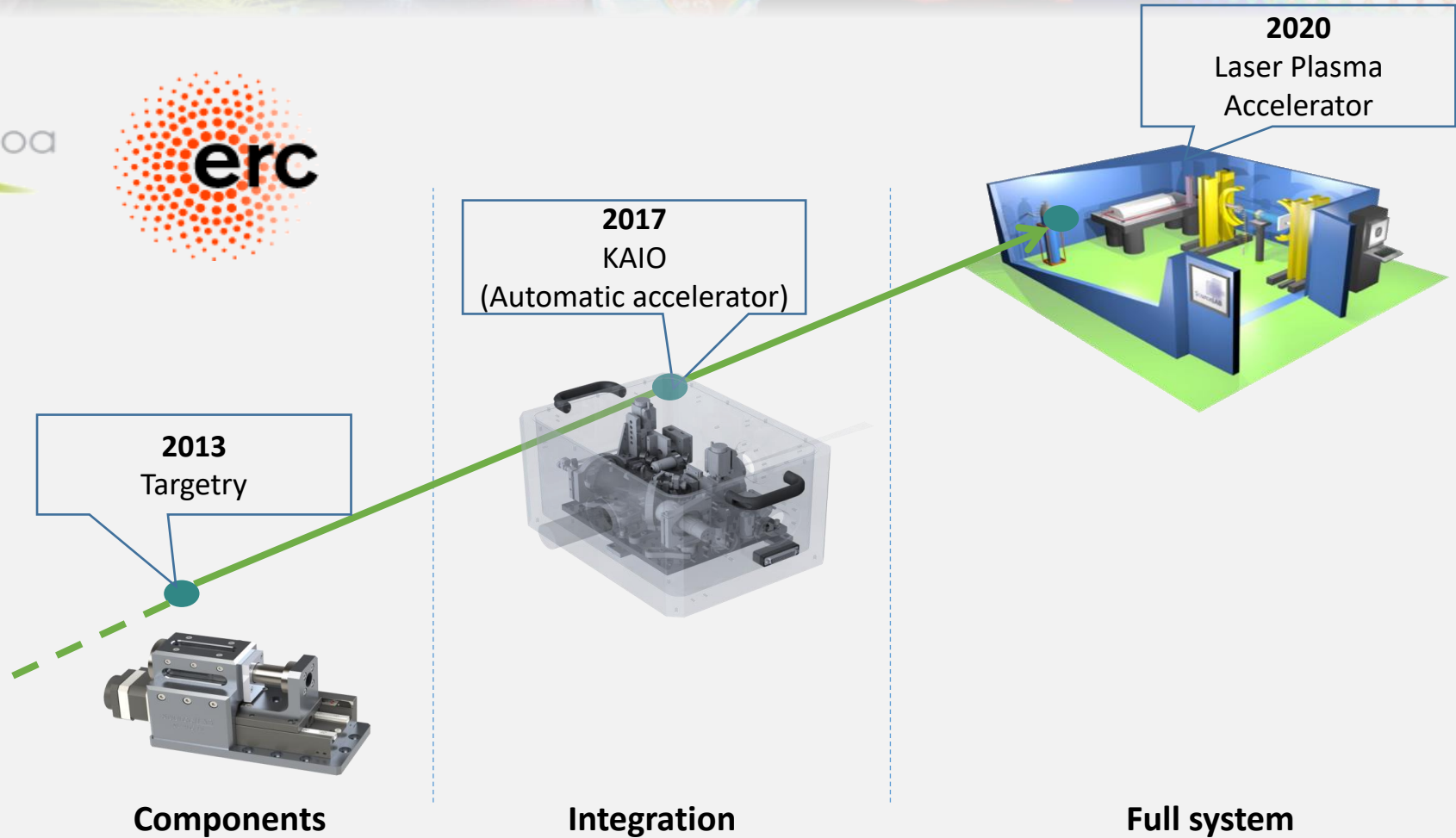


Electron acceleration in the wake of an intense laser pulse

Source **LAB**

Our revolution for beam applications
Laser Plasma Accelerators for inspection

SourceLAB – founded in 2013
LOA spinoff, at Ecole Polytechnique (Paris – France)

