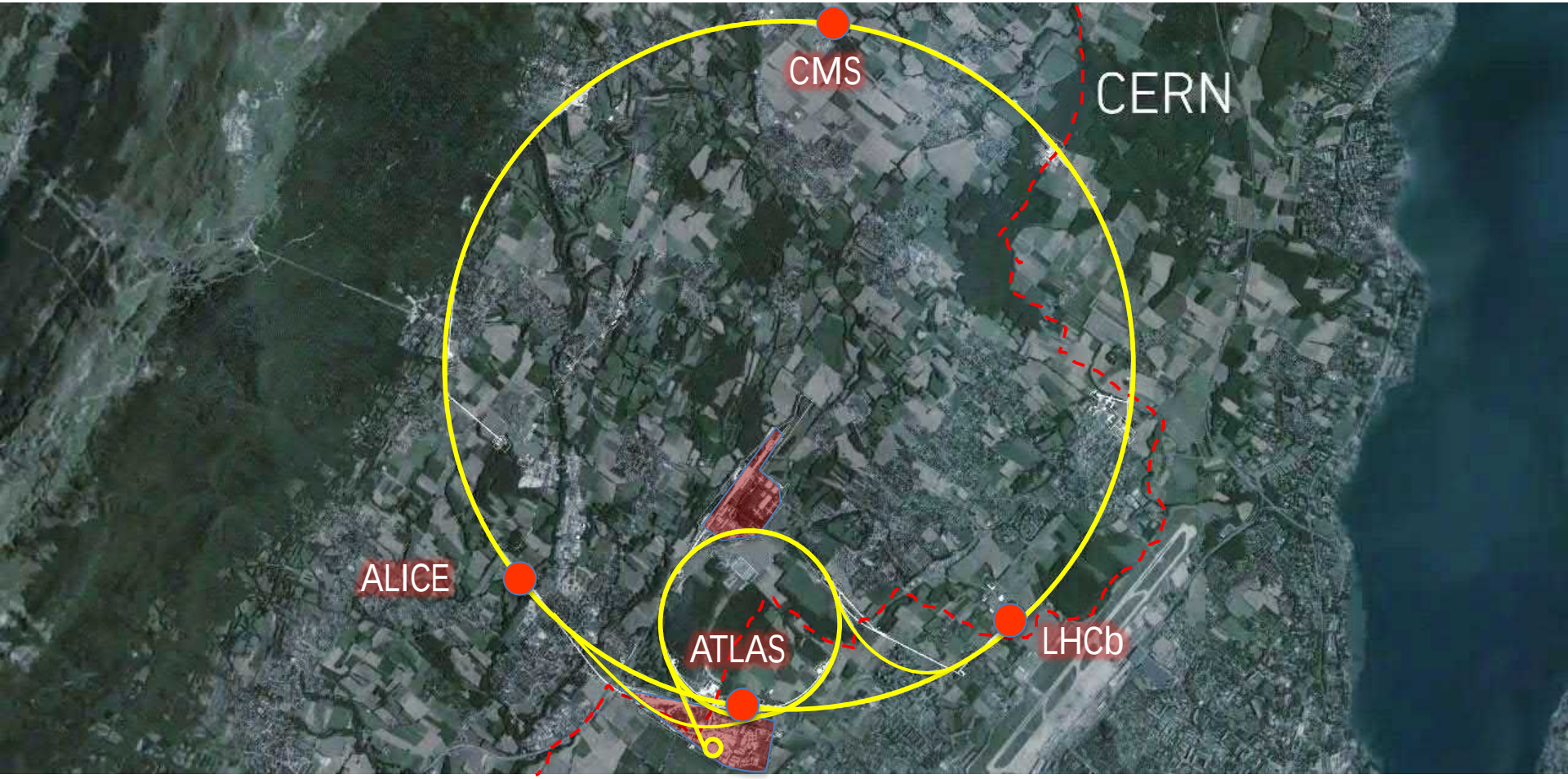
Space seen from the underground : CERN Aerospace Applications

