

Réunion sur une EoI Microvertex pour la stratégie européenne

- Welcome / Introduction: **Laurent**
- Objectifs des EoI pour FCC et dans la stratégie Européenne: **Greg**
- Projet matrice taille reticule pour atteindre 3 μm de précision + simulation a IPHC: **Auguste**
- Préparation d'une architecture configurable versatile qui puisse s'appliquer à d'autres détecteurs (tracking central, calorimétrie): **Jerome**
- Développement de senseur MCMOS pour précision en temps avec transition vers TPSCo 65nm considérée: **Philippe**
- Tracking + simulations a IP2I: **Didier**

Progress with Collaboration Forming @ FCC

(→ role of detectors EOI's)

G. Bernardi (CNRS/IN2P3)

FCC Week 2024 San Francisco, 11th June 2024,
APC, July 10th 2024



Swiss Accelerator
Research and
Technology

<http://cern.ch/fcc>



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European
Commission

Horizon 2020
European Union funding
for Research & Innovation

photo: J. Wenninger

New (2024 – 2026)

Update of the European Strategy for Particle Physics

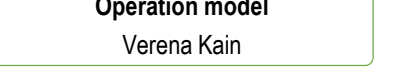
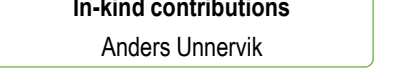
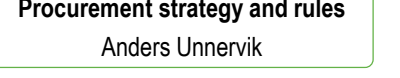
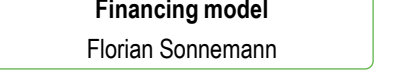
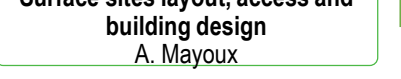
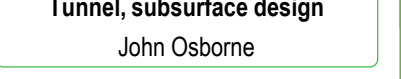
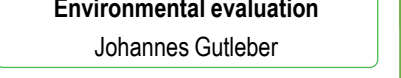
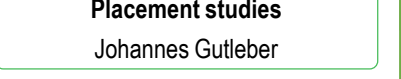
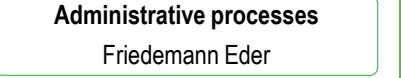
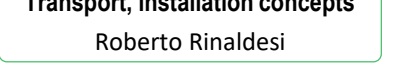
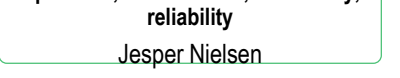
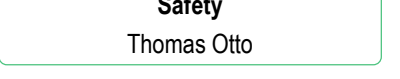
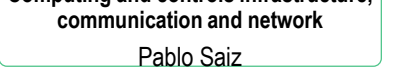
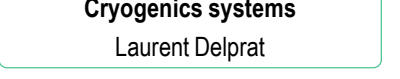
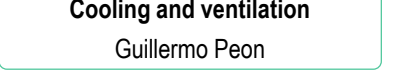
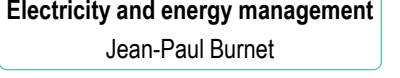
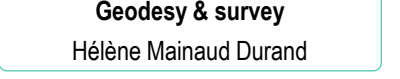
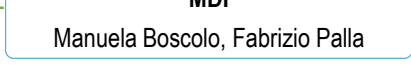
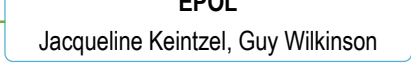
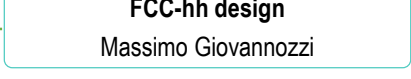
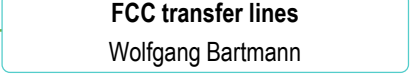
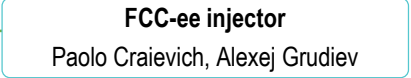
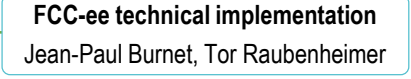
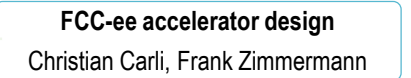
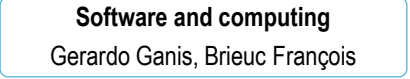
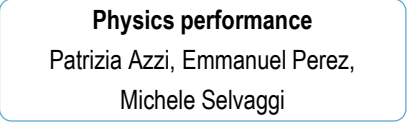
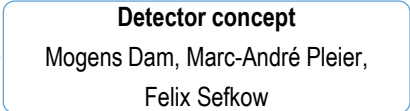
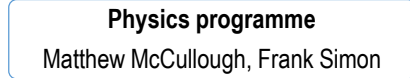
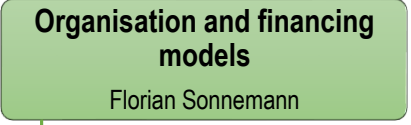
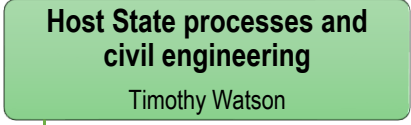
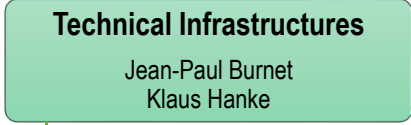
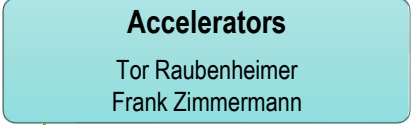
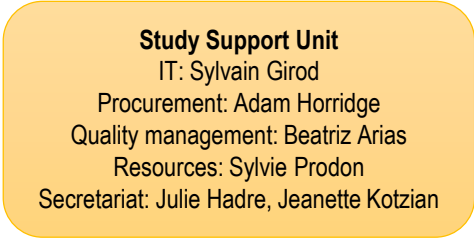
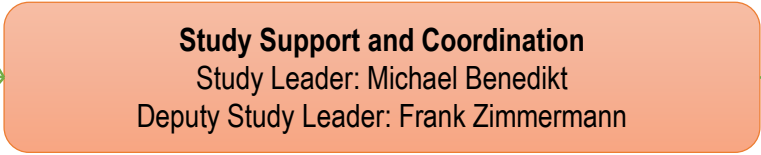
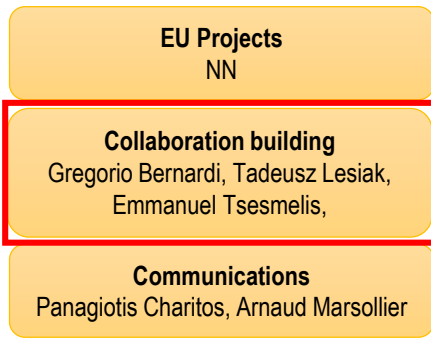