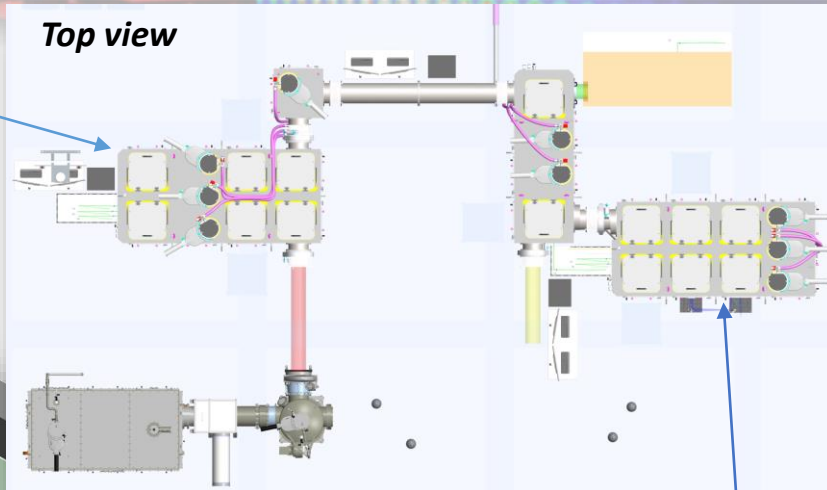


Mission Statement : “To bring Laser Plasma Technology to the world”

PW beamline under construction at ELI-ALPS (Hungary)

PW laser compressor by Amplitude

Plasma mirror



Interaction chamber for Surface Harmonic

30 m

30 m

■ Strong-Field QED exploration :
Fedeli et al., PRL, 127, 114801 (2021)

