

Innovation from science – experience at STFC

Tim Bestwick

Science and Technology Facilities Council
Erice, October 2012

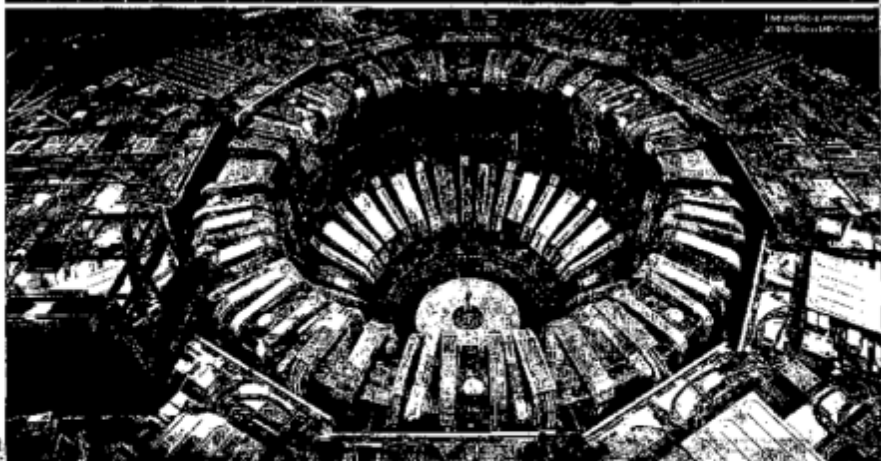


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Search for a spin-off | Previous successes from the home of the Hadron Collider



The world's most powerful particle accelerator

Medical scanners

Cern has looked at the forefront of the technology behind PET and MRI medical imaging machines since building particle accelerators with Geneva's hospitals in the 1970s. Electronics developed for Cern's ultra-radiating Large Hadron Collider are also an obvious high profile use of Cern's PET/MRI scanners that would provide more detailed images of the human body.

Touch screens

More than three decades before the technology became ubiquitous, the first touch screen control panel was developed at Cern in the 1970s by Peter Stenroos, a Danish physicist. He had been asked to come up with a system to replace the thousands of buttons, knobs and switches needed to operate Cern's Super Proton Synchrotron particle accelerator.

World wide web

The Internet as developed the world wide web in 1990 as part of a Cern project to improve information sharing between its network of 10,000 scientists working in collaboration and experiment across the world. The infrastructure was developed in its Geneva-Lausanne agreement in the coming century of the LHC's opening.

Greater commercial returns sought from Cern

By Andrew Evans, North of England Correspondent

Britain is operating an effort to attract bigger commercial returns from the bills involved by the world's governments in Cern, the European particle research laboratory. Cern is last year, an issue in the Large Hadron Collider, the most powerful atom smasher when active, late to fully discover the Higgs boson "God particle", which explains matter. Its research, also helped create the world wide web and MRI technology since the 1970s to 2014. "We don't believe money can be done in terms of commercial value. We want to get technology from inside the facility better than the outside,"

says John Womersley, chief executive of the Science and Technology Facilities Council, the UK research body. "Cern's infrastructure bill is about £100bn to get better at." Cern and the STFC are opening a copyright for use for the companies to receive funding and licence will help them submitted all the laboratory's research. Prof Womersley said the collaboration would help develop "highly skilled" Cern's staff elsewhere in a way that "this might be people's lives". He said would companies who still deal at high-end technology, selling their own software. Womersley said at Cern last year was established by a Working Group will receive £400m funding to

in 48 hours perhaps separate from Cern and to help from the STFC, access to intellectual property of professional staff and CERN's facilities (CERN is Swiss territory, the financing is provided by the UK and Switzerland). Paul Vernon, head of design development at STFC, said similar opportunities could include security clearance - as Cern has developed technology to detect nuclear - or bio-threats the conditions such as an emergency. But he added "it is not likely to be something we don't expect. That is why we are opening it up as an innovation enterprise."

