

# List of Actions for the Accelerator Design meetings

Chair: Daniel Schulte

## MEETING HELD ON 01/03/2021

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| <b>1: Magnet working group</b> | Try and answer to Peter McIntyre's question: is their new solenoid technology of interest for optimizing $\mu$ -cooling scenarios? |
| <b>2: Muon collaboration</b>   | Think and propose possible test facilities (to be discussed during the coming workshop on 24-25/03/2021).                          |

## MEETING HELD ON 08/03/2021

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| <b>1: Everybody</b>                           | Send names of speakers to Roberto Losito for the Muon Collider Testing Opportunities ( <a href="https://indico.cern.ch/event/1016248/">https://indico.cern.ch/event/1016248/</a> ) on 24-25/03/2021.  |
| <b>2: Particle Physics team?</b>              | Clarify the origin of the neutrino energy distribution in the rest frame of the decaying muons.   |
| <b>3: Particle Physics team?</b>              | Clarify the origin of fraction of neutrino energy going into to inelastic interactions.   |
| <b>4: D. Schulte, C. Carli and D. Neuffer</b> | Understand the origin of the difference of a factor 1.5 in the radiation level between the formulae of B.J. King obtained in ( <a href="https://arxiv.org/pdf/physics/9908017.pdf">https://arxiv.org/pdf/physics/9908017.pdf</a> ) and another of his papers (link to be added in the future => See minutes of meeting held on 15/03/2021). |

## MEETING HELD ON 15/03/2021

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| <b>1: C. Curatolo and D. Lucchesi</b> | Discuss the past MDI considerations concerning muons in particular for CLIC, with Helmut Burkhardt and the CLIC detector people (similar subject studied and it was a big concern). |
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## MEETING HELD ON 29/03/2021

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| <b>1: Everybody</b> | Look at our website ( <a href="https://muoncollider.web.cern.ch/welcome-page-muon-collider-website">https://muoncollider.web.cern.ch/welcome-page-muon-collider-website</a> ) and send any comment to Elias (many thanks in advance!). |
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## MEETING HELD ON 12/04/2021

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**1: Kenneth  
Richard Long**

Following a question from PhilippeL, why is there no cost estimate for the “utilities” in the overall cost estimate for nuSTORM (and what should it be)?

**2: Elias Métral,  
Ilias  
Efthymiopoulos,  
Simone Gilardoni**

Check possibilities of a high-power proton beam at CERN, either from SPS or PS, with different pulse lengths (based on an estimate from DanielS,  $\sim 100 \mu\text{s}$  is the time we have and one should try and see what would be the maximum number of protons we can send during this time).

## MEETING HELD ON 19/04/2021

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**1: Marco Calviani  
(from the  
previous  
meeting)**

Establish some contacts with Mu2e (at FNAL) and COMET (at JPARC) concerning the target/solenoidal system.

**2: Chris Rogers  
and Daniel  
Schulte**

Define what the cooling demonstration should be and estimate the corresponding cost.

**3: Manfred Wendt**

Think about what could be done for the instrumentation to measure a low-intensity beam of muons (few  $1\text{E}5$  in a bucket and few  $1\text{E}8$  in all buckets).

## MEETING HELD ON 26/04/2021

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**1: Muon Beam  
Panel**

Produce an interim report for the LDG by end July 2021 (instead of September as initially planned).

**2: Chris Rogers**

Send a first set of relevant parameters for the cooling.

## MEETING HELD ON 03/05/2021

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- 1: Jean-Pierre Delahaye** Finalise/check the list of main relevant parameters all along the muon collider chain and send the “final version” to Elias such that this information can be stored on our website and be available for all the community.
- 2: Everybody** Contact Daniel (and Elias) if you would like to have some seminar(s) before the 1<sup>st</sup> Community Meeting.

## MEETING HELD ON 10/05/2021

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- 1: Everybody (and in particular a convener for a WG)** Answer to the questions raised by email to discuss them and conclude at the second conveners’ meeting this Wednesday.
- 2: Jean-Pierre Delahaye and Mark Palmer** Try and send to all of us the list of parameters to be used for the different stages of the muon collider chain (as the 1<sup>st</sup> Community Meeting will take place next week).

## MEETING HELD ON 31/05/2021

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- 1: Daniel Schulte** Decide on the exact date and format of the 2<sup>nd</sup> Muon Community Meeting (current proposal: 3 consecutive days, July 12-13-14, between 14:00 and 18:00).
- 2: Everybody** Continue to progress in the different Working Groups and prepare the 2<sup>nd</sup> Muon Community Meeting in July.

## MEETING HELD ON 14/06/2021

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- 1: Roberto Losito** Try and estimate the cost of the 2 proposed options by Chris, as this will be essential to guide further discussions and see what we can afford (and what we cannot).
- 2: Marco Calviani** Confirm, or not, some predictions about the effect of the bunch length on the thermal shock, which depend on other factors as well, and quantitatively establish the potential limits: do we need to go down to bunch lengths of ~ 1-2 ns or could ~ 100-200 ns be OK?
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| <b>3: Everybody</b> | Continue to progress in the different Working Groups and prepare the 2 <sup>nd</sup> Muon Community Meeting of July 12-14. |
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## MEETING HELD ON 13/09/2021

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- 1: Everybody / conveners** Following the recent decision from the LDG to discuss the deliverables and rough cost of the work programme already on September 22, please send updated info to Elias and Chris asap (ideally before coming Muon Beam Panel meeting on 16/09 at 14:00).
- 2: Elias and Chris** Organise a meeting this Friday 17/09 to discuss the results of Action 1.

## MEETING HELD ON 20/09/2021

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- 1: All WGs** DEADLINE: tomorrow Tuesday 21/09/21 at 18:00 => Send to Chris, Daniel and Elias the template prepared by Daniel (and discussed during the meeting last Friday => See <https://indico.cern.ch/event/1077527/contributions/4532065/attachments/2311486/3933946/Template.pptx>) filled for each WG.
- 2: Guillermo Brauchli and team** DEADLINE: this Friday 23/09 => Try and perform a short survey to see who could help and who we could help with this technology.

## MEETING HELD ON 08/11/2021

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- 1: Daniel and Chris** Finalise the final report to be sent to the LDG tomorrow morning (instead of next Friday as initially foreseen), with the latest comments received from the LDG during lunch time.
- 2: ScottB** Try and find back what he did in the past with grain-oriented steel etc. and discuss this with HerbertDG who is willing to collaborate on this.
- 3: HerbertDG and FulvioB** Start to collaborate and discuss also with the CERN magnet group and Stephan Russenschuk (who knows a lot about magnet modelling) in particular.

## MEETING HELD ON 22/11/2021

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**1: All people interested by EU proposals**

Contact Roberto Losito and Daniel asap.

## **MEETING HELD ON 29/11/2021**

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**1: Roberto Losito** Roberto Losito will organise meetings on Tuesday afternoons (14:00 - 15:00) to continue the discussions on the possible EU co-funding.

**2: Everybody** Start to think about the Snowmass preparation with the goal to meet altogether ~ end of February or beginning of March, before submitting something to the White paper.

## **MEETING HELD ON 13/12/2021**

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**1: Everybody** Prepare for the Snowmass White Papers and EU proposal.

*Reported by E. Métral and D. Schulte*