SourceLAB, already a key supplier of Laser Plasma Technology

Customers



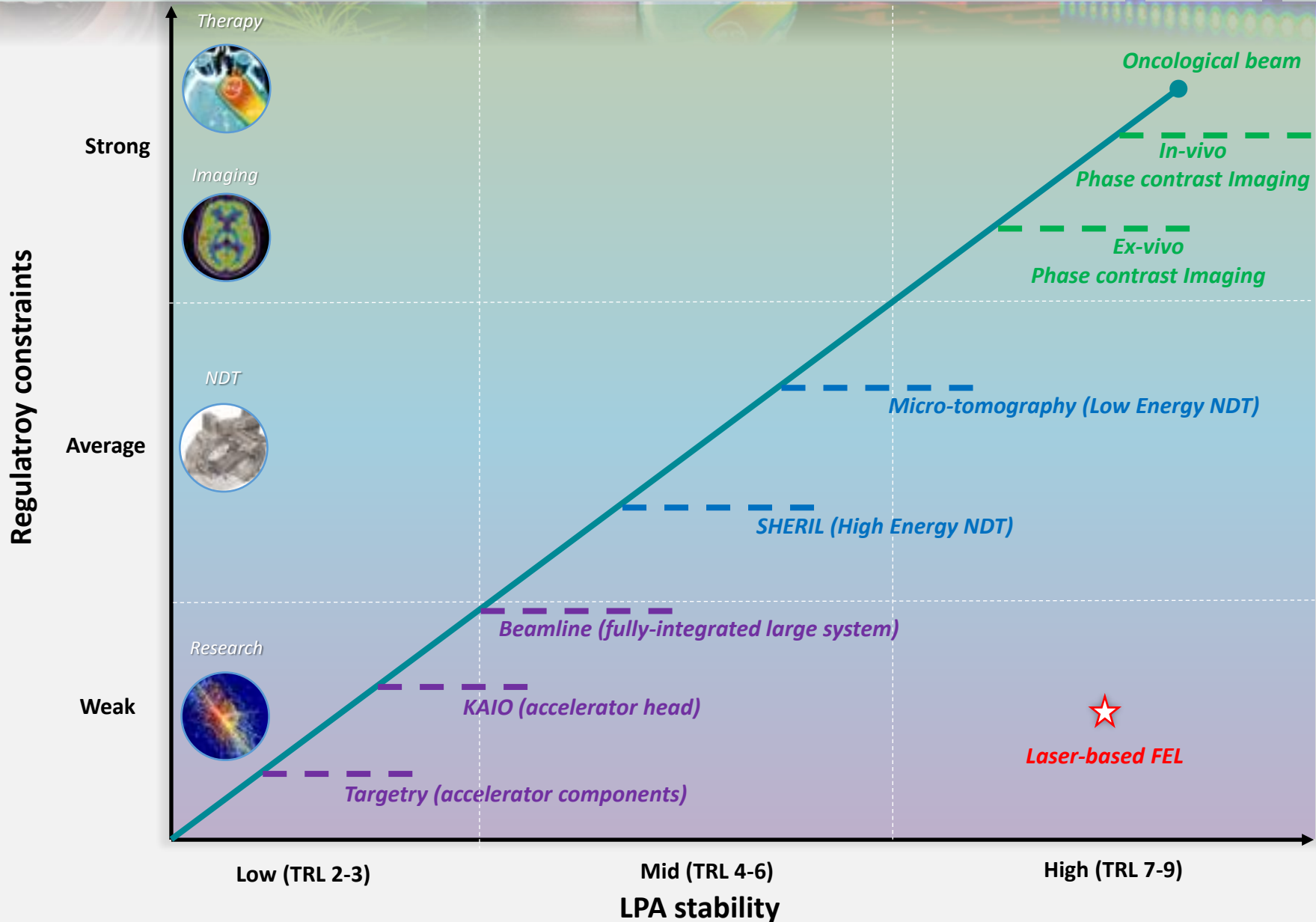
Exclusive licensing



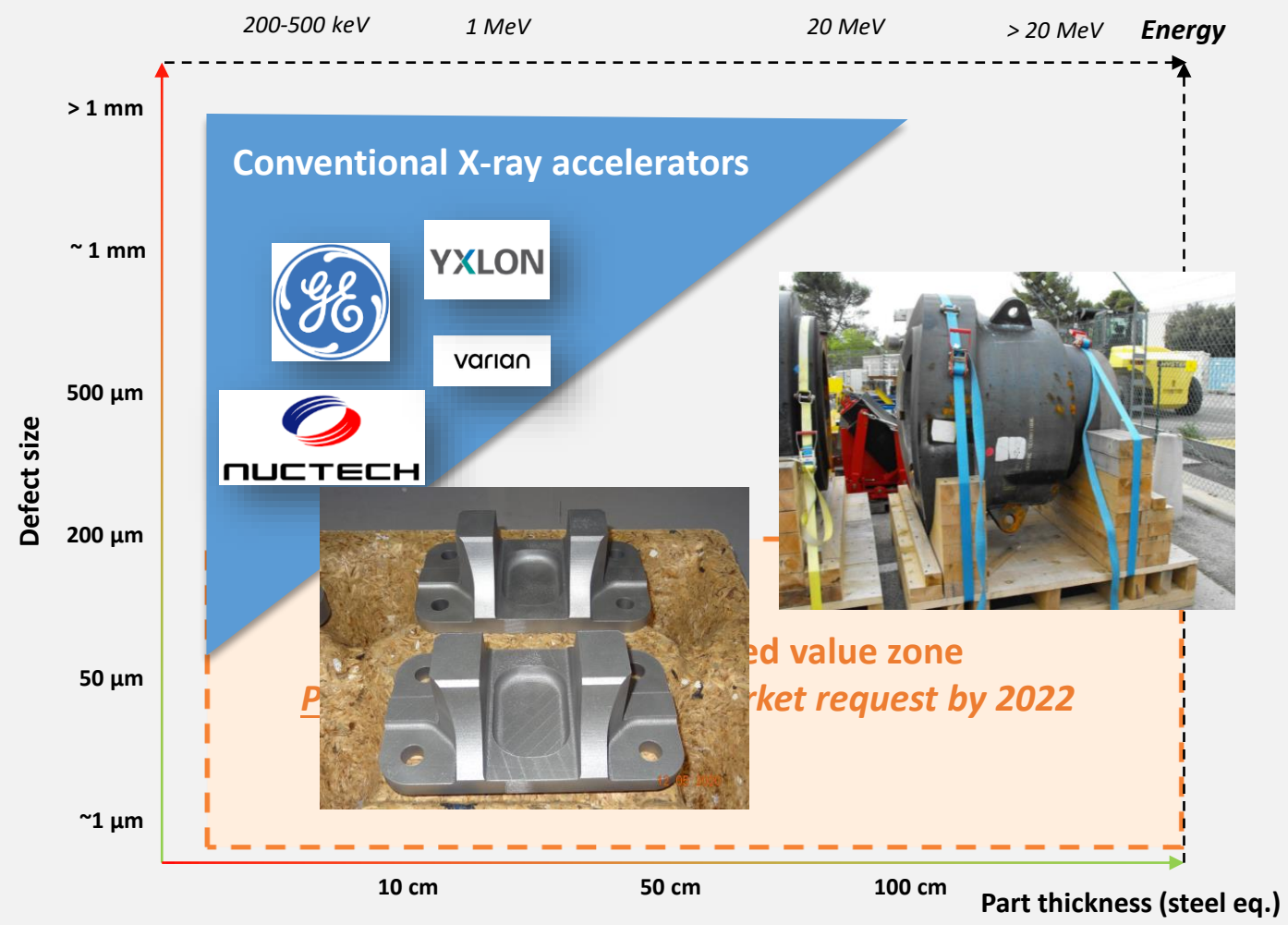
Our key financial partners



Matching increasingly high-impact markets with LPA stability needs

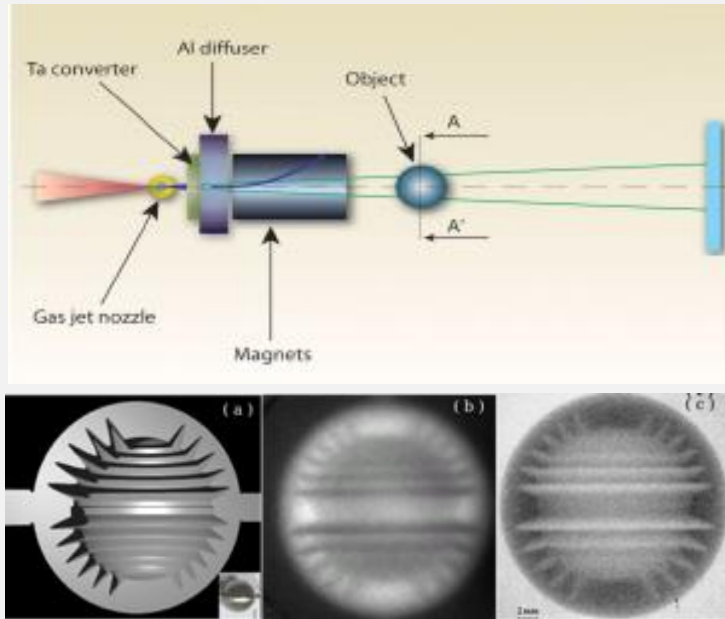


Unsatisfied need : Non Destructive Testing (NDT) needs more spatial resolution



NDT X-ray sources with a Laser Plasma Accelerator