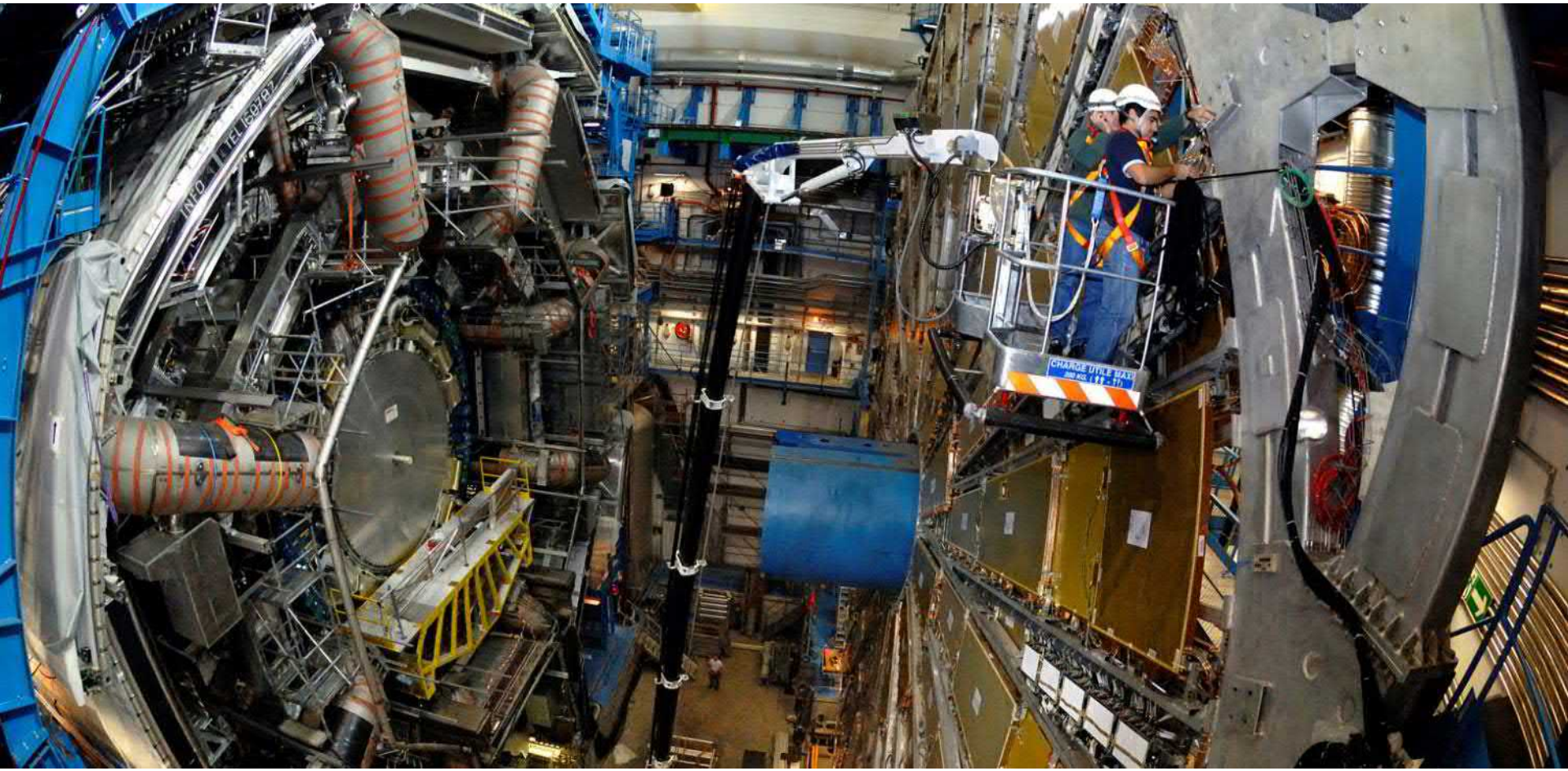
Space Career Event
HES-SO HEPIA
07-11-18

Enrico Chesta
CERN – European Organization for Nuclear Research
Knowledge Transfer Group – Aerospace Applications

