



Science & Technology
Facilities Council

Economic Impact Reporting Framework 2007/08

November 2008





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Introduction

This is the first annual Economic Impact Reporting Framework (EIRF) published by the Science and Technology Facilities Council (STFC). Wherever possible this report merges the frameworks of STFC's two predecessor Research Councils, the Particle Physics and Astronomy Research Council (PPARC) and the Council for the Central Laboratories of the Research Councils (CCLRC). However, where this has not been possible it has been clearly highlighted within the tables.

These reports were implemented across all the Research Councils in 2005 and form part of the new Economic Impact Framework managed by the Department for Innovation, Universities and Skills. More information about the Economic Impact Framework can be found at: <http://www.berr.gov.uk/dius/science/science-funding/framework/page9306.html>

The EIRF contains data on selected aspects of STFC performance relevant to the Government's objectives for the UK science base:

1. Overall economic impacts;
2. Knowledge generation (stock of publicly available knowledge);
3. Knowledge generation (human capital);
4. Investment in the research base and innovation;
5. Framework conditions (public engagement);
6. Framework conditions (financial sustainability);
7. Knowledge exchange efficiency.

The majority of indicators in this report were recorded in the previous Output 1 reporting framework, apart from those in knowledge exchange efficiency, the majority of which were captured in the previous Output 2 framework. The framework shows, where possible, the data for 2005/06, 2006/07 and 2007/08.

The Council's EIRF should be read in conjunction with its 2007/08 Delivery Plan Report (<http://www.scitech.ac.uk/Resources/PDF/STFCDelPlanRep0708.pdf>) and Annual Report (<http://www.scitech.ac.uk/resources/pdf/STFCAR0708.pdf>), which provide a comprehensive summary of achievements over the period.

1: Overall Economic Impacts

The Economic Impact of the Synchrotron Radiation Source (SRS) which closed in 2008 following 31 years of successful operation, was reviewed by STFC in 2007-2008. Although much of the work was done outside the current EIRF reporting period, STFC would like to highlight some of the successes:

- **Worldwide synchrotron community**
 - SRS world's first 2nd generation multiuser V-ray SR facility;
 - Provided exemplar for facility operations (industrial access, radiation protection, ancillary laboratories);
 - Now over 60 SR sources worldwide, SRS staff involved in over half.
- **Financial impact**
 - Budget spend - £468M, 90% in the UK and 40% spent in wages in the North West;
 - Direct jobs created by the SRS - 229 employees for 31 years, creating induced economic impacts via spend of wages and creation of new jobs;
 - Worked with over 300 local businesses, creating indirect economic impact on the supply chain of these businesses.
- **Science from SRS**
 - Two million hours of science carried out on the SRS which produced 5000 papers and solved over 1200 protein structures;
 - Research had impact on daily lives, for example, the structure of foot & mouth disease was solved using the SRS which is paving the way for a vaccine.
- **Skills & qualifications**
 - Critical mass of highly skilled engineers, technicians and instrumentation developers and researchers built;
 - 11000 individual users have used the SRS during its lifetime from over 25 countries;
 - 4000 students have used the SRS as part of their degrees or doctorates;
 - 2000 post-doctoral researchers have used the SRS for some aspect of their research;
 - More than 110 staff transferred to academia, other synchrotrons or industry, transferring their knowledge.
- **Commercialisation of SRS technology**
 - 4 spin-outs, 4 potential spin-outs, 3 indirect spin-outs;
 - 1 commercial service providing access for industry;
 - 25 patents registered;
 - 11 licenses, revenue ~£1M.
- **Usage of the SRS by industry**
 - 197 proprietary customers - government departments, industry, hospitals, museums, universities, other SR sources;
 - Industrial customers – pharmaceuticals & healthcare, oil & petroleum, chemicals, consumer products & food, aerospace & defence, energy, automotive.
- **Technology transfer to industry**
 - Transfer of unique skills and technology to industry on several projects allowing partners to win contracts:
 - ◆ Joint design and production of Helios compact synchrotron source by SRS staff and Oxford Instruments for IBM, contract worth £18M to Oxford Instruments;
 - ◆ e2v won £250M of sales after development of antimultipactor coating in collaboration with the SRS.

Research from STFC funded facilities has led to the formation of several spinout companies which are starting to have huge economic impacts. Examples include:

- **LaserThor** - 'Leaves on the line' costs the UK rail industry over £100M every autumn, a cost made up of performance fines, treatment costs, incidents and accidents and associated investigations. LaserThor has successfully developed the Laser Railhead Cleaner (LRC) using state of the art laser and optical technology capable of operating at

40mph. Network Rail now plans to replace its current methods of treating leaf contamination with LaserThor's proven LRC equipment. More details from:

<http://www.laserthor.com/>

- **Microvisk Technologies** have developed Micro Electro Mechanical Sensors for the international medical market. The technology will be available as a Point-of-Care and a Home Use Test improving the management and ease of testing to monitor Warfarin Treatment. More information can be found from: <http://www.microvisk.com/>
 - **Benefits of a Point of Care Device:**
 - ◆ Faster, no delay whilst the test is sent to the Laboratory;
 - ◆ Faster, the patient gets their result in a single consultation;
 - ◆ Less cost to the healthcare provider.
 - **Benefits for the Home Use Device:**
 - ◆ Test can be carried out weekly in the convenience of the patient's home;
 - ◆ Patients conduct their own test;
 - ◆ Patient only needs to report the result – can be done via telephone saving a trip to the Doctor's Surgery.

The Harwell Science and Innovation Campus Joint Venture was initially set out by former Science Minister, Lord Sainsbury, as part of the Government's ten-year UK Science and Innovation Investment Framework.

PIPSS is a knowledge transfer scheme that supports the development of effective, long term collaborations between UK Universities, CERN, ESO (European Southern Observatory), ESA (European Space Agency), UK industry and research sector organisations. Through the past year STFC Knowledge Exchange has worked with external funding partners to run two successful PIPSS calls.

- Six projects were awarded under the Bio Mini PIPSS call with BBSRC and a further six projects were awarded under the Themed Call for Defence and Security held in conjunction with Dstl;
- The success of Dr Gordon Love's group working on Astronomical Instrumentation, Optics and Photonics at the University of Durham shows how a small amount of funding can lead on to bigger things. His group was awarded a Follow-on Fund in 2006 for Low Cost and High Speed Control Systems for Image Processing. This was followed up with a successful Bio Mini PIPSS award this year for Smart Bio-imaging and it is hoped that this in turn will on to future applications for core BBRSC funding demonstrating the real benefits of Knowledge Exchange;
- STFC will continue to seek out opportunities to work with external partners.

2: Knowledge Generation

2.1: Publicly Available Knowledge

STFC is a leading funder of Physics-based research within the UK and supports research within a number of key areas by providing the UK research community with access to facilities, grants and studentships and fellowships.

STFC does not currently collect comprehensive data on the outputs of all the research it supports, particularly in relation to grants and funding programmes to HEIs. This is under review as part of a Research Councils UK project to examine the most effective methods of capturing output and outcome data from projects, as well as the broader review of research excellence by the Higher Education Funding Councils. As a result the metrics in this section - at best - provide a proxy measure of the quality of the research funded by STFC, and capture only a small portion of the inevitable outputs and outcomes this research generates.

Highlights in relation to the stock of publicly available knowledge include:

- The consistent use of STFC facilities by users from 5 and 5* rated university departments (Section 2.1) over the past three years;
- STFC funded research generates a range of scientific knowledge demonstrated by the wide variety of published material from technical design studies to academic articles;
- For the first time, experiments have been carried out at the Diamond Light Source (DLS) facility based at the Rutherford Appleton Laboratory as it runs up to full capacity (Section 2.2);
- A steady increase in the number of publications arising from funding of Astronomy and Particle Physics in the UK. In addition, STFC is including publications arising from the first year's funding of Nuclear Physics (Sections 2.3-2.6);
- International usage of the Research Facilities continues at a good level, and invited talks at international conferences continue to increase year on year (Section 2.7).

