



Science & Technology
Facilities Council

Economic Impact Reporting Framework 2008/09





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Introduction

This is the second annual Economic Impact Reporting Framework (EIRF) published by the Science and Technology Facilities Council (STFC).

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 Business, Innovation and Skills.

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 to 2008/09 inclusive.

The Council's EIRF should be read in conjunction with its 2008/09 Delivery Plan Report (http://www.stfc.ac.uk/About/Stats/DP/STFC_DelPLan.aspx) and Annual Report (<http://www.stfc.ac.uk/Publications/ar/intro.aspx>), which provide a comprehensive summary of achievements over the period.

1: Overall Economic Impacts

Over the coming year, STFC will be refocusing its activities to deliver its newly-adopted Vision of maximising impact on the UK. World Class Innovation, World Class Research and World Class Skills are the starting point for developing its corporate goals.

Innovation

Rapiscan Systems Ltd. is one of the world's leading providers of security monitoring equipment for airports and other ports of entry. By providing initial consultancy and subsequent design activities, the Engineering Technology Centre (ETC) at STFC's Daresbury Laboratory has helped Rapiscan (through its subsidiary company, CXR) to realise world leading scanning technology which is already being trialled at UK airports and will form the next breakthrough in providing a safe and secure country.

In mid 2006, ETC provided vacuum technology expertise that allowed the challenges of developing high power, multi-focus x-ray sources to be overcome by CXR, and subsequently realise changes to give a fully working RTT20 system. In addition to these changes, the ETC also worked closely with CXR to design and implement additional features to the system to afford improved safety. The system was finally installed in a supervised laboratory area at Daresbury and jointly STFC and CXR were able to debug and evaluate the system parameters.

Building on this relationship and the skills and environment afforded by the ETC, CXR then worked closely with Daresbury to realise their first airport installed RTT baggage scanning system, the RTT80. This system is currently being trialled at Manchester Airport. In addition to providing the cleaning, bakeout and assembly of many components, the ETC also developed and realised mechanical handling equipment for manoeuvring the x-ray source and its associated components. Once again, the ETC were able to provide skilled staff and excellent facilities to support CXR in the assembly and testing of the system.

Throughout this programme, the ETC at STFC Daresbury has used its considerable facilities and skills, developed through many years of support of large science facilities such as the SRS, to assist Rapiscan in their commercial product development. This programme has not only yielded a number of 'field prototype' units, but has also formed a relationship which is promoting technology development in other areas such as accelerator systems and x-ray generators. In essence, this project has enabled both the commercial partner and STFC to learn a great deal about each other's business, with considerable success.

Rapiscan Systems UK has significantly increased its revenue over recent years and has received the Queens Award for International Trade. Its UK operations are seen as key to this growth and the commercialisation of the RTT "family" of system is likely to attract further investment and create opportunities for UK businesses.

The ETC has developed a greater awareness of both commercial business and the security marketplace and this will enable it to assist more UK businesses in the future.

Research

ISIS is giving a specialist bioscience spinout the fundamental knowledge needed to make more accurate biosensors to diagnose potentially fatal diseases.

Diagnostic biosensors are devices used to detect diseases in the human body. When diagnosing infectious diseases, biosensors must be sensitive and quick enough to distinguish between a virus and a bacterial infection. For example meningitis (a bacterial or viral infection) can be fatal if not diagnosed correctly and attended to quickly.

Diagnostic biosensors need a high performance protein surface, an invisible engineered biological film that detects virus proteins in a sample. Orla Protein Technologies is a spinout of Newcastle University. It designs custom protein surfaces for some of the most advanced biosensor manufacturers. Orla wanted to show how proteins bind to its biological film to give clear and accurate results.

Orla uses neutron scattering at ISIS to confirm the structure of its protein surfaces. ISIS enables Orla to view its layers in action under water, binding to specific molecules and rejecting others. The ISIS experiments provided the physical and structural information necessary to ensure their protein surfaces were reliable for manufacturing.

- Diagnostic biosensors allow doctors to quickly tell the difference between a virus and bacterial infection, allowing them to treat illnesses such as human respiratory syncytial virus or meningitis appropriately.
- Every diagnostic biosensor requires a high performance protein surface that detects the tell tale molecules in a sample. This engineered biological film is so thin that a stack of 30,000 would only be as thick as a sheet of paper.
- Orla Protein Technologies makes bespoke protein surfaces for large companies developing the next generation of electronic biosensors. ISIS enables Orla to test the quality of its engineered surfaces.

Skills

More than 600 universities from 44 countries in the Europe region rely on STFC's Microelectronics Support Centre (MSC). The centre supplies and supports the commercial design tool software used by microelectronics design engineers at an affordable price. This helps to produce highly trained, highly skilled graduates for UK and European design companies.

Based at the Rutherford Appleton Laboratory, MSC also trains the trainers and offers hands-on, practical courses so that lecturers and researchers get the most out of the software.

Microelectronics, in the form of silicon chips, is an essential part of modern day life – from mobile phones to cars – and is also enabling research in many areas of science and medicine.

Modern microelectronics design is complex and constantly changing so few universities can support or maintain their own dedicated support system. MSC therefore provides a vital resource and infrastructure to universities and research institutes and has done for more than 20 years.

Almost all of Europe's microelectronics engineering graduates have been trained on MSC supported design software. The MSC's EURO PRACTICE Software Service, largely funded by end user subscriptions with a contribution from the EC, encourages knowledge exchange between universities and from university to industry. The MSC partners with 20 of the world's leading microelectronics and microsystems companies to make advanced design tools and flows available to the academic community.

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.

This is the second year we have presented data. We have recently published our Vision for STFC, and we anticipate aligning the indicators to reflect this. Thus, in future this report will provide more opportunities to demonstrate what we have achieved in terms of impacts from our investments.