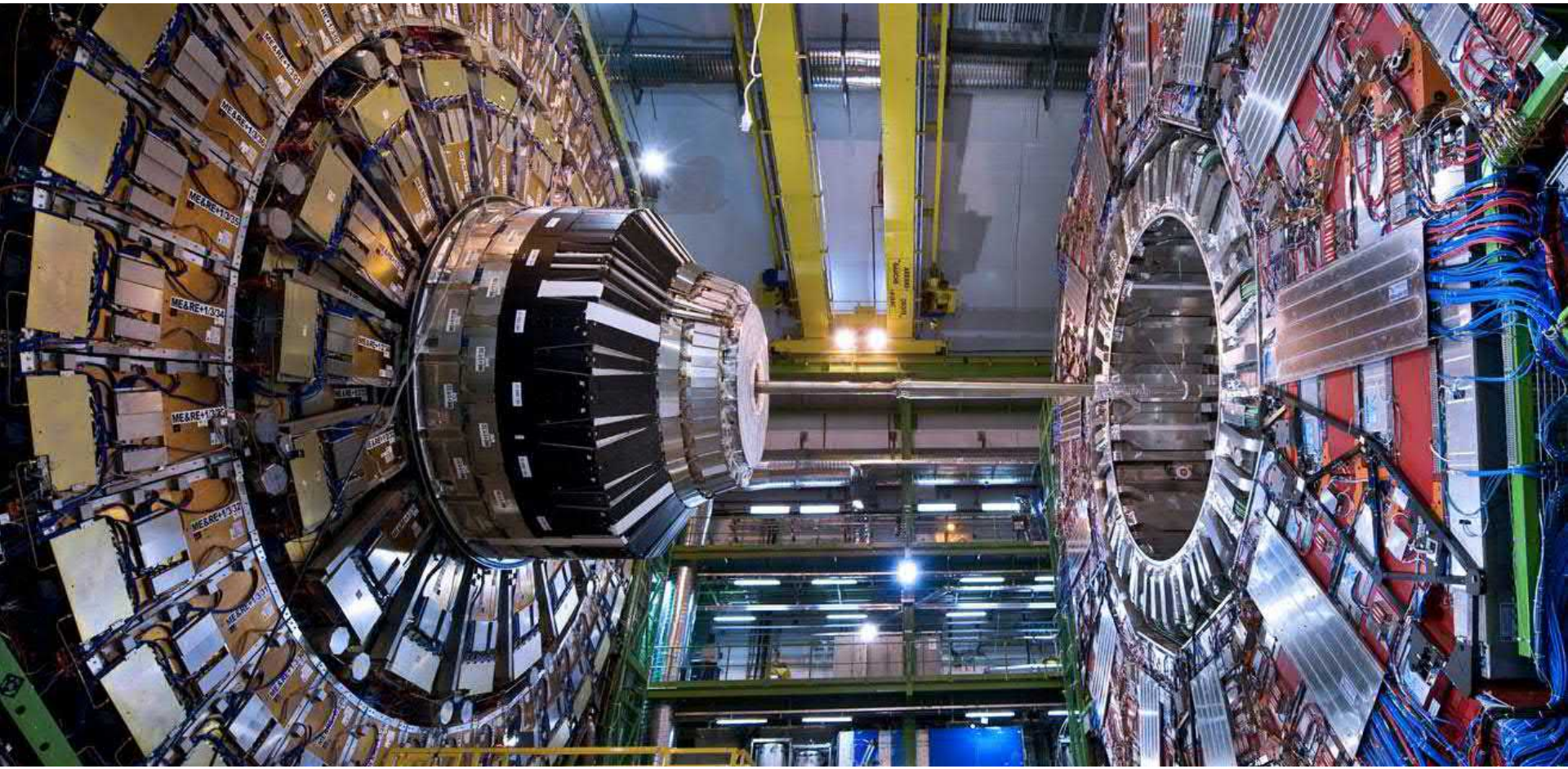
CERN main mission: particle physics



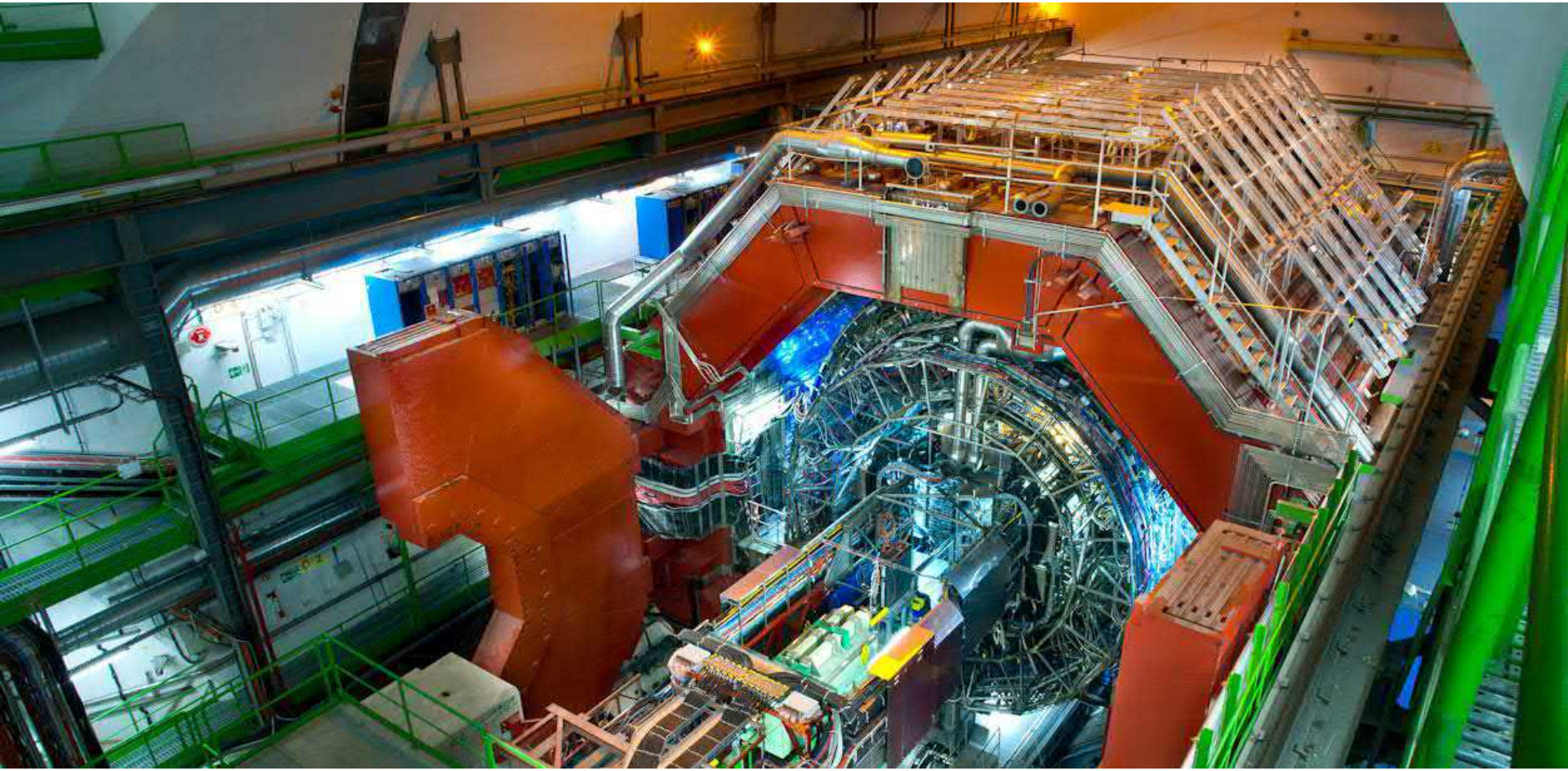
Detectors - ATLAS