High energy source with Bremsstrahlung effect

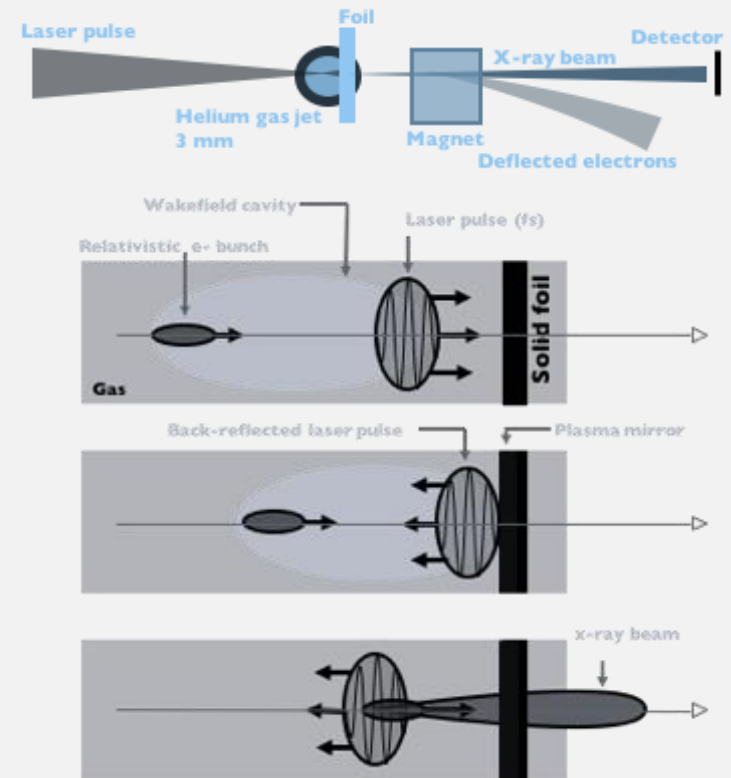


Energy: 1-100 MeV tunable

Resolution: ~50 μm

- Glinec et al, Phys. Rev. Lett., 94, 025003 (2005)
- Ben-Ismael et al, Appl. Phys. Lett., 98, 264101 (2011)
- Guillaume et al, PRSTAB, 18, 061301 (2015)
- Döpp et al, NIMA, 830 (2016)

Micro focus source with Compton effect



Energy: >100 keV

Resolution: 1 μm

- Ta Phuoc et al. Nature Photonics 6, 308-311 (2012)
- Corde et al, Rev. Mod. Phys., 85, 1 (2013).