For the first time, we are able to present data recording the activities of the Astronomy Technology Centre in Edinburgh.

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

- STFC funded research generates a range of scientific knowledge demonstrated by the wide variety of published material from technical design studies to academic articles (Section 2.1);
- There was a significant increase in the research output and number of experiments carried out at the Diamond Light Source (DLS) facility based at the Rutherford Appleton Laboratory as it runs up to full capacity. The year saw a corresponding decline in the number of experiments at the SRS, as this closed during the reporting period. This brought to an end over 20 years of successful operation for this facility (Section 2.1);
- A steady increase in the number of publications arising from funding of Astronomy and Particle Physics in the UK, and an increase in the citation impact for UK Astronomy publications (Section 2.2);
- An increase in the UK's share of Nuclear Physics publications (Section 2.3);
- International usage of the Research Facilities increased year-on-year, and invited talks at international conferences continue at a high level (Section 2.6).

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2.6	International standing of RC funded strategic facilities	% of facility time with international presence				Due to the evolving data collection methods, it is difficult to provide an accurate comparison over time. No SRS FAPs were held during 2008/09.	
			2005/06	2006/07	2007/08		2008/09
		CLF	14%	46%	36%		45%
		DLS		-	3%		16%
		ISIS	37%	35%	55%		58%
		SRS	9%	-	5%		4%
		Number of invited talks at international conferences by staff					
			2005/06	2006/07	2007/08		2008/09
		CLF		27	50		47
		DLS		-	79		57
		ISIS		40	125		92
		SRS		18	25		-
		International representation on FAPs and advisory boards					
			2005/06	2006/07	2007/08		2008/09
		CLF		23%	30%		40%
DLS		-	15%	18%			
ISIS		25%	37%	33%			
SRS		16%	15%	-			

2.2: Human Capital

STFC provides significant input into the development of a 'world-class skills base' through its studentships and fellowships programmes in nuclear physics, particle physics and astronomy, as well as access to training via its facilities. Examples of the complex nature of STFC's support provide an overview of the investment in human capital across the Council. Key points to note include:

- STFC's Postdoctoral and Advanced Research Fellowships continue to attract high calibre candidates worldwide. In 2008/09, STFC funded 13 Postdoctoral Fellowships, worth approximately £210k over three years. Advanced Fellowships are worth approximately £400k over five years. Six Advanced Fellowships were funded in 2008/09 (Section 2.17).
- STFC supports approximately 900 postgraduate students (Section 2.14) over the course of their training, at an annual cost of over £17m (Section 2.19).
- 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. 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. Over 90% of students surveyed cite enthusiasm for the subject or research as being an important reason for undertaking a PhD. Over 75% have desire to undertake research in a first rate research group. In 2008/09 a greatly increased percentage (62%) believed a PhD would enhance their general career prospects;

STFC provides a considerable range training opportunities to support the development of the scientific skills within the UK (Section 2.8). These include:

- STFC's Research Facilities, along with DLS provided research access to over 700 PhD students funded by other Research Councils during the course of the year, many of whom are multidisciplinary, delivering over 9000 PhD training days to those students;
- STFC and DLS now have a total of 106 staff involved as student supervisors, an increase of 40% in the year.

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. DLS continues to add new topics in response to user demand.

STFC won funding from the South East England Development Agency (SEEDA) and the European Social Fund (ESF) worth almost £900,000. The money will be used by STFC partner organisations to train employees from high-tech businesses in ICT, electronics and advanced instrumentation. The project began in November 2008 and will run until the end of 2010. It is hoped that during the project, training will be given to 900 people from at least 300 businesses. In partnership with Aylesbury Training Group, Oxford and Cherwell Valley College and Engineering Prospects, STFC will develop and deliver the industry-led training programmes that will result in specialist qualifications. The topics and skills available are in demand by employers and include Java programming, vacuum technologies, electro-pneumatic hydraulics and control, laboratory technician expertise and electronic measurement and testing techniques.

