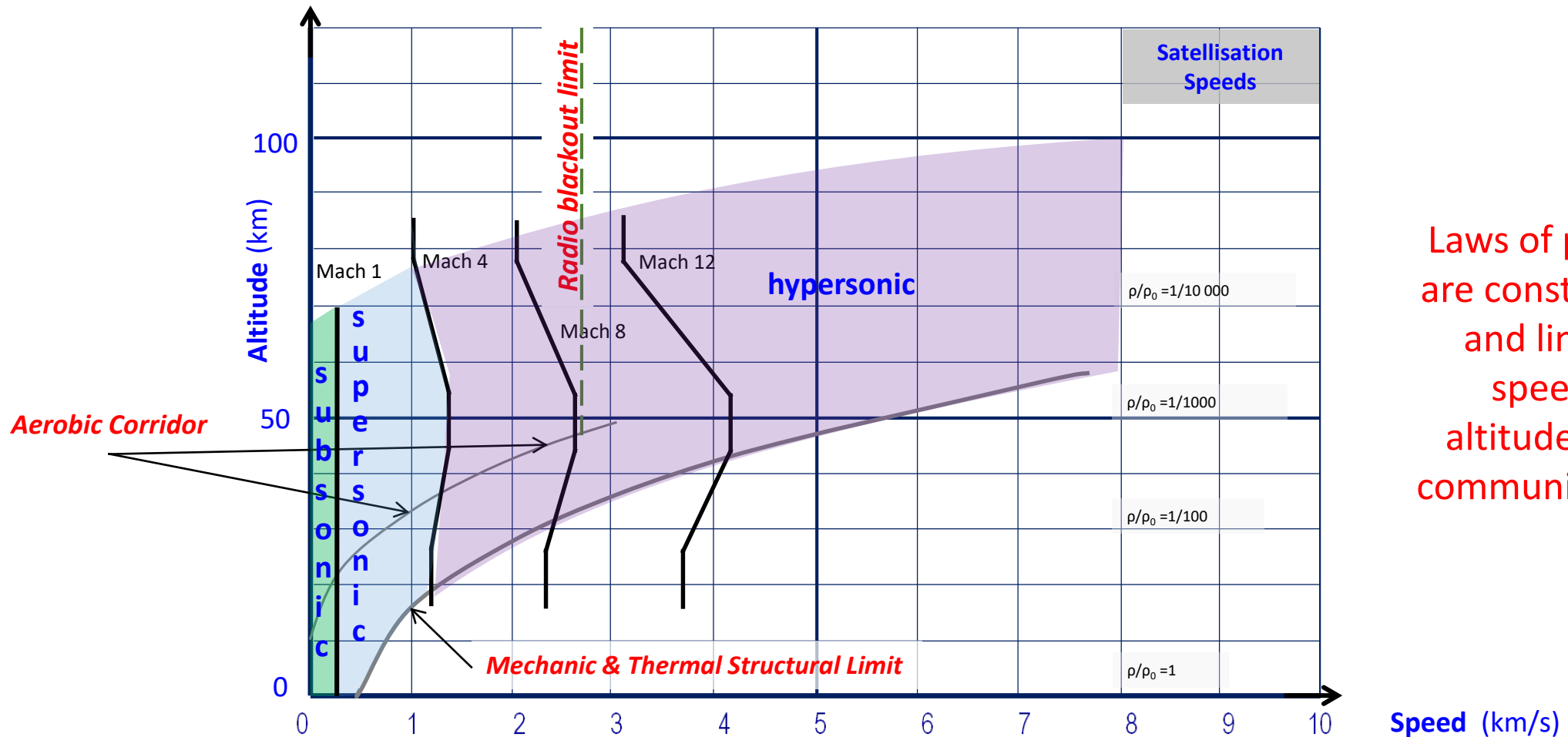


civil new types of applications in the higher airspace before 2035

civil new types of applications after 2035

