TASCS News Update

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Review Comments Received

- Overall ratings: Good (6), Very good (7×3), Excellent (10)
- This is important and relevant for many science application areas…
- …great potential to encourage and facilitate collaborative advanced HPC activities…
- The CCA has already demonstrated great impact…
- The project has a great mix of computational scientists and applied mathematicians all working in close collaboration with domain-specific scientists.
- Many partnerships are listed – given the universal and cross-cutting appeal of the idea this is unsurprising.

More Comments

- The project has interacted with SciDAC projects of [list]. The software quality and capability of these applications are greatly enhanced.
- For such a large project…this is indeed a comprehensive and tightly integrated effort. The team has a history of working effectively together…
- The interaction with other SciDAC projects and institutions is one of the great strengths of this project.
- Again, the greater impact of this project is in the contributions to better software engineering practices and a scalable solution fo software integration.

More Comments

- TASCS and the CCA have achieved impressive milestones towards the implementation of a component-based solution to a number of key DOE/SciDAC areas.
- Having attended one of he CCA training classes in the past, I can attest to the care and attention to detail devoted to training and community building activities by the development team.
- Elimination of parallel coupling part due to reduction of budget is very unfortunate.
- ***The CCA is a Poster Child of what a SciDAC project should be.***

Things to Think About

- …stress software sustainability and the parts of their efforts that will outlive the current funding cycle.
- Capitalization of third party software (as part of the CCA Toolkit) needs to be better addressed…
- Perhaps one area that I'd have expected CCA to have been more advanced in is testing…
- …recommend a systematic benchmarking activity so that one can track and verify that indeed the CCA is living to its promise of high performance.
- The biggest problems appear to be in usability – the investigators have started several efforts to address this… However much remains to be done – progress is being made, but will take time.

More Things to Think About

- The idea of “socially scalable builds” is a great follow up to ideas and deliverables/tools that are current more mature in the project.
- The effectiveness of the CCA technology will be measured by how well the HPC software development community receives the technology…

Reviewer 33 Sums Up

- While one can make a reasonable case to start preparing a "sunset" for this initiative on many grounds – diminishing returns… -- I would argue strongly against that. The technology has been nurtured over the years and appears to be at a point where at least a few groups are benefitting a lot from it. The potential for reusability, verification and composability – all long sought goals of software development is tremendous.
- The scale of this effort is one I do have some concern about. The potential of the methodology to reduce "time to science" is very high but at the scale it is supported it will be very hard for this technology to become default operating procedure for SciDAC and DOE as opposed to being of use to a small set of pioneers. Unless there is a larger adoptions of these methodologies the use of these will ultimately diminish. The investigators have an awareness of the issues involved but it will take time and persistence from the funding agencies to carry these ideas to fruition.

But OASCR Sees Things Differently

- …we determined that the SciDAC portfolio is no longer optimal in today's environment. This is not surprising, given the rate of change in computing since 2006.
- Unfortunately, we have determined that [TASCS] is no longer on the critical path for this phase of SciDAC.
- Therefore, we have decided to bring TASCS to an orderly conclusion over the next 12 months.
- 6 months of FY2010 funds to TASCS laboratory partners
- 12 months of funding TASCS university partners

Where Does This Leave Us?

- Established users of the CCA tools concerned about support for the tools beyond FY10
  - 18 active projects, 9 component products, 5 submitted proposals
- TASCS members need to find new funding for FY10 and beyond
- OASCR has (almost) no HPC software engineering in their research portfolio

Developing a Path Forward: Priorities

- Provide longer-term support for the CCA tools for users
- Develop new funded projects for TASCS participants
  - May or may not be related to HPC software engineering
  - Keep team together (to the extent possible)
- Focus remaining TASCS efforts for greatest effect
  - Bug fixes, capability and sustainability improvements to tools
  - Documentation
  - Critical new tool developments
  - Documentation
  - R&D driven by user needs
  - Documentation
  - R&D which can be leveraged by future projects
  - Documentation
- Future of the CCA Forum will depend on our success with the items above, and continued interest and participation

Developing a Path Forward: The "Have Done" List

- Understand minimum levels of effort needed to support CCA tools
  - Still considering whether "community support" is feasible
- Developing a solid list of users, contact info, and tool usage
  - Still need to look for "special" needs w.r.t. tools and collaborative research
- Inform users of situation, plans to move forward
- Initiate discussions with OASCR

Developing a Path Forward: The "To Do" List

- Work with OASCR to determine…
  - Viable funding strategies for on-going support of CCA tools, and corresponding operational models/plans
  - Programs, topics, and sizes of proposals "most likely to succeed"
- POCs contact users for special needs
- Develop plan for work on CCA tools
- Understand the lessons learned from TASCS
- Brainstorm new research ideas
  - DOE is not the only potential sponsor
- Prioritize and rescope other TASCS activities
  - As soon as we have a clearer picture of the path forward