Ref No	Indicator	Data											Comments/Overview		
2.1	Major Facility user RAE scores												Users from 5 and 5* rated university departments. Will change when RAE changes.		
			2005/06		2006/07		2007/08								
		CLF	75%		73%		60%								
		DLS	-		-		75%								
		ISIS	92%		92%		90%								
	SRS	67%		72%		78%									
2.2	Publication data by major STFC facility/ department												<p>Due to the differences in data collection methods over time, it is difficult to provide an accurate comparison over time.</p> <p>ISIS: In FY2007/08 ISIS underwent a long shutdown in order to enable some extensive obsolescence work to be carried out and to prepare the ISIS synchrotron for the extraction of the second proton beam for the new second target station. As a consequence the beamtime available this year for the user programme was reduced.</p> <p>The number of publications is still going up following requests for updates from the user community.</p>		
			Publications			Lab reports/technical design studies			Conference publications			Experiments carried out			
			2005/06	2006/07	2007/08	2005/06	2006/07	2007/08	2005/06	2006/07	2007/08	2005/06		2006/07	2007/08
		CLF	83	122	97		9	2						222	79
		DLS	-	-	163	-	-	-	-	-	41	-		-	101
		ISIS	400+	400+	350+	-	-	-	-	-	-	-		811	382
	SRS	488	352	340	-	2	27	-	2	20	-	939	690		

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2.3	Astronomy, Nuclear Physics and Particle Physics publications/citations	<p>Astronomy and planetary science Number of publications by year (Normalised to UK) and Citations impact (Ci) – the average number of references for each paper in the most recent five year period</p> <table border="1"> <thead> <tr> <th rowspan="2">Year</th> <th colspan="2">UK</th> <th colspan="2">USA</th> <th colspan="2">Germany</th> <th colspan="2">France</th> <th colspan="2">Italy</th> </tr> <tr> <th>No</th> <th>Ci</th> <th>No</th> <th>Ci</th> <th>No</th> <th>Ci</th> <th>No</th> <th>Ci</th> <th>No</th> <th>Ci</th> </tr> </thead> <tbody> <tr> <td>2007</td> <td>1902 (1.0)</td> <td>9.99</td> <td>5295 (2.8)</td> <td>10.48</td> <td>1800 (0.9)</td> <td>10.61</td> <td>1343 (0.7)</td> <td>9.17</td> <td>1320 (0.7)</td> <td>8.74</td> </tr> <tr> <td>2006</td> <td>1893 (1.0)</td> <td>9.61</td> <td>5259 (2.8)</td> <td>10.2</td> <td>1722 (0.9)</td> <td>10.14</td> <td>1267 (0.7)</td> <td>8.46</td> <td>1228 (0.6)</td> <td>8.62</td> </tr> <tr> <td>2005</td> <td>1754 (1.0)</td> <td>9.88</td> <td>5116 (2.9)</td> <td>10.19</td> <td>1570 (0.9)</td> <td>9.51</td> <td>1194 (0.7)</td> <td>8.24</td> <td>1.183 (0.7)</td> <td>8.98</td> </tr> </tbody> </table> <p>Particle Physics* Physics, Particles and Fields papers (normalised to UK)</p> <table border="1"> <thead> <tr> <th>Year/Country</th> <th>UK</th> <th>USA</th> <th>Germany</th> <th>France</th> <th>Japan</th> <th>Russia</th> <th>Switzerland</th> <th>Italy</th> </tr> </thead> <tbody> <tr> <td>2007</td> <td>996 (1.0)</td> <td>2794 (2.8)</td> <td>1437 (1.4)</td> <td>805 (0.8)</td> <td>814 (0.8)</td> <td>991 (1.0)</td> <td>579 (0.6)</td> <td>1308 (1.3)</td> </tr> <tr> <td>2006</td> <td>932 (1.0)</td> <td>2640 (2.8)</td> <td>1407 (1.5)</td> <td>772 (0.8)</td> <td>834 (0.9)</td> <td>867 (0.9)</td> <td>573 (0.6)</td> <td>1059 (1.1)</td> </tr> </tbody> </table> <p>Nuclear physics# Physics, Nuclear papers (normalised to UK)</p> <table border="1"> <thead> <tr> <th>Year/Country</th> <th>UK</th> <th>USA</th> <th>Germany</th> <th>France</th> <th>Japan</th> <th>Russia</th> <th>Switzerland</th> <th>Italy</th> </tr> </thead> <tbody> <tr> <td>2007</td> <td>353 (1.0)</td> <td>1717 (4.9)</td> <td>962 (2.7)</td> <td>537 (1.5)</td> <td>711 (2.0)</td> <td>619 (1.8)</td> <td>206 (0.6)</td> <td>541 (1.5)</td> </tr> </tbody> </table>	Year	UK		USA		Germany		France		Italy		No	Ci	No	Ci	No	Ci	No	Ci	No	Ci	2007	1902 (1.0)	9.99	5295 (2.8)	10.48	1800 (0.9)	10.61	1343 (0.7)	9.17	1320 (0.7)	8.74	2006	1893 (1.0)	9.61	5259 (2.8)	10.2	1722 (0.9)	10.14	1267 (0.7)	8.46	1228 (0.6)	8.62	2005	1754 (1.0)	9.88	5116 (2.9)	10.19	1570 (0.9)	9.51	1194 (0.7)	8.24	1.183 (0.7)	8.98	Year/Country	UK	USA	Germany	France	Japan	Russia	Switzerland	Italy	2007	996 (1.0)	2794 (2.8)	1437 (1.4)	805 (0.8)	814 (0.8)	991 (1.0)	579 (0.6)	1308 (1.3)	2006	932 (1.0)	2640 (2.8)	1407 (1.5)	772 (0.8)	834 (0.9)	867 (0.9)	573 (0.6)	1059 (1.1)	Year/Country	UK	USA	Germany	France	Japan	Russia	Switzerland	Italy	2007	353 (1.0)	1717 (4.9)	962 (2.7)	537 (1.5)	711 (2.0)	619 (1.8)	206 (0.6)	541 (1.5)	<p>Data provided by <i>Evidence Ltd</i>, from Thomson Reuters Web of Science database, 'papers' includes substantive journal articles, reviews and meeting abstracts.</p> <p>*Due to changes in the way the data has been collected, historical data from 2005/06 are no longer valid.</p> <p>#Nuclear physics is reported here for 2007/08 only, as it is the first year in which STFC funded this discipline.</p>
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2.2: Human Capital

STFC also provides considerable input into the development of a 'world-class skills base' through its studentships and fellowships programmes in particle physics and astronomy, as well as access to training via its facilities. The complex nature of STFC's support was previously captured in the EIRFs from both PPARC and CCLRC which have now been merged to provide an overview of the investment in human capital across the new Research Council. Key points to note include:

- PIPSS fellowships were embedded within HEIS, with 1 new fellow in 2007/08;
- The Nuclear Physics Facilities which STFC supports are used by almost all STFC-funded students from this community in the UK (approximately 60-70 students in 2007/08) (Section 2.8);
- STFC currently supports approximately 700 postgraduate students with an annual expenditure of £15M (Section 2.18). The majority of studentships are awarded to university departments through a biennial quota research studentships exercise. Departmental quota applications are assessed by the Council's Education, Training and Careers Committee against a range of criteria covering the training environment and the level and quality of research activity in a department (Section 2.20);
- STFC's Postdoctoral and Advanced Research Fellowships continue to attract high calibre candidates worldwide. A total of up to 12 awards under each scheme are offered annually. Postdoctoral Fellowships are worth approximately £210k over three years. Advanced Fellowships are worth approximately £400k over five years.

While changes in the way training is measured at each of the facilities mean that comparisons over time are difficult, STFC provides considerable training opportunities to support the development of the scientific skills within the UK (Section 2.8). These include:

- Apprenticeship schemes, PhD training days and other training opportunities such as in-house leadership development programmes;
- The Microelectronic Support Centre within the STFC technology department provides state-of-the art microelectronic design tools, support and training to 61 UK HEIs and 464 Institutions throughout Europe;
- STFC's Research Facilities provided research access to over 700 PhD students during the course of the year, many of these are multidisciplinary.

The interdisciplinary nature of STFC's facilities is also demonstrated with facility users coming from a broad range of disciplinary backgrounds, including biology, biomaterials and medicine, engineering, physics and chemistry, providing a fertile ground for knowledge exchange and innovation within the UK research base.

Improving our information on Careers and Diversity.