Working together will also be able to encourage via investment from Liverpool and Manchester as well as the UK or to other institutions in the Duchesne site, which includes RHM and UCL. The STFC contribution from a year to 2015, a fifth of the council's budget. The programme will receive £15m annually in contrast to other areas. Steve Myers, Cern's director of operations, said he is looking for a way to help to maximise the benefit to society of Cern technology through the development and exploitation of intellectual property. The STFC's Business creation capital fund could also become involved. STFC's Innovation commercialisation can also help create more

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Technology and trophies

£40,000
Funding which companies will receive

40hrs
Technical support from CERN where will receive

£100m
Save the STFC contribution to Cern each year

£15m
Value of Cern contracts UK companies receive annually

The Economist

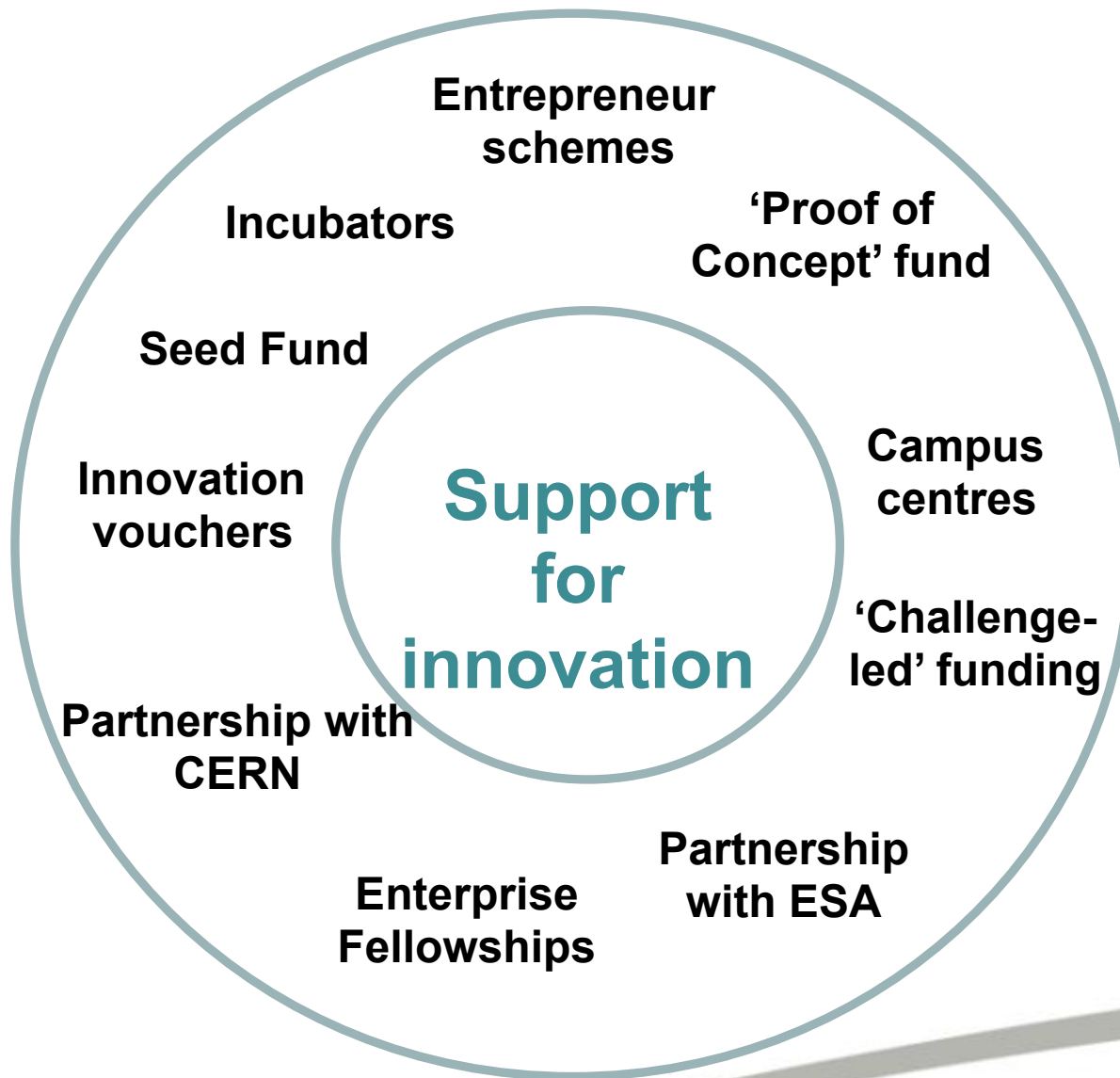
JULY 7th-13th 2012 Economist.com

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A giant leap for science



