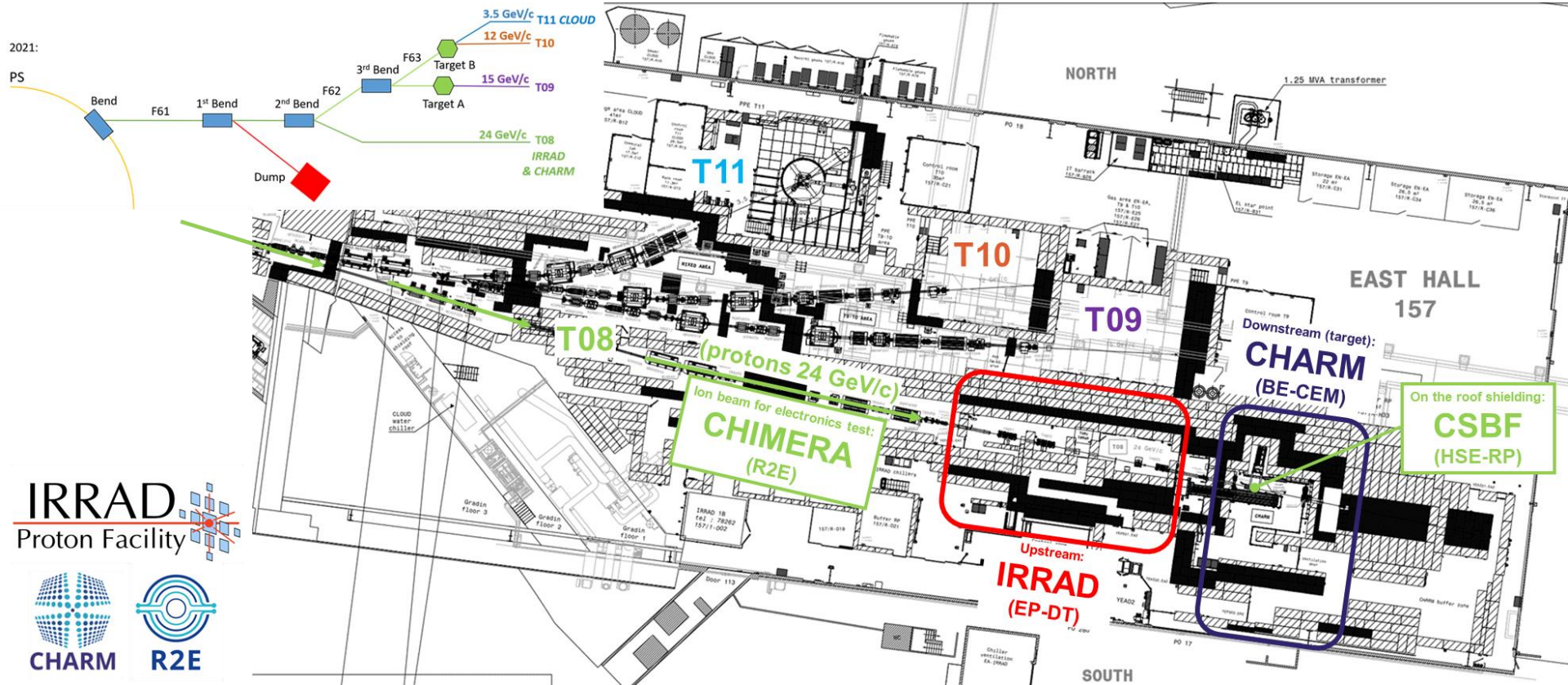


Irradiation facilities at CERN PS

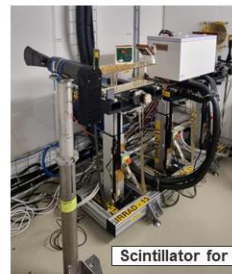
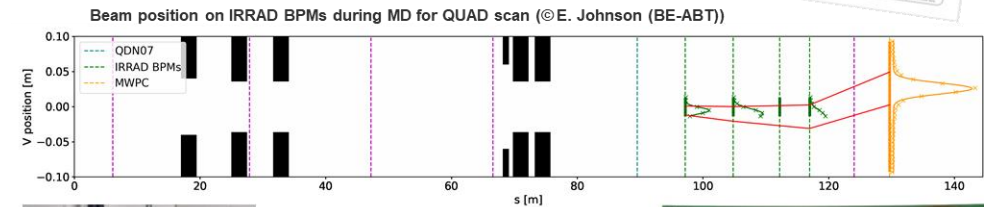
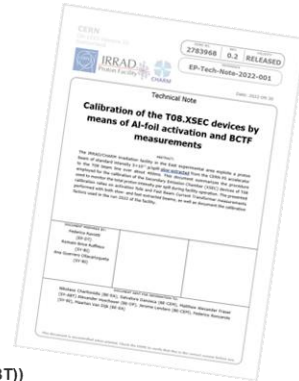
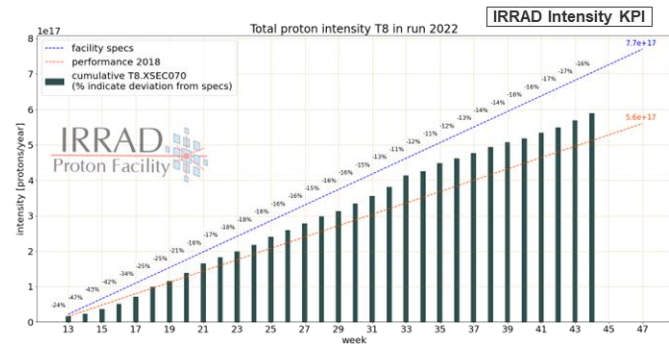


