



Istituto Nazionale di Fisica Nucleare



Preparazione alla prossima *European Strategy*

**Sandra Malvezzi, Aleandro Nisati
- INFN ESPPU Steering group -**

Sezione INFN di Roma 13 Settembre e 18 Ottobre 2024

Sezione INFN di Genova 28 Ottobre 2024

Sezione INFN di Firenze 29 Ottobre 2024

Sezione INFN di Bologna 7 Novembre 2024

European Strategy for Particle Physics

- The **European Strategy for Particle Physics** is a comprehensive framework **coordinated by CERN Council** to set the **priorities and future directions for particle physics research in Europe**. It aims to guide scientific, technological, and financial decisions in particle physics, in Europe, but not only: it impacts on a global scale due to the international collaboration and to the impact of CERN/Europe on the fundamental research worldwide.
- This process, typically carried out every 7-8 years, is **based on an extensive consultations with the scientific community, stakeholders, and relevant institutions** to ensure that the strategy reflects the latest scientific and technological advancements and addresses emerging challenges.

European Strategy for Particle Physics

Steps in the Update Process

1. Mandate by the CERN Council:

- The update process begins when the CERN Council issues a **mandate to review and update the current strategy**. This mandate outlines the scope, goals, and timeline for the update. ✓

2. Community Involvement and Call for Input:

- A **public call for input is issued**, inviting contributions from the global particle physics community, including researchers, institutions, and national funding agencies. This step ensures that a wide range of perspectives and ideas are considered. ✓

3. Establishment of the Physics Preparatory Group (PPG):

- A **Physics Preparatory Group (PPG)** is formed, consisting of experts from the field. This group is responsible for collecting input, organizing discussions, and preparing a draft of the updated strategy. The PPG typically includes representatives from CERN, member states, and prominent physicists. ✓

4. Open Symposium:

- An **Open Symposium is held**, gathering scientists and stakeholders to discuss the input received and the key scientific questions that the updated strategy should address. This symposium serves as a platform for debate on the future direction of the field, including potential projects, experiments, and technologies. ✓

Lido di Venezia

5. Drafting the Strategy Update:

1. Based on the discussions and input, the **PPG drafts the updated strategy**. This draft, **the Briefing Book**, outlines the recommended scientific priorities, technological developments, and necessary investments for the coming years.

6. Submit the European Strategy Update recommendations to the CERN Council:

- The **Briefing Book is reviewed by the European Strategy Group (ESG)**, which includes representatives from CERN, member states, and observer states. Additional feedback is sought to refine and adjust the recommendations. A final document based is issued by the ESG to the CERN Council

The main ESPP bodies

- **CERN Council:** Final decision-making authority, approving the strategy.
- **European Strategy Group (ESG):** Oversees the entire strategy process, prepares recommendations. The **ESG** is the central coordinating body responsible for overseeing the development of the European Strategy for Particle Physics
- **Physics Preparatory Group (PPG):** Evaluates scientific and technical input, advises the ESG. The **PPG** is an advisory group of experts that provides detailed scientific and technical evaluations of the proposals and input received from the particle physics community, A “**Briefing Book**” based on the input and discussions will then be prepared by the PPG. The Briefing Book is submitted to the ESG.
- **Strategy Secretariat** Oversees the ESPPU process and assists the PPG
 - Also:
 - **ECFA:** Advises on accelerator-based projects and future facilities
 - **SPC:** Provides scientific guidance, assessing the feasibility and impact of proposed projects
 - **National Labs & Institutions:** Provide scientific input and resources
 - **Funding Agencies & Governments:** Evaluate financial feasibility and support the strategy
 - **International Partners:** Coordinate global collaborations and shared projects

Mandato del CERN Council all'European Strategy Group (ESG)

From CERN/SPC/1239/Rev.2

The ESG should take into consideration:

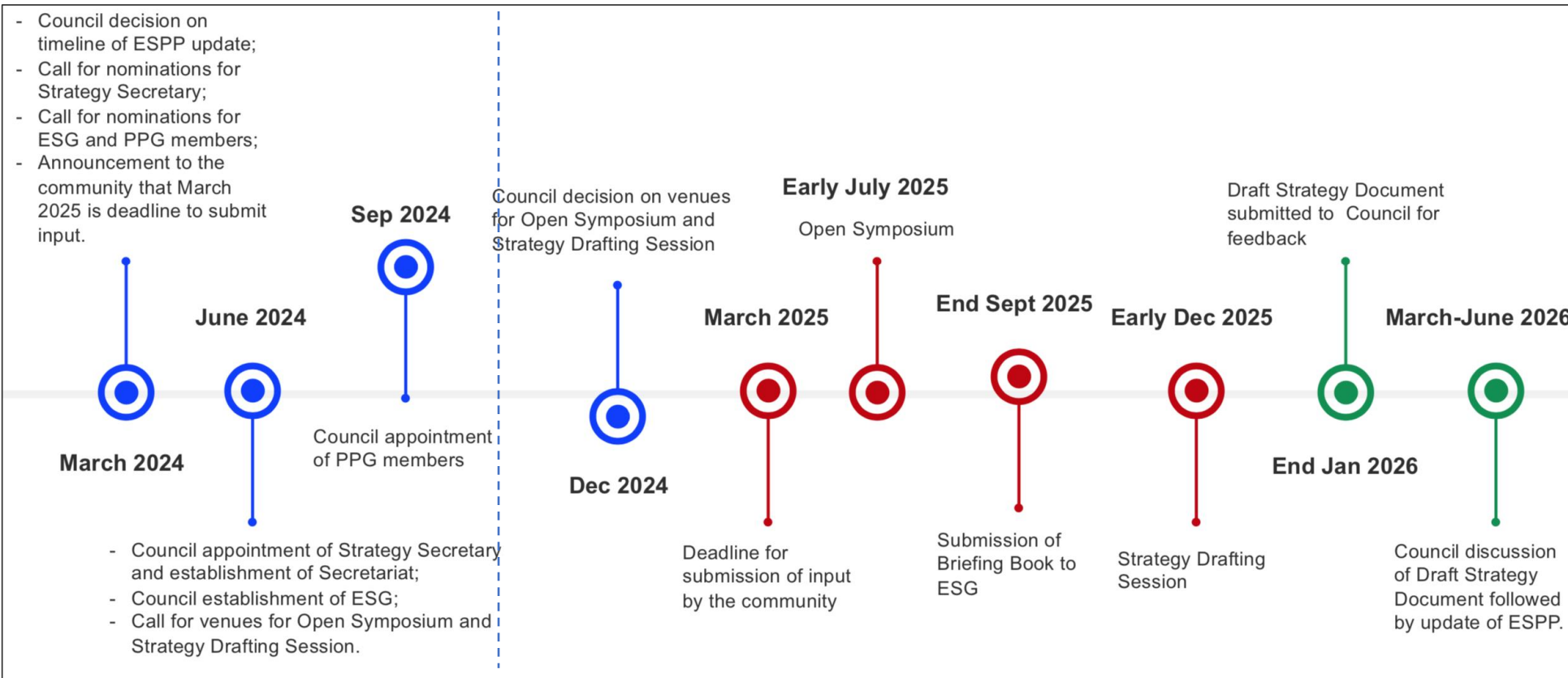
- the input of the particle physics community;
- the status of implementation of the 2020 Strategy update;
- the accomplishments over recent years, including the results from the LHC and other
- **experiments and facilities worldwide**, the progress in the construction of the **High-Luminosity LHC**, the outcome of the **Future Circular Collider Feasibility Study**, and **recent technological developments in accelerator, detector and computing**;
- the international landscape of the field.

The update process and its timeline

2024: year of preparation, establishments of committees, choice of locations for the various meetings

2025: submission of scientific inputs, Open Symposium, drafting of the strategic document

2026 discussion at Council and Strategy update (in 2027/2028 Council decides...)



Strategy Secretariat:

organising and running the ESPP process

Strategy Secretary (K. Jakobs.)
Paris Sphicas (ECFA Chair)
Hugh Montgomery (SPC Chair)
Dave Newbold (LDG Chair)

European Strategy

Group (ESG): Prepares the Strategy Document

Physics Preparatory Group

(PPG): collects input from the community, organises the Open Symposium, prepares the Briefing Book

Inputs from the community will be reviewed by **ESG**: careful and rigorous study of the documentation provided, i.e of the Briefing Book drafted by **PPG** with support of the **Strategy Secretariat**

Open Symposium 23-27 June 2025 - Lido di Venezia ! I do hope to see you there

ESPPU 2020 recommendations

Original version

❑ Fully exploit the **LHC potential** and lay the foundations of a new system of **future accelerators**

❑ feasibility study

❑ conceptual design

❑ infrastructure and costs for a new ring (~100 km) hosted at CERN .