- The Research Councils (RCs), through the RCUK Research Careers and Diversity Unit (RCDU) have collaborated with the Equality Challenge Unit on a mapping study of equality data in higher education. Jointly with the Higher Education Statistics Agency (HESA) and the funding councils, we are working to fill the gaps and improve the data on which the research councils can draw in the future;

Ref No	Indicator	Data										Comments/Overview
2.8	Number of Students/trainees using STFC facilities/ departments each year	2007/08										<p>Due to the differences in data collection methods over time, it is difficult to provide an accurate comparison over time.</p> <p>*Tech: The Microelectronics Support Centre provides state-of-the-art microelectronic design tools, support and training to 61 UK HEIs (with 287 individual contacts) and 464 institutions throughout Europe.</p> <p>The Nuclear Physics facilities we support and develop are used by almost all STFC funded students in the UK at various overseas laboratories. There are roughly 60-70 STFC funded Nuclear Physics students in the UK.</p>
		AST	CLF	DLS	e-Sci	ISIS	PPD	SSTD	SRS	Tech*		
		Students	2	114	6	4	280	10	4	345	21	
		Apprentices	-	3	-	-	-	-	-	-	-	
		Staff working towards professional qualification	-	8	8	1	2	2	-	1	6	
		PhD training days	-	2500	-	-	2045	-	-	3000	-	
		Student Supervisors	3	15	5	1	13	10	2	10	4	
		CSED: Chemical Database Service Users: 3590; HPCx Users: 1322; Collaborative Computational Projects: 370 groups; EU networks: 50 groups; Code licenses: 2476; Training days: 2285										
		2006/07										
		AST	CLF	e-Sci	ISIS	SRS	Tech					
Students	16	99	5	302	461	9						
Apprentices	-	-	-	2	-	4						
Student Supervisors	-	-	-	10	16	-						
2005/06												
CLF	ISIS	SRS	Tech									
Students	63	293	572	6								

Ref No	Indicator	Data			Comments/Overview	
		2005/06	2006/07	2007/08		
2.9	Number of Facility users per science/facility programme area		2005/06	2006/07	2007/08	<p>*CLF: Estimate – new computerised user management data system effective from July 2007 only. User numbers therefore estimated for April-June 2007 period.</p> <p>^Diamond Light Source have estimated these figures based on the discipline information supplied by the team leader on the proposals submitted during this period and have assumed an average of 6 users per proposal.</p> <p>#ISIS: the distribution of successful proposals is the same as for submitted proposals; in this FY ISIS operated only from October 2007 onwards due to a major shutdown.</p>
		CLF	150	165	324*	
		Biochemistry/Biomaterials/Biology	20	12	35	
		Chemistry	56	21	25	
		Engineering	2	3	-	
		Environment	-	-	10	
		Materials	4	5	35	
		Medicine			11	
		Physics	65	118	200	
		Technology	3	5	-	
		Technical Development	-	-	8	
		DLS			603^	
		Biology and Bio-materials	-	-	182	
		Chemistry	-	-	83	
		Engineering	-	-	0	
		Environment	-	-	41	
		Materials	-	-	98	
		Medicine	-	-	65	
		Physics	-	-	117	
		Technique Development	-	-	17	
		ISIS	n/a	2913	1302#	
		Biology, Bio-materials & Medicine	5%	143	98	
		Chemistry	32%	870	330	
		Engineering, Energy & Environment (Technology Development)	4%	195	141	
		Materials	32%	954	403	
		Physics	26%	718	274	
		Technique Development	1%	24	56	
		SRS	1511	1061	234	
		Biology	468	271	77	
		Chemistry	404	313	82	
		Engineering	7	0	2	
		Environment	86	61	16	
Materials	251	197	24			
Medicine	36	47	-			
Physics	243	172	33			
Technique Development	16	0	-			

Ref No	Indicator	Data	Comments/Overview																								
2.10	Telescope Utilisation data	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>ING: Access for UK users</td> <td>47.6%</td> <td>47.6%</td> <td>47.6%</td> </tr> <tr> <td>Performance (good or excellent)</td> <td>96%</td> <td>91%</td> <td>88%</td> </tr> <tr> <td>JAC: Access for UK users</td> <td></td> <td></td> <td></td> </tr> <tr> <td>JCMT</td> <td>49.5%</td> <td>49.5%</td> <td>49.5%</td> </tr> <tr> <td>UKIRT</td> <td>85%</td> <td>85%</td> <td>85%</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	ING: Access for UK users	47.6%	47.6%	47.6%	Performance (good or excellent)	96%	91%	88%	JAC: Access for UK users				JCMT	49.5%	49.5%	49.5%	UKIRT	85%	85%	85%	
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2.11	Retention of SET staff reported by staff turnover	99 out of 250 recruits were SET 114 out of 326 leavers were SET	This information was not captured for PPARC, and thus it is not possible to include historical data.																								
2.12	% Female SET Staff as proportion of total staff	11% of SET staff are female	This information was not captured for PPARC, and thus it is not possible to include historical data.																								
2.13	Number of active researchers using STFC Facilities.	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>33</td> <td>30</td> </tr> <tr> <td>Diamond</td> <td>-</td> <td>33</td> </tr> <tr> <td>ISIS</td> <td>72</td> <td>66</td> </tr> <tr> <td>SRS</td> <td>39</td> <td>8</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08	CLF	33	30	Diamond	-	33	ISIS	72	66	SRS	39	8	An Active Researcher is defined as an employee who is a Principal Investigator or Co-Investigator on grant applications (including Facility Access or Facility Development) and/or someone who leads a research team.									
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2.16	Rate of change in PhDs awarded in relation to Particle Physics and Astronomy per annum	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Astronomy</td> <td>54.1%</td> <td>62.5%</td> <td>57.8%</td> </tr> <tr> <td>Particle Physics/ Particle Astrophysics</td> <td>45.9%</td> <td>37.5%</td> <td>42.2%</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	Astronomy	54.1%	62.5%	57.8%	Particle Physics/ Particle Astrophysics	45.9%	37.5%	42.2%																					
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2.18	Demographic/diversity data for staff and studentships	<table border="1"> <thead> <tr> <th>Staff</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Average of staff falls within age category</td> <td>35-39</td> </tr> <tr> <td>Male</td> <td>79%</td> </tr> <tr> <td>Female</td> <td>21%</td> </tr> <tr> <td>SET</td> <td>70%</td> </tr> <tr> <td>Non-SET</td> <td>30%</td> </tr> <tr> <td>Full-Time</td> <td>92%</td> </tr> <tr> <td>Part-Time</td> <td>8%</td> </tr> <tr> <td>White</td> <td>93%</td> </tr> <tr> <td>Non-White</td> <td>7%</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Students</th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Male</td> <td>78%</td> <td>77%</td> <td>75%</td> </tr> <tr> <td>Female</td> <td>22%</td> <td>23%</td> <td>25%</td> </tr> </tbody> </table> <p>Out of current 735 students 2 are studying part-time. We do not routinely collect age data on our students but the majority fall into the 21-25 age bracket.</p>	Staff	2007/08	Average of staff falls within age category	35-39	Male	79%	Female	21%	SET	70%	Non-SET	30%	Full-Time	92%	Part-Time	8%	White	93%	Non-White	7%	Students	2005/06	2006/07	2007/08	Male	78%	77%	75%	Female	22%	23%	25%	New category for staff in 2007/08.
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2.19	Average cost via grant funding for post-graduate students	£14.4k pa	New category for 2007/08. Based on total, actual expenditure																																

Ref No	Indicator	Data	Comments/Overview
2.20	Feedback on students' training experience	<p>95% of students cited enthusiasm for the subject/research as being an important reason for undertaking a PhD.</p> <p>71% of students wanted to do research in a first rate research group.</p> <p>55% of students wished to pursue a career in academia/research.</p> <p>36% of students believed a PhD would enhance their general career prospects.</p> <p>14% of students have daily contact with their supervisor, whilst 54% have weekly contact, 17% have fortnightly contact and 7% have monthly contact.</p> <p>46% of students rate the supervision they receive as excellent, 49% good, 3% satisfactory and 2% rate the supervision received as unsatisfactory/very poor.</p> <p>9% of universities, 50% of departments and 31% of both provide a formal training programme in the student's first year.</p> <p>68% of students rate their overall training as good, whilst 29% rate it as adequate and only a small minority (3%) rate their overall training as inadequate.</p>	<p>New Category for 2007/08.</p> <p>All STFC-funded PhD students are requested to complete a questionnaire on their training experience each year. The results for each institution are analysed and the results are input to the biennial quota exercise. The Education, Training and Careers Committee who award the quota studentships use the analysis available as a factor when peer reviewing the quota applications. Information is also included in the feedback to institutions when informing them of the outcome of their applications.</p>

Ref No	Indicator	Data			Comments/Overview
2.21	First destination of STFC funded PhDs		2004/05	2005/06	Source: HESA Data. 2005/06 data is the most recent available. This is based on the survey conducted during 2006/07.
			PPARC	STFC	
		RC category			
		Engaged in study	14	4	
		Gov and Public Sector - not research related	5	9	
		Gov and Public Sector - research related	1	1	
		Higher Education - academic (U T & R)	4	5	
		Higher Education - mainly research	36	40	
		Higher Education - other	1	1	
		I & C - not research related	20	3	
		I & C - research related	1	25	
		Not employed	11	5	
		Not known or not reported	-	5	
		Other Employment	2	5	
		R & D Sector unknown	10	7	
School (Education other)	-	2			
School Teaching or teacher training	2	8			
Self employed voluntary and unpaid work	-	-			
Grand Total	107	120			
2.22	% SEB as first destination of STFC funded PhDs		2004/05	2005/06	Source: HESA Data. 2005/06 data is the most recent available. This is based on the survey conducted during 2006/07.
			PPARC	STFC	
		RC category			
		Higher Education – academic (U T & R)	3%	4%	
		Higher Education – mainly research	33%	33%	
		School (Education other)	-	1%	
School Teaching or teacher training	1%	6%			
2.23	% business and public services as first destination of STFC funded PhDs		2004/05	2005/06	Source: HESA Data. 2005/06 data is the most recent available. This is based on the survey conducted during 2006/07.
			PPARC	STFC	
		RC category			
		Gov and Public Sector - not research related	4%	7%	
Gov and Public Sector - research related	1%	1%			

3: Investment in Research Base and Innovation

The formation of STFC from PPARC and CCLRC means that we cannot draw complete comparisons from previous years on total investment in the research base and innovation. However, Direct Vote income in 2007/08 was £648.338M, an increase over the previous allocations to CCLRC and PPARC of over £40M (Section 3.1).