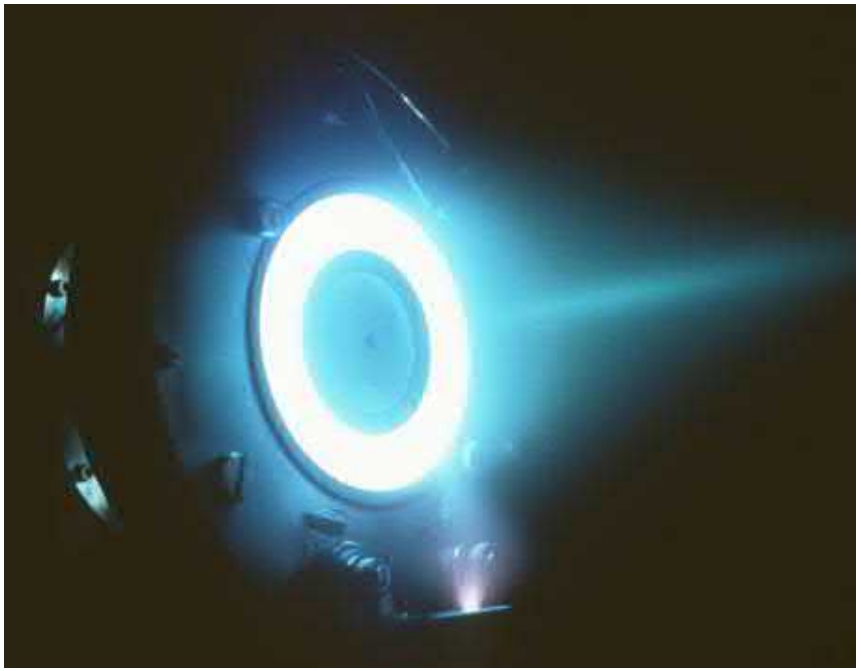
Detectors - CMS



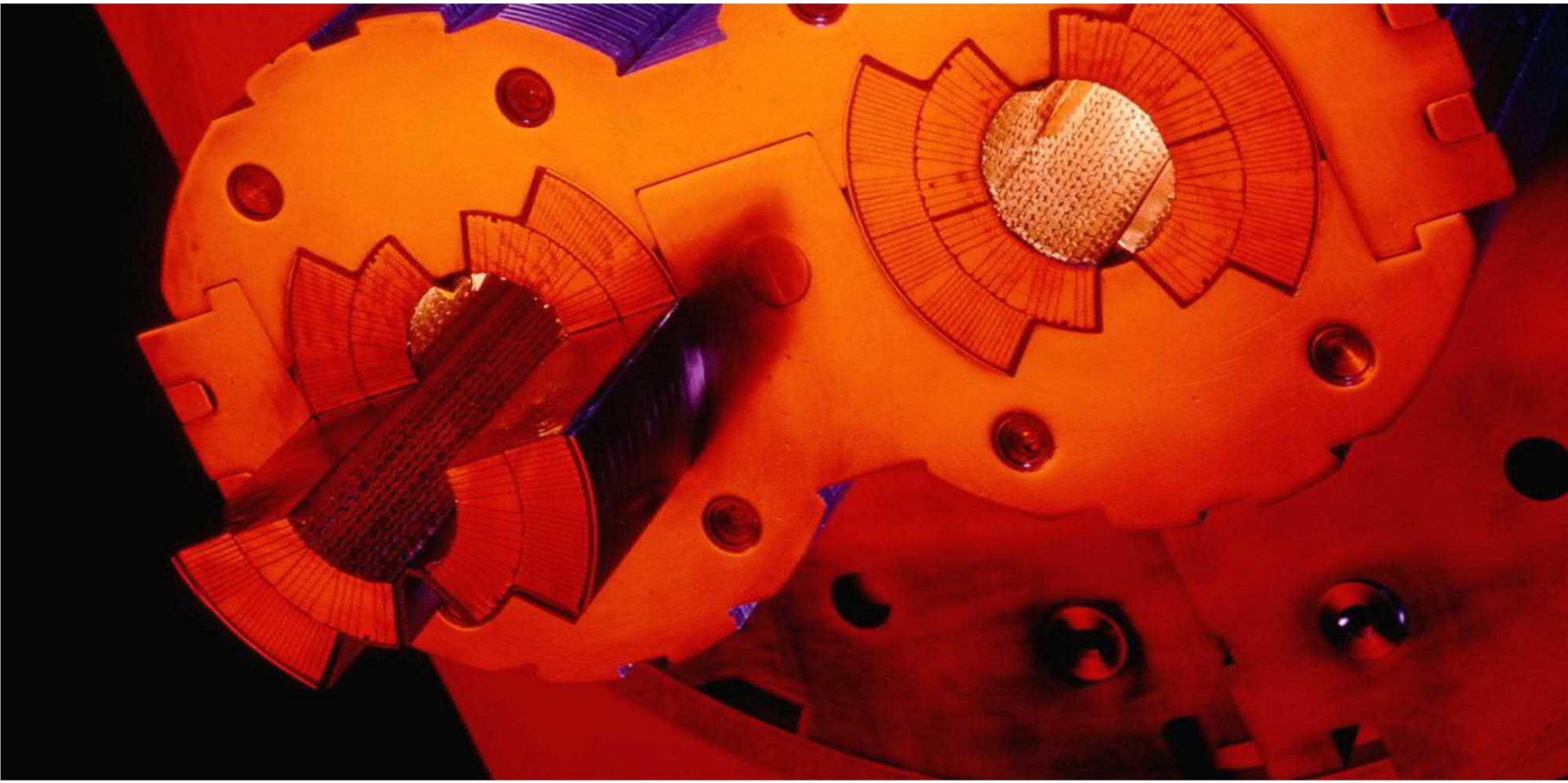
Detectors - ALICE