▪ First stage FCC-ee.

▪ Second stage FCC-hh (same tunnel)

▪ a scheme that CERN has already used with the sequential construction of LEP and LHC.

❑ R&D for New Accelerators

❑ **Muon Collider (MC)**, an innovative muon collider in the design phase characterized by great potential for both precision and discovery physics.

❑ **Plasma acceleration** (EuPraxia)

“An **electron-positron Higgs factory** is the highest-priority next collider. For the longer term, the European particle physics community has the **ambition to operate a proton-proton collider at the highest achievable energy.**”

“Europe, together with its international partners, should investigate the **technical and financial feasibility** of a future hadron collider **at CERN** with a centre-of-mass energy of at least 100 TeV and with an **electron-positron Higgs and electroweak factory as a possible first stage.**”

“Such a feasibility study of the colliders and related infrastructure should be established as a global endeavour and be completed on the timescale of the next Strategy update.”

“ The European particle physics community must intensify accelerator R&D and sustain it with adequate resources.”

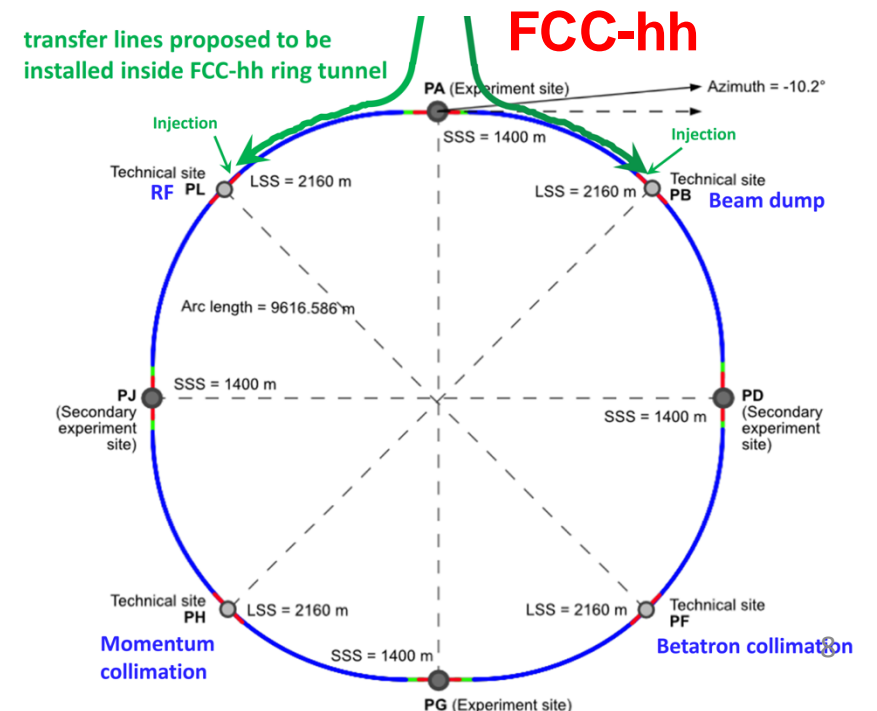
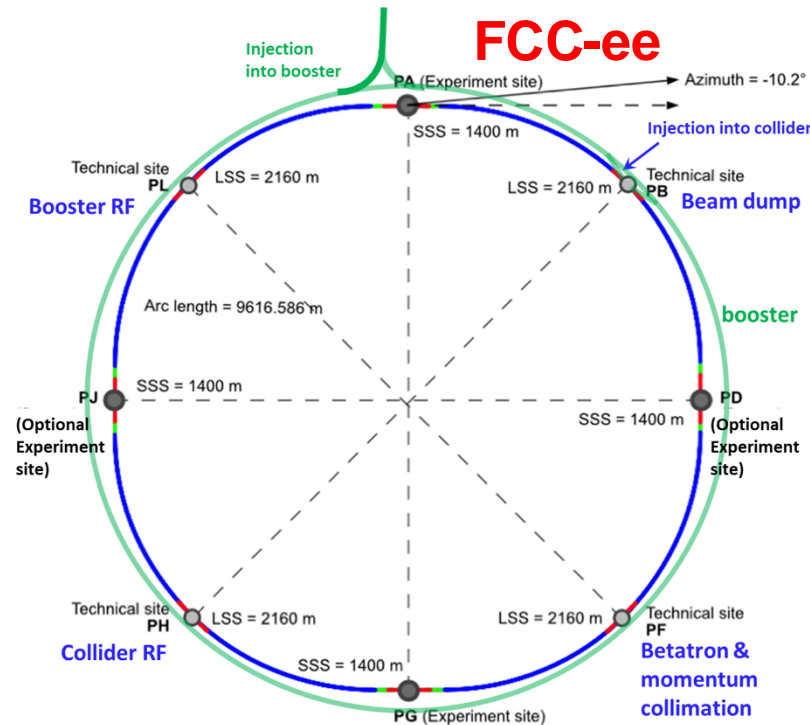
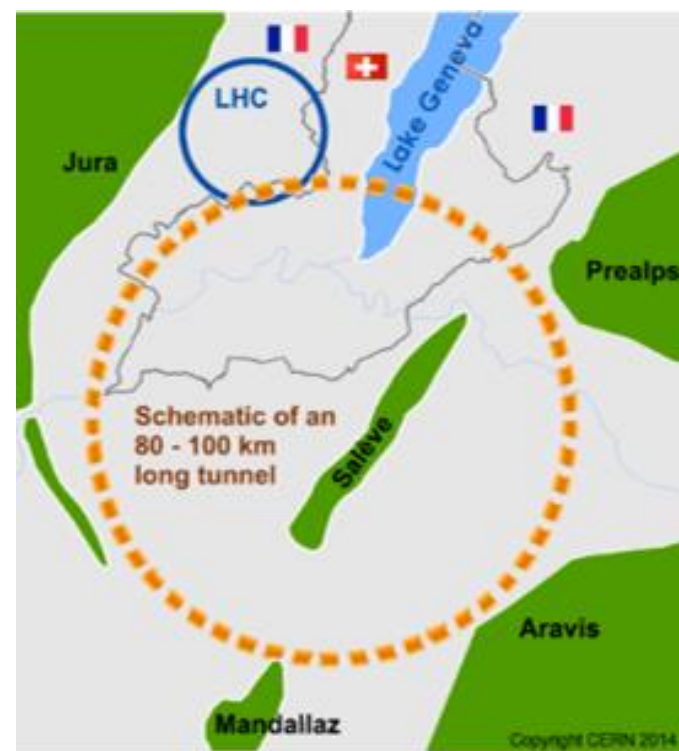
Flagship project: the integrated FCC

Comprehensive long-term program, follows ESPPU 2020 recommendations, **maximizes** physics opportunities

- Phase 1: FCC-ee (Z, W, H, $t\bar{t}$): Higgs factory, electroweak & top factory
- Phase 2: FCC-hh (~100 TeV): natural continuation @ energy frontier, pp & AA collisions; eh option

highly synergic

- Civil engineering and common technical infrastructure, exploits CERN's existing infrastructure
- It allows for the start-up of a new machine at CERN within a few years after the end of HL-LHC



FCC feasibility study mid-term report

Full Report

8 Chapters/Deliverables
~ 700pp document
~ 16 editors
~ 500 contributors

Executive Summary

8 Chapters/Deliverables
~ 45pp document
~ 16 editors



International review committees:

SAC: Scientific Advisory Committee ,
CRP: Cost Review Panel
CERN SPC: Scientific Policy Committee
CERN FC :Financial Committee)

assessed both the level of technical/physical studies and the cost estimate as adequate for this intermediate phase of the project.

further investigation and work towards the final report of the FCC Feasibility Study Group
March 2025

INFN: activities & R&D

The FCC project poses many technological challenges including:

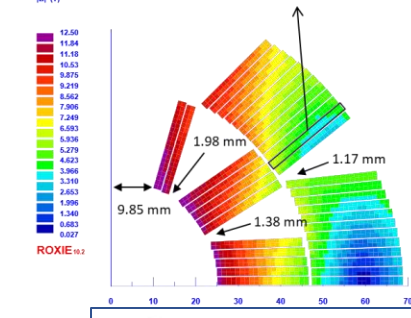
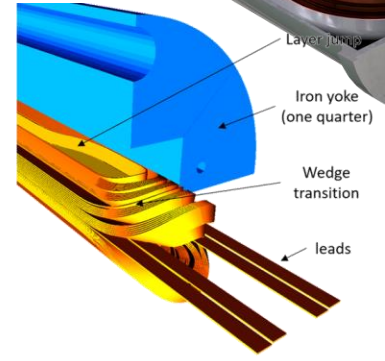
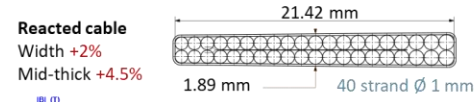
- The damping ring and the injectors
- Radiofrequency cavities
- Beam dipoles and quadrupoles
- Machine/detector interface

INFN has promoted/financed **specific R&D** projects that can significantly contribute to the current European Strategy and the one in preparation.

