



SOLEIL

What happened the last 2 years

- Located in France - 25km south of Paris
- Created in 2002 - 350 permanent
- 2.75 GeV – 354 m storage ring
- 9 orders of magnitude in energy, TeraHertz to hard X-rays
- 29 Beamlines - 24 on Insertion device

Motion control

➤ Galil



➤ DeltaTAU



➤ Controllers

- **DMC-2182**
- **DMC-4183**
- 8 axis / box
- External drivers
- Classics applications

- **Power Brick LV**
(integrated amplifier)
- **PowerBrick controller**
- **High performances**
Virtual axis via Kinematic models

➤ Drivers / Amplifiers

- **Midi Engineering**
Stepper 2A / 4A/ 5A
- **Phytron** Under vacuum
PAB drivers
- **Elmo**
OEM for servo amplifier
- **NANOMOTION**
- **PI**
Piezo driver
- **SMARACT**
SDC2
- **Npoint**
LC.400
- **NANOS**
- **Heason**

450 Controllers / ~3500 axis in operation

Mechatronic

➤ Mechatronic working group*

- Include experts from
 - Mechanical Engineering
 - Metrology lab
 - Motion control team
 - Software team



Create dynamic between all teams involved in designing mechatronic systems

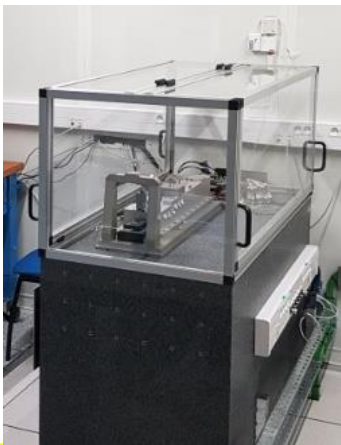
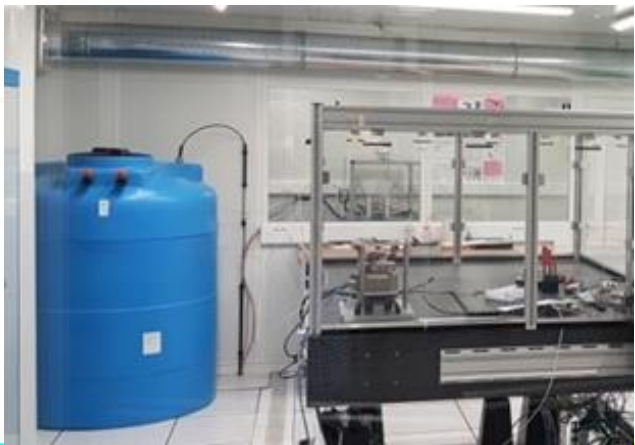
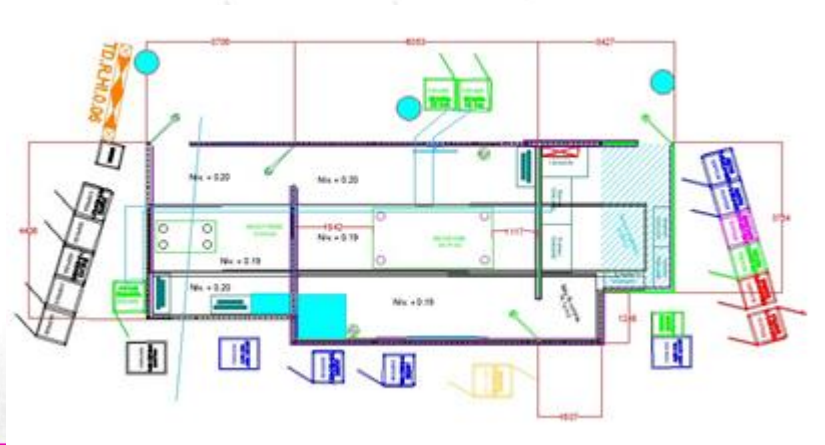


Tasks in progress

- Mechatronic training
- Active vibration control
- Improving Flyscan architecture
- Improving modeling as a tool

➤ Metrology lab**

Labspace of 64 m² including 2 separated metrology room and a control room.

