AUSTRALIAN eRESEARCH INFRASTRUCTURE COUNCIL (AeRIC)

AeRIC Meeting - Thursday, 29 May 2008

AGENDA ITEM 4: NCI BUSINESS PLAN

Paper: The NCI Annual Business Plan was circulated to AeRIC members on 21 May 2008.

Purpose

To provide AeRIC with a summary of the NCRIS Team's assessment of the NCI Annual Business Plan for 2008/09.

Background

The ANU submitted the 2008/9 Annual Business Plan (ABP) for the National Computational Infrastructure (NCI) Project on 31 March 2008. The ANU undertook to revise the Plan and submit the revision to DIISR when:

- *the joint tender request with the Bureau of Meteorology (BoM) has resulted in greater technical and timing certainty; and*
- *the incoming NCI Director has had the opportunity to develop and expand on certain areas of the Plan that are currently under-developed.*

In assessing the Annual Business Plan, the NCRIS team gives particular consideration to:

- *the required content for the Plan, as specified in the funding agreement;*
- *the alignment with the capability investment plan as approved by NCRIS; and*
- *the degree to which any variations might represent a change requiring re-appraisal by NCRIS.*

Alignment with the PfC Investment Plan

The NCRIS Investment Plan for the Platforms for Collaboration (PfC) capability sought to continue to respond to the most recent review of APAC, which suggested that a larger share of the resource needed to be used in a capability mode and that both a higher investment level and a broader funding base were needed.

The PfC proposals also sought to respond to the priority issue inherent in NCRIS planning, which leads to a requirement on NCI to show the capability resource is deployed against priority research needs (the NCRIS Roadmap), although not to an exclusive degree.

The PfC investment plan includes the following references to NCI:

- *The NCI investment will deliver an internationally significant computing capability which can be assigned on a merit and priority basis, and build essential expertise in HPC needed to support NCRIS supported and other priority research....The investment will also develop a computing fabric that supports the migration of tools and systems towards users. ...The outcome will be a national computing environment in which computing power can be configured to match the tools and analyses required by priority research.(p7)*
- *This component will bring together co-investors in major computational infrastructure and related service providers and work towards the vision: "*An inter-operating infrastructure of peak, shoulder, institutional and departmental resources matches

capabilities to needs and priorities.*"...The component will provide support on a merit basis and to the more purpose-specific computing capabilities needed by other NCRIS investments. The capabilities will be extensible and allow third parties to co-invest for dedicated capacity or to 'purchase' capacity dedicated to discipline or problem specific services....The intention is to maximise options for economies of scale, to build-on rather than compete for expertise, and to provide a number of managed environments able to support computing capacity and services needed by other NCRIS investments....The capabilities will be extensible and allow third parties to co-invest for dedicated capacity or to 'purchase' capacity dedicated to discipline or problem specific services." (p20)*

- *The national computational fabric should aim to provide the underlying computing capability that best supports the key disciplines and priority research of NCRIS investments....It is expected the overall systems should support the capabilities and priority research areas identified in the business plan for that system....This investment will make available computational resources to researchers at a national level....It should market advanced computing to researchers and research managers and provide opportunities for networking that can lead to cooperation and skill enhancement through collaborative projects. (p22)*

Summary

The NCI Business Plan provides details as required in the funding agreement, outlining progress to date with regard to governance, co-investment negotiations, preparatory work to identify procurement requirements for a development cluster in 2007-2008 and a new peak system in 2008-2009. The Plan also provided a brief outline of activities relating policy and outreach, a notional budget, list of milestones, risk assessment and key performance indicators.

The Investment Plan required the following to be addressed in the Annual Business Plan:

- a Governing Committee with a Director charged with the ongoing development of an integrative framework for aligning significant compute infrastructure requirements and investments;
- a national peak capability service commensurate with international practice focussed on advanced services for the cohort of expert users with research goals that depend on such a capability;
- a national computational fabric complementing that peak capability with several application specific systems, supporting NCRIS priority research;
- a community based merit allocation system to consider system priorities and allocate resources against research community needs; and
- support activities to assist application development and porting and to develop a stronger network of computational researchers.

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Governance

In particular, the ABP reports on the progress of implementing the governance arrangements to support the ongoing implementation of NCI.

The NCI Steering Committee has been established to advise ANU on the implementation of NCI. Following discussions between ANU and the then DEST regarding the composition of

the NCI Steering Committee, representatives from CSIRO, BoM, Geoscience Australia and the research intensive universities are currently members of the Steering Committee.

This has been a very welcome development, and underpins the cooperative framework within which ANU, CSIRO and BoM, in particular, are moving to acquire both the next National Facility research system and the BoM's production weather forecasting and climate research system.

Issues

The critical issue with respect to the Annual Business Plan will be the extent to which progress against the Plan will be able to be reported in the next Progress Report due at the end of September 2008, in order to evaluate the Plan against the key performance indicators. At this stage, there is insufficient information on the new Peak System (pending the results of the joint tender with BoM), and on the progress with the negotiations for the Specialised Facilities. Without these details it would be difficult to determine the extent of progress against the Plan in the next Progress Report due at the end of September 2008, and to evaluate the Plan against the key performance indicators.