Among these projects there is also the **Muon Collider**.

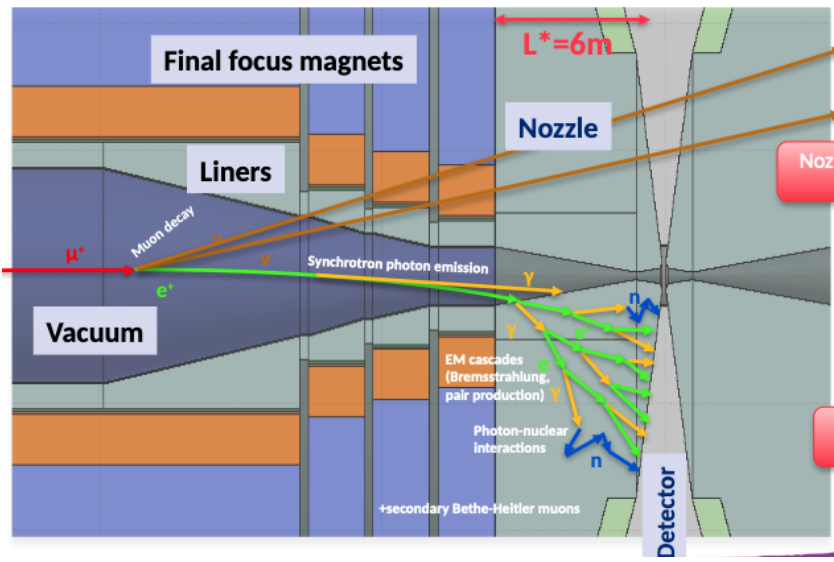
INFN community involved in the study of SRF cavities, high field magnets for the cooling cell, and in the study of the interaction region, the injector and dumping ring, and the detector

It is essential to carry out an R&D experiment that demonstrates the feasibility of a high-energy muon collider → Demonstrator



Bore Field	Operating Current	Margin on Loadline @ 1.9 K
12 T	20180 A	24.4%
*13.5 T	23000 A	15%

*intended as mechanical limit



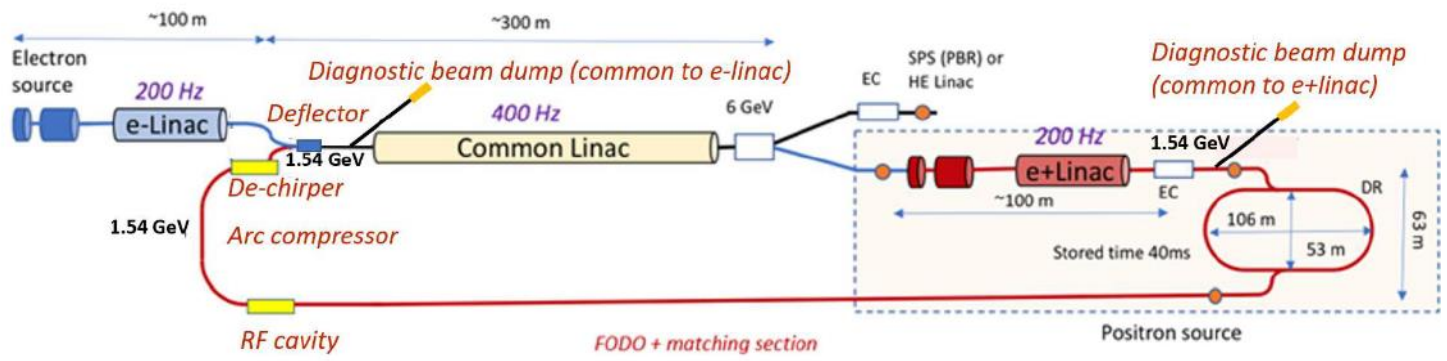
Nozzle shape and material:
Determines spectra, entry positions and directions of secondaries entering detector

Nozzle → Background reduction by orders of magnitude

Lattice and beam aperture:
Determine how many decay products are lost near the IP*, but little influence on secondary spectra and entry positions in detector

Lattice → Background reduction by a factor of a few

* Decay products lost on the inside of nozzle are the most relevant for background



Progetti per Acceleratori di Particelle per prossima European Strategy

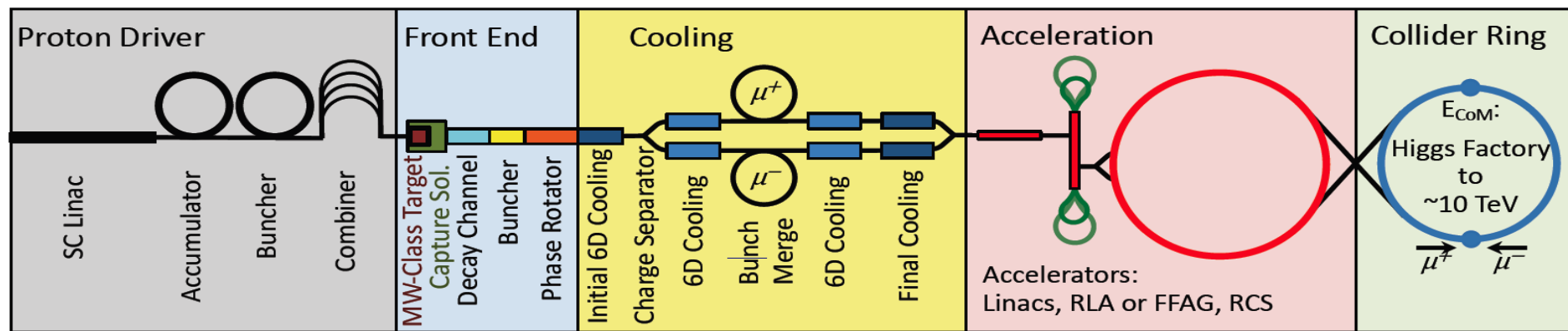
Muon Collider R&D activities

LASA-MI

ESPP: WP2 IONIZATION COOLING - DESIGN AND STUDY OF A COOLING CELL

Review dei progetti di acceleratori LASA - 21 Marzo 2024

Muon Collider



Highly innovative project

- It combines precision and discovery potential
- high energy collisions with modest losses of synchrotron radiation (small rings)

Double challenge:

- Muon is unstable ($\tau=2.2 \mu\text{s}$)
- When hadronically produced, it must be «cooled»
- Cooling, acceleration and collisions must be accomplished in a fraction of a second

US P5: The Muon Shot – The US ambition

Particle Physics Project Prioritisation Panel (P5) endorses muon collider R&D: "This is our muon shot"