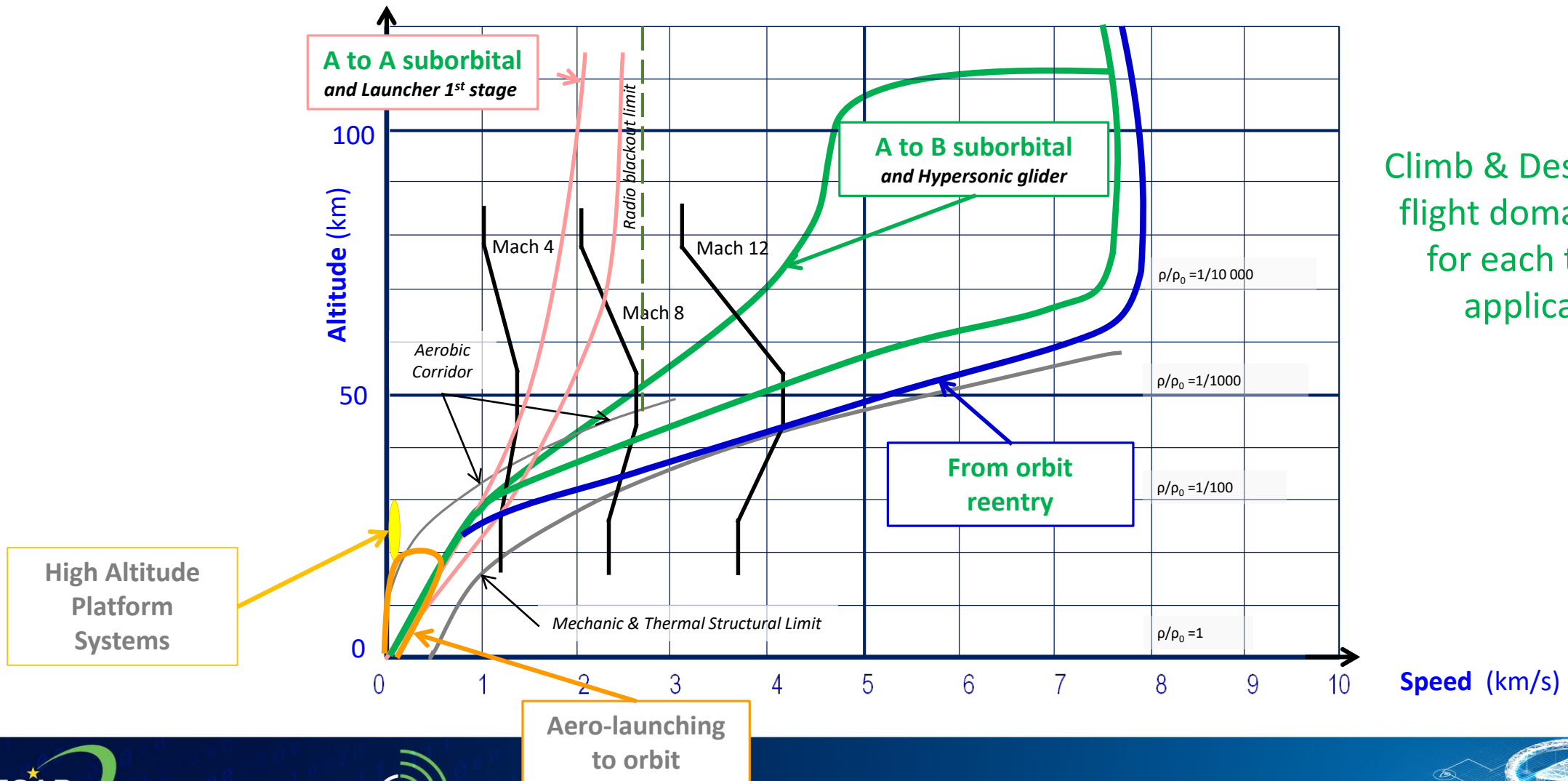
military types of applications

Flight domains physical limits



Laws of physics
are constraining
and linking
speeds,
altitudes and
communications