However, we note that ANU has offered to submit a revised Business Plan once this detail is known, as a result of the tender process currently underway.

Action

That AeRIC note the assessment of the NCI Business Plan by the NCRIS Team against the requirements under the NCRIS Funding Agreement.

NCRIS Team
May 2008

AGENDA ITEM 4: Continued

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Purpose

To provide AeRIC with the Executive Director's comments to DIISR on the additional PfC issues for Annual Business Plans, namely:

Q1 *The degree to which the PfC infrastructure and services are being tailored to meet the needs of NCRIS researchers as well as participants in other research activities*

Q2 *The extent to which the PfC infrastructure and services are being utilised across NCRIS capabilities and other research activities*

Q3 *Evidence that common services can be and are being used to harness resources and expertise to achieve research goals not otherwise attainable.*

To begin with, the proposed joint acquisition with the BoM represents an initiative that clearly could achieve these goals in at least the area of climate and earth system systems science.

The specialised systems and CT&T components of the NCI plan, through their proposed EOI processes, are also able to support strategic alignment with NCRIS roadmap goals, but the nature of the EOI will determine the extent to which this is achieved.

Specialised Systems:

A call for Expressions of Interest (EoI) in participating in the Specialised Facility (SF) sub-program will be made. The call may be restricted. Minimally NCRIS facilities, state-based eResearch infrastructure providers and universities with relevant infrastructure projects will be included.

CT&T Program:

The NCI/SC will issue a call for EoI from the research community to co-fund activities to assist that community (such as astronomy, geosciences, computational chemistry) to improve the software development environments for users of the facilities in NCI. The CT&T EOI will go through a similar process as the SF call.

However, some delivery of computational power from the overall NCI resource to specific application areas is needed if a 'strategic use' of the majority of the funding is to be realised.

This was the requirement behind the reference to both merit and priority allocation process in the NCRIS contract.

The ABP appears to propose the continued use of a relatively unaligned MAS if a general view of "Research Quality" is applied independent of domain of application.

Merit Access Scheme

The MAS considers applications for use of the capability computing resource which are assessed on the criteria:

- Research Quality
- Appropriateness of the capability system (needs supercomputing)
- Reasonableness of the level of resource requested
- Track record of the applicant (can make effective use of a supercomputer)

The risk is that this approach will fail to support a future argument for significant expansion or lay the groundwork for multiple capability systems; as an increased investment would need NCI to articulate and deliver resource into (at least some of) those problems that have sufficient importance to Australia to justify the expense of supercomputing investment.

Also:

- The NCRIS Roadmap Review is revealing few explicit statements of demand for HPC. This suggests NCI needs to undertake a significant marketing campaign and perhaps needs to demonstrate that it can guarantee the delivery of resource to areas of need, to support the success of such a campaign.
- If non-academic research users are to be supported, the unavailability of merit indicators, such as ARC grant performance may lead NCI into difficult waters regarding the efficacy of the MAS. A careful consideration of the MAS in widening the pool of applicants is needed.
- It appears there is a widespread view that capability computing is "provided", a view that may be reinforced by the MAS process itself. Alternatives such as the provision of subsidised but still partially costed services may need to be evaluated.

Action

- Some feedback should be sought on the reasons for delay in progressing the CT&T and Specialist Systems activities as I regularly field queries as to why they have been abandoned.
- A review of the impact of access and allocation methodologies should be undertaken and a revised Allocation Scheme provided at the time of the Annual Progress Report, along with the rationale for the manner in which that scheme supports the sustainability and strategic alignment of the overall NCI investment.

  Essentially I am suggesting that if the contractually proposed "Access Sub-project" has been completed a more thorough interaction with NCRIS is required as the result has not met expectations; and if it hasn't been completed, then it should be undertaken as soon as practical.

I have extracted relevant references from the contract.

Executive Director
May 2008

Attachment A – Extracts from NCI NCRIS Funding Agreement

GOVERNANCE And MANAGEMENT

Merit Allocation Committee

The role of the MAC will be to make allocations granting access to the NCRIS share of the resources on the National Facility and other funded facilities. The principles of the Merit Allocation Scheme by which merit allocation will be determined will be outlined in the Annual Business Plan and agreed with DEST.

PROJECT ACTIVITIES

Access Sub-Project

This sub-project will review various merit and priority access processes, with a view determining the most appropriate process for the NCI. Areas highlighted for development include multi-year allocations, data allocations, coordination of merit processes across peak and specialised facilities, the composition of the merit committee, and shares allocations. Further, the sub-project will also examine changes in shares depending on the needs of the community, and purchase options for research and non-research users. The sub-project will also re-evaluate access conditions as part of any technology change occurring within the Operational Facilities and Services Activities.

Policy Sub-Project

A range of policies will be required to meet the goals of the Project. These may include acceptable use policies as technology developments change; policies resulting from access considerations; and operational considerations of the NCI facilities.