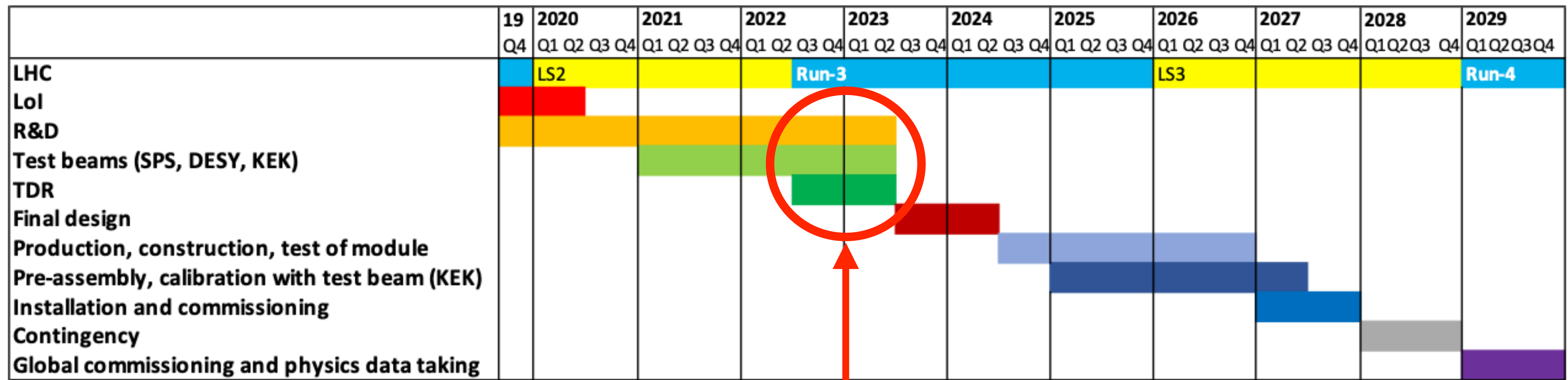
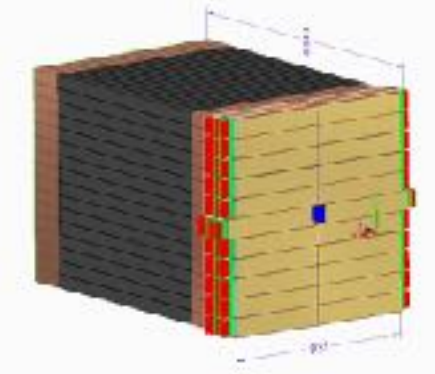


Discussion on KAKENHI (FoCal R&D)

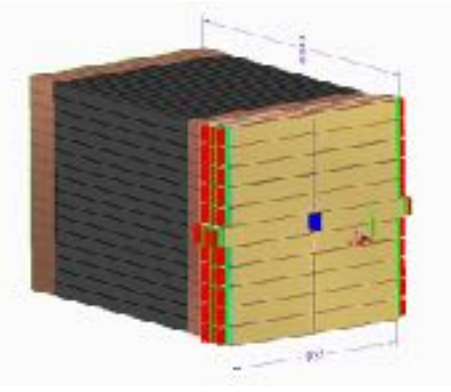
Tatsuya Chujo
(University of Tsukuba)

FoCal Timeline



Final R&D in 2022 towards Technical Design Report in 2023

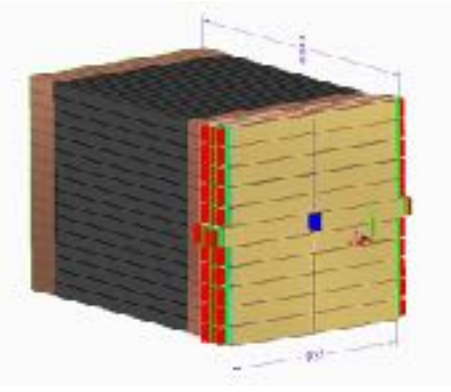
Production in 2024-2026, Installation in 2027, Physics data taking in 2029-2032 (LHC Run-4)



FoCal: Plan in Japan (2022-2023)

1. PS test beam (06.2022) [done]
2. SPS test beam (09.2022), CRU-FLP readout, common for PIXEL and HCal [done]
3. **RANS test @ RIKEN for irradiation test (regulator, Si sensor) (10.2022) →(01.2023)?**
4. SPS test beam (11.2022) [done]
5. **KEK PF-AR test beam (12.2022)**
6. Probe station in Japan operational (12.2022) [basically done]
7. **HGCROC v2 packaging (12.2022) [on-going, delivered in March]**
8. **New PCB production (single/ 5 pad layer) (12.2022), and module production**
9. **ELPH test beam (02.2023)**

HGCROC packaging in Japan



- Discussion with Christophe de La Taille (OMEGA), on August 2, 2022.

• HGCROC V2

- **Two Wafers will be sent directly to the company in Japan from OMEGA by the end of August 2022.**
- Each wafer contains 250 Si HGCROC and 250 SiPM HGCROC, so **a total of 500 Si HGCROC and 500 SiPM HGCROC.**
- The initial deal is to keep 50% of the produced chips in Tsukuba and send back 50% to CERN (For OMEGA).
- Tsukuba group can keep more chips if needed and a new deal can be discussed : Possibility to keep all the Si HGCROC.

• HGCROC V3

- In case of good results for packaging the HGCROC V2, **possibility of working on 50 WAFERS in this company.**
- For the V3 Wafers, we have 500 chips per wafer : 400 Si and 100 SiPM.
- The estimated period is by the end of 2023, beginning of 2024.
- Tsukuba group will get a part of the produced chips (Deal with OMEGA and CMS).