The SHERIL demonstrator platform at LOA...

Upper level:
laser room

Laser



Detector

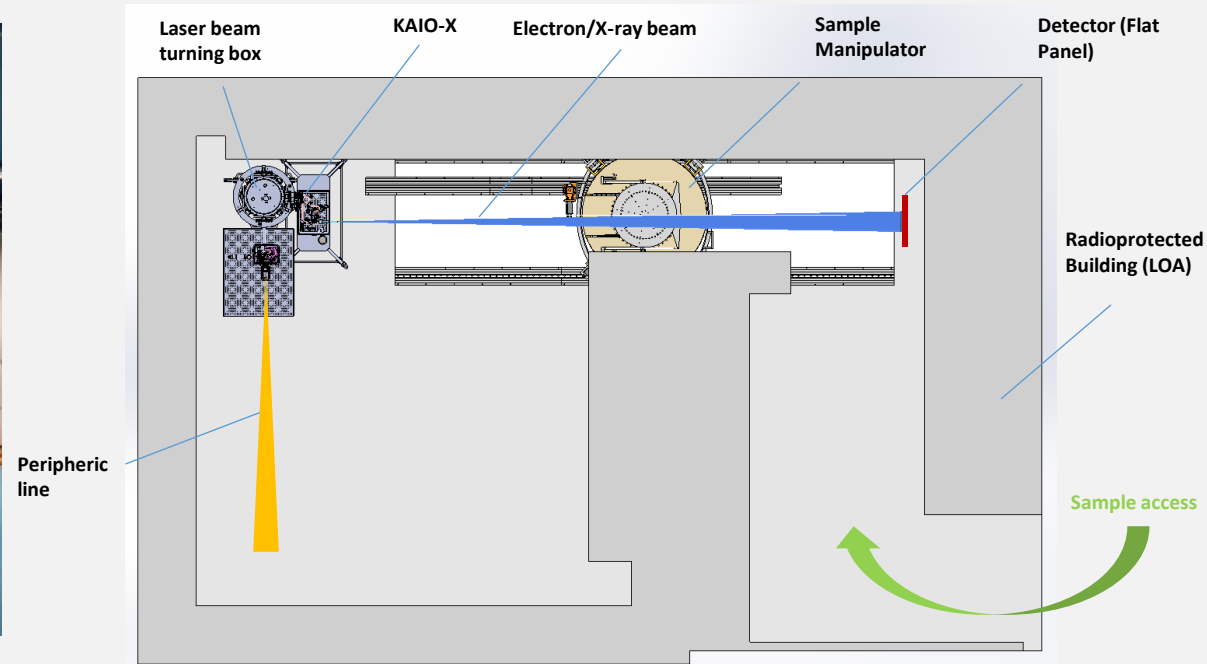
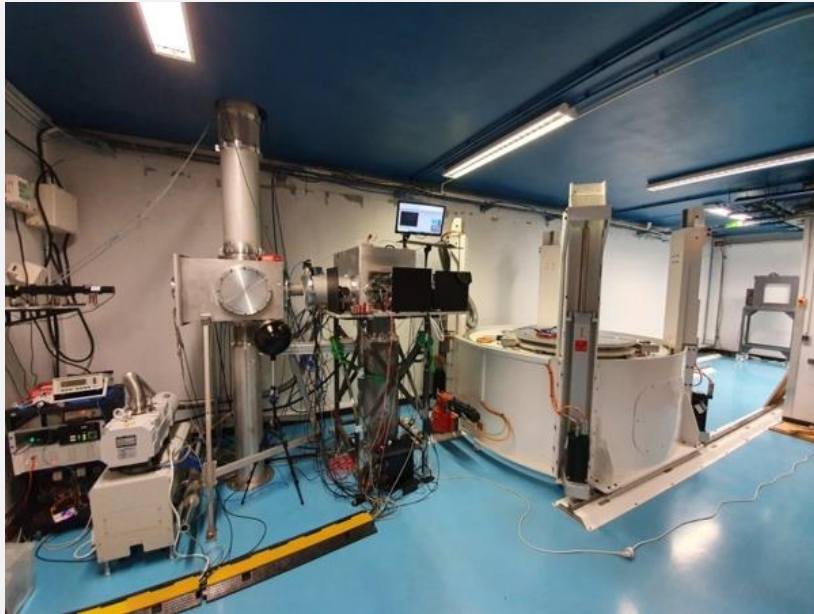
Interaction
chamber

