

GridPP
UK Computing for Particle Physics

GridPP Project Management Board

Resource report

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GridPP financial summary

This section summarises the current financial situation in GridPP3. Details of finances in GridPP1, 2 and 2+ can be found in previous Oversight Committee papers (for example, GridPP-PMB-133-Resources.doc).

There are three channels by which GridPP spends money: first, via the SLA at RAL; secondly, via grants to the Universities; and thirdly, direct expenditure from STFC. For GridPP3, two rounds of hardware grants will be made to the Universities. The first of these occurred at the start of the project (FY08), while the next will be at the end of FY09/ start of FY10. The amount of these grants is calculated based on resources provided to the project in a previously defined period.

Table-1 below shows the financial situation at the end of August 2009, in terms of hardware, staff costs in each of the areas of the project and miscellaneous expenditure, which includes items such as travel. This table covers expenditure from FY08, which was the start of the GridPP3 project. Spend in bold has been finalised, including the FY08 SLA outturn, which covers Tier-1 hardware, Tier-1 staff, a proportion of other staff costs, and travel.

	WG	FY08	FY09	FY10	TOTAL PLAN FY08 onwards
Tier-1 HW	A	£1,658,531	£1,598,632	£2,953,000	£6,210,163
Tier-2 HW	B	£2,186,000	£400,000	£1,598,000	£4,184,000
Tier-1 Staff	A	£993,757	£1,321,136	£1,361,230	£3,676,123
Tier-2 Staff	B	£926,630	£967,363	£999,772	£2,893,765
Support Staff	C	£678,610	£552,407	£456,333	£1,687,350
Operation etc	D	£726,778	£829,302	£856,251	£2,412,330
Management	E	£316,288	£336,247	£347,391	£999,926
Misc. staff	F	£46,176	£47,426	£49,042	£142,644
Misc. spend (travel etc.)	G	£179,227	£216,400	£258,270	£653,897
Total		£7,711,996	£6,268,913	£8,879,288	£22,860,197

Table-1: Current GridPP plan

The overall project budget is shown in Table-2 below. The GridPP3 award (which covers GridPP2+ and GridPP3) was £24.661m plus a working allowance of £247k. GridPP2+ expenditure was £1,786,372, leaving funds for GridPP3 of £22,874,628.

Total Project Cost FY08 onwards	£22,860,197
GridPP 2+ and 3 Award	£24,661,000
Spend in GridPP 2+	£1,786,372
Total funds available for GridPP3	£22,874,628
Project Balance	£14,431

Table-2: GridPP project budget

The main points are:

a) Tier-1 hardware spend in FY08 was planned (at the time of the last OC) to be £1.943m. Due to a combination of circumstances, a proportion of this spend has been moved into FY09, resulting in an actual FY08 spend of £1.659m. The main components of this are:

- £306k was allocated for purchase of tape server drives. Because of the delayed start for the LHC, it was concluded that these would not be required in FY08, so purchase has been deferred until FY09.
- Due to the late move to R89, some deliveries of CPU and disk were delayed. As a result, 6.5% of the disk and CPU costs were not paid in FY08 and £70.8k will instead be paid in FY09.
- An additional rack of disk was purchased (£62k) to offset unexpected overheads in the CASTOR storage system, which is configured to prevent filesystems being filled beyond 95% of total capacity.
- £20k of hardware purchases for the 3D service were deferred until FY09.
- The full cost of the new tape robot was accrued against GridPP in FY08. However, a proportion of this was allocated to e-Science in FY09, resulting in a refund for GridPP of £62,195.

The net effect is that £334,632 has been moved from FY08 to FY09 (as noted by STFC in their internal outturn figures) due to changing circumstances. This, together with a delay of £1m from FY09 to FY10 to help manage the funding profile (see point b below), generates the new Tier-1 hardware profile shown in Table-1.