From the smallest to the biggest particle accelerators…

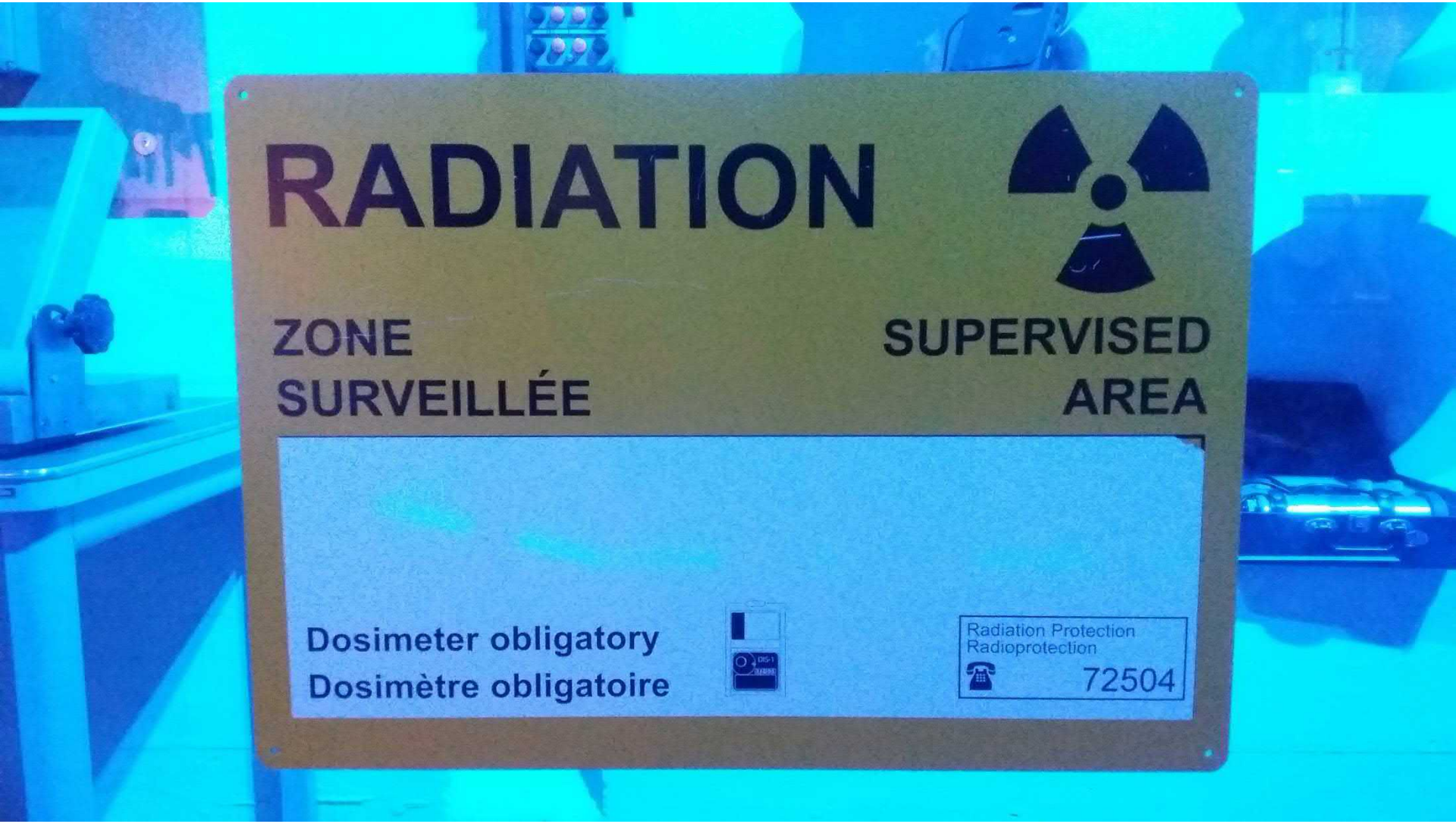


Very high vacuum

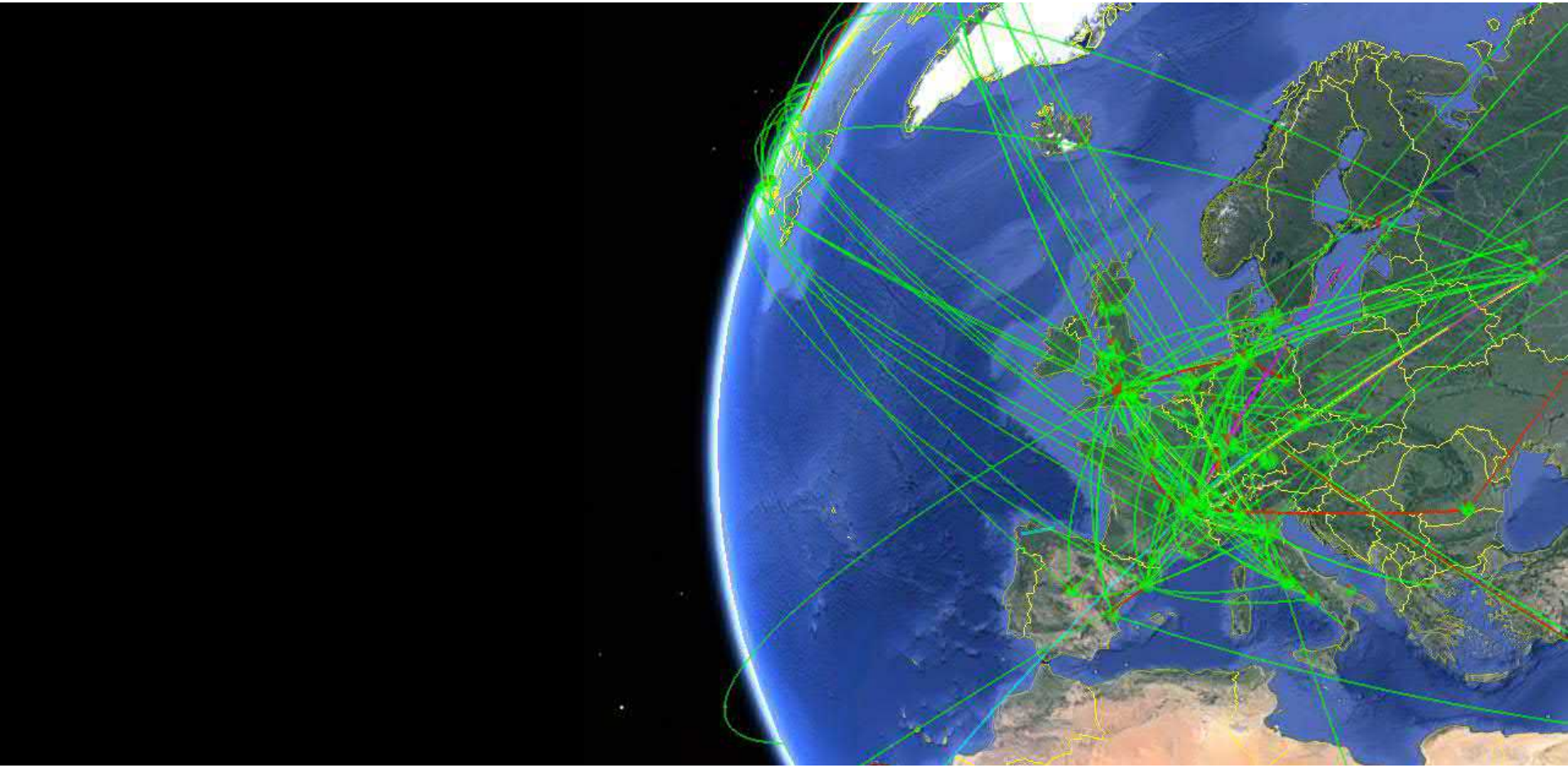


