ALICE Summary

LHCC Computing Manpower Review

September 3, 2003

Management Structure

LCG
- SC2
- GDB
- POB
- PEB

DAQ

Int. Comp. Board

Regional Tiers

HLT

Offline Board

US Grid Coordination

EU Grid Coordination

Software projects

Detector projects

Project Leader & Deputy

Planning Coordination

Resources Coordination

Production Environment Coordination

Framework & Infrastructure Coordination

Simulation Coordination

Reconstruction & Physics Coordination

Core Offline

Lack of personnel

- Lack of personnel documented in 2001 during the LHCC Computing Review
  - Both for experiments and for common HW and SW infrastructure (IT then, now LCG)
- Funding agencies answered to the *infrastructural* needs sending people to LCG
- Experiment needs were not addressed and the situation remains critical

ALICE strategy

- Lightweight Core Offline Team @ CERN
- Single structure incorporating code & physics algorithm developers
  - Excellent integration between physicists & computer scientists => scale-economy of the personnel
  - Most of the work done by programming physicists
- Base on existing reliable components
  - Solid computing infrastructure based on ROOT
  - Open Source Grid components integrated into AliEn
  - Transition to OO/C++ completed already in 1999
- Strategic decisions already taken and demonstrated

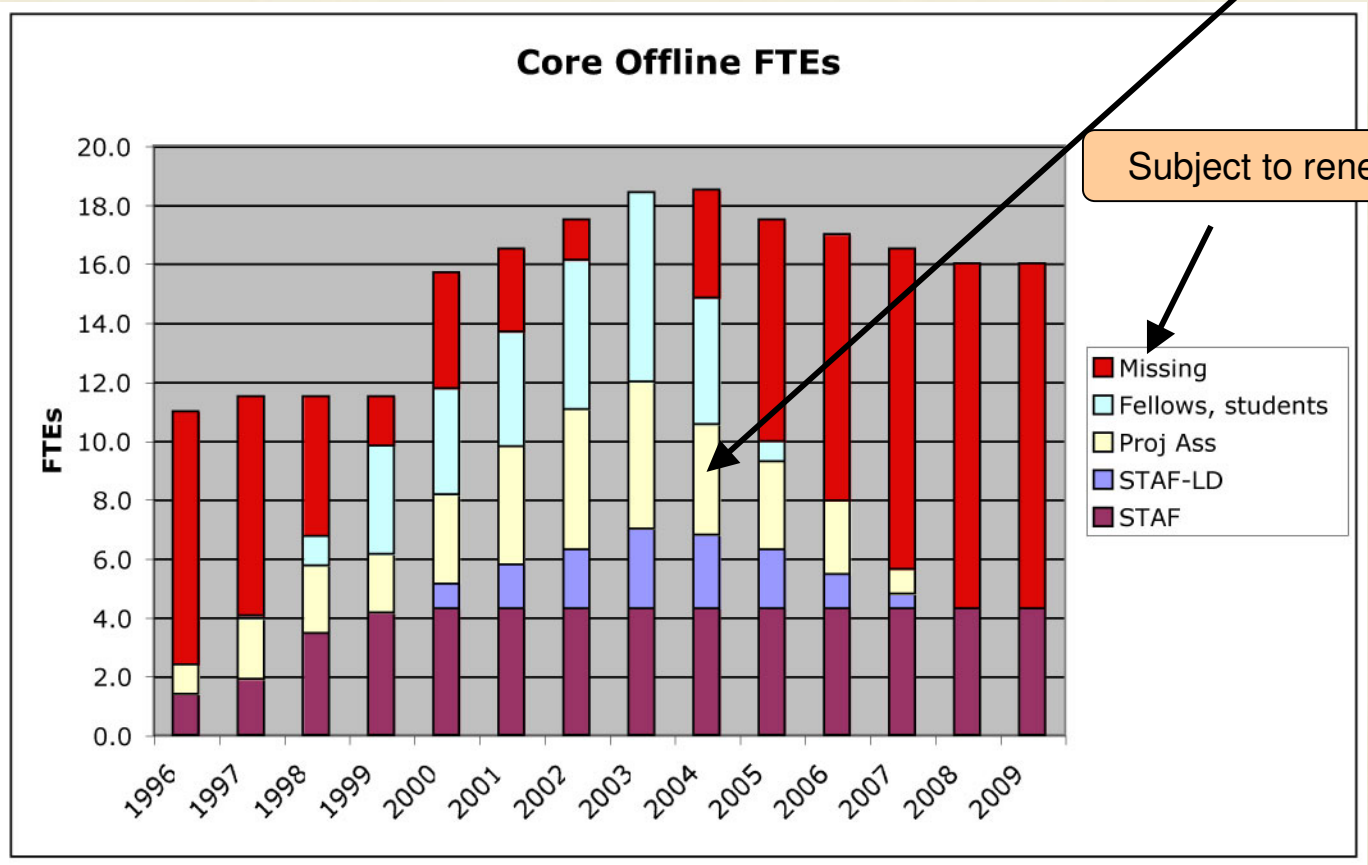
Core Offline

- Coordination and management of Offline project
- Development of some key components
- Software distribution and front line support
- Why @ CERN?
  - CERN, more than other ALICE groups, has the critical mass of people with the right skills
  - Close to LCG management and to ALICE central coordination
  - Easier to find temporary staff with the right profile
- Large common tasks are actively *farmed out* to participating institutions whenever possible
  - With some success up to now