- b) STFC have requested that we consider whether some Tier-1 hardware costs could be postponed from FY09 until FY10, as a result of delays in the LHC. In response to the new LHC schedule, the experiments have re-estimated their global hardware requirements but these have not yet been ratified by the LHCC. However, we have agreed to consider a plan where we split the disk/CPU into two tranches (April and Sep) next year. In this scenario, we could commit to holding back £1m of Tier-1 HW from FY09 to FY10. If the requirements were subsequently delayed, then we would revert to a single purchase at the later date. The hardware costs for FY09 and FY10 in Table-1 have factored in this move of £1m, and the hardware spend over the two years has been re-profiled to reflect the latest experiment estimates. Nevertheless, there remains substantial uncertainty in the experiment requirements and further iterations on these allocations may be required.
- c) Costs of the OPN are included in the Tier-1 hardware line for FY09 and FY10 (see paper GridPP-PMB-141-OPN).
- d) As noted by the last Oversight Committee, due to delays issuing the grants, the Tier-2 spend for the first tranche of hardware money actually occurred in the 08/09 financial year (rather than FY07), so this has been moved to the correct column. Two other items have also been moved from expenditure in FY07: an estimated £32k set aside in FY07 for meeting international obligations on R-GMA was covered by funds from EGEE, therefore did not need to be charged to GridPP. However, although the immediate need was met by EGEE, there still exists an uncertain period where there will be a transition from R-GMA to other technologies, so we envisage that these funds may still be required. This amount has therefore been moved to the FY10 budget. A further £20k was set aside for maintaining AFS services, which has been included in the Tier-1 hardware spend.
- e) At the request of STFC, most hardware spend for the second round of Tier-2 grants has been postponed into FY10, from FY09. For a small number of Tier-2 sites this would cause significant difficulties, so an estimated £400,000 has been kept back to allocate in FY09. For the majority of Tier-2 sites, grants should be issued in early FY10.

- f) As a result of a site-wide moratorium on recruitment at RAL there were delays in hiring for the remaining Tier-1 positions, requiring GridPP to request special dispensation to begin recruitment. Once external recruitment started, the number and quality of applicants was generally low and even after resorting to external agencies it proved necessary to have a further round of recruitment to fill some posts. Overall 8 posts were delayed, mostly by 2-3 months. This has resulted in lower SLA staff costs than originally envisaged for FY 08/09, by £77,561 (4% of the total).
- g) STFC has offered to pay up to €10,000 in each of FY09 and FY10 towards UK participation in EGI. If needed, this will come from GridPP's working allowance, and has been (conservatively) estimated at £9,000 p.a. in the current planning.
- h) Due to careful management of the budget, both travel and miscellaneous costs FY08 were lower than predicted, resulting in a reduction of £19k in line G. Travel costs were reduced in part because the delay to the LHC meant there was less need for travel, and in part because late hiring of staff decreased the call on the budget. There will also be a rebate of £27k from EGEE to cover travel costs.
- i) There remains a substantial risk that continuing global financial instabilities and large fluctuations in exchange rates could significantly affect our hardware costs. The current planning is based on revised hardware estimates using information from the latest Tier-1 hardware procurement.

Staff effort

Table-3 below summarises the state of posts in GridPP3 at the end of August 09.

Work Area	FTE currently funded	Posts	Filled
Management	3.45	6	6
Misc. staff	1.13	2	2
Operations	6.5	12	10
Support	7.3	10	10
Tier-1	18.00	21	21
Tier-2	17	25	21

Table-3: Posts funded and filled in GridPP3

GridPP is now in a much better staffing position than when we reported to the last Oversight Committee. All posts are filled for support, management and the Tier-1, but there remain two outstanding vacancies in experiment support at RAL (which is in the operations line).

Recruitment at RAL has been challenging, partly owing to additional approval constraints (and consequent delays) imposed by STFC but also in the early part of the period the market was very competitive and a number of recruitments had to be repeated several times. Three additional FTE of effort commenced work in the first 6 months this year (1 fabric team, 1 production team and the extra OC approved CASTOR d/b admin) and one experiment support position started in August. One further experiment support staff member is contracted to start in October, leaving only one experiment support post of 0.5FTE to be filled.

The Tier-2 row above includes posts (Lancaster, QMUL, Oxford) where fractional funding has been allocated and the sites plan instead to support a full-time staff member for a shorter period. In these cases recruitment has not yet commenced because the effort is more important in the later part of the project when LHC data is

available. However, most Tier-2 sites have now completed their current recruitments, and staff turnover has begun to become the dominant issue. Details are:

- In SouthGrid, the EGEE-funded Deputy Tier-2 coordinator started in Jan 2009. There has been staff turnover at Bristol and Birmingham, but both these position are now filled.
- For NorthGrid, the Deputy Tier-2 Co-ordinator started in November 2008.
- In ScotGrid, there has been staff turnover in data management, storage and system administrator posts, but again these positions are now all filled. The Deputy Tier-2 Co-ordinator started in November 2008.
- LondonGrid has seen three new system administrators start in the last year at Brunel, RHUL and QMUL. However, LondonGrid remains understaffed, in particular at Imperial College where the regular system administrator has been on maternity leave.

