

Dear Vittorio,  
 here is my proposal for additon of “muon Acceleration into the BENE NA”. This has been discussed with Helmut, Rob and Bruno and has their agreement.  
 François Méot.

**To be added in NAComposition1.xls**

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**To be included in the “acceleration” column in EUandDSTimetable1.xls**

(Note : the “Front-end” Section should be reduced accordingly)

2003	June	Proposal of R/D program
2003	Oct.	Formal R/D program
2004	March	European network formed and working
2004	Sept	Contribution to RLA designs
2004	Oct	Contribution to FFAG designs
2004	Nov	Proposals for RF cavities and magnets R/D
2005	Nov	Preliminary design of full acceleration/storage scheme
2006	Nov	Recommendations for RF cavities and magnets R/D
2007	Nov	Completed NuFact acceleration optimised design
2008	March	Chapter for CDR

**To be included in the “BENE N3” (double sheet) document**

5/ muon acceleration and storageThe group will examine in detail existing muon acceleration and storage designs. It will compare the optical, acceleration and transmission properties of RLA-type and FFAG-type structures. It will propose a choice of scheme based on performances, technical and economic aspects.

**To be included in the document “Networking Activity of the CARE Integrating Activity Project”**

- **Muon acceleration and storage**

- The group will foster and prepare the choice and design of a complete muon acceleration and storage scheme. Two possibilities are being considered : Linac based acceleration including a pre-accelerator and one or two recirculating Linac accelerator (and derived designs) stages ; Fixed Field Alternating Gradient accelerator rings and derived designs. Their properties and merits will be investigated in terms of muon intensity and energy. This analysis of the machine properties will be accompanied by preliminary designs of the key components namely magnets and RF cavities. Once the main options will be defined in collaboration with the “Proton driver’ and “Front end” groups, prototyping magnets and RF cavities will start. The purpose of the prototypes is double : first, define a set of realistic parameters for the magnetic and acceleration fields, second establish the manufacturing methods for robust and economic magnets and cavities. The same approach will be applied to the muon decay ring which is expected to be conceptually much simpler since the RF fields are needed for longitudinal focusing only. Special attention will be given to the safety aspects related to a high energy muon beam and to the engineering constraints imposed by multiple base line experiments that impose a non horizontal ring. Those features will be discussed with the “Physics group”. Based on that knowledge, cost and construction schedule of the acceleration system and of the decay ring will be determined.