2 m-thick
concrete walls

Manipulator

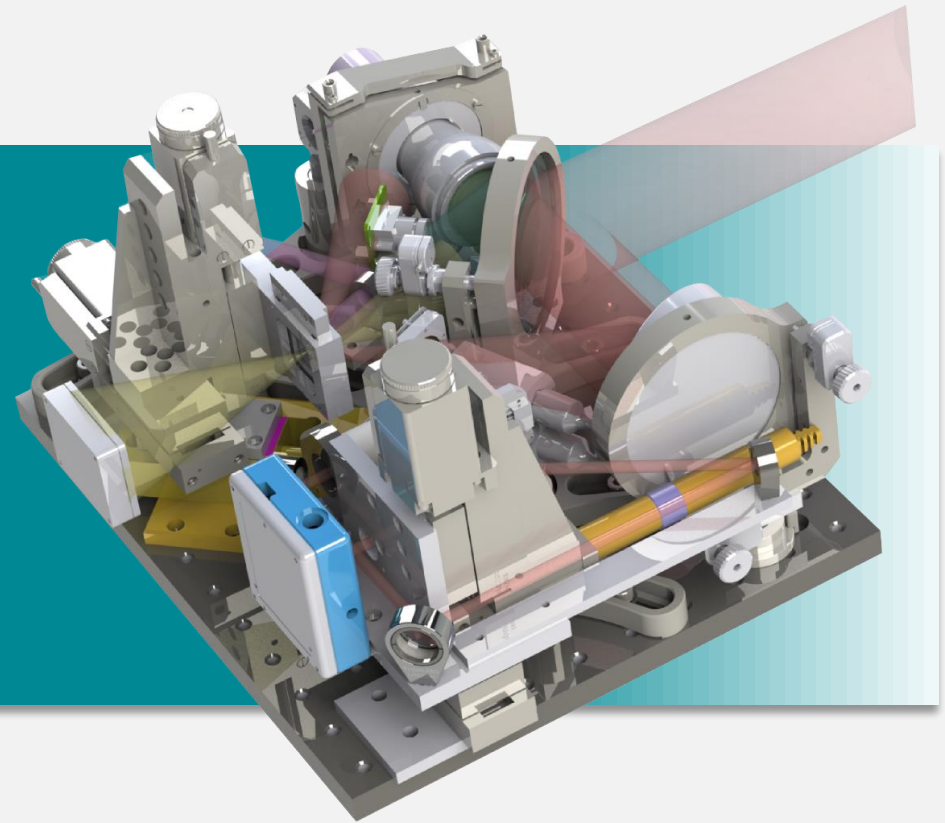
Lower level:
radioprotected
room

...offering unique inspection services