Table-4 shows the effort delivered to GridPP3 from both GridPP-funded positions and positions funded from other sources. These figures are produced as part of the quarterly reports and it is recognized that there may be some inaccuracies due to personnel changing posts, but the table will give a general overview of the situation. Unfunded effort comes from a mix of EGEE, RAL and university internal funding. Despite the difficulties in recruiting at the Tier-1 and Tier-2s, overall effort delivered during the course of GridPP3 is 126% of that funded by GridPP and all work areas have delivered at or more than the funded effort. In particular, there are large unfunded contributions in operations and Tier-2 support, without which it would be difficult to run a successful grid.

Work Area	GridPP funded effort (%)	Unfunded effort (%)	Total effort %
Management	100	0	100
Miscellaneous	100	0	100
Operations	79	65	144
Support	96	19	115
Tier-1	88	22	110
Tier-2	87	59	146
Total	89	37	126

Table-4: Cumulative effort delivered to GridPP3 from funded and unfunded sources

Travel

Figure-1 shows the travel spend to July 2009, alongside spend in previous years. The reduced number of staff in GridPP3 compared to previous phases of the project has led to lower travel spend generally. Travel spend for FY09 is expected to be within our estimated budget, but is likely to be greater than for FY08 due to the completion of recruitment for GridPP3 positions and the LHC restart. Also note that there is a contribution from EGEE to these costs, which will not be realised until next financial year.

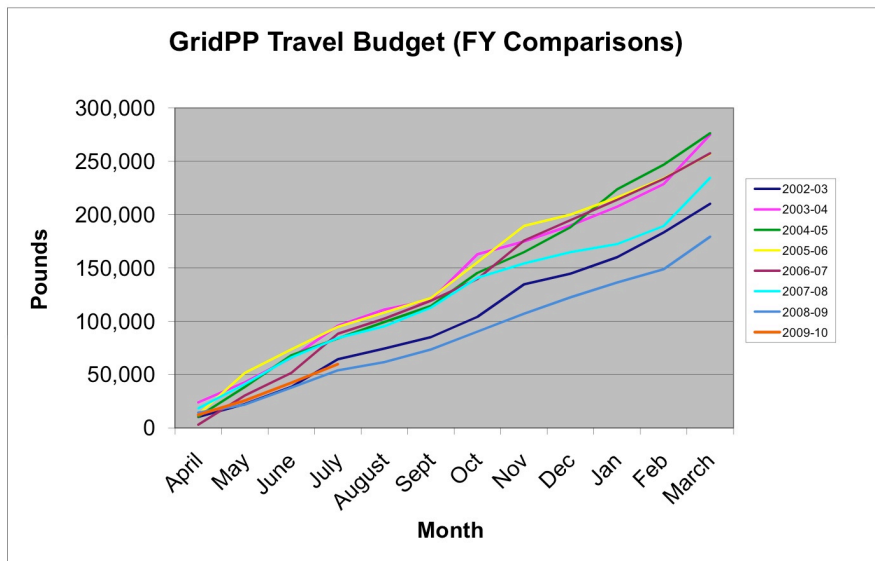


Figure-1: GridPP travel budget

Summary

The SLA outturn for FY08/09 has now been incorporated into the GridPP plan. Due to circumstances including the delay to the LHC and the late move to R89, £335k of Tier-1 hardware costs have been moved from FY08 to FY09. In addition, at the request of STFC, we have planned for a scenario where £1m of Tier-1 hardware spend is delayed from FY09 to FY10. Similarly, the next round of Tier-2 hardware grants were due to be issued towards the end of FY09. At STFC's request, all but £400,000 of this spend has been delayed to the start of FY10.

The recruitment position is substantially better than when we last reported to the OC, with nearly all staff effort expected at this stage of the project now in place. As a result of a site-wide moratorium on recruitment at RAL there were delays in hiring for the remaining SLA positions, requiring GridPP to request special dispensation to begin recruitment. However, RAL is now very close to its full complement of staff. Recruitment has also continued at the Tier-2s, and despite staff turnover all positions are filled at SouthGrid, NorthGrid and ScotGrid. Effort funded from other sources has more than compensated for the unfilled posts in the project so far, with 126% of the funded effort delivered.