



To:
Whom it may concern

Cc.:

From:
DCSC Secretariat

Subject:
Executive summary: Grant application "The National Programme for Research Infrastructure"

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On 20 March 2007, the Danish Agency for Science, Technology and Innovation posted a call for expressions of interestⁱ for national research infrastructure grants. Five university rectors responded through the Danish Center for Scientific Computing (DCSC). On 26 June 2007 the Agency invited the rectors to submit a full elaborated grant application.

The application consists of

- "Application Form T", the research advisory system's standard application form required for application to the call.
- Two cover letters from the applicant consortium of rectors.
- "Annex 1 to 5" (the actual application):
- A popular science introduction (Danish and English), with case stories and a demonstration video, which is unchanged since it was first submitted together with the expressions of interest.

Executive summary

In the light of globalization and increasing pressures on national economic competitiveness, the applicant consortium, five Danish university rectors, argue that a strong research sector based on an advanced information and telecommunication technology infrastructure is becoming more and more important. If Denmark is to become a leading *knowledge-based* society, Denmark must have a strong eScience foundation. The term eScience is used here to describe the application of advanced information and telecommunication technologies (ICT) in research, the use of global collaboration within key areas of science, and the development of the next generation of ICT infrastructure that will enable these activities. World class scientific computing facilities are an essential part of ICT infrastructures for a vast variety of research areas.

In line with recommendations from the report "*Future Research Infrastructure – An Analysis of Needs and a Proposed Strategy*"ⁱⁱⁱ from the Danish Council for Strategic Research, the rector consortium hereby seeks financial assistance to unite and strengthen a significant part of the basic eScience infrastructures in Denmark, supplied by the *Danish Center for Scientific Computing (DCSC)* and the *Danish Center for Grid Computing (DCGC)*.

Scientists from a broad range of scientific areas use *scientific computing*, based on significant distributed computer resources and large data storage facilities, for complex calculations, modelling, simulation, and analysis. Scientists have a substantial need for *Grid computing* to seamlessly bind distributed resources together.

This application argues that by uniting and strengthening DCSC and DCGC, Denmark will be much better equipped to participate in international scientific grand challenge endeavours.

A set of case stories from DCSC's user community are presented, in order to show more explicitly where Danish research could achieve more, if granted a stronger SC infrastructure.

A total funding of DKK 55 million (EUR 7.4 million) over three years (2008-2010) is proposed, divided over two DCSC expansion phases:

Phase 1 - DCSC strengthening and Gridification (2008):

1. Strengthening the DCSC call for scientific computing proposals
2. Introducing specialisation and division of labour - Constructing a centralised national SMP installation
3. Gridifying the decentralised Danish scientific computing resources
4. Securing Danish participation in international Grid cooperation
5. Strengthening the DCSC secretariat

Phase 2 - Consolidation, support, education and liaison (2009-2010):

1. Further consolidation of phase 1, but in a unified DCSC/DCGC organization
2. Adding how-to courses with targeted instruction on the merits of Scientific Computing and Grid infrastructure
3. Adding technical/academic user support
4. Adding joint R&D projects with the Danish Research Network and Denmark's Electronic Research Library

ⁱ Call for expressions of interest: <http://fist.dk/site/forside/soeg-stoette/opslag-stoettemuligheder/2007/denationale-pulje-for-forskningsinfrastruktur>

ⁱⁱ *Fremtidens forskningsinfrastruktur - kortlægning af behov og forslag til strategi*, Det Strategiske Forskningsråd, 2005.12.01: <http://fist.dk/site/forside/publikationer/2005/fremtidens-forskningsinfrastruktur-kortlægning-af-behov>