There was a £20M increase in spend on capacity and capability building in 2007/08, with over £32M investment in ISIS, and £2M from EPSRC for new capital equipment in support of the applied science loan pool (Section 3.2).

STFC supports a wide range of research including particle physics and astronomy, as well as providing access to large-scale facilities and infrastructure to support many other scientific disciplines. During 2007/08, STFC invested in a range of updates to existing Facilities (Section 3.3).

STFC invested over £90M in grant funding over the year (Section 3.5) and £185M on international subscriptions (Section 3.6). A major part of this investment was directly related to the Large Hadron Collider at CERN, which went live for the first time on 10 September 2008.

In 2007/08 STFC facilities continued to exceed their targets for user satisfaction across its UK based facilities (Section 3.7).

Ref No	Indicator	Data	Comments/Overview				
3.1	Total STFC income per annum	<p>Direct Vote Income in 2007/08: £648.338M</p> <p>Near Cash £399.785M Non Cash £84.256M Total Resource £484.041M</p> <p>Capital £137.628M DLS Capital £26.669M Total Capital £164.297M</p> <p>External income funding operating activities £63.030M External income funding capital £3.880M</p>	<p>Because of the merger it is difficult to make comparisons between 2007/08 and previous years. However, one reason why the external income funding operating activities is lower than in 2006/07 is that the external income included about £25M from PPARC to CCLRC.</p>				
3.2	Money spent on capacity and capability building	<table border="1"> <thead> <tr> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>£19.25M</td> <td>£39.95M</td> </tr> </tbody> </table> <p>2005/06: not collected</p> <p>2007/08 detail: CLF: £6073k ISIS: TS2 Project (£32M in FY07/08, £145M total allocation), HRPD Upgrade (£1,045k); HiFi – Muon spectrometer (£718k); POLARIS upgrade (£58k); Polarised Neutrons (£55k); SRS: No money spent on capacity/capability building in 2007/08. For New Sources activities eg ERLP £1835k; Recycling SRS beamlines for Diamond £47k Tech: £2M EPSRC Funds: new capital equipment in support of applied science loan pool.</p>	2006/07	2007/08	£19.25M	£39.95M	<p>2006/07 data is for CCLRC only.</p>
2006/07	2007/08						
£19.25M	£39.95M						

Ref No	Indicator	Data	Comments/Overview																				
3.3	Investment in new scientific/ technology areas	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> <tr> <th></th> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td>Cfi/TP*</td> <td>2.65</td> <td>1.79</td> </tr> <tr> <td>CLF</td> <td>5.0</td> <td>4.1</td> </tr> <tr> <td>ISIS</td> <td>16.1</td> <td>0.59</td> </tr> <tr> <td>SRS</td> <td>16.9</td> <td>0.43</td> </tr> </tbody> </table> <p>2005/06: not collected</p> <p>2007/08 detail: Centre for Instrumentation £1288k; Technology Partnerships - £508k CLF: Total £4145k: LSF £259k; High Power Lasers (Gemini, Artemis) £3816k ISIS: Hydrogen storage programme (£568k); Accelerated radiation testing of chips (£25k) SRD: FGDs (for Diamond): Polarisation £291k; Large Scale Tomography £70k; New Facilities for SMX £71k Other grants: EU SAXIER £104k; NWSF £599k; PET gamma tracker £149k</p>		2006/07	2007/08		£M	£M	Cfi/TP*	2.65	1.79	CLF	5.0	4.1	ISIS	16.1	0.59	SRS	16.9	0.43	<p>Diamond exempt for 2007/08.</p> <p>*Centre for Instrumentation has allowed core underpinning technologies to be developed for STFC facilities and programmes. A specific area of success is Active Pixel Sensor developments (which are leading UK Detector involvement in the ESRF Upgrade, are relevant to STFC programmes in Space and Particle Physics and are being exploited for a number of commercial applications).</p> <p>Technology Partnership funding has allowed us to develop novel technologies in response to biotechnology drivers. Specific areas of advancement have been stem cell and brain science research and has yielded ongoing collaborations with Oxford and UCL amongst others.</p>		
	2006/07	2007/08																					
	£M	£M																					
Cfi/TP*	2.65	1.79																					
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ISIS	16.1	0.59																					
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3.4	Cross-council Programmes	<p>CLF: 12 experiments ISIS: The research programmes of the majority of the ISIS users are funded through EPSRC grants; there is also a small number of NERC and BBSRC grants SRS: 17 days funded beamtime for academic users*</p>	<p>New category for 2007/08. *The Wellcome Trust funds protein crystallography research by academic users at the SRS</p>																				
3.5	Multidisciplinarity of STFC investment	<p>827 grants with a value of £94.9M: 711 active physics grants with an actual spend of £87.4M 116 active non-physics grants with an actual spend of £7.5M</p>	<p>New category for 2007/08. STFC is able only to define grants as being physics or non-physics.</p>																				
3.6	Expenditure on International Subscriptions	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> <tr> <th></th> <th>£M</th> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td></td> <td>190.529</td> <td>177.293</td> <td>185.025</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08		£M	£M	£M		190.529	177.293	185.025	<p>International Subscriptions</p>								
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3.7	Major Facility user satisfaction measure presented by academic and private sector responses	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>94% (85%)</td> <td>89% (85%)</td> <td>89% (85%)</td> </tr> <tr> <td>DLS</td> <td>-</td> <td>-</td> <td>81% good or excellent</td> </tr> <tr> <td>ISIS</td> <td>89% (85%)</td> <td>89% (85%)</td> <td>90% (85%)</td> </tr> <tr> <td>SRS</td> <td>86% (85%)</td> <td>87% (85%)</td> <td>86% (85%)</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	CLF	94% (85%)	89% (85%)	89% (85%)	DLS	-	-	81% good or excellent	ISIS	89% (85%)	89% (85%)	90% (85%)	SRS	86% (85%)	87% (85%)	86% (85%)	<p>Target rates in brackets</p>
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SRS	86% (85%)	87% (85%)	86% (85%)																				

4: Framework Conditions

4.1: Financial Sustainability

STFC provides considerable investment into large scale facilities and international subscriptions on behalf of UK research and innovation to build and sustain capacity in key research areas. For example, ISIS underwent a major refurbishment programme from March-October 2007; Diamond Light Source continued to increase capacity, and the Synchrotron Radiation Source based in Daresbury underwent a period of shutdown, prior to officially closing in August 2008.

STFC receives significant income from the other Research Councils to fund experiments at the Research Facilities (Section 4.3). In 2007/08, a total of £2.2M was received to directly fund research on the Facilities.

Equally important in ensuring the ongoing financial sustainability of STFC is its commitment to encouraging efficiency throughout all its operations. In 2007/08 STFC achieved Gershon Efficiency Savings of £21.8M against a target of £8.8M through the re-prioritisation of its programmes and reductions in the number of low quality proposals. STFC also achieved savings within its administration and through the increased efficiency of its capital infrastructure (Sections 4.7-4.10).