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2.8	Number of Students/trainees using STFC facilities/ departments each year	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Students</td> <td>934</td> <td>892</td> <td>786</td> <td>767</td> </tr> <tr> <td>Apprentices</td> <td></td> <td>6</td> <td>3</td> <td>9</td> </tr> <tr> <td>Staff working towards professional qualification</td> <td></td> <td></td> <td>28</td> <td>44</td> </tr> <tr> <td>PhD training days</td> <td></td> <td></td> <td>7545</td> <td>9373</td> </tr> <tr> <td>Student Supervisors</td> <td></td> <td>26</td> <td>63</td> <td>106</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	2008/09	Students	934	892	786	767	Apprentices		6	3	9	Staff working towards professional qualification			28	44	PhD training days			7545	9373	Student Supervisors		26	63	106	Due to the evolving data collection methods, it is difficult to provide an accurate comparison over time.
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2.20	Feedback on students' training experience	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Enthusiasm for the subject/research as being an important reason for undertaking a PhD</td> <td>95%</td> <td>94%</td> </tr> <tr> <td>Desire to do research in a first rate research group</td> <td>71%</td> <td>78%</td> </tr> <tr> <td>Wish to pursue a career in academia/research</td> <td>55%</td> <td>5%</td> </tr> <tr> <td>Believe a PhD would enhance their general career prospects</td> <td>36%</td> <td>62%</td> </tr> <tr> <td>Daily contact with supervisor</td> <td>14%</td> <td>14%</td> </tr> <tr> <td>Weekly contact with supervisor</td> <td>54%</td> <td>55%</td> </tr> <tr> <td>Supervision rated as excellent</td> <td>46%</td> <td>47%</td> </tr> <tr> <td>Supervision rated very good/good</td> <td>49%</td> <td>43%</td> </tr> <tr> <td>Overall training rated good</td> <td>68%</td> <td>75%</td> </tr> </tbody> </table>		2007/08	2008/09	Enthusiasm for the subject/research as being an important reason for undertaking a PhD	95%	94%	Desire to do research in a first rate research group	71%	78%	Wish to pursue a career in academia/research	55%	5%	Believe a PhD would enhance their general career prospects	36%	62%	Daily contact with supervisor	14%	14%	Weekly contact with supervisor	54%	55%	Supervision rated as excellent	46%	47%	Supervision rated very good/good	49%	43%	Overall training rated good	68%	75%																
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Ref No	Indicator	Data				Comments/Overview	
2.21	First destination of STFC funded PhDs		2004/05	2005/06	2006/07	2007/08	Source: HESA Data.
		RC category	PPARC	STFC	STFC	STFC	
		Engaged in study	14	4	1	-	
		Gov and Public Sector - not research related	5	9	2	2	
		Gov and Public Sector - research related	1	1	-	2	
		Higher Education - academic (U T & R)	4	5	2	1	
		Higher Education - mainly research	36	40	26	35	
		Higher Education - other	1	1	-	-	
		I & C - not research related	20	3	1	3	
		I & C - research related	1	25	11	17	
		Not employed	11	5	4	3	
		Not known or not reported	-	5	1	1	
		Other Employment	2	5	-	-	
		R & D Sector unknown	10	7	3	4	
		School (Education other)	-	2	-	-	
School Teaching or teacher training	2	8	7	-			
Self employed voluntary and unpaid work	-	-	-	1			
Grand Total	107	120	58	69			
2.22	% SEB as first destination of STFC funded PhDs		2004/05	2005/06	2006/07	2007/08	Source: HESA Data.
		RC category	PPARC	STFC	STFC	STFC	
		Higher Education – academic (U T & R)	3%	4%	2%	1%	
		Higher Education – mainly research	33%	33%	60%	50%	
		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	2006/07	2007/08	Source: HESA Data.
		RC category	PPARC	STFC	STFC	STFC	
		Gov and Public Sector - not research related	4%	7%	3%	3%	
		Gov and Public Sector - research related	1%	1%	-	3%	

3: Investment in Research Base and Innovation

Science Budget total income for both operating and capital investment in 2008/09 was over £680m, an increase of approximately £40m over the previous year's allocation (Section 3.1).

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 the year, STFC invested in a range of updates to existing Facilities (Section 3.3).

STFC invested over £140M in grant funding over the year, an increase of over £50m over the previous year (Section 3.5). Investment in 2008/09 on international subscriptions also increased to £215m, a rise of £20m (Section 3.6).

In 2008/09 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	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> <th>2008/09</th> </tr> <tr> <th></th> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td>Science Budget</td> <td>648.338</td> <td>686.037</td> </tr> <tr> <td>Near Cash</td> <td>399.785</td> <td>453.292</td> </tr> <tr> <td>Non Cash</td> <td>84.256</td> <td>81.434</td> </tr> <tr> <td>Total Resource</td> <td>484.041</td> <td>534.726</td> </tr> <tr> <td>Capital</td> <td>137.628</td> <td>120.220</td> </tr> <tr> <td>DLS Capital</td> <td>26.669</td> <td>31.091</td> </tr> <tr> <td>Total Capital</td> <td>164.297</td> <td>151.311</td> </tr> <tr> <td>External Income funding operating activities</td> <td>63.030</td> <td>66.736</td> </tr> <tr> <td>External income funding capital</td> <td>3.880</td> <td>13.422</td> </tr> </tbody> </table>		2007/08	2008/09		£M	£M	Science Budget	648.338	686.037	Near Cash	399.785	453.292	Non Cash	84.256	81.434	Total Resource	484.041	534.726	Capital	137.628	120.220	DLS Capital	26.669	31.091	Total Capital	164.297	151.311	External Income funding operating activities	63.030	66.736	External income funding capital	3.880	13.422	Because of the merger it is not possible to present data prior to 2007/08.
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3.4	Facility utilisation by other Research Councils/Funders	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td></td> <td></td> </tr> <tr> <td>DLS</td> <td>0</td> <td></td> </tr> <tr> <td>ISIS#</td> <td></td> <td></td> </tr> <tr> <td>SRS</td> <td>17 days</td> <td>18 days</td> </tr> </tbody> </table>		2007/08	2008/09	CLF			DLS	0		ISIS#			SRS	17 days	18 days	# 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.																		
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Ref No	Indicator	Data				Comments/Overview	
3.5	Multidisciplinarity of STFC grant funding		2007/08	2008/09		STFC is able only to define grants as being PPAN or PALS	
		PPAN	711 (£87.4m)	243 (£124m)			
		PALS	116 (£7.5m)	59 (£20m)			
		Total Grants	827 (£94.9m)	302 (£144m)			
3.6	Expenditure on International Subscriptions	2005/06	2006/07	2007/08	2008/09	International Subscriptions	
		£M	£M	£M	£M		
		190.529	177.293	185.025	215.479		
3.7	Major Facility user satisfaction measure presented by academic and private sector responses		2005/06	2006/07	2007/08	2008/09	Target rates in brackets * The way in which the % is presented is to be consistent with the way in which the other facilities present their data in the DIUS report. It is not directly comparable with our submission last FY (FY07/08) as the user questionnaires have changed.
		CLF	94% (85%)	89% (85%)	89% (85%)	91% (85%)	
		DLS	-	-	81% good or excellent	87% (80%)*	
		ISIS	89% (85%)	89% (85%)	90% (85%)	91% (85%)	
		SRS	86% (85%)	87% (85%)	86% (85%)	83% (85%)	

4: Framework Conditions

4.1: Financial Sustainability

STFC is involved in a large number and value of international collaborations, with over £10M income from EU projects, and over £5M from non-European collaborations. Nearly 500 staff are directly involved in collaborations with international facilities.

