GridPP5 Status

Prof. David Britton
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Context

- GridPP5 proposal was re-submitted in Feb, addressing 3 scenarios:
  - Flat Cash (i.e. 10% reduction)
  - 90% FC (i.e 19% reduction)
  - 70% FC (i.e 37% reduction)

- At the time of the last GridPP collaboration meeting at QMUL in April we had almost completed the process of presenting/defending the proposal to the Review Committee.

- In May, GridPP finalsed and submitted a 21-page document document addressing the final questions and comments from the review process.

- The review committee subsequently provided the PPGP with advice on the funding GridPP required and provided a report to STFC Science Board.

- Science Board considered this report alongside the funding recommendations from the PPGP, which had been tensioned against the particle physics experiment (PPE) programme.

To meet STFC's MoU commitment to CERN and the WLCG by ensuring that GridPP is able to handle the challenge of higher data rates and volumes of LHC Run-2.

- By providing our expected share of the hardware at the Tier-1 and Tier-2s.

- By providing the expected Grid services at the expected service levels.

- By contributing at an appropriate level to the development and evolution of the WLCG infrastructure.

Strategic Goal -2

To prepare GridPP for the 2020 start of LHC Run-3 by exploiting developments in IT technology and by influencing and contributing to WLCG's future technical direction and development.

- By actively evolving the GridPP infrastructure.
  - Requires innovation, development, prototyping, scale testing, and effort to engage with H2020 project.

- By contributing to (including leading) WLCG technical groups.
  - Need the effort do more than simply run the infrastructure.

- By working closely with the LHC experiments to ensure they can capitalise on the potential of new technology.
  - We need dedicated embedded effort in the experiments.

Strategic Goal -3

To reduce the cost to STFC of operation of GridPP by developing cost-sharing collaborations and by evolving the infrastructure to reduce the operational cost.

- By reducing the staff effort required to deliver both the Tier-1 and the Tier-2 service.

- By making use of new technology that increases efficiency and reduces effort.

- By sharing the cost of hardware and infrastructure with a wider community.

GridPP
UK Computing for Particle Physics

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Dear Dave

GRIDPP5

I am writing to update you on progress towards announcing the GridPP5 grants. The GridPP5 Review Panel report to Science Board was considered at its meeting in July 2015, alongside the recommendations from the Particle Physics Experiment Grants Panel, which had been tensioned by the panel against the particle physics experiment (PPE) programme.

Science Board endorsed the panel's recommendations in principle, which includes support for the programme defined in the GridPP5 90% flat cash scenario, but with award levels normalised to be consistent with those for the rest of the PPE recommended programme. This had to be heavily prioritised to fit within the flat cash funding agreed last year by STFC Council and included reductions to academic time, group non-staff costs and support posts.

- With Flat Cash we can meet our strategic objectives, continuing to deliver appropriate resources and excellent service to the LHC experiment and the broader community. In addition we can play a leading role in developing the UK/EU-T0 agenda with the ultimate goal of creating a more general and sustainable infrastructure.

- **With 90% of Flat Cash, we can mainly meet our strategic goals but we will not have resources to lead the development of the UK e-infrastructure.**

- With 70% of Flat Cash, we will not meet our strategic goals, except in the sense that we reduce the cost of GridPP. We will not deliver the resources or service level expected by the WLCG MoU. We will reduce the capability of the RAL Tier-1 to respond to requirements from other collaborations.

De-scope from Flat Cash scenario:

- Remove requests for effort to develop UK-T0 (1.5 FTE).

- Remove hardware (£375k) to support UK-T0 development.
  - Large risk that we will not develop new communities that would contribute to the infrastructure in the long-term.

- Reduce capacity hardware request to 92% of requirement
  - Strategic guidance required (if necessary) on whether to fully meet MoU or continue to guarantee resources to non-LHC experiments.

- Faster ramp-down Tier-2 effort to 15-FTE endpoint.
  - Introduces risks to service levels, leverage, MoU delivery.

All three strategic objectives will be met at some level but we will not underpin Objective-3 by ensuring the costs can be shared in the long term by new user groups.

