
9th Beta-beam Task Meeting

Introduction - Status

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Where do we stand

- **Month 50 in the 54-months Design Study (initially 48 months) .**
- **Three milestones due in October 2008 (i.e. months 45)**
 - **M2.3 Final design low energy ring(s)**
 - **M3.3 Study of ion acceleration in PS and SPS and potential upgrades**
 - **M4.3 Decay ring design → optics and beam dynamics design ok need to agree in today's meeting on what will be written up in which detail for the technical systems and the collimation system.**
- **The remaining deliverables are:**
 - **D1 Design of low energy rings (detailed report A. Lachaize/A. Tkatchenko)**
 - **D2 Ion acceleration scenarios in PS and SPS (to be written, M. Benedikt, S. Hancock, P. Delahaye)**
 - **D3 Design of decay ring (detailed report A. Chance, J. Payet)**
 - **D4 Conceptual design report for a beta-beam facility (being written, all)**
- **All deliverables due at the end of the study i.e. July 2009.**

Recent developments and activities

- **Decay ring**
 - **Collimation system**
 - Collimation simulations
 - Energy deposition in collimation region
 - **Open mid-plane magnet studies**
 - Quadrupole design
- **Dynamic vacuum and beam loss distribution**
 - **Coherent simulations for all machine**
 - New version of StrahlSim
 - Most recent version of optics
- **RP studies for beta-beam accelerators**
 - **Focus on Decay Ring, SPS started?**
- **Final Report**
 - **Drafts of main chapters and some sub-chapters available**

Open Technical Issues

- **Completion and check of parameter list**
- **Collimation in the Decay Ring**
 - **Simulation + beams loads + system layout**
 - **Collimator pre designs (material, dimensions, cost, etc.)**
 - **Absorbers and SC magnet protection (→open mid-plane magnets)**
- **Decay Ring RF system**
 - **“Rough” concept for the 40/80 MHz systems**
 - **RF system parameters, comparable systems**
- **Technical systems for all machines**
 - **Concepts or comparable existing systems**
 - **References for feasibility, cost estimates**
- **Cost estimates**

Time schedule

- **4 months left until end of the study (July 2009)**
 - Preparation of final reports
 - Finishing of technical work
 - Cost estimates
 - Final editing

- **One more task meeting mid/end June in GSI**
 - Coherency of report

Programme

09:30	Introduction and status	M. Benedikt
09:45	General status of RP studies and investigations on the Decay Ring	S. Trovati
10:15	Decay ring collimation study and energy deposition on surrounding magnets	E. Bouquerel
10:45	COFFEE	
11:00	Status on decay ring magnet design and cryogenics	E. Wildner
11:20	Decay ring open mid plane quadrupole magnet design	F. Borgnolutti
11:40	Beam loss distribution and dynamic vacuum simulations for RCS, PS, SPS and DR	L. Bozyk
12:10	LUNCH	
14:00	Preparation of final deliverables Final Report Deliverables D1-D3	All
16:00	Discussion and conclusions	All
16:15	COFFEE	
16:30	Steering committee	SC Members
17:00	END	

Objectives from Annex 1

The objective is to do a Conceptual Design Study (CDS), covering all accelerator physics aspects, to demonstrate the feasibility of a beta-beam facility.

The final report will contain:

- the optics design of the accelerator chain,
- beam dynamic simulations of critical processes (RF, collimation),
- a loss management concept
- first stage technical designs demonstrating the feasibility of critical hardware → collimation, SC magnets, 40/80 MHz RF, RCS magnets
- a facility layout → only conceptual, no TL design, no TI, no CV.
- a cost estimate → overall no detailed breakdown, Linac, RCS, DR