

# **Future muon LFV experiments and the European Strategy for Particle Physics**

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# The European Strategy Update



## EUROPEAN STRATEGY FOR PARTICLE PHYSICS

The European Strategy for Particle Physics is the cornerstone of Europe's decision-making process for the long-term future of the field. Mandated by the CERN Council, it is formed through a broad consultation of the grass-roots particle physics community, it actively solicits the opinions of physicists from around the world, and it is developed in close coordination with similar processes in the US and Japan in order to ensure coordination between regions and optimal use of resources globally.

# The European Strategy Update

“decision-making for the long-term future of the field”



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# Schedule

- Mandate by the CERN Council **DONE**
- Community Involvement and Call for Input **CALL OPEN**
- Establishment of the Physics Preparatory Group (PPG) **ONGOING**
- Submission of input from the community **BY 31 MARCH 2025**
- Open Symposium **23-27 JUNE 2025**
- “Briefing book” **END OF SEPTEMBER 2025**
- Strategy Drafting Session **1-5 DECEMBRE 2025**
- Submit the European Strategy Update recommendations to the CERN Council **MARCH-JUNE 2026 COUNCIL SESSION**

# Discussion

- The community is invited to submit inputs:
  - national communities
  - projects
  - theory
  - etc.
- Main focus on large projects (FCC, CLIC, muon collider...) but inputs from small groups are also very important
- Although we are not yet structured as a “project”, I think we should be committed to submitting our own contribution

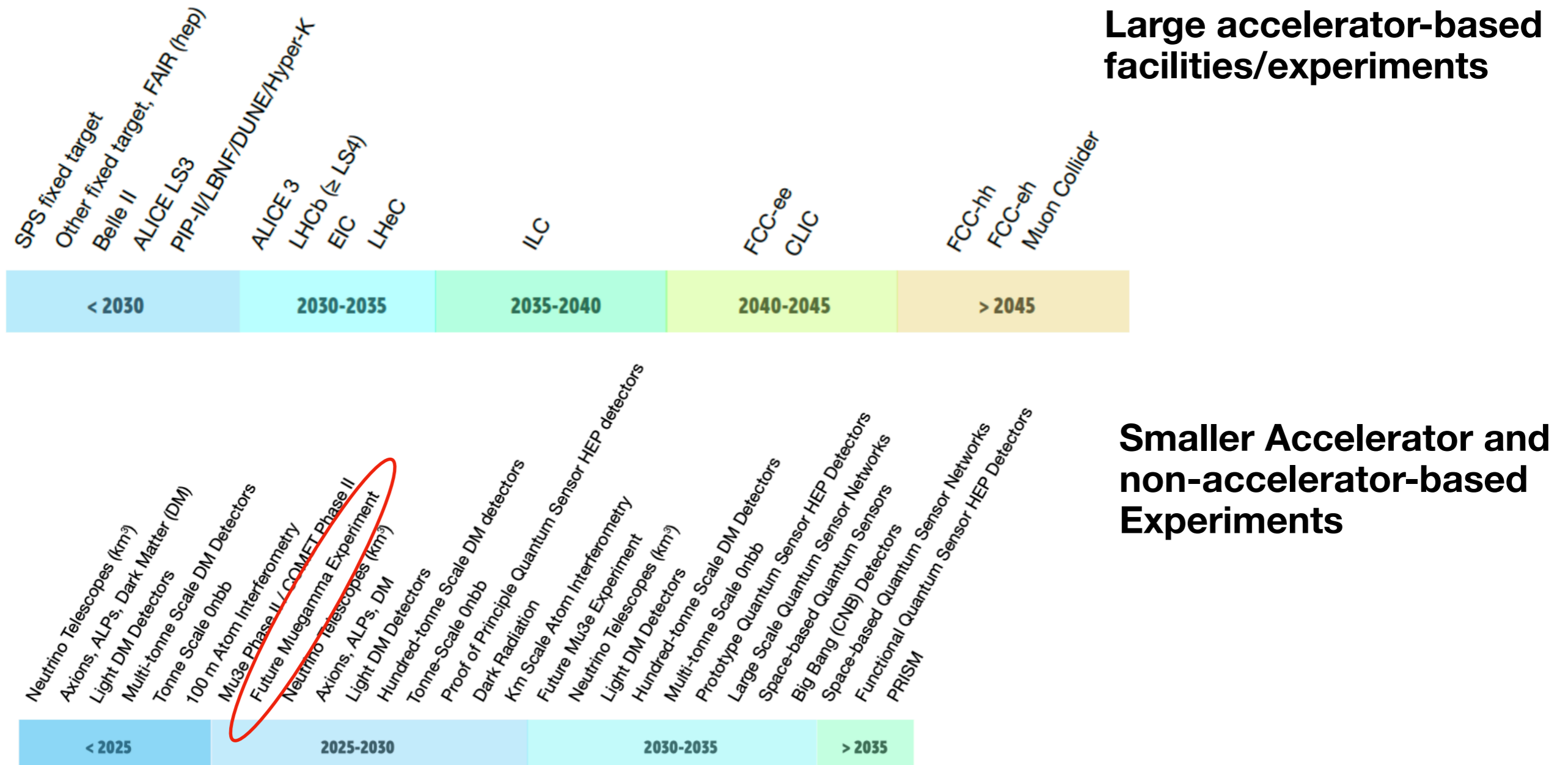
# DRD collaborations

- As an outcome of the previous Strategy Update, CERN is setting up a number of collaborations (*DRD*) committed to detector R&Ds

DRD1	Gaseous Detectors
DRD2	Liquid Detectors
DRD3	Solid State Detectors
DRD4	PID and Photon Detectors
DRD5	Quantum Sensing
DRD6	Calorimetry
DRD7	Electronics
DRD8	Integration

# DRD collaborations

- Again, the main focus is on R&Ds for experiments at large accelerator facilities, but small experiments are also considered in the mandate of these collaborations



# DRD collaborations

- DRD collaborations, although based in Europe, are intended to involve collaborators from around the world
- Their own budget will be small, but their impact on the strategic financial choices of funding agencies in Europe could be relevant
  - it is important to be part of these collaborations, to boost interest in our activities
- INFN groups (Pisa, Roma, Lecce) are in DRD1, involved in tasks related to the development of future light-weight trackers (drift chambers and TPCs)
  - relevant for the  $e^+e^-$  tracker and, possibly, the  $e^+$  tracker (if operated at not-so-high intensities)
- Heidelberg U. is in DRD2, involved in R&Ds on monolithic CMOS sensors
  - relevant for the  $e^+$  tracker



# Conclusions

- The European particle physics community is going through a series of processes that will have a huge impact on future strategic choices:
  - it is critical to be part of these processes
- This is the right moment to produce documents promoting our activities towards future muon LFV experiments