Core Personnel breakdown

Direct contribution from institutes and ALICE CERN exploitation budget

Subject to renewal



ALICE Strategy

- This strategy made possible to adapt to constraints on human resources

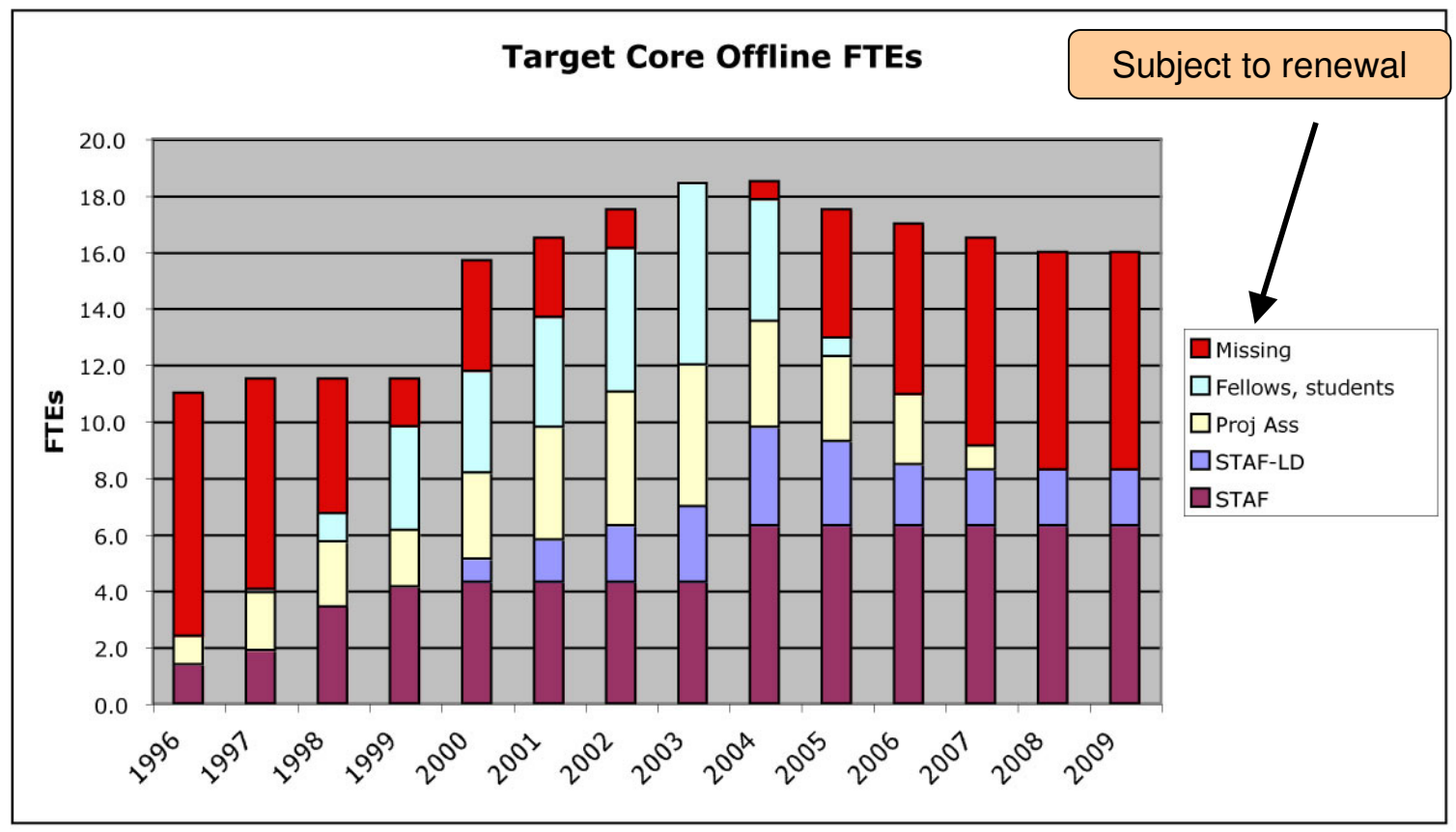
  BUT

- In core offline situation is extremely fragile because of the very small number of long term positions
  - Dependence on availability of short term CERN positions
    - Uncertainty on renewals
    - Loss of knowledge -- difficulty of knowledge transfer
    - Difficulty to cover key positions with people with the appropriate profile
    - Competition within ALICE in a fixed quota situation

Priorities @ CERN

- Have at least 1/3 of long-term personnel, limit use of fellows and students to 1/2, without changing the target number of FTEs
- Ensure the covering of key areas by converting two area coordinators now on temporary positions into CERN permanent staff
  - Failure would jeopardise the readiness of ALICE Offline
- Alleviate the “volatility” of Core Offline Team with at least two long term (6 years, LD-like) positions at CERN to replace short term ones
  - Detaching LCG LDs to ALICE would be a natural solution
  - Failure would seriously endanger the ALICE Offline

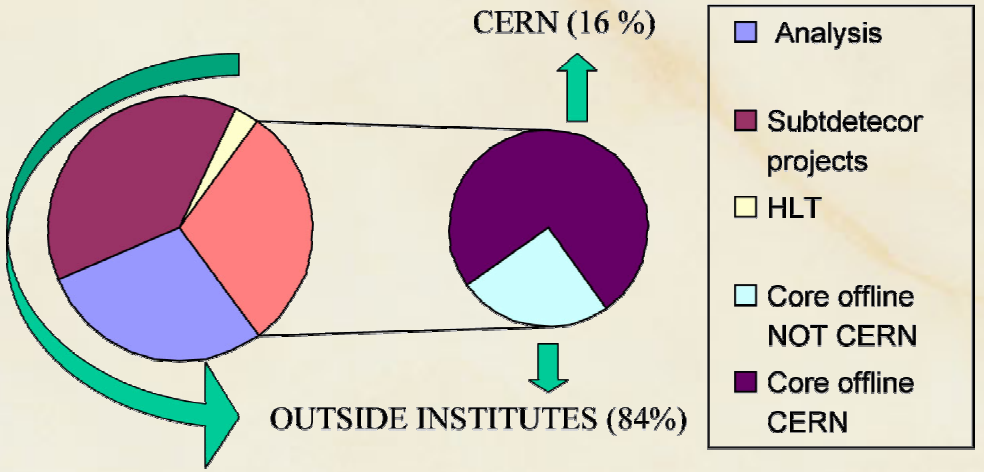
Target Core personnel breakdown



Priorities @ Outside Institutes