As part of the ongoing relations between the Italian and UK science communities the president of the Italian National Research Council (CNR) visited STFC's Rutherford Appleton Laboratory to inaugurate the newest instrument at the £145 million pound ISIS Second Target Station. The new instrument, called 'Nimrod' allows liquids and glassy materials to be examined in minute detail and will contribute to the understanding of many current and emerging fields of technology.

Italian scientists have had lasting connections with ISIS. The CNR first signed an agreement in 1985 to use and help develop ISIS and now around a hundred scientists from all over Italy make the most of the facility every year, in areas including engineering, cultural heritage and advanced materials. The CNR is a major partner in the construction of the Nimrod instrument, contributing high quality engineering components vital to its performance.

STFC receives significant income from the other Research Councils to fund experiments at the Research Facilities (Section 4.3). In 2008/09, over £1M 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 2008/09 STFC achieved Value for Money (formerly Gershon Efficiency) Savings of £23.1M against a target of £20.7M across a range of measures (Sections 4.7-4.10).

Ref No	Indicator	Data	Comments/Overview																														
4.1	International Collaborations	<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">Income from international collaboration (split by EU and Rest of World) £k</th> <th rowspan="2">Number of STFC staff involved in collaborations with international facilities</th> </tr> <tr> <th>EU</th> <th>RoW</th> </tr> </thead> <tbody> <tr> <td>2006/07</td> <td>4215</td> <td>927</td> <td>159</td> </tr> <tr> <td>2007/08</td> <td>7298</td> <td>5515</td> <td>415</td> </tr> <tr> <td>2008/09</td> <td>10660</td> <td>5170</td> <td>487</td> </tr> </tbody> </table>		Income from international collaboration (split by EU and Rest of World) £k		Number of STFC staff involved in collaborations with international facilities	EU	RoW	2006/07	4215	927	159	2007/08	7298	5515	415	2008/09	10660	5170	487													
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4.2	Capital investment in facilities as a % of capital value	<table border="1"> <thead> <tr> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>20%</td> <td>15%</td> <td>16%</td> <td>20%</td> </tr> </tbody> </table>	2005/06	2006/07	2007/08	2008/09	20%	15%	16%	20%																							
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4.4	Breakdown of RC spend on and between large facilities	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> <tr> <th></th> <th>£M</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> <td>5.183</td> </tr> <tr> <td>ISIS</td> <td>47.878</td> <td>40.014</td> <td>47.238</td> <td>35.118</td> </tr> <tr> <td>SRS*</td> <td>9.615</td> <td>6.974</td> <td>3.418</td> <td>2.374</td> </tr> <tr> <td>TOTAL</td> <td>61.691</td> <td>53.528</td> <td>58.296</td> <td>42.675</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	2008/09		£M	£M	£M	£M	CLF	4.198	6.540	7.640	5.183	ISIS	47.878	40.014	47.238	35.118	SRS*	9.615	6.974	3.418	2.374	TOTAL	61.691	53.528	58.296	42.675	Does not include capital construction costs of Diamond Light Source. * SRS figure includes 2008/09 capital expenditure on ALICE (£2.215M).
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4.5	Value for Money project – reducing expenditure attributable to administration	<table border="1"> <thead> <tr> <th>2007/08</th> <th>2008/09</th> </tr> <tr> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td>9.769 (target 7.921)</td> <td>12.918 (target 11.107)</td> </tr> </tbody> </table>	2007/08	2008/09	£M	£M	9.769 (target 7.921)	12.918 (target 11.107)	Project administered through the RCUK Efficiency Delivery Project Board.																								
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4.6	Savings arising from re-prioritisation of programmes/ reduction of low quality proposals	<table border="1"> <thead> <tr> <th>2007/08</th> <th>2008/09</th> </tr> <tr> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td>21.810 (target 8.850)</td> <td>7.183 (target 5.810)</td> </tr> </tbody> </table>	2007/08	2008/09	£M	£M	21.810 (target 8.850)	7.183 (target 5.810)	Project administered through the RCUK Efficiency Delivery Project Board.																								
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4.7	Savings arising from increased efficiency of RC Institutes including better use of capital infrastructure	<table border="1"> <thead> <tr> <th>2007/08</th> <th>2008/09</th> </tr> <tr> <th>£M</th> <th>£M</th> </tr> </thead> <tbody> <tr> <td>10.399 (target 7.380)</td> <td>0.920 (target 1.000)</td> </tr> </tbody> </table>	2007/08	2008/09	£M	£M	10.399 (target 7.380)	0.920 (target 1.000)	Project administered through the RCUK Efficiency Delivery Project Board.																								
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4.8	Financial contribution arising from greater co-funding (including profit from all contract research and external contributions to facilities)	<table border="1"> <thead> <tr> <th data-bbox="629 268 1010 300">2007/08</th> <th data-bbox="1010 268 1382 300">2008/09</th> </tr> <tr> <th data-bbox="629 300 1010 331">£M</th> <th data-bbox="1010 300 1382 331">£M</th> </tr> </thead> <tbody> <tr> <td data-bbox="629 331 1010 363">4.829 (target 9.280)</td> <td data-bbox="1010 331 1382 363">2.228 (target 2.800)</td> </tr> </tbody> </table>		2007/08	2008/09	£M	£M	4.829 (target 9.280)	2.228 (target 2.800)	Project administered through the RCUK Efficiency Delivery Project Board.
2007/08	2008/09									
£M	£M									
4.829 (target 9.280)	2.228 (target 2.800)									

4.2: Public Engagement

The Research Councils together funded £2.4 million of public engagement initiatives through the RCUK Public Engagement with Research (PER) team (formerly the RCUK Science in Society team) in 2008/09. Our vision is to enable society to value and have confidence in research processes and outputs and to lead a broad spectrum of public engagement activity that has research and researchers at its heart.