Recommend joining the IMCC

Consider FNAL as a host candidate

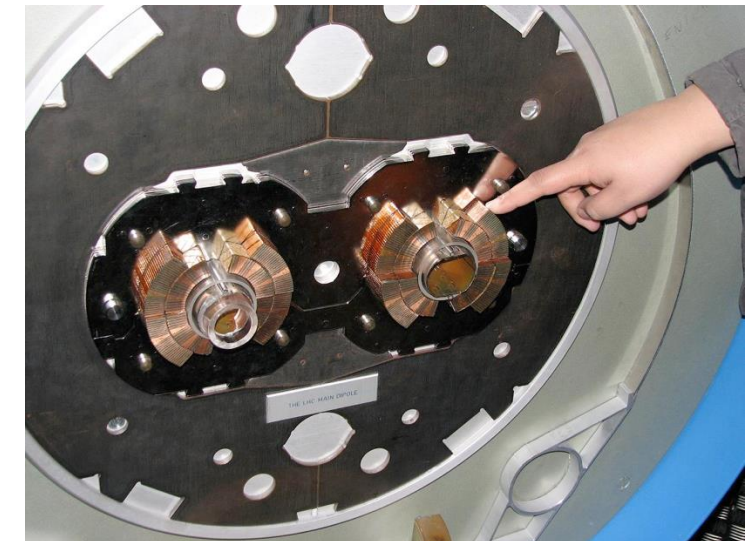
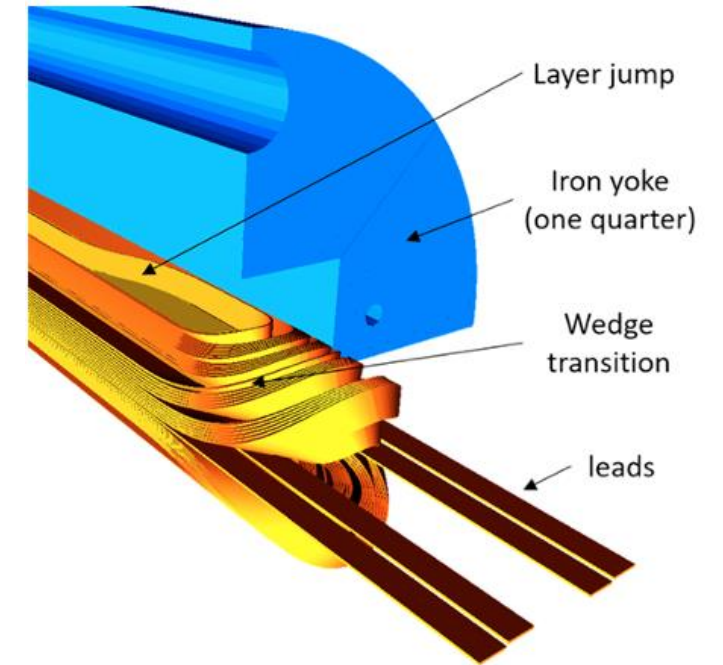
US is already participating to the collaboration

High Field Magnets



The development of high-field superconducting magnets is crucial for future hadron colliders, at energies well above those of the LHC

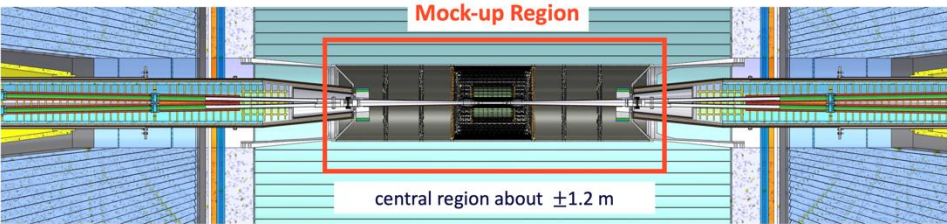
- ❑ INFN strongly committed to this study with the research program FALCON-D (Future Accelerator post-LHC Cos-theta Optimized Nb₃Sn Dipole.)
 - ❑ INFN/CERN agreements
 - ❑ Feasibility demonstration of 12 T field dipoles is close
 - ❑ 14-16 T dipoles need further R&D
 - ❑ INFN & CERN support this study also aimed at the realization of a double aperture dipole



Technological challenge: high field magnets operating at “high” temperatures (HTS)

Interaction Region (MDI and IR)

FCC-ee Interaction Region



Mock-up Region

central region about ± 1.2 m

IR based on the crab-waist scheme, compact and crowded with tight constraints and many technical challenges → mockup needed for R&D and prove state-of-the-art technological solutions and test its feasibility

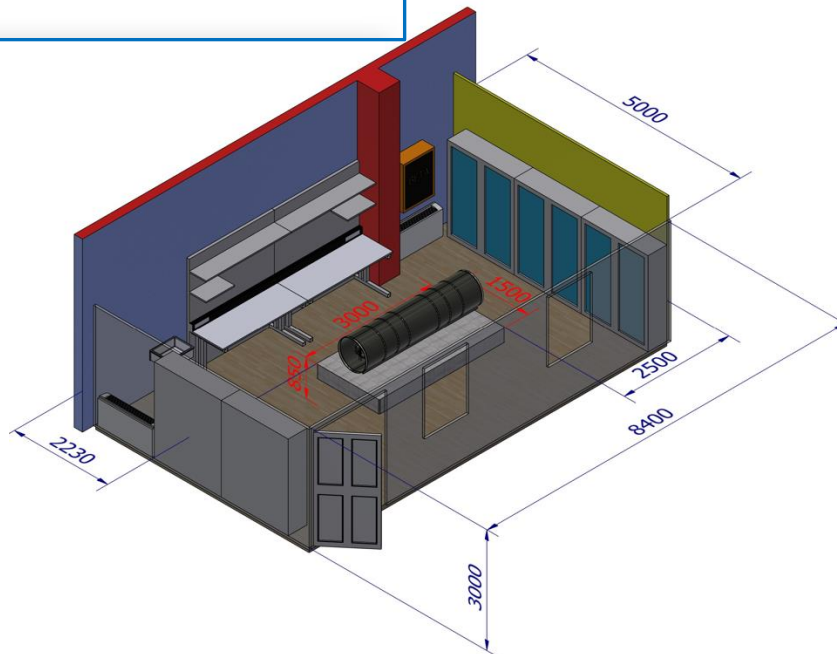
It will be built in Frascati in joint venture CERN-INFN.
Addendum KES815/ATS signed by INFN 26.01.2024

Relevant dates from Addendum:

Starting date	1.11.2023
Delivery to INFN-LNF of the central vacuum chamber	30.11.2024
End date	31.12.2025

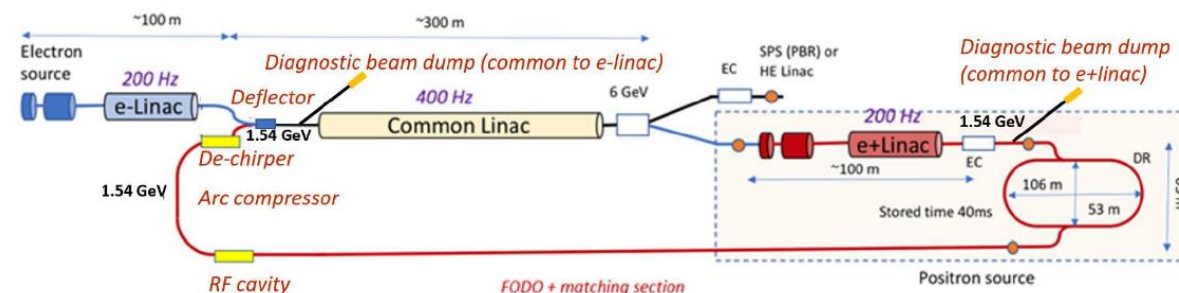
Agreements with CERN for building a **mock-up** in LNF

→
in-situ checks



Damping Ring for FCC-ee

LNF

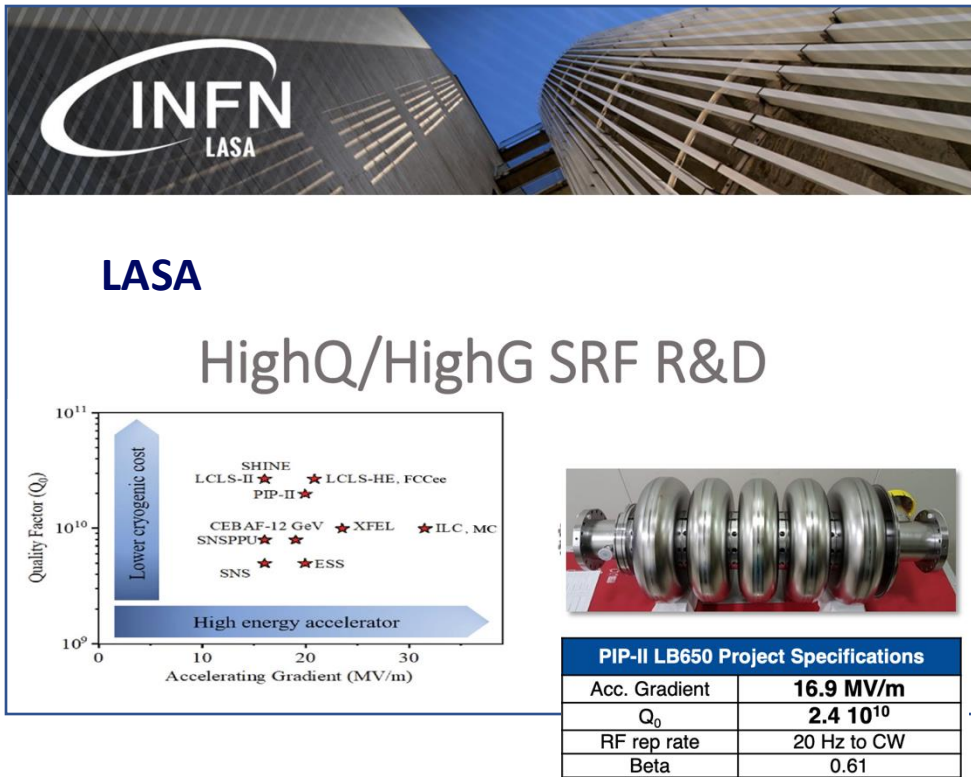


❑ Necessary to "compress" the positron beam originating from the source until it reaches the characteristics necessary to carry out high-frequency collisions with the electron beam in the FCC-ee ring