Launched by CERN Council on proposal by
CERN management in March 2024

Key Dates (as far as already known):

- 31. March 2025: Deadline for submission of input by the community
- End of June 2025: Open Symposium
- ...
- June 2026: Council decision on Update of the Strategy

FCC Feasibility Study



Collaboration building:
Through the FCC Global Collaboration (FGC) and the International Forum for National Contacts (IFNC)

Thoughts on organisation / compilation / review of EOI's submission in favour of FCC for the coming European Strategy

Several categories of Notes will be submitted in March 2025:

- Nationally, there will be general notes which will include FCC, but on which we do not decide.
- FCC is considering National/Regional FCC notes. Could be quite useful to show the support
- **EOI for subdetectors/technologies (towards FCC)**
- EOI for detector concepts: for instance ILD has clearly stated they will submit one

Nationally/Regionally Yearly Reports from:

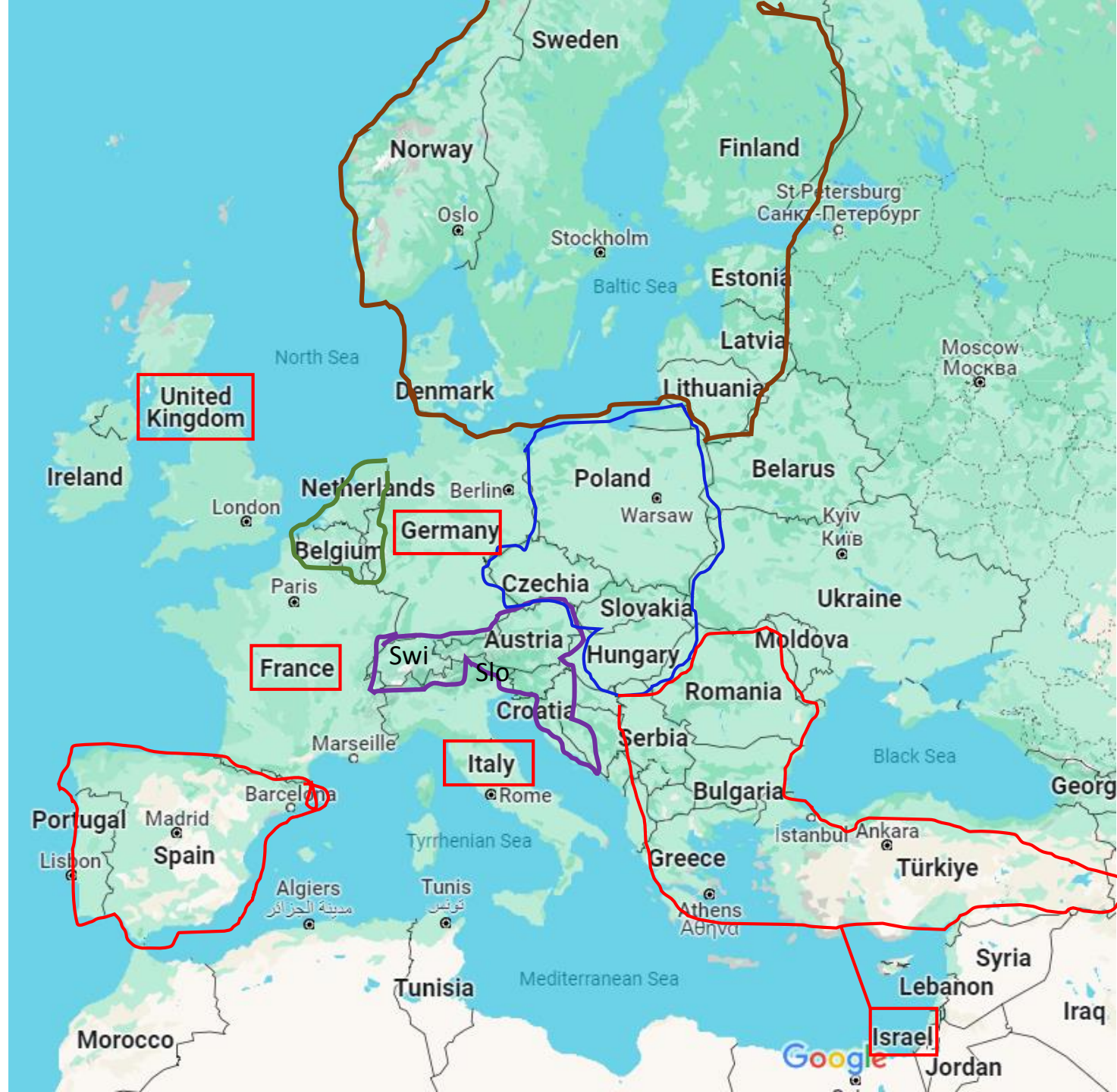
10 European regions (corresponding to ~30 countries)

- Spain+Portugal
- France
- UK
- Italy
- Germany
- Belgium+Netherland
- Nordic+Baltic countries
- Switzerland+Austria+Slovenia+Croatia
- Poland+Czekia+Slovakia+Hungary
- Romania+Bulgaria+Serbia+Greece+Turkey+Israel
- +
 - India
 - Korea/Japan
 - Brazil/Argentina/Chile/Mexico
 - USA / Canada

Next review at FCC Physics workshop, January 2025

➔ Notes for ESG ?

➔ Foresee an IFNC meeting to discuss these matters (including Institutes contact) and harmonize on the Eol



Thoughts on organisation / compilation / review of Detector EoI's submission in favour of FCC for the coming European Strategy

Produce EOI for **subdetectors / technologies**

EOI for muVTXs

EOI for DC, TPC, All silicon

EOI for Noble liquid, Dual-Readout, Calice-Like

EOI for HCALs

EOI for Muon-Detectors

Or for technology, e.g.