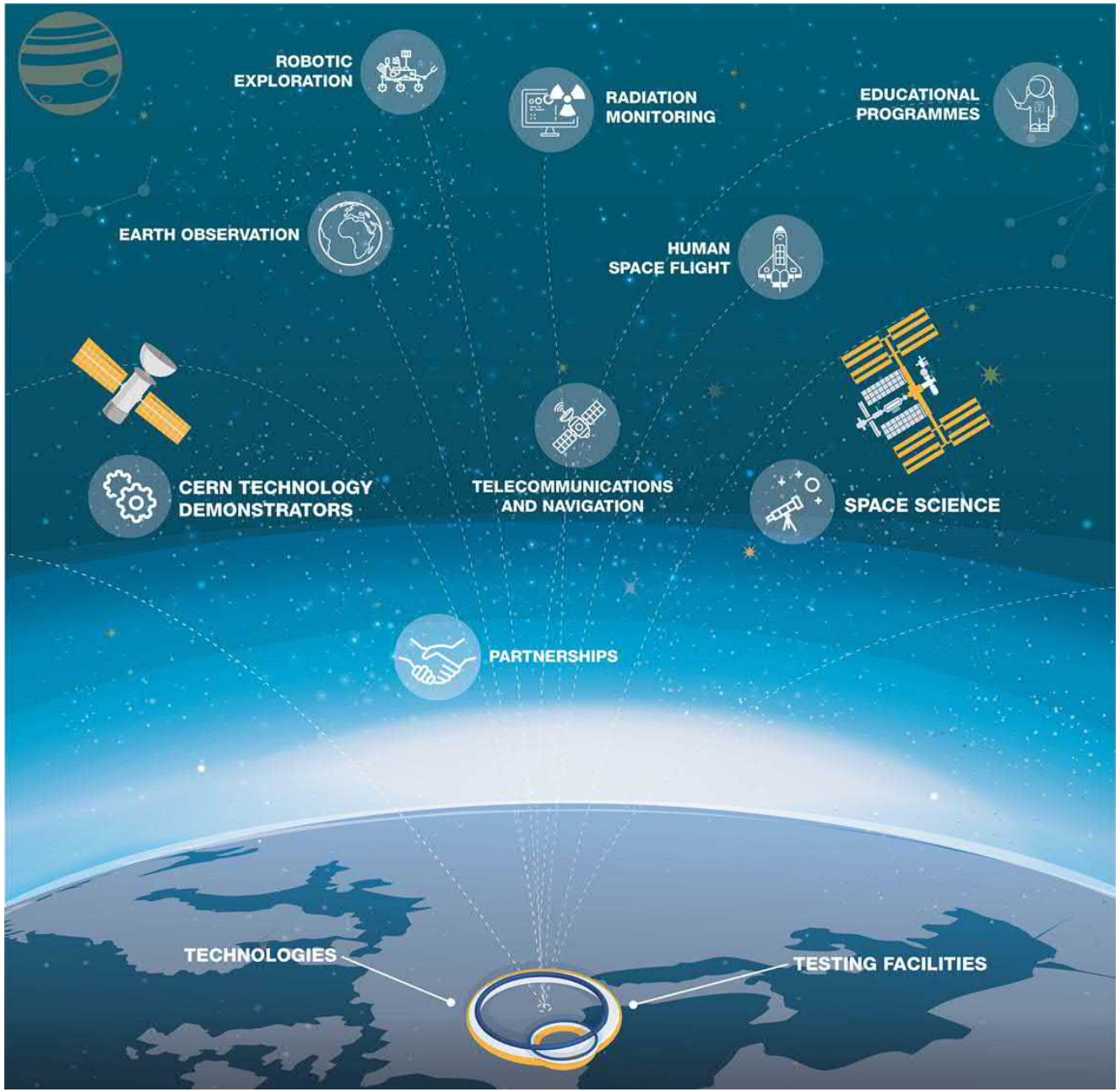
Extreme temperatures

Radiations

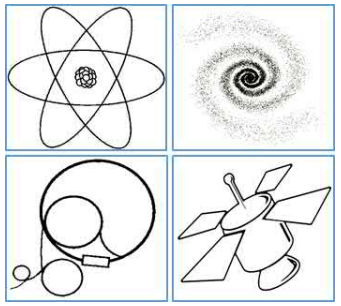

RADIATION
ZONE
SURVEILLÉE
SUPERVISED
AREA
Dosimeter obligatory
Dosimètre obligatoire
Radiation Protection
Radioprotection
72504

