



Prototyping activities at IdeaSquare

ISAB-G Annual Meeting 24.02.2023

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Short Introduction



Structural Engineer from NTNU in Norway

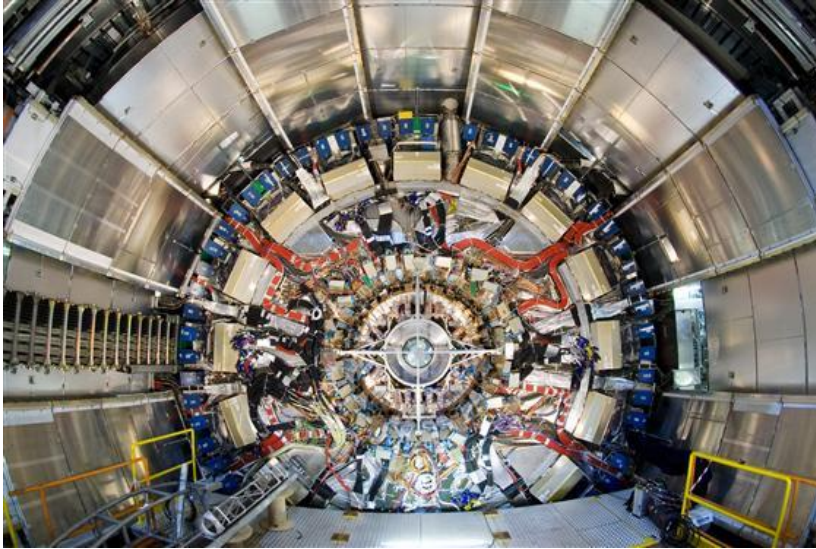
Started in November 2022

Responsible for prototyping activities at
IdeaSquare



Collaboration projects within CERN

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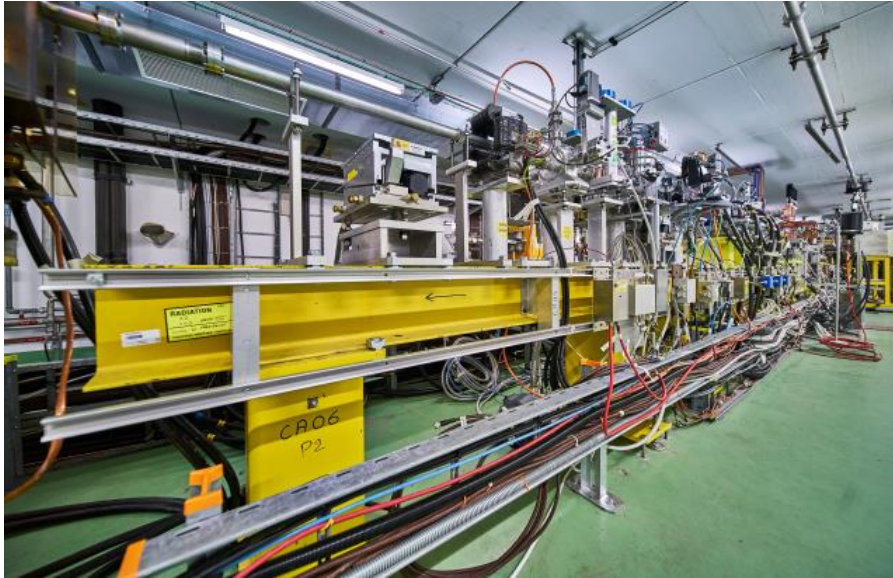


ATLAS Experiment

Over 15 Collaboration Projects

Some of the collaborators:

- ATLAS
- CMS
- Faser
- ISOLDE
- Neutrino Platform
- CLEAR

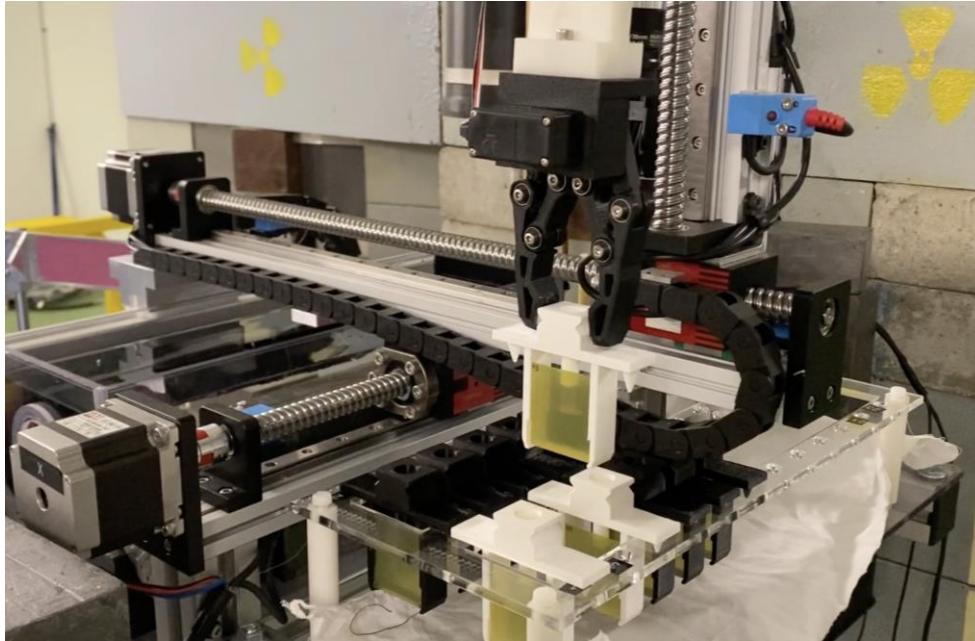


Linear Electron Beam at CERN

Medical research for radiotherapy

Challenge: need to change samples while beam is running

clear★



C-Robot

3D printing

Laser cutting

Video:

<https://pkorysko.web.cern.ch/C-Robot.html>

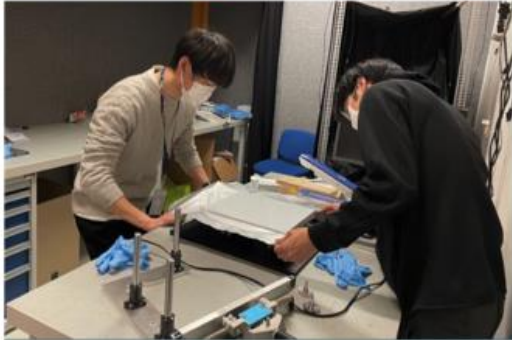
FASER ν Collaboration



Collaboration in June and September

Work in Electro shop

Performed thickness measurements on tungsten plates



Video:

<https://www.youtube.com/watch?v=-HvKkCZeP2k>

ATLAS Collaboration

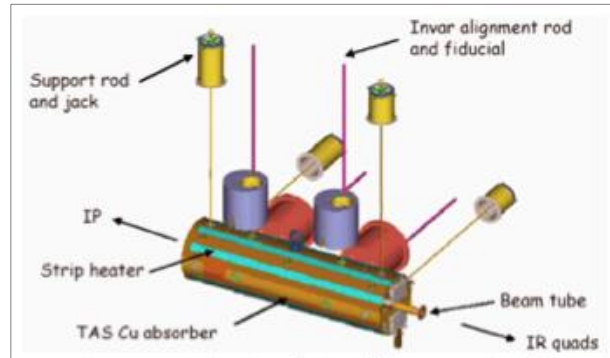


TAS Configuration

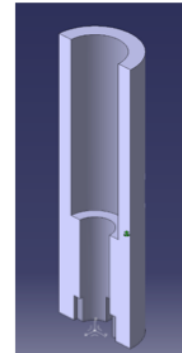
TAS Alignment System

3D Printing of shell

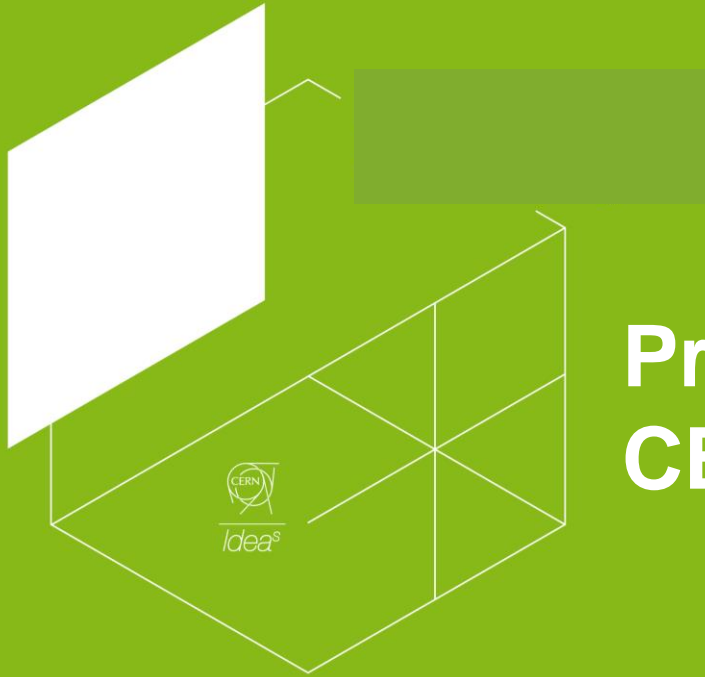
Ongoing collaboration from April - July



TAS Animation



3D-model of prototype



Prototyping courses for CERN people

FPGA Programming



Programming an FPGA inside a myRIO

Continued courses in programming an FPGA and ARM processor using LabVIEW:

- Held by Adriaan Rijllart
- 2 x 2h
- November 21. and 23.
- 20 attendees
- Next planned: April 25. – 26.

Arduino workshop



Air Quality Monitor Arduino workshop

Due to high popularity of FPGA trainings, new offering for 2023:

- Held by Alberto Perro
- 2h workshop
- January 18., February 08.
- 25+ attendees
- Monthly occurrence, next March 08.

Open Doors prototyping



New event for 2023 to raise awareness of IdeaSquare facilities

Introduction to rapid prototyping:

- February 16.
- 1h
- 28 participants



Training for using prototyping workspaces

Training for using prototyping workspaces



In 2022, did trainings to use different machines based on need.

High demand – need-based was not efficient enough. Need for creating a streamlined system for supporting CERN personnel.

2022: first pilot

2023: starting to run regular trainings

3D printing training



Held at the 3D Studio at IdeaSquare

How to use the FDM 3D printers
at IdeaSquare

February 23.

1h training every 2nd week

5 attendees per training

Next training: March 02.

Laser Cutter training



Held at the Machine Shop at IdeaSquare

How to use the Laser Cutter at IdeaSquare

February 23.

1h training every 2nd week

5 attendees per training

Next training: March 02.



**R&D&I
projects**

Student Program prototyping



**Challenge
Based
Innovation**

**INNOVATION
CHANGE**



Student programs tackling societal challenges (CBI, Innovation 4 Change, Attract Academy)

11 programmes with prototyping activities

Combine CERN and ATTRACT technologies with SDGs

Variations of low and high fidelity prototyping

Examples - high fidelity



New MRI scanner



Cataract early eye detection and data gathering



Crowd4**SDG**



EU-funded Research and Innovation
programme

50 participants

Acceleration phase: Developing a
working prototype

Workshop and guidance of participants



**Thank you for
your time!**