❑ Project supported by INFN and CERN

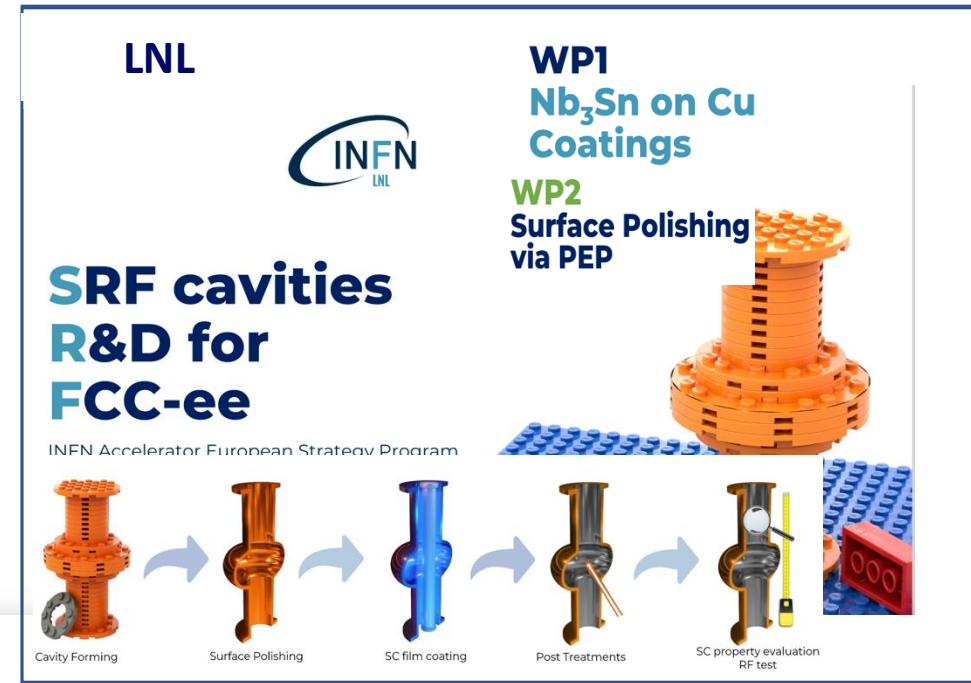
Superconducting radio frequency cavities

Niobio (Nb) SRF cavities
INFN-LASA Milano



- R&D activity at LASA aimed at the production of ultra-high Q cavities for PIP-II
- experience to learn from

Nb₃Sn on Cu coatings
INFN-LNL Legnaro



This solution can be used at higher temperatures than Niobium (4.5 K vs 2.0 K), with consequent important savings on the energy spent by the cryogenic system

Detectors : ECFA detector roadmap

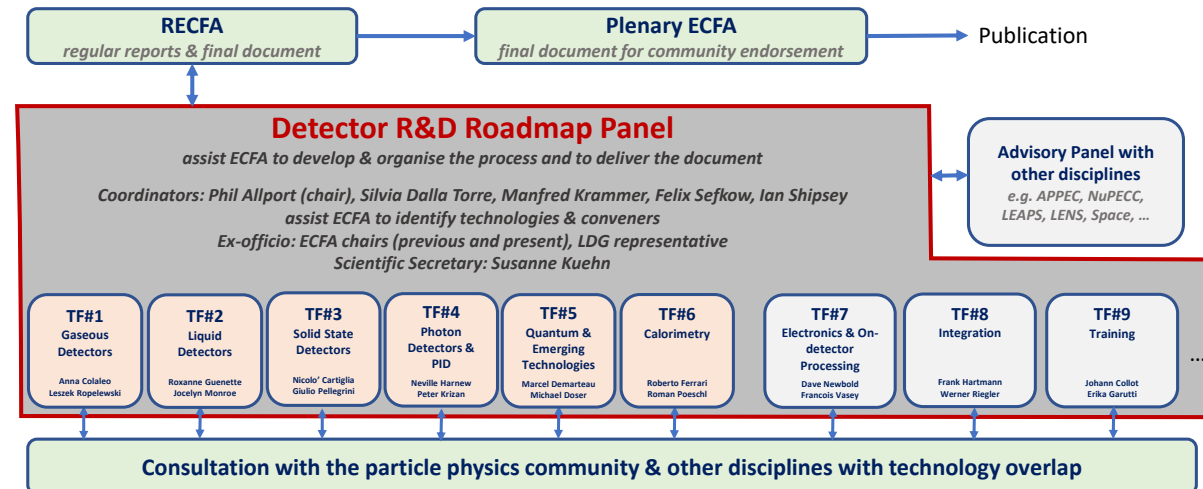
Strategic recommendations:

- ❑ R&D facilities
 - Test beam, large-scale prototyping, irradiation
- ❑ Engineering support for detector R&D
- ❑ Development of specific software for instrumentation
- ❑ International coordination and organization of R&D activities:

❑ DRD collaborations

- long-term strategic financing program
- blue-sky R&D

ESPPU 2020 : *The success of particle physics experiments relies on innovative instrumentation and state-of-the-art infrastructures. To prepare and realise future experimental research programmes, the community must maintain a strong focus on instrumentation. Detector R&D programmes and associated infrastructures should be supported at CERN, national institutes, laboratories and universities. ...*



Attract, cultivate and support the careers of young R&D experts

Collaborazioni DRD

Fully Approved for an initial period of 3 years by CERN Research Board in December 2023



- Gaseous Detectors (DRD1) [ex RD51]
- Liquid Detectors (DRD2)
- Photodetectors & Particle ID (DRD4)
- Calorimetry (DRD6)

Reports at open session of DRDC meeting:
<https://indico.cern.ch/event/1356910>
Full Proposals in CERN CDS

Conditionally approved



- Semiconductor Detectors (DRD3) [ex RD50, RD42,..]

Full proposals recently submitted for review



- Quantum Sensors (DRD5)
- Electronics (DRD7)

Both aim for approval in June

Letter of Intent submitted

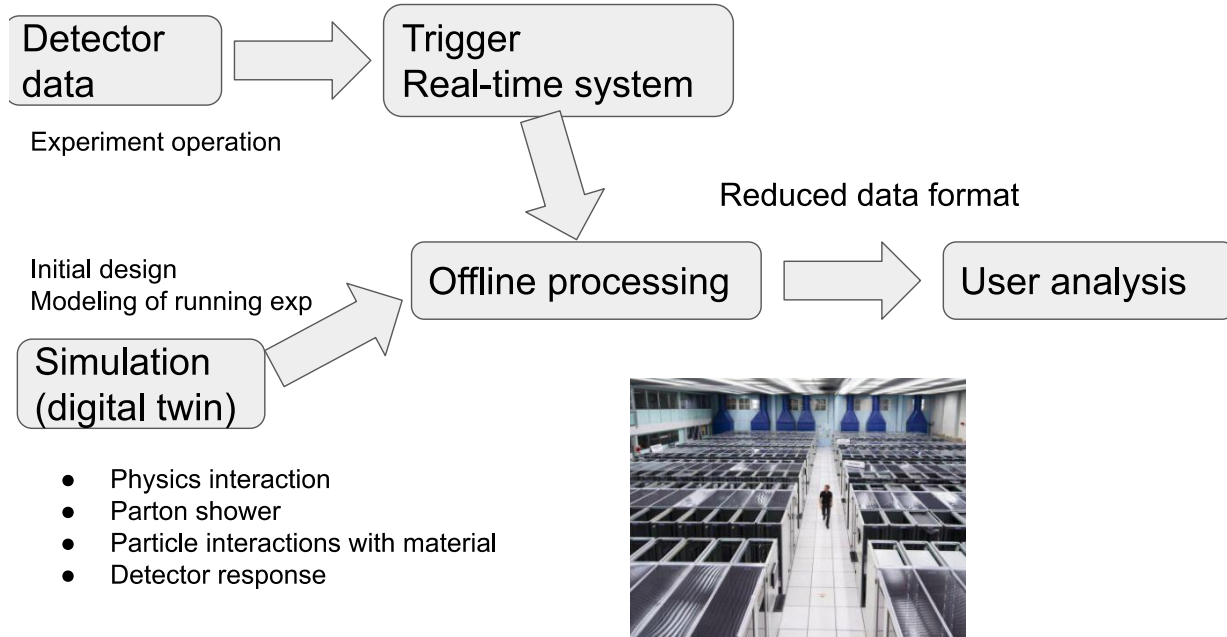


- Integration (DRD8)