development of LGADs with picosecond timing capabilities for FCC

...

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- Identify at least 2 editors per subdetector (SD) note by September/October 2024
- Submit SD-EOI's by March 2025
- Difficulty: Identifying the EoI topics, partly a bottom up approach.

Thoughts on organisation / compilation / review of Detector EoI's submission in favour of FCC for the coming European Strategy

Produce EOI for (proto) detector concepts



- Difficulty: agree if and on how to present them.

Next 5 years / HEP Collaborations building

- **Eol for subdetectors and proto-detector concepts to be submitted by March 2025**
- **National/Regional notes in support of FCC to be submitted by March 2025**
- **Develop the work done for the Eol's during the pre-TDR phase, 2026-2027**
- **Set-up process for proto-collaborations formation in 2028-2029**

The Cost Review Panel recommends to work with the scientific community, institutes, laboratories and funding agencies to ensure support and resources for **four experiments**, facilitating the exploitation of the full scientific potential offered by the large investment in the FCC-ee facility

- **Explore how the countries/institutes position themselves on the current/future proto-detector concepts and subdetector Eol's.**

A possible strategy for building HEP collaborations in the next five years:

- **Start with EOI for subdetectors and proto-detector concepts in 2025, and their development in the following two years.**
- Assuming positive recommendation to push forward by end of 2027 by the CERN council:
 - Setting up FCCC and, later, following call for CDR, proto-collaborations possibly but not necessarily around proposed proto-detector concepts
 - Find a scheme to reduce the number of proto-collaborations (merging) if more than 4 proposals
 - **Process could converge by 2030-2031**