Ref No	Indicator	Data			Comments/Overview	
4.1	International Collaborations	2007/08	Income from international collaboration (split by EU and Rest of World) £k		Number of STFC staff involved in collaborations with international facilities	<p>*Includes £1,558k for the TS2 EU instrumentation.</p> <p>#Includes energy collaborations, microstructure and cooler activities. Also includes major funding for EuroPractice function and for XFEL project.</p> <p>Income figures exclude major Technology involvement in international programmes such as CERN, where funding goes via science Departments.</p> <p>Further collaborations with ALBA and Chinese Academy of Sciences also exist.</p>
			EU	RoW		
		ASTeC	400	-	30	
		CLF	385	-	21	
		CSED	80	-	-	
		Diamond	-	-	19	
		e-Science	533	-	25	
		ISIS*	2229	1925	60	
		NPG	-	-	3	
		PPD	200	-	70	
		SRS	281	-	20	
		SSTD	500	3000	50	
		Tech#	2690	590	120	
		2006/07	Income from international collaboration (split by EU and Rest of World) £k		Number of STFC staff involved in collaborations with international facilities	
			EU	RoW		
		ASTeC	420	-	25	
		CLF	695	237	27	
		e-Science	1180	58	15	
		ISIS	1700	632	67	
		SRS	220	-	25	
4.2	Capital investment in facilities as a % of capital value	2005/06	2006/07	2007/08	The STFC provides facilities for the wider community. We have therefore assumed that all of our capital expenditure enhances these facilities.	
		20%	15%	16%		

Ref No	Indicator	Data	Comments/Overview																					
4.3	External funding into Facilities	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> <tr> <th></th> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>1.01</td> <td>0.626</td> </tr> <tr> <td>CMF</td> <td>0.272</td> <td>0.353</td> </tr> <tr> <td>ISIS</td> <td>0.085</td> <td>0.086</td> </tr> <tr> <td>SRS</td> <td>0.948</td> <td>1.124</td> </tr> <tr> <td>TOTAL</td> <td>2.315</td> <td>2.189</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08		£M	£M	CLF	1.01	0.626	CMF	0.272	0.353	ISIS	0.085	0.086	SRS	0.948	1.124	TOTAL	2.315	2.189	<p>New category for 2007/08. Data covers direct Research Council funding of the main facilities only and includes both Near-cash Resource and Capital.</p> <p>Although the overall STFC income from other RC's (excluding PPARC) is up from £13.878M in 2006/07, the amount directly funding facilities is down by approx 5%. EPSRC reduced its grant funding to the CLF Loan Pool in 2007/08 to cover staff and consumables costs only, pending submission of a new grant proposal. The equipment costs on the Loan Pool grant in 2006/07 had been approx £310k. Had an equivalent sum been funded in 2007/08, the impact on the overall RC funding of facilities would have been an increase of 8%, rather than a decrease of 5%.</p>
	2006/07	2007/08																						
	£M	£M																						
CLF	1.01	0.626																						
CMF	0.272	0.353																						
ISIS	0.085	0.086																						
SRS	0.948	1.124																						
TOTAL	2.315	2.189																						
4.4	% budget spent on new scientific capabilities entering service as a result of RC funding (including internal funding)	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>4%</td> <td>21%</td> </tr> <tr> <td>Diamond</td> <td>-</td> <td>54%</td> </tr> <tr> <td>ISIS</td> <td>48%</td> <td>-</td> </tr> <tr> <td>SRS</td> <td>4%</td> <td>-</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08	CLF	4%	21%	Diamond	-	54%	ISIS	48%	-	SRS	4%	-							
	2006/07	2007/08																						
CLF	4%	21%																						
Diamond	-	54%																						
ISIS	48%	-																						
SRS	4%	-																						
4.5	Spend on New Facilities	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> <tr> <th></th> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>2.58</td> <td>4.2</td> </tr> <tr> <td>Diamond</td> <td>-</td> <td>24.7</td> </tr> <tr> <td>ISIS</td> <td>145.4</td> <td>49.93</td> </tr> <tr> <td>SRS</td> <td>2.9</td> <td>-</td> </tr> <tr> <td>TOTAL</td> <td>150.88</td> <td>78.83</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08		£M	£M	CLF	2.58	4.2	Diamond	-	24.7	ISIS	145.4	49.93	SRS	2.9	-	TOTAL	150.88	78.83	
	2006/07	2007/08																						
	£M	£M																						
CLF	2.58	4.2																						
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TOTAL	150.88	78.83																						

Ref No	Indicator	Data	Comments/Overview																								
4.6	Rate of change in RC spend on and between facilities	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> <tr> <th></th> <th>£M</th> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>4.198</td> <td>6.540</td> <td>7.640</td> </tr> <tr> <td>ISIS</td> <td>47.878</td> <td>40.014</td> <td>47.238</td> </tr> <tr> <td>SRS</td> <td>9.615</td> <td>6.974</td> <td>3.418</td> </tr> <tr> <td>TOTAL</td> <td>61.691</td> <td>53.528</td> <td>58.296</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08		£M	£M	£M	CLF	4.198	6.540	7.640	ISIS	47.878	40.014	47.238	SRS	9.615	6.974	3.418	TOTAL	61.691	53.528	58.296	Does not include capital construction costs of Diamond Light Source.
	2005/06	2006/07	2007/08																								
	£M	£M	£M																								
CLF	4.198	6.540	7.640																								
ISIS	47.878	40.014	47.238																								
SRS	9.615	6.974	3.418																								
TOTAL	61.691	53.528	58.296																								
4.7	Combined Gershon Efficiency Targets – reducing expenditure attributable to administration	£9.769M saved against target of £7.921M	Project administered through the RCUK Efficiency Delivery Project Board. Part of HMT VfM savings target.																								
4.8	Savings arising from re-prioritisation of programmes/ reduction of low quality proposals	£21.810M saved against target of £8.850M	Project administered through the RCUK Efficiency Delivery Project Board.																								
4.9	Savings arising from increased efficiency of RC Institutes including better use of capital infrastructure	£10.399M saved against target of £7.380M	Project administered through the RCUK Efficiency Delivery Project Board.																								
4.10	Financial contribution arising from greater co-funding (including profit from all contract research and external contributions to facilities)	£4.829M saved against target of £9.280M	Project administered through the RCUK Efficiency Delivery Project Board. Target not achieved however the excess savings incurred in 1.5 to 1.7 above have be used to offset.																								

4.2: Public Engagement

Since its formation, STFC has been actively involved in a range of engagement activities attracting over 3041 pupils and 4172 members of the public to its on-site events. Events are regularly evaluated with 100% feedback from participants as either 'good or excellent' (Section 4.11).

In 2007/08 STFC received 42 applications from HEI groups to its Small Awards Scheme for public engagement and 6 University teams either grant funded by STFC or using its facilities have exhibitions at the prestigious Royal Society Summer Exhibition.

A recent highlight has been STFC's £0.6M programme of public engagement with the Large Hadron Collider project at CERN, one of the biggest experiments in the history of science.

The Research Councils spent £1.2M collectively through the RCUK SIS unit in 2007/08, funding a range of initiatives including public dialogue, national school enrichment schemes which support the DCSF STEM programme objectives such as Researchers in Residence, and joint activity at science and arts festivals to open up RC-funded work to a broader audience.

The RCUK SIS unit delivered the third UK Public Attitudes to Science Survey (funded by DIUS, published January 2008) which provides valuable trend data about what the public thinks about science, scientists and science policy. For the first time, attitudes towards social science were also examined.

The RCUK public dialogue on energy research provided insight into the public's priorities for energy research, and has led to the development (in progress) of a guide for researchers on what the public considers important in this area of research.

Ref No	Indicator	Data		Comments/Overview												
4.11	Number of public events promoting science attended by STFC SEAs	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Number of days spent visiting other countries (CEO and Directors)</td> <td>223</td> <td>288</td> </tr> <tr> <td>Number of MoUs with overseas organisations</td> <td>11</td> <td>STFC: 18 Diamond: 11</td> </tr> <tr> <td>Number of School visits/events</td> <td>83</td> <td>97</td> </tr> </tbody> </table> <p>2007/08 detail: 491 SEAs and other staff supported visits and events held for schools, teachers and the public at RAL and DL. 20 SEAs and other staff supported similar events held off site. On-site events attracted 3041 school pupils and 4172 members of the public. Off-site events reached 1472 school pupils and 233 members of the public.</p>			2006/07	2007/08	Number of days spent visiting other countries (CEO and Directors)	223	288	Number of MoUs with overseas organisations	11	STFC: 18 Diamond: 11	Number of School visits/events	83	97	
	2006/07	2007/08														
Number of days spent visiting other countries (CEO and Directors)	223	288														
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Number of School visits/events	83	97														

Ref No	Indicator	Data						Comments/Overview
4.12	Level of interaction with HEIs	2007/08	Number of joint appointments	Number of visiting fellowships/ professorships (from other organisations)	Staff with visiting fellowships/ professorships in other organisations	Number and value of collaborative projects with HEIs		<p>In 2007/8 STFC received 42 applications from HEI groups to our Small Awards Scheme for public engagement, 9 to our Large Awards Scheme, and 10 to our Science in Society Fellowships scheme. Also, six University teams either grant-funded by STFC or using our facilities have exhibitions at the prestigious Royal Society Summer Exhibition.</p> <p>*The majority of ISIS experiments is carried out as a collaboration between ISIS and HEIs</p> <p>#All NPG projects are collaborations with HEI's. NPG annual budget is circa £1.6M, support staff and the major projects. In UK there are 10 HEI's in nuclear physics research, circa 70 academic staff.</p>
							£k	
		ASTeC	1	-	3	7	3000	
		CLF	6	11	8	4	239	
		CSE	8	7	-	25	5000	
		Diamond	7	-	14	8	650	
		e-Sci	2	8	1	32	3500	
		ISIS*	2	1	25	-		
		NPG#	-	1	-	-		
		PPD	5	1	-	10	20000	
		SSTD	4	20	-		5000	
		SRS	4	-	2	9	987	
		Tech	-	-	3	10	2064	
		2006/07	Number of joint appointments	Number of visiting fellowships/ professorships (from other organisations)	Staff with visiting fellowships/ professorships in other organisations	Number and value of collaborative projects with HEIs		
							£k	
		ASTeC	1	3	-	-		
		CLF	5	4	9	6	114	
		e-Sci	-	2	-	10	400	
		ISIS	5	23	8	5	8100	
		SRS	9	-	5	8	1900	
Tech	1	-	2	-	-			