• Run 2022:

- **34w for proton run** (Mar.-Nov.); **anticipated stop affected ion run** (CHIMERA project) reduced to 4d.
- 1w commissioning + **6 MD slots** (BE-OP & SY-ABT) to **improve proton beam & develop ion beam**
- special weeks: high duty-cycle, **RP run @ CSBF**, etc.

• Highlights:

- Several **runs to calibrate T8 SY-BI instruments** with Al-foils/BCT based techniques ([EDMS 2783968](#))
- Weekly **reporting of beam intensity KPIs** to Beam Operation & PS/SPS Physics Coordinator
- 5.4 GeV/u - 750 MeV/u **ion-beam characterization** for the CHIMERA project (CERN/ESA)
- IRRAD Beam Profile Monitors (BPMs):
 - **data published real-time to CCC** via CMW (NXCALs)
 - built first **prototype of fast DAQ** (ms resolution)
 - development ongoing for **large-area, ultra-thin sensors**

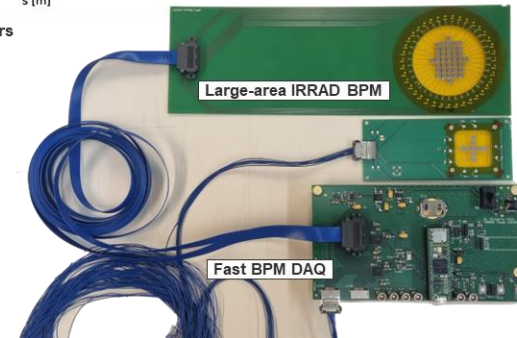


BPM Project Partners

• Sensors:



• DAQ electronics:

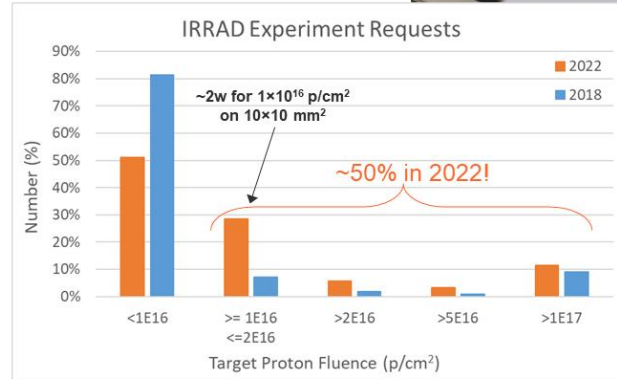
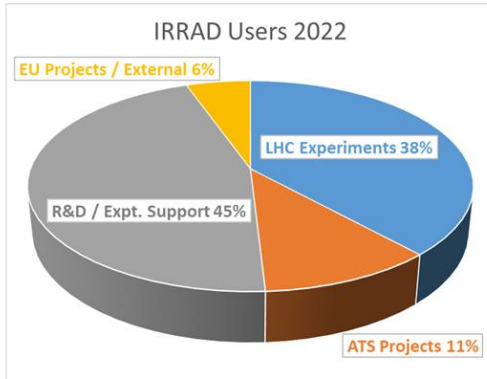
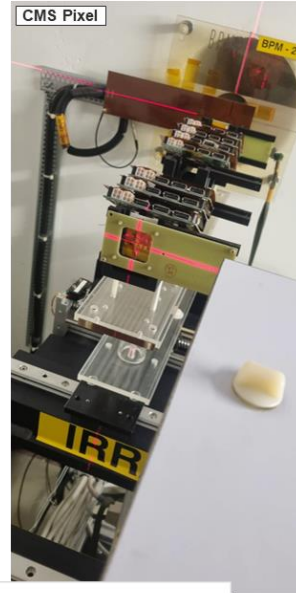


- **Be aware: run 2023 will be significantly shorter (~20%), from end of April to mid October!** (preliminary dates to be confirmed once injector schedule 2023 will be released)

• IRRAD (at 7/11/22, run still ongoing):

- **54 experiments registered** in [IRRAD Data Manager](#)
- **602 samples processed** so far:
 - **LHC Experiments:** ATLAS ITk pixel & strips, ATLAS Reliance, ATLAS HGTD, CMS pixel, CMS HGAL, CMS DP sensors, LHCb ECAL, LHCb LAPPD, etc.
 - **R&D coll. & expt. support:** EP-RD, RD53, RD50, EP-ESE, EP-DT
 - **CERN ATS Projects:** TE-MS, EN-EL, R2E, etc.
 - **EU- projects & external:** AIDAInnova, RADNEXT, CNES (FR)

• CHARM (parallel, BE): **39 tests** (including several EP expt.!)