Finding out what people think

RCUK PER team has ensured public engagement adds benefit and impact to the cross-Council priority theme programme plans. Information on what people think has contributed toward Research Council policy and research strategy development within these themes. Two cross-Council themes have received RCUK funding for public engagement in 2008/09.

Reaching young people - support and encourage young people to engage with contemporary research and follow R&D careers

We fund a range of initiatives¹ which support both the 5-19 DCSF STEM programme objectives and researchers who wish to carry out public engagement with young people and the schools sector. Our policy focus in this area has developed significantly in the last year, and is now changing from providing unique support and opportunity for teachers and young people to additionally ensuring support to our researchers in terms of their own skills development. A resource for the research community will be the first major output of this policy development in 2009.

Encourage researchers to engage with the public

The Research Councils also continue to invest significantly in encouraging researchers to engage with the public through the Beacons for Public Engagement initiative (£9.2m over four years with the funding councils and the Wellcome Trust). The scheme has established six university-based collaborative centres and a National Coordinating Centre to support, recognise, reward and build capacity for public engagement within HEIs. RCUK along with other funders are now considering the legacy of this pilot programme and ways of further embedding public engagement in the HE sector.

RCUK has also been compiling an evidence base which demonstrates the benefits that undertaking public engagement can have for researchers and their research. A publication aimed at the research community will be published in 2009.

Keep people informed and up to date about RC-funded research

RCUK PER team has also led on joint activity at a science and art festivals in the UK (e.g. Cheltenham Science Festival). The RCUK PER funded Darwin Today exhibition, led by BBSRC, is currently touring the UK and will have been to over 30 venues (such as science festivals, cathedrals, schools and museums) by the end of Darwin Year 2009 (potentially reaching over

¹ For example, our major schemes to bring researchers and schools together are 1) Researchers in Residence – a placement and training scheme for researchers wishing to work with schools. RCUK researchers were funded for placements in 153 UK secondary schools in 2008 2) Contemporary Science in the Classroom – a teacher CPD initiative which supports researchers and teachers working together to overcome barriers to teaching the curriculum. It is anticipated that by March 2011 that at least 1200 teachers will have received CPD. RCUK also provides teacher resources through SchoolsScience.co.uk which received over 80,000 hits in 2008 3) BA CREST – RCUK part funds this nationally recognised accreditation scheme for science and technology projects. Over 18,000 prizes were awarded in 2008 (across whole scheme) 4) Nuffield Bursaries – support for students to carry out projects in research environments working alongside practising scientists. 100 young people were funded directly by RCUK in 2008.

60,000 people). RCUK PER has also contributed funding to the BIS Science:[So What? So everything] campaign.

Since its formation, STFC has been actively involved in a range of engagement activities, with the public, with schools and with HEIs:

- Over 7000 pupils and 9000 members of the public attended on-site events (Section 4.11). Events are regularly evaluated with 100% feedback from participants as either 'good or excellent'.
- During the year, STFC was involved in 93 collaborative projects with HEIs, totalling over £42M in revenue. With over 33 joint appointments, 19 visiting fellowships or professorships from other organisation and over 70 staff with visiting positions in other organisation, the strength and breadth of interaction is clearly healthy (Section 4.12).

Simon Langton School, Canterbury is benefiting from STFC's Science in Society Programme. At the school, the Simon Langton Star Centre is a focus for students to engage with frontier, 'big questions' science and includes trips to CERN and astronomical observing. There is also engagement with a spin-off from particle physics research: pupils are using 'MediPix' chips from the LHC project to detect cosmic rays from space. At this school of around 600 pupils, 150 are studying A-level physics, and last year the schools sent 15 students to University to study Physics and 25 to study engineering. Through a combination of inspirational teaching and linkage with inspiring STFC frontier research, students are drawn to STEM subjects post-16.

Ref No	Indicator	Data				Comments/Overview																																								
4.9	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> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Number of School visits/events</td> <td>83</td> <td>97</td> <td>86</td> </tr> <tr> <td>On-site events:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>School pupils attending</td> <td>n/a</td> <td>3041</td> <td>3759</td> </tr> <tr> <td>Public attending</td> <td>n/a</td> <td>4172</td> <td>5002</td> </tr> <tr> <td>SEAs involved</td> <td></td> <td>491</td> <td>310</td> </tr> <tr> <td>Off-site events:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>School pupils attending</td> <td>n/a</td> <td>1472</td> <td>5171</td> </tr> <tr> <td>Public attending</td> <td>n/a</td> <td>233</td> <td>3530</td> </tr> <tr> <td>SEAs involved</td> <td></td> <td>20</td> <td>51</td> </tr> </tbody> </table>					2006/07	2007/08	2008/09	Number of School visits/events	83	97	86	On-site events:				School pupils attending	n/a	3041	3759	Public attending	n/a	4172	5002	SEAs involved		491	310	Off-site events:				School pupils attending	n/a	1472	5171	Public attending	n/a	233	3530	SEAs involved		20	51	
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4.10	Level of interaction with HEIs	<table border="1"> <thead> <tr> <th></th> <th>Number of joint appointments</th> <th>Number of visiting fellowships/ professorships (from other organisations)</th> <th>Staff with visiting fellowships/ professorships in other organisations</th> <th>Number and value of collaborative projects with HEIs</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td>£k</td> </tr> <tr> <td>2005/06</td> <td>15</td> <td>14</td> <td></td> <td></td> </tr> <tr> <td>2006/07</td> <td>21</td> <td>32</td> <td>24</td> <td>29</td> <td>10514</td> </tr> <tr> <td>2007/08</td> <td>31</td> <td>49</td> <td>63</td> <td>105</td> <td>40440</td> </tr> <tr> <td>2008/09</td> <td>33</td> <td>25</td> <td>85</td> <td>117</td> <td>42186</td> </tr> </tbody> </table>					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	2005/06	15	14			2006/07	21	32	24	29	10514	2007/08	31	49	63	105	40440	2008/09	33	25	85	117	42186	*The majority of ISIS experiments is carried out as a collaboration between ISIS and HEIs							
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4.11	Public Engagement	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>SiS programme budget</td> <td>£1.7M</td> <td>£1.5M</td> </tr> <tr> <td>Percentage of resource budget</td> <td>0.3%</td> <td>0.25%</td> </tr> </tbody> </table>					2007/08	2008/09	SiS programme budget	£1.7M	£1.5M	Percentage of resource budget	0.3%	0.25%	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.																															
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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.