Finding the Higgs boson





Entrepreneur schemes

Incubators

'Proof of Concept' fund

Seed Fund

Innovation vouchers

Support for innovation

Campus centres

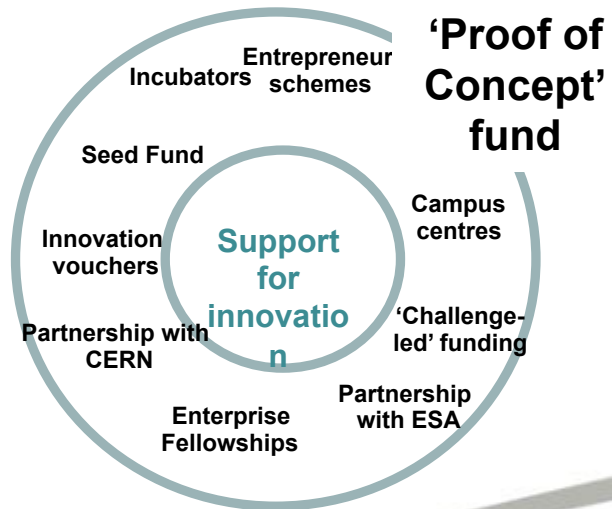
'Challenged' funding

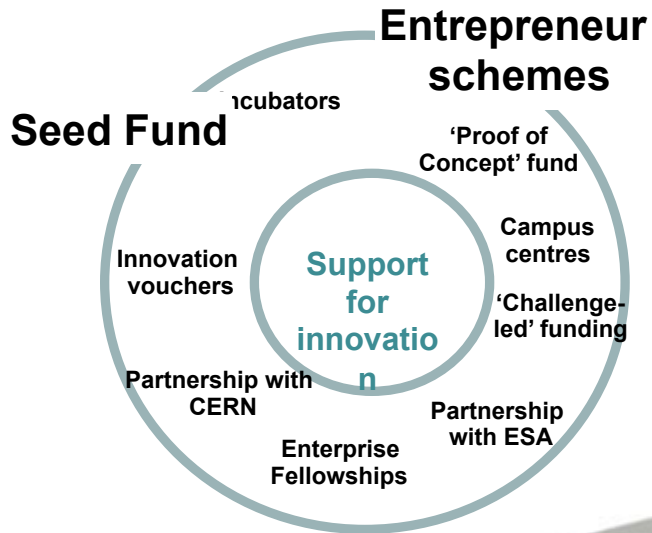
Partnership with CERN

Enterprise Fellowships

Partnership with ESA



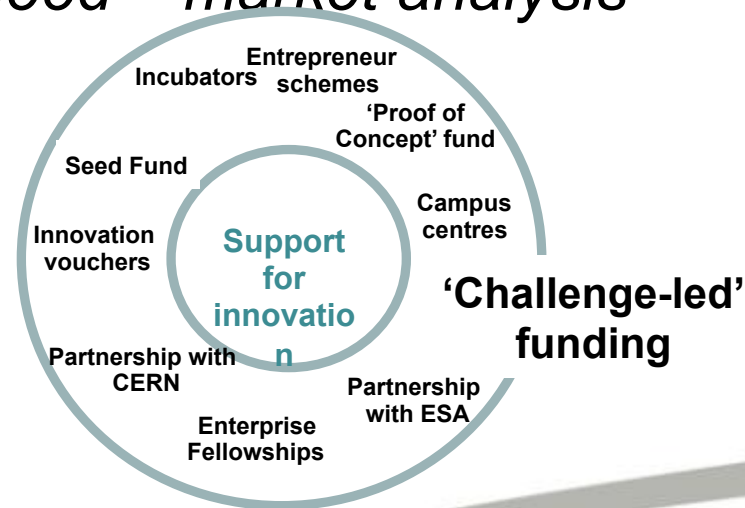




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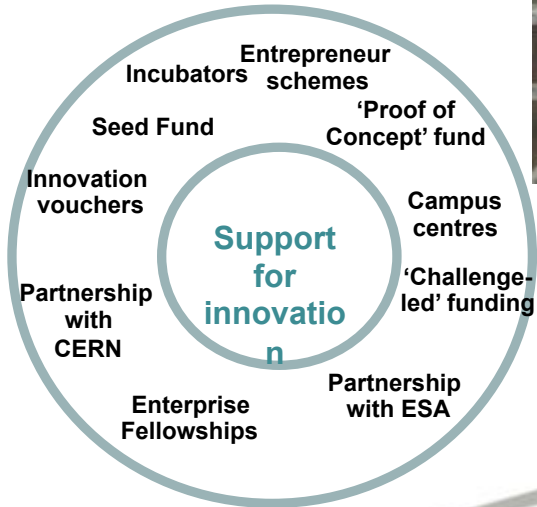
Challenge-Led Applied Systems Programme (CLASP)

- *Novel and imaginative projects from STFC research*
- *Theme for each call (e.g. 'medical')*
- *Demonstrate market need – market analysis*
- *Mentoring of projects*
- *Any size of project*





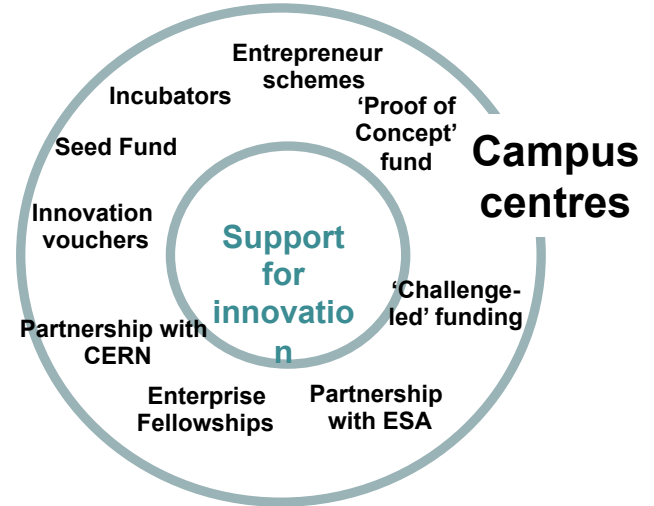
“Bridging the “valley of death”: improving the commercialisation of research “







Daresbury Research Collaboratory leads the way in data-intensive computing



Overview

The need

Daresbury Research Collaboratory (DRC) has been established in association with IBM as part of a major UK government investment in business-focused high-performance computing. The DRC needed a powerful, energy-efficient infrastructure to support both general computing and Big Data projects.

