

Maintenance and Operations Cost

Procedure

- Preliminary (*very*) M&O cost estimates presented at RRB March 2001
- ALICE internal 'Task Force' refined estimates, concentrating on 'A' and 'C' cost
- Collaboration with Scrutiny Group during summer

M&O cost concern:

- the running of the experiment – 2005 onwards
- cost associated with the experimental area – from today!
- running the Collaboration

Concerning the Origin of the data, ALICE M&O Cost may be split in:

1 - Items estimated by sources other than ALICE (usually CERN services):

- power, cooling&ventilation
- listed as billed (i.e. no or very limited scrutiny from ALICE)
- difficult to 'meter'
- scrutiny group instrumental in common approach across experiments

Total 'bills' to be paid by ALICE in 2002: ~ 170 kCHF.

2 - Items included & estimated by ALICE:

- 'running' detector: cost from 2005 onwards
 - exception: existing (old!) L3 installations: ~ 15 kCHF in 2002
- 'running' collaboration: secretariat, economat, printing, outreach (~ 41 kCHF)
- ALICE test-beam environment: ~ 255 kCHF + 50 kCHF 'bills' in 2002

About Test beam facilities:

ALICE teams use non-CERN test-beams (GSI, ITEP, Strasbourg, ..):

- project specific tests only (=> part of project cost)

not included in M&O cost estimates.

ALICE provides a CERN test beam facility for use by *all* detectors:

- general infrastructure; not specific to project or institute
 - not covered by provisions of MoU
- shared use => shared cost (one way or another)

Common cost (i.e. generic test beam cost) included in M&O estimates.

Project specific test beam costs are NOT part of M&O

Test Beam Experimental zones:

- Dedicated to ALICE: T10 (PS, since '97) and X5A(SPS, since 2000) with counting rooms and gas areas
- used almost full year, up to 5 parallel users!
- Some use of H4, H6 with counting houses and gas areas
- Dedicated gas and electrical infrastructure in GIF

Test Beam Common infrastructure:

- cables, gas mixing units, gas lines, electronics racks and crates, support tables for detectors
- 5 working stations at T10 and X5A each
- 5 Trigger systems (4-fold coincidence) with readout electronics
- 3 Data acquisition systems (allows parallel running)
- Reference tracking with readout electronics
- 3 x-y planes of cathode strip chambers
- 5 x-y planes of silicon strip detectors
- 4 pad chambers
- User Laboratory and Workshop: machines, tools, electronics, gas

Summary of ALICE M&O cost estimates (kCHF):

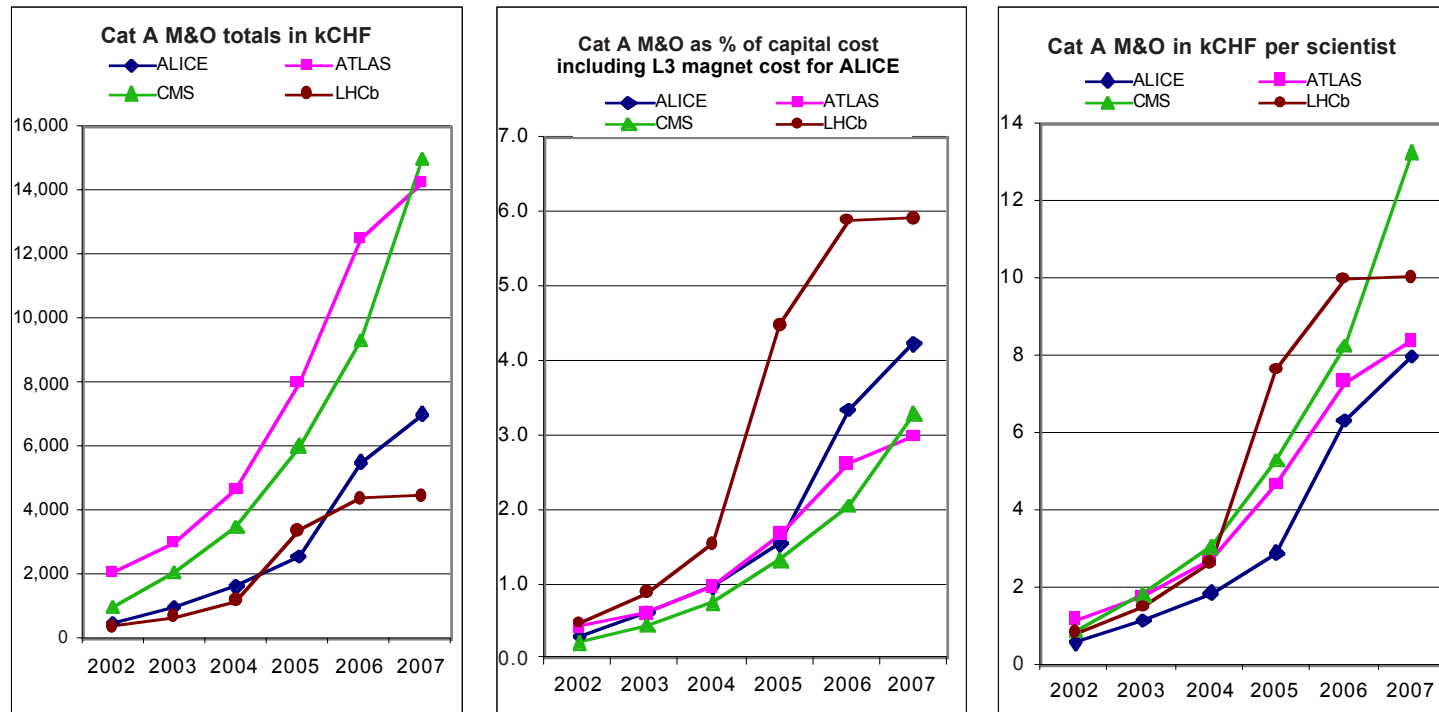
| Category | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Detector related costs | 5.0 | 150.0 | 340.0 | 623.9 | 1,650.2 | 1,803.2 |
| Secretariat | 41.0 | 119.0 | 160.0 | 209.0 | 217.0 | 226.0 |
| Communications | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| On-line computing | 0.0 | 10.0 | 20.0 | 238.4 | 471.0 | 1,166.6 |
| Test beams, calibration facilities | 295.2 | 217.2 | 167.2 | 167.2 | 167.2 | 167.2 |
| Laboratory operations | 0.0 | 280.0 | 280.0 | 280.0 | 280.0 | 280.0 |
| General services | 792.0 | 859.0 | 1,288.7 | 1,483.4 | 3,283.9 | 3,915.8 |
| Consultancy | 0.0 | 0.0 | 0.0 | 200.0 | 200.0 | 200.0 |
| Outreach | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 |
| <i>Total ('A' + 'C' cost)</i> | 1,153.2 | 1,655.2 | 2,275.9 | 3,221.9 | 6,289.3 | 7,778.8 |
| <i>A TOTAL</i> | 493.2 | 1,005.2 | 1,605.9 | 2,531.9 | 5,524.3 | 6,998.8 |
| <i>C TOTAL</i> | 660.0 | 650.0 | 670.0 | 690.0 | 765.0 | 780.0 |
| <i>B Total</i> | 0.0 | 0.0 | 129.6 | 767.3 | 1,064.0 | 1,164.5 |