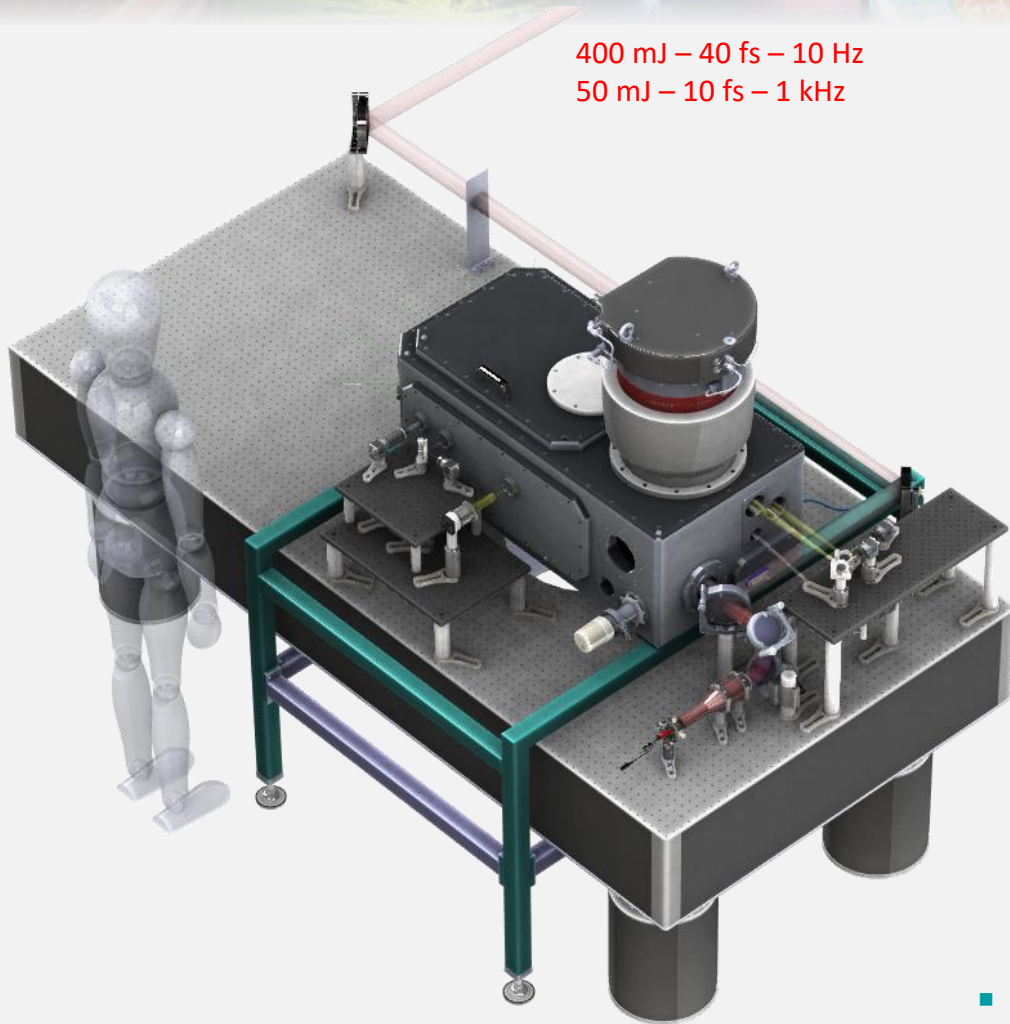


e-KAIO

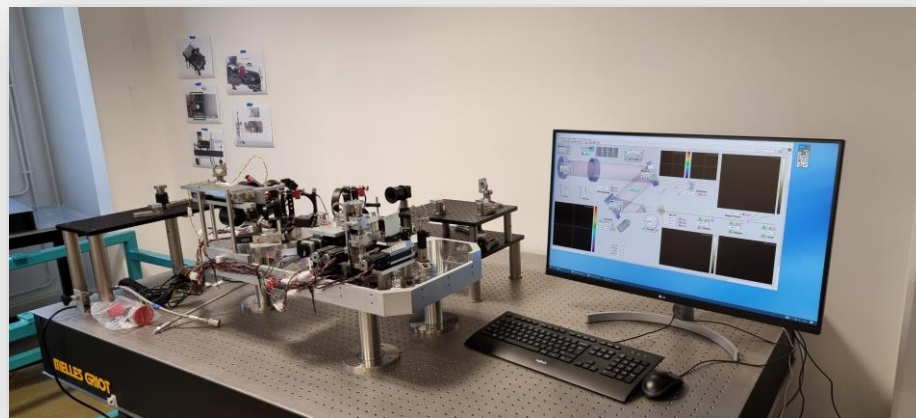
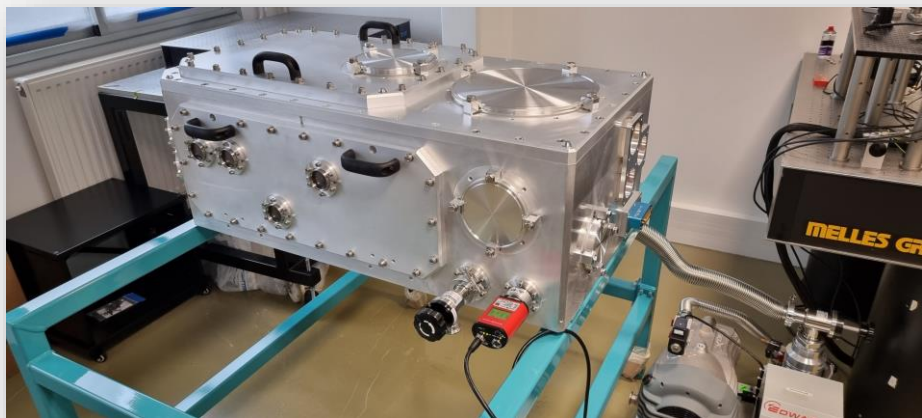
kHz electron accelerator