The solution

DRC deployed Blue Wonder, an IBM System x iDataPlex cluster comprising 8,192 Intel Xeon E5-2670 processor cores. Software from IBM, ScaleMP and Platform enables shared file system access across the entire cluster and the rapid provisioning of large-scale shared memory environments, ideal for Big Data workloads.

The benefit

Provides an easy entry-point for high-performance computing for UK organisations of all sizes. Supports the development of business applications capable of taking advantage of HPC architectures. Complies with "Green IT" objectives and saves on electricity costs with energy-efficient design and energy-aware scheduling of tasks

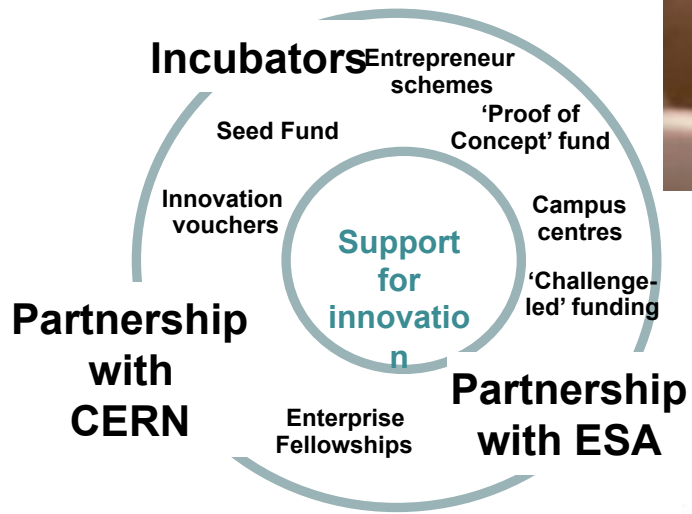
Founded in 2012, Daresbury Research Collaboratory (DRC) is part of a new centre of expertise in computational science and engineering located at the Daresbury Science and Innovation Campus near Manchester. The DRC was created by the Science & Technology Facilities Council (STFC) in association with IBM, as a result of a