Ref No	Indicator	Data	Comments/Overview												
		<table border="1"> <thead> <tr> <th data-bbox="504 268 667 360">2005/06</th> <th data-bbox="667 268 875 360">Number of joint appointments</th> <th data-bbox="875 268 1090 360">Number of visiting professorships</th> </tr> </thead> <tbody> <tr> <td data-bbox="504 360 667 392">ISIS</td> <td data-bbox="667 360 875 392">6</td> <td data-bbox="875 360 1090 392">7</td> </tr> <tr> <td data-bbox="504 392 667 424">SRS</td> <td data-bbox="667 392 875 424">9</td> <td data-bbox="875 392 1090 424">5</td> </tr> <tr> <td data-bbox="504 424 667 456">Tech</td> <td data-bbox="667 424 875 456">-</td> <td data-bbox="875 424 1090 456">2</td> </tr> </tbody> </table>	2005/06	Number of joint appointments	Number of visiting professorships	ISIS	6	7	SRS	9	5	Tech	-	2	
2005/06	Number of joint appointments	Number of visiting professorships													
ISIS	6	7													
SRS	9	5													
Tech	-	2													
4.13	Survey trends in public attitudes to science issues	<p>The Research Councils working together ran the 2008 Public Attitudes to Science survey, published in February 2008. The full report is at www.rcuk.ac.uk/sis/pas.htm. A result of interest for STFC is that 81% of UK citizens supported the view that "even if it brings no immediate benefits, scientific research which advances knowledge is necessary and should be supported by the Government" (up from 72% in the 2000 survey). STFC takes this as strong public support for fundamental research. The survey also shows STFC the public interest in areas of its research, such as energy, security, design of new drugs, and space.</p> <p>In connection with the Large Hadron Collider project, STFC consulted the public, teachers and young people on their prior knowledge, interest levels and concerns about particle physics and such huge physics experiments. This formative evaluation was valuable in developing our LHC public engagement strategy.</p>													
4.14	Public Engagement	<p>The STFC Science in Society programme represented an investment of £1.7M in 2007/8, or roughly 0.3% of total budget.</p> <p>Feedback is sought from teachers and members of the public attending events at or supported by RAL and DL to allow events to be evaluated. Events are rated on a five point scale (1 - poor, 5 - excellent). In 2007/08, there was a 100% 'excellent' rating given by teachers for events organised at RAL and DL, and a 100% 'good or excellent' rating given by members of the public for events open to them.</p>	<p>New category for 2007/08.</p> <p>The expenditure covers grant-funding, a few major investments, and public engagement from the main UK laboratories. The key objectives are to stimulate and respond to public interest in the research, to link it with schools and young people, to encourage and support researchers' public engagement work, and to capitalise on STFC Labs/Campuses contributions to STEM and skills agendas. All funded and directly-delivered public engagement activities are evaluated.</p>												

5: Knowledge Exchange Efficiency

STFC has considerable linkages with businesses and public services through its facilities and grants programmes. It aims to increase this interaction over the next 20 years through the development of its Science and Innovation Campuses based at Daresbury (DSIC) and at Harwell (HSIC) as well as developing a comprehensive strategy to develop and support the economic impact derived from the research it supports.

Although it is early days for the Research Council, key highlights from 2007/08 include:

- 71 companies based at DSIC (an increase of 147%), with a further 54 tenant organisations and 65 organisations housed in innovation centres at HSIC (Section 5.2);
- Partnerships with RDAs includes over £50M campus investment by the North West RDA into DSIC, an increase from £8.5M (mainly collaborative grants) in 2006/07 (Section 5.4);
- A doubling of the number of beam days relevant to commercial or quasi-commercial partners at STFC facilities (from 82 in 2006/07 to 170 in 2007/08) (Section 5.8);
- Contracts placed with UK companies for the purchase of equipments for STFC funded major facilities and equipment continued to increase in 2007/08, with , for example, €20.01M for ESO (Section 5.8);
- STFC currently employs 8.1 FTE staff dedicated to commercialisation and industrial liaison (Section 5.10), and it support a range of workshops and events to promote engagement with business and commercialisation of research (Sections 5.11, 5.12).

STFC supports a wide range of collaborative projects between its facilities and UK industry. The KITE Club encourages entrepreneurship amongst our academic community by acting as a gateway for accessing information about our programmes and related external activities. It provides opportunities for networking and making new contacts with other academic groups and industry for Knowledge Exchange through workshops and brokering meetings. Membership continues to grow and successful collaborations formed.

In addition STFC sponsors the Sensors and Instrumentation KTN and works closely with several other KTNs including the Photonics KTN which is run through the UKATC, and the Electronics KTN who are helping promote the industrial opportunities available through the STFC SKA project.

5.1: Interaction with Business and Public Services

Ref No	Indicator	Data	Comments/Overview										
5.1	Number of academic/ private sector collaborations using STFC facilities	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>5 projects/4 collaborators</td> </tr> <tr> <td>ISIS</td> <td>8 projects</td> </tr> <tr> <td>SSTD</td> <td>10 projects</td> </tr> <tr> <td>SRS</td> <td>21 projects/28 collaborators</td> </tr> </tbody> </table>		2007/08	CLF	5 projects/4 collaborators	ISIS	8 projects	SSTD	10 projects	SRS	21 projects/28 collaborators	<p>Previous data incomplete and has not been included.</p> <p>ISIS: the number of collaborations is certainly higher, but we do not yet capture this information comprehensively.</p>
	2007/08												
CLF	5 projects/4 collaborators												
ISIS	8 projects												
SSTD	10 projects												
SRS	21 projects/28 collaborators												
5.2	Number of companies, type of business of companies on Campuses, number of staff and spread of employee functions	<p>DSIC: 2007/08: Total of 71 companies on Campus with the split being about 45% Digital/ICT, 20% Healthcare, 20% Advanced Eng/ Instrumentation and 15% Others. Total number of employees is about 235 with about 50 jobs (FT & PT) being created since moving onto Campus.</p> <p>2006/07: 48 (including DL tenants), SMEs, corporates, STFC spin-outs, support staff, engineers and directors.</p> <p>HSIC: There are currently a wide range of companies/organisations. There are 54 Tenants organisations and a further 65 organisations housed in two innovation centres. In total there are around 4500 employees on the campus.</p>											
5.3	Amount of building/ infrastructure investment of campus tenants	<p>DSIC: Costs of renting rooms and facilities on Campus can be measured – this is approximately £600K/year. However this is a small fraction of their total expenditure. For example, Campus companies have raised £11m in investment (from survey Nov 2007) and gained £1M in GRAND Awards in 2007.</p> <p>HSIC: Currently STFC cannot obtain this data as there are different landlords and building owners across the Campus. Once the HSIC JV is up and running there will be better scope to obtain some of this data.</p>	Previous data incomplete and has not been included.										
5.4	RDA investment in Campuses	<p>DSIC: 2007/08: The NWDA have invested over £50M on Daresbury SIC. They currently are funding the Daresbury SIC Ltd organisation to a level of £300k/year, an approx £200k/year business support fund and are providing a budget of £600k/year to operate the Innovation Centre.</p> <p>2006/07: approx £8.5M</p> <p>HSIC: There are currently no Campus specific activities funded by SEEDA at HSIC.</p>											