- Academic Time for "leadership/management" reduced from 1.6 FTE → 0.6 FTE

- Consumables to be "normalised" to the experiment grants but there is almost none in the GridPP budget anyway.

- Travel funding to be "normalised" to the experiment grants: GridPP has submitted a paper that breaks down our travel costs.

- GridPP was asked to defend FEC on 12 posts; document has been submitted.

Overall, a Success!

- Success = Disaster avoided, and in the circumstances, probably almost as good as we could have hoped or even wanted.

- GridPP5 has been funded at the level of £25m over the next four years.

- Many thanks to all those who contributed to the proposal and it's defense….

- …. which, of course, was itself built on the achievements and reputation of GridPP4 for which you all deserve credit.

Looking Forwards

Over the next four years we need to:

- Deliver the steadily increasing MoU commitments of resources at the Tier-1 and Tier-2s.
- Maintain and improve the services we provide.
- Contribute to, and in places lead, the evolution of the WLCG infrastructure.
- Reduce the effort required to run our infrastructure. (WG)
- Engage and support new user groups.
- Engage with other e-infrastructures in the UK.
- Engage with European initiatives such as EGI, EU-T0, HNSciCloud, etc.
- Respond appropriately to the RCUK Impact agenda.
- Prepare for the period after GridPP5 (very different? GridPP?)

3.4. The proposal should set out the <u>international context of the GridPP5 phase</u> and its contribution within global initiatives, including the European Grid Initiative (EGI) and the WLCG, and the synergies and <u>coordination with STFC investment in other e-Science related and high performance computing areas.</u> Science Board has requested that the proposal set out planned developments and innovations for the future, including how the collaboration will use new technology and software to develop more efficient and cost-effective operating methods.

Talk by David Corney

It is a high priority for GridPP to engage with groups beyond HEP, particularly groups funded by STFC. This is as important as the other forward-looking work we do. Needs to be:
- *Focused*
- *Visible*
- *Enabling*

- Sep 10th, 2015: GridPP35, Liverpool
- Oct 20th, 2015: UK-T0 Workshop, RAL
- Jan 25th, 2016: EU-T0 Workshop, RAL

Opening Session

Chair –

10:30 **Welcome** 10'

10:40 **Liverpool** 5'

10:45 **Status of GridPP5** 45'
  Speaker: David Britton (University of Glasgow (GB))

11:50 **The STFC Computing Review** 20'
  Speaker: Peter Clarke (University of Edinburgh (GB))

12:10 **EU-T0 and UK-T0** 35'
  Speaker: david corney (STFC - Rutherford Lab)

Early Results & Expanding the Community part-I

Chair – Pete Clarke

13:45 **LHC Recent results** 25'
  Speaker: David Hutchcroft, Liverpool

14:10 **The Run-II computung models - how are we doing ?** 45'
  Speakers: Andrew David Lahiff (STFC - Rutherford Appleton Lab. (GB)), Alastair Dewhurst (STFC - Rutherford Appleton Lab. (GB)), Raja Nandakumar (STFC - Rutherford Appleton Lab. (GB))

14:55 **How to Archive DiRAC data to RAL** 25'
  Speaker: Dr. Lydia Heck (Durham)

Expanding the community part-II

Chair – Pete Clarke

15:45 **LSST** 20'
  Speakers: Dr. Joe Zuntz, Alessandra Forti (University of Manchester

16:05 **Lux-Zeplin** 20'
  Speaker: Alastair Currie

16:25 **UKQCD** 20'
  Speaker: Craig McNeile

16:45 **Computational Radio Therapy** 20'
  Speaker: Dr. Frederic Brochu

17:05 **Hadron Therapy ??? TBD** 20'

17:25 **Discussion : what can we do to help** 20'

Session 4

Chair – David Colling

09:00 Vac/Vcycle 20'
Speaker: Andrew McNab (University of Manchester)

09:20 CEPH 20'
Speaker: Ian Peter Collier (STFC - Rutherford Appleton Lab. (GB))

09:40 LHC workloads on ARCHER 20'
Speaker: Andrew John Washbrook (University of Edinburgh (GB))