About the number of 'Scientific Staff holding Ph.D. or Equivalent Qualifications'

A survey has been carried out in the Collaboration to determine the number of authors to be used to determine the sharing of Cat. A cost.

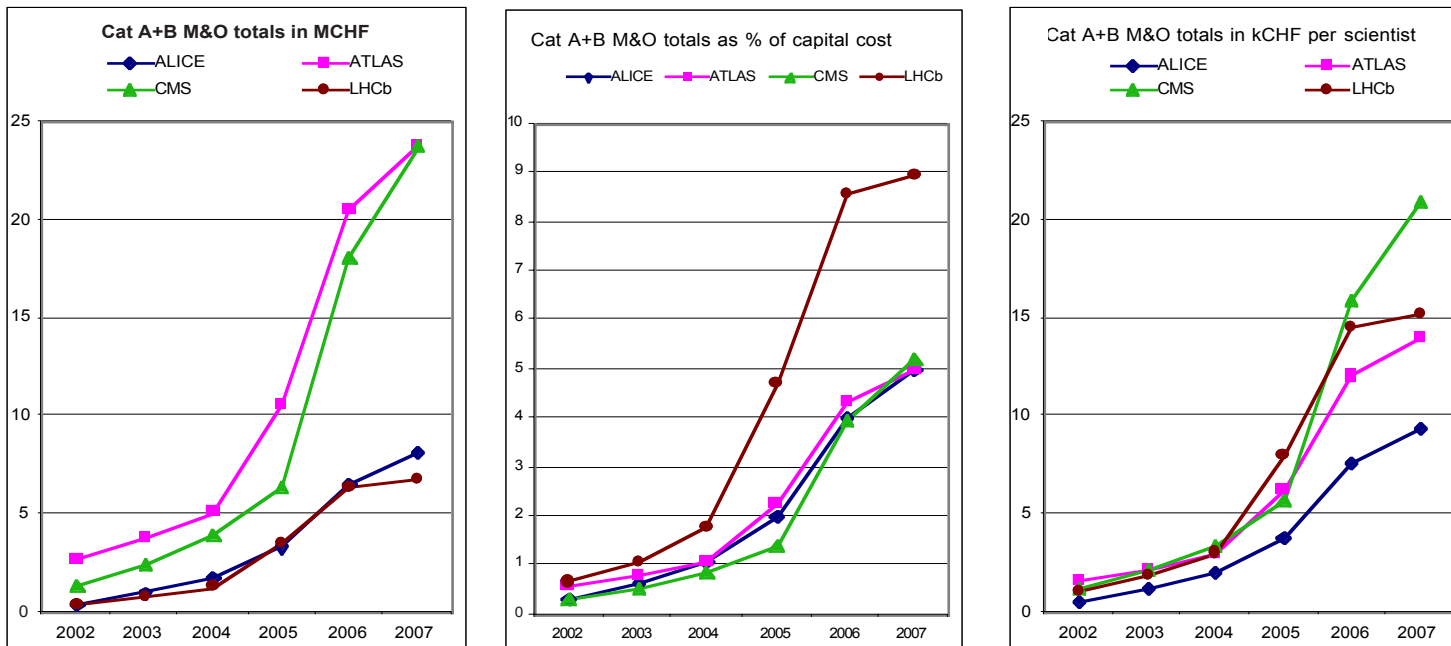
- Almost all the data are available
- Some more work is needed to make sure the rules are applied in a consistent manner
- Preliminary total: about 750 authors.

Comparisons 4 LHC Experiments – Cat. A Cost



NB: Not including cost of recording media

Comparisons 4 LHC Experiments – Cat. A+B Cost



NB: Not including cost of recording media