Workplan

Currently two different options considered

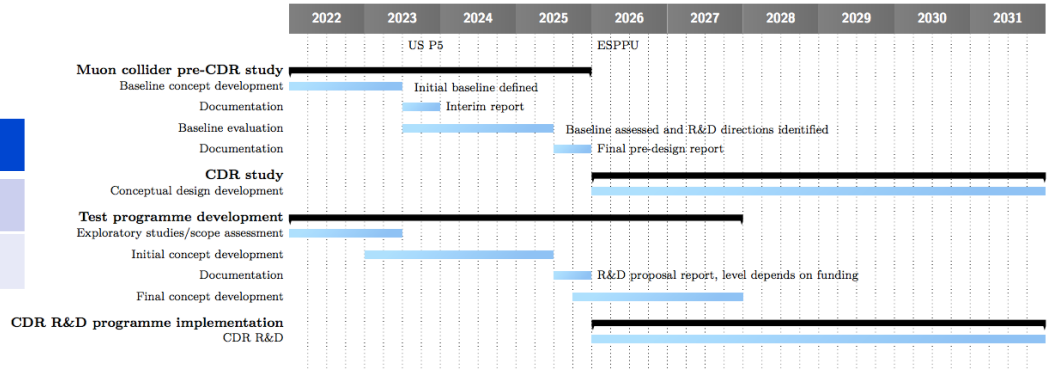
- goal is 10+ TeV, the reason to consider muons
- potential intermediate stage (e.g. 3 TeV) explored, will consider other options later

Three main deliverables are foreseen in R&D Roadmap Report:

- a **Project Evaluation Report** that assesses the muon collider potential as input to the **next ESPPU**; (Note: ESPPU because this is a European document, we want to feed into all relevant processes)
- **an R&D Plan** that describes a path towards the collider;
- **an Interim Report** by the **end of 2023** that documents progress and allows the wider community to update their view of the concept and to give feedback to the collaboration.

Scenario	FTEy	M MCHF
Full scenario	445.9	11.9
Reduced scenario	193	2.45

http://arxiv.org/abs/2201.07895



Resources and Workplan

EU Design Study proposal has been accepted
- finalising contracts
- kick-off meeting likely March 2023
- but some work already started

Current resources still **below reduced scenario**
- working on increasing them
- adjusting workplan priorities

Can only partially achieve goals before ESPPU

Workplan evolves taking in to account availability of resources and partner interest
- not strictly following reduced scenario
- leaves room for increase

Discussions ongoing in many places
- moving target
- asked Nadia Pastrone to chair Resource Task Force

Accelerator R&D Roadmap

Scenario	FTEy	M MCHF
Full scenario	445.9	11.9
Reduced scenario	193	2.45

Contributed to Snowmass

Many other efforts ongoing
- e.g. CHART approved some support

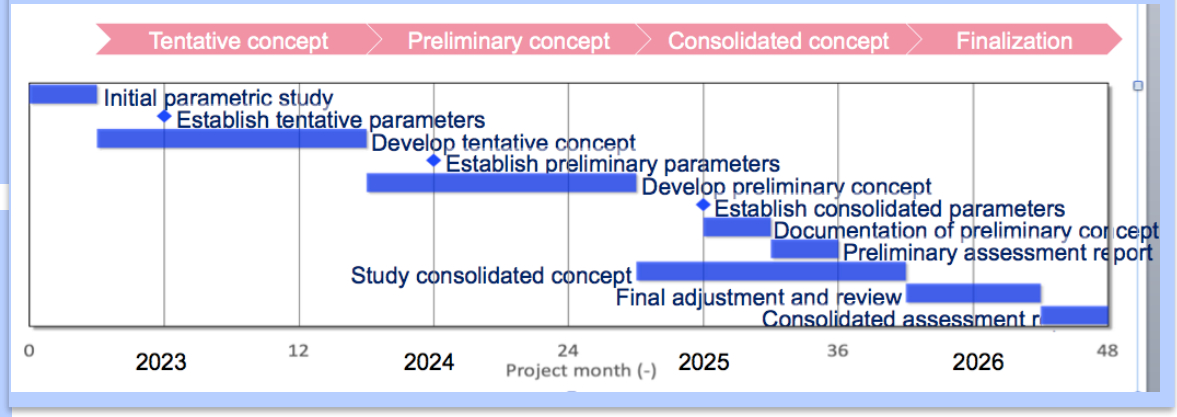
Meanwhile doing work with the resources that we have

EU Design Study

HORIZON-INFRA-2022-DEV-01-01: Research infrastructure concept development

EU contribution 3 MEUR = 530 pm, partners 680 pm,
CERN requested budget increase +1.5 MCHF

January 2023 to December 2026
Kick-off probably March 2023
Finalising Grant and Consortium Agreements
⇒ Roberto



Workpackages

1. Coordination and Communication
2. Physics/Detector Performance Requirements
3. Proton Complex
4. Muon Production and Cooling
5. High-energy Complex
6. RF Systems
7. Magnetic Systems
8. Muon Cooling Module

Plan to also apply for next HORIZON-INFRA-2024-TECH call in 2024, to develop technologies (up to 10 MEUR)

Goal is to prepare experimental programme, e.g. demonstrator, prototypes, …

Preparation to start early next year

CC Members

To be endorsed by SB

Physics	Andrea Wulzer
Detector and MDI	Donatella Lucchesi

Protons	Natalia Milas
Muon production and cooling	Chris Rogers
Muon acceleration	Antoine Chance
Collider	Christian Carli

Magnets	Luca Bottura
RF	Alexej Grudiev
Beam-matter int. target systems	Anton Lechner
Collective effects	Elias Metral

Cooling cell design	to be filled after EU decision
Demonstrator	Roberto Losito

US (detector)	Sergo Jindariani
US (accelerator)	Mark Palmer
Asia (China)	Jingyu Tang
Asia (Japan)	tbd

EU Design Study WP leaders:

EU RF WP	Claude Marchand
Cooling cell	Lucio Rossi

Proposal for deputies (to be endorsed by ICB):
Andrea Wulzer
Donatella Lucchesi
Chris Rogers

Short-term Goals

- Start Design Study
- Increase resources and integrate more partners
  - react to P5, INFRA-TECH proposal, other opportunities
  - ICB will be instrumental

- Continue and ramp up work
  - Technologies and design
  - Develop alternative parameter sets to explore parameter space
  - Consider re-use of existing infrastructure
  - Start to develop scenarios toward a collider consistent with HL-LHC operation until 2042 and considering opportunities on the way (proton complex, NuStorm, …)
    - workshop on non-collider physics at muon collider, demonstrator and synergies

- Provide interim report by the end of 2023
  - Workplan, resources, initial results