- About 10 FTEs missing in the subdetector projects for software developments
- Covering this deficit is important to provide high quality physics results
  - Failure to find these people means slower integration & development of physics algorithms
- This is a responsibility of the Institutes in charge of the subdetector projects
  - We are working hard to find these people
  - Additional resources from funding agencies will have to be discussed case-by-case

Global view



Activity	Item	2003	2004	2005	2006
Common software infrastructure	Needed	30.1	29.7	27.4	24.3
	Available	30.3	26.1	19.9	15.3
	Missing	0.2	3.7	7.5	9.0
Subdetector Software	Needed	46.3	48.6	48.2	48.2
	Available	37.7	35.3	33.8	33.8
	Missing	8.6	13.3	14.4	14.4
Analysis	Needed	52.0	54.0	58.0	61.0
	Available	50.7	51.2	48.3	45.4
	Missing	1.3	2.8	9.7	15.6
HLT	Needed	4.5	4.5	4.5	4.5
	Available	4.1	3.9	2.9	2.9
	Missing	0.4	0.6	1.6	1.6
Total	Needed	132.9	136.8	138.1	138.0
	Available	122.8	116.5	104.9	97.4
	Missing	10.1	20.4	33.2	40.6

Conclusions

- ALICE strategy allows to cope (at present) with constraints on human resources
  - But personnel is still a critical issue
  - The system is highly unstable
- Priority @ CERN
  - Consolidate 2 key positions (essential)
  - Convert at least two short term positions into longer term posts (very important)
- Priority @ outside institutes
  - Strengthen software personnel in subdetectors projects