Key highlights include:

- There was an increase in the number of academic or private sector collaborations using STFC or DLS in the year (Section 5.1).
- 87 companies based at DSIC (an increase of 16), with over 300 employees. A further 130 organisations are located at HSIC (Section 5.2). It is hoped that in future, a range of performance indicators will be developed to show the breadth of inward investment in the campuses;
- An increase to 177 in the number of beam days relevant to commercial or quasi-commercial partners at STFC facilities (Section 5.8);
- Contracts placed with UK companies for the purchase of equipment for STFC funded major facilities continued to increase with, for example, €83.9M for ESA (Section 5.8);
- STFC now employs 7 FTE staff (more than double the number in the previous year) 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);
- An analysis of PIPSS final reports shows a rise in the number of projects demonstrating successful completion of R&D as indicated by a viable proposal for industrial engagement (Section 5.15), as well as an increase in the number of projects reporting successful technology output or transfer (Section 5.18);
- Income from licensing of intellectual property more than doubled from £92k in 2007/08 to over £230k in 2008/09 (Section 5.24).
- UKATC reported 16 technology-based projects with commercial customers, with a total value of £5.6M (Section 5.25).

The Science and Technology Facilities Council welcomed Canadian-based MacDonald Dettwiler and Associates Ltd (MDA) as the first major commercial space company to establish operation on the Harwell Science and Innovation Campus. MDA will initially take space in the Space Science and Technology Department at STFC Rutherford Appleton Laboratory (RAL). MDA has had a presence in the UK since last year when the company became the major shareholder in Orbital Optics Ltd, a space camera payload business also located on the Harwell Science and Innovation Campus. Orbital Optics Ltd is a spin out from Rutherford Appleton Laboratory. The company first filed a patent on new satellite camera technology in 1996. The 'Topsat' mission launched in 2005 included the new 2.5m 'RALCam' camera designed and built by STFC's Space Science & Technology Department. In spring 2006, the STFC spinout company 'Orbital Optics Ltd' was set up with £470k funding. In 2007, MDA invested and bought majority share in OOL.