Ref No	Indicator	Data	Comments/Overview																
5.5	Other Private Sector investment in Campuses	DSIC and HSIC: the commercial negotiations for the creation of the JVs continued throughout 2007/2008. The negotiations and announcement of commercial partners should be available for the 2008/2009 report.	Previous data incomplete and has not been included.																
5.6	Public Sector investment in Campuses	DSIC and HSIC: Reporting will be developed for 2008/2009 as part of the overall management of the JVs at the SICs.	Previous data incomplete and has not been included.																
5.7	% business/public services people on Governing bodies	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>STFC Council</td> <td>20%</td> </tr> <tr> <td>Diamond Governing Body*</td> <td>25%</td> </tr> </tbody> </table>		2007/08	STFC Council	20%	Diamond Governing Body*	25%	<p>Because of the merger it is not possible to make comparisons between 2007/08 and previous years.</p> <p>*Note: only DLS Board included in the data as the overall "Governing Body" of DLS – other advisory bodies, e.g. the Scientific Advisory Committee, DISCo are excluded from the data.</p>										
	2007/08																		
STFC Council	20%																		
Diamond Governing Body*	25%																		
5.8	Number of beam days relevant to commercial or quasi commercial partners (eg ESA/hospitals) by facility and beamline	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>10</td> <td>70</td> </tr> <tr> <td>Diamond</td> <td>-</td> <td>16</td> </tr> <tr> <td>ISIS</td> <td>6</td> <td>-</td> </tr> <tr> <td>SRS</td> <td>66</td> <td>84</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08	CLF	10	70	Diamond	-	16	ISIS	6	-	SRS	66	84	ISIS: no commercial beamtime in 2007/08; active collaboration with a consortium of UK industry in a feasibility study for the accelerated chip irradiation testing.	
	2006/07	2007/08																	
CLF	10	70																	
Diamond	-	16																	
ISIS	6	-																	
SRS	66	84																	
5.9	Value of contracts placed with UK companies for the purchase of equipment for major facilities and research programmes	<p>Contracts placed by CERN, ESO and ESA with UK Companies.</p> <table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>ESA</td> <td>€ 45.244M</td> <td>€ 39.165M</td> <td>€ 48.24M</td> </tr> <tr> <td>ESO</td> <td>€ 6.85M</td> <td>€ 2.7M</td> <td>€ 20.01M</td> </tr> <tr> <td>CERN</td> <td>CHF 39.355M</td> <td>CHF 26.459M</td> <td>CHF 11.38M</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	ESA	€ 45.244M	€ 39.165M	€ 48.24M	ESO	€ 6.85M	€ 2.7M	€ 20.01M	CERN	CHF 39.355M	CHF 26.459M	CHF 11.38M	
	2005/06	2006/07	2007/08																
ESA	€ 45.244M	€ 39.165M	€ 48.24M																
ESO	€ 6.85M	€ 2.7M	€ 20.01M																
CERN	CHF 39.355M	CHF 26.459M	CHF 11.38M																
5.10	RC staff employed in a dedicated commercialisation/ industrial liaison function	At the end of March 2008 there were 8.1 FTE dedicated to commercialisation and industrial liaison	New category for 2007/08 as requested by DIUS.																
5.11	Numbers of STFC workshops /events to help develop researchers commercialisation skills and attendance at workshops	2 seminars with CERN between 2005 and 2007.	New category for 2007/08 as requested by DIUS.																
5.12	Numbers of STFC workshops/ events to promote engagement with business and attendance at workshops	16 events since April 2006 with 2491 attendees.	New category for 2007/08 as requested by DIUS.																

Ref No	Indicator	Data	Comments/Overview
5.13	Facility user satisfaction measure for industrial users	CLF: 100% Diamond: not measured* ISIS: 90% SRS: not measured 2005/06 and 2006/07: not collected	*Diamond – n/a in period. First industrial proprietary users began arriving in April 2008, ie outside the reporting period. ISIS does not differentiate between academic and industrial users. Data from DARTS/CLIK for SRS industrial users is incomplete.

5.2: Collaborative Research

Ref No	Indicator	Data	Comments/Overview																
5.14	Number and value of collaborative projects between STFC facilities and UK industry	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Number</td> <td>75</td> <td>14</td> </tr> <tr> <td>Value</td> <td>£11.9M</td> <td>£15.06M</td> </tr> </tbody> </table> <p>2006/07: not collected</p>		2005/06	2007/08	Number	75	14	Value	£11.9M	£15.06M								
	2005/06	2007/08																	
Number	75	14																	
Value	£11.9M	£15.06M																	
5.15	Successful completion of the R&D as demonstrated through a viable proposal for industrial engagement in the final project	<p>2007/08: Of the 8 final PIPSS reports, there were four projects where industrial engagement was continuing and three where further funding would be required to support further engagement.</p> <p>2006/07: Of the 21 final reports, there were 19 where there would be future industrial engagement.</p> <p>2005/06: not collected</p>	Provided from an analysis of PIPSS and FoF final reports																
5.16	Volume of collaborative research for early phase technology development and knowledge transfer	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> <tr> <th></th> <th>£k</th> <th>£k</th> <th>£k</th> </tr> </thead> <tbody> <tr> <td>PRD</td> <td>-</td> <td>1635</td> <td>-</td> </tr> <tr> <td>PIPSS</td> <td>1130</td> <td>74</td> <td>4463</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08		£k	£k	£k	PRD	-	1635	-	PIPSS	1130	74	4463	Total of PRD and PIPSS awards for the financial year
	2005/06	2006/07	2007/08																
	£k	£k	£k																
PRD	-	1635	-																
PIPSS	1130	74	4463																
5.17	Share of the R&D budget for major projects awarded to industry	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> <tr> <th></th> <th>£k</th> <th>£k</th> </tr> </thead> <tbody> <tr> <td>PRI</td> <td>1070</td> <td>135</td> </tr> <tr> <td>PIPSS</td> <td>74</td> <td>137</td> </tr> </tbody> </table> <p>2005/06: not collected.</p>		2006/07	2007/08		£k	£k	PRI	1070	135	PIPSS	74	137	Value of PRI awards to industry and value of PIPSS awarded under State Aids regulations				
	2006/07	2007/08																	
	£k	£k																	
PRI	1070	135																	
PIPSS	74	137																	

Ref No	Indicator	Data	Comments/Overview												
5.18	Percentage of projects reporting successful technology output or transfer in final report	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td></td> <td>>70%</td> <td>80%</td> <td>62%</td> </tr> <tr> <td></td> <td>8/11</td> <td>16/21</td> <td>5/8</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08		>70%	80%	62%		8/11	16/21	5/8	% calculated from the PIPSS and FoF final reports
	2005/06	2006/07	2007/08												
	>70%	80%	62%												
	8/11	16/21	5/8												
5.19	Total number of companies collaborating in STFC projects and range of commercial sectors represented	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Organisations</td> <td>9</td> <td>19</td> <td>26</td> </tr> <tr> <td>Sectors</td> <td>6</td> <td>6</td> <td>7</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	Organisations	9	19	26	Sectors	6	6	7	Industrial organisations collaborating in PIPSS.
	2005/06	2006/07	2007/08												
Organisations	9	19	26												
Sectors	6	6	7												
5.20	Joint assessment with third party of project success using final report		This metric is no longer applicable as STFC have decided to stop peer review of the final report for grants in line with the RCUK Outputs and Outcomes Collection project.												

5.3: Cooperative Training

Ref No	Indicator	Data	Comments/Overview						
5.21	Number of CASE award students (where STFC acts as the industrial partner)	2007/08: 31	Previous data incomplete and has not been included.						
5.22	Number of STFC PhD degree holders employed outside the direct research programme (data derived from periodic reviews of the career development of PhD graduates)	A study of students in 2003, who had ended their awards 6-8 years earlier, showed that 12% worked in other government and public organisations and 48% in the private sector.	Data to be updated in future reports.						
5.23	Expenditure on collaborative Post-graduate Training	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td></td> <td>£k</td> </tr> <tr> <td>Spend</td> <td>412</td> </tr> </tbody> </table>		2007/08		£k	Spend	412	New category for 2007/08. The spend on CASE students is for maintenance (stipend), CASE addition payment, fees and overseas fieldwork costs. CASE students receive a higher stipend than quota students of £1k per annum. They also receive a CASE addition of £615 per annum.
	2007/08								
	£k								
Spend	412								

5.4: Commercialisation of Research

Ref No	Indicator	Data	Comments/Overview												
5.24	Income from licensing of intellectual property	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td></td> <td>£k</td> <td>£k</td> <td>£k</td> </tr> <tr> <td>Income</td> <td>35</td> <td>60</td> <td>92</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08		£k	£k	£k	Income	35	60	92	
	2005/06	2006/07	2007/08												
	£k	£k	£k												
Income	35	60	92												
5.25	Number and revenue of technology-based projects with commercial and quasi-commercial customers (eg ESA/hospitals)	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>1 (£200k)</td> <td>2 (£300k)</td> </tr> <tr> <td>Diamond</td> <td>-</td> <td>-</td> </tr> <tr> <td>ISIS</td> <td>2 (£0)</td> <td>-</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08	CLF	1 (£200k)	2 (£300k)	Diamond	-	-	ISIS	2 (£0)	-	
	2006/07	2007/08													
CLF	1 (£200k)	2 (£300k)													
Diamond	-	-													
ISIS	2 (£0)	-													
5.26	Nominal value of shares, VC raised and employee numbers of direct spin-outs	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Total VC investment in Spin-outs</td> <td>£12M</td> <td>£24M</td> </tr> <tr> <td>Total Number of employees</td> <td>46</td> <td>55</td> </tr> <tr> <td>Nominal portfolio valuation</td> <td>£5M</td> <td>£2.4M</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08	Total VC investment in Spin-outs	£12M	£24M	Total Number of employees	46	55	Nominal portfolio valuation	£5M	£2.4M	
	2006/07	2007/08													
Total VC investment in Spin-outs	£12M	£24M													
Total Number of employees	46	55													
Nominal portfolio valuation	£5M	£2.4M													
5.27	Value of programmes supported by STFC to promote commercialisation and enterprise	Value of Follow on Fund awards: £314k Value of Proof of Concept Awards: £901k STFC's contribution to the RCUK Business Plan Competition: £95k	Value of FoF awards, Value of PoC awards, investment in RCUK Business Plan Competition. (NB: spend may take place over a number of financial years).												
5.28	Number of projects which result in successful spin out or license	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Spin-outs</td> <td>1</td> <td>-</td> <td>1</td> </tr> <tr> <td>New Licenses</td> <td>n/a</td> <td>-</td> <td>4</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	Spin-outs	1	-	1	New Licenses	n/a	-	4	Relates to activities from STFC Laboratories.
	2005/06	2006/07	2007/08												
Spin-outs	1	-	1												
New Licenses	n/a	-	4												
5.29	Number of Patents arising from STFC Facilities	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Patents filed</td> <td>3</td> </tr> <tr> <td>Related "family" filings</td> <td>12</td> </tr> <tr> <td>Patents granted</td> <td>2</td> </tr> </tbody> </table>		2007/08	Patents filed	3	Related "family" filings	12	Patents granted	2	New category for 2007/08. Will relate to patent "families".				
	2007/08														
Patents filed	3														
Related "family" filings	12														
Patents granted	2														