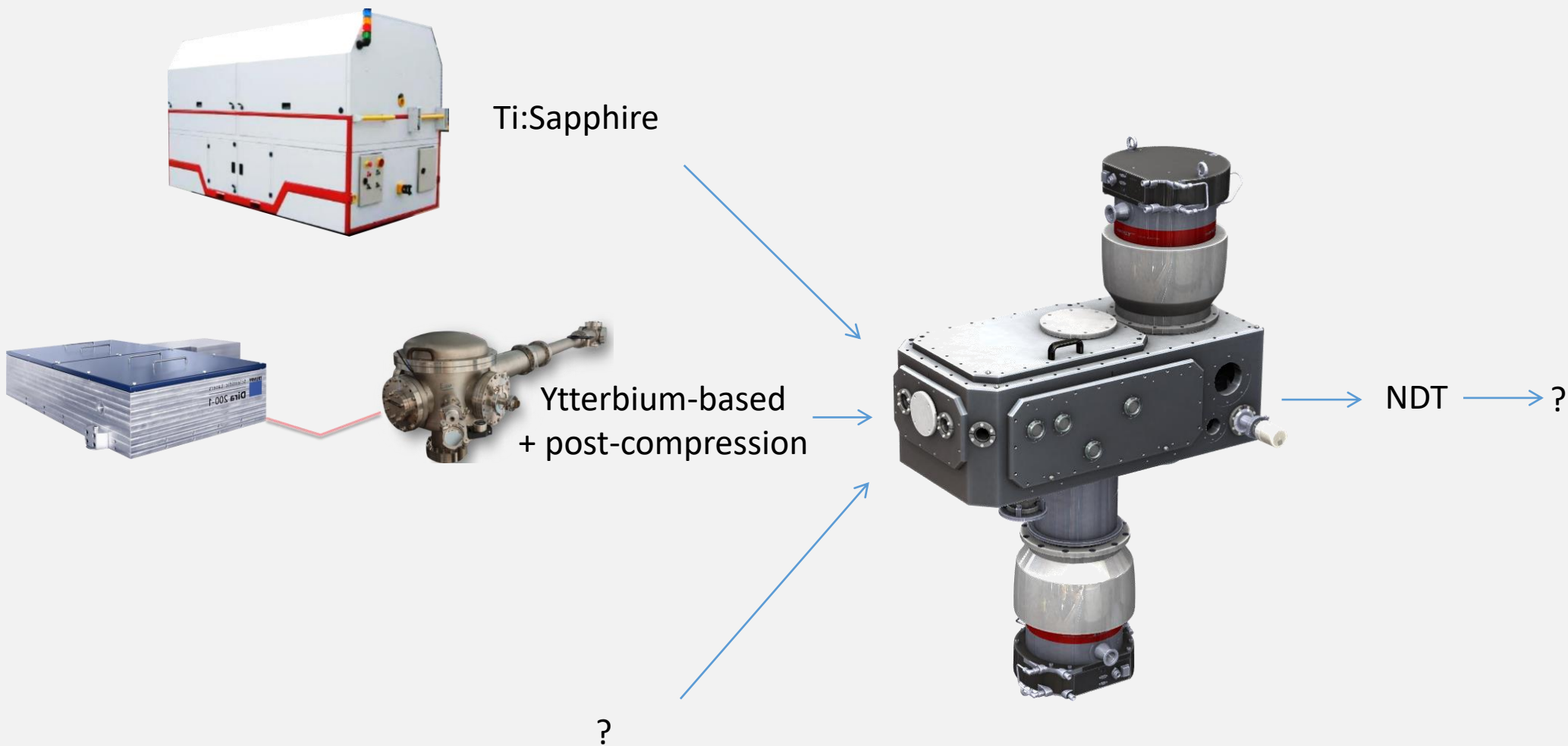
400 mJ – 40 fs – 10 Hz
50 mJ – 10 fs – 1 kHz



- Inspired from Rovige et al, PRAB 23, 093401 (2020)
- > 10 MeV electron cutoff
- Ready for high rep rate (kHz)



Choosing the right laser technology to build next steps





Source **LAB**

Laser Plasma Technologies

www.sourcelab-plasma.com