• Evolving user needs in IRRAD after LS2:

- **~50% exceeding 10¹⁶ p/cm²** on areas >10×10 mm²
 - Cold (-25°C), cryogenic & large area often required
 - irradiations to **10¹⁷ p/cm² levels require ~1 year!**

• Outlook 2023 & challenges ahead:

- **improving beam quality & availability** (higher intensity)
- IRRAD/CHARM **Safety File homologation**
- **investigating upgrade scenarios** to meet post HL-LHC needs (running task in **RADNEXT** WP4)

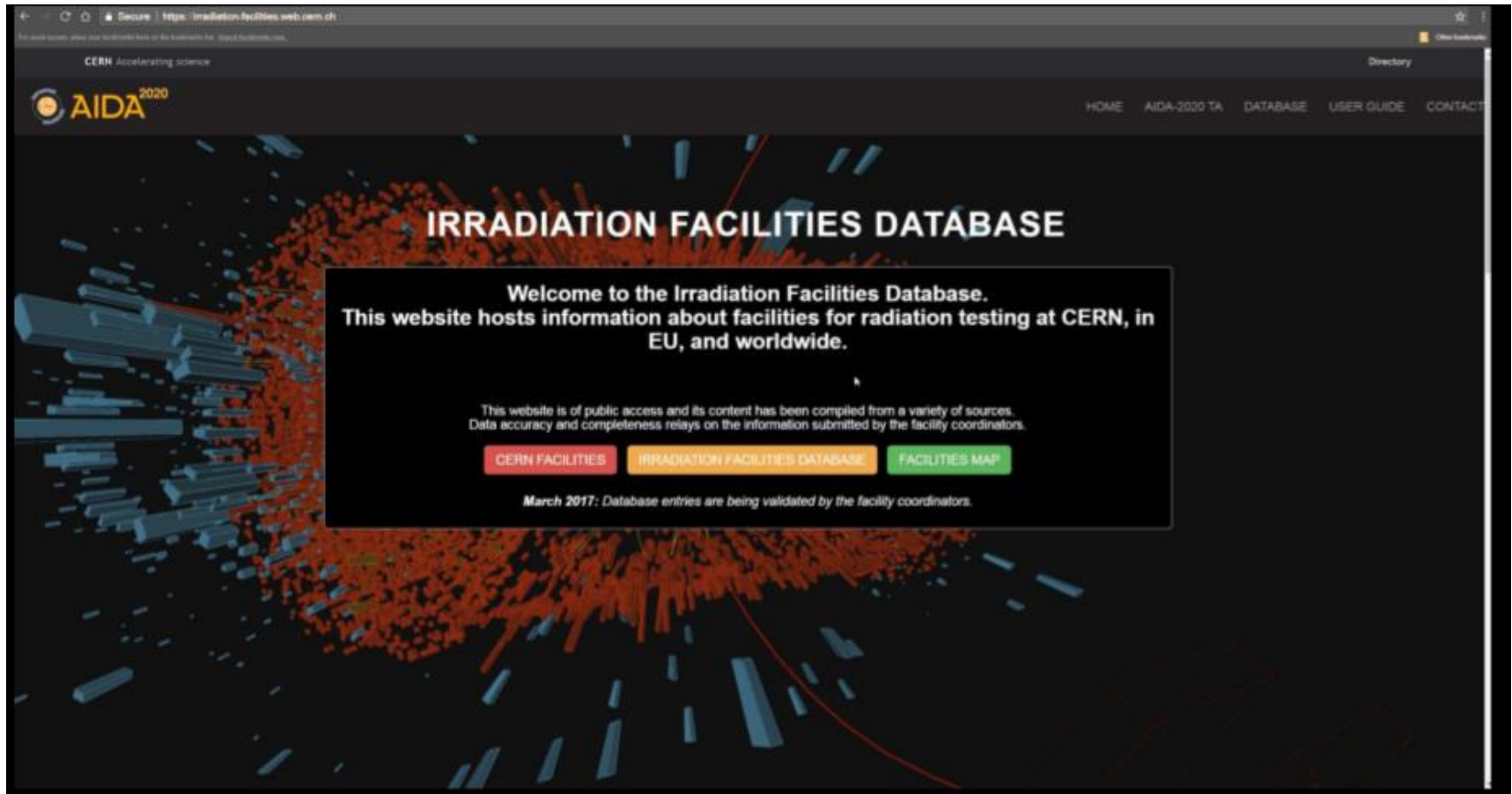
Irradiation facilities at CERN PS

- Use our web page
 - <http://cern.ch/ps-irrad>
- For your registration
 - <http://cern.ch/IRRAD-data-manager>
- For your Dosimetry result
 - <https://ps-irrad.web.cern.ch/results.php>



AIDA²⁰²⁰

Irradiation Facilities Database



<http://cern.ch/irradiation-facilities>