Full Proposal to be written by the end of this year

- Italian INFN colleagues in various roles of responsibility
- Waiting for MoU and Annex
- INFN financing scheme discussed with the Presidents of CSN, to be finalized
- Inter CSN review process

Software & Computing



Community is Growing

challenge/opportunity:
detector optimization with
artificial intelligence?



Machine-learning Optimized
Design of Experiments

EUROPEAN COALITION FOR AI IN
FUNDAMENTAL PHYSICS



an European Initiative for advancing the use of Artificial Intelligence (AI) In Fundamental Physics. Members are working on particle physics, astrophysics, gravitational wave physics, cosmology, theoretical physics as well as simulation and computational infrastructure.

Role of AI: accelerator control, data acquisition, event triggering, anomaly detection, new physics scouting, event reconstruction, event generation, detector simulation, LHC grid control, analytics, signal extraction, likelihood free inference, background rejection, new physics searches, etc..

...Quantum Computing



EUROPEAN AI FOR
FUNDAMENTAL PHYSICS
CONFERENCE
EuCAIFCon 2024

Welcome

The European Strategy for Particle Physics is the cornerstone of Europe's strategy-setting process for the long-term future of the field. Mandated by the CERN Council, the Strategy takes into account results from the LHC and other facilities in the world, the international physics landscape and developments in related fields with the aim to maximise scientific returns.

In March 2024, the CERN Council launched the process for the third update of the Strategy. [The European Strategy Group](#) (ESG) and the [Strategy Secretariat](#) for this update were established in June 2024 to organise the full process. The [remit](#) of the European Strategy Group was also approved in June 2024.

The Strategy update process is expected to converge by January 2026, when a draft Strategy document will be submitted to the Council. The community at large will be involved during the full [process](#) and is asked to provide input at several stages.

RELATED WEBSITES

- ▶ [The European Strategy for Particle Physics](#)
- ▶ [CERN Council](#)
- ▶ [European Committee for Future Accelerators \(ECFA\)](#)
- ▶ [European Strategy Forum on Research Infrastructures \(ESFRI\)](#)

contact: epps.2024@cern.ch



La home page della prossima Strategy si trova a questo link:

<https://europeanstrategyupdate.web.cern.ch/welcome>

INFN Input per la European Strategy

- The INFN has started work on the preparation of the Update of the European Strategy for Particle Physics (ESPPU) with the [workshop on May 6th and 7th in Rome](#).
 - During the discussions that took place at this meeting, the basic recommendation emerged with which INFN will contribute to the work of the *Strategy*.
- The next step is to promote discussions within the Laboratories and Sections of the Institute, and to coordinate the preparation of documents that will be submitted as *Input* for the next *Strategy*.
- This approach is inspired by the model adopted by INFN during the last *European Strategy* from December 2018 to January 2020 (symposium in Granada in 2019).



Considerazioni importanti, baseline e possibili scenari alternativi

by Karl Jakobs

ECFA meeting – LNF 4 and 5 July 2024

- *In this Strategy Update process, we must converge on a preferred option for the next collider at CERN plus alternative options (prioritised)*
- *This may imply as well strong focus on certain R&D lines*
- *It will provide the basis for a decision on construction of the next major collider at CERN by Council in 2027/28*
- *Current baseline – justified by 2020 Strategy: FCC integrated programme (FCC-ee followed by a hadron collider of at least 100 TeV)*
- *Possible alternative scenarios (for next collider, following the HL-LHC):*
 - *Realisation of a lower-energy hadron collider (50 – 80 TeV) on an earlier timescale (2050 – 2055)*
 - *Linear Collider at CERN (CLIC, ...)*
 - *Muon Collider at CERN*
 - *Further exploitation of the LHC physics programme, eventually with the addition of e-h collisions*
 - ...
- *Non-exhaustive list, other scenarios may come up and be proposed by the community*

Streamlining the process and form of national inputs

ECFA

3. Questions to be considered by individual countries/regions in forming and furnishing a “national input” to the ESPP:


a. Which is the preferred next major/flagship collider project for CERN

b. What are the most important elements in the response to (3a)?

- Physics potential**
- Long-term perspective**
- Financial and human resource requirements – and implications for other projects**
- Timing**
- Careers and training**
- Sustainability**

Streamlining the process and form of national inputs

- c. **Should CERN/Europe proceed with the preferred option set out in 3a) or should alternative options be considered:**
- i. if Japan proceeds with the ILC in a timely way?
 - ii. if China proceeds with the CEPC on the announced timescale?
 - iii. if the US proceeds with a muon collider?
 - iv. if there are major new (unexpected) results from the HL-LHC or other HEP experiments?

 d. **Beyond the preferred option in 3a), what other accelerator R&D topics (e.g. highfield magnets, RF technology, alternative accelerators/colliders) should be pursued in parallel?**

 e. **What is the prioritised list of alternative options if the preferred option set out in 3a) is not feasible (due to cost, timing, international developments, or for other reasons)?**

 f. **What are the most important elements in the response to 3e)? (The set of considerations in 3b should be used).**

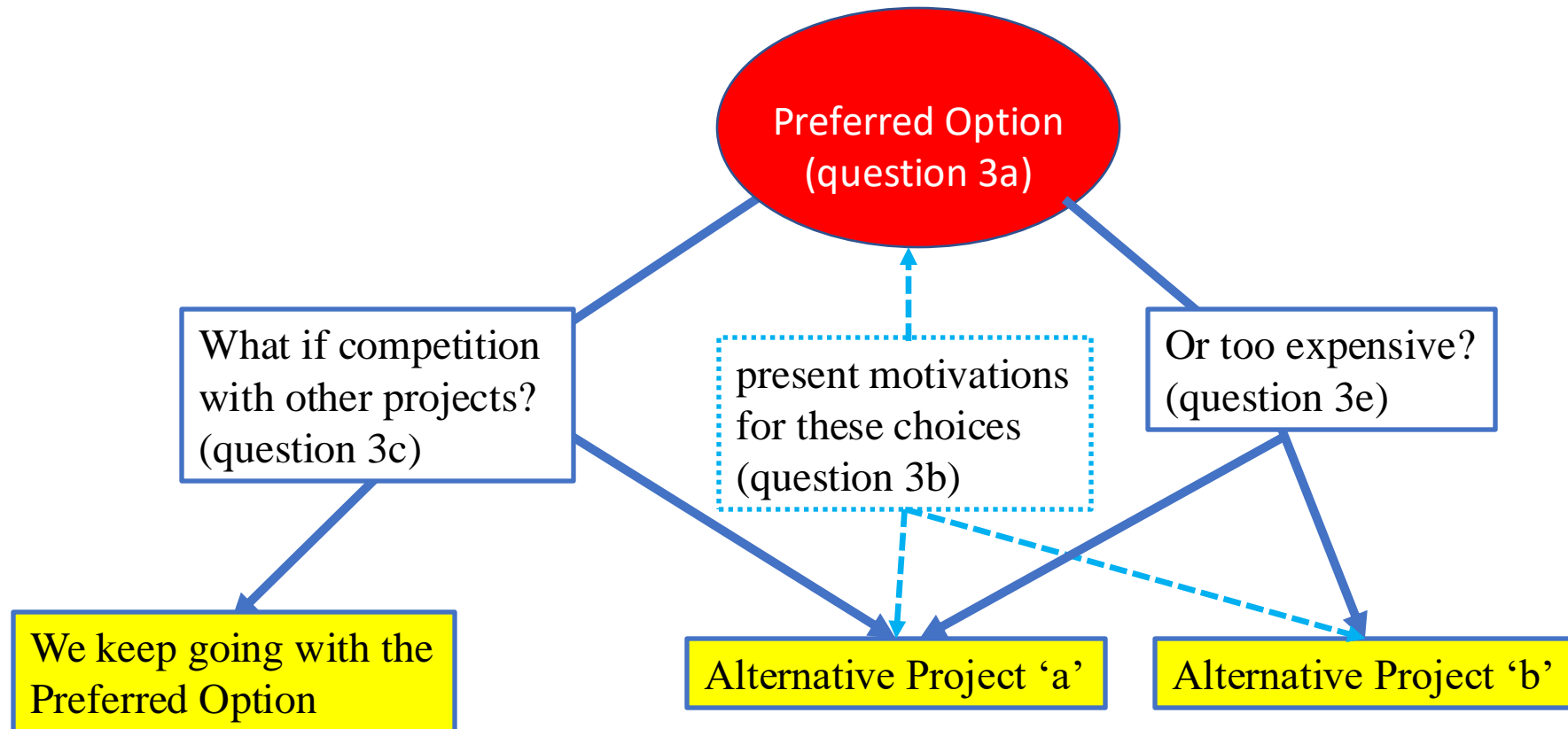
Streamlining the process and form of national inputs