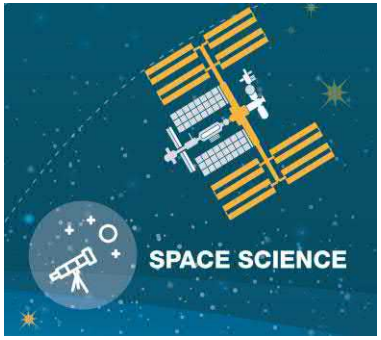
Big data





CERN AEROSPACE APPLICATIONS





CERN Supported Scientific Experiments in Space - Exemples

Astroparticle Physics – Astrophysics - Cosmology

AMS-02

Nucleon

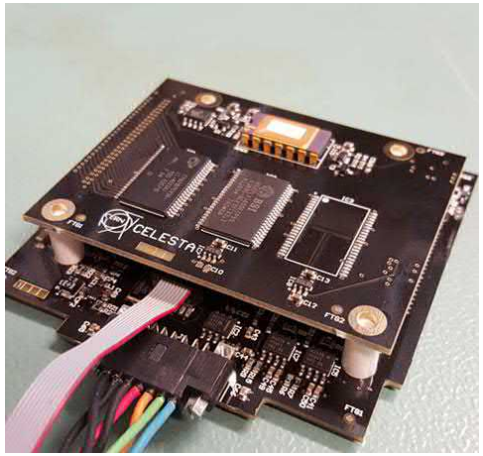
CALET

LISA Pathfinder

DAMPE

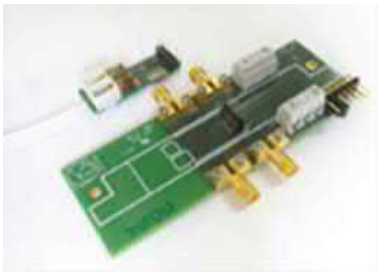
EUCLID

CERN IOD exemple: CELESTA CubeSat

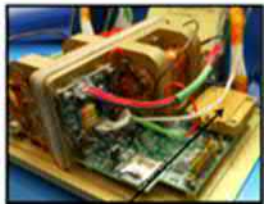


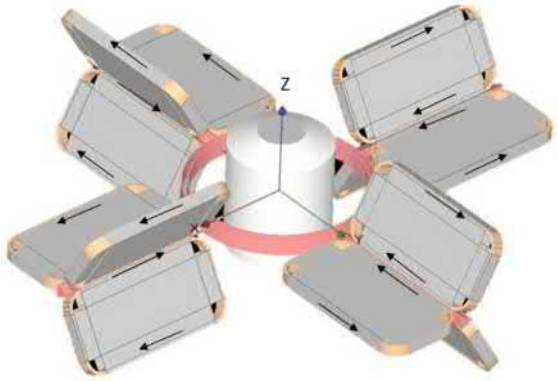
Exemples of CERN Technologies for Space

Micro-engineering and advanced material solutions for thermal management



Rad-hard electronic devices

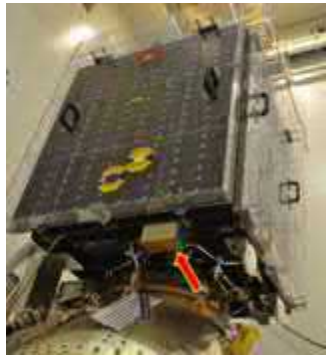




Superconducting shields

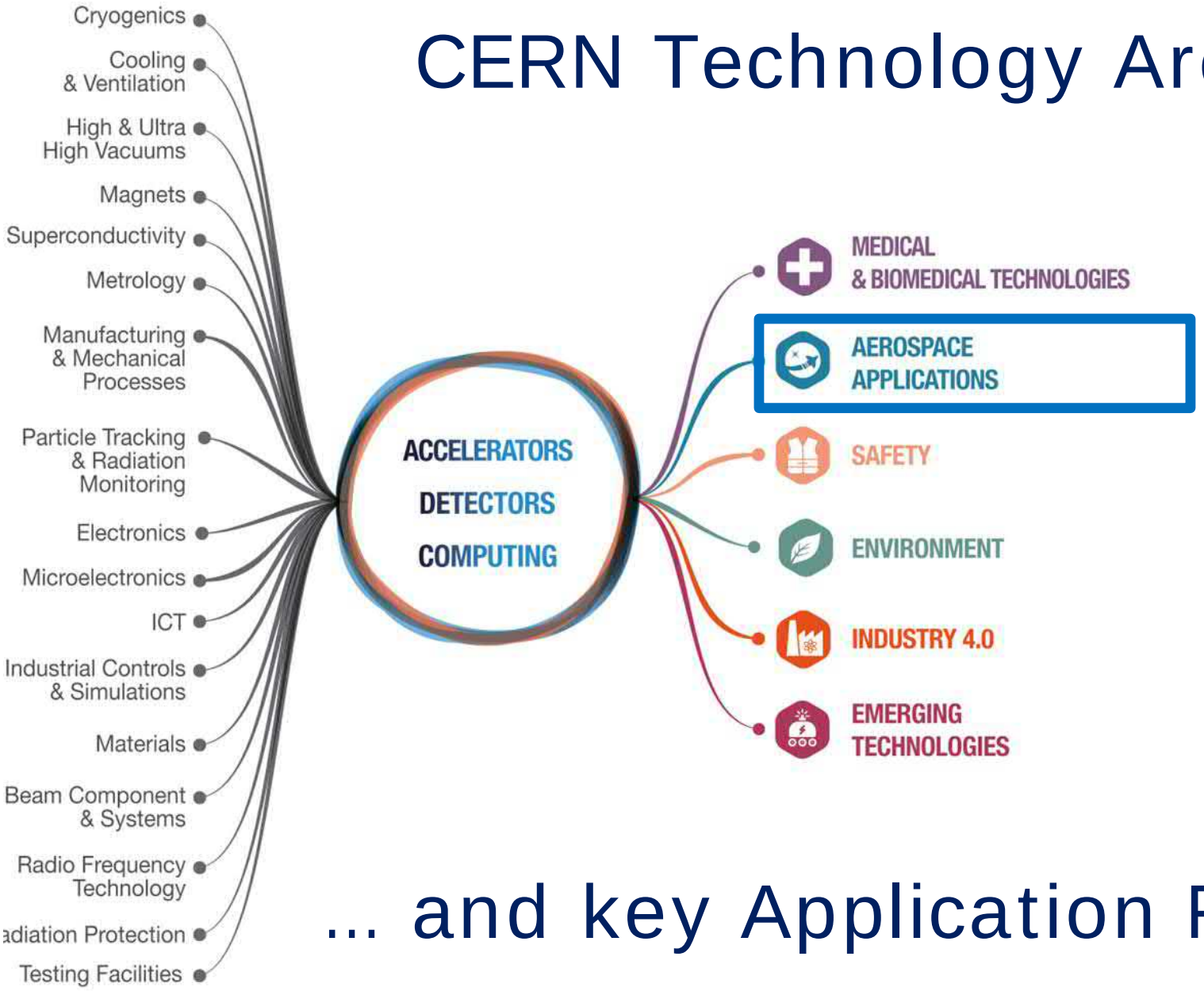
Data handling software

CernVM File system



Medipix/Timepix detectors in-flight demonstration on Proba-V, Orion and the ISS

CERN Technology Areas...



... and key Application Fields


For more informations:
https://careers.cern/students
https://kt.cern/aerospace