

Final Remarks





Muon Collaboration

MUTAC Charge

1. Review and comment on the R&D progress achieved since the last MUTAC review.
2. Review and give advice on the R&D plans and corresponding budgets for FY05.
3. Assess and comment on plans for the CERN Targetry experiment.
4. Assess and comment on plans for the MICE experiment.
5. Review and comment on Simulation Group plans, including Neutrino Factory design optimization, FFAG acceleration system activities, and Muon Collider studies.
6. Review and give advice on the Muon Collaboration 5-year R&D plan.

R&D Progress since April 2004



Liquid-hydrogen
Absorber Test



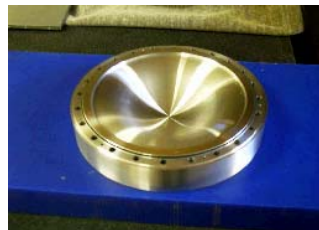
200MHz RF cavity
with beryllium windows



Preparing for RF Testing
in MTA



Target Expt magnet
under construction



New absorber
windows



SCRF
Cavity
studies

	All (\$M)	No PD (\$M)	No PD & Tgt. (\$M)
FS2	1832	1641	1538
FS2a-scaled (%)	67	63	60

Despite limited resources, the MC has continued to make significant progress

R&D Plans vs Budgets for FY05

Following the path presented in previous years to MUTAC, **constrained by available resources.**

Hardware R&D focused on MICE, MUCOOL for MICE, and Targetry.

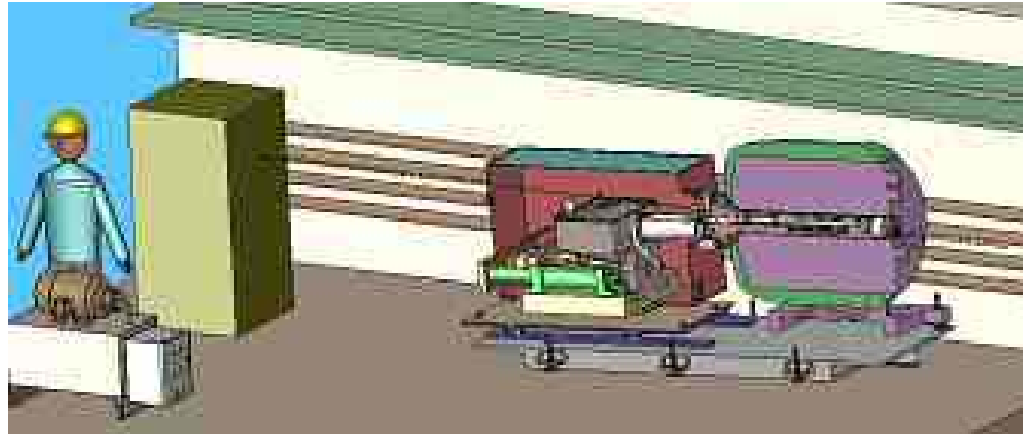
Design studies: Study 2b (following up loose ends from Study 2a), and preparation for the World Design Study. Also some MC activity relooking at Muon Collider cooling schemes, supplemented by a healthy SBIR-based.

FY05 activity is aimed at doing what needs to be done to succeed with our longer (5 year) plan.

Year	DOE M\$
FY00	8.0
FY01	6.2
FY02	5.8
FY03	3.5
FY04	4.0
FY05	3.6

CERN Targetry Experiment

CERN Target Experiment was approved 5 April 2005, to run in 2007 !



Funding the experiment is part of our 5 year plan

Hg-jet target design is advanced.

Solenoid is under construction.

Instrumentation conceptual design completed.

We are on track for a successful experiment in 2007 !

MICE Experiment

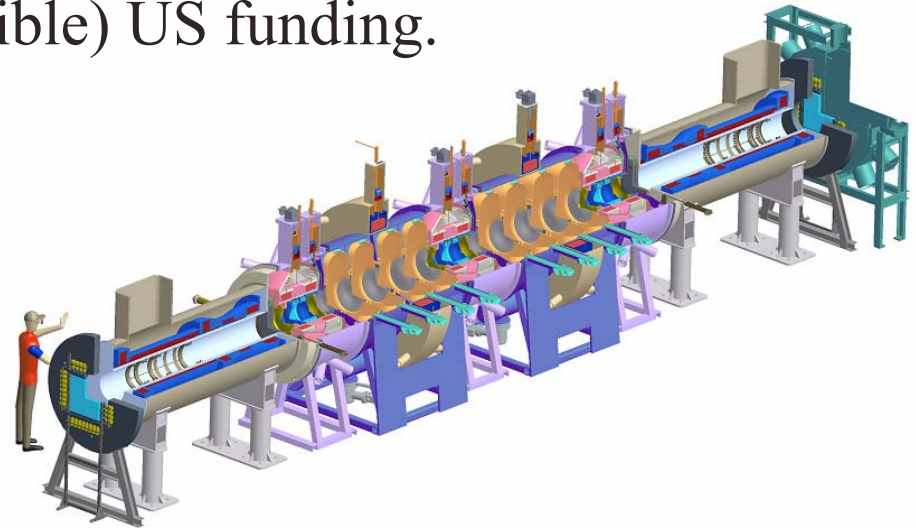
MICE Experiment is approved, and has very significant UK funding, and some modest (but not negligible) US funding.

First Beam April 2007 !

Funding the US parts of MICE (up to “stage 5”) is part of our 5 year plan

Funding is tight ... our contingency is time.

We are committed to making MICE a success.



Simulation Group Plans

Main Neutrino Factory Thrust So Far

Study 1: Feasibility

Study 2: Feasibility & Performance

Study 2a: Feasibility, Performance & Cost Effectiveness

Includes new phase rot & bunching, better cooling, new non-scaling FFAG

Next Steps

World Design Study: Scoping Study, then “Study 3”

Will include further work on optimization, & on FFAGs

In addition to the main neutrino factory thrust we also have a limited activity on Muon Colliders supplemented by additional resources from SBIR funded efforts. Some of this is directed towards ring cooler & Muon Collider design → new ideas may ultimately be of benefit to Neutrino Factory & Muon Collider design.



Muon Collaboration

Five-Year R&D Plan

We have a 5-year plan based on flat funding that will enable us to deliver on 3 major international commitments:

MICE

Target Experiment at CERN

Participation in the “World Design Study”

Funding is very tight, but with careful deployment of our resources we believe we can deliver.

National Program

The threat to the BNL group was a shock.

The MC was set up as a National Program. Its organization is based on this, and its success is dependent on this.

We have been encouraged to collaborate with international partners → MICE, Target Experiment, World Design Study

To make these international commitments we need to be able to manage the agreed on resources (funding & support for the people needed).

We have made (painful) sacrifices to arrive at our 5-year plan:

- minimized the non-MICE part of MUCOOL
- allowing others to take up the development of non-scaling FFAGs
- no new major hardware initiatives in the coming 5 years

As MUTAC has noted in previous years, we would put an addition 1MS/year to very good use.

The MC has a good track record in delivering on whatever plans have been funded ... we are confident with continued support we can continue to deliver, & are **excited about our involvement in MICE, Targetry, & the World Design Study.**