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 colspan="2">2007/08</th> <th colspan="2">2008/09</th> </tr> <tr> <th>Projects</th> <th>Collaborations</th> <th>Projects</th> <th>Collaborations</th> </tr> </thead> <tbody> <tr> <td>44</td> <td>32</td> <td>62</td> <td>12</td> </tr> </tbody> </table>	2007/08		2008/09		Projects	Collaborations	Projects	Collaborations	44	32	62	12	<p>Previous data incomplete and has not been included.</p> <p>Collaborations: the number is certainly higher, but we do not yet capture this information comprehensively.</p>																				
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5.2	Number of companies, type of business of companies on Campuses, number of staff and spread of employee functions	<table border="1"> <thead> <tr> <th>DSIC</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Companies</td> <td>48</td> <td>71</td> <td>87</td> </tr> <tr> <td>Sectors</td> <td>-</td> <td>4</td> <td>4</td> </tr> <tr> <td>Employees</td> <td>-</td> <td>235</td> <td>304</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>HSIC</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Companies</td> <td></td> <td>54</td> <td>130</td> </tr> <tr> <td>Sectors</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Employees</td> <td>-</td> <td>4500</td> <td>n/a</td> </tr> </tbody> </table>	DSIC	2006/07	2007/08	2008/09	Companies	48	71	87	Sectors	-	4	4	Employees	-	235	304	HSIC	2006/07	2007/08	2008/09	Companies		54	130	Sectors	-	-	-	Employees	-	4500	n/a	
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5.3	Amount of building/ infrastructure investment of campus tenants	<table border="1"> <thead> <tr> <th>DSIC</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> <tr> <td></td> <td>£M</td> <td>£M</td> <td>£M</td> </tr> </thead> <tbody> <tr> <td>Investment raised</td> <td>-</td> <td>11</td> <td>20</td> </tr> <tr> <td>GRAND Awards*</td> <td>-</td> <td>1</td> <td>1</td> </tr> <tr> <td>Rental cost of accommodation pa</td> <td>-</td> <td>600</td> <td>700</td> </tr> </tbody> </table> <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>	DSIC	2006/07	2007/08	2008/09		£M	£M	£M	Investment raised	-	11	20	GRAND Awards*	-	1	1	Rental cost of accommodation pa	-	600	700	<p>* GRAND Awards – NWDA Grants for Research and Development</p> <p>The HSIC JV Partner is in the process of developing a system to capture detailed information as part of developing Economic Impact indicators for the Harwell Campus.</p>												
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Investment raised	-	11	20																																
GRAND Awards*	-	1	1																																
Rental cost of accommodation pa	-	600	700																																
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: None recorded.</p>	<p>The HSIC JV Partner is in the process of developing a system to capture detailed information as part of developing Economic Impact indicators for the Harwell Campus.</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> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>STFC Council</td> <td>20%</td> <td>30%</td> </tr> <tr> <td>Diamond Governing Body*</td> <td>25%</td> <td>25%</td> </tr> </tbody> </table>		2007/08	2008/09	STFC Council	20%	30%	Diamond Governing Body*	25%	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	2008/09																					
STFC Council	20%	30%																					
Diamond Governing Body*	25%	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>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>82</td> <td>170</td> <td>177</td> </tr> </tbody> </table> <p>2005/06: not collected</p>	2006/07	2007/08	2008/09	82	170	177															
2006/07	2007/08	2008/09																					
82	170	177																					
5.9	Value of contracts placed with UK companies for the purchase of equipment for major facilities and research programmes	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>ESA</td> <td>€ 45.2M</td> <td>€ 39.2M</td> <td>€ 48.2M</td> <td>€83.9M</td> </tr> <tr> <td>ESO</td> <td>€ 6.8M</td> <td>€ 2.7M</td> <td>€ 20.0M</td> <td>€13.7M</td> </tr> <tr> <td>CERN</td> <td>CHF 39.4M</td> <td>CHF 26.5M</td> <td>CHF 11.4M</td> <td>CHF 7.4M</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	2008/09	ESA	€ 45.2M	€ 39.2M	€ 48.2M	€83.9M	ESO	€ 6.8M	€ 2.7M	€ 20.0M	€13.7M	CERN	CHF 39.4M	CHF 26.5M	CHF 11.4M	CHF 7.4M	Contracts placed by CERN, ESO and ESA with UK Companies.
	2005/06	2006/07	2007/08	2008/09																			
ESA	€ 45.2M	€ 39.2M	€ 48.2M	€83.9M																			
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CERN	CHF 39.4M	CHF 26.5M	CHF 11.4M	CHF 7.4M																			
5.10	RC staff employed in a dedicated commercialisation/industrial liaison function	<table border="1"> <thead> <tr> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>17</td> </tr> </tbody> </table>	2007/08	2008/09	8	17																	
2007/08	2008/09																						
8	17																						
5.11	Numbers of STFC workshops/ events to help develop researchers commercialisation skills and attendance at workshops	<table border="1"> <thead> <tr> <th></th> <th>2005-08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Workshops</td> <td>2</td> <td>6</td> </tr> <tr> <td>Attendees</td> <td>-</td> <td>75</td> </tr> </tbody> </table>		2005-08	2008/09	Workshops	2	6	Attendees	-	75												
	2005-08	2008/09																					
Workshops	2	6																					
Attendees	-	75																					
5.12	Numbers of STFC workshops/ events to promote engagement with business and attendance at workshops	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Workshops</td> <td>16</td> <td>47</td> </tr> <tr> <td>Attendees</td> <td>2491</td> <td>992</td> </tr> </tbody> </table>		2006/07	2008/09	Workshops	16	47	Attendees	2491	992												
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Workshops	16	47																					
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Ref No	Indicator	Data	Comments/Overview															
5.13	Facility user satisfaction measure for industrial users	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>CLF</td> <td>100%</td> <td>-</td> </tr> <tr> <td>Diamond*</td> <td>-</td> <td>-</td> </tr> <tr> <td>ISIS</td> <td>90%</td> <td>91%</td> </tr> <tr> <td>SRS</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>2005/06 and 2006/07: not collected</p>		2007/08	2008/09	CLF	100%	-	Diamond*	-	-	ISIS	90%	91%	SRS	-	-	*Diamond – not available for 2008/09. ISIS does not differentiate between academic and industrial users. Data from DARTS/CLIK for SRS industrial users is incomplete.
	2007/08	2008/09																
CLF	100%	-																
Diamond*	-	-																
ISIS	90%	91%																
SRS	-	-																

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> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Number</td> <td>75</td> <td>14</td> <td>4</td> </tr> <tr> <td>Value</td> <td>£11.9M</td> <td>£15.06M</td> <td>£0.9M</td> </tr> </tbody> </table> <p>2006/07: not collected</p>		2005/06	2007/08	2008/09	Number	75	14	4	Value	£11.9M	£15.06M	£0.9M									
	2005/06	2007/08	2008/09																				
Number	75	14	4																				
Value	£11.9M	£15.06M	£0.9M																				
5.15	Successful completion of R&D as demonstrated through a viable proposal for industrial engagement in the final project	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td></td> <td>90%</td> <td>50%</td> <td>70%</td> </tr> <tr> <td></td> <td>19/21</td> <td>4/8</td> <td>7/10</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08	2008/09		90%	50%	70%		19/21	4/8	7/10	Provided from an analysis of PIPSS and FoF final reports								
	2006/07	2007/08	2008/09																				
	90%	50%	70%																				
	19/21	4/8	7/10																				
5.16	Value of PRD and PIPSS awards	<table border="1"> <thead> <tr> <th></th> <th>2005/06</th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> <tr> <td></td> <td>£k</td> <td>£k</td> <td>£k</td> <td>£k</td> </tr> </thead> <tbody> <tr> <td>PRD</td> <td>-</td> <td>1635</td> <td>-</td> <td>1035</td> </tr> <tr> <td>PIPSS</td> <td>1130</td> <td>74</td> <td>4463</td> <td>1527</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	2008/09		£k	£k	£k	£k	PRD	-	1635	-	1035	PIPSS	1130	74	4463	1527	
	2005/06	2006/07	2007/08	2008/09																			
	£k	£k	£k	£k																			
PRD	-	1635	-	1035																			
PIPSS	1130	74	4463	1527																			
5.17	Value of awards to industry and value of PIPSS awarded under State Aids regulations	<table border="1"> <thead> <tr> <th></th> <th>2006/07</th> <th>2007/08</th> <th>2008/09</th> </tr> <tr> <td></td> <td>£k</td> <td>£k</td> <td>£k</td> </tr> </thead> <tbody> <tr> <td></td> <td>1144</td> <td>272</td> <td>1705</td> </tr> </tbody> </table> <p>2005/06: not collected</p>		2006/07	2007/08	2008/09		£k	£k	£k		1144	272	1705									
	2006/07	2007/08	2008/09																				
	£k	£k	£k																				
	1144	272	1705																				