- 4) The remit given to the ESG also specifies that “The Strategy update should also indicate areas of priority for exploration complementary to colliders and for other experiments to be considered at CERN and at other laboratories in Europe, as well as for participation in projects outside Europe.” It would thus be most useful if the national inputs explicitly included the preferred prioritisation for non-collider projects. Specific questions to address:**
- a) What other areas of physics should be pursued, and with what relative priority?**
 - b) What are the most important elements in the response to 4a)? (The set of considerations in 3b should be used)**
 - c) To what extent should CERN participate in nuclear physics, astroparticle physics or other areas of science, while keeping in mind and adhering to the CERN Convention? Please use the current level and form of activity as the baseline for comparisons.**

The 'logic' of what asked

Karl's reminder:

Current baseline – justified by 2020 Strategy: FCC integrated programme (FCC-ee followed by a hadron collider of at least 100 TeV)



Mario Draghi's Report to EU

- [Available at this link](#)
- FCC/CERN cited in page 236:

The Large Hadron Collider has propelled CERN to global leadership in particle physics – a mantle that has shifted from the US to Europe – and it stands as CERN's flagship facility. One of CERN's most promising current projects, with significant scientific potential, is the construction of the Future Circular Collider (FCC): a 90-km ring designed initially for an electron collider and later for a hadron collider. Chinese authorities are also considering constructing a similar accelerator in China, recognising its scientific potential and its role in advancing cutting-edge technologies. If China were to win this race and its circular collider were to start working before CERN's, Europe would risk losing its leadership in particle physics, potentially jeopardising CERN's future.

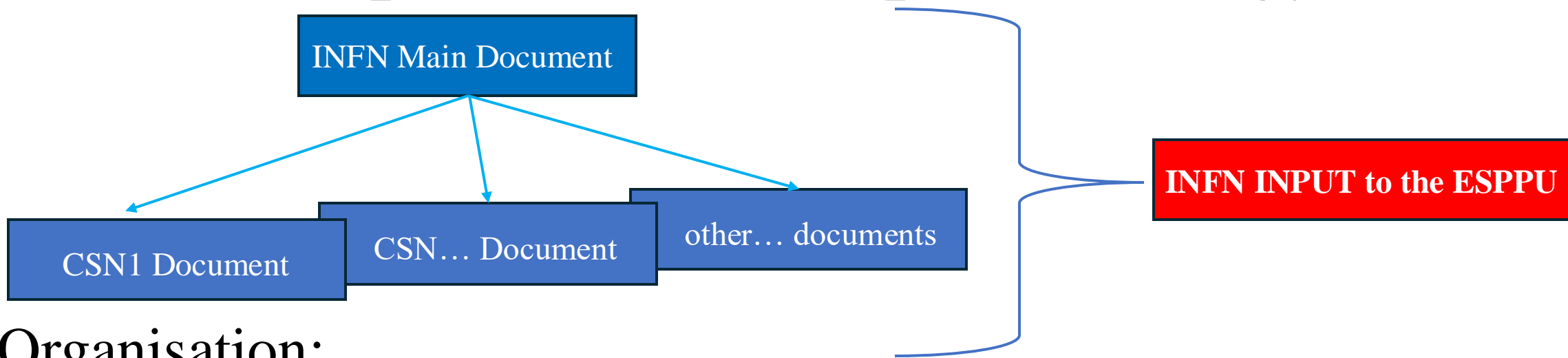
and in page 252 as well:

the future of CERN is at risk due to China's progress in emulating one of CERN's most promising current projects, the Future Circular Collider (FCC). Refinancing CERN and ensuring its continued global leadership in frontier research should be regarded as a top EU priority, given the objective of maintaining European prominence in this critical area of fundamental research, which is expected to generate significant business spillovers in the coming years.

How do we proceed?

- Fortunately, anticipating an acceleration in the process related to the next Strategy, INFN moved in time
- The outcome of the INFN workshop on May 6th and 7th is consistent with what was presented and discussed by the ESPP Secretariat and ECFA at the July LNF meeting.
 - We need to do further work to develop options for alternative projects

INFN Input for the European Strategy



- Organisation:

- **Steering Group** (C. Borca, M. Ciuchini, S. Malvezzi, A. Nisati, R. Tenchini)

- **Gruppo di Lavoro**, composed by:

- ⑩ Presidenti delle cinque Commissioni Scientifiche

- ⑩ Direttori dei Laboratori Nazionali

- ⑩ Chair del Machine Advisory Committee dell' INFN (MAC)

- ⑩ Rappresentante attività Calcolo (CNC)

- ⑩ Rappresentanti dell' Ufficio Comunicazione dell' INFN

Come procediamo noi?

- Il risultato del [workshop INFN](#) del 6 e 7 Maggio è consistente con quanto presentato e discusso da Segretariato ESPP e ECFA al meeting di LNF.
 - **Dobbiamo fare del lavoro ulteriore per elaborare le opzioni sui progetti alternativi**
- La preparazione dei documenti che si pensa di utilizzare come Input alla prossima ESPP è in linea con quanto richiesto o suggerito
- Ulteriori affinamenti del documento di *Input* principale terranno conto delle discussioni che stanno avendo luogo o che presto avranno luogo presso i Laboratori Nazionali, le Sezioni e le Commissioni Scientifiche (e della sintesi che arriverà da questo GdL)
- Sottometteremo entro il 31 Marzo 2025 i nostri documenti di Input. Il documento principale lo vorremmo sottomettere insieme a tutti gli altri. Il Management INFN valuterà se sarà necessario un aggiornamento da parte nostra, da sottomettere dopo il Briefing Book e prima della Drafting Session.
- Riunioni svolte e previste dello Steering con il GdL, previsto anche un evento pubblico finale il 4 Febbraio 2025 a Milano –
 - Possibili riunioni anche dopo il Simposio e prima della riunione dell' ESG