5.5: People Exchange between SEB and Users

Ref No	Indicator	Data	Comments/Overview																				
5.30	Value and size of programmes to promote knowledge exchange and number of awards made	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> </tr> <tr> <th></th> <th>£k</th> <th>£k</th> <th>£k</th> </tr> </thead> <tbody> <tr> <td>KES</td> <td>-</td> <td>491</td> <td>635</td> </tr> <tr> <td>S&I KTN</td> <td>-</td> <td>63.3</td> <td>113</td> </tr> <tr> <td>KTP</td> <td>11</td> <td>19.5</td> <td>-</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08		£k	£k	£k	KES	-	491	635	S&I KTN	-	63.3	113	KTP	11	19.5	-	KES: Knowledge Exchange Service S&I KTN: Sensors and Instrumentation Knowledge Transfer Network KTP: Knowledge Transfer Partnership
	2005/06	2006/07	2007/08																				
	£k	£k	£k																				
KES	-	491	635																				
S&I KTN	-	63.3	113																				
KTP	11	19.5	-																				
5.31	Promotional themes selected against criteria such as timeliness, industrial demand, uniqueness of knowledge base, and third party support	<p>2007/08: Two themed PIPSS calls: Defence and Security in collaboration with MoD/Dstl; Bio Mini-PIPSS in collaboration with BBSRC.</p> <p>2006/07: Two themed PIPSS calls: Bioimaging Mini-PIPSS in collaboration with BBSRC; Security in collaboration with MoD/Dstl.</p> <p>2005/06: Two Special Interest Groups (SIGs): Defence, Security and Aerospace; Healthcare and Life Sciences.</p>	PIPSS Themed calls																				
5.32	Number of and funding for Knowledge Transfer Partnerships	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> </tr> </thead> <tbody> <tr> <td>Number of KTPs</td> <td>4</td> </tr> <tr> <td>Contribution</td> <td>£52k</td> </tr> </tbody> </table>		2007/08	Number of KTPs	4	Contribution	£52k	New category for 2007/08. Knowledge Transfer Partnerships enable private and public sector research organisations to apply their research knowledge to important business problems. KTPs are Government funded and enable UK businesses to benefit from the wide range of expertise available in the UK Knowledge Base. STFC can co-fund KTP with the Department for Innovation, Universities and Skills (DIUS), usually on a 50% basis.														
	2007/08																						
Number of KTPs	4																						
Contribution	£52k																						

Action Plan

Listed below are a number of activities which STFC is putting in place to help take forward the Economic Impact agenda over the next reporting period and beyond.

Harwell Science and Innovation Campus

- On 14 August, after many months of negotiations, Science and Innovation Minister, Ian Pearson, confirmed the government's support for the new public-private partnership comprising the UK Atomic Energy Authority (UKAEA), the Science and Technology Facilities Council (STFC) and international property group Goodman. The partnership will run the Oxfordshire campus in a 50:50 joint venture;
- Under the agreement, UKAEA has provided land at Harwell for development and an existing business base. STFC is contributing involvement in major public sector science programmes and a proactive approach to ensuring fundamental research can be harnessed and exploited by innovators, entrepreneurs and industry. Goodman will offer market access to global businesses and expertise in long-term property ownership, development and management, as well as providing working capital for the joint venture;
- Investment at the campus will encompass fundamental scientific research and the development of property, facilities and local infrastructure. A minimum of 100,000m² of laboratory, high technology industrial and office accommodation will be developed in the first 20 year phase of the project. Up to 5000 high value knowledge-based jobs are also expected to be created;
- While the overall economic impacts are in the future, the joint venture approach will enable the campus to benefit from public sector access to global scientific communities, research programmes and facilities, alongside Goodman's commercial expertise.

Careers and Diversity

- The RCs are working together to obtain information on the career paths of those who have completed research studies, to contribute to the evidence of outcomes from investments in research training and the impact of research graduates. An analysis of options for the collection of information relating to UK Doctoral Graduates was reported in April 2008. Data will now be gathered through an enhancement of HESA's survey of the destinations of leavers of higher education (DLHE), seeking responses from all the research graduates who responded to the 2005 DLHE survey. This will follow their career path 3 ½ years after graduation. The first results of the study will become available in May 2009 and will be drawn on in next year's EIRFs. The analysis will also inform future phases of the study as it follows doctoral graduates' career paths over a number of years;
- In addition to HESA reports, the RCs will commission analysis to inform the higher education sector, policy development and graduates' decisions about their career options and this will be available in autumn 2009.

Financial Sustainability

- STFC is in the process of developing an Asset Management Strategy (AMS). The strategy document reviews the management of the STFC asset base and how this contributes to the delivery of our strategic objectives. In particular it sets the broad direction for developing, rationalising and maintaining our asset base and its capabilities taking into account all associated costs with asset management (such as increased operational costs, provisions for decommissioning and depreciation) and the prioritisation resulting

from funding availability. It includes the wider asset base of capital grants awarded to the HEIs and provided to international organisations such as ESA, CERN and ESO.

Knowledge Exchange Efficiency

- STFC has considerable linkages with businesses and public services through its facilities and grants programmes. It aims to increase this interaction over the next 20 years through the development of its Science and Innovation Campuses based at Daresbury (DSIC) and at Harwell (HSIC) as well as developing a comprehensive strategy to develop and support the economic impact derived from the research it supports.

Glossary

ASTeC – Accelerator Science and Technology Centre
BBSRC – Biotechnology and Biological Sciences Research Council
CCLRC – Council for the Central Laboratory of the Research Councils
CERN – European Organisation for Nuclear Research
Cfi – Centre for Instrumentation
CLF – Central Laser Facility
CMF – Central Microstructure Facility
CSED – Computation Science and Engineering Department
DCSF – Department for Children, Schools and Families
DIUS – Department for Innovation, Universities and Skills
DLS – Diamond Light Source
Dstl – Defence Science and Technology Laboratory
EPSRC – Engineering and Physical Sciences Research Council
ESA – European Space Agency
ESO – European Southern Observatory
ESRF – European Synchrotron Radiation Facility
FAP – Facility Access Panel
FoF – Follow-on Fund
FTE – Full Time Equivalent
HEI – Higher Education Institute
HESA – Higher Education Statistics Agency
ICT – Information and Communication Technology
ILL – Institut Laue-Langevin
ING – Isaac Newton Group of Telescopes
JAC – Joint Astronomy Centre
JCMT – James Clerk Maxwell Telescope
KTN – Knowledge Transfer Network
LHC – large Hadron Collider
MoD – Ministry of Defence
MoU – Memorandum of Understanding
NPG – Nuclear Physics Group
NWDA – North West Development Agency
PPARC – Particle Physics and Astronomy Research Council
PPD – Particle Physics Department
PoC – Proof of Concept
PRI – Pupil Researcher Initiative
RC – Research Council
RCUK – Research Councils UK
RDA – Regional Development Agency
SEA – Science and Engineering Ambassador
SEB – Science and Engineering Base
SEEDA – South East England Development Agency
SET – Science, Engineering and Technology
SiS – Science in Society
SKA – Square Kilometre Array
SME – Small or Medium Enterprise
SRS – Synchrotron Radiation Source
SSTD – Space Science and Technology Department
STEM – Science, Technology, Engineering and Mathematics
TP – Technology Partnership
UKATC – UK Astronomy Technology Centre
UKIRT – UK Infra-red Telescope
VC – Venture Capital

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