



Roadmap Report for the Muon Collider

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Roadmap



- Next week will clarify timeline and different reports for Roadmap
- Interim report by late July to LDG
- September LDG gives interim report to Council
- December LDG will give final report to Council
- Not exactly clear what will be required from Panel, collaboration and community during these periods

Proposal for Report Structure



- Introduction
- Executive summary
- Muon collider motivation
 - physics
 - potential cost and power efficiency
- Sustainability
 - power efficiency
 - cost efficiency
- Muon collider design overview
- Status of design (and history)
- Muon collider challenges
 - Overall project
 - Parameters
 - Layout
 - Power, cost and risk drivers
 - Radiation protection and site considerations
 - Other project challenges
 - Proton complex
 - Target area and source system
 - Muon cooling
 - Muon acceleration
 - Muon collider ring
 - MDI
 - Magnets
 - RF
 - Beam dynamics
 - Radiation protection other systems
 - ...

Maybe best to only go by
accelerator area for challenges

Proposal for Report Structure



- Work programme (deliverables)
 - Project
 - Parameters and layout
 - Cost and power
 - Choices and trade-offs
 - Accelerator design
 - Proton complex
 - Muon production and cooling
 - High-energy acceleration
 - Collider ring
 - Beam dynamics
 - MDI
 - Systems design
 - Magnets and power converters
 - RF
 - Target and shielding
 - Neutrino flux mitigation
 - Other technologies
 - Test facility preparation
- Synergies
 - Technologies
 - Magnets
 - RF
 - Targets
 - ...
 - Facilities
 - Proton complex
 - Neutrino facility
 - ...
- Scenarios and impact

Work programme along
the lines of expertises

Steps Forward



- Goal: Interim report full draft by end of June
 - Iteration with LDG next week
- Some report to Council early June
- Conveners prepare a 1-2 page summary of the challenges by May 26 to panel members
 - Will be discussed in Muon Beam Panel on May 27
 - From all working groups
 - technology can then be grouped differently for report, if decided
 - Synergy working group obviously to state what we need to do to fill chapter
- Will then have meeting of panel and conveners the week after
- Stakeholder meeting June 7
 - Conveners prepare some slides with the few key R&D activities
 - Things that can realistically be done in the coming 4.5 years
 - Remember, the goal is to justify end of 2025 years that we should start with a CDR and test programme
- Working groups should continue working
 - conveners take the initiative
 - answer questions from panel
- Community meeting [July 12+13](#) will discuss draft of interim report