Future Accelerator options for CERN

ESPP 2020 recommendation

Alternative options

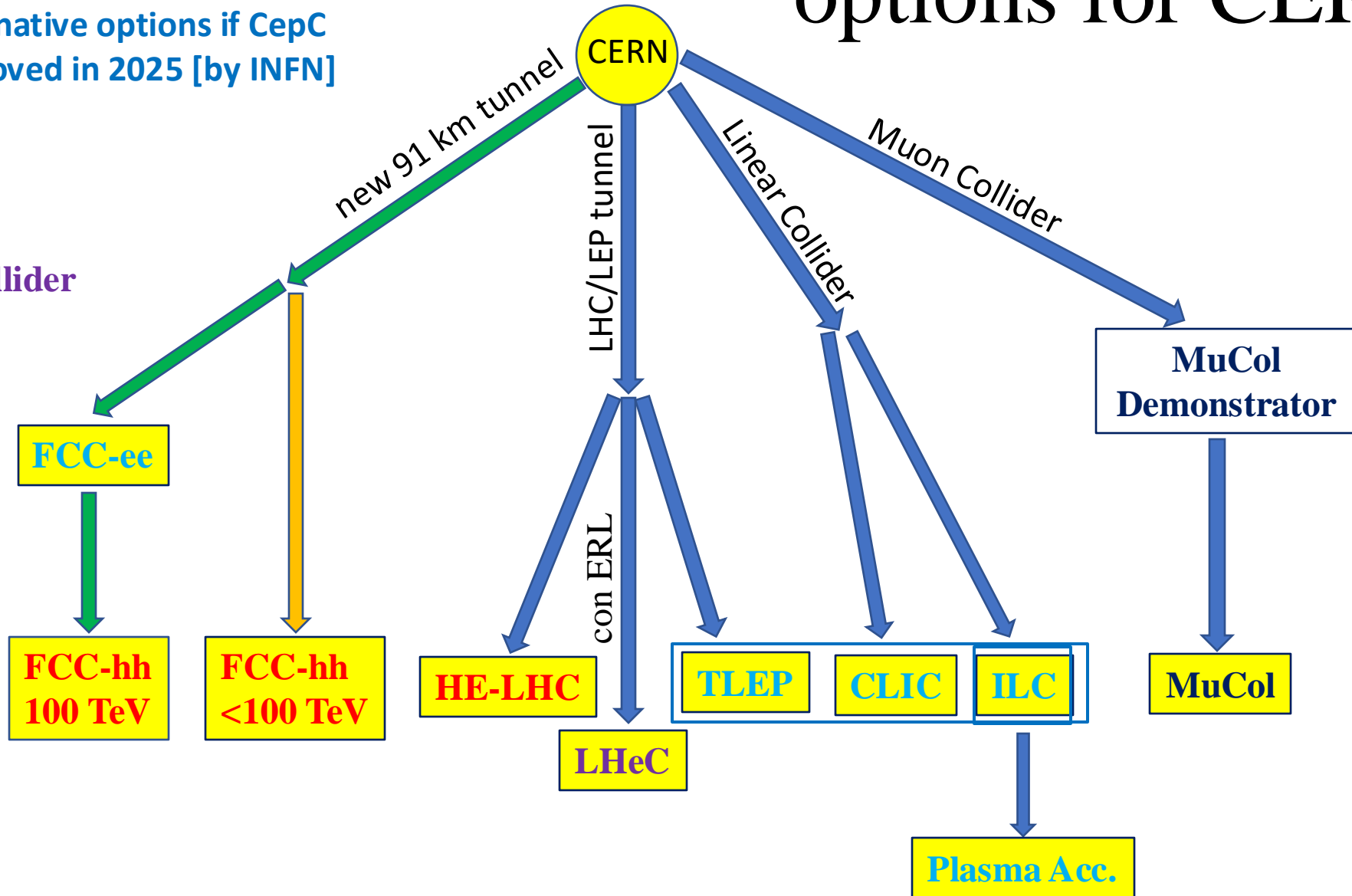
Alternative options if CepC approved in 2025 [by INFN]

e+e- collider

hadron collider

electron-hadron collider

$\mu+\mu-$ collider



Articolo su prossimo DG CERN

Repubblica 28 Ottobre 2024

- The position emerged from the Rome INFN workshop of 6 and 7 May appeared quite clearly. It is now officially announced.

Il timore dei fisici che vorrebbero Fcc è che l'alleanza tra Londra e Berlino nasca proprio dalla volontà di rallentare l'avvio dell'impresa. Ma ci sono altri Paesi fondatori del Cern che invece Fcc lo vogliono. A cominciare dall'Italia (9,8% del budget). «Per noi il Future circular collider è una priorità», conferma Antonio Zoccoli, presidente dell'Istituto nazionale di fisica nucleare. La pensano così anche Francia (13% del budget) e Svizzera (3,7%). I loro voti convergeranno sugli altri candidati, favorevoli a Fcc?

Iniziative INFN programmate

- **30 Settembre 2024: 2° meeting comunità ECR**
<https://agenda.infn.it/event/42691/>
- **1 Ottobre 2024: Incontro INFN su Collider Adronici (LNF)**
<https://agenda.infn.it/event/42594/timetable/>
- **22-24 Gennaio 2025: Incontro INFN su Collider Adronici (LNF)**
- **Workshop INFN finalizzazione Input alla European Strategy 4
Febbraio 2025 (da confermare)**

Materiale supplementare

Timeline

September 2024 Council

Council appointment of the members of the PPG

December 2024 Council

Council decision on the **venues for the Open Symposium** and the **Strategy Drafting Session**

Call for proposals to host these events have gone out;
Dates of both events have been fixed

31 March 2025

Deadline for the submission of input from the community

23 – 27 June 2025

Open Symposium

End of September 2025

Submission of the “Briefing Book” to the ESG

01 – 05 December 2025

Strategy Drafting Session

End January 2026

Submission of the Draft Strategy Document to the Council for feedback

March-June 2026 Council Sessions

Discussion of the Draft Strategy Document by the Council followed by the updating of the Strategy by the Council.



Streamlining the process and form of national inputs

1) Organization of national and/or regional meetings

- a) It is suggested that two national ("town-hall" or similar) meetings be organised (clearly, each country/region remains at liberty to decide on the number):
 - i. one meeting between the end of March 2025 and the Open Symposium at the end of June, with a deadline for comments by 26 May, and
 - ii. a second one after the release of the Briefing Book around the end of September 2025, with a deadline of 14 November 2025.
- i. The meeting(s) could/should be co-organised by the Restricted ECFA delegate and the country's representative on the ESG (for some countries this is the same person).
- ii. The meeting(s) should be guided by a set of "standard questions" to be considered.
- iii. Potentially, and if deemed useful, the November 2024 Plenary ECFA meeting could be used to further guide and assist with this process.

Convention for the Establishment of a European Organization for Nuclear Research

CONVENTION FOR THE ESTABLISHMENT OF A EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Paris, 1st July, 1953
as amended on 17 January 1971

ARTICLE II : Purposes

1. The Organization shall provide for collaboration among European States in nuclear research of a pure scientific and fundamental character, and in research essentially related thereto. The Organization shall have no concern with work for military requirements and the results of its experimental and theoretical work shall be published or otherwise made generally available.
2. The Organization shall, in the collaboration referred to in paragraph 1 above, confine its activities to the following:
 1. the construction and operation of one or more international laboratories (hereinafter referred to as "the Laboratories ") for research on high-energy particles, including work in the field of cosmic rays; each Laboratory shall include:
 - i. one or more particle accelerators;
 - ii. the necessary ancillary apparatus for use in the research programmes carried out by means of the machines referred to in (i) above;
 - iii. the necessary buildings to contain the equipment referred to in (i) and (ii) above and for the administration of the Organization and the fulfilment of its other functions;

Community Involvement (cont.)

(ii) Open Symposium 23 – 27 June 2025

In addition to plenary (and parallel) presentations, this Symposium should be organised such that there is room for discussions

(iii) Based on the collected input (March 2025) and Briefing Book (Sept. 2025) **further input from the national communities is welcome**

A proposal on how to collect and structure this input is presented by ECFA

→ see talk by Paris Sphicas this afternoon

Summary on Community Input

31 March 2025

Deadline for the submission of input from the community

Further input from national communities

23 – 27 June 2025

Open Symposium

Lido di Venezia

End of September 2025

Submission of the “Briefing Book”

Further input from national communities, deadline 14 Nov 2025

01 – 05 December 2025

Strategy Drafting Session

How do we proceed?

- **The Chairs of the CSNs**, in addition to organizing internal events, will invite their Coordinators to initiate **discussions and debates at the INFN Divisions**, in agreement with their respective Directors. The conclusions that emerge from these meetings will be shared with the same Presidents.
- **The Directors of the Laboratories** will initiate a discussion within the scientific community of their respective Laboratories, focusing especially on the **contributions they can offer based on the research infrastructures available at the Laboratories themselves**.
- **The Chairs of the CSNs and the Directors of the Laboratories must produce a document to be sent to the INFN Steering Group**; this document will summarize the results of the process within the CSNs and Laboratories and may potentially be submitted as input to the Strategy.
- **The MAC Coordinator** will oversee the preparation of a document that homogeneously compiles the **studies on accelerators conducted by the INFN** and financed by the Executive Committee with dedicated funds to contribute to the development of the European Strategy 2020 recommendations.
- The Computing Representative will oversee the preparation of a document that homogeneously compiles the **studies on aspects related to computing for future projects**