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> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td></td> <td>>70%</td> <td>80%</td> <td>62%</td> <td>80%</td> </tr> <tr> <td></td> <td>8/11</td> <td>16/21</td> <td>5/8</td> <td>8/10</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	2008/09		>70%	80%	62%	80%		8/11	16/21	5/8	8/10	% calculated from the PIPSS and FoF final reports
	2005/06	2006/07	2007/08	2008/09														
	>70%	80%	62%	80%														
	8/11	16/21	5/8	8/10														
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> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Organisations</td> <td>9</td> <td>19</td> <td>26</td> <td>19</td> </tr> <tr> <td>Sectors</td> <td>6</td> <td>6</td> <td>7</td> <td>4</td> </tr> </tbody> </table>		2005/06	2006/07	2007/08	2008/09	Organisations	9	19	26	19	Sectors	6	6	7	4	Industrial organisations collaborating in PIPSS.
	2005/06	2006/07	2007/08	2008/09														
Organisations	9	19	26	19														
Sectors	6	6	7	4														

5.3: Cooperative Training

Ref No	Indicator	Data	Comments/Overview									
5.21	Number of CASE award students (where STFC acts as the industrial partner)	2008/09: 11 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> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td></td> <td>£k</td> <td></td> </tr> <tr> <td>Spend</td> <td>412</td> <td>419</td> </tr> </tbody> </table>		2007/08	2008/09		£k		Spend	412	419	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	2008/09										
	£k											
Spend	412	419										

5.4: Commercialisation of Research

Ref No	Indicator	Data				Comments/Overview	
5.24	Income from licensing of intellectual property		2005/06	2006/07	2007/08	2008/09	
			£k	£k	£k	£k	
		Income	35	60	92	231	
5.25	Number and revenue of technology-based projects with commercial and quasi-commercial customers (eg ESA/hospitals)		2006/07	2007/08	2008/09		
			£k	£k	£k		
		3	200	2	300	20	5648
		2005/06: not collected					
5.26	Nominal value of shares, VC raised and employee numbers of direct spin-outs		2006/07	2007/08	2008/09		
	Total VC investment in Spin-outs		£12M	£24M	£24M		
	Total Number of employees		46	55	48		
	Nominal portfolio valuation		£5M	£2.4M	£1.3M		
		2005/06: not collected					
5.27	Value of programmes supported by STFC to promote commercialisation and enterprise		2007/08	2008/09			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).
			£k	£k			
	Value of Follow on Fund awards		314	290			
	Value of Proof of Concept Awards		901	815			
	STFC's contribution to the RCUK Business Plan Competition		95	-			
5.28	Number of projects which result in successful spin out or license		2005/06	2006/07	2007/08	2008/09	Relates to activities from STFC Laboratories.
	Spin-outs		1	-	1	6	
	New Licenses		n/a	-	4	0	

Ref No	Indicator	Data		Comments/Overview	
5.29	Number of Patents arising from STFC Facilities		2007/08	2008/09	New category for 2007/08. Will relate to patent "families".
		Patents filed	3	7	
		Related "family" filings	12	7	
		Patents granted	2	5	

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		2005/06	2006/07	2007/08	2008/09	KES: Knowledge Exchange Service S&I KTN: Sensors and Instrumentation Knowledge Transfer Network KTP: Knowledge Transfer Partnership
			£k	£k	£k	£k	
		KES	-	491	635	392	
		S&I KTN	-	63.3	113	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>2005/06: Two Special Interest Groups (SIGs): Defence, Security and Aerospace; Healthcare and Life Sciences.</p> <p>2006/07: Two themed PIPSS calls: Bioimaging Mini-PIPSS in collaboration with BBSRC; Security in collaboration with MoD/Dstl.</p> <p>2007/08: Two themed PIPSS calls: Defence and Security in collaboration with MoD/Dstl; Bio Mini-PIPSS in collaboration with BBSRC.</p> <p>2008/09: PIPSS and miniPIPSS continued from previous year.</p>				PIPSS Themed calls	

Ref No	Indicator	Data	Comments/Overview									
5.32	Number of and funding for Knowledge Transfer Partnerships	<table border="1"> <thead> <tr> <th></th> <th>2007/08</th> <th>2008/09</th> </tr> </thead> <tbody> <tr> <td>Number of KTPs</td> <td>4</td> <td>1</td> </tr> <tr> <td>Contribution</td> <td>£52k</td> <td>£42k</td> </tr> </tbody> </table>		2007/08	2008/09	Number of KTPs	4	1	Contribution	£52k	£42k	<p>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.</p>
	2007/08	2008/09										
Number of KTPs	4	1										
Contribution	£52k	£42k										

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
PALS – Physical and Life Sciences
PPARC – Particle Physics and Astronomy Research Council
PPAN – Particle Physics, Astronomy and Nuclear Physics
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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