Planning for LHC Computing in Germany

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Outline

- General Situation
- Functionality of a German Center
- LHCb Specific Aspects
- ATLAS Resource Estimates
- Summary and Conclusions

General Situation

- Goal: optimize efficiency of computing resources
- Strategy: concentrate on computing-center approach
- Proposal for regional center for ATLAS being formulated
- CMS likely to join
- Expression of interest by the others
- Importance of computing recognized by BMBF
  - ☞ technical details to be fixed until mid 2000
  - ☞ funding scheme to be worked out for ...
  - ☞ a) initial installation
  - ☞ b) running costs
- Installation at existing center (CERN/DESY/ZEUTHEN/GSI)

Functionality of a German Regional Center

- Data Management
  - storage and backup
  - data access for selection jobs
- Limited Reprocessing
- Monte Carlo Production
- Software Management
  - installation/maintenance of experiment software
  - software support for attached institutes
  - license management

LHCb specific Aspects

- initial discussion April 1999
- expectations/requirements . . .
  - ☞ transparent access to all data
  - ☞ software maintenance
  - ☞ numbers of groups 5
  - ☞ numbers of users O(20)
  - ☞ support from groups unclear
- funding for LHCb not yet approved
- required resources to be defined
- no preference for location of RC

➜ functionality at least possible cost

ATLAS Resource Estimates

cost estimates

item	ATLAS	all LHC
CPU (2005)	2 MDM	4 MDM
Disks (2005)	1 MDM	2 MDM
Tape Storage (2005)	1 MDM	1 MDM
operating costs/year	1 MDM	2 MDM
manpower/FTE	3	5

computing resources for RC

item	2005	2007
CPU/SI95	70000	150000
Processor boxes	150	200
Disk space/TB	60	100
I/O bandwidth GB/sec	60	100
Tape Storage/PB	0.2	0.6
Data Import/TB/day	1	1

Summary and Conclusions

- Regional Center in Germany likely to be built
  - ☞ funding to be defined(BMBF/EU)
- LHCb in principle interested to join
  - ☞ funding situation unclear
  - ☞ exact requirements still to be defined
- Alternative Approaches could be interesting
  - ☞ internet databases
  - ☞ joint infrastructure for science and industry