10:00 Datacentred- using commercial resources 20'
Speaker: Dariush Marsh (DataCentred)

Session 6

Chair – Steve Lloyd

14:00 Security going forward 20'
Speaker: Ian Neilson (STFC RAL (GB))

14:20 Security and Traceability 40'
Speaker: David Crooks (University of Glasgow)

15:00 TBD 20'

15:20 TBD 20'

15:40 Closeout 15'

Session 5

Chair – Roger Jones

11:00 LHCOPN & LHCONE policy 15'
Speaker: Peter Clarke (University of Edinburgh (GB))

11:15 Named Data Networking & Technical tests for LHCONE 20'
Speaker: Duncan Rand (Imperial College Sci., Tech. & Med. (GB))

11:35 The Janet End-to-End Performance Initiative 25'
Speaker: Dr. Tim Chown

12:00 News from the HEPiX IPv6 working group 15'
Speaker: Dave Kelsey (STFC - Rutherford Appleton Lab. (GB))

12:15 QMUL experiences with enabling IPv6 20'
Speaker: Daniel Peter Traynor (University of London (GB))

12:35 How to configure an IPv6 host (demo) 10'
Speaker: Dr. Ewan Mac Mahon (University of Oxford)
📎 📄 GridPP35 - Config...

12:45 GridPP IPv6 update and discussion 15'
Speaker: Duncan Rand (Imperial College Sci., Tech. & Med. (GB))

GridPP4+ Procurement plan A	
CPU	£ 389,000.00
Disk	£ 483,000.00
Tape Infrastructure	£ 254,000.00
Tape Media	£ 37,000.00
Misc	£ 310,000.00
Total Tier-1 Planned Spend	£1,473,000.00
of which Capital is projected to be	£1,154,000.00
and resource	£ 319,000.00
Tier-2 H/W (inc PPD) capital	£ 846,000.00
Total Capital	£2,000,000.00

GridPP4+ Procurement plan B	
CPU	£ 389,000.00
Disk	£ 483,000.00
Tape Infrastructure	£ 254,000.00
Tape Media	£ 37,000.00
Misc	£ 310,000.00
CEPH 50% production scale storage system	£ 500,000.00
Cloud Infrastructure 20% production scale setup	£ 200,000.00
CASTOR Disk cache for Tape pool	£ 100,000.00
Total Tier-1 Planned Spend	£2,273,000.00
of which Capital is projected to be	£1,954,000.00
and resource	£ 319,000.00
Tier-2 H/W (inc PPD) capital	£1,246,000.00
Total Capital	£3,200,000.00

Table-6: GridPP4+ plan B procurement plan

- 1st October 2015 – snapshot of metrics will be used to guide distribution of hardware money.
- After that metrics are going to be revised (simplified) – working group looking into this.

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24th May
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10:30-11:00 Arrive (Coffee)
Scope, Aims and Background to the Meeting [Chair: Paul Jeffreys]
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Note all talks currently [20+10']
11:00-11:30 Introduction                        - Steve Lloyd
11:30-12:00 Current Project Structure           - Tony Doyle
12:00-12:30 Current Manpower Allocations        - Dave Britton


12:30-1:30 Lunch


Work Group Structures and Plans
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Middleware I "Midfield" [Chair: Roger Barlow]
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1:30-1:45  Architecture Task Force              - Steve Fisher
1:45-2:00  A: Workload Management               - Steve Fisher
                                                  (PP Dave Colling)
2:00-2:30  B: Information Services and Data Management - Alex Martin
2:30-3:00  C: Monitoring Services               - Robin Middleton
3:00-3:30  D: Fabric Management and Mass Storage - Themis Bowcock


3:30-4:00 Tea


Middleware II "Defence" [Chair: Fabrizio Gagliardi]
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4:00-4:30  E: Security                          - Dave Kelsey
4:30-5:00  F: Networking                        - Pete Clarke
5:00-5:30  K: CERN                              - Tony Cass
                                                  (PP Les Robertson

5:30-6:00  Discussion
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- Provisionally 5th and 6th of April 2016
  - IOP is 21st – 23rd March?
  - Easter is 27th March

- And the location is…. *Pitlochry (again)!*