New entrants in ATM



Climb & Descent give flight domain limits for each type of application

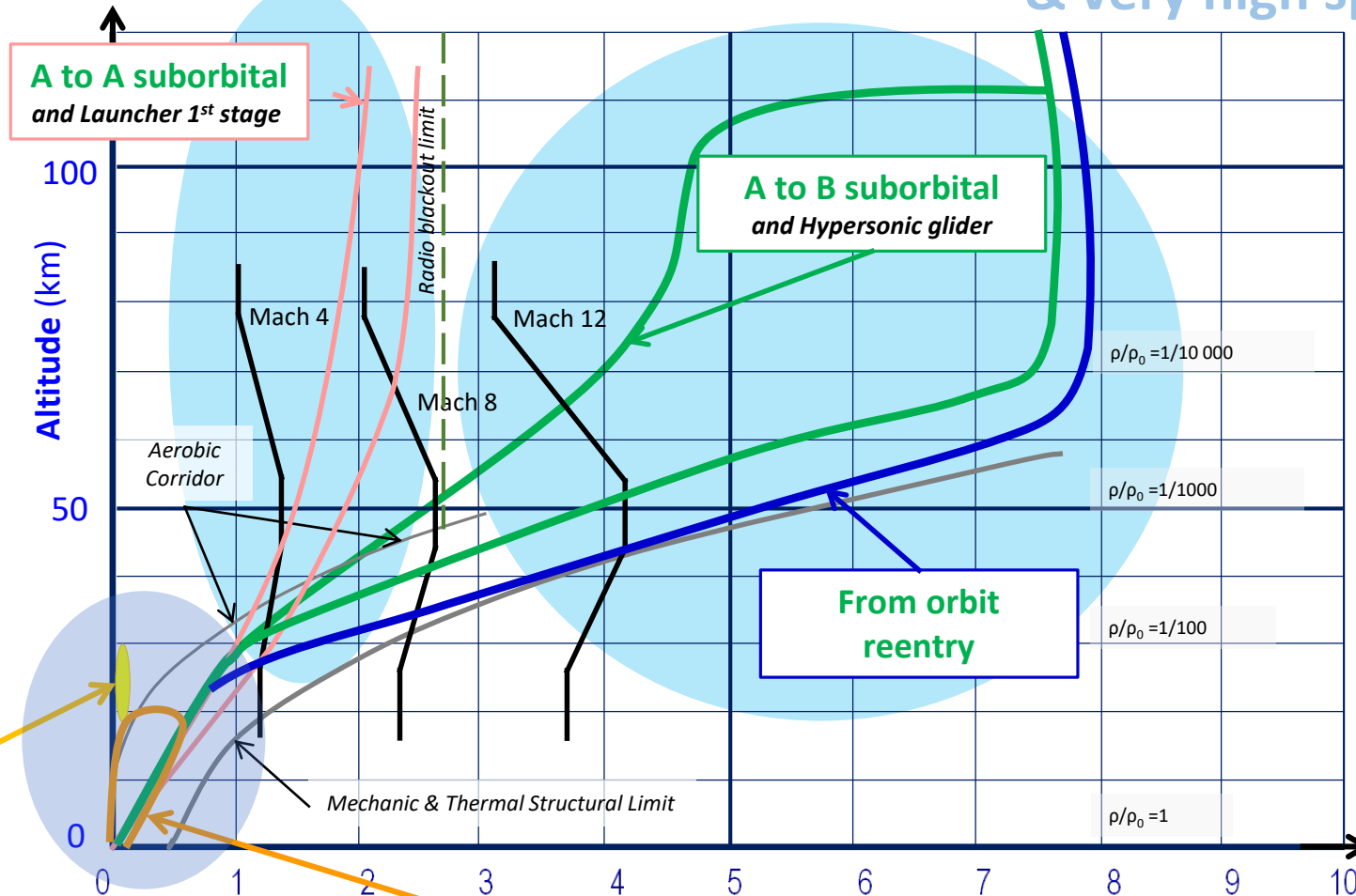
how far and how quick ?

Worldwide global
& very high speed

Regional
& high speed

Regional
& low speed

High Altitude
Platform
Systems



Aero-launching
to orbit

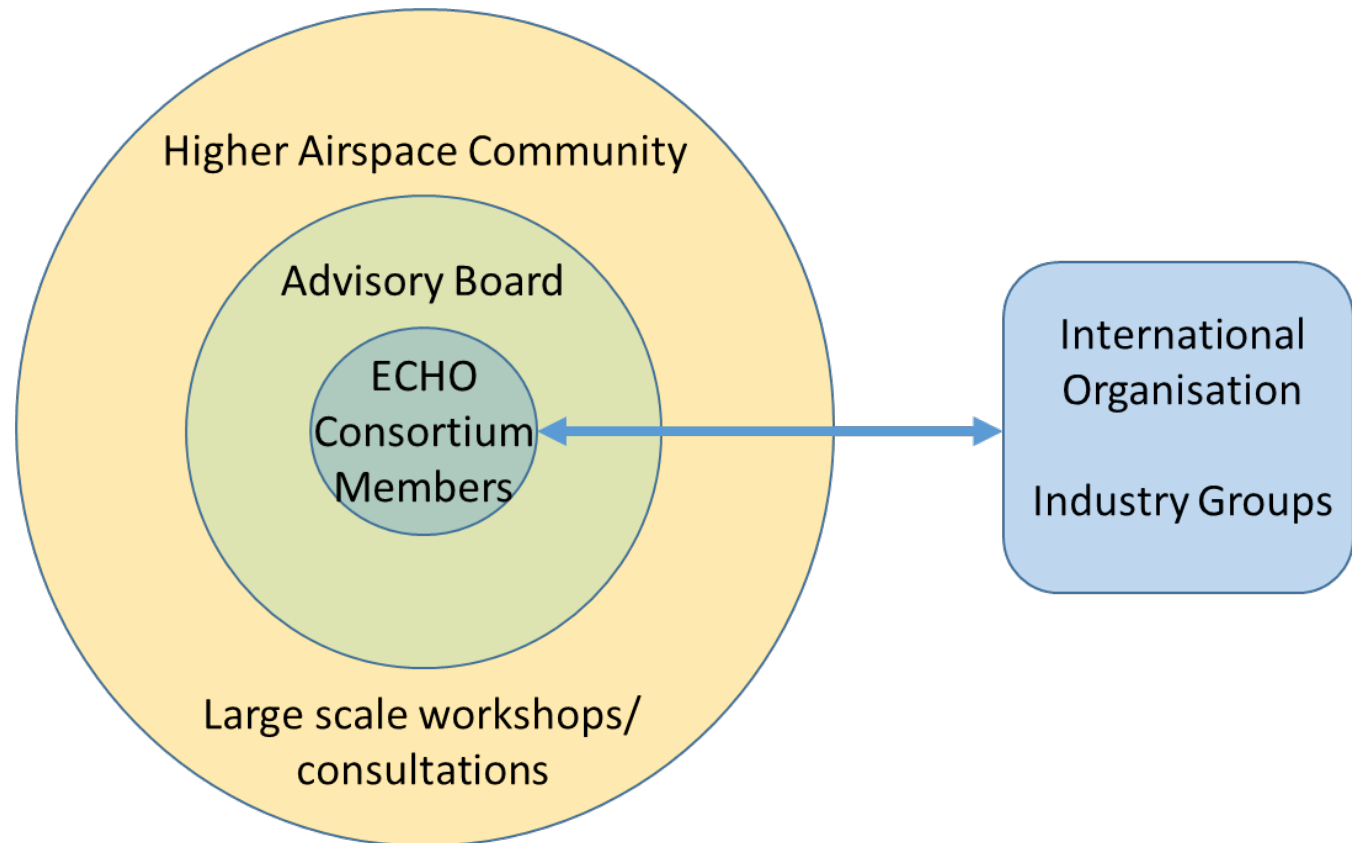


will translate
new needs in
ConOps and
Rules

Speed (km/s)

ECHO Organisation

- EUROCONTROL
- DLR
- DASSAULT AVIATION SA
- THALES ALENIA SPACE SAS
- ONERA
- ENAV
- ENAC (Italy)
- CIRA
- DSNA
- ENAC (France)
- Airbus Operations SL



Thank You



This project has received funding from the SESAR Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 890417

www.higherairspace.eu

www.eurocontrol.int/project/european-concept-higher-airspace-operation