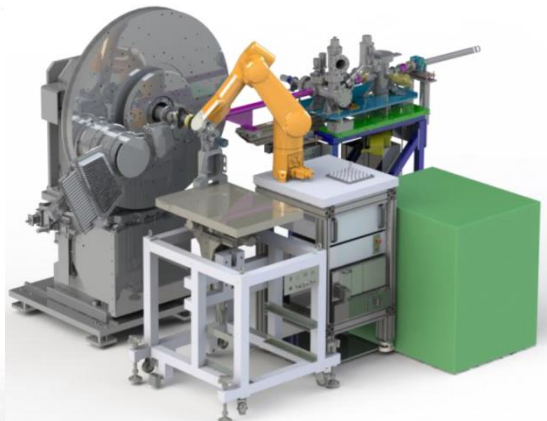


Beamline automation: Synchronization & Robotics

➤ *Standardizing Stäubli brand*

➤ *Standard integration*

- Robot - Tool
- Robot – Fluid panel
- Robot - Controller
- Robot – Hutch
- Robot – Generic control

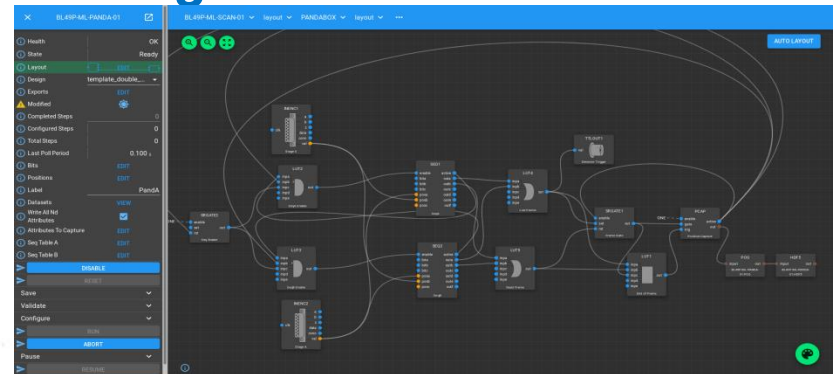


MOPHA001 poster

➤ *Improving PandaBox Features for Flyscan*



➤ *Improving FPGA Framework & configuration tools*



TUAPP05 talk

Precision systems

➤ *Nano-precision technologies*

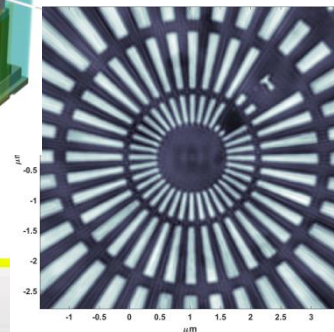
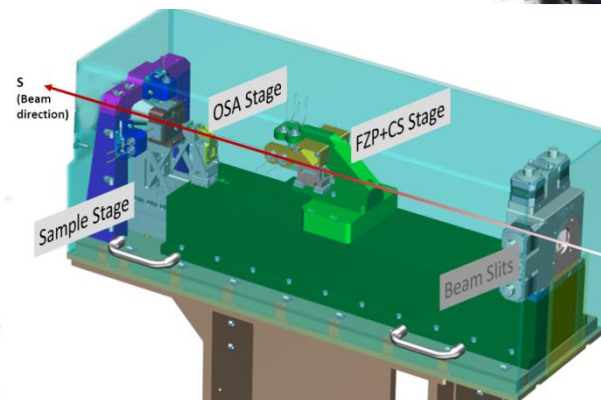
Characterizations:

- Npoint,
- Smaract
- Aerotech...

➤ *Improving precision control and acquisition with interferometry.*

- Motion control team
- Software team

➤ *Developing Nanoprobe* for 2D-Nano-Ptychography



MOCPL06 talk