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I-TAC February 2010 to June 2012:

26 companies supported with access to laboratory space and equipment

34 new jobs created

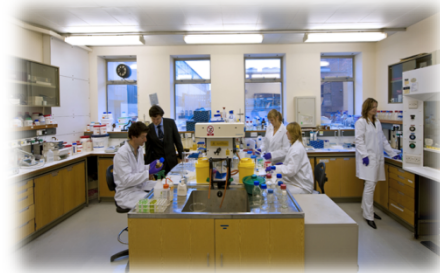
Over £8.5 million has been secured in investment into those companies

5 new products have been taken

8 patent applications

2 licensing agreements

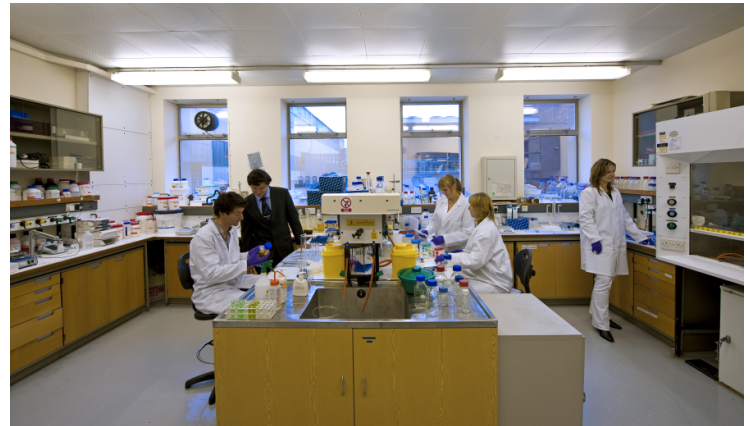
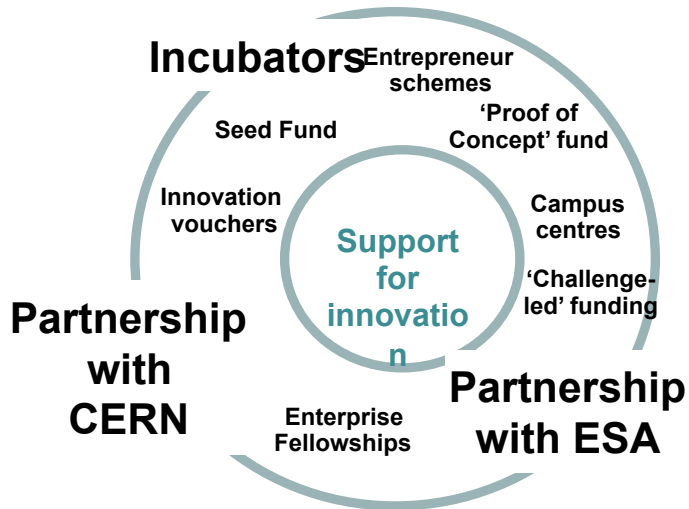
Innovations Technology Access Centre



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technology



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STFC and CERN are pleased to announce the first call for applicants onto our new business incubation centre (BIC) programme.

If you are a high-tech start-up or SME looking to take high energy physics technologies to commercial applications, then the STFC CERN BIC's unique combination of funding, technical expertise, office space, and business support, could provide the perfect environment for your company to flourish.

This comprehensive offering includes:

- £40,000 of funding for use on intellectual property (IP) protection, design, prototyping, market studies etc.
- Access to up to 40 hours of CERN and 40 hours of STFC scientists and technical expertise
- Use of CERN IP with favourable conditions
- Opportunities for collaboration and networking on the Sci-Tech Daresbury science and innovation campus and through STFC and CERN networks

The scheme is open to up to 5 companies per year over its two-year pilot, and the deadline